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- Dow AgroSciences
- Dupont Agricultural Products
- FMC Corporation
- Garst Seeds
- Loveland Industries
- Makhteshim-Agan of North America
- Monsanto Company
- Pioneer Hybrid International
- Spraying Systems Company
- Syngenta Crop Protection, Inc.
- United Agri Products
- Valent USA Corporation

Experiment Directory

Ames corn experiments

- ACN-1 Evaluation of Callisto premixes in tank-mix combinations with Gramoxone Max or Touchdown IQ for weed control in no-tillage corn
- ACN-2 Evaluation of early preplant applications of Aim with Bicep II Magnum, Guardsman Max, Balance Pro and others for weed control in no-tillage corn
- ACN-3 Early preplant and preemergence applied Balance Pro tank-mixtures followed by postemergence Option and Liberty in no-tillage corn
- ACN-4 Preemergence applied herbicide tank-mixtures and prepackaged mixtures for weed control in no-tillage corn
- ACN-5 Axiom, Dual II Magnum, Surpass and Define applied early preplant and preemergence for weed control in no-tillage corn
- ACC-1 Evaluation of crop phytotoxicity and weed control in corn with postemergence applied Steadfast, Atrazine, Callisto and others
- ACC-2 Evaluation of Axiom, Atrazine, Define, Epic, Marksman and Accent for crop phytotoxicity and weed control in corn
- ACC-3 Evaluation of postemergence applied Option with various adjuvants for crop phytotoxicity and weed control in corn
- ACC-4 Evaluation of postemergence applied Option with various tank-mixture combinations for crop efficacy and weed control in corn
- ACC-5 Evaluation of grass and broadleaf weed control in corn with Balance Pro and Callisto
- ACC-6 Evaluation of Callisto program approaches for crop phytotoxicity and weed control in corn
- ACC-7 Preemergence applied Harness Xtra, Degree Xtra, and postemergence Yukon, Permit, Hornet, and Northstar for weed control in corn
- ACC-8 Preemergence applied herbicide tank-mixtures and prepackaged mixtures for weed control in corn
- ACC-9 Evaluation of preemergence and postemergence applied Basis and Callisto tank-mixtures for crop phytotoxicity and weed control in corn
- ACC-10 Postemergence applications of Steadfast, Callisto, Atrazine, Option, Distinct and Clarity for weed control in corn
- ACC-11 Evaluation of postemergence applications of Aim, Callisto, Shotgun and Appeal for crop phytotoxicity and weed control in corn
- ACC-12 Balance Pro, Define, Outlook, Dual II Magnum and other preemergence applied herbicides at one X and half X rates for weed control in corn
- ACC-13 Callisto and Dual II Magnum premix formulations with and without Atrazine and applied preemergence and postemergence for weed control in corn
- ACS-1 Balance Pro, Atrazine, and Define applied preemergence and Liberty and Option applied postemergence for weed control in corn
- ACS-2 Preemergence and postemergence applied herbicide programs including glyphosate for weed control in corn
- ACS-3 Postemergence applications of Liberty alone and in tank-mixture with Callisto, Atrazine, Distinct or Clarity for weed control in corn
- ACS-4 Preemergence applied Bicep II Magnum, Dual II Magnum and others followed by postemergence Callisto, Touchdown IQ and Northstar in corn

- ACS-5 Evaluation of postemergence applied Liberty in tank-mixture with various rates of Define for crop phytotoxicity and weed control in corn
- ACS-6 Evaluation of weed control with preemergence and postemergence applied herbicide combinations including Lightning, Distinct, Callisto and others
- ACS-7 Evaluation of Hornet WDG, Callisto, Atrazine and Glyphomax Plus following soil applied herbicides for weed control in corn
- ACS-8 Evaluation of potential corn injury from Counter 20CR insecticide followed by Callisto, Steadfast, or Option herbicide
- ACS-9 Evaluation of postemergence CHA4535, Roundup UltraMAX and Glyphos X-TRA for crop phytotoxicity and weed control in corn
- ACS-10 Preemergence applied Bicep II Magnum, Dual II Magnum and others followed by post-emergence Callisto, Touchdown IQ and Northstar in corn

Ames soybean experiments

- ASN-1 Early preplant tank-mixture combinations with Valor followed by Roundup UltraMAX for weed control in no-tillage soybean
- ASN-2 Evaluation of early preplant applications of Aim, Glyphomax Plus, 2,4-D LV4 and others for weed control in no-tillage soybean
- ASC-1 Prowl formulations applied preplant incorporated and preemergence and followed by various postemergence herbicides for weed control in soybean
- ASC-2 Preemergence FirstRate, Authority, Python and Valor followed by postemergence Glyphomax Plus for weed control in soybean
- ASC-3 FirstRate, Authority, Pendimax, Python, Domain, Command, Phoenix, Flexstar, Roundup UltraMAX and Touchdown IQ for weed control in soybean
- ASC-4 Evaluation of postemergence combinations of Phoenix with FirstRate, Flexstar and Harmony GT for crop phytotoxicity and weed control in soybean
- ASC-5 Preemergence applied Valor, Domain, Amplify and Boundary followed by Roundup UltraMAX for weed control in soybean
- ASC-6 Evaluation of postemergence applied Clethodim-Agan 2EC and Select 2EC for grass control in soybean
- ASC-7 Postemergence applied Clethodim-Agan 2EC and Select 2EC with Cobra, Pursuit, Storm or FirstRate for grass control in soybean
- ASC-8 Evaluation of Aim, Appeal, Phoenix and Resource with Roundup UltraMAX or Touchdown IQ for weed control in soybean
- ASC-9 Evaluation of postemergence CHA4535, Roundup UltraMAX and Glyphos X-TRA for crop phytotoxicity and weed control in soybean

Ames fallow experiment

- AFS-1 Postemergence applications of Engame, PCC 1216 and Roundup UltraMAX with various surfactants for weed control on fallow ground

Lewis corn experiments (Southwest Iowa)

- LCC-1 Balance Pro, Atrazine, and Define applied preemergence and Liberty and Option applied postemergence for woolly cupgrass control in corn
- LCC-2 Lightning, Distinct, Marksman, Callisto and Atrazine applied postemergence for woolly cupgrass control in corn
- LCC-3 Evaluation of Axiom, Define, Epic and other preemergence applied herbicide applications for woolly cupgrass control in corn
- LCC-4 Evaluation of postemergence applied Steadfast, Distinct, Callisto, Atrazine and Option for woolly cupgrass control in corn

Lewis soybean experiment (Southwest Iowa)

- LSC-1 Evaluation of Phoenix for crop tolerance and woolly cupgrass control in soybean when tank-mixed with Select

Nashua corn experiments (Northeast Iowa)

- NCN-1 Preemergence applied herbicide tank-mixtures and prepackaged mixtures for weed control in no-tillage corn
- NCC-1 Evaluation of crop phytotoxicity and weed control in corn from preemergence followed by postemergence applied herbicides
- NCC-2 Bicep Lite II Magnum, Balance Pro, Callisto, A12854, A12909 and Northstar for weed control in corn
- NCC-3 Postemergence applications of Liberty alone and in tank-mixture with Callisto, Atrazine, Distinct or Clarity for weed control in corn
- NCC-4 FulTime, Degree Xtra and Bicep Lite II Magnum followed by postemergence applied Glyphomax Plus, Roundup UltraMAX or Touchdown IQ in corn
- NCC-5 Evaluation of Lightning, Distinct, Marksman, Callisto and Atrazine applied postemergence for crop phytotoxicity and weed control in corn

Nashua Soybean experiments (Northeast Iowa)

- NSN-1 Valor, Prowl, Domain and others applied early preplant followed by postemergence Roundup UltraMAX and Glyphomax Plus in no-tillage soybean
- NSC-1 FirstRate, Authority, Valor, Domain soil applied and Glyphomax Plus, Touchdown IQ, Roundup UltraMAX and Phoenix postemergence in soybean
- NSC-2 Evaluation of preplant incorporated, preemergence and postemergence herbicides including Raptor, Extreme and Glyphomax Plus in soybean

Kanawha experiments (Northern Iowa)

<u>Soybean studies</u>	Summary of studies comparing glyphosate programs and conventional herbicide programs
<u>Corn studies</u>	Summary of studies evaluating mesotrione combinations, herbicide programs, and preemergence products
<u>Nozzle study</u>	Summary of two multi-year studies evaluating drift-reduction nozzles and the blended-pulse system for weed control in soybeans

Other central Iowa experiments

Alfalfa removal in no-till corn

Treatment, Crop and Species Abbreviations and Observations

Research results contained in the ISU Weed Science Research Results report are generated by Agriculture Research Manager software, which uses various abbreviations for crop species, treatment rate and timing information. Weed and crop species are designated with the 5-letter Bayer codes. Visual estimates of crop phytotoxicity and weed control are compared to an untreated check and made on a 0 to 100 rating scale (0 percent = no crop phytotoxicity or weed control; 100 percent = complete crop death or weed control).

Treatment and application information abbreviations

<u>Abbreviation</u>	<u>Description</u>
DPOST	Directed postemergence
DPRE	Delayed preemergence
EPOST	Early postemergence
EPP	Early preplant
FL OZ/A	Fluid ounces product per acre
LB A/A	Pounds active ingredient per acre
LB AE/A	Pounds acid equivalent per acre
LB AE/A	Pounds acid equivalent per acre
LB/100 GAL	Pounds dry product per 100 gallons mix
LB/A	Pounds product per acre
LPOST	Late postemergence
MPOST	Mid-postemergence
OZ /1000 ROW-FT	Ounces product per 1000 feet of row
OZ/A	Ounces dry product per acre
PHYGEN %	% phytotoxicity – general/injury
POST	Postemergence
PPI	Preplant incorporated
PRE	Preemergence
PT/A	pint per acre
QT/A	Quarts material per acre
SPIKE	Spike corn
SPOST	Sequential postemergence
STAND	Corn stand/17.5 row feet
% v/v	Percent volume of product per volume mix basis
% w/v	Percent weight of product per volume mix basis
% w/w	Percent weight of product per weight mix basis

Crop and weed names and abbreviations

<u>Abbreviation</u>	<u>Common name</u>	<u>Genus species</u>
ABUTH	velvetleaf	<i>Abutilon theophrasti</i>
AMATA	common waterhemp	<i>Amaranthus rudis</i>
CHEAL	common lambsquarters	<i>Chenopodium album</i>
ERBVI	woolly cupgrass	<i>Eriochloa villosa</i>
GLXMA	soybean	<i>Glycine max</i>
POLPY	Pennsylvania smartweed	<i>Polygonum pensylvanicum</i>
SETFA	giant foxtail	<i>Setaria faberi</i>
SETLU	yellow foxtail	<i>Setaria lutescens</i>
SETVI	green foxtail	<i>Setaria viridis</i>
THLAR	field pennycress	<i>Thlaspi arvense L.</i>
XANST	common cocklebur	<i>Xanthium strumarium</i>
ZEAMD	corn	<i>Zea mays</i>

Products used in 2002 Research Program

Commercial Name or Experimental Number	Common Name or Experimental Number	Company
Aatrex 4 L	Atrazine	Syngenta
Aatrex 90 DF	Atrazine	Syngenta
Accent 75 DG	Nicosulfuron	Dupont
Aim 2 EW	Carfentrazone	FMC
Aim 40 DF	Carfentrazone	FMC
Amplify 84 WG	Cloransulam	Monsanto
Appeal 0.91 EC	Fluthiacet-methyl (proposed)	United Agri Products
Assure II 0.88 EC	Quizalofop-P	Dupont
Authority 75 DF	Sulfentrazone	Dupont
Balance Pro 4 SC	Isoxaflutole	Aventis
Banvel 4 SL	Dicamba	BASF
Basagran 4 SL	Bentazon	BASF
Basis 75 WG	Rimsulfuron&thifensulfuron	Dupont
Callisto 4 SC	Mesotrione	Syngenta
CHA 4535 5SL	Glyphosate	Cheminova
Clarity 4 SL	Dicamba	BASF
Clethodim-Agan 2 EC	Clethodim	Makhteshim-Agan
Cobra 2 EC	Lactofen	Valent
Command 3 ME	Clomazone	FMC
Define 60 DF	Flufenacet	Aventis
Degree 3.8 CS	Acetochlor	Monsanto
Dual II Magnum 7.64 EC	S-metolachlor & CGA-154281	Syngenta
FirstRate 84 WG	Cloransulam	Dow AgroSciences
Flexstar 1.88 HL	Fomesafen & adjuvant	Syngenta
Glyfos X-TRA 4 SL	Glyphosate	Cheminova
Glyphomax Plus 4 SL	Glyphosate	Dow AgroSciences
Gramoxone MAX 3 SL	Paraquat	Syngenta
Harmony GT 75 DF	Thifensulfuron	Dupont
Harness 7 EC	Acetochlor & MON 4660	Monsanto
Lasso 4 EC	Alachlor	Monsanto
Liberty 1.67 SL	Glufosinate	Aventis
Micro-Tech	Alachlor	Monsanto
Option 35 WDG	Foramsulfuron (proposed)	Aventis
Outlook 6 EC	Dimethenamid-P	BASF
PCC 1216 4 SL	PCC 1216	United Agri Product
Pendimax 3.3 EC	Pendimethalin	Dow AgroSciences
Permit 75 WG	Halosulfuron	Monsanto
Phoenix 2 EC	Lactofen	Valent
Poast Plus 1 E	Sethoxydim & BCH-815S	BASF

Products used in 2002 Research Program (continued)

Commercial Name or Experimental Number	Common Name or Experimental Number	Company
Prowl 3.3 EC	Pendimethalin	BASF
Prowl H ₂ O 3.8 EC	Pendimethalin	BASF
Pursuit 2 SL	Imazethapyr	BASF
Python 80 WG	Flumetsulam	Dow AgroSciences
Raptor 1 SL	Imazamox	BASF
Resource 0.86 EC	Flumiclorac	Valent
Roundup Ultra 3SL (lb ae)	Glyphosate	Monsanto
Roundup Ultra 4 SL (lb ai)	Glyphosate	Monsanto
Roundup Ultra MAX 3.7 SL (lb ae)	Glyphosate	Monsanto
Roundup Ultra MAX 5 SL (lb ai)	Glyphosate	Monsanto
Saber 3.8 SL	2,4-D	United Agri Products
Salvo 5 SL	2,4-D	United Agri Products
Savana 2.5 SL	2,4-D	United Agri Products
Select 2 EC	Clethodim	Valent
Sencor 75 DF	Metribuzin	Bayer
Spartan 4F	Carfentrazone	FMC
Surpass 6.4 EC	Acetochlor & dichlormid	Dow AgroSciences
Topnotch 3.2 CS	Acetochlor & dichlormid	Dow AgroSciences
Touchdown IQ 3 SL (lb ae)	Sulfosate	Syngenta
Treflan 4 EC HPF	Trifluralin	Dow AgroSciences
Ultra Blazer 2 SL	Acifluorfen	BASF
Valor 51 WG	Flumioxazin	Valent
Weedone LV4 3.8 SL	2,4-D ester	Aventis
2, 4-D LV4	2, 4-D LV4	Agrialiance

Prepackage Mixtures

A 12854 3.94 SE	Mesotrione & s-metolachlor & atrazine	Syngenta
A 12909 3.67 SE	Mesotrione & s-metolachlor	Syngenta
Accent Gold 83.8 DF	Nicosulfuron & rimsulfuron & clopyralid & flumetsulam	Dupont
Acetochlor 75 5.5 SE	Acetochlor & atrazine	Dow AgroSciences
Acetochlor 150 5.1 SE	Acetochlor & atrazine	Dow AgroSciences
Axiom 68 DF	Flufenacet & metribuzin	Bayer
Axiom AT 75 WG	Flufenacet & metribuzin & atrazine	Bayer
Basis Gold 89.5 DF	Rimsulfuron & nicosulfuron & atrazine	Dupont
Bicep II Magnum 5.5 L	S-metolachlor & atrazine & CGA-154281	Syngenta
Bicep Lite II Magnum 6 L	S-metolachlor & atrazine & CGA-154281	Syngenta

Products used in 2002 Research Program (continued)

Commercial Name or Experimental Number	Common Name or Experimental Number	Company
Boundary 7.8 EC	S-metolachlor & metribuzin & CGA-154281	Syngenta
Buctril+Atrazine 3 SC	Bromoxynil & atrazine	Aventis
Celebrity Plus 70 WG	Dicamba & diflufenzopyr & nicosulfuron	BASF
Degree Xtra 4.04 CS	Acetochlor & safener & atrazine	Monsanto
Distinct 70 WG	Dicamba & diflufenzopyr	BASF
Domain 60 DF	Flufenacet & metribuzin	Bayer
Engame 1.3 SL	Glyphosate & 1-aminomethanamide dihydrogen tetraoxosulfate	Entek
Epic 58 DF	Flufenacet & isoxaflutole	Bayer
ETK 2350 1.5 SL	ETK 2350	United Agri Products
Extreme 2.17 SL	Imazethapyr & glyphosate	BASF
Fieldmaster 4.25 EC	Acetochlor & atrazine & glyphosate	Monsanto
FulTime 4 SC	Acetochlor & safener & atrazine	Dow AgroSciences
Fusion 2.66 EC	Fluazifop-P & fenoxaprop	Syngenta
Gauntlet DF	Sulfentrazone & cloransulam	FMC
GF688	GF688	Dow AgroSciences
G-Max Lite 5 SL	Dimethenamid & atrazine	BASF
Guardsman 5 SC	Dimethenamid & atrazine	BASF
Guardsman Max 5 SE	Dimethenamid-P & atrazine	BASF
Harness Xtra 5.6 EC	Acetochlor & safener & atrazine	Monsanto
Harness Xtra 6 EC	Acetochlor & safener & atrazine	Monsanto
Hornet WDG 68.5 WG	Flumetsulam & clopyralid	Dow AgroSciences
Leadoff 5 SL	Dimethenamid & atrazine	Dupont
Liberty ATZ 4.34 SC	Glufosinate & atrazine	Aventis
Lightning 70 DG	Imazethapyr & imazapyr	BASF
Marksman 3.2 FL	Dicamba & atrazine	BASF
Northstar 47.4 WG	Primisulfuron & dicamba	Syngenta
Pursuit Plus 2.9 SL	Pendimethalin & imazethapyr	BASF
Readymaster ATZ 4 SC	Glyphosate & atrazine	Monsanto
Shotgun 3.25 FL	Atrazine & 2,4-D ester	United Agri Products
Spirit 57 WG	Prosulfuron & primisulfuron	Syngenta
Steadfast 75 WDG	Nicosulfuron & rimsulfuron	Dupont
Storm 4 SL	Bentazon & acifluorfen	BASF
Synchrony STS 42 DF	Chlorimuron & thifensulfuron	Dupont
USA 2001 71.5 DF	USA 2001 71.5 DF	Bayer
Yukon 67.5 WDG	Halosulfuron & dicamba	Monsanto

Products used in 2002 Research Program (continued)

Commercial Name or Experimental Number	Common Name or Experimental Number	Company
Additives		
Classification		
Activator 90 (NIS) Ammonium sulfate	Non-ionic surfactant/penetrant Fertilizer	UAP-Loveland Ind. Terra Industries
Choice Herbimax (Crop Oil Concentrate)	Water conditioner/ammonium sulfate Oil-surfactant adjuvant	UAP-Loveland Ind. UAP-Loveland Ind.
LI 700 Liberate	Surfactant/penetrant/acidifier Penetrant Deposition Aid drift control agent	UAP-Loveland Ind. UAP-Loveland Ind.
MSO Phase	Methylated seed oil plus surfactant Additive	UAP-Loveland Ind. UAP-Loveland Ind.
Route Silwet L-77	Additive Spray adjuvant concentrate	Loveland Industries UAP-Loveland Ind.
Vortex X-77 (NIS) 28%N	Additive Non-ionic spreader/activator Fluid fertilizer	Loveland Industries UAP-Loveland Ind. United Supplies

**Temperature and Precipitation, 2002
Ames, IA**

Date	March			April			May			June			July			August								
	temp °F max	temp °F min	precip inch	temp °F max	temp °F min	precip inch	temp °F max	temp °F min	precip inch	temp °F max	temp °F min	precip inch	temp °F max	temp °F min	precip inch	temp °F max	temp °F min	precip inch						
1	19	11		50	25		58	39	0.45	92	65		89	71		86	59							
2	17	5		39	24		58	34	0.01	77	60	0.54	88	65		78	52							
3	5	-8		34	18		67	37		81	59		88	65		89	57							
4	34	-9		45	17		68	40		64	55		90	69	0.55	84	69	2.59						
5	52	13		54	18		81	44	0.07	73	52		87	68		83	70	1.48						
6	36	23		57	24		81	52		78	51		89	67	1.08	76	63	0.21						
7	40	24		52	44	0.13	73	48		84	58		85	66	0.01	78	60							
8	44	32		51	39	0.06	82	48		86	64		92	71		79	60							
9	32	13		59	29		58	37		87	64		87	69		80	59							
10	28	7		76	40		67	35		81	70		81	65	3.09	84	62							
11	45	26		64	44	0.60	58	47	2.60	81	65	0.83	67	60	0.07	90	65							
12	56	21		59	40		49	42		82	65	1.41	77	60		81	60	0.21						
13	46	32		62	33		68	40		72	54	0.01	79	58		71	56	0.04						
14	53	32		78	45		70	42		74	53		81	57		82	53	0.02						
15	36	26		89	55		73	53	0.12	76	55		83	57		81	58	0.01						
16	47	24		84	63	0.17	65	50	0.19	78	52		86	61		76	53	0.01						
17	39	30		76	51		59	43		78	58		89	64		74	53	0.01						
18	49	24		87	52	0.02	60	38		83	64		88	67		71	47	0.01						
19	41	34		55	42		63	38		84	70		86	69		76	55	0.02						
20	52	23		53	41	0.56	60	37		87	64	0.01	95	72		78	54	0.02						
21	23	11		41	34	0.18	64	36		87	70		93	72		85	69	0.25						
22	38	11		53	34		75	47		88	69		83	61		82	68	0.01						
23	48	22		73	41		70	47	0.23	87	66		78	56		79	66							
24	39	28		60	35	0.12	65	41	0.09	87	62		79	89		80	64							
25	38	20		54	34		67	47	0.66	89	65		85	65	0.02	83	64							
26	44	15		56	34		77	51		91	67		87	66	0.39	86	64							
27	52	26		54	40	1.51	80	56		85	63		90	67	0.05	82	62							
28	60	39		45	36	0.01	82	60		86	61		89	70		82	62							
29	59	32		67	35		81	65		92	65		86	67		82	61							
30	49	31		57	46	0.03	91	63		91	73		92	65		80	60							
31	49	29					87	61					91	69		83	61							
	Avg			Sum			Avg			Sum			Avg			Sum			Avg			Sum		
	max	min	precip	max	min	precip	max	min	precip	max	min	precip	max	min	precip	max	min	precip	max	min	precip	max	min	precip
	41	21	0.00	59	37	3.39	70	46	4.42	83	62	2.80	86	66	5.26	81	60	4.89						

Temperature and Precipitation, 2002
Lewis, IA

Date	April			May			June			July			August		
	temp °F		precip	temp °F		precip	temp °F		precip	temp °F		precip	temp °F		precip
	max	min	inch	max	min	inch	max	min	inch	max	min	inch	max	min	inch
1	72	31		60	37	0.14	92	69		88	71		86	60	
2	41	24		58	35		93	67		87	65		81	54	
3	37	15		67	38		84	68		89	66		95	64	
4	48	15		67	44		70	58		89	70		93	70	0.13
5	58	26		82	46	0.03	77	54		90	67		87	72	0.01
6	61	27		79	57	0.11	84	56		91	68		82	67	0.01
7	53	46	0.02	74	51		86	59		93	66		85	63	
8	54	38	0.10	78	48		88	64		96	73		84	58	
9	63	28		59	41		87	69		90	69		84	58	
10	74	43		65	39	0.02	83	66	0.43	83	64	0.38	87	65	
11	65	46	0.24	58	48	2.51	82	65	0.88	74	63	0.20	93	65	
12	64	43		52	41		82	64	0.02	76	61	0.29	84	58	0.65
13	67	41		70	39		72	57		80	59		75	57	0.52
14	82	50		72	44		76	52		82	58		84	55	
15	89	58		74	57		80	54		85	59		84	60	
16	82	60		65	50		79	56		87	64		80	57	
17	79	48		63	43	0.01	82	58		91	66		77	55	0.46
18	87	56		62	37		80	66		92	69		67	54	
19	56	40		66	40		88	69		92	71		76	58	0.01
20	50	42	0.41	63	39		87	67		98	70		87	60	0.13
21	44	34	0.08	66	40		89	71		98	74		85	70	0.50
22	61	31	0.25	75	53	0.23	90	68		84	65	0.08	85	67	0.60
23	78	43		67	48	0.07	90	68		81	56		82	67	0.20
24	64	35	0.09	56	41	0.32	89	65		89	61	0.01	80	63	0.01
25	56	31		67	46	0.04	91	67		88	66	0.63	84	66	
26	52	40		77	53		92	70		77	71	0.44	85	64	
27	59	38	1.25	82	57		87	64		92	73		82	65	
28	45	35		81	60	0.03	88	62		87	73		83	66	
29	68	36		84	62	0.23	94	69		89	66		81	62	
30	63	45	0.22	91	64		91	73		89	69		81	64	
31				91	67					92	68		86	63	
	Avg		Sum	Avg		Sum	Avg		Sum	Avg		Sum	Avg		Sum
	max	min	precip	max	min	precip	max	min	precip	max	min	pre	max	min	precip
	62	38	2.66	70	47	3.74	85	64	1.33	88	66	2.03	83	62	3.23

Temperature and Precipitation, 2002
Nashua, IA

Date	April			May			June			July			August		
	temp °F		precip	temp °F		precip	temp °F		precip	temp °F		precip	temp °F		precip
	max	min	inch	max	min	inch	max	min	inch	max	min	inch	max	min	inch
1	32	21		53	37	0.33	90	59		90	69		85	57	
2	34	22		54	32		69	58	0.26	89	64		76	53	
3	27	18		65	33		66	51	0.41	89	66		87	58	0.38
4	37	15		70	42		60	53	0.26	87	68		83	68	1.34
5	48	26		76	38	0.20	72	51	0.19	86	66		79	69	1.45
6	52	22		81	52		77	50		84	66		75	59	
7	54	43	0.03	70	44		84	58	0.10	89	67		77	55	
8	48	35	0.15	82	48		86	63		92	71		80	55	
9	58	29		56	40		87	63		89	70		81	57	
10	74	38		63	33		80	69		73	59	0.27	82	62	
11	64	44	0.83	56	44	0.88	81	66	0.18	70	58	1.72	88	61	
12	56	42	0.01	50	43		81	65	0.67	78	52	0.01	78	61	0.93
13	67	32		65	39		75	55		81	53		66	55	0.27
14	76	46		69	38		72	53	0.09	82	56		79	53	0.01
15	90	56		77	49		76	53		82	57		80	57	
16	87	63	0.14	69	50		79	48		85	60		80	53	0.05
17	72	51	0.01	57	39		77	53		88	63		73	51	0.42
18	82	51	0.62	60	33		83	59	0.48	86	68		74	46	0.01
19	55	43		61	35		82	66		86	67		74	52	
20	52	40	0.05	58	35		80	65		91	72		77	49	
21	41	32	0.32	65	33		87	65		91	70	0.30	84	65	0.42
22	48	31		77	47		89	68		80	59	0.80	80	68	0.31
23	67	34		78	47		89	67		77	56		80	65	0.23
24	59	32	0.16	65	43	0.01	88	63		78	59	0.06	80	64	
25	52	29		64	41	0.32	90	66		81	63	0.04	82	63	0.07
26	56	26		78	50		86	65		86	64		83	61	
27	47	37	1.45	84	55		82	60		85	67	0.74	80	59	
28	44	36	0.01	82	58	0.50	87	60		87	65	1.18	80	62	
29	65	36		82	62	0.46	91	64		82	65	0.20	81	59	
30	65	45		89	61		91	71		89	64		82	54	
31				82	61	0.01				88	69		83	61	
	Avg		Sum	Avg		Sum	Avg		Sum	Avg		Sum	Avg		Sum
	max	min	precip	max	min	precip	max	min	precip	max	min	pre	max	min	precip
	57	36	3.78	69	44	2.71	81	60	2.64	85	64	5.32	80	58	5.89

Iowa State University

Evaluation of crop phytotoxicity and weed control in corn with postemergence applied Steadfast, Atrazine, Callisto and others, Ames, IA, 2002.

Trial ID: ACC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-08-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate the crop safety and weed control potential of postemergence Steadfast applied alone, and tank-mixed with various rates of Atrazine, Callisto, and Distinct.

Conclusions: Significant differences in corn stands between herbicide treatments were observed on July 24. These differences, however, were attributable to planter malfunction and not the herbicides. Corn injury was apparent with nearly all treatments when observed on June 15 and 22, eight and fifteen days after application, respectively. Injury ranged from 2 to 13% with the MPOST applications. Bicep II Magnum applied PRE provided excellent giant foxtail, common waterhemp, common lambsquarters and Pennsylvania smartweed control, but not velvetleaf and common cocklebur when noted on June 22. The addition of Callisto, however, improved the control of these species to excellent. Generally, giant foxtail control was good to excellent with all of the MPOST treatments, regardless of the herbicide mixtures and rates, and ranged from 82 to 93% when evaluated July 15. Steadfast applied alone did not achieve acceptable velvetleaf, common waterhemp, common lambsquarters, Pennsylvania smartweed and common cocklebur control on July 15. The addition of Atrazine to the Steadfast treatment improved the control of several of these species to an acceptable level. The best overall broadleaf control, however, was achieved when Callisto was included with Atrazine and Steadfast. There were few significant differences between the various rates of Callisto and Atrazine added to the Steadfast treatments. Steadfast plus Distinct provided excellent overall weed control on July 15, except for common waterhemp. When Atrazine was added to this mixture, common waterhemp control improved to an acceptable level. When observed on July 15, MPOST applied Option with Atrazine gave acceptable control of velvetleaf, common lambsquarters, Pennsylvania smartweed and common cocklebur, but not common waterhemp. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD

Variety: PIONEER 34B23

Planting Date: 05-07-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT

Plot Length, Unit: 25 FT

Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

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	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-08-02	06-07-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	MPOST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	82 F	84 F
% Relative Humidity:	71	56
Wind Velocity, Unit:	11 MPH	12 MPH
Soil Temp., Unit:	64 F	73 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	90	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V4-V5
Stage Scale:	-	DESC
Height, Unit:	-	10 IN

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WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 3-4 LEAF
Stage Scale:	-	5-7 IN
Density, Unit:	- -	15 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 5-7 LEAF
Stage Scale:	-	4-8 IN
Density, Unit:	- -	1-5 FT2
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS
Stage Scale:	-	4-8 IN
Density, Unit:	- -	5-10 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	3-6 IN
Density, Unit:	- -	0-10 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-6 LEAF
Stage Scale:	-	3-8 IN
Density, Unit:	- -	0-1 FT2
Weed 6 Code, Stage:	XANST -	XANST 5-6 LEAF
Stage Scale:	-	3-8 IN
Density, Unit:	- -	0-2 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Evaluation of crop phytotoxicity and weed control in corn with postemergence applied Steadfast, Atrazine, Callisto and others, Ames, IA, 2002.

Trial ID: ACC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH
Rating Data Type								STAND	PHYGEN	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit								17.5 ft	percent	percent	percent	percent	percent
Rating Date								07-24-02	05-23-02	06-15-02	06-22-02	06-22-02	06-22-02
Trt-Eval Interval								77 DA-A	15 DA-A	8 DA-B	15 DA-B	15 DA-B	15 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								25	0	0	0	0
2	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			27	0	2	10	87
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							
3	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			26	0	2	8	93
	Atrazine	90	0.75	LB A/A	13.3 OZ/A	MPOST B							
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							
4	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			28	0	2	12	88
	Callisto	4	0.0312	LB A/A	1.0 FL OZ/A	MPOST B							
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							
5	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			26	0	3	10	90
	Callisto	4	0.0312	LB A/A	1.0 FL OZ/A	MPOST B							
	Atrazine	90	0.25	LB A/A	4.44 OZ/A	MPOST B							
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							
6	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			27	0	3	10	90
	Callisto	4	0.0312	LB A/A	1.0 FL OZ/A	MPOST B							
	Atrazine	90	0.75	LB A/A	13.3 OZ/A	MPOST B							
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							
7	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			23	0	2	8	92
	Callisto	4	0.047	LB A/A	1.5 FL OZ/A	MPOST B							
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							
8	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			26	0	3	13	88
	Callisto	4	0.047	LB A/A	1.5 FL OZ/A	MPOST B							
	Atrazine	90	0.25	LB A/A	4.44 OZ/A	MPOST B							
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							
9	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			25	0	3	10	90
	Callisto	4	0.047	LB A/A	1.5 FL OZ/A	MPOST B							
	Atrazine	90	0.75	LB A/A	13.3 OZ/A	MPOST B							
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							
10	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST B			25	0	5	10	85
	Callisto	4	0.0625	LB A/A	2.0 FL OZ/A	MPOST B							
	COC		1.0	% V/V	1.0 % V/V	MPOST B							
	AMS		2.0	LB/A	2.0 LB/A	MPOST B							

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD STAND 17.5 ft 07-24-02 77 DA-A	ZEAMD PHYGEN percent 05-23-02 15 DA-A	ZEAMD PHYGEN percent 06-15-02 8 DA-B	ZEAMD PHYGEN percent 06-22-02 15 DA-B	SETFA CONTROL percent 06-22-02 15 DA-B	ABUTH CONTROL percent 06-22-02 15 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
11	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		26	0	3	8	88	99
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST B							
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
12	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		28	0	5	8	87	99
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST B							
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
13	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		27	0	3	7	83	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		26	0	5	8	85	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST B							
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
15	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		28	0	5	12	88	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST B							
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
16	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		27	0	5	10	88	96
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		27	0	5	10	85	99
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	MPOST B							
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
18	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST B		27	0	5	12	86	93
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	MPOST B							
	MSO		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
19	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE A		26	0	0	0	90	75
20	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE A		27	0	0	2	93	98
	Callisto	4	0.188	LB A/A	6.0	FL OZ/A	PRE A							
LSD (P=.05)									2.7	0.0	3.0	5.2	9.4	9.3

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-22-02 15 DA-B	CHEAL CONTROL percent 06-22-02 15 DA-B	POLPY CONTROL percent 06-22-02 15 DA-B	XANST CONTROL percent 06-22-02 15 DA-B	ZEAMD PHYGEN percent 07-15-02 38 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Steadfast COC AMS	75 1.0 2.0	0.035 % V/V LB/A	LB % V/V A/A	0.75 1.0 2.0	OZ/A % V/V LB/A	MPOST MPOST MPOST	B B B	50	65	65	65	0
3	Steadfast Atrazine COC AMS	75 90 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 13.3 1.0 2.0	OZ/A OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST	B B B B	77	98	90	83	0
4	Steadfast Callisto COC AMS	75 4 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 1.0 1.0 2.0	OZ/A FL OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST	B B B B	85	99	94	98	0
5	Steadfast Callisto Atrazine COC AMS	75 4 90 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 1.0 4.44 1.0 2.0	OZ/A FL OZ/A OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST MPOST	B B B B B	99	99	99	99	0
6	Steadfast Callisto Atrazine COC AMS	75 4 90 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 1.0 13.3 1.0 2.0	OZ/A FL OZ/A OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST MPOST	B B B B B	99	99	99	99	0
7	Steadfast Callisto COC AMS	75 4 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 1.5 1.0 2.0	OZ/A FL OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST	B B B B	88	99	99	99	0
8	Steadfast Callisto Atrazine COC AMS	75 4 90 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 1.5 4.44 1.0 2.0	OZ/A FL OZ/A OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST MPOST	B B B B B	99	99	99	99	0
9	Steadfast Callisto Atrazine COC AMS	75 4 90 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 1.5 13.3 1.0 2.0	OZ/A FL OZ/A OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST MPOST	B B B B B	98	99	99	99	0
10	Steadfast Callisto COC AMS	75 4 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 2.0 1.0 2.0	OZ/A FL OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST	B B B B	91	99	98	98	0
11	Steadfast Callisto Atrazine COC AMS	75 4 90 1.0 2.0	0.035 LB A/A % V/V LB/A	LB A/A % V/V A/A	0.75 2.0 4.44 1.0 2.0	OZ/A FL OZ/A OZ/A % V/V LB/A	MPOST MPOST MPOST MPOST MPOST	B B B B B	98	99	99	99	0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-22-02 15 DA-B	CHEAL CONTROL percent 06-22-02 15 DA-B	POLPY CONTROL percent 06-22-02 15 DA-B	XANST CONTROL percent 06-22-02 15 DA-B	ZEAMD PHYGEN percent 07-15-02 38 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
12	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	99	99	99	99	0
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	B					
	COC		1.0	% V/V	1.0	% V/V	MPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B					
13	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	87	99	69	99	0
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	B					
	COC		1.0	% V/V	1.0	% V/V	MPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B					
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	99	99	99	99	0
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	B					
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST	B					
	COC		1.0	% V/V	1.0	% V/V	MPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B					
15	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	99	99	99	99	0
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	B					
	COC		1.0	% V/V	1.0	% V/V	MPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B					
16	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	85	96	96	98	0
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	MPOST	B					
	COC		1.0	% V/V	1.0	% V/V	MPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B					
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	93	99	99	99	0
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	MPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	B					
	COC		1.0	% V/V	1.0	% V/V	MPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B					
18	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST	B	73	99	99	94	0
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	MPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	MPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B					
19	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE	A	99	99	99	75	0
20	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE	A	99	99	99	90	0
	Callisto	4	0.188	LB A/A	6.0	FL OZ/A	PRE	A					
LSD (P=.05)							11.7	1.2	19.3	6.4	0.0		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 07-15-02 38 DA-B	ABUTH CONTROL percent 07-15-02 38 DA-B	AMATA CONTROL percent 07-15-02 38 DA-B	CHEAL CONTROL percent 07-15-02 38 DA-B	POLPY CONTROL percent 07-15-02 38 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	88	58	47	62	63
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
3	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	93	65	68	96	88
	Atrazine	90	0.75	LB	A/A	13.3	OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
4	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	90	96	83	98	93
	Callisto	4	0.0312	LB	A/A	1.0	FL OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
5	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	90	98	98	99	99
	Callisto	4	0.0312	LB	A/A	1.0	FL OZ/A	MPOST B					
	Atrazine	90	0.25	LB	A/A	4.44	OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
6	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	88	99	99	99	99
	Callisto	4	0.0312	LB	A/A	1.0	FL OZ/A	MPOST B					
	Atrazine	90	0.75	LB	A/A	13.3	OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
7	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	93	99	86	98	96
	Callisto	4	0.047	LB	A/A	1.5	FL OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
8	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	88	99	99	99	99
	Callisto	4	0.047	LB	A/A	1.5	FL OZ/A	MPOST B					
	Atrazine	90	0.25	LB	A/A	4.44	OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
9	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	88	99	99	99	99
	Callisto	4	0.047	LB	A/A	1.5	FL OZ/A	MPOST B					
	Atrazine	90	0.75	LB	A/A	13.3	OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
10	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	82	98	92	96	98
	Callisto	4	0.0625	LB	A/A	2.0	FL OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					
11	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST B	85	99	99	99	99
	Callisto	4	0.0625	LB	A/A	2.0	FL OZ/A	MPOST B					
	Atrazine	90	0.25	LB	A/A	4.44	OZ/A	MPOST B					
	COC		1.0	%	V/V	1.0	% V/V	MPOST B					
	AMS		2.0	LB/A		2.0	LB/A	MPOST B					

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 07-15-02 38 DA-B	ABUTH CONTROL percent 07-15-02 38 DA-B	AMATA CONTROL percent 07-15-02 38 DA-B	CHEAL CONTROL percent 07-15-02 38 DA-B	POLPY CONTROL percent 07-15-02 38 DA-B			
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
12	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		82	99	99	99	99	
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST B							
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
13	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		85	99	91	99	99	
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		83	99	99	99	99	
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST B							
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
15	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		83	99	99	99	99	
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST B							
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
16	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		90	99	78	99	99	
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		85	99	92	99	99	
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	MPOST B							
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B							
	COC		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
18	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST B		82	93	67	99	99	
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	MPOST B							
	MSO		1.0	% V/V	1.0	% V/V	MPOST B							
	AMS		2.0	LB/A	2.0	LB/A	MPOST B							
19	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE A		88	73	99	99	99	
20	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE A		91	98	98	99	99	
	Callisto	4	0.188	LB A/A	6.0	FL OZ/A	PRE A							
LSD (P=.05)														
							8.2	10.1	12.0	2.7	5.0			

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 07-15-02 38 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated								0
2	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		62
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
3	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		83
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
4	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		96
	Callisto	4	0.0312	LB A/A	1.0	FL OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
5	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		98
	Callisto	4	0.0312	LB A/A	1.0	FL OZ/A	MPOST B		
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
6	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		99
	Callisto	4	0.0312	LB A/A	1.0	FL OZ/A	MPOST B		
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
7	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		98
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
8	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		99
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST B		
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
9	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		99
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST B		
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
10	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		98
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		
11	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		98
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST B		
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST B		
	COC		1.0	% V/V	1.0	% V/V	MPOST B		
	AMS		2.0	LB/A	2.0	LB/A	MPOST B		

Iowa State University

Weed Code							XANST		
Rating Data Type							CONTROL		
Rating Unit							percent		
Rating Date							07-15-02		
Trt-Eval Interval							38 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
12	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	99
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST	B	
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	B	
	COC		1.0	% V/V	1.0	% V/V	MPOST	B	
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B	
13	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	B	
	COC		1.0	% V/V	1.0	% V/V	MPOST	B	
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B	
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	B	
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST	B	
	COC		1.0	% V/V	1.0	% V/V	MPOST	B	
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B	
15	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	B	
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	B	
	COC		1.0	% V/V	1.0	% V/V	MPOST	B	
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B	
16	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	96
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	MPOST	B	
	COC		1.0	% V/V	1.0	% V/V	MPOST	B	
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B	
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	B	99
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	MPOST	B	
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	B	
	COC		1.0	% V/V	1.0	% V/V	MPOST	B	
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B	
18	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST	B	93
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	MPOST	B	
	MSO		1.0	% V/V	1.0	% V/V	MPOST	B	
	AMS		2.0	LB/A	2.0	LB/A	MPOST	B	
19	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE	A	73
20	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE	A	83
	Callisto	4	0.188	LB A/A	6.0	FL OZ/A	PRE	A	
LSD (P=.05)									8.5

Iowa State University

Evaluation of Axiom, Atrazine, Define, Epic, Marksman and Accent for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-07-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate various preemergence applied herbicides including Axiom, Epic, USA 2001, and Define and postemergence Marksman, and Define for crop injury and weed control in corn.

Conclusions: No significant differences between treatments in corn stand were determined, although there was considerable variation. Negligible corn injury occurred from soil-applied herbicides when observed on May 31, twenty-three days after application. Preemergence (PRE) applied Axiom plus Atrazine, Define plus Atrazine, Epic, Epic plus Atrazine, USA 2001, Define plus Epic and Harness Xtra generally provided good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, Pennsylvania smartweed, and common cocklebur control when observed on May 31. On August 8, giant foxtail, common waterhemp, common lambsquarters and Pennsylvania smartweed control remained 85% or higher with these treatments. Common cocklebur control with PRE applied Define plus Atrazine, USA 2001 plus Atrazine, Define plus Epic, and Harness Xtra was no longer acceptable on August 8.

Generally, no crop injury was observed on July 8 and August 8 from EPOST and POST applied treatments. On July 8 and August 8, PRE treatments followed by POST applied Marksman achieved good to excellent control of all weed species evaluated. Define applied EPOST was ineffective in controlling any of the weed species on July 8 and August 8. However, when Atrazine or Atrazine plus Accent was added to the treatment, control improved considerably for most of the species. Considerable variation in corn yields were determined, but only several significant differences occurred between treatments. Define applied EPOST, alone, yielded significantly less than all of the treatments except the control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD Variety: PIONEER 34B23

Planting Date: 05-07-02 Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

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	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-08-02	05-23-02	05-31-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	POST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	82 F	70 F	87 F
% Relative Humidity:	71	65	46
Wind Velocity, Unit:	11 MPH	8 MPH	6 MPH
Soil Temp., Unit:	64 F	63 F	75 F
Soil Moisture:	DRY	DAMP	DRY
% Cloud Cover:	90	20	10

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V1	ZEAMD V3
Stage Scale:	-	DESC	DESC
Height, Unit:	-	1.5 IN	4 IN

Iowa State University

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 2 LEAF	SETFA 1-4 LEAF
Stage Scale:	-	0.5-1 IN	0.25-2 IN
Density, Unit:	- -	0-15 FT2	0-25 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYLEDON	ABUTH COTYL-4
Stage Scale:	-	0.5-1 IN	0.25-2 IN
Density, Unit:	- -	0-5 FT2	0-15 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -	AMATA COTYL-1
Stage Scale:	-	-	0.25-1 IN
Density, Unit:	- -	- -	0-2 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL -	CHEAL COTYL-4
Stage Scale:	-	-	.13-1 IN
Density, Unit:	- -	- -	0-50 FT2
Weed 5 Code, Stage:	POLPY -	POLPY -	POLPY COTYL-2
Stage Scale:	-	-	0.5-1 IN
Density, Unit:	- -	- -	0-1 FT2
Weed 6 Code, Stage:	XANST -	XANST COTYLEDON	XANST COTYL-4
Stage Scale:	-	1-2 IN	1-4
Density, Unit:	- -	0-1 FT2	0-1 FT2

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	HAND BOOM	TERRA PRO
Operating Pressure:	30	25	30
Nozzle Type:	11002	11003	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Evaluation of Axiom, Atrazine, Define, Epic, Marksman and Accent for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type							STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent	percent
Rating Date							07-25-02	05-31-02	05-31-02	05-31-02	05-31-02	05-31-02
Trt-Eval Interval							78 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							21	0	0	0	0
2	Axiom	68	0.978 LB A/A	23.0 OZ/A		PRE A		26	0	98	91	99
	Atrazine	90	0.9 LB A/A	1.0 LB/A		PRE A						
3	Define	60	0.788 LB A/A	21.0 OZ/A		PRE A		26	0	93	87	96
	Atrazine	90	0.9 LB A/A	1.0 LB/A		PRE A						
4	Epic	58	0.544 LB A/A	15.0 OZ/A		PRE A		26	3	95	95	99
5	Epic	58	0.471 LB A/A	13.0 OZ/A		PRE A		26	2	98	93	98
	Atrazine	90	0.9 LB A/A	1.0 LB/A		PRE A						
6	USA2001	71.5	0.67 LB A/A	15.0 OZ/A		PRE A		26	2	98	99	99
7	USA2001	71.5	0.581 LB A/A	13.0 OZ/A		PRE A		28	0	98	93	99
	Atrazine	90	0.9 LB A/A	1.0 LB/A		PRE A						
8	Define	60	0.413 LB A/A	11.0 OZ/A		PRE A		28	2	96	96	99
	Epic	58	0.326 LB A/A	9.0 OZ/A		PRE A						
9	Harness Xtra	6	3.45 LB A/A	2.3 QT/A		PRE A		25	2	99	82	98
10	Define	60	0.788 LB A/A	21.0 OZ/A		PRE A		26	0	92	30	90
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C						
	28% UAN		2.0 QT/A	2.0 QT/A		POST C						
11	Axiom	68	0.978 LB A/A	23.0 OZ/A		PRE A		27	0	95	47	99
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C						
	28% UAN		2.0 QT/A	2.0 QT/A		POST C						
12	USA2001	71.5	0.581 LB A/A	13.0 OZ/A		PRE A		25	2	90	90	99
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C						
	28% UAN		2.0 QT/A	2.0 QT/A		POST C						
13	Epic	58	0.435 LB A/A	12.0 OZ/A		PRE A		24	0	93	86	99
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C						
	28% UAN		2.0 QT/A	2.0 QT/A		POST C						
14	Outlook	6	0.89 LB A/A	19.0 FL OZ/A		PRE A		24	0	96	23	76
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C						
	28% UAN		2.0 QT/A	2.0 QT/A		POST C						
15	Define	60	0.788 LB A/A	21.0 OZ/A		EPOST B		25	0	68	40	57
	COC		1.0 QT/A	1.0 QT/A		EPOST B						
16	Define	60	0.788 LB A/A	21.0 OZ/A		EPOST B		27	0	93	98	99
	Atrazine	90	0.9 LB A/A	1.0 LB/A		EPOST B						
	COC		1.0 QT/A	1.0 QT/A		EPOST B						
17	Define	60	0.788 LB A/A	21.0 OZ/A		EPOST B		27	0	73	70	92
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
	COC		1.0 QT/A	1.0 QT/A		EPOST B						

Iowa State University

Weed Code							ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type							STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	percent	
Rating Date							07-25-02	05-31-02	05-31-02	05-31-02	05-31-02	05-31-02	
Trt-Eval Interval							78 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
18	Define	60	0.788 LB A/A	21.0 OZ/A		EPOST B		26	0	93	96	99	
	Atrazine	90	0.9 LB A/A	1.0 LB/A		EPOST B							
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B							
	COC		1.0 QT/A	1.0 QT/A		EPOST B							
LSD (P=.05)								3.6	2.8	9.3	24.3	16.7	12.4

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								POLPY CONTROL percent 05-31-02 23 DA-A	XANST CONTROL percent 05-31-02 23 DA-A	ZEAMD PHYGEN percent 06-08-02 8 DA-C	ZEAMD PHYGEN percent 07-08-02 38 DA-C	SETFA CONTROL percent 07-08-02 38 DA-C	ABUTH CONTROL percent 07-08-02 38 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
1	Untreated							0	0	0	0	0	0
2	Axiom	68	0.978	LB A/A	23.0	OZ/A	PRE A	96	95	0	0	91	70
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE A						
3	Define	60	0.788	LB A/A	21.0	OZ/A	PRE A	96	85	0	0	90	55
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE A						
4	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE A	99	96	0	2	93	95
5	Epic	58	0.471	LB A/A	13.0	OZ/A	PRE A	98	95	0	2	98	93
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE A						
6	USA2001	71.5	0.67	LB A/A	15.0	OZ/A	PRE A	99	92	0	0	96	98
7	USA2001	71.5	0.581	LB A/A	13.0	OZ/A	PRE A	99	86	0	0	96	79
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE A						
8	Define	60	0.413	LB A/A	11.0	OZ/A	PRE A	96	53	0	0	93	95
	Epic	58	0.326	LB A/A	9.0	OZ/A	PRE A						
9	Harness Xtra	6	3.45	LB A/A	2.3	QT/A	PRE A	99	83	0	0	96	53
10	Define	60	0.788	LB A/A	21.0	OZ/A	PRE A	53	50	0	0	88	96
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST C						
	28% UAN		2.0	QT/A	2.0	QT/A	POST C						
11	Axiom	68	0.978	LB A/A	23.0	OZ/A	PRE A	85	30	0	0	95	95
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST C						
	28% UAN		2.0	QT/A	2.0	QT/A	POST C						
12	USA2001	71.5	0.581	LB A/A	13.0	OZ/A	PRE A	94	73	0	0	90	99
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST C						
	28% UAN		2.0	QT/A	2.0	QT/A	POST C						
13	Epic	58	0.435	LB A/A	12.0	OZ/A	PRE A	99	87	0	0	95	99
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST C						
	28% UAN		2.0	QT/A	2.0	QT/A	POST C						
14	Outlook	6	0.89	LB A/A	19.0	FL OZ/A	PRE A	75	23	0	0	92	95
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST C						
	28% UAN		2.0	QT/A	2.0	QT/A	POST C						
15	Define	60	0.788	LB A/A	21.0	OZ/A	EPOST B	43	47	0	0	68	27
	COC		1.0	QT/A	1.0	QT/A	EPOST B						
16	Define	60	0.788	LB A/A	21.0	OZ/A	EPOST B	99	95	0	0	88	83
	Atrazine	90	0.9	LB A/A	1.0	LB/A	EPOST B						
	COC		1.0	QT/A	1.0	QT/A	EPOST B						
17	Define	60	0.788	LB A/A	21.0	OZ/A	EPOST B	88	60	0	0	73	37
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST B						
	COC		1.0	QT/A	1.0	QT/A	EPOST B						
18	Define	60	0.788	LB A/A	21.0	OZ/A	EPOST B	99	96	0	0	92	66
	Atrazine	90	0.9	LB A/A	1.0	LB/A	EPOST B						
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST B						
	COC		1.0	QT/A	1.0	QT/A	EPOST B						
LSD (P=.05)								13.3	30.0	0.0	1.6	11.7	30.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 07-08-02 38 DA-C	CHEAL CONTROL percent 07-08-02 38 DA-C	POLPY CONTROL percent 07-08-02 38 DA-C	XANST CONTROL percent 07-08-02 38 DA-C	SETFA CONTROL percent 08-08-02 69 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Axiom	68	0.978	LB A/A	23.0	OZ/A	PRE	A	98	95	96	88	86
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE	A					
3	Define	60	0.788	LB A/A	21.0	OZ/A	PRE	A	86	91	96	77	85
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE	A					
4	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE	A	96	99	99	95	91
5	Epic	58	0.471	LB A/A	13.0	OZ/A	PRE	A	99	99	99	88	98
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE	A					
6	USA2001	71.5	0.67	LB A/A	15.0	OZ/A	PRE	A	99	99	98	87	96
7	USA2001	71.5	0.581	LB A/A	13.0	OZ/A	PRE	A	99	99	99	75	93
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE	A					
8	Define	60	0.413	LB A/A	11.0	OZ/A	PRE	A	99	99	93	48	91
	Epic	58	0.326	LB A/A	9.0	OZ/A	PRE	A					
9	Harness Xtra	6	3.45	LB A/A	2.3	QT/A	PRE	A	99	99	99	72	90
10	Define	60	0.788	LB A/A	21.0	OZ/A	PRE	A	98	99	99	98	87
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST	C					
	28% UAN		2.0	QT/A	2.0	QT/A	POST	C					
11	Axiom	68	0.978	LB A/A	23.0	OZ/A	PRE	A	99	99	99	98	95
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST	C					
	28% UAN		2.0	QT/A	2.0	QT/A	POST	C					
12	USA2001	71.5	0.581	LB A/A	13.0	OZ/A	PRE	A	99	99	99	99	88
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST	C					
	28% UAN		2.0	QT/A	2.0	QT/A	POST	C					
13	Epic	58	0.435	LB A/A	12.0	OZ/A	PRE	A	99	99	99	98	95
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST	C					
	28% UAN		2.0	QT/A	2.0	QT/A	POST	C					
14	Outlook	6	0.89	LB A/A	19.0	FL OZ/A	PRE	A	99	99	99	98	88
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	POST	C					
	28% UAN		2.0	QT/A	2.0	QT/A	POST	C					
15	Define	60	0.788	LB A/A	21.0	OZ/A	EPOST	B	37	43	43	43	72
	COC		1.0	QT/A	1.0	QT/A	EPOST	B					
16	Define	60	0.788	LB A/A	21.0	OZ/A	EPOST	B	99	99	99	90	83
	Atrazine	90	0.9	LB A/A	1.0	LB/A	EPOST	B					
	COC		1.0	QT/A	1.0	QT/A	EPOST	B					
17	Define	60	0.788	LB A/A	21.0	OZ/A	EPOST	B	67	58	80	57	73
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B					
	COC		1.0	QT/A	1.0	QT/A	EPOST	B					
18	Define	60	0.788	LB A/A	21.0	OZ/A	EPOST	B	96	99	99	83	87
	Atrazine	90	0.9	LB A/A	1.0	LB/A	EPOST	B					
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B					
	COC		1.0	QT/A	1.0	QT/A	EPOST	B					
LSD (P=.05)									10.5	7.6	11.0	21.8	15.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ABUTH CONTROL percent 08-08-02 69 DA-C	AMATA CONTROL percent 08-08-02 69 DA-C	CHEAL CONTROL percent 08-08-02 69 DA-C	POLPY CONTROL percent 08-08-02 69 DA-C	XANST CONTROL percent 08-08-02 69 DA-C	ZEAMD YIELD BU/A 10-11-02 156 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
1	Untreated							0	0	0	0	0	47
2	Axiom	68	0.978 LB A/A	23.0 OZ/A		PRE A		66	98	95	96	88	217
	Atrazine	90	0.9 LB A/A	1.0 LB/A		PRE A							
3	Define	60	0.788 LB A/A	21.0 OZ/A		PRE A		50	86	91	96	77	203
	Atrazine	90	0.9 LB A/A	1.0 LB/A		PRE A							
4	Epic	58	0.544 LB A/A	15.0 OZ/A		PRE A		95	96	99	99	95	213
5	Epic	58	0.471 LB A/A	13.0 OZ/A		PRE A		93	99	99	99	88	224
	Atrazine	90	0.9 LB A/A	1.0 LB/A		PRE A							
6	USA2001	71.5	0.67 LB A/A	15.0 OZ/A		PRE A		98	99	99	98	87	227
7	USA2001	71.5	0.581 LB A/A	13.0 OZ/A		PRE A		79	99	99	99	75	231
	Atrazine	90	0.9 LB A/A	1.0 LB/A		PRE A							
8	Define	60	0.413 LB A/A	11.0 OZ/A		PRE A		95	99	99	93	48	221
	Epic	58	0.326 LB A/A	9.0 OZ/A		PRE A							
9	Harness Xtra	6	3.45 LB A/A	2.3 QT/A		PRE A		53	99	99	99	72	203
10	Define	60	0.788 LB A/A	21.0 OZ/A		PRE A		96	98	99	99	96	227
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C							
	28% UAN		2.0 QT/A	2.0 QT/A		POST C							
11	Axiom	68	0.978 LB A/A	23.0 OZ/A		PRE A		91	99	99	99	98	224
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C							
	28% UAN		2.0 QT/A	2.0 QT/A		POST C							
12	USA2001	71.5	0.581 LB A/A	13.0 OZ/A		PRE A		99	99	99	99	99	218
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C							
	28% UAN		2.0 QT/A	2.0 QT/A		POST C							
13	Epic	58	0.435 LB A/A	12.0 OZ/A		PRE A		99	99	99	99	98	212
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C							
	28% UAN		2.0 QT/A	2.0 QT/A		POST C							
14	Outlook	6	0.89 LB A/A	19.0 FL OZ/A		PRE A		93	99	99	99	98	198
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		POST C							
	28% UAN		2.0 QT/A	2.0 QT/A		POST C							
15	Define	60	0.788 LB A/A	21.0 OZ/A		EPOST B		23	32	40	43	43	160
	COC		1.0 QT/A	1.0 QT/A		EPOST B							
16	Define	60	0.788 LB A/A	21.0 OZ/A		EPOST B		83	99	99	99	90	244
	Atrazine	90	0.9 LB A/A	1.0 LB/A		EPOST B							
	COC		1.0 QT/A	1.0 QT/A		EPOST B							
17	Define	60	0.788 LB A/A	21.0 OZ/A		EPOST B		33	67	50	80	57	210
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B							
	COC		1.0 QT/A	1.0 QT/A		EPOST B							
18	Define	60	0.788 LB A/A	21.0 OZ/A		EPOST B		66	96	99	99	83	231
	Atrazine	90	0.9 LB A/A	1.0 LB/A		EPOST B							
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B							
	COC		1.0 QT/A	1.0 QT/A		EPOST B							
LSD (P=.05)								30.9	10.2	8.4	11.0	21.8	30.7

Iowa State University

Evaluation of postemergence applied Option with various adjuvants for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 3

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-06-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to assess crop injury and weed control from postemergence applied tank-mixtures of Option with various adjuvants.

Conclusions: Corn stand was consistent between herbicide treatments and no significant differences were determined. Serious corn injury ranging 8 to 18% from the treatments was observed on June 8, eight days after application. Significant differences between the Option/adjuvant treatment combinations were few. On June 18, eighteen days after application, injury symptoms continued to persist from the treatments and ranged from 5 to 11%. Giant foxtail control was excellent when observed on July 8, thirty-eight days after application, and no significant differences were found between the treatments. Significant differences were determined, however, between treatments for control of yellow foxtail. Overall, control was poor to good with the treatments, ranging from 57 to 85%. Option plus Callisto plus Liberate plus Choice treatments achieved poor, and significantly less yellow foxtail control than the other treatments.

Broadleaf weed control was variable with the treatments. Generally, Option plus the various adjuvants without Callisto in the treatment, did not provide acceptable control of velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed when observed on July 8. Common cocklebur control, however, was good to excellent. The differences in broadleaf weed control were not significant between the treatments. Option with Callisto in the treatment plus the various adjuvants achieved excellent overall broadleaf weed control on July 8. No significant differences between treatments were determined. Corn yields were quite variable between the treatments. Differences were not consistently a result of the observed level of crop injury or weed control. All treatments yielded significantly higher than the untreated control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	SETLU	FOXTAIL, YELLOW	SETARIA LUTESCENS (WEIG. EX STUNTZ) HUBB
3.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
5.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
6.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.
7.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD

Variety: GARST 8550

Planting Date: 05-06-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT

Plot Length, Unit: 25 FT

Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

Iowa State University

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	05-31-02
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	86 F
% Relative Humidity:	46
Wind Velocity, Unit:	6 MPH
Soil Temp., Unit:	75 F
Soil Moisture:	DRY
% Cloud Cover:	10

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD V3
Stage Scale:	DESC
Height, Unit:	4 IN

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WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-3 LEAF
Stage Scale:	0.25-3 IN
Density, Unit:	50 FT2
Weed 2 Code, Stage:	SETLU 1-3 LEAF
Stage Scale:	0.25-2 IN
Density, Unit:	0-10 FT2
Weed 3 Code, Stage:	ABUTH COTYL-4
Stage Scale:	0.25-3 IN
Density, Unit:	0-5 FT2
Weed 4 Code, Stage:	AMATA COTYL-2
Stage Scale:	0.25-3 IN
Density, Unit:	0-20 FT2
Weed 5 Code, Stage:	CHEAL COTYL-NUM
Stage Scale:	0.25-3 IN
Density, Unit:	0-5 FT2
Weed 6 Code, Stage:	POLPY 2-4 LEAF
Stage Scale:	1-2.5 IN
Density, Unit:	0-4 FT2
Weed 7 Code, Stage:	XANST COTYL-4
Stage Scale:	1-3 IN
Density, Unit:	0-3 FT2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

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**Evaluation of postemergence applied Option with various adjuvants for crop
phytotoxicity and weed control in corn, Ames, IA, 2002.**

Trial ID: ACC 3
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	SETLU	ABUTH
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent	percent
Rating Date							07-22-02	06-08-02	06-18-02	06-18-02	06-18-02	06-18-02
Trt-Eval Interval							52 DA-A	8 DA-A	18 DA-A	18 DA-A	18 DA-A	18 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Stg	Appl Code					
1	Untreated							22	0	0	0	0
2	Option MSO	70 0.0656 LB A/A	1.5 PT/A	1.5 OZ/A	1.5 PT/A	POST A		26	18	7	99	93
	AMS	2.0 LB/A		2.0 LB/A		POST A						95
3	Option MSO	70 0.0656 LB A/A	1.0 % V/V	1.5 OZ/A	1.0 % V/V	POST A		25	17	5	99	95
	Choice	0.5 % V/V		0.5 % V/V		POST A						93
4	Option Vortex	70 0.0656 LB A/A	2.0 PT/A	1.5 OZ/A	2.0 PT/A	POST A		26	17	5	99	92
5	Option Phase	70 0.0656 LB A/A	0.5 % V/V	1.5 OZ/A	0.5 % V/V	POST A		26	13	12	99	92
	Choice	0.5 % V/V		0.5 % V/V		POST A						90
6	Option Liberate	70 0.0656 LB A/A	0.25 % V/V	1.5 OZ/A	0.25 % V/V	POST A		27	10	3	99	85
	Choice	0.5 % V/V		0.5 % V/V		POST A						88
7	Option Liberate	70 0.0656 LB A/A	0.5 % V/V	1.5 OZ/A	0.5 % V/V	POST A		25	13	8	99	87
	Choice	0.5 % V/V		0.5 % V/V		POST A						93
8	Option Callisto	70 0.0656 LB A/A	4 0.094 LB A/A	1.5 OZ/A	3.0 FL OZ/A	POST A		26	10	8	99	93
	MSO	1.0 % V/V		1.0 % V/V		POST A						99
	Choice	0.5 % V/V		0.5 % V/V		POST A						
9	Option Callisto	70 0.0656 LB A/A	4 0.094 LB A/A	1.5 OZ/A	3.0 FL OZ/A	POST A		27	10	5	99	92
	Phase	0.5 % V/V		0.5 % V/V		POST A						99
	Choice	0.5 % V/V		0.5 % V/V		POST A						
10	Option Callisto	70 0.0656 LB A/A	4 0.094 LB A/A	1.5 OZ/A	3.0 FL OZ/A	POST A		28	8	5	99	82
	Liberate	0.25 % V/V		0.25 % V/V		POST A						99
	Choice	0.5 % V/V		0.5 % V/V		POST A						
11	Option Callisto	70 0.0656 LB A/A	4 0.094 LB A/A	1.5 OZ/A	3.0 FL OZ/A	POST A		26	13	12	99	83
	Liberate	0.5 % V/V		0.5 % V/V		POST A						99
	Choice	0.5 % V/V		0.5 % V/V		POST A						
12	Option MSO	70 0.0656 LB A/A	1.5 PT/A	1.5 OZ/A	1.5 PT/A	POST A		27	15	8	99	93
	28% UAN	2.0 QT/A		2.0 QT/A		POST A						92
LSD (P=.05)							3.5	7.3	7.4	0.0	5.6	5.5

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-18-02 18 DA-A	CHEAL CONTROL percent 06-18-02 18 DA-A	POLPY CONTROL percent 06-18-02 18 DA-A	XANST CONTROL percent 06-18-02 18 DA-A	ZEAMD PHYGEN percent 07-08-02 38 DA-A	SETFA CONTROL percent 07-08-02 38 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
1	Untreated							0	0	0	0	0	
2	Option MSO AMS	70 0.0656 LB A/A 1.5 PT/A 2.0 LB/A		1.5 OZ/A 1.5 PT/A 2.0 LB/A		POST A POST A POST A		58	83	80	95	0 0 0	95
3	Option MSO Choice	70 0.0656 LB A/A 1.0 % V/V 0.5 % V/V		1.5 OZ/A 1.0 % V/V 0.5 % V/V		POST A POST A POST A		62	93	82	98	0 0 0	95
4	Option Vortex	70 0.0656 LB A/A 2.0 PT/A		1.5 OZ/A 2.0 PT/A		POST A POST A		58	83	67	95	0	95
5	Option Phase Choice	70 0.0656 LB A/A 0.5 % V/V 0.5 % V/V		1.5 OZ/A 0.5 % V/V 0.5 % V/V		POST A POST A POST A		70	72	60	95	0 0 0	95
6	Option Liberate Choice	70 0.0656 LB A/A 0.25 % V/V 0.5 % V/V		1.5 OZ/A 0.25 % V/V 0.5 % V/V		POST A POST A POST A		53	47	22	78	0 0 0	95
7	Option Liberate Choice	70 0.0656 LB A/A 0.5 % V/V 0.5 % V/V		1.5 OZ/A 0.5 % V/V 0.5 % V/V		POST A POST A POST A		55	67	32	89	0 0 0	95
8	Option Callisto MSO Choice	70 0.0656 LB A/A 4 0.094 LB A/A 1.0 % V/V 0.5 % V/V		1.5 OZ/A 3.0 FL OZ/A 1.0 % V/V 0.5 % V/V		POST A POST A POST A POST A		99	99	99	99	0 0 0 0	95
9	Option Callisto Phase Choice	70 0.0656 LB A/A 4 0.094 LB A/A 0.5 % V/V 0.5 % V/V		1.5 OZ/A 3.0 FL OZ/A 0.5 % V/V 0.5 % V/V		POST A POST A POST A POST A		99	99	99	98	0 0 0 0	95
10	Option Callisto Liberate Choice	70 0.0656 LB A/A 4 0.094 LB A/A 0.25 % V/V 0.5 % V/V		1.5 OZ/A 3.0 FL OZ/A 0.25 % V/V 0.5 % V/V		POST A POST A POST A POST A		99	99	99	99	0 0 0 0	95
11	Option Callisto Liberate Choice	70 0.0656 LB A/A 4 0.094 LB A/A 0.5 % V/V 0.5 % V/V		1.5 OZ/A 3.0 FL OZ/A 0.5 % V/V 0.5 % V/V		POST A POST A POST A POST A		99	99	99	99	0 0 0 0	95
12	Option MSO 28% UAN	70 0.0656 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 1.5 PT/A 2.0 QT/A		POST A POST A POST A		73	85	60	96	0	95
LSD (P=.05)								21.1	9.5	18.2	11.8	0.0	0.0

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Weed Code							SETLU	ABUTH	AMATA	CHEAL	POLPY	XANST	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	percent	
Rating Date							07-08-02	07-08-02	07-08-02	07-08-02	07-08-02	07-08-02	
Trt-Eval Interval							38 DA-A	38 DA-A	38 DA-A	38 DA-A	38 DA-A	38 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated							0	0	0	0	0	
2	Option MSO AMS	70 0.0656 LB A/A 1.5 PT/A 2.0 LB/A		1.5 OZ/A 1.5 PT/A 2.0 LB/A		POST A POST A POST A		80	78	53	78	63	95
3	Option MSO Choice	70 0.0656 LB A/A 1.0 % V/V 0.5 % V/V		1.5 OZ/A 1.0 % V/V 0.5 % V/V		POST A POST A POST A		85	78	35	88	78	93
4	Option Vortex	70 0.0656 LB A/A 2.0 PT/A		1.5 OZ/A 2.0 PT/A		POST A POST A		83	73	45	80	58	91
5	Option Phase Choice	70 0.0656 LB A/A 0.5 % V/V 0.5 % V/V		1.5 OZ/A 0.5 % V/V 0.5 % V/V		POST A POST A POST A		80	70	60	62	55	83
6	Option Liberate Choice	70 0.0656 LB A/A 0.25 % V/V 0.5 % V/V		1.5 OZ/A 0.25 % V/V 0.5 % V/V		POST A POST A POST A		82	72	48	42	22	87
7	Option Liberate Choice	70 0.0656 LB A/A 0.5 % V/V 0.5 % V/V		1.5 OZ/A 0.5 % V/V 0.5 % V/V		POST A POST A POST A		82	80	42	60	32	89
8	Option Callisto MSO Choice	70 0.0656 LB A/A 4 0.094 LB A/A 1.0 % V/V 0.5 % V/V		1.5 OZ/A 3.0 FL OZ/A 1.0 % V/V 0.5 % V/V		POST A POST A POST A POST A		82	99	98	99	99	98
9	Option Callisto Phase Choice	70 0.0656 LB A/A 4 0.094 LB A/A 0.5 % V/V 0.5 % V/V		1.5 OZ/A 3.0 FL OZ/A 0.5 % V/V 0.5 % V/V		POST A POST A POST A POST A		78	99	98	99	99	94
10	Option Callisto Liberate Choice	70 0.0656 LB A/A 4 0.094 LB A/A 0.25 % V/V 0.5 % V/V		1.5 OZ/A 3.0 FL OZ/A 0.25 % V/V 0.5 % V/V		POST A POST A POST A POST A		57	99	98	99	99	98
11	Option Callisto Liberate Choice	70 0.0656 LB A/A 4 0.094 LB A/A 0.5 % V/V 0.5 % V/V		1.5 OZ/A 3.0 FL OZ/A 0.5 % V/V 0.5 % V/V		POST A POST A POST A POST A		65	99	98	99	99	98
12	Option MSO 28% UAN	70 0.0656 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 1.5 PT/A 2.0 QT/A		POST A POST A POST A		82	77	52	78	57	91
LSD (P=.05)								11.7	23.2	24.7	18.4	20.0	13.5

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Weed Code							ZEAMD		
Rating Data Type							YIELD		
Rating Unit							BU/A		
Rating Date							10-11-02		
Trt-Eval Interval							133 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Unit	Grow Stg	Appl Code	
1	Untreated								15
2	Option MSO AMS	70	0.0656	LB A/A	1.5	OZ/A	POST	A	148
					1.5	PT/A	POST	A	
					2.0	LB/A	POST	A	
3	Option MSO Choice	70	0.0656	LB A/A	1.5	OZ/A	POST	A	170
					1.0	% V/V	POST	A	
					0.5	% V/V	POST	A	
4	Option Vortex	70	0.0656	LB A/A	1.5	OZ/A	POST	A	162
					2.0	PT/A	POST	A	
5	Option Phase Choice	70	0.0656	LB A/A	1.5	OZ/A	POST	A	144
					0.5	% V/V	POST	A	
					0.5	% V/V	POST	A	
6	Option Liberate Choice	70	0.0656	LB A/A	1.5	OZ/A	POST	A	168
					0.25	% V/V	POST	A	
					0.5	% V/V	POST	A	
7	Option Liberate Choice	70	0.0656	LB A/A	1.5	OZ/A	POST	A	128
					0.5	% V/V	POST	A	
					0.5	% V/V	POST	A	
8	Option Callisto MSO Choice	70	0.0656	LB A/A	1.5	OZ/A	POST	A	171
		4	0.094	LB A/A	3.0	FL OZ/A	POST	A	
					1.0	% V/V	POST	A	
					0.5	% V/V	POST	A	
9	Option Callisto Phase Choice	70	0.0656	LB A/A	1.5	OZ/A	POST	A	155
		4	0.094	LB A/A	3.0	FL OZ/A	POST	A	
					0.5	% V/V	POST	A	
					0.5	% V/V	POST	A	
10	Option Callisto Liberate Choice	70	0.0656	LB A/A	1.5	OZ/A	POST	A	177
		4	0.094	LB A/A	3.0	FL OZ/A	POST	A	
					0.25	% V/V	POST	A	
					0.5	% V/V	POST	A	
11	Option Callisto Liberate Choice	70	0.0656	LB A/A	1.5	OZ/A	POST	A	156
		4	0.094	LB A/A	3.0	FL OZ/A	POST	A	
					0.5	% V/V	POST	A	
					0.5	% V/V	POST	A	
12	Option MSO 28% UAN	70	0.0656	LB A/A	1.5	OZ/A	POST	A	157
					1.5	PT/A	POST	A	
					2.0	QT/A	POST	A	
LSD (P=.05)									32.0

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	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-30-02	06-05-02
Application Method:	SPRAY	SPRAY
Application Timing:	EPOST	MPOST
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	91 F	73 F
% Relative Humidity:	63	64
Wind Velocity, Unit:	4 MPH	1 MPH
Soil Temp., Unit:	73 F	66 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	30	80

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD V3	ZEAMD V4
Stage Scale:	DESC	DESC
Height, Unit:	3 IN	7 IN

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WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA 1-4 LEAF	SETFA 1-4 LEAF
Stage Scale:	0.25-2 IN	1-4 IN
Density, Unit:	0-15 FT2	60 FT2
Weed 2 Code, Stage:	SETLU 1-2 LEAF	SETLU 1-4 LEAF
Stage Scale:	0.25-1 IN	1-3 IN
Density, Unit:	0-1 FT2	0-1 FT2
Weed 3 Code, Stage:	ABUTH 1-4 LEAF	ABUTH 1-6 LEAF
Stage Scale:	0.25-2 IN	0.5-6 IN
Density, Unit:	0-5 FT2	0-15 FT2
Weed 4 Code, Stage:	AMATA COTYL-4	AMATA NUMEROUS
Stage Scale:	0.5-1 IN	2-6 IN
Density, Unit:	0-25 FT2	0-15 FT2
Weed 5 Code, Stage:	CHEAL COTYL-2	CHEAL NUMEROUS
Stage Scale:	0.25-1 IN	1-3 IN
Density, Unit:	0-1 FT2	0-10 FT2
Weed 6 Code, Stage:	POLPY 2-4 LEAF	POLPY NUMEROUS
Stage Scale:	0.5-2 IN	2-6 IN
Density, Unit:	0-2 FT2	0-1 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD STAND 17.5 ft 07-22-02 53 DA-A	ZEAMD PHYGEN percent 06-08-02 9 DA-A	ZEAMD PHYGEN percent 06-14-02 15 DA-A	ZEAMD CONTROL percent 06-21-02 15 DA-A	SETFA CONTROL percent 06-21-02 15 DA-A	SETLU CONTROL percent 06-21-02 15 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
13	Option Define MSO 28% UAN	70 0.0656 60 0.3 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 8.0 1.5 2.0	OZ/A OZ/A PT/A QT/A	EPOST EPOST EPOST EPOST	A A A A	22	10	2	0	99	99
14	Option Permit MSO 28% UAN	70 0.0656 75 0.0315 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 0.67 1.5 2.0	OZ/A OZ/A PT/A QT/A	MPOST MPOST MPOST MPOST	B B B B	23	0	7	5	99	95
15	Option Hornet WDG MSO 28% UAN	70 0.0656 68.5 0.128 1.5 2.0	LB A/A LB AE/A PT/A QT/A	1.5 3.0 1.5 2.0	OZ/A OZ/A PT/A QT/A	MPOST MPOST MPOST MPOST	B B B B	18	0	12	10	99	93
16	Steadfast Callisto COC 28% UAN	75 0.035 4 0.047 1 2.0	LB A/A LB A/A QT/A QT/A	0.75 1.5 1.0 2.0	OZ/A FL OZ/A QT/A QT/A	MPOST MPOST MPOST MPOST	B B B B	21	0	7	7	99	98
LSD (P=.05)								6.7	0.0	5.1	3.8	4.8	5.6

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ABUTH CONTROL percent 06-21-02 15 DA-A	AMATA CONTROL percent 06-21-02 15 DA-A	CHEAL CONTROL percent 06-21-02 15 DA-A	POLPY CONTROL percent 06-21-02 15 DA-A	ZEAMD PHYGEN percent 07-11-02 36 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	0
2	Option MSO 28% UAN	70 0.0656 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B		95	55	85	62	0
3	Option Distinct MSO 28% UAN	70 0.0656 LB A/A 70 0.0437 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 1.0 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		96	90	90	98	0
4	Option Distinct MSO 28% UAN	70 0.0656 LB A/A 70 0.0875 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 2.0 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		95	90	93	95	0
5	Option Distinct MSO 28% UAN	70 0.0656 LB A/A 70 0.175 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 4.0 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		95	95	95	99	0
6	Distinct MSO 28% UAN	70 0.175 LB A/A 1.5 PT/A 2.0 QT/A		4.0 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B		98	93	96	98	0
7	Option Callisto MSO 28% UAN	70 0.0656 LB A/A 4 0.047 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 1.5 FL OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		99	92	99	99	0
8	Option Callisto MSO 28% UAN	70 0.0656 LB A/A 4 0.0625 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 2.0 FL OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		99	92	99	98	0
9	Option Callisto MSO 28% UAN	70 0.0656 LB A/A 4 0.094 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 3.0 FL OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		99	92	99	99	0
10	Callisto MSO 28% UAN	4 0.094 LB A/A 1.5 PT/A 2.0 QT/A		3.0 FL OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B		99	95	99	99	0
11	Option Define MSO 28% UAN	70 0.0656 LB A/A 60 0.15 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 4.0 OZ/A 1.5 PT/A 2.0 QT/A		EPOST A EPOST A EPOST A EPOST A		78	43	96	96	0
12	Option Define MSO 28% UAN	70 0.0656 LB A/A 60 0.225 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 6.0 OZ/A 1.5 PT/A 2.0 QT/A		EPOST A EPOST A EPOST A EPOST A		75	58	95	90	0
13	Option Define MSO 28% UAN	70 0.0656 LB A/A 60 0.3 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 8.0 OZ/A 1.5 PT/A 2.0 QT/A		EPOST A EPOST A EPOST A EPOST A		80	82	95	85	0

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Weed Code							ABUTH	AMATA	CHEAL	POLPY	ZEAMD		
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN		
Rating Unit							percent	percent	percent	percent	percent		
Rating Date							06-21-02	06-21-02	06-21-02	06-21-02	07-11-02		
Trt-Eval Interval							15 DA-A	15 DA-A	15 DA-A	15 DA-A	36 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
14	Option Permit	70	0.0656	LB A/A	1.5	OZ/A	MPOST B		96	65	85	99	0
	MSO	75	0.0315	LB A/A	0.67	OZ/A	MPOST B						
	28% UAN		1.5	PT/A	1.5	PT/A	MPOST B						
			2.0	QT/A	2.0	QT/A	MPOST B						
15	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST B		99	78	92	99	0
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	MPOST B						
	MSO		1.5	PT/A	1.5	PT/A	MPOST B						
	28% UAN		2.0	QT/A	2.0	QT/A	MPOST B						
16	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		98	95	98	99	0
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST B						
	COC		1	QT/A	1.0	QT/A	MPOST B						
	28% UAN		2.0	QT/A	2.0	QT/A	MPOST B						
LSD (P=.05)								4.2	15.1	4.8	4.7	0.0	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL percent 07-11-02 36 DA-B	SETLU CONTROL percent 07-11-02 36 DA-B	ABUTH CONTROL percent 07-11-02 36 DA-B	AMATA CONTROL percent 07-11-02 36 DA-B	CHEAL CONTROL percent 07-11-02 36 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	0
2	Option MSO 28% UAN	70 0.0656 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B		93	88	92	33	87
3	Option Distinct MSO 28% UAN	70 0.0656 LB A/A 70 0.0437 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 1.0 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		90	85	88	78	90
4	Option Distinct MSO 28% UAN	70 0.0656 LB A/A 70 0.0875 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 2.0 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		93	85	95	78	93
5	Option Distinct MSO 28% UAN	70 0.0656 LB A/A 70 0.175 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 4.0 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		93	90	92	92	96
6	Distinct MSO 28% UAN	70 0.175 LB A/A 1.5 PT/A 2.0 QT/A		4.0 OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B		52	50	98	93	99
7	Option Callisto MSO 28% UAN	70 0.0656 LB A/A 4 0.047 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 1.5 FL OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		90	83	99	85	96
8	Option Callisto MSO 28% UAN	70 0.0656 LB A/A 4 0.0625 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 2.0 FL OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		87	82	99	88	96
9	Option Callisto MSO 28% UAN	70 0.0656 LB A/A 4 0.094 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 3.0 FL OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B MPOST B		87	80	99	92	98
10	Callisto MSO 28% UAN	4 0.094 LB A/A 1.5 PT/A 2.0 QT/A		3.0 FL OZ/A 1.5 PT/A 2.0 QT/A		MPOST B MPOST B MPOST B		23	23	99	99	99
11	Option Define MSO 28% UAN	70 0.0656 LB A/A 60 0.15 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 4.0 OZ/A 1.5 PT/A 2.0 QT/A		EPOST A EPOST A EPOST A EPOST A		96	96	65	33	98
12	Option Define MSO 28% UAN	70 0.0656 LB A/A 60 0.225 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 6.0 OZ/A 1.5 PT/A 2.0 QT/A		EPOST A EPOST A EPOST A EPOST A		99	99	65	48	95
13	Option Define MSO 28% UAN	70 0.0656 LB A/A 60 0.3 LB A/A 1.5 PT/A 2.0 QT/A		1.5 OZ/A 8.0 OZ/A 1.5 PT/A 2.0 QT/A		EPOST A EPOST A EPOST A EPOST A		96	96	65	73	95

Iowa State University

Weed Code							SETFA	SETLU	ABUTH	AMATA	CHEAL		
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit							percent	percent	percent	percent	percent		
Rating Date							07-11-02	07-11-02	07-11-02	07-11-02	07-11-02		
Trt-Eval Interval							36 DA-B	36 DA-B	36 DA-B	36 DA-B	36 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
14	Option Permit	70	0.0656	LB A/A	1.5	OZ/A	MPOST B		95	93	96	55	88
	MSO			1.5	PT/A		MPOST B						
	28% UAN			2.0	QT/A		MPOST B						
15	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST B		95	90	98	57	95
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	MPOST B						
	MSO			1.5	PT/A		MPOST B						
	28% UAN			2.0	QT/A		MPOST B						
16	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST B		93	90	95	92	98
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST B						
	COC			1	QT/A		MPOST B						
	28% UAN			2.0	QT/A		MPOST B						
LSD (P=.05)							7.3	8.3	9.1	22.8	4.7		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								POLPY CONTROL percent 07-11-02 36 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated								0
2	Option MSO 28% UAN	70 0.0656 1.5 2.0	LB A/A PT/A QT/A	1.5 1.5 2.0	OZ/A PT/A QT/A	MPOST MPOST MPOST	B B B		57
3	Option Distinct MSO 28% UAN	70 0.0656 70 0.0437 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 1.0 1.5 2.0	OZ/A OZ/A PT/A QT/A	MPOST MPOST MPOST MPOST	B B B B		98
4	Option Distinct MSO 28% UAN	70 0.0656 70 0.0875 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 2.0 1.5 2.0	OZ/A OZ/A PT/A QT/A	MPOST MPOST MPOST MPOST	B B B B		95
5	Option Distinct MSO 28% UAN	70 0.0656 70 0.175 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 4.0 1.5 2.0	OZ/A OZ/A PT/A QT/A	MPOST MPOST MPOST MPOST	B B B B		99
6	Distinct MSO 28% UAN	70 0.175 1.5 2.0	LB A/A PT/A QT/A	4.0 1.5 2.0	OZ/A PT/A QT/A	MPOST MPOST MPOST	B B B		99
7	Option Callisto MSO 28% UAN	70 0.0656 4 0.047 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 1.5 1.5 2.0	OZ/A FL OZ/A PT/A QT/A	MPOST MPOST MPOST MPOST	B B B B		96
8	Option Callisto MSO 28% UAN	70 0.0656 4 0.0625 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 2.0 1.5 2.0	OZ/A FL OZ/A PT/A QT/A	MPOST MPOST MPOST MPOST	B B B B		96
9	Option Callisto MSO 28% UAN	70 0.0656 4 0.094 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 3.0 1.5 2.0	OZ/A FL OZ/A PT/A QT/A	MPOST MPOST MPOST MPOST	B B B B		93
10	Callisto MSO 28% UAN	4 0.094 1.5 2.0	LB A/A PT/A QT/A	3.0 1.5 2.0	FL OZ/A PT/A QT/A	MPOST MPOST MPOST	B B B		99
11	Option Define MSO 28% UAN	70 0.0656 60 0.15 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 4.0 1.5 2.0	OZ/A OZ/A PT/A QT/A	EPOST EPOST EPOST EPOST	A A A A		96
12	Option Define MSO 28% UAN	70 0.0656 60 0.225 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 6.0 1.5 2.0	OZ/A OZ/A PT/A QT/A	EPOST EPOST EPOST EPOST	A A A A		87
13	Option Define MSO 28% UAN	70 0.0656 60 0.3 1.5 2.0	LB A/A LB A/A PT/A QT/A	1.5 8.0 1.5 2.0	OZ/A OZ/A PT/A QT/A	EPOST EPOST EPOST EPOST	A A A A		86

Iowa State University

Weed Code							POLPY			
Rating Data Type							CONTROL			
Rating Unit							percent			
Rating Date							07-11-02			
Trt-Eval Interval							36 DA-B			
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code		
14	Option	70	0.0656	LB	A/A	1.5	OZ/A	MPOST	B	98
	Permit	75	0.0315	LB	A/A	0.67	OZ/A	MPOST	B	
	MSO		1.5	PT/A		1.5	PT/A	MPOST	B	
	28% UAN		2.0	QT/A		2.0	QT/A	MPOST	B	
15	Option	70	0.0656	LB	A/A	1.5	OZ/A	MPOST	B	99
	Hornet WDG	68.5	0.128	LB	AE/A	3.0	OZ/A	MPOST	B	
	MSO		1.5	PT/A		1.5	PT/A	MPOST	B	
	28% UAN		2.0	QT/A		2.0	QT/A	MPOST	B	
16	Steadfast	75	0.035	LB	A/A	0.75	OZ/A	MPOST	B	95
	Callisto	4	0.047	LB	A/A	1.5	FL OZ/A	MPOST	B	
	COC		1	QT/A		1.0	QT/A	MPOST	B	
	28% UAN		2.0	QT/A		2.0	QT/A	MPOST	B	
LSD (P=.05)									11.0	

Iowa State University

Evaluation of grass and broadleaf weed control in corn with Balance Pro and Callisto, Ames, IA, 2002.

Trial ID: ACC 5
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50011 Initiation Date: 05-21-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate preemergence applied Balance Pro and Callisto for crop injury and weed control in corn.
Conclusions: Differences in corn stand between treatments were not significant. Balance Pro applied at 0.094 lb/A caused 10% corn injury when observed on June 8, eighteen days after application. No injury was apparent when noted forty-five days after application on July 5. Eighty to 85% giant foxtail control was achieved with the two highest rates of Balance Pro applied alone when observed on July 5. The lowest rate of Balance Pro did not provide adequate control. The addition of Define and/or Atrazine in tank-mixture with Balance Pro improved giant foxtail control to 90% or higher. Callisto applied alone, did not provide acceptable giant foxtail control at any rate evaluated. When Dual II Magnum was tank-mixed with Callisto, giant foxtail control improved, but was no better than 78%. All Balance Pro and Callisto treatments, whether applied alone or in tank-mix combinations, provided excellent control of velvetleaf, common waterhemp, and common lambsquarters. Common cocklebur control was acceptable with the highest rate of Balance Pro alone and with all rates of Callisto alone. Dual II Magnum tank-mixed with Callisto did not provide acceptable cocklebur control. On July 25, sixty-five days after application, similar trends in control were observed that were noted earlier. (Dept. of Agronomy, Iowa State University, Ames)

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8550
Planting Date: 05-21-02 Planting Method: DIRECT DRILLED
Rate: 27700 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM
pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS
Fert. Level: EXCELLENT

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-21-02
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	63 F
% Relative Humidity:	46
Wind Velocity, Unit:	10 MPH
Soil Temp., Unit:	55 F
Soil Moisture:	DRY
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD -
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
	-
Stage Scale:	-
Density, Unit:	- -

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

Evaluation of grass and broadleaf weed control in corn with Balance Pro and Callisto, Ames, IA, 2002.

Trial ID: ACC 5
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code	ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA		
Rating Data Type	STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL		
Rating Unit	17.5 ft	percent	percent	percent	percent	percent		
Rating Date	07-18-02	06-01-02	06-08-02	06-08-02	06-08-02	06-08-02		
Trt-Eval Interval	58 DA-A	11 DA-A	18 DA-A	18 DA-A	18 DA-A	18 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Stg	Code
1	Untreated							
2	Balance Pro	4	0.047 LB A/A	1.5 FL OZ/A	PRE	A		
3	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	PRE	A		
4	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	PRE	A		
5	Callisto	4	0.14 LB A/A	4.5 FL OZ/A	PRE	A		
6	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	PRE	A		
7	Callisto	4	0.187 LB A/A	6.0 FL OZ/A	PRE	A		
8	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	PRE	A		
	Define	60	0.45 LB A/A	12.0 OZ/A	PRE	A		
9	Callisto	4	0.187 LB A/A	6.0 FL OZ/A	PRE	A		
	Dual II Magnum	7.64	1.27 LB A/A	1.33 PT/A	PRE	A		
10	Balance Pro	4	0.047 LB A/A	1.5 FL OZ/A	PRE	A		
	Define	60	0.6 LB A/A	16.0 OZ/A	PRE	A		
	Atrazine	4	1.0 LB A/A	1.0 QT/A	PRE	A		
11	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	PRE	A		
	Dual II Magnum	7.64	1.27 LB A/A	1.33 PT/A	PRE	A		
12	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	PRE	A		
	Atrazine	4	1.5 LB A/A	1.5 QT/A	PRE	A		
LSD (P=.05)								
		4.2	0.0	2.7	4.8	7.2	3.7	

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-08-02 18 DA-A	XANST CONTROL percent 06-08-02 18 DA-A	ZEAMD PHYGEN percent 07-05-02 45 DA-A	SETFA CONTROL percent 07-05-02 45 DA-A	ABUTH CONTROL percent 07-05-02 45 DA-A	AMATA CONTROL percent 07-05-02 45 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Stg	Code				
1	Untreated								0	0	0	0
2	Balance Pro	4	0.047 LB A/A	1.5 FL OZ/A	PRE	A			99	63	0	77
3	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	PRE	A			99	70	0	10
4	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	PRE	A			99	70	0	80
5	Callisto	4	0.14 LB A/A	4.5 FL OZ/A	PRE	A			99	67	0	5
6	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	PRE	A			99	85	0	85
7	Callisto	4	0.187 LB A/A	6.0 FL OZ/A	PRE	A			99	96	0	8
8	Balance Pro Define	4 60	0.07 LB A/A 0.45 LB A/A	2.25 FL OZ/A 12.0 OZ/A	PRE PRE	A A			99	80	0	95
9	Callisto Dual II Magnum	4 7.64	0.187 LB A/A 1.27 LB A/A	6.0 FL OZ/A 1.33 PT/A	PRE PRE	A A			99	75	0	75
10	Balance Pro Define Atrazine	4 60 4	0.047 LB A/A 0.6 LB A/A 1.0 LB A/A	1.5 FL OZ/A 16.0 OZ/A 1.0 QT/A	PRE PRE PRE	A A A			99	77	0	98
11	Callisto Dual II Magnum	4 7.64	0.094 LB A/A 1.27 LB A/A	3.0 FL OZ/A 1.33 PT/A	PRE PRE	A A			99	75	0	78
12	Balance Pro Atrazine	4 4	0.094 LB A/A 1.5 LB A/A	3.0 FL OZ/A 1.5 QT/A	PRE PRE	A A			99	83	0	90
LSD (P=.05)									0.0	25.6	0.0	13.0
											7.5	5.8

Iowa State University

Weed Code	CHEAL	XANST	SETFA	ABUTH	AMATA	CHEAL						
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL						
Rating Unit	percent	percent	percent	percent	percent	percent						
Rating Date	07-05-02	07-05-02	07-25-02	07-25-02	07-25-02	07-25-02						
Trt-Eval Interval	45 DA-A	45 DA-A	65 DA-A	65 DA-A	65 DA-A	65 DA-A						
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Stg	Code				
1	Untreated											
2	Balance Pro	4	0.047 LB A/A	1.5 FL OZ/A	PRE	A						
3	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	PRE	A						
4	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	PRE	A						
5	Callisto	4	0.14 LB A/A	4.5 FL OZ/A	PRE	A						
6	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	PRE	A						
7	Callisto	4	0.187 LB A/A	6.0 FL OZ/A	PRE	A						
8	Balance Pro Define	4 60	0.07 LB A/A 0.45 LB A/A	2.25 FL OZ/A 12.0 OZ/A	PRE PRE	A A						
9	Callisto Dual II Magnum	4 7.64	0.187 LB A/A 1.27 LB A/A	6.0 FL OZ/A 1.33 PT/A	PRE PRE	A A						
10	Balance Pro Define Atrazine	4 60 4	0.047 LB A/A 0.6 LB A/A 1.0 LB A/A	1.5 FL OZ/A 16.0 OZ/A 1.0 QT/A	PRE PRE PRE	A A A						
11	Callisto Dual II Magnum	4 7.64	0.094 LB A/A 1.27 LB A/A	3.0 FL OZ/A 1.33 PT/A	PRE PRE	A A						
12	Balance Pro Atrazine	4 4	0.094 LB A/A 1.5 LB A/A	3.0 FL OZ/A 1.5 QT/A	PRE PRE	A A						
LSD (P=.05)							1.1	28.9	15.6	9.6	5.4	1.1

Iowa State University

Weed Code								XANST	
Rating Data Type								CONTROL	
Rating Unit								percent	
Rating Date								07-25-02	
Trt-Eval Interval								65 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit Stg	Appl Code	
1	Untreated								0
2	Balance Pro	4	0.047	LB	A/A	1.5	FL OZ/A	PRE A	67
3	Callisto	4	0.094	LB	A/A	3.0	FL OZ/A	PRE A	95
4	Balance Pro	4	0.07	LB	A/A	2.25	FL OZ/A	PRE A	76
5	Callisto	4	0.14	LB	A/A	4.5	FL OZ/A	PRE A	91
6	Balance Pro	4	0.094	LB	A/A	3.0	FL OZ/A	PRE A	85
7	Callisto	4	0.187	LB	A/A	6.0	FL OZ/A	PRE A	96
8	Balance Pro Define	4 60	0.07 0.45	LB LB	A/A A/A	2.25 12.0	FL OZ/A OZ/A	PRE A PRE A	81
9	Callisto Dual II Magnum	4 7.64	0.187 1.27	LB LB	A/A A/A	6.0 1.33	FL OZ/A PT/A	PRE A PRE A	72
10	Balance Pro Define Atrazine	4 60 4	0.047 0.6 1.0	LB LB LB	A/A A/A A/A	1.5 16.0 1.0	FL OZ/A OZ/A QT/A	PRE A PRE A PRE A	79
11	Callisto Dual II Magnum	4 7.64	0.094 1.27	LB LB	A/A A/A	3.0 1.33	FL OZ/A PT/A	PRE A PRE A	70
12	Balance Pro Atrazine	4 4	0.094 1.5	LB LB	A/A A/A	3.0 1.5	FL OZ/A QT/A	PRE A PRE A	88
LSD (P=.05)									28.6

Iowa State University

Evaluation of Callisto program approaches for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 6
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50011 Initiation Date: 05-21-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to assess the potential of preemergence and postemergence applied Callisto tank-mixture combinations for crop phytotoxicity and weed control in corn.

Conclusions: Differences in corn stand between treatments were not significant. No corn injury was observed from preemergence (PRE) treatments. PRE Bicep II Magnum, Guardsman Max, FullTime, and Degree Xtra achieved excellent giant foxtail, common waterhemp, common lambsquarters and Pennsylvania smartweed control when observed on June 13, 19, July 19, and August 16. However, these treatments did not adequately control velvetleaf and common cocklebur. PRE treatments that did provide good to excellent control of the species evaluated on the above dates included Bicep II Magnum plus Callisto, Dual II Magnum plus Callisto plus Atrazine, and Epic. On June 13, PRE Dual II Magnum, Outlook and Topnotch provided good to excellent giant foxtail and common waterhemp control, fair to good common lambsquarters control, and poor velvetleaf, Pennsylvania smartweed and common cocklebur control.

Postemergence (POST) applied Marksman caused 10% corn injury when observed on June 29, fifteen days after application. POST applications of Callisto, Callisto plus Atrazine, Marksman and Hornet WDG following PRE treatments achieved excellent velvetleaf, common lambsquarters, Pennsylvania smartweed and common cocklebur control when observed on June 29, July 19 and August 16. Corn yields were variable between treatments and several resulted in significantly lower yields compared to others. All treatment yields were significantly higher than the untreated control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
4.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8550
Planting Date: 05-21-02 Planting Method: DIRECT DRILLED
Rate: 27700 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM
 pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-21-02	06-14-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	63 F	75 F
% Relative Humidity:	46	48
Wind Velocity, Unit:	10 MPH	13 MPH
Soil Temp., Unit:	55 F	66 F
Soil Moisture:	DRY	MOIST
% Cloud Cover:	0	60

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V5
Stage Scale:	-	DESC
Height, Unit:	-	8.5 IN

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WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 2-4 L, 2T
Stage Scale:	-	3 IN
Density, Unit:	- -	0-5 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL 7
Stage Scale:	-	0.25-6 IN
Density, Unit:	- -	0-10 FT2
Weed 3 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	0.25-4 IN
Density, Unit:	- -	0-2 FT2
Weed 4 Code, Stage:	AMATA -	AMATA 2-6 LEAF
Stage Scale:	-	0.25 IN
Density, Unit:	- -	<1 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-8 LF
Stage Scale:	-	4-5 IN
Density, Unit:	- -	0-1 FT2
Weed 6 Code, Stage:	XANST -	XANST 2-8 LEAF
Stage Scale:	-	0.5-8 IN
Density, Unit:	- -	0-1 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Evaluation of Callisto program approaches for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 6
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	
Rating Data Type							STAND	PHYGEN	PHYGEN	PHYGEN	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	percent	
Rating Date							07-15-02	06-01-02	06-08-02	06-13-02	06-13-02	06-13-02	
Trt-Eval Interval							55 DA-A	11 DA-A	18 DA-A	23 DA-A	23 DA-A	23 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code						
1	Untreated							25	0	0	0	0	
2	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE A	26	0	0	0	98	
3	Bicep II Magnum Callisto	5.5 4	3.3 0.187	LB A/A LB A/A	2.4 6.0	QT/A FL OZ/A	PRE A PRE A	28	0	0	0	98	
4	Dual II Magnum Callisto Atrazine	7.64 4 4	2.0 0.2 0.75	LB A/A LB A/A LB A/A	2.1 6.4 1.5	PT/A FL OZ/A PT/A	PRE A PRE A PRE A	27	0	0	0	98	
5	Guardzman Max	5	2.87	LB A/A	4.6	PT/A	PRE A	26	0	0	0	99	
6	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE A	28	0	0	0	99	
7	FulTime	4	4.0	LB A/A	4.0	QT/A	PRE A	25	0	0	0	99	
8	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE A	28	0	0	0	99	
9	Dual II Magnum Callisto COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE A POST B	27	0	0	0	99	
			1.0	% V/V	1.0	% V/V	POST B						
			2.5	% V/V	2.5	% V/V	POST B						
10	Dual II Magnum Callisto Atrazine COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE A POST B	28	0	0	0	99	
		4	0.25	LB A/A	0.5	PT/A	POST B						
			1.0	% V/V	1.0	% V/V	POST B						
			2.5	% V/V	2.5	% V/V	POST B						
11	Bicep II Magnum Callisto COC 28% UAN	5.5 4	2.9 0.094	LB A/A LB A/A	2.1 3.0	QT/A FL OZ/A	PRE A POST B	28	0	0	0	99	
			1.0	% V/V	1.0	% V/V	POST B						
			2.5	% V/V	2.5	% V/V	POST B						
12	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE A POST B	27	0	0	0	99	
13	Topnotch Hornet WDG NIS AMS	3.2 68.5	2.0 0.128	LB A/A LB AE/A	2.5 3.0	QT/A OZ/A	PRE A POST B	27	0	0	0	99	
			0.25	% V/V	0.25	% V/V	POST B						
			1.0	% W/W	1.0	% W/W	POST B						
LSD (P=.05)								3.3	0.0	0.0	0.0	1.9	19.4

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 06-13-02 23 DA-A	CHEAL CONTROL percent 06-13-02 23 DA-A	POLPY CONTROL percent 06-13-02 23 DA-A	XANST CONTROL percent 06-13-02 23 DA-A	ZEAMD PHYGEN percent 06-29-02 15 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE	A	99	99	99	68	0
3	Bicep II Magnum Callisto	5.5 4	3.3 0.187	LB A/A LB A/A	2.4 6.0	QT/A FL OZ/A	PRE PRE	A A	99	99	99	88	0
4	Dual II Magnum Callisto Atrazine	7.64 4 4	2.0 0.2 0.75	LB A/A LB A/A LB A/A	2.1 6.4 1.5	PT/A FL OZ/A PT/A	PRE PRE PRE	A A A	99	99	99	87	0
5	Guardsman Max	5	2.87	LB A/A	4.6	PT/A	PRE	A	99	99	99	55	0
6	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE	A	99	99	99	87	0
7	FulTime	4	4.0	LB A/A	4.0	QT/A	PRE	A	99	99	99	70	0
8	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	A	99	99	99	60	0
9	Dual II Magnum Callisto COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE POST	A B	99	75	43	17	0
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
10	Dual II Magnum Callisto Atrazine COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE POST	A B	99	73	47	17	0
		4	0.25	LB A/A	0.5	PT/A	POST	B					
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
11	Bicep II Magnum Callisto COC 28% UAN	5.5 4	2.9 0.094	LB A/A LB A/A	2.1 3.0	QT/A FL OZ/A	PRE POST	A B	99	99	99	73	0
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
12	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE POST	A B	99	82	50	17	10
13	Topnotch Hornet WDG NIS AMS	3.2 68.5	2.0 0.128	LB A/A LB AE/A	2.5 3.0	QT/A OZ/A	PRE POST	A B	99	90	58	20	2
			0.25	% V/V	0.25	% V/V	POST	B					
			1.0	% W/W	1.0	% W/W	POST	B					
LSD (P=.05)									0.0	5.2	5.1	19.3	1.3

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL percent 06-29-02 15 DA-B	ABUTH CONTROL percent 06-29-02 15 DA-B	AMATA CONTROL percent 06-29-02 15 DA-B	CHEAL CONTROL percent 06-29-02 15 DA-B	POLPY CONTROL percent 06-29-02 15 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE	A	98	50	99	99	98
3	Bicep II Magnum Callisto	5.5 4	3.3 0.187	LB A/A LB A/A	2.4 6.0	QT/A FL OZ/A	PRE PRE	A A	98	99	99	99	99
4	Dual II Magnum Callisto Atrazine	7.64 4 4	2.0 0.2 0.75	LB A/A LB A/A LB A/A	2.1 6.4 1.5	PT/A FL OZ/A PT/A	PRE PRE PRE	A A A	98	99	99	99	99
5	Guardsman Max	5	2.87	LB A/A	4.6	PT/A	PRE	A	99	55	99	98	99
6	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE	A	99	99	99	99	99
7	FulTime	4	4.0	LB A/A	4.0	QT/A	PRE	A	99	58	99	99	99
8	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	A	99	48	99	99	99
9	Dual II Magnum Callisto COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
10	Dual II Magnum Callisto Atrazine COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
		4	0.25	LB A/A	0.5	PT/A	POST	B					
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
11	Bicep II Magnum Callisto COC 28% UAN	5.5 4	2.9 0.094	LB A/A LB A/A	2.1 3.0	QT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
12	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE POST	A B	99	87	99	99	99
13	Topnotch Hornet WDG NIS AMS	3.2 68.5	2.0 0.128	LB A/A LB AE/A	2.5 3.0	QT/A OZ/A	PRE POST	A B	99	88	99	96	99
			0.25	% V/V	0.25	% V/V	POST	B					
			1.0	% W/W	1.0	% W/W	POST	B					
LSD (P=.05)									1.9	8.8	0.0	1.5	1.1

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 06-29-02 15 DA-B	ZEAMD PHYGEN percent 07-19-02 35 DA-B	SETFA CONTROL percent 07-19-02 35 DA-B	ABUTH CONTROL percent 07-19-02 35 DA-B	AMATA CONTROL percent 07-19-02 35 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE A	60	0	93	43	
3	Bicep II Magnum Callisto	5.5 4	3.3 0.187	LB A/A LB A/A	2.4 6.0	QT/A FL OZ/A	PRE A PRE A	93	0	93	99	
4	Dual II Magnum Callisto Atrazine	7.64 4 4	2.0 0.2 0.75	LB A/A LB A/A LB A/A	2.1 6.4 1.5	PT/A FL OZ/A PT/A	PRE A PRE A PRE A	92	0	95	99	
5	Guardsman Max	5	2.87	LB A/A	4.6	PT/A	PRE A	53	0	96	48	
6	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE A	93	0	98	99	
7	FulTime	4	4.0	LB A/A	4.0	QT/A	PRE A	67	0	95	60	
8	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE A	57	0	96	47	
9	Dual II Magnum Callisto COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE A POST B	99	0	95	99	
			1.0	% V/V	1.0	% V/V	POST B					
			2.5	% V/V	2.5	% V/V	POST B					
10	Dual II Magnum Callisto Atrazine COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE A POST B	99	0	95	99	
		4	0.25	LB A/A	0.5	PT/A	POST B					
			1.0	% V/V	1.0	% V/V	POST B					
			2.5	% V/V	2.5	% V/V	POST B					
11	Bicep II Magnum Callisto COC 28% UAN	5.5 4	2.9 0.094	LB A/A LB A/A	2.1 3.0	QT/A FL OZ/A	PRE A POST B	99	0	95	99	
			1.0	% V/V	1.0	% V/V	POST B					
			2.5	% V/V	2.5	% V/V	POST B					
12	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE A POST B	99	5	95	93	
13	Topnotch Hornet WDG NIS AMS	3.2 68.5	2.0 0.128	LB A/A LB AE/A	2.5 3.0	QT/A OZ/A	PRE A POST B	96	0	95	92	
			0.25	% V/V	0.25	% V/V	POST B					
			1.0	% W/W	1.0	% W/W	POST B					
LSD (P=.05)								9.4	0.0	2.7	8.9	0.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 07-19-02 35 DA-B	POLPY CONTROL percent 07-19-02 35 DA-B	XANST CONTROL percent 07-19-02 35 DA-B	ZEAMD PHYGEN percent 08-16-02 63 DA-B	SETFA CONTROL percent 08-16-02 63 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE	A	99	98	60	0	92
3	Bicep II Magnum Callisto	5.5 4	3.3 0.187	LB A/A LB A/A	2.4 6.0	QT/A FL OZ/A	PRE PRE	A A	99	99	93	0	88
4	Dual II Magnum Callisto Atrazine	7.64 4 4	2.0 0.2 0.75	LB A/A LB A/A LB A/A	2.1 6.4 1.5	PT/A FL OZ/A PT/A	PRE PRE PRE	A A A	99	99	93	0	87
5	Guardman Max	5	2.87	LB A/A	4.6	PT/A	PRE	A	98	99	53	0	96
6	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE	A	99	98	93	0	96
7	FulTime	4	4.0	LB A/A	4.0	QT/A	PRE	A	99	99	65	0	95
8	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	A	99	99	55	0	93
9	Dual II Magnum Callisto COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE POST	A B	99	99	96	0	92
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
10	Dual II Magnum Callisto Atrazine COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE POST	A B	99	99	95	0	88
		4	0.25	LB A/A	0.5	PT/A	POST	B					
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
11	Bicep II Magnum Callisto COC 28% UAN	5.5 4	2.9 0.094	LB A/A LB A/A	2.1 3.0	QT/A FL OZ/A	PRE POST	A B	99	99	95	0	92
			1.0	% V/V	1.0	% V/V	POST	B					
			2.5	% V/V	2.5	% V/V	POST	B					
12	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE POST	A B	99	99	99	2	95
13	Topnotch Hornet WDG NIS AMS	3.2 68.5	2.0 0.128	LB A/A LB AE/A	2.5 3.0	QT/A OZ/A	PRE POST	A B	95	99	98	0	93
			0.25	% V/V	0.25	% V/V	POST	B					
			1.0	% W/W	1.0	% W/W	POST	B					
LSD (P=.05)									2.4	1.6	8.7	1.3	6.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ABUTH CONTROL percent 08-16-02 63 DA-B	AMATA CONTROL percent 08-16-02 63 DA-B	CHEAL CONTROL percent 08-16-02 63 DA-B	POLPY CONTROL percent 08-16-02 63 DA-B	XANST CONTROL percent 08-16-02 63 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE A		40	99	98	98	60
3	Bicep II Magnum Callisto	5.5 4	3.3 0.187	LB A/A LB A/A	2.4 6.0	QT/A FL OZ/A	PRE A PRE A		99	99	99	99	93
4	Dual II Magnum Callisto Atrazine	7.64 4 4	2.0 0.2 0.75	LB A/A LB A/A LB A/A	2.1 6.4 1.5	PT/A FL OZ/A PT/A	PRE A PRE A PRE A		99	99	99	99	93
5	Guardsman Max	5	2.87	LB A/A	4.6	PT/A	PRE A		45	99	98	99	53
6	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE A		99	99	99	98	93
7	FulTime	4	4.0	LB A/A	4.0	QT/A	PRE A		58	99	99	99	65
8	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE A		47	99	99	99	55
9	Dual II Magnum Callisto COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE A POST B		99	99	99	99	96
			1.0	% V/V	1.0	% V/V	POST B						
			2.5	% V/V	2.5	% V/V	POST B						
10	Dual II Magnum Callisto Atrazine COC 28% UAN	7.64 4	1.6 0.094	LB A/A LB A/A	1.67 3.0	PT/A FL OZ/A	PRE A POST B		99	99	99	99	95
		4	0.25	LB A/A	0.5	PT/A	POST B						
			1.0	% V/V	1.0	% V/V	POST B						
			2.5	% V/V	2.5	% V/V	POST B						
11	Bicep II Magnum Callisto COC 28% UAN	5.5 4	2.9 0.094	LB A/A LB A/A	2.1 3.0	QT/A FL OZ/A	PRE A POST B		99	99	99	99	95
			1.0	% V/V	1.0	% V/V	POST B						
			2.5	% V/V	2.5	% V/V	POST B						
12	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE A POST B		93	99	99	99	99
13	Topnotch Hornet WDG NIS AMS	3.2 68.5	2.0 0.128	LB A/A LB AE/A	2.5 3.0	QT/A OZ/A	PRE A POST B		92	99	95	99	98
			0.25	% V/V	0.25	% V/V	POST B						
			1.0	% W/W	1.0	% W/W	POST B						
LSD (P=.05)									10.7	0.0	2.6	1.6	8.7

Iowa State University

Weed Code								ZEAMD
Rating Data Type								YIELD
Rating Unit								BU/A
Rating Date								10-11-02
Trt-Eval Interval								143 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code
1	Untreated							69
2	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE A	151
3	Bicep II Magnum Callisto	5.5 4	3.3 0.187	LB A/A LB A/A	2.4 6.0	QT/A FL OZ/A	PRE A PRE A	172
4	Dual II Magnum Callisto Atrazine	7.64 4 4	2.0 0.2 0.75	LB A/A LB A/A LB A/A	2.1 6.4 1.5	PT/A FL OZ/A PT/A	PRE A PRE A PRE A	179
5	Guardsman Max	5	2.87	LB A/A	4.6	PT/A	PRE A	161
6	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE A	166
7	FulTime	4	4.0	LB A/A	4.0	QT/A	PRE A	172
8	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE A	178
9	Dual II Magnum Callisto COC 28% UAN	7.64 4	1.6 0.094 1.0 2.5	LB A/A LB A/A % V/V % V/V	1.67 3.0 1.0 2.5	PT/A FL OZ/A % V/V % V/V	PRE A POST B POST B POST B	176
10	Dual II Magnum Callisto Atrazine COC 28% UAN	7.64 4	1.6 0.094 0.25 1.0 2.5	LB A/A LB A/A LB A/A % V/V % V/V	1.67 3.0 0.5 1.0 2.5	PT/A FL OZ/A PT/A % V/V % V/V	PRE A POST B POST B POST B POST B	187
11	Bicep II Magnum Callisto COC 28% UAN	5.5 4	2.9 0.094 1.0 2.5	LB A/A LB A/A % V/V % V/V	2.1 3.0 1.0 2.5	QT/A FL OZ/A % V/V % V/V	PRE A POST B POST B POST B	183
12	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE A POST B	171
13	Topnotch Hornet WDG NIS AMS	3.2 68.5	2.0 0.128 0.25 1.0	LB A/A LB AE/A % V/V % W/W	2.5 3.0 0.25 1.0	QT/A OZ/A % V/V % W/W	PRE A POST B POST B POST B	147
LSD (P=.05)								27.2

Iowa State University

Preemergence applied Harness Xtra, Degree Xtra, and Degree and postemergence Yukon, Permit, Hornet, and Northstar for weed control in corn, Ames, IA, 2002.
 Trial ID: ACC 7 Study Dir.: Owen/Lux/Franzenburg
 Location: Ames Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
 Affiliation: Iowa State University
 Postal Code: 50011
 Investigator: Owen/Hartzler/Pringnitz
 Affiliation: Iowa State University
 Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL
 State/Prov.: IA
 Postal Code: 50011 Initiation Date: 05-21-02
 Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate the effectiveness of soil and postemergence applied herbicides including Harness Xtra, Degree Xtra, Bicep II Magnum, Degree, Yukon, Permit and others for crop phytotoxicity and weed control in corn.

Conclusions: Significant differences in corn stand between treatments were determined, but were attributable to variations in emergence and not the herbicides. All preemergence (PRE) applied treatments demonstrated excellent crop safety. Giant foxtail, common waterhemp, and common lambsquarters control was excellent when observed on June 13 and July 15 with PRE Harness Extra (6 and 5.6 EC), Degree Xtra, and Bicep II Magnum. Variable control of velvetleaf and common cocklebur was noted with these treatments. On June 13, Harness, Micro-Tech, Lasso, Degree, Outlook, and Dual II Magnum applied PRE, provided good to excellent giant foxtail and common waterhemp control, fair to excellent common lambsquarters control, and poor velvetleaf and common cocklebur control.

Postemergence (POST) applications caused corn injury when observed June 29, fifteen days after application. Yukon, Distinct, and Northstar applied POST following the PRE treatments achieved good to excellent velvetleaf, common waterhemp, common lambsquarters, and common cocklebur control on July 15 and August 14. POST applied Permit provided good to excellent velvetleaf, common waterhemp and common cocklebur control, but fair common lambsquarters control. Accent plus Yukon applied POST provided good to excellent broadleaf weed control and fair to good giant foxtail control on July 15 and August 14. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8550
 Planting Date: 05-21-02 Planting Method: DIRECT DRILLED
 Rate: 27700 SEEDS/A Depth: 1.5 IN
 Row Spacing: 30 IN Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
 Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

Iowa State University

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM
 pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-21-02	06-14-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	63 F	75 F
% Relative Humidity:	46	60
Wind Velocity, Unit:	10 MPH	8 MPH
Soil Temp., Unit:	55 F	66 F
Soil Moisture:	DRY	DRT
% Cloud Cover:	0	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V5
Stage Scale:	-	DESC
Height, Unit:	-	9 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF
Stage Scale:	-	0.5-8 IN
Density, Unit:	- -	0-25 FT ²
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-NUM
Stage Scale:	-	0.25-6 IN
Density, Unit:	- -	0-1 FT ²
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS
Stage Scale:	-	0.5-1 IN
Density, Unit:	- -	<1 FT ²
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	0.25-3 IN
Density, Unit:	- -	0-2 FT ²
Weed 5 Code, Stage:	XANST -	XANST 2-8 LEAF
Stage Scale:	-	2-8 IN
Density, Unit:	- -	<1 FT ²

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APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Preemergence applied Harness Xtra, Degree Xtra, and Degree and postemergence
Yukon, Permit, Hornet, and Northstar for weed control in corn, Ames, IA, 2002.

Trial ID: ACC 7

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent
Rating Date							07-18-02	06-01-02	06-13-02	06-13-02	06-13-02
Trt-Eval Interval							58 DA-A	11 DA-A	23 DA-A	23 DA-A	23 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							24	0	0	0
2	Harness Xtra	6	3.45 LB A/A	2.3 QT/A		PRE	A	28	0	0	96
3	Harness Xtra	5.6	4.2 LB A/A	3.0 QT/A		PRE	A	25	0	0	96
4	Degree Xtra	4.04	3.74 LB A/A	3.7 QT/A		PRE	A	29	0	0	95
5	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE	A	27	0	0	93
6	Harness	7	2.2 LB A/A	2.5 PT/A		PRE	A	26	0	0	99
	Yukon	67.5	0.169 LB A/A	4.0 OZ/A		POST	B				30
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
	AMS		2.0 % W/W	2.0 % W/W		POST	B				
7	Micro-Tech	4	3.0 LB A/A	3.0 QT/A		PRE	A	25	0	0	93
	Yukon	67.5	0.169 LB A/A	4.0 OZ/A		POST	B				30
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
	AMS		2.0 % W/W	2.0 % W/W		POST	B				
8	Lasso	4	3.0 LB A/A	3.0 QT/A		PRE	A	27	0	0	96
	Yukon	67.5	0.169 LB A/A	4.0 OZ/A		POST	B				25
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
	AMS		2.0 % W/W	2.0 % W/W		POST	B				
9	Degree	3.8	2.2 LB A/A	4.63 PT/A		PRE	A	25	0	0	95
	Yukon	67.5	0.169 LB A/A	4.0 OZ/A		POST	B				30
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
	AMS		2.0 % W/W	2.0 % W/W		POST	B				
10	Harness	7	2.19 LB A/A	2.5 PT/A		PRE	A	26	0	0	99
	Permit	75	0.0314 LB A/A	0.67 OZ/A		POST	B				23
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
	AMS		2.0 % W/W	2.0 % W/W		POST	B				
11	Degree	3.8	2.2 LB A/A	4.63 PT/A		PRE	A	27	0	0	96
	Permit	75	0.0314 LB A/A	0.67 OZ/A		POST	B				23
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
	AMS		2.0 % W/W	2.0 % W/W		POST	B				
12	Accent	75	0.0314 LB A/A	0.67 OZ/A		POST	B	27	0	0	0
	Yukon	67.5	0.169 LB A/A	4.0 OZ/A		POST	B				0
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
13	Outlook	6	0.94 LB A/A	20.0 FL OZ/A		PRE	A	26	0	0	96
	Distinct	70	0.175 LB A/A	4.0 OZ/A		POST	B				27
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
	AMS		5.0 LB/100 GAL	5.0 LB/100 GAL		POST	B				
14	Dual II Magnum	7.64	1.91 LB A/A	2.0 PT/A		PRE	A	29	0	0	93
	Northstar	47.4	0.148 LB A/A	5.0 OZ/A		POST	B				23
	NIS		0.25 % V/V	0.25 % V/V		POST	B				
	28% UAN		2.0 % V/V	2.0 % V/V		POST	B				
LSD (P=.05)							3.2	0.0	0.0	4.6	15.1

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-13-02 23 DA-A	CHEAL CONTROL percent 06-13-02 23 DA-A	XANST CONTROL percent 06-13-02 23 DA-A	ZEAMD PHYGEN percent 06-29-02 15 DA-B	ZEAMD PHYGEN percent 07-15-02 31 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Harness Xtra	6	3.45	LB A/A	2.3	QT/A	PRE	A	99	99	87	0	0
3	Harness Xtra	5.6	4.2	LB A/A	3.0	QT/A	PRE	A	99	99	90	0	0
4	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	A	99	99	80	0	0
5	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE	A	99	99	75	0	0
6	Harness Yukon NIS AMS	7 67.5	2.2 0.169	LB A/A LB A/A	2.5 4.0	PT/A OZ/A	PRE POST	A B	99	95	27	5	0
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
7	Micro-Tech Yukon NIS AMS	4 67.5	3.0 0.169	LB A/A LB A/A	3.0 4.0	QT/A OZ/A	PRE POST	A B	99	88	23	7	0
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
8	Lasso Yukon NIS AMS	4 67.5	3.0 0.169	LB A/A LB A/A	3.0 4.0	QT/A OZ/A	PRE POST	A B	99	85	23	5	0
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
9	Degree Yukon NIS AMS	3.8 67.5	2.2 0.169	LB A/A LB A/A	4.63 4.0	PT/A OZ/A	PRE POST	A B	99	90	35	5	0
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
10	Harness Permit NIS AMS	7 75	2.19 0.0314	LB A/A LB A/A	2.5 0.67	PT/A OZ/A	PRE POST	A B	99	95	23	2	0
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
11	Degree Permit NIS AMS	3.8 75	2.2 0.0314	LB A/A LB A/A	4.63 0.67	PT/A OZ/A	PRE POST	A B	99	91	25	0	0
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
12	Accent Yukon NIS	75 67.5	0.0314 0.169	LB A/A LB A/A	0.67 4.0	OZ/A OZ/A	POST POST	B B	0	0	0	13	8
			0.25	% V/V	0.25	% V/V	POST	B					
13	Outlook Distinct NIS AMS	6 70	0.94 0.175	LB A/A LB A/A	20.0 4.0	FL OZ/A OZ/A	PRE POST	A B	99	88	27	7	0
			0.25	% V/V	0.25	% V/V	POST	B					
			5.0	LB/100 GAL	5.0	LB/100 GAL	POST	B					
14	Dual II Magnum Northstar NIS 28% UAN	7.64 47.4	1.91 0.148	LB A/A LB A/A	2.0 5.0	PT/A OZ/A	PRE POST	A B	99	77	37	7	0
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% V/V	2.0	% V/V	POST	B					
LSD (P=.05)									0.0	7.5	17.0	2.9	1.3

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 07-15-02 31 DA-B	ABUTH CONTROL percent 07-15-02 31 DA-B	AMATA CONTROL percent 07-15-02 31 DA-B	CHEAL CONTROL percent 07-15-02 31 DA-B	XANST CONTROL percent 07-15-02 31 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Harness Xtra	6	3.45	LB A/A	2.3	QT/A	PRE	A	90	75	99	99	85
3	Harness Xtra	5.6	4.2	LB A/A	3.0	QT/A	PRE	A	92	60	99	99	72
4	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	A	88	47	99	99	75
5	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE	A	83	68	99	99	72
6	Harness Yukon NIS AMS	7 67.5	2.2 0.169	LB A/A LB A/A	2.5 4.0	PT/A OZ/A	PRE POST	A B	93	99	99	99	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
7	Micro-Tech Yukon NIS AMS	4 67.5	3.0 0.169	LB A/A LB A/A	3.0 4.0	QT/A OZ/A	PRE POST	A B	85	99	99	99	96
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
8	Lasso Yukon NIS AMS	4 67.5	3.0 0.169	LB A/A LB A/A	3.0 4.0	QT/A OZ/A	PRE POST	A B	90	99	99	99	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
9	Degree Yukon NIS AMS	3.8 67.5	2.2 0.169	LB A/A LB A/A	4.63 4.0	PT/A OZ/A	PRE POST	A B	90	96	99	99	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
10	Harness Permit NIS AMS	7 75	2.19 0.0314	LB A/A LB A/A	2.5 0.67	PT/A OZ/A	PRE POST	A B	95	93	99	83	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
11	Degree Permit NIS AMS	3.8 75	2.2 0.0314	LB A/A LB A/A	4.63 0.67	PT/A OZ/A	PRE POST	A B	93	92	99	78	96
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
12	Accent Yukon NIS	75 67.5	0.0314 0.169	LB A/A LB A/A	0.67 4.0	OZ/A OZ/A	POST POST	B B	85	99	92	93	99
			0.25	% V/V	0.25	% V/V	POST	B					
13	Outlook Distinct NIS AMS	6 70	0.94 0.175	LB A/A LB A/A	20.0 4.0	FL OZ/A OZ/A	PRE POST	A B	93	98	99	99	95
			0.25	% V/V	0.25	% V/V	POST	B					
			5.0	LB/100 GAL	5.0	LB/100 GAL	POST	B					
14	Dual II Magnum Northstar NIS 28% UAN	7.64 47.4	1.91 0.148	LB A/A LB A/A	2.0 5.0	PT/A OZ/A	PRE POST	A B	90	93	99	99	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% V/V	2.0	% V/V	POST	B					
LSD (P=.05)									5.7	14.6	2.6	2.3	10.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 08-14-02 61 DA-B	ABUTH CONTROL percent 08-14-02 61 DA-B	AMATA CONTROL percent 08-14-02 61 DA-B	CHEAL CONTROL percent 08-14-02 61 DA-B	XANST CONTROL percent 08-14-02 61 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Harness Xtra	6	3.45	LB A/A	2.3	QT/A	PRE	A	82	75	99	99	85
3	Harness Xtra	5.6	4.2	LB A/A	3.0	QT/A	PRE	A	83	60	99	99	72
4	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	A	87	47	99	99	73
5	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE	A	70	68	99	99	70
6	Harness Yukon NIS AMS	7 67.5	2.2 0.169	LB A/A LB A/A	2.5 4.0	PT/A OZ/A	PRE POST	A B	88	99	99	99	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
7	Micro-Tech Yukon NIS AMS	4 67.5	3.0 0.169	LB A/A LB A/A	3.0 4.0	QT/A OZ/A	PRE POST	A B	73	99	99	99	95
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
8	Lasso Yukon NIS AMS	4 67.5	3.0 0.169	LB A/A LB A/A	3.0 4.0	QT/A OZ/A	PRE POST	A B	85	99	99	99	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
9	Degree Yukon NIS AMS	3.8 67.5	2.2 0.169	LB A/A LB A/A	4.63 4.0	PT/A OZ/A	PRE POST	A B	80	98	99	99	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
10	Harness Permit NIS AMS	7 75	2.19 0.0314	LB A/A LB A/A	2.5 0.67	PT/A OZ/A	PRE POST	A B	90	92	99	83	95
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
11	Degree Permit NIS AMS	3.8 75	2.2 0.0314	LB A/A LB A/A	4.63 0.67	PT/A OZ/A	PRE POST	A B	88	92	99	75	96
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% W/W	2.0	% W/W	POST	B					
12	Accent Yukon NIS	75 67.5	0.0314 0.169	LB A/A LB A/A	0.67 4.0	OZ/A OZ/A	POST POST	B B	75	99	87	93	99
			0.25	% V/V	0.25	% V/V	POST	B					
13	Outlook Distinct NIS AMS	6 70	0.94 0.175	LB A/A LB A/A	20.0 4.0	FL OZ/A OZ/A	PRE POST	A B	88	98	99	99	95
			0.25	% V/V	0.25	% V/V	POST	B					
			5.0	LB/100 GAL	5.0	LB/100 GAL	POST	B					
14	Dual II Magnum Northstar NIS 28% UAN	7.64 47.4	1.91 0.148	LB A/A LB A/A	2.0 5.0	PT/A OZ/A	PRE POST	A B	82	93	99	99	99
			0.25	% V/V	0.25	% V/V	POST	B					
			2.0	% V/V	2.0	% V/V	POST	B					
LSD (P=.05)									10.0	14.4	6.5	4.4	10.0

Iowa State University

**Preemergence applied herbicide tank-mixtures and prepackaged mixtures
for weed control in corn, Ames, IA, 2002.**

Trial ID: ACC 8

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011 Initiation Date: 05-21-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate crop injury and weed control potential of Acetochlor 75 and 150 compared to commercial prepackaged standards including FulTime, Guardsman Max, Harness Xtra and others.

Conclusions: Variability in corn emergence resulted in significant stand differences between treatments. All treatments exhibited excellent crop safety when observed on June 1, 7, and 24. All treatments afforded excellent giant foxtail, common waterhemp and common lambsquarters control when observed on June 24 and July 25. No significant differences were determined between treatments for any of these weed species. Control of velvetleaf and common cocklebur was not acceptable with any treatment on any of the observation dates. (Dept. of Agronomy, Iowa State University, Ames)

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8550

Planting Date: 05-21-02 Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM

pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS

Fert. Level: EXCELLENT

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-21-02
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	63 F
% Relative Humidity:	46
Wind Velocity, Unit:	10 MPH
Soil Temp., Unit:	55 F
Soil Moisture:	DRY
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD -
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
	-
Stage Scale:	-
Density, Unit:	- -

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

**Preemergence applied herbicide tank-mixtures and prepackaged mixtures
for weed control in corn, Ames, IA, 2002.**

Trial ID: ACC 8

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code	ZEAMD STAND	ZEAMD PHYGEN	ZEAMD PHYGEN	ZEAMD PHYGEN	SETFA CONTROL	ABUTH CONTROL							
Rating Data Type	17.5 ft	percent	percent	percent	percent	percent							
Rating Unit	07-18-02	06-01-02	06-07-02	06-24-02	06-24-02	06-24-02							
Rating Date	58 DA-A	11 DA-A	17 DA-A	34 DA-A	34 DA-A	34 DA-A							
Trt-Eval Interval													
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated							25	0	0	0	0	0
2	Acetochlor 75	5.5	3.44 LB A/A	2.5	QT/A	PRE	A	26	0	0	0	99	52
3	Acetochlor 150	5.1	4.33 LB A/A	3.4	QT/A	PRE	A	26	0	0	0	99	70
4	FulTime	4	4.2 LB A/A	4.2	QT/A	PRE	A	28	0	0	0	98	72
5	Guardsman Max	5	2.87 LB A/A	4.6	PT/A	PRE	A	29	0	0	0	98	68
6	G-Max Lite	5	2.5 LB A/A	4.0	PT/A	PRE	A	27	0	0	0	98	22
7	Harness Xtra	6	3.45 LB A/A	2.3	QT/A	PRE	A	28	0	0	0	99	53
8	Harness Xtra	5.6	4.2 LB A/A	3.0	QT/A	PRE	A	28	0	0	0	99	58
9	Degree Xtra	4.04	3.74 LB A/A	3.7	QT/A	PRE	A	28	0	0	0	98	57
10	Bicep II Magnum	5.5	3.58 LB A/A	2.6	QT/A	PRE	A	26	0	0	0	98	50
11	Bicep Lite II Magnum	6	3.3 LB A/A	2.2	QT/A	PRE	A	27	0	0	0	98	52
LSD (P=.05)								2.3	0.0	0.0	0.0	2.8	30.8

Iowa State University

Weed Code							AMATA	CHEAL	XANST	ZEAMD	SETFA
Rating Data Type							CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-24-02	06-24-02	06-24-02	07-25-02	07-25-02
Trt-Eval Interval							34 DA-A	34 DA-A	34 DA-A	65 DA-A	65 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Acetochlor 75	5.5	3.44 LB A/A	2.5 QT/A		PRE	A	99	99	83	0
3	Acetochlor 150	5.1	4.33 LB A/A	3.4 QT/A		PRE	A	99	99	87	0
4	FulTime	4	4.2 LB A/A	4.2 QT/A		PRE	A	99	99	77	0
5	Guardsman Max	5	2.87 LB A/A	4.6 PT/A		PRE	A	99	99	73	0
6	G-Max Lite	5	2.5 LB A/A	4.0 PT/A		PRE	A	99	98	78	0
7	Harness Xtra	6	3.45 LB A/A	2.3 QT/A		PRE	A	99	99	70	0
8	Harness Xtra	5.6	4.2 LB A/A	3.0 QT/A		PRE	A	99	99	75	0
9	Degree Xtra	4.04	3.74 LB A/A	3.7 QT/A		PRE	A	99	99	62	0
10	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE	A	99	99	87	0
11	Bicep Lite II Magnum	6	3.3 LB A/A	2.2 QT/A		PRE	A	99	99	68	0
LSD (P=.05)							0.0	1.2	28.5	0.0	4.0

Iowa State University

Weed Code							ABUTH	AMATA	CHEAL	XANST	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-25-02	07-25-02	07-25-02	07-25-02	
Trt-Eval Interval							65 DA-A	65 DA-A	65 DA-A	65 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Stg	Appl Code				
1	Untreated							0	0	0	
2	Acetochlor 75	5.5	3.44 LB A/A	2.5 QT/A		PRE A		47	99	99	
3	Acetochlor 150	5.1	4.33 LB A/A	3.4 QT/A		PRE A		62	99	99	
4	FulTime	4	4.2 LB A/A	4.2 QT/A		PRE A		67	99	99	
5	Guardsman Max	5	2.87 LB A/A	4.6 PT/A		PRE A		62	99	99	
6	G-Max Lite	5	2.5 LB A/A	4.0 PT/A		PRE A		18	99	98	
7	Harness Xtra	6	3.45 LB A/A	2.3 QT/A		PRE A		52	99	99	
8	Harness Xtra	5.6	4.2 LB A/A	3.0 QT/A		PRE A		55	99	99	
9	Degree Xtra	4.04	3.74 LB A/A	3.7 QT/A		PRE A		52	99	99	
10	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE A		40	99	99	
11	Bicep Lite II Magnum	6	3.3 LB A/A	2.2 QT/A		PRE A		48	99	99	
LSD (P=.05)								27.9	0.0	1.2	32.8

Iowa State University

Evaluation of preemergence and postemergence applied Basis and Callisto tank-mixtures for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 9

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-22-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate the crop safety and efficacy of Callisto plus Basis tank-mixtures in corn.

Conclusions: Significant differences in corn stand between treatments were determined. These differences were a result of variable stand establishment and not due to herbicide treatment. Preemergence (PRE) applied Basis alone at 0.047 lb/A and with Callisto caused negligible corn injury when noted on June 14. Significant corn injury resulting from early postemergence (EPOST) applied treatments was observed on June 8, eight days after application. On June 14, injury symptoms were still apparent. PRE Basis at 0.023 lb/A was not effective in controlling giant foxtail, velvetleaf or common waterhemp when observed on June 14 and July 5, but did control common lambsquarters. Giant foxtail, velvetleaf and common waterhemp control improved when Basis was applied PRE at the 0.047 lb/A rate, but only fair control was attained. The addition of Callisto or Callisto plus Atrazine to Basis applied PRE resulted in excellent velvetleaf, common waterhemp and common lambsquarters control. EPOST applications of Basis and Basis tank-mixture combinations afforded good to excellent giant foxtail, velvetleaf, common waterhemp and common lambsquarters control on June 14. On July 5, giant foxtail control was no longer acceptable with any EPOST treatment. However, broadleaf weed control continued to be excellent where Callisto or Callisto plus Atrazine occurred with Basis. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: ZEAMD CORN, FIELD

Variety: GARST 8550

Planting Date: 05-21-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT

Plot Length, Unit: 25 FT

Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

Iowa State University

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM
 pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-22-02	05-31-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	EPOST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	73 F	86 F
% Relative Humidity:	57	46
Wind Velocity, Unit:	15 MPH	2 MPH
Soil Temp., Unit:	57 F	75 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	10	10

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V1
Stage Scale:	-	DESC
Height, Unit:	-	1.5 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-2 LEAF
Stage Scale:	-	0.25 IN
Density, Unit:	- -	45 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYLEDON
Stage Scale:	-	0.25 IN
Density, Unit:	- -	0-3 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -
Stage Scale:	-	-
Density, Unit:	- -	- -
Weed 4 Code, Stage:	CHEAL -	CHEAL -
Stage Scale:	-	-
Density, Unit:	- -	- -

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Evaluation of preemergence and postemergence applied Basis and Callisto tank-mixtures for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 9

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	percent	
Rating Date							07-16-02	06-08-02	06-14-02	06-14-02	06-14-02	06-14-02	
Trt-Eval Interval							55 DA-A	8 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
1	Untreated							23	0	0	0	0	
2	Basis	75	0.0234	LB A/A	0.5 OZ/A	PRE	A	25	0	0	60	38	42
3	Basis Callisto	75 4	0.0234 0.188	LB A/A LB A/A	0.5 OZ/A 6.0 FL OZ/A	PRE PRE	A A	27	0	0	62	99	99
4	Basis Callisto Atrazine	75 4 90	0.0234 0.188 1.5	LB A/A LB A/A LB A/A	0.5 OZ/A 6.0 FL OZ/A 26.7 OZ/A	PRE PRE PRE	A A A	26	0	0	68	99	99
5	Basis	75	0.047	LB A/A	1.0 OZ/A	PRE	A	25	3	3	82	77	67
6	Basis Callisto	75 4	0.047 0.188	LB A/A LB A/A	1.0 OZ/A 6.0 FL OZ/A	PRE PRE	A A	24	0	2	85	99	99
7	Basis Callisto Atrazine	75 4 90	0.047 0.188 1.5	LB A/A LB A/A LB A/A	1.0 OZ/A 6.0 FL OZ/A 26.7 OZ/A	PRE PRE PRE	A A A	27	0	0	87	99	99
8	Basis COC AMS	75 1.0 2.0	0.0155 % V/V LB/A	LB A/A V/V LB/A	0.33 OZ/A 1.0 % V/V 2.0 LB/A	EPOST EPOST EPOST	B B B	22	13	15	90	91	70
9	Basis Atrazine COC AMS	75 90 1.0 2.0	0.0155 0.5 % V/V LB/A	LB A/A LB A/A V/V LB/A	0.33 OZ/A 8.9 OZ/A 1.0 % V/V 2.0 LB/A	EPOST EPOST EPOST EPOST	B B B B	26	10	8	92	99	99
10	Basis Callisto COC AMS	75 4 1.0 2.0	0.0155 0.0312 % V/V LB/A	LB A/A LB A/A V/V LB/A	0.33 OZ/A 1.0 FL OZ/A 1.0 % V/V 2.0 LB/A	EPOST EPOST EPOST EPOST	B B B B	26	12	7	88	99	99
11	Basis Callisto Atrazine COC AMS	75 4 90 1.0 2.0	0.0155 0.0312 0.5 % V/V LB/A	LB A/A LB A/A LB A/A V/V LB/A	0.33 OZ/A 1.0 FL OZ/A 8.9 OZ/A 1.0 % V/V 2.0 LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	24	12	7	93	99	99
12	Basis Callisto COC AMS	75 4 1.0 2.0	0.0155 0.0625 % V/V LB/A	LB A/A LB A/A V/V LB/A	0.33 OZ/A 2.0 FL OZ/A 1.0 % V/V 2.0 LB/A	EPOST EPOST EPOST EPOST	B B B B	25	12	3	87	99	99
13	Basis Callisto Atrazine COC AMS	75 4 90 1.0 2.0	0.0155 0.0625 0.5 % V/V LB/A	LB A/A LB A/A LB A/A V/V LB/A	0.33 OZ/A 2.0 FL OZ/A 8.9 OZ/A 1.0 % V/V 2.0 LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	24	10	5	93	99	99
14	Basis Callisto COC AMS	75 4 1.0 2.0	0.0155 0.094 % V/V LB/A	LB A/A LB A/A V/V LB/A	0.33 OZ/A 3.0 FL OZ/A 1.0 % V/V 2.0 LB/A	EPOST EPOST EPOST EPOST	B B B B	25	10	5	92	99	99

Iowa State University

Weed Code								ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA		
Rating Data Type								STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL		
Rating Unit								17.5 ft	percent	percent	percent	percent	percent		
Rating Date								07-16-02	06-08-02	06-14-02	06-14-02	06-14-02	06-14-02		
Trt-Eval Interval								55 DA-A	8 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate	Unit	Grow Stg	Appl Code						
15	Basis	75	0.0155	LB A/A	0.33	OZ/A		EPOST B		23	10	5	92	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A		EPOST B							
	Atrazine	90	0.5	LB A/A	8.9	OZ/A		EPOST B							
	COC		1.0	% V/V	1.0	% V/V		EPOST B							
	AMS		2.0	LB/A	2.0	LB/A		EPOST B							
16	Bicep II Magnum	5.5	2.88	LB A/A	2.1	QT/A		PRE A		26	0	0	93	99	99
	Callisto	4	0.188	LB A/A	6.0	FL OZ/A		PRE A							
LSD (P=.05)								3.7	4.1	3.2	6.2	6.7	9.2		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 06-14-02 14 DA-B	ZEAMD PHYGEN percent 07-05-02 35 DA-B	SETFA CONTROL percent 07-05-02 35 DA-B	ABUTH CONTROL percent 07-05-02 35 DA-B	AMATA CONTROL percent 07-05-02 35 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Basis	75	0.0234	LB	A/A	0.5	OZ/A	PRE	A	88	0	50	35	38
3	Basis Callisto	75 4	0.0234 0.188	LB	A/A	0.5 6.0	OZ/A FL OZ/A	PRE PRE	A A	99	0	52	99	99
4	Basis Callisto Atrazine	75 4 90	0.0234 0.188 1.5	LB	A/A	0.5 6.0 26.7	OZ/A FL OZ/A OZ/A	PRE PRE PRE	A A A	99	0	58	99	99
5	Basis	75	0.047	LB	A/A	1.0	OZ/A	PRE	A	92	0	73	67	52
6	Basis Callisto	75 4	0.047 0.188	LB	A/A	1.0 6.0	OZ/A FL OZ/A	PRE PRE	A A	99	0	73	99	99
7	Basis Callisto Atrazine	75 4 90	0.047 0.188 1.5	LB	A/A	1.0 6.0 26.7	OZ/A FL OZ/A OZ/A	PRE PRE PRE	A A A	99	0	82	99	99
8	Basis COC AMS	75 1.0 2.0	0.0155 % V/V LB/A	LB	A/A	0.33 1.0 2.0	OZ/A % V/V LB/A	EPOST EPOST EPOST	B B B	99	0	67	88	40
9	Basis Atrazine COC AMS	75 90 2.0	0.0155 0.5 % V/V LB/A	LB	A/A	0.33 8.9 1.0 2.0	OZ/A OZ/A % V/V LB/A	EPOST EPOST EPOST EPOST	B B B B	99	0	70	62	80
10	Basis Callisto COC AMS	75 4 2.0	0.0155 0.0312 % V/V LB/A	LB	A/A	0.33 1.0 1.0 2.0	OZ/A FL OZ/A % V/V LB/A	EPOST EPOST EPOST EPOST	B B B B	99	0	62	96	96
11	Basis Callisto Atrazine COC AMS	75 4 90 2.0	0.0155 0.0312 0.5 % V/V LB/A	LB	A/A	0.33 1.0 8.9 1.0 2.0	OZ/A FL OZ/A OZ/A % V/V LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	99	0	72	99	99
12	Basis Callisto COC AMS	75 4 2.0	0.0155 0.0625 % V/V LB/A	LB	A/A	0.33 2.0 1.0 2.0	OZ/A FL OZ/A % V/V LB/A	EPOST EPOST EPOST EPOST	B B B B	99	0	58	99	99
13	Basis Callisto Atrazine COC AMS	75 4 90 2.0	0.0155 0.0625 0.5 % V/V LB/A	LB	A/A	0.33 2.0 8.9 1.0 2.0	OZ/A FL OZ/A OZ/A % V/V LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	99	0	73	99	99
14	Basis Callisto COC AMS	75 4 2.0	0.0155 0.094 % V/V LB/A	LB	A/A	0.33 3.0 1.0 2.0	OZ/A FL OZ/A % V/V LB/A	EPOST EPOST EPOST EPOST	B B B B	99	0	62	99	99
15	Basis Callisto Atrazine COC AMS	75 4 90 2.0	0.0155 0.094 0.5 % V/V LB/A	LB	A/A	0.33 3.0 8.9 1.0 2.0	OZ/A FL OZ/A OZ/A % V/V LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	99	0	68	99	99

Iowa State University

Weed Code								CHEAL	ZEAMD	SETFA	ABUTH	AMATA	
Rating Data Type								CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit								percent	percent	percent	percent	percent	
Rating Date								06-14-02	07-05-02	07-05-02	07-05-02	07-05-02	
Trt-Eval Interval								14 DA-B	35 DA-B	35 DA-B	35 DA-B	35 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
16	Bicep II Magnum Callisto	5.5 4	2.88 0.188	LB A/A LB A/A	2.1 6.0	QT/A FL OZ/A	PRE PRE	A A	99	0	83	99	
LSD (P=.05)									2.7	0.0	11.3	11.0	11.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 07-05-02 35 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated								0
2	Basis	75	0.0234	LB A/A	0.5	OZ/A	PRE	A	88
3	Basis Callisto	75 4	0.0234 0.188	LB A/A LB A/A	0.5 6.0	OZ/A FL OZ/A	PRE PRE	A A	99
4	Basis Callisto Atrazine	75 4 90	0.0234 0.188 1.5	LB A/A LB A/A LB A/A	0.5 6.0 26.7	OZ/A FL OZ/A OZ/A	PRE PRE PRE	A A A	99
5	Basis	75	0.047	LB A/A	1.0	OZ/A	PRE	A	90
6	Basis Callisto	75 4	0.047 0.188	LB A/A LB A/A	1.0 6.0	OZ/A FL OZ/A	PRE PRE	A A	99
7	Basis Callisto Atrazine	75 4 90	0.047 0.188 1.5	LB A/A LB A/A LB A/A	1.0 6.0 26.7	OZ/A FL OZ/A OZ/A	PRE PRE PRE	A A A	99
8	Basis COC AMS	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B	98
				1.0 % V/V	1.0	% V/V	EPOST	B	
				2.0 LB/A	2.0	LB/A	EPOST	B	
9	Basis Atrazine COC AMS	75 90	0.0155 0.5	LB A/A LB A/A	0.33 8.9	OZ/A OZ/A	EPOST EPOST	B B	99
				1.0 % V/V	1.0	% V/V	EPOST	B	
				2.0 LB/A	2.0	LB/A	EPOST	B	
10	Basis Callisto COC AMS	75 4	0.0155 0.0312	LB A/A LB A/A	0.33 1.0	OZ/A FL OZ/A	EPOST EPOST	B B	99
				1.0 % V/V	1.0	% V/V	EPOST	B	
				2.0 LB/A	2.0	LB/A	EPOST	B	
11	Basis Callisto Atrazine COC AMS	75 4 90	0.0155 0.0312 0.5	LB A/A LB A/A LB A/A	0.33 1.0 8.9	OZ/A FL OZ/A OZ/A	EPOST EPOST EPOST	B B B	99
				1.0 % V/V	1.0	% V/V	EPOST	B	
				2.0 LB/A	2.0	LB/A	EPOST	B	
12	Basis Callisto COC AMS	75 4	0.0155 0.0625	LB A/A LB A/A	0.33 2.0	OZ/A FL OZ/A	EPOST EPOST	B B	99
				1.0 % V/V	1.0	% V/V	EPOST	B	
				2.0 LB/A	2.0	LB/A	EPOST	B	
13	Basis Callisto Atrazine COC AMS	75 4 90	0.0155 0.0625 0.5	LB A/A LB A/A LB A/A	0.33 2.0 8.9	OZ/A FL OZ/A OZ/A	EPOST EPOST EPOST	B B B	99
				1.0 % V/V	1.0	% V/V	EPOST	B	
				2.0 LB/A	2.0	LB/A	EPOST	B	
14	Basis Callisto COC AMS	75 4	0.0155 0.094	LB A/A LB A/A	0.33 3.0	OZ/A FL OZ/A	EPOST EPOST	B B	99
				1.0 % V/V	1.0	% V/V	EPOST	B	
				2.0 LB/A	2.0	LB/A	EPOST	B	
15	Basis Callisto Atrazine COC AMS	75 4 90	0.0155 0.094 0.5	LB A/A LB A/A LB A/A	0.33 3.0 8.9	OZ/A FL OZ/A OZ/A	EPOST EPOST EPOST	B B B	99
				1.0 % V/V	1.0	% V/V	EPOST	B	
				2.0 LB/A	2.0	LB/A	EPOST	B	

Iowa State University

Weed Code								CHEAL	
Rating Data Type								CONTROL	
Rating Unit								percent	
Rating Date								07-05-02	
Trt-Eval Interval								35 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
16	Bicep II Magnum	5.5	2.88	LB A/A	2.1	QT/A	PRE	A	99
	Callisto	4	0.188	LB A/A	6.0	FL OZ/A	PRE	A	
LSD (P=.05)									2.7

Iowa State University

Postemergence applications of Steadfast, Callisto, Atrazine, Option, Distinct and Clarity for weed control in corn, Ames, IA, 2002.

Trial ID: ACC 10

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-21-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate various preemergence applied herbicides including Balance Pro, Bicep II Magnum and others followed by postemergence Steadfast, Option, Callisto, and Distinct for crop phytotoxicity and weed control in corn.

Conclusions: No significant differences in corn stand between herbicide treatments were observed on July 16. Significant corn injury occurred from nearly all EPOST and MPOST treatments when observed on June 19 and 29. Some injury was still apparent on July 19, but was considered negligible. Nearly all PRE followed by EPOST or MPOST and MPOST applications not following a PRE demonstrated good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters and common cocklebur control on June 29. In general, treatments that included a PRE followed by an EPOST or MPOST continued to provide excellent broad-spectrum weed control when observed on July 19. MPOST applications of Steadfast and Option alone were not as effective on July 19 in controlling velvetleaf, common waterhemp, and common lambsquarters compared to the other treatments. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
4.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD

Variety: GARST 8550

Planting Date: 05-21-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

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SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM
 pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-22-02	06-10-02	06-14-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	75 F	81 F	75 F
% Relative Humidity:	57	83	48
Wind Velocity, Unit:	15 MPH	10 MPH	13 MPH
Soil Temp., Unit:	57 F	75 F	66 F
Soil Moisture:	DRY	DRY	MOIST
% Cloud Cover:	10	90	60

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V4	ZEAMD V5
Stage Scale:	-	DESC	DESC
Height, Unit:	-	5 IN	8 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 1T	SETFA 1-4 L, 2T
Stage Scale:	-	0.25-3 IN	0.5-4 IN
Density, Unit:	- -	5-50 FT ²	30 FT ²
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-4	ABUTH 4-5 LF
Stage Scale:	-	0.25-3 IN	1-4 IN
Density, Unit:	- -	0-5 FT ²	0-1 FT ²
Weed 3 Code, Stage:	CHEAL -	CHEAL 2-6 LEAF	CHEAL NUMEROUS
Stage Scale:	-	0.25-2 IN	0.25-3 IN
Density, Unit:	- -	0-3 FT ²	0-3 FT ²
Weed 4 Code, Stage:	AMATA -	AMATA -	AMATA NUMEROUS
Stage Scale:	-	-	0.25-5 IN
Density, Unit:	- -	- -	0-3 FT ²
Weed 5 Code, Stage:	XANST -	XANST 4-6 LF	XANST 4-8 LF
Stage Scale:	-	1.5-4 IN	2-6 IN
Density, Unit:	- -	0-2 FT ²	0-1 FT ²

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	TERRA PRO
Operating Pressure:	30	30	30
Nozzle Type:	11002	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Postemergence applications of Steadfast, Callisto, Atrazine, Option, Distinct and Clarity for weed control in corn, Ames, IA, 2002.

Trial ID: ACC 10

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent	percent
Rating Date							07-16-02	06-19-02	06-29-02	06-29-02	06-29-02	06-29-02
Trt-Eval Interval							55 DA-A	5 DA-C	15 DA-C	15 DA-C	15 DA-C	15 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code				
1	Untreated								23	0	0	0
2	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST	C		26	12	10	85
	COC		1.0	% V/V	1.0 % V/V	MPOST	C					90
	AMS		2.0	LB/A	2.0 LB/A	MPOST	C					83
3	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST	C		25	12	10	82
	Atrazine	90	0.75	LB A/A	13.3 OZ/A	MPOST	C					95
	COC		1.0	% V/V	1.0 % V/V	MPOST	C					96
	AMS		2.0	LB/A	2.0 LB/A	MPOST	C					
4	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C		25	18	13	82
	MSO		1.0	% V/V	1.0 % V/V	MPOST	C					85
	AMS		2.0	LB/A	2.0 LB/A	MPOST	C					77
5	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C		25	13	12	82
	Atrazine	90	1.0	LB A/A	17.8 OZ/A	MPOST	C					95
	MSO		1.0	% V/V	1.0 % V/V	MPOST	C					96
	AMS		2.0	LB/A	2.0 LB/A	MPOST	C					
6	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE	A		25	18	7	98
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C					99
	Atrazine	90	1.0	LB A/A	17.8 OZ/A	MPOST	C					
	MSO		1.0	% V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A	2.0 LB/A	MPOST	C					
7	Bicep II Magnum	5.5	2.9	LB A/A	2.1 QT/A	PRE	A		25	2	2	92
	Clarity	4	0.25	LB A/A	8.0 FL OZ/A	EPOST	B					95
	NIS		0.25	% V/V	0.25 % V/V	EPOST	B					99
8	Dual II Magnum	7.64	1.61	LB A/A	1.69 PT/A	PRE	A		24	3	2	93
	Marksman	3.2	1.2	LB A/A	3.0 PT/A	EPOST	B					98
	NIS		0.25	% V/V	0.25 % V/V	EPOST	B					99
9	Bicep II Magnum	5.5	1.15	LB A/A	0.84 QT/A	PRE	A		26	8	7	90
	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST	C					99
	Callisto	4	0.047	LB A/A	1.5 FL OZ/A	MPOST	C					99
	Atrazine	90	0.75	LB A/A	13.3 OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A	2.0 LB/A	MPOST	C					
10	Dual II Magnum	7.64	0.66	LB A/A	0.69 PT/A	PRE	A		26	10	7	90
	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST	C					99
	Callisto	4	0.047	LB A/A	1.5 FL OZ/A	MPOST	C					99
	Atrazine	90	0.75	LB A/A	13.3 OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A	2.0 LB/A	MPOST	C					
11	Bicep II Magnum	5.5	1.15	LB A/A	0.84 QT/A	PRE	A		25	15	5	99
	Steadfast	75	0.035	LB A/A	0.75 OZ/A	EPOST	B					99
	Distinct	70	0.0875	LB A/A	2.0 OZ/A	EPOST	B					99
	COC		1.0	% V/V	1.0 % V/V	EPOST	B					
	AMS		2.0	LB/A	2.0 LB/A	EPOST	B					

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD STAND 17.5 ft 07-16-02 55 DA-A	ZEAMD PHYGEN percent 06-19-02 5 DA-C	ZEAMD PHYGEN percent 06-29-02 15 DA-C	SETFA CONTROL percent 06-29-02 15 DA-C	ABUTH CONTROL percent 06-29-02 15 DA-C	AMATA CONTROL percent 06-29-02 15 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code						
12	Dual II Magnum	7.64	0.66	LB A/A	0.69	PT/A	PRE	A	25	15	5	99	99	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B						
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B						
	COC		1.0	% V/V	1.0	% V/V	EPOST	B						
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B						
13	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	24	10	12	83	99	99
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST	C						
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	C						
	COC		1.0	% V/V	1.0	% V/V	MPOST	C						
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C						
14	Harness Xtra	6	3.0	LB A/A	2.0	QT/A	PRE	A	26	2	0	95	93	99
	Clarity	4	0.25	LB A/A	8.0	FL OZ/A	EPOST	B						
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B						
15	Harness	7	1.75	LB A/A	2.0	PT/A	PRE	A	24	5	3	95	95	99
	Marksman	3.2	1.2	LB A/A	3.0	PT/A	EPOST	B						
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B						
LSD (P=.05)									3.0	4.1	4.1	3.8	4.6	7.7

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-29-02 15 DA-C	XANST CONTROL percent 06-29-02 15 DA-C	ZEAMD PHYGEN percent 07-19-02 35 DA-C	SETFA CONTROL percent 07-19-02 35 DA-C	ABUTH CONTROL percent 07-19-02 35 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Steadfast	75	0.035	LB	A/A	0.75 OZ/A	MPOST	C	87	93	5	87	82
	COC		1.0	%	V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A		2.0 LB/A	MPOST	C					
3	Steadfast	75	0.035	LB	A/A	0.75 OZ/A	MPOST	C	99	96	3	85	92
	Atrazine	90	0.75	LB	A/A	13.3 OZ/A	MPOST	C					
	COC		1.0	%	V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A		2.0 LB/A	MPOST	C					
4	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C	87	93	5	83	83
	MSO		1.0	%	V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A		2.0 LB/A	MPOST	C					
5	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C	99	99	3	78	91
	Atrazine	90	1.0	LB	A/A	17.8 OZ/A	MPOST	C					
	MSO		1.0	%	V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A		2.0 LB/A	MPOST	C					
6	Balance Pro	4	0.047	LB	A/A	1.5 FL OZ/A	PRE	A	99	99	2	95	99
	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C					
	Atrazine	90	1.0	LB	A/A	17.8 OZ/A	MPOST	C					
	MSO		1.0	%	V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A		2.0 LB/A	MPOST	C					
7	Bicep II Magnum	5.5	2.9	LB	A/A	2.1 QT/A	PRE	A	99	98	0	88	93
	Clarity	4	0.25	LB	A/A	8.0 FL OZ/A	EPOST	B					
	NIS		0.25	%	V/V	0.25 % V/V	EPOST	B					
8	Dual II Magnum	7.64	1.61	LB	A/A	1.69 PT/A	PRE	A	99	99	0	92	98
	Marksman	3.2	1.2	LB	A/A	3.0 PT/A	EPOST	B					
	NIS		0.25	%	V/V	0.25 % V/V	EPOST	B					
9	Bicep II Magnum	5.5	1.15	LB	A/A	0.84 QT/A	PRE	A	99	99	0	88	99
	Steadfast	75	0.035	LB	A/A	0.75 OZ/A	MPOST	C					
	Callisto	4	0.047	LB	A/A	1.5 FL OZ/A	MPOST	C					
	Atrazine	90	0.75	LB	A/A	13.3 OZ/A	MPOST	C					
	COC		1.0	%	V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A		2.0 LB/A	MPOST	C					
10	Dual II Magnum	7.64	0.66	LB	A/A	0.69 PT/A	PRE	A	99	99	0	87	99
	Steadfast	75	0.035	LB	A/A	0.75 OZ/A	MPOST	C					
	Callisto	4	0.047	LB	A/A	1.5 FL OZ/A	MPOST	C					
	Atrazine	90	0.75	LB	A/A	13.3 OZ/A	MPOST	C					
	COC		1.0	%	V/V	1.0 % V/V	MPOST	C					
	AMS		2.0	LB/A		2.0 LB/A	MPOST	C					
11	Bicep II Magnum	5.5	1.15	LB	A/A	0.84 QT/A	PRE	A	99	99	0	95	96
	Steadfast	75	0.035	LB	A/A	0.75 OZ/A	EPOST	B					
	Distinct	70	0.0875	LB	A/A	2.0 OZ/A	EPOST	B					
	COC		1.0	%	V/V	1.0 % V/V	EPOST	B					
	AMS		2.0	LB/A		2.0 LB/A	EPOST	B					
12	Dual II Magnum	7.64	0.66	LB	A/A	0.69 PT/A	PRE	A	99	99	0	95	99
	Steadfast	75	0.035	LB	A/A	0.75 OZ/A	EPOST	B					
	Distinct	70	0.0875	LB	A/A	2.0 OZ/A	EPOST	B					
	COC		1.0	%	V/V	1.0 % V/V	EPOST	B					
	AMS		2.0	LB/A		2.0 LB/A	EPOST	B					

Iowa State University

Weed Code							CHEAL	XANST	ZEAMD	SETFA	ABUTH	
Rating Data Type							CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-29-02	06-29-02	07-19-02	07-19-02	07-19-02	
Trt-Eval Interval							15 DA-C	15 DA-C	35 DA-C	35 DA-C	35 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code					
13	Steadfast	75	0.035 LB	A/A	0.75 OZ/A	MPOST	C	99	99	3	80	99
	Callisto	4	0.047 LB	A/A	1.5 FL OZ/A	MPOST	C					
	Atrazine	90	0.75 LB	A/A	13.3 OZ/A	MPOST	C					
	COC		1.0 %	V/V	1.0 %	V/V	MPOST	C				
	AMS		2.0 LB/A		2.0 LB/A		MPOST	C				
14	Harness Xtra	6	3.0 LB	A/A	2.0 QT/A	PRE	A	99	99	0	95	93
	Clarity	4	0.25 LB	A/A	8.0 FL OZ/A	EPOST	B					
	NIS		0.25 %	V/V	0.25 %	V/V	EPOST	B				
15	Harness	7	1.75 LB	A/A	2.0 PT/A	PRE	A	99	99	0	93	95
	Marksman	3.2	1.2 LB	A/A	3.0 PT/A	EPOST	B					
	NIS		0.25 %	V/V	0.25 %	V/V	EPOST	B				
LSD (P=.05)							1.8	4.0	2.6	5.6	8.3	

Iowa State University

Weed Code							AMATA	CHEAL	XANST		
Rating Data Type							CONTROL	CONTROL	CONTROL		
Rating Unit							percent	percent	percent		
Rating Date							07-19-02	07-19-02	07-19-02		
Trt-Eval Interval							35 DA-C	35 DA-C	35 DA-C		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code			
1	Untreated								0	0	0
2	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	75	77	88
	COC		1.0	% V/V	1.0	% V/V	MPOST	C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C			
3	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	93	98	96
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	C			
	COC		1.0	% V/V	1.0	% V/V	MPOST	C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C			
4	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST	C	68	82	93
	MSO		1.0	% V/V	1.0	% V/V	MPOST	C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C			
5	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST	C	93	99	99
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	MPOST	C			
	MSO		1.0	% V/V	1.0	% V/V	MPOST	C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C			
6	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	99	99
	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST	C			
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	MPOST	C			
	MSO		1.0	% V/V	1.0	% V/V	MPOST	C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C			
7	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE	A	99	99	98
	Clarity	4	0.25	LB A/A	8.0	FL OZ/A	EPOST	B			
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B			
8	Dual II Magnum	7.64	1.61	LB A/A	1.69	PT/A	PRE	A	99	99	99
	Marksman	3.2	1.2	LB A/A	3.0	PT/A	EPOST	B			
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B			
9	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	99	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C			
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST	C			
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	C			
	COC		1.0	% V/V	1.0	% V/V	MPOST	C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C			
10	Dual II Magnum	7.64	0.66	LB A/A	0.69	PT/A	PRE	A	99	99	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C			
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST	C			
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	C			
	COC		1.0	% V/V	1.0	% V/V	MPOST	C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C			
11	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	99	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B			
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B			
	COC		1.0	% V/V	1.0	% V/V	EPOST	B			
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B			
12	Dual II Magnum	7.64	0.66	LB A/A	0.69	PT/A	PRE	A	98	99	98
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B			
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B			
	COC		1.0	% V/V	1.0	% V/V	EPOST	B			
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B			

Iowa State University

Weed Code							AMATA	CHEAL	XANST	
Rating Data Type							CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	
Rating Date							07-19-02	07-19-02	07-19-02	
Trt-Eval Interval							35 DA-C	35 DA-C	35 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
13	Steadfast	75	0.035 LB	A/A	0.75 OZ/A	MPOST	C	99	99	99
	Callisto	4	0.047 LB	A/A	1.5 FL OZ/A	MPOST	C			
	Atrazine	90	0.75 LB	A/A	13.3 OZ/A	MPOST	C			
	COC		1.0 %	V/V	1.0 %	V/V	MPOST	C		
	AMS		2.0 LB/A		2.0 LB/A		MPOST	C		
14	Harness Xtra	6	3.0 LB	A/A	2.0 QT/A	PRE	A	99	99	99
	Clarity	4	0.25 LB	A/A	8.0 FL OZ/A	EPOST	B			
	NIS		0.25 %	V/V	0.25 %	V/V	EPOST	B		
15	Harness	7	1.75 LB	A/A	2.0 PT/A	PRE	A	99	99	99
	Marksman	3.2	1.2 LB	A/A	3.0 PT/A	EPOST	B			
	NIS		0.25 %	V/V	0.25 %	V/V	EPOST	B		
LSD (P=.05)							7.7	3.7	4.3	

Iowa State University

Evaluation of postemergence applications of Aim, Callisto, Shotgun and Appeal for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 11

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-21-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate the crop safety and weed control potential of postemergence applications of Aim or Appeal in combination with other herbicides.

Conclusions: No significant differences in corn stand were determined between treatments when observed on July 18. Most treatments caused significant corn injury when noted on June 21, seven days after application. When observed on July 3, little to no injury was apparent. Overall, Dual II Magnum applied preemergence (PRE) provided 75 to 82% giant foxtail control when observed on July 3. Giant foxtail control was 90 to 95% where postemergence (POST) applied Accent Gold followed Dual II Magnum. POST applications of Aim, Aim with Atrazine, Hornet WDG, Callisto or Accent Gold provided excellent velvetleaf, common waterhemp, and common lambsquarters control on July 3 and 19. POST Atrazine without Aim in the tank-mixture provided excellent control of common waterhemp and common lambsquarters but not velvetleaf, on July 3 and 19. POST Shotgun, Shotgun plus Appeal, Atrazine plus Appeal, Atrazine plus Accent Gold plus Appeal and Accent Gold plus Appeal achieved excellent control of all broadleaf weed species when observed on July 3 and 19. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: ZEAMD CORN, FIELD

Variety: GARST 8550

Planting Date: 05-21-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT

Plot Length, Unit: 25 FT

Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

Iowa State University

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM
 pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-21-02	06-14-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	63 F	75 F
% Relative Humidity:	46	48
Wind Velocity, Unit:	10 MPH	13 MPH
Soil Temp., Unit:	54 F	66 F
Soil Moisture:	DRY	MOIST
% Cloud Cover:	0	60

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V5
Stage Scale:	-	DESC
Height, Unit:	-	10 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 2-4 LEAF
Stage Scale:	-	0.25-1 IN
Density, Unit:	- -	0-10 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 2-6 LEAF
Stage Scale:	-	0.5-5 IN
Density, Unit:	- -	0-3 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 2-3 LF
Stage Scale:	-	0.5 IN
Density, Unit:	- -	<1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 2-NUM
Stage Scale:	-	0.5-5 IN
Density, Unit:	- -	0-2 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Evaluation of postemergence applications of Aim, Callisto, Shotgun and Appeal for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACC 11

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent	percent
Rating Date							07-18-02	06-21-02	07-03-02	07-03-02	07-03-02	07-03-02
Trt-Eval Interval								7 DA-B	19 DA-B	19 DA-B	19 DA-B	19 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code				
1	Untreated								26	0	0	0
2	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	27	10	5	80
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	POST	B				99
	Atrazine	90	0.5	LB A/A	0.556	LB/A	POST	B				
	NIS		0.25	% V/V	0.25	% V/V	POST	B				
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	27	10	5	80
	Aim	40	0.00825	LB A/A	0.33	OZ/A	POST	B				98
	Atrazine	90	0.5	LB A/A	0.556	LB/A	POST	B				
	NIS		0.25	% V/V	0.25	% V/V	POST	B				
4	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	29	13	5	77
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	POST	B				98
	NIS		0.25	% V/V	0.25	% V/V	POST	B				
5	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	27	2	0	77
	Atrazine	90	0.5	LB A/A	0.556	LB/A	POST	B				77
	COC		1.0	QT/A	1.0	QT/A	POST	B				
6	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	27	17	5	78
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	POST	B				99
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	B				
	NIS		0.25	% V/V	0.25	% V/V	POST	B				
7	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	27	17	0	80
	Atrazine	90	0.5	LB A/A	0.556	LB/A	POST	B				99
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	B				
	NIS		0.25	% V/V	0.25	% V/V	POST	B				
8	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	26	17	5	80
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	POST	B				99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	B				
	COC		1.0	% V/V	1.0	% V/V	POST	B				
	NIS		0.25	% V/V	0.25	% V/V	POST	B				
9	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	28	3	2	82
	Atrazine	90	0.5	LB A/A	0.556	LB/A	POST	B				99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	B				
	COC		1.0	% V/V	1.0	% V/V	POST	B				
	NIS		0.25	% V/V	0.25	% V/V	POST	B				
10	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	27	20	5	92
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	POST	B				99
	Accent Gold	83.8	0.152	LB A/A	2.9	OZ/A	POST	B				
	COC		1.0	% V/V	1.0	% V/V	POST	B				
	AMS		2.0	LB/A	2.0	LB/A	POST	B				
11	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	27	17	0	92
	Atrazine	90	0.5	LB A/A	0.556	LB/A	POST	B				99
	Accent Gold	83.8	0.152	LB A/A	2.9	OZ/A	POST	B				
	COC		1.0	% V/V	1.0	% V/V	POST	B				
	AMS		2.0	LB/A	2.0	LB/A	POST	B				

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ZEAMD STAND 17.5 ft 07-18-02	ZEAMD PHYGEN percent 06-21-02 7 DA-B	ZEAMD PHYGEN percent 07-03-02 19 DA-B	SETFA CONTROL percent 07-03-02 19 DA-B	ABUTH CONTROL percent 07-03-02 19 DA-B	AMATA CONTROL percent 07-03-02 19 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code						
12	Dual II Magnum Shotgun LI 700	7.64 3.25	1.6 0.81 0.25	LB A/A LB A/A % V/V	1.67 2.0 0.25	PT/A PT/A % V/V	PRE POST POST	A B B	28	3	0	82	99	99
13	Dual II Magnum Shotgun Appeal LI 700	7.64 3.25 0.91	1.6 0.81 0.00355 0.25	LB A/A LB A/A LB A/A % V/V	1.67 2.0 0.5 0.25	PT/A PT/A FL OZ/A % V/V	PRE POST POST POST	A B B B	25	3	5	80	99	99
14	Dual II Magnum Atrazine Appeal LI 700	7.64 4 0.91	1.6 1.0 0.00355 0.25	LB A/A LB A/A LB A/A % V/V	1.67 1.0 0.5 0.25	PT/A QT/A FL OZ/A % V/V	PRE POST POST POST	A B B B	28	5	0	75	98	99
15	Dual II Magnum Atrazine Accent Gold Appeal LI 700	7.64 4 85.6 0.91	1.6 1.0 0.155 0.00355 0.25	LB A/A LB A/A LB A/A LB A/A % V/V	1.67 1.0 2.9 0.5 0.25	PT/A QT/A OZ/A FL OZ/A % V/V	PRE POST POST POST POST	A B B B B	28	20	0	95	99	99
16	Dual II Magnum Accent Gold Appeal LI 700	7.64 85.6 0.91	1.6 0.155 0.00355 0.25	LB A/A LB A/A LB A/A % V/V	1.67 2.9 0.5 0.25	PT/A OZ/A FL OZ/A % V/V	PRE POST POST POST	A B B B	28	20	0	90	98	96
LSD (P=.05)								2.4	3.6	3.8	4.3	5.3	3.1	

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 07-03-02 19 DA-B	SETFA CONTROL percent 07-19-02 35 DA-B	ABUTH CONTROL percent 07-19-02 35 DA-B	AMATA CONTROL percent 07-19-02 35 DA-B	CHEAL CONTROL percent 07-19-02 35 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Dual II Magnum Aim Atrazine NIS	7.64 2 90	1.6 0.0078 0.5	LB A/A LB A/A LB A/A	1.67 0.5 0.556	PT/A FL OZ/A LB/A	PRE POST POST	A B B B	99	77	98	99	99
3	Dual II Magnum Aim Atrazine NIS	7.64 40 90	1.6 0.00825 0.5	LB A/A LB A/A LB A/A	1.67 0.33 0.556	PT/A OZ/A LB/A	PRE POST POST	A B B B	99	78	98	98	99
4	Dual II Magnum Aim NIS	7.64 2	1.6 0.0078	LB A/A LB A/A	1.67 0.5	PT/A FL OZ/A	PRE POST	A B B	98	73	98	93	96
5	Dual II Magnum Atrazine COC	7.64 90	1.6 0.5	LB A/A LB A/A	1.67 0.556	PT/A LB/A	PRE POST	A B B	99	75	78	98	99
6	Dual II Magnum Aim Hornet WDG NIS	7.64 2 68.5	1.6 0.0078 0.128	LB A/A LB A/A LB AE/A	1.67 0.5 3.0	PT/A FL OZ/A OZ/A	PRE POST POST	A B B B	99	77	99	99	99
7	Dual II Magnum Atrazine Hornet WDG NIS	7.64 90 68.5	1.6 0.5 0.128	LB A/A LB A/A LB AE/A	1.67 0.556 3.0	PT/A LB/A OZ/A	PRE POST POST	A B B B	99	80	99	99	99
8	Dual II Magnum Aim Callisto COC NIS	7.64 2 4	1.6 0.0078 0.094	LB A/A LB A/A LB A/A	1.67 0.5 3.0	PT/A FL OZ/A FL OZ/A	PRE POST POST	A B B B B	99	75	99	98	99
9	Dual II Magnum Atrazine Callisto COC NIS	7.64 90 4	1.6 0.5 0.094	LB A/A LB A/A LB A/A	1.67 0.556 3.0	PT/A LB/A FL OZ/A	PRE POST POST	A B B B B	99	80	99	99	98
10	Dual II Magnum Aim Accent Gold COC AMS	7.64 2 83.8	1.6 0.0078 0.152	LB A/A LB A/A LB A/A	1.67 0.5 2.9	PT/A FL OZ/A OZ/A	PRE POST POST	A B B B B	98	87	99	98	98
11	Dual II Magnum Atrazine Accent Gold COC AMS	7.64 90 83.8	1.6 0.5 0.152	LB A/A LB A/A LB A/A	1.67 0.556 2.9	PT/A LB/A OZ/A	PRE POST POST	A B B B B	99	85	99	98	99
12	Dual II Magnum Shotgun LI 700	7.64 3.25	1.6 0.81	LB A/A LB A/A	1.67 2.0	PT/A PT/A	PRE POST	A B B	99	82	99	99	99

Iowa State University

Weed Code								CHEAL	SETFA	ABUTH	AMATA	CHEAL		
Rating Data Type								CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								percent	percent	percent	percent	percent		
Rating Date								07-03-02	07-19-02	07-19-02	07-19-02	07-19-02		
Trt-Eval Interval								19 DA-B	35 DA-B	35 DA-B	35 DA-B	35 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg Stg	Appl Code					
13	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A		99	77	99	99	99
	Shotgun	3.25	0.81	LB A/A	2.0	PT/A	POST	B						
	Appeal	0.91	0.00355	LB A/A	0.5	FL OZ/A	POST	B						
	LI 700		0.25	% V/V	0.25	% V/V	POST	B						
14	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A		99	72	98	99	99
	Atrazine	4	1.0	LB A/A	1.0	QT/A	POST	B						
	Appeal	0.91	0.00355	LB A/A	0.5	FL OZ/A	POST	B						
	LI 700		0.25	% V/V	0.25	% V/V	POST	B						
15	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A		99	93	99	99	99
	Atrazine	4	1.0	LB A/A	1.0	QT/A	POST	B						
	Accent Gold	85.6	0.155	LB A/A	2.9	OZ/A	POST	B						
	Appeal	0.91	0.00355	LB A/A	0.5	FL OZ/A	POST	B						
	LI 700		0.25	% V/V	0.25	% V/V	POST	B						
16	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A		93	87	98	95	93
	Accent Gold	85.6	0.155	LB A/A	2.9	OZ/A	POST	B						
	Appeal	0.91	0.00355	LB A/A	0.5	FL OZ/A	POST	B						
	LI 700		0.25	% V/V	0.25	% V/V	POST	B						
LSD (P=.05)								1.9	7.0	6.5	3.2	2.1		

Iowa State University

Balance Pro, Define, Outlook, Dual II Magnum and other preemergence applied herbicides at one X and half X rates for weed control in corn, Ames, IA, 2002.

Trial ID: ACC 12

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011 Initiation Date: 05-21-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate the crop safety and efficacy of preemergence applied Balance Pro, Define, Harness and other acetanilides in corn.

Conclusions: No significant differences in corn stand between treatments were determined. All treatments demonstrated excellent crop safety. A mix of foxtail species including giant, yellow and green were present in the experiment area. Giant and yellow foxtail were the predominant species. Balance Pro, Harness, Topnotch, and Outlook applied preemergence (PRE) at 1X rates provided good to excellent control of giant and yellow foxtail when observed on June 8, July 3, and 29. Define and Dual II Magnum applied PRE at 1X rates did not adequately control giant and yellow foxtail on any of the observation dates. One-half X rates of PRE applied Define, Harness, Dual II Magnum and Outlook were ineffective in controlling either grass species on any of the evaluation dates.

Balance Pro achieved excellent velvetleaf, common waterhemp, and common lambsquarters control on June 8, July 3, and 29. No treatments, other than Balance Pro, provided velvetleaf control. All 1X rates of the herbicides, except Define and 1/2X rates of Harness and Topnotch, provided good to excellent common waterhemp control on July 3 and 29. Common lambsquarters control on July 3 and 29 was marginally acceptable with 1X rates of Harness and Topnotch. (Dept. of Agronomy, Iowa State University, Ames)

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8550

Planting Date: 05-21-02 Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM

pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS

Fert. Level: EXCELLENT

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-21-02
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	63 F
% Relative Humidity:	46
Wind Velocity, Unit:	10 MPH
Soil Temp., Unit:	55 F
Soil Moisture:	DRY
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD -
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
	-
Stage Scale:	-
Density, Unit:	- -

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

Weed Code							CHEAL	ZEAMD	SETFA	SETLU	ABUTH	AMATA
Rating Data Type							CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent	percent
Rating Date							06-08-02	07-03-02	07-03-02	07-03-02	07-03-02	07-03-02
Trt-Eval Interval							18 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Appl Stg	Code				
1	Untreated								0	0	0	0
2	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	PRE	A	99	0	92	92
3	Balance Pro	4	0.07	LB A/A	2.25	FL OZ/A	PRE	A	99	0	92	90
4	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	0	92	90
5	Define	60	0.675	LB A/A	18.0	OZ/A	PRE	A	48	0	75	78
6	Harness	7	1.97	LB A/A	2.25	PT/A	PRE	A	95	0	93	93
7	Topnotch	3.2	2.0	LB A/A	2.5	QT/A	PRE	A	95	0	92	93
8	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	52	0	77	78
9	Outlook	6	0.84	LB A/A	18.0	FL OZ/A	PRE	A	80	0	85	85
10	Define	60	0.337	LB A/A	9.0	OZ/A	PRE	A	47	0	57	58
11	Harness	7	0.98	LB A/A	1.125	PT/A	PRE	A	73	0	75	75
12	Topnotch	3.2	1.0	LB A/A	1.25	QT/A	PRE	A	72	0	82	83
13	Dual II Magnum	7.64	0.8	LB A/A	0.835	PT/A	PRE	A	42	0	62	62
14	Outlook	6	0.42	LB A/A	9.0	FL OZ/A	PRE	A	42	0	67	63
LSD (P=.05)							12.4	0.0	9.3	8.7	12.6	10.1

Iowa State University

Callisto and Dual II Magnum premix formulations with and without Atrazine and applied preemergence and postemergence for weed control in corn, Ames, IA, 2002.

Trial ID: ACC 13

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-21-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate preemergence and postemergence applied A12854 and A12909 for crop phytotoxicity and weed control in corn.

Conclusions: No significant differences in corn stand between treatments were determined. Preemergence (PRE) applied A12854 and A12909 demonstrated excellent crop safety. Three to 5% corn injury was observed on June 8 with PRE Balance Pro plus Atrazine and Topnotch plus Hornet WDG. On June 8 and 14, 0 to 10% corn injury was observed from early postemergence (EPOST) applications of A12854 plus Accent, A12909 plus Accent and postemergence (POST) Marksman. Giant foxtail control was good to excellent with PRE, EPOST, and POST applied treatments when observed on June 19. On July 15, all treatments except PRE A12854, A12909, and Bicep II Magnum provided 90% and higher giant foxtail control. Nearly all of the treatments afforded excellent velvetleaf, common waterhemp, and common lambsquarters control on June 19 and July 15. Exceptions were PRE Bicep II Magnum and Harness Xtra. Neither gave acceptable velvetleaf control. Corn yields ranged from 176 to 214 bu/A. A large LSD resulted with few significant differences between treatments. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: ZEAMD CORN, FIELD

Variety: GARST 8550

Planting Date: 05-21-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

Iowa State University

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM
 pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-21-02	05-31-02	06-10-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	POST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	63 F	86 F	81 F
% Relative Humidity:	46	46	83
Wind Velocity, Unit:	10 MPH	2 MPH	11 MPH
Soil Temp., Unit:	54 F	75 F	75 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	0	10	90

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V1	ZEAMD V4
Stage Scale:	-	DESC	DESC
Height, Unit:	-	1.5 IN	5 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-2 LEAF	SETFA 2-4 L, 1T
Stage Scale:	-	.13-.3 IN	1-3 IN
Density, Unit:	- -	50 FT2	0-3 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH -	ABUTH 2-4 LEAF
Stage Scale:	-	-	1-3 IN
Density, Unit:	- -	- -	0-3 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -	AMATA 1-4 LEAF
Stage Scale:	-	-	0.5-1
Density, Unit:	- -	- -	<1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	-	4-6 IN
Density, Unit:	- -	- -	0-2 FT2

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	TERRA PRO
Operating Pressure:	30	30	30
Nozzle Type:	11002	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Callisto and Dual II Magnum premix formulations with and without Atrazine and applied preemergence and postemergence for weed control in corn, Ames, IA, 2002.

Trial ID: ACC 13

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD	SETFA	
Rating Data Type							STAND	PHYGEN	PHYGEN	PHYGEN	PHYGEN	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	percent	
Rating Date							07-25-02	06-01-02	06-08-02	06-14-02	06-19-02	06-19-02	
Trt-Eval Interval							65 DA-A	11 DA-A	8 DA-B	24 DA-A	24 DA-A	24 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
1	Untreated							23	0	0	0	0	
2	A12854	3.94	2.46 LB A/A	2.5 QT/A	PRE	A		26	0	0	0	87	
3	A12854	3.94	2.95 LB A/A	3.0 QT/A	PRE	A		28	0	0	0	92	
4	A12909	3.67	1.84 LB A/A	2.0 QT/A	PRE	A		26	0	0	0	87	
5	A12909	3.67	2.2 LB A/A	2.4 QT/A	PRE	A		25	0	2	0	85	
6	Bicep II Magnum	5.5	2.9 LB A/A	2.1 QT/A	PRE	A		28	0	0	0	87	
7	Balance Pro Atrazine	4 4	0.094 LB A/A 1.0 LB A/A	3.0 FL OZ/A 1.0 QT/A	PRE PRE	A A		27	0	5	5	3	
8	Harness Xtra	6	3.0 LB A/A	2.0 QT/A	PRE	A		26	0	0	0	95	
9	Topnotch Hornet WDG	3.2 68.5	2.0 LB A/A 0.128 LB AE/A	2.5 QT/A 3.0 OZ/A	PRE PRE	A A		28	0	3	2	2	
10	Outlook Marksman COC	6 3.2	0.84 LB A/A 1.2 LB A/A 1.0 % V/V	18.0 FL OZ/A 3.0 PT/A 1.0 % V/V	PRE POST POST	A C C		25	0	0	10	7	
11	A12854 Accent	3.94 75	2.46 LB A/A 0.0155 LB A/A	2.5 QT/A 0.33 OZ/A	EPOST EPOST	B B		28	0	10	5	2	
12	A12854 Accent	3.94 75	2.95 LB A/A 0.0155 LB A/A	3.0 QT/A 0.33 OZ/A	EPOST EPOST	B B		25	0	8	5	3	
13	A12909 Accent	3.67 75	1.84 LB A/A 0.0155 LB A/A	2.0 QT/A 0.33 OZ/A	EPOST EPOST	B B		25	0	8	3	3	
14	A12909 Accent	3.67 75	2.2 LB A/A 0.0155 LB A/A	2.4 QT/A 0.33 OZ/A	EPOST EPOST	B B		26	0	10	0	5	
LSD (P=.05)								2.6	0.0	3.5	1.8	3.2	5.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 06-19-02 24 DA-A	AMATA CONTROL percent 06-19-02 24 DA-A	CHEAL CONTROL percent 06-19-02 24 DA-A	ZEAMD PHYGEN percent 07-15-02 55 DA-A	SETFA CONTROL percent 07-15-02 55 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	A12854	3.94	2.46 LB A/A	2.5 QT/A		PRE A		99	99	99	0	
3	A12854	3.94	2.95 LB A/A	3.0 QT/A		PRE A		99	99	99	0	
4	A12909	3.67	1.84 LB A/A	2.0 QT/A		PRE A		99	99	99	0	
5	A12909	3.67	2.2 LB A/A	2.4 QT/A		PRE A		99	99	99	0	
6	Bicep II Magnum	5.5	2.9 LB A/A	2.1 QT/A		PRE A		47	99	99	0	
7	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A		PRE A		99	99	99	0	
	Atrazine	4	1.0 LB A/A	1.0 QT/A		PRE A						
8	Harness Xtra	6	3.0 LB A/A	2.0 QT/A		PRE A		63	99	99	0	
9	Topnotch	3.2	2.0 LB A/A	2.5 QT/A		PRE A		99	99	99	0	
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A		PRE A						
10	Outlook	6	0.84 LB A/A	18.0 FL OZ/A		PRE A		98	99	99	0	
	Marksman	3.2	1.2 LB A/A	3.0 PT/A		POST C						
	COC		1.0 % V/V	1.0 % V/V		POST C						
11	A12854	3.94	2.46 LB A/A	2.5 QT/A		EPOST B		99	99	99	0	
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
12	A12854	3.94	2.95 LB A/A	3.0 QT/A		EPOST B		99	99	99	0	
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
13	A12909	3.67	1.84 LB A/A	2.0 QT/A		EPOST B		98	99	99	0	
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
14	A12909	3.67	2.2 LB A/A	2.4 QT/A		EPOST B		99	99	99	0	
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
LSD (P=.05)								4.7	0.0	0.0	0.0	5.6

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-15-02 55 DA-A	AMATA CONTROL percent 07-15-02 55 DA-A	CHEAL CONTROL percent 07-15-02 55 DA-A	ZEAMD YIELD BU/A 10-11-02 143 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code		
1	Untreated									0	
2	A12854	3.94	2.46	LB A/A	2.5	QT/A	PRE	A		99	
3	A12854	3.94	2.95	LB A/A	3.0	QT/A	PRE	A		99	
4	A12909	3.67	1.84	LB A/A	2.0	QT/A	PRE	A		99	
5	A12909	3.67	2.2	LB A/A	2.4	QT/A	PRE	A		99	
6	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	PRE	A		45	
7	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	PRE	A		99	
	Atrazine	4	1.0	LB A/A	1.0	QT/A	PRE	A		99	
8	Harness Xtra	6	3.0	LB A/A	2.0	QT/A	PRE	A		60	
9	Topnotch	3.2	2.0	LB A/A	2.5	QT/A	PRE	A		99	
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	PRE	A		99	
10	Outlook	6	0.84	LB A/A	18.0	FL OZ/A	PRE	A		98	
	Marksman	3.2	1.2	LB A/A	3.0	PT/A	POST	C		99	
	COC		1.0	% V/V	1.0	% V/V	POST	C		99	
11	A12854	3.94	2.46	LB A/A	2.5	QT/A	EPOST	B		99	
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B		99	
12	A12854	3.94	2.95	LB A/A	3.0	QT/A	EPOST	B		99	
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B		99	
13	A12909	3.67	1.84	LB A/A	2.0	QT/A	EPOST	B		98	
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B		99	
14	A12909	3.67	2.2	LB A/A	2.4	QT/A	EPOST	B		99	
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B		99	
LSD (P=.05)											4.4
											0.0
											0.0
											31.6

Iowa State University

Evaluation of Callisto premixes in tank-mix combinations with Gramoxone Max or Touchdown IQ for weed control in no-tillage corn, Ames, IA, 2002.

Trial ID: ACN 1
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: USA Initiation Date: 05-24-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate two and three way mesotrione pre-mixtures for crop phytotoxicity and one pass weed control in no-tillage corn.

Conclusions: Significant differences in corn stand between herbicide treatments were observed. Corn stand was adversely affected by heavy giant foxtail pressure in the untreated control and in treatments where Gramoxone Max or Touchdown IQ were not included for burndown of vegetation at planting. No corn injury was observed with any treatment when observed on June 2 and 21. Giant foxtail, velvetleaf, common waterhemp, common lambsquarters and Pennsylvania smartweed control was good to excellent with A 12854 tank-mixed with either Gramoxone Max and Touchdown IQ when observed on June 7 and June 21. Giant foxtail control was not acceptable with A 12909 when tank-mixed with Gramoxone Max or Gramoxone Max plus 2, 4-D LV4 on these dates, while it was acceptable when tank-mixed with Touchdown IQ. Broadleaf weed control with these treatments, however, was excellent. Further, giant foxtail control was acceptable when A 12909 was tank-mixed with Atrazine and Gramoxone Max. A 12909 and A 12854 without Gramoxone Max or Touchdown IQ did not provide burndown of giant foxtail but, did control broadleaf weeds. When observed on July 25, giant foxtail control ranged from 5 to 85%, while broadleaf weed control was good to excellent with all treatments except Fieldmaster and Bicep II Magnum. These treatments no longer provided adequate velvetleaf control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.
6.	THLAR	PENNYCRESS, FIELD	THLASPI ARVENSE L.

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8550
Planting Date: 05-24-02 Planting Method: DIRECT DRILLED
Rate: 27700 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Tillage Type: NO-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

Iowa State University

MAINTENANCE

Field Prep./Maintenance: The field was left un-tilled from the soybean cropping year 2001. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 46% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM
 pH: 7.75 Soil Name: CANISTEO, NICOLLET
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	05-24-02
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	54 F
% Relative Humidity:	61
Wind Velocity, Unit:	7 MPH
Soil Temp., Unit:	59 F
Soil Moisture:	DRY
% Cloud Cover:	70

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD -
Stage Scale:	-
	-

Iowa State University

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-3 LEAF
Stage Scale:	0.13-4 IN
Density, Unit:	90 FT2
Weed 2 Code, Stage:	ABUTH COTYL-3
Stage Scale:	0.5-3 IN
Density, Unit:	0-15 FT2
Weed 3 Code, Stage:	AMATA COTYL-4
Stage Scale:	0.13-3 IN
Density, Unit:	0-15 FT2
Weed 4 Code, Stage:	CHEAL 4-NUM
Stage Scale:	0.5-7 IN
Density, Unit:	0-25 FT2
Weed 5 Code, Stage:	POLPY 1-3
Stage Scale:	0.5-2 IN
Density, Unit:	<1 FT2
Weed 6 Code, Stage:	THLAR NUMEROUS
Stage Scale:	5-8 IN
Density, Unit:	0-4 FT2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

Evaluation of Callisto premixes in tank-mix combinations with Gramoxone Max or Touchdown IQ for weed control in no-tillage corn, Ames, IA, 2002.

Trial ID: ACN 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code						ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH
Rating Data Type						STAND	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit						17.5 ft	percent	percent	percent	percent
Rating Date						07-15-02	06-02-02	06-07-02	06-07-02	06-07-02
Trt-Eval Interval						52 DA-A	9 DA-A	14 DA-A	14 DA-A	14 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code			
1	Untreated							10	0	0
2	A12909	3.67	1.84	2.0	QT/A	PRE	A	24	0	0
	Gramoxone Max	3	0.62	0.83	LB A/A	PRE	A			77
	NIS		0.25	0.25	LB A/A	PRE	A			99
			% V/V	% V/V						
3	A12909	3.67	2.2	2.4	LB A/A	PRE	A	23	0	0
	Gramoxone Max	3	0.62	0.83	LB A/A	PRE	A			78
	NIS		0.25	0.25	LB A/A	PRE	A			99
			% V/V	% V/V						
4	A12909	3.67	1.84	2.0	LB A/A	PRE	A	24	0	0
	Touchdown IQ	3	0.56	0.75	LB AE/A	PRE	A			98
	AMS		8.5	8.5	LB/100 GAL	PRE	A			99
5	A12909	3.67	2.2	2.4	LB A/A	PRE	A	25	0	0
	Touchdown IQ	3	0.56	0.75	LB AE/A	PRE	A			98
	AMS		8.5	8.5	LB/100 GAL	PRE	A			99
6	A12909	3.67	1.84	2.0	LB A/A	PRE	A	24	0	0
	Gramoxone Max	3	0.62	0.83	LB A/A	PRE	A			73
	2, 4-D LV4	4	0.5	0.5	LB A/A	PRE	A			99
	NIS		0.25	0.25	% V/V	PRE	A			
7	A12909	3.67	2.2	2.4	LB A/A	PRE	A	24	0	0
	Gramoxone Max	3	0.62	0.83	LB A/A	PRE	A			75
	2, 4-D LV4	4	0.5	0.5	LB A/A	PRE	A			99
	NIS		0.25	0.25	% V/V	PRE	A			
8	A12854	3.94	2.5	2.5	LB A/A	PRE	A	26	0	0
	Gramoxone Max	3	0.62	0.83	LB A/A	PRE	A			95
	NIS		0.25	0.25	% V/V	PRE	A			99
9	A12854	3.94	3.0	3.0	LB A/A	PRE	A	23	0	0
	Gramoxone Max	3	0.62	0.83	LB A/A	PRE	A			92
	NIS		0.25	0.25	% V/V	PRE	A			99
10	A12854	3.94	2.5	2.5	LB A/A	PRE	A	24	0	0
	Touchdown IQ	3	0.56	0.75	LB AE/A	PRE	A			98
	AMS		8.5	8.5	LB/100 GAL	PRE	A			98
11	A12854	3.94	3.0	3.0	LB A/A	PRE	A	25	0	0
	Touchdown IQ	3	0.56	0.75	LB AE/A	PRE	A			98
	AMS		8.5	8.5	LB/100 GAL	PRE	A			99
12	A12854	3.94	2.5	2.5	LB A/A	PRE	A	22	0	0
	Gramoxone Max	3	0.62	0.83	LB A/A	PRE	A			92
	2, 4-D LV4	4	0.5	0.5	LB A/A	PRE	A			99
	NIS		0.25	0.25	% V/V	PRE	A			
13	A12854	3.94	3.0	3.0	LB A/A	PRE	A	24	0	0
	Gramoxone Max	3	0.62	0.83	LB A/A	PRE	A			96
	2, 4-D LV4	4	0.5	0.5	LB A/A	PRE	A			99
	NIS		0.25	0.25	% V/V	PRE	A			

Iowa State University

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	
Rating Date							07-15-02	06-02-02	06-07-02	06-07-02	06-07-02	
Trt-Eval Interval							52 DA-A	9 DA-A	14 DA-A	14 DA-A	14 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
14	GF688	3.5	2.19 LB A/A	2.5	QT/A	PRE	A	26	0	0	98	99
	Glyphomax Plus	3	0.56 LB AE/A	0.75	QT/A	PRE	A					
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	PRE	A					
15	Fieldmaster	4.25	4.25 LB A/A	4.0	QT/A	PRE	A	27	0	0	98	98
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	PRE	A					
16	Bicep II Magnum	5.5	2.9 LB A/A	2.1	QT/A	PRE	A	23	0	0	95	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
17	A12909	3.67	1.84 LB A/A	2.0	QT/A	PRE	A	24	0	0	96	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
18	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	24	0	0	95	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
19	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	18	0	0	27	99
	COC		1.0 % V/V	1.0	% V/V	PRE	A					
20	A12854	3.94	3.0 LB A/A	3.0	QT/A	PRE	A	17	0	0	20	99
	COC		1.0 % V/V	1.0	% V/V	PRE	A					
LSD (P=.05)								3.8	0.0	0.0	7.6	1.2

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval						AMATA CONTROL percent 06-07-02 14 DA-A	CHEAL CONTROL percent 06-07-02 14 DA-A	POLPY CONTROL percent 06-07-02 14 DA-A	THLAR CONTROL percent 06-07-02 14 DA-A	ZEAMD PHYGEN percent 06-21-02 28 DA-A			
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated							0	0	0			
2	A12909 Gramoxone Max NIS	3.67 3	1.84 0.62 0.25	LB A/A LB A/A % V/V	2.0 0.83 0.25	QT/A QT/A % V/V	PRE PRE PRE	A A A	99	99	99	99	0
3	A12909 Gramoxone Max NIS	3.67 3	2.2 0.62 0.25	LB A/A LB A/A % V/V	2.4 0.83 0.25	QT/A QT/A % V/V	PRE PRE PRE	A A A	99	99	99	99	0
4	A12909 Touchdown IQ AMS	3.67 3	1.84 0.56 8.5	LB A/A LB AE/A LB/100 GAL	2.0 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	99	94	99	0
5	A12909 Touchdown IQ AMS	3.67 3	2.2 0.56 8.5	LB A/A LB AE/A LB/100 GAL	2.4 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	99	94	99	0
6	A12909 Gramoxone Max 2, 4-D LV4 NIS	3.67 3 4	1.84 0.62 0.5 0.25	LB A/A LB A/A LB A/A % V/V	2.0 0.83 0.5 0.25	QT/A QT/A QT/A % V/V	PRE PRE PRE PRE	A A A A	99	99	99	99	0
7	A12909 Gramoxone Max 2, 4-D LV4 NIS	3.67 3 4	2.2 0.62 0.5 0.25	LB A/A LB A/A LB A/A % V/V	2.4 0.83 0.5 0.25	QT/A QT/A QT/A % V/V	PRE PRE PRE PRE	A A A A	99	99	99	99	0
8	A12854 Gramoxone Max NIS	3.94 3	2.5 0.62 0.25	LB A/A LB A/A % V/V	2.5 0.83 0.25	QT/A QT/A % V/V	PRE PRE PRE	A A A	99	99	99	99	0
9	A12854 Gramoxone Max NIS	3.94 3	3.0 0.62 0.25	LB A/A LB A/A % V/V	3.0 0.83 0.25	QT/A QT/A % V/V	PRE PRE PRE	A A A	99	99	99	99	0
10	A12854 Touchdown IQ AMS	3.94 3	2.5 0.56 8.5	LB A/A LB AE/A LB/100 GAL	2.5 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	98	98	98	98	0
11	A12854 Touchdown IQ AMS	3.94 3	3.0 0.56 8.5	LB A/A LB AE/A LB/100 GAL	3.0 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	99	99	99	0
12	A12854 Gramoxone Max 2, 4-D LV4 NIS	3.94 3 4	2.5 0.62 0.5 0.25	LB A/A LB A/A LB A/A % V/V	2.5 0.83 0.5 0.25	QT/A QT/A QT/A % V/V	PRE PRE PRE PRE	A A A A	99	99	99	99	0
13	A12854 Gramoxone Max 2, 4-D LV4 NIS	3.94 3 4	3.0 0.62 0.5 0.25	LB A/A LB A/A LB A/A % V/V	3.0 0.83 0.5 0.25	QT/A QT/A QT/A % V/V	PRE PRE PRE PRE	A A A A	99	99	99	99	0
14	GF688 Glyphomax Plus AMS	3.5 3	2.19 0.56 8.5	LB A/A LB AE/A LB/100 GAL	2.5 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	92	99	99	0
15	Fieldmaster AMS	4.25 8.5	4.25 LB A/A LB/100 GAL	4.0 8.5	QT/A LB/100 GAL	PRE PRE	A A	98	99	99	98	0	

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Weed Code							AMATA	CHEAL	POLPY	THLAR	ZEAMD	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-07-02	06-07-02	06-07-02	06-07-02	06-21-02	
Trt-Eval Interval							14 DA-A	14 DA-A	14 DA-A	14 DA-A	28 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
16	Bicep II Magnum	5.5	2.9 LB A/A	2.1	QT/A	PRE	A	99	99	99	99	0
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
17	A12909	3.67	1.84 LB A/A	2.0	QT/A	PRE	A	99	99	99	99	0
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
18	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	99	99	99	99	0
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
19	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	99	99	99	99	0
	COC		1.0 % V/V	1.0	% V/V	PRE	A					
20	A12854	3.94	3.0 LB A/A	3.0	QT/A	PRE	A	99	99	99	99	0
	COC		1.0 % V/V	1.0	% V/V	PRE	A					
LSD (P=.05)							1.2	1.3	4.2	1.2	0.0	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval						SETFA CONTROL percent 06-21-02 28 DA-A	ABUTH CONTROL percent 06-21-02 28 DA-A	AMATA CONTROL percent 06-21-02 28 DA-A	CHEAL CONTROL percent 06-21-02 28 DA-A	POLPY CONTROL percent 06-21-02 28 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated							0	0	0
2	A12909 Gramoxone Max NIS	3.67 3	1.84 0.62 0.25	LB LB %	A/A A/A V/V	2.0 0.83 0.25	QT/A QT/A V/V	PRE PRE PRE	A A A	62 99 99
3	A12909 Gramoxone Max NIS	3.67 3	2.2 0.62 0.25	LB LB %	A/A A/A V/V	2.4 0.83 0.25	QT/A QT/A V/V	PRE PRE PRE	A A A	63 99 99
4	A12909 Touchdown IQ AMS	3.67 3	1.84 0.56 8.5	LB LB LB/100	A/A AE/A GAL	2.0 0.75 8.5	QT/A QT/A LB/100	PRE PRE PRE	A A A	95 98 99
5	A12909 Touchdown IQ AMS	3.67 3	2.2 0.56 8.5	LB LB LB/100	A/A AE/A GAL	2.4 0.75 8.5	QT/A QT/A LB/100	PRE PRE PRE	A A A	95 99 99
6	A12909 Gramoxone Max 2, 4-D LV4 NIS	3.67 3 4	1.84 0.62 0.5 0.25	LB LB LB %	A/A A/A A/A V/V	2.0 0.83 0.5 0.25	QT/A QT/A QT/A V/V	PRE PRE PRE PRE	A A A A	68 99 99 99
7	A12909 Gramoxone Max 2, 4-D LV4 NIS	3.67 3 4	2.2 0.62 0.5 0.25	LB LB LB %	A/A A/A A/A V/V	2.4 0.83 0.5 0.25	QT/A QT/A QT/A V/V	PRE PRE PRE PRE	A A A A	65 99 99 99
8	A12854 Gramoxone Max NIS	3.94 3	2.5 0.62 0.25	LB LB %	A/A A/A V/V	2.5 0.83 0.25	QT/A QT/A V/V	PRE PRE PRE	A A A	90 99 99
9	A12854 Gramoxone Max NIS	3.94 3	3.0 0.62 0.25	LB LB %	A/A A/A V/V	3.0 0.83 0.25	QT/A QT/A V/V	PRE PRE PRE	A A A	88 99 99
10	A12854 Touchdown IQ AMS	3.94 3	2.5 0.56 8.5	LB LB LB/100	A/A AE/A GAL	2.5 0.75 8.5	QT/A QT/A LB/100	PRE PRE PRE	A A A	96 99 99
11	A12854 Touchdown IQ AMS	3.94 3	3.0 0.56 8.5	LB LB LB/100	A/A AE/A GAL	3.0 0.75 8.5	QT/A QT/A LB/100	PRE PRE PRE	A A A	98 99 99
12	A12854 Gramoxone Max 2, 4-D LV4 NIS	3.94 3 4	2.5 0.62 0.5 0.25	LB LB LB %	A/A A/A A/A V/V	2.5 0.83 0.5 0.25	QT/A QT/A QT/A V/V	PRE PRE PRE PRE	A A A A	87 99 99 99
13	A12854 Gramoxone Max 2, 4-D LV4 NIS	3.94 3 4	3.0 0.62 0.5 0.25	LB LB LB %	A/A A/A A/A V/V	3.0 0.83 0.5 0.25	QT/A QT/A QT/A V/V	PRE PRE PRE PRE	A A A A	92 99 99 99
14	GF688 Glyphomax Plus AMS	3.5 3	2.19 0.56 8.5	LB LB LB/100	A/A AE/A GAL	2.5 0.75 8.5	QT/A QT/A LB/100	PRE PRE PRE	A A A	95 99 99
15	Fieldmaster AMS	4.25	4.25	LB LB/100	A/A GAL	4.0 8.5	QT/A LB/100	PRE PRE	A A	95 65

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Weed Code							SETFA	ABUTH	AMATA	CHEAL	POLPY
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-21-02	06-21-02	06-21-02	06-21-02	06-21-02
Trt-Eval Interval							28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
16	Bicep II Magnum	5.5	2.9 LB A/A	2.1	QT/A	PRE	A	92	73	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A				
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A				
	NIS		0.25 % V/V	0.25	% V/V	PRE	A				
17	A12909	3.67	1.84 LB A/A	2.0	QT/A	PRE	A	96	99	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A				
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A				
	NIS		0.25 % V/V	0.25	% V/V	PRE	A				
18	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	95	99	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A				
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A				
	NIS		0.25 % V/V	0.25	% V/V	PRE	A				
19	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	22	99	99	99
	COC		1.0 % V/V	1.0	% V/V	PRE	A				
20	A12854	3.94	3.0 LB A/A	3.0	QT/A	PRE	A	15	99	99	99
	COC		1.0 % V/V	1.0	% V/V	PRE	A				
LSD (P=.05)							10.2	3.5	0.0	3.5	3.5

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Weed Code						THLAR	SETFA	ABUTH	AMATA	CHEAL			
Rating Data Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL			
Rating Unit						percent	percent	percent	percent	percent			
Rating Date						06-21-02	07-25-02	07-25-02	07-25-02	07-25-02			
Trt-Eval Interval						28 DA-A	62 DA-A	62 DA-A	62 DA-A	62 DA-A			
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated							0	0	0			
2	A12909 Gramoxone Max NIS	3.67 3	1.84 0.62 0.25	LB A/A LB A/A % V/V	2.0 0.83 0.25	QT/A QT/A % V/V	PRE PRE PRE	A A A	99	40	99	99	99
3	A12909 Gramoxone Max NIS	3.67 3	2.2 0.62 0.25	LB A/A LB A/A % V/V	2.4 0.83 0.25	QT/A QT/A % V/V	PRE PRE PRE	A A A	99	45	99	99	99
4	A12909 Touchdown IQ AMS	3.67 3	1.84 0.56 8.5	LB A/A LB AE/A LB/100 GAL	2.0 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	83	98	99	98
5	A12909 Touchdown IQ AMS	3.67 3	2.2 0.56 8.5	LB A/A LB AE/A LB/100 GAL	2.4 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	83	99	99	99
6	A12909 Gramoxone Max 2, 4-D LV4 NIS	3.67 3 4	1.84 0.62 0.5 0.25	LB A/A LB A/A LB A/A % V/V	2.0 0.83 0.5 0.25	QT/A QT/A QT/A % V/V	PRE PRE PRE PRE	A A A A	99	48	99	99	99
7	A12909 Gramoxone Max 2, 4-D LV4 NIS	3.67 3 4	2.2 0.62 0.5 0.25	LB A/A LB A/A LB A/A % V/V	2.4 0.83 0.5 0.25	QT/A QT/A QT/A % V/V	PRE PRE PRE PRE	A A A A	99	48	98	99	99
8	A12854 Gramoxone Max NIS	3.94 3	2.5 0.62 0.25	LB A/A LB A/A % V/V	2.5 0.83 0.25	QT/A QT/A % V/V	PRE PRE PRE	A A A	99	78	99	99	99
9	A12854 Gramoxone Max NIS	3.94 3	3.0 0.62 0.25	LB A/A LB A/A % V/V	3.0 0.83 0.25	QT/A QT/A % V/V	PRE PRE PRE	A A A	99	78	99	99	99
10	A12854 Touchdown IQ AMS	3.94 3	2.5 0.56 8.5	LB A/A LB AE/A LB/100 GAL	2.5 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	85	99	98	99
11	A12854 Touchdown IQ AMS	3.94 3	3.0 0.56 8.5	LB A/A LB AE/A LB/100 GAL	3.0 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	83	99	99	99
12	A12854 Gramoxone Max 2, 4-D LV4 NIS	3.94 3 4	2.5 0.62 0.5 0.25	LB A/A LB A/A LB A/A % V/V	2.5 0.83 0.5 0.25	QT/A QT/A QT/A % V/V	PRE PRE PRE PRE	A A A A	99	70	99	99	99
13	A12854 Gramoxone Max 2, 4-D LV4 NIS	3.94 3 4	3.0 0.62 0.5 0.25	LB A/A LB A/A LB A/A % V/V	3.0 0.83 0.5 0.25	QT/A QT/A QT/A % V/V	PRE PRE PRE PRE	A A A A	99	82	99	99	99
14	GF688 Glyphomax Plus AMS	3.5 3	2.19 0.56 8.5	LB A/A LB AE/A LB/100 GAL	2.5 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	87	99	99	86
15	Fieldmaster AMS	4.25 3	4.25 0.56 8.5	LB A/A LB AE/A LB/100 GAL	4.0 0.75 8.5	QT/A QT/A LB/100 GAL	PRE PRE PRE	A A A	99	83	45	99	98

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Weed Code							THLAR	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-21-02	07-25-02	07-25-02	07-25-02	07-25-02	
Trt-Eval Interval							28 DA-A	62 DA-A	62 DA-A	62 DA-A	62 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
16	Bicep II Magnum	5.5	2.9 LB A/A	2.1	QT/A	PRE	A	99	82	52	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
17	A12909	3.67	1.84 LB A/A	2.0	QT/A	PRE	A	99	85	99	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
18	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	99	85	99	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A					
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A					
	NIS		0.25 % V/V	0.25	% V/V	PRE	A					
19	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	99	12	99	99	99
	COC		1.0 % V/V	1.0	% V/V	PRE	A					
20	A12854	3.94	3.0 LB A/A	3.0	QT/A	PRE	A	99	5	99	99	99
	COC		1.0 % V/V	1.0	% V/V	PRE	A					
LSD (P=.05)							0.0	13.9	4.3	0.9	5.7	

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Weed Code							POLPY	THLAR	
Rating Data Type							CONTROL	CONTROL	
Rating Unit							percent	percent	
Rating Date							07-25-02	07-25-02	
Trt-Eval Interval							62 DA-A	62 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated							0	0
2	A12909	3.67	1.84 LB A/A	2.0	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
3	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
4	A12909	3.67	1.84 LB A/A	2.0	QT/A	PRE	A	93	99
	Touchdown IQ	3	0.56 LB AE/A	0.75	QT/A	PRE	A		
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	PRE	A		
5	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	96	99
	Touchdown IQ	3	0.56 LB AE/A	0.75	QT/A	PRE	A		
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	PRE	A		
6	A12909	3.67	1.84 LB A/A	2.0	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
7	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
8	A12854	3.94	2.5 LB A/A	2.5	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
9	A12854	3.94	3.0 LB A/A	3.0	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
10	A12854	3.94	2.5 LB A/A	2.5	QT/A	PRE	A	99	99
	Touchdown IQ	3	0.56 LB AE/A	0.75	QT/A	PRE	A		
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	PRE	A		
11	A12854	3.94	3.0 LB A/A	3.0	QT/A	PRE	A	99	99
	Touchdown IQ	3	0.56 LB AE/A	0.75	QT/A	PRE	A		
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	PRE	A		
12	A12854	3.94	2.5 LB A/A	2.5	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
13	A12854	3.94	3.0 LB A/A	3.0	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
14	GF688	3.5	2.19 LB A/A	2.5	QT/A	PRE	A	99	99
	Glyphomax Plus	3	0.56 LB AE/A	0.75	QT/A	PRE	A		
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	PRE	A		
15	Fieldmaster	4.25	4.25 LB A/A	4.0	QT/A	PRE	A	99	99
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	PRE	A		

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Weed Code							POLPY	THLAR	
Rating Data Type							CONTROL	CONTROL	
Rating Unit							percent	percent	
Rating Date							07-25-02	07-25-02	
Trt-Eval Interval							62 DA-A	62 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
16	Bicep II Magnum	5.5	2.9 LB A/A	2.1	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	2, 4-D LV4	4	0.5 LB A/A	0.5	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
17	A12909	3.67	1.84 LB A/A	2.0	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
18	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	99	99
	Gramoxone Max	3	0.62 LB A/A	0.83	QT/A	PRE	A		
	Atrazine	4	1.5 LB A/A	1.5	QT/A	PRE	A		
	NIS		0.25 % V/V	0.25	% V/V	PRE	A		
19	A12909	3.67	2.2 LB A/A	2.4	QT/A	PRE	A	99	99
	COC		1.0 % V/V	1.0	% V/V	PRE	A		
20	A12854	3.94	3.0 LB A/A	3.0	QT/A	PRE	A	99	99
	COC		1.0 % V/V	1.0	% V/V	PRE	A		
LSD (P=.05)							4.4	0.0	

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APPLICATION DESCRIPTION

	A
Application Date:	04-23-02
Application Method:	SPRAY
Application Timing:	EPP
Applic. Placement:	BROSOI
Air Temp., Unit:	57 F
% Relative Humidity:	73
Wind Velocity, Unit:	14 MPH
Soil Temp., Unit:	54 F
Soil Moisture:	DAMP
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD -
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1 LEAF
Stage Scale:	0-1 IN
Density, Unit:	1-10 FT2
Weed 2 Code, Stage:	CHEAL 4 LEAF
Stage Scale:	0-1 IN
Density, Unit:	0-1 FT2
Weed 3 Code, Stage:	THLAR ROSETTE
Stage Scale:	2-6 IN
Density, Unit:	0-1 FT2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Hand Boom
Operating Pressure:	25
Nozzle Type:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Evaluation of early preplant applications of Aim with Bicep II Magnum, Guardsman Max, Balance Pro and others for weed control in no-tillage corn, Ames, IA, 2002.

Trial ID: ACN 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	SETFA	CHEAL	THLAR		
Rating Data Type							STAND	PHYGEN	CONTROL	CONTROL	CONTROL		
Rating Unit							17.5 ft	percent	percent	percent	percent		
Rating Date							07-16-02	05-23-02	04-26-02	04-26-02	04-26-02		
Trt-Eval Interval							84 DA-A	30 DA-A	3 DA-A	3 DA-A	3 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Stg	Code					
1	Untreated								20	0	0	0	0
2	Bicep II Magnum	5.5	2.9 LB A/A	2.1 QT/A	EPP	A			24	0	99	99	60
	Aim	2	0.0078 LB A/A	0.5 FL OZ/A	EPP	A							
	COC		1.0 % V/V	1.0 % V/V	EPP	A							
3	Bicep Lite II Magnum	6	3.3 LB A/A	2.2 QT/A	EPP	A			23	0	99	99	63
	Aim	2	0.0078 LB A/A	0.5 FL OZ/A	EPP	A							
	COC		1.0 % V/V	1.0 % V/V	EPP	A							
4	Guardsman Max	5	2.87 LB A/A	4.6 PT/A	EPP	A			25	0	99	99	63
	Aim	2	0.0078 LB A/A	0.5 FL OZ/A	EPP	A							
	COC		1.0 % V/V	1.0 % V/V	EPP	A							
5	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	EPP	A			24	0	99	99	70
	Aim	2	0.0078 LB A/A	0.5 FL OZ/A	EPP	A							
	COC		1.0 % V/V	1.0 % V/V	EPP	A							
6	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	EPP	A			24	0	99	99	43
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP	A							
	COC		1.0 % V/V	1.0 % V/V	EPP	A							
7	Axiom	68	0.81 LB A/A	19.0 OZ/A	EPP	A			24	0	99	99	70
	Aim	2	0.0078 LB A/A	0.5 FL OZ/A	EPP	A							
	COC		1.0 % V/V	1.0 % V/V	EPP	A							
8	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A	EPP	A			25	0	99	99	57
	Hornet WDG	68.5	0.171 LB AE/A	4.0 OZ/A	EPP	A							
	Aim	2	0.0078 LB A/A	0.5 FL OZ/A	EPP	A							
	COC		1.0 % V/V	1.0 % V/V	EPP	A							
LSD (P=.05)							3.2	0.0	0.0	0.0	12.0		

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Weed Code							SETFA	CHEAL	THLAR	SETFA	CHEAL
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							05-03-02	05-03-02	05-03-02	05-13-02	05-13-02
Trt-Eval Interval							10 DA-A	10 DA-A	10 DA-A	20 DA-A	20 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Stg	Appl Code			
1	Untreated								0	0	0
2	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	EPP A		99	99	96
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A				
	COC		1.0	% V/V	1.0	% V/V	EPP A				
3	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	EPP A		99	99	99
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A				
	COC		1.0	% V/V	1.0	% V/V	EPP A				
4	Guardsman Max	5	2.87	LB A/A	4.6	PT/A	EPP A		99	99	96
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A				
	COC		1.0	% V/V	1.0	% V/V	EPP A				
5	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	EPP A		99	99	90
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A				
	COC		1.0	% V/V	1.0	% V/V	EPP A				
6	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	EPP A		99	99	57
	2, 4-D LV4	4	0.5	LB A/A	1.0	PT/A	EPP A				
	COC		1.0	% V/V	1.0	% V/V	EPP A				
7	Axiom	68	0.81	LB A/A	19.0	OZ/A	EPP A		99	99	96
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A				
	COC		1.0	% V/V	1.0	% V/V	EPP A				
8	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	EPP A		99	99	73
	Hornet WDG	68.5	0.171	LB AE/A	4.0	OZ/A	EPP A				
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A				
	COC		1.0	% V/V	1.0	% V/V	EPP A				
LSD (P=.05)							0.0	0.0	16.6	0.0	0.0

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Weed Code							THLAR	
Rating Data Type							CONTROL	
Rating Unit							percent	
Rating Date							05-13-02	
Trt-Eval Interval							20 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Unit	Grow Stg	Appl Code
1	Untreated							0
2	Bicep II Magnum	5.5	2.9	LB A/A	2.1	QT/A	EPP A	99
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A	
	COC		1.0	% V/V	1.0	% V/V	EPP A	
3	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	EPP A	99
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A	
	COC		1.0	% V/V	1.0	% V/V	EPP A	
4	Guardsman Max	5	2.87	LB A/A	4.6	PT/A	EPP A	99
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A	
	COC		1.0	% V/V	1.0	% V/V	EPP A	
5	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	EPP A	99
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A	
	COC		1.0	% V/V	1.0	% V/V	EPP A	
6	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	EPP A	99
	2, 4-D LV4	4	0.5	LB A/A	1.0	PT/A	EPP A	
	COC		1.0	% V/V	1.0	% V/V	EPP A	
7	Axiom	68	0.81	LB A/A	19.0	OZ/A	EPP A	99
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A	
	COC		1.0	% V/V	1.0	% V/V	EPP A	
8	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	EPP A	99
	Hornet WDG	68.5	0.171	LB AE/A	4.0	OZ/A	EPP A	
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	EPP A	
	COC		1.0	% V/V	1.0	% V/V	EPP A	
LSD (P=.05)								0.0

Iowa State University

Early preplant and preemergence applied Balance Pro tank-mixtures followed by postemergence Option and Liberty in no-tillage corn, Ames, IA, 2002.

Trial ID: ACN 3

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 04-12-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate early preplant and preemergence applications of Balance Pro in various tank-mixtures with Atrazine and/or Define for crop phytotoxicity and weed control in corn.

Conclusions: No significant differences were determined in corn stand between treatments. No corn injury was observed on May 23 and 28 from any early preplant (EPP) or preemergence (PRE) applied treatment. Balance at 0.0625 lb/A with Atrazine at either 1.0 or 0.5 lb/A and Roundup UltraMAX early preplant timing (EPP1) did not provide acceptable control of giant foxtail or woolly cupgrass when observed on May 28. All other treatment combinations, rates and application timings achieved excellent giant foxtail and woolly cupgrass control on May 23, except Dual II Magnum and Bicep II Magnum. Giant foxtail control was excellent with Dual II Magnum and Bicep II Magnum, but woolly cupgrass control was poor to fair. Velvetleaf, common waterhemp, common lambsquarters and common cocklebur control was good to excellent with all soil applied treatments except Dual II Magnum when observed May 23.

Postemergence (POST) applications of Option with Distinct and Buctril plus Atrazine caused 10% corn injury when observed June 14, seven days after application. Most treatment combinations and application timings continued to provide acceptable giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and common cocklebur control on July 3. Woolly cupgrass control, however, was generally acceptable only when Balance Pro was included in the soil applied treatment or when followed by POST Liberty plus Atrazine. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETVI	FOXTAIL, GREEN	SETARIA VIRIDIS (L.) P.BEAUUV.
2.	ERBVI	CUPGRASS, WOOLLY	ERIOCHLOA VILLOSA (THUNB.) KUNTH
3.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
5.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD

Variety: PIONEER 33P69 LL

Planting Date: 05-06-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: NO-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: The field was left un-tilled from the soybean cropping year 2001. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 46% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM
 pH: 7.75 Soil Name: CANISTEO, NICOLLET
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	04-12-02	04-23-02	04-30-02	05-07-02	06-07-02
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	EPP1	EPP2	EPP3	PRE	POST
Applic. Placement:	BROSOI	BROSOI	BROSOI	BROSOI	BROFOL
Air Temp., Unit:	48 F	57 F	52 F	61 F	72 F
% Relative Humidity:	88	73	80	71	56
Wind Velocity, Unit:	2 MPH	8 MPH	1 MPH	8 MPH	12 MPH
Soil Temp., Unit:	50 F	54 F	52 F	63 F	73 F
Soil Moisture:	WET	DAMP	WET	MOIST	DRY
% Cloud Cover:	50	0	50	20	0

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	ZEAMD -	ZEAMD -	ZEAMD --	ZEAMD -	ZEAMD V5
Stage Scale:	-	-	-	-	DESC
Height, Unit:	-	-	-	-	10 IN

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WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code, Stage:	SETVI -	SETVI 1 LEAF	SETVI 1 LEAF	SETVI 1-2 LEAF	SETVI 2-4 LEAF
Stage Scale:	-	0.5 IN	0.5 IN	1 IN	2-3 IN
Density, Unit:	- -	5-30 FT2	40 FT2	50 FT2	5-25 FT2
Weed 2 Code, Stage:	ERBVI -	ERBVI -	ERBVI 1 LEAF	ERBVI 1-2 LEAF	ERBVI 2-4 LEAF
Stage Scale:	-	-	1 IN	1 IN	2-3 IN
Density, Unit:	- -	- -	0-1 FT2	0-1 FT2	0-3 FT2
Weed 3 Code, Stage:	ABUTH -	ABUTH COTYLEDON	ABUTH COTYLEDON	ABUTH 2 LEAF	ABUTH 2 LEAF
Stage Scale:	-	0.5 IN	0.5 IN	0.5 IN	1-2 IN
Density, Unit:	- -	0-3 FT2	0-2 FT2	0-1 FT2	0-1 FT2
Weed 4 Code, Stage:	AMATA -	AMATA -	AMATA -	AMATA -	AMATA 2 LF
Stage Scale:	-	-	-	-	1 IN
Density, Unit:	- -	- -	- -	- -	0-1 FT2
Weed 5 Code, Stage:	CHEAL -	CHEAL 4 LEAF	CHEAL NUMEROUS	CHEAL NUMEROUS	CHEAL NUMEROUS
Stage Scale:	-	0.5 IN	1-1.5 IN	1-2 IN	1-3 IN
Density, Unit:	- -	0-1 FT2	0-5 FT2	0-3 FT2	0-1 FT2
Weed 6 Code, Stage:	XANST -	XANST -	XANST -	XANST 2 LEAF	XANST 4-8 LEAF
Stage Scale:	-	-	-	1-2 IN	3-6 IN
Density, Unit:	- -	- -	- -	0-1 FT2	0-1 FT2

APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	HAND BOOM	HAND BOOM	HAND BOOM	TERRA PRO	TERRA PRO
Operating Pressure:	25	25	25	30	30
Nozzle Type:	11003	11003	11003	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

Iowa State University

Early preplant and preemergence applied Balance Pro tank-mixtures followed by postemergence Option and Liberty in no-tillage corn, Ames, IA, 2002.

Trial ID: ACN 3

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETVI	ERBVI
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent
Rating Date							07-16-02	05-23-02	05-28-02	05-28-02	05-28-02
Trit-Eval Interval							70 DA-D	16 DA-D	21 DA-D	21 DA-D	21 DA-D
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							23	0	0	0
2	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	EPP1 A			29	0	0	77
	Atrazine	4	1.0 LB A/A	1.0 QT/A	EPP1 A						50
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A						
	Option	70	0.0656 LB A/A	1.5 OZ/A	POST E						
	Distinct	70	0.131 LB A/A	3.0 OZ/A	POST E						
	MSO		1.5 PT/A	1.5 PT/A	POST E						
	28% UAN		1.5 QT/A	1.5 QT/A	POST E						
3	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	EPP1 A			26	0	0	52
	Atrazine	4	0.5 LB A/A	0.5 QT/A	EPP1 A						62
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A						
	Liberty	1.67	0.365 LB A/A	28.0 FL OZ/A	POST E						
	Atrazine	4	1.0 LB A/A	1.0 QT/A	POST E						
	AMS		3.0 LB/A	3.0 LB/A	POST E						
4	Balance Pro	4	0.14 LB A/A	4.5 FL OZ/A	EPP1 A			25	0	0	90
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP1 A						81
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A						
	Buctril + Atrazine	3	1.13 LB A/A	1.5 QT/A	POST E						
5	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A	EPP1 A			25	0	0	90
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A						40
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A						
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST E						
	COC		1.0 QT/A	1.0 QT/A	POST E						
	28% UAN		2.0 QT/A	2.0 QT/A	POST E						
6	Balance Pro	4	0.082 LB A/A	2.63 FL OZ/A	EPP2 B			26	0	0	98
	Define	60	0.487 LB A/A	13.0 OZ/A	EPP2 B						96
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP2 B						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B						
7	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	EPP2 B			28	0	0	96
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP2 B						96
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B						
8	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	EPP2 B			26	0	0	93
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						68
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B						
9	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	EPP3 C			26	0	0	98
	Guardman Max	5	2.19 LB A/A	3.5 PT/A	EPP3 C						93
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C						

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Weed Code							ZEAMD	ZEAMD	ZEAMD	SETVI	ERBVI	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	
Rating Date							07-16-02	05-23-02	05-28-02	05-28-02	05-28-02	
Trt-Eval Interval							70 DA-D	16 DA-D	21 DA-D	21 DA-D	21 DA-D	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
10	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	FL OZ/A	EPP3	C	29	0	0	98	95
	Atrazine	4	1.5 LB A/A	1.5 QT/A	QT/A	EPP3	C					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	FL OZ/A	EPP3	C					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	LB/100 GAL	EPP3	C					
11	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	QT/A	EPP3	C	27	0	0	98	82
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	FL OZ/A	EPP3	C					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	LB/100 GAL	EPP3	C					
12	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	FL OZ/A	PRE	D	30	0	0	99	98
	Define	60	0.487 LB A/A	13.0 OZ/A	OZ/A	PRE	D					
	Atrazine	4	1.5 LB A/A	1.5 QT/A	QT/A	PRE	D					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	FL OZ/A	PRE	D					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	LB/100 GAL	PRE	D					
13	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	FL OZ/A	PRE	D	27	0	0	96	92
	Harness Xtra	6	3.0 LB A/A	2.0 QT/A	QT/A	PRE	D					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	FL OZ/A	PRE	D					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	LB/100 GAL	PRE	D					
14	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	QT/A	PRE	D	27	0	0	99	91
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	FL OZ/A	PRE	D					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	LB/100 GAL	PRE	D					
LSD (P=.05)								4.7	0.0	0.0	4.7	17.1

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 05-28-02 21 DA-D	AMATA CONTROL percent 05-28-02 21 DA-D	CHEAL CONTROL percent 05-28-02 21 DA-D	XANST CONTROL percent 05-28-02 21 DA-D	ZEAMD PHYGEN percent 06-14-02 7 DA-E
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Balance Pro	4	0.0625	LB A/A	2.0 FL OZ/A	EPP1	A	96	99	99	83
	Atrazine	4	1.0	LB A/A	1.0 QT/A	EPP1	A				
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP1	A				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP1	A				
	Option	70	0.0656	LB A/A	1.5 OZ/A	POST	E				
	Distinct	70	0.131	LB A/A	3.0 OZ/A	POST	E				
	MSO		1.5	PT/A	1.5 PT/A	POST	E				
	28% UAN		1.5	QT/A	1.5 QT/A	POST	E				
3	Balance Pro	4	0.0625	LB A/A	2.0 FL OZ/A	EPP1	A	98	96	99	96
	Atrazine	4	0.5	LB A/A	0.5 QT/A	EPP1	A				
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP1	A				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP1	A				
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	POST	E				
	Atrazine	4	1.0	LB A/A	1.0 QT/A	POST	E				
	AMS		3.0	LB/A	3.0 LB/A	POST	E				
4	Balance Pro	4	0.14	LB A/A	4.5 FL OZ/A	EPP1	A	98	99	99	99
	Atrazine	4	1.5	LB A/A	1.5 QT/A	EPP1	A				
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP1	A				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP1	A				
	Buctril + Atrazine	3	1.13	LB A/A	1.5 QT/A	POST	E				
5	Dual II Magnum	7.64	1.6	LB A/A	1.67 PT/A	EPP1	A	27	95	63	83
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP1	A				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP1	A				
	Callisto	4	0.094	LB A/A	3.0 FL OZ/A	POST	E				
	COC		1.0	QT/A	1.0 QT/A	POST	E				
	28% UAN		2.0	QT/A	2.0 QT/A	POST	E				
6	Balance Pro	4	0.082	LB A/A	2.63 FL OZ/A	EPP2	B	99	99	99	93
	Define	60	0.487	LB A/A	13.0 OZ/A	EPP2	B				
	Atrazine	4	1.5	LB A/A	1.5 QT/A	EPP2	B				
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP2	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP2	B				
7	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	EPP2	B	99	99	99	98
	Atrazine	4	1.5	LB A/A	1.5 QT/A	EPP2	B				
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP2	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP2	B				
8	Bicep II Magnum	5.5	3.3	LB A/A	2.4 QT/A	EPP2	B	93	99	99	96
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP2	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP2	B				
9	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	EPP3	C	99	99	99	99
	Guardman Max	5	2.19	LB A/A	3.5 PT/A	EPP3	C				
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP3	C				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP3	C				
10	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	EPP3	C	98	99	99	99
	Atrazine	4	1.5	LB A/A	1.5 QT/A	EPP3	C				
	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	EPP3	C				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	EPP3	C				

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Weed Code							ABUTH	AMATA	CHEAL	XANST	ZEAMD	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							05-28-02	05-28-02	05-28-02	05-28-02	06-14-02	
Trt-Eval Interval							21 DA-D	21 DA-D	21 DA-D	21 DA-D	7 DA-E	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
11	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	EPP3 C			98	99	99	98	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C							
12	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	PRE D			99	99	99	99	0
	Define	60	0.487 LB A/A	13.0 OZ/A	PRE D							
	Atrazine	4	1.5 LB A/A	1.5 QT/A	PRE D							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
13	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	PRE D			98	99	99	99	0
	Harness Xtra	6	3.0 LB A/A	2.0 QT/A	PRE D							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
14	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	PRE D			96	99	99	99	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
LSD (P=.05)							6.0	1.0	2.6	14.9	2.7	

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Weed Code							ZEAMD	SETVI	ERBVI	ABUTH	AMATA
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							07-03-02	07-03-02	07-03-02	07-03-02	07-03-02
Trt-Eval Interval							26 DA-E	26 DA-E	26 DA-E	26 DA-E	26 DA-E
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	EPP1 A			0	88	53	99
	Atrazine	4	1.0 LB A/A	1.0 QT/A	EPP1 A						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A						
	Option	70	0.0656 LB A/A	1.5 OZ/A	POST E						
	Distinct	70	0.131 LB A/A	3.0 OZ/A	POST E						
	MSO		1.5 PT/A	1.5 PT/A	POST E						
	28% UAN		1.5 QT/A	1.5 QT/A	POST E						
3	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	EPP1 A			0	95	99	99
	Atrazine	4	0.5 LB A/A	0.5 QT/A	EPP1 A						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A						
	Liberty	1.67	0.365 LB A/A	28.0 FL OZ/A	POST E						
	Atrazine	4	1.0 LB A/A	1.0 QT/A	POST E						
	AMS		3.0 LB/A	3.0 LB/A	POST E						
4	Balance Pro	4	0.14 LB A/A	4.5 FL OZ/A	EPP1 A			0	88	90	99
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP1 A						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A						
	Buctril + Atrazine	3	1.13 LB A/A	1.5 QT/A	POST E						
5	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A	EPP1 A			0	75	40	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A						
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST E						
	COC		1.0 QT/A	1.0 QT/A	POST E						
	28% UAN		2.0 QT/A	2.0 QT/A	POST E						
6	Balance Pro	4	0.082 LB A/A	2.63 FL OZ/A	EPP2 B			0	92	95	99
	Define	60	0.487 LB A/A	13.0 OZ/A	EPP2 B						
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP2 B						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B						
7	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	EPP2 B			0	87	95	99
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP2 B						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B						
8	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	EPP2 B			0	82	60	71
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B						
9	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	EPP3 C			0	90	92	99
	Guardsman Max	5	2.19 LB A/A	3.5 PT/A	EPP3 C						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C						
10	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	EPP3 C			0	88	90	99
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP3 C						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C						

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Weed Code							ZEAMD	SETVI	ERBVI	ABUTH	AMATA	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							07-03-02	07-03-02	07-03-02	07-03-02	07-03-02	
Trt-Eval Interval							26 DA-E	26 DA-E	26 DA-E	26 DA-E	26 DA-E	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code					
11	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	EPP3 C			0	90	77	52	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C							
12	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	PRE D			0	93	95	98	96
	Define	60	0.487 LB A/A	13.0 OZ/A	PRE D							
	Atrazine	4	1.5 LB A/A	1.5 QT/A	PRE D							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
13	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	PRE D			0	82	88	98	98
	Harness Xtra	6	3.0 LB A/A	2.0 QT/A	PRE D							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
14	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	PRE D			0	78	73	47	94
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
LSD (P=.05)							0.0	12.7	16.6	12.3	4.4	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval						CHEAL CONTROL percent 07-03-02 26 DA-E	XANST CONTROL percent 07-03-02 26 DA-E	ZEAMD PHYGEN percent 07-29-02 52 DA-E	SETVI CONTROL percent 07-29-02 52 DA-E	ERBVI CONTROL percent 07-29-02 52 DA-E
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated							0	0	0
2	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	EPP1 A			99	99	0
	Atrazine	4	1.0 LB A/A	1.0 QT/A	EPP1 A					85
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A					55
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A					
	Option	70	0.0656 LB A/A	1.5 OZ/A	POST E					
	Distinct	70	0.131 LB A/A	3.0 OZ/A	POST E					
	MSO		1.5 PT/A	1.5 PT/A	POST E					
	28% UAN		1.5 QT/A	1.5 QT/A	POST E					
3	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	EPP1 A			99	99	0
	Atrazine	4	0.5 LB A/A	0.5 QT/A	EPP1 A					90
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A					95
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A					
	Liberty	1.67	0.365 LB A/A	28.0 FL OZ/A	POST E					
	Atrazine	4	1.0 LB A/A	1.0 QT/A	POST E					
	AMS		3.0 LB/A	3.0 LB/A	POST E					
4	Balance Pro	4	0.14 LB A/A	4.5 FL OZ/A	EPP1 A			99	98	0
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP1 A					83
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A					82
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A					
	Buctril + Atrazine	3	1.13 LB A/A	1.5 QT/A	POST E					
5	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A	EPP1 A			99	99	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP1 A					68
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP1 A					40
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST E					
	COC		1.0 QT/A	1.0 QT/A	POST E					
	28% UAN		2.0 QT/A	2.0 QT/A	POST E					
6	Balance Pro	4	0.082 LB A/A	2.63 FL OZ/A	EPP2 B			99	91	0
	Define	60	0.487 LB A/A	13.0 OZ/A	EPP2 B					88
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP2 B					92
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B					
7	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A	EPP2 B			99	93	0
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP2 B					80
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B					87
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B					
8	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	EPP2 B			99	91	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B					77
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP2 B					53
9	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	EPP3 C			99	94	0
	Guardsman Max	5	2.19 LB A/A	3.5 PT/A	EPP3 C					87
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C					88
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C					
10	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	EPP3 C			99	99	0
	Atrazine	4	1.5 LB A/A	1.5 QT/A	EPP3 C					83
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C					88
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C					

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Weed Code							CHEAL	XANST	ZEAMD	SETVI	ERBVI	
Rating Data Type							CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							07-03-02	07-03-02	07-29-02	07-29-02	07-29-02	
Trt-Eval Interval							26 DA-E	26 DA-E	52 DA-E	52 DA-E	52 DA-E	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code					
11	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	EPP3 C			99	87	0	83	68
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C							
12	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	PRE D			99	99	0	90	92
	Define	60	0.487 LB A/A	13.0 OZ/A	PRE D							
	Atrazine	4	1.5 LB A/A	1.5 QT/A	PRE D							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
13	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	PRE D			99	99	0	73	83
	Harness Xtra	6	3.0 LB A/A	2.0 QT/A	PRE D							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
14	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	PRE D			99	88	0	70	65
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D							
LSD (P=.05)							0.0	9.4	0.0	15.2	15.0	

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Weed Code							ABUTH	AMATA	CHEAL	XANST	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-29-02	07-29-02	07-29-02	07-29-02	
Trt-Eval Interval							52 DA-E	52 DA-E	52 DA-E	52 DA-E	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A		EPP1 A		99	99	99	99
	Atrazine	4	1.0 LB A/A	1.0 QT/A		EPP1 A					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP1 A					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP1 A					
	Option	70	0.0656 LB A/A	1.5 OZ/A		POST E					
	Distinct	70	0.131 LB A/A	3.0 OZ/A		POST E					
	MSO		1.5 PT/A	1.5 PT/A		POST E					
	28% UAN		1.5 QT/A	1.5 QT/A		POST E					
3	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A		EPP1 A		99	96	99	99
	Atrazine	4	0.5 LB A/A	0.5 QT/A		EPP1 A					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP1 A					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP1 A					
	Liberty	1.67	0.365 LB A/A	28.0 FL OZ/A		POST E					
	Atrazine	4	1.0 LB A/A	1.0 QT/A		POST E					
	AMS		3.0 LB/A	3.0 LB/A		POST E					
4	Balance Pro	4	0.14 LB A/A	4.5 FL OZ/A		EPP1 A		99	99	99	98
	Atrazine	4	1.5 LB A/A	1.5 QT/A		EPP1 A					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP1 A					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP1 A					
	Buctril + Atrazine	3	1.13 LB A/A	1.5 QT/A		POST E					
5	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A		EPP1 A		99	99	99	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP1 A					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP1 A					
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		POST E					
	COC		1.0 QT/A	1.0 QT/A		POST E					
	28% UAN		2.0 QT/A	2.0 QT/A		POST E					
6	Balance Pro	4	0.082 LB A/A	2.63 FL OZ/A		EPP2 B		98	98	99	91
	Define	60	0.487 LB A/A	13.0 OZ/A		EPP2 B					
	Atrazine	4	1.5 LB A/A	1.5 QT/A		EPP2 B					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP2 B					
7	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A		EPP2 B		99	99	99	93
	Atrazine	4	1.5 LB A/A	1.5 QT/A		EPP2 B					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP2 B					
8	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A		EPP2 B		71	98	99	91
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP2 B					
9	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A		EPP3 C		99	99	99	94
	Guardsman Max	5	2.19 LB A/A	3.5 PT/A		EPP3 C					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP3 C					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP3 C					
10	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A		EPP3 C		99	99	99	99
	Atrazine	4	1.5 LB A/A	1.5 QT/A		EPP3 C					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP3 C					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPP3 C					

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Weed Code							ABUTH	AMATA	CHEAL	XANST	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-29-02	07-29-02	07-29-02	07-29-02	
Trt-Eval Interval							52 DA-E	52 DA-E	52 DA-E	52 DA-E	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code				
11	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	EPP3 C			48	98	99	85
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP3 C						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPP3 C						
12	Balance Pro	4	0.07 LB A/A	2.25 FL OZ/A	PRE D			98	96	99	99
	Define	60	0.487 LB A/A	13.0 OZ/A	PRE D						
	Atrazine	4	1.5 LB A/A	1.5 QT/A	PRE D						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D						
13	Balance Pro	4	0.0625 LB A/A	2.0 FL OZ/A	PRE D			98	98	99	99
	Harness Xtra	6	3.0 LB A/A	2.0 QT/A	PRE D						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D						
14	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	PRE D			45	94	99	88
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE D						
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE D						
LSD (P=.05)							12.5	4.8	0.0	9.0	

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MAINTENANCE

Field Prep./Maintenance: The field was left un-tilled from the soybean cropping year 2001. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 46% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM
 pH: 7.75 Soil Name: CANISTEO, NICOLLET
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	05-06-02
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	66 F
% Relative Humidity:	68
Wind Velocity, Unit:	11 MPH
Soil Temp., Unit:	64 F
Soil Moisture:	MOIST
% Cloud Cover:	30

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD -
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETVI 1-2 LEAF
Stage Scale:	.25-.5 IN
Density, Unit:	5-50 FT2
Weed 2 Code, Stage:	ABUTH COTYL-1LF
Stage Scale:	0.25 IN
Density, Unit:	0-1 FT2
Weed 3 Code, Stage:	CHEAL COTLY-NUM
Stage Scale:	0.25-2 IN
Density, Unit:	0-5 FT2
Weed 4 Code, Stage:	AMATA -
Stage Scale:	-
Density, Unit:	- -
Weed 5 Code, Stage:	XANST -
Stage Scale:	-
Density, Unit:	- -

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APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

**Preemergence applied herbicide tank-mixtures and prepackaged mixtures for
for weed control in no-tillage corn, Ames, IA, 2002.**

Trial ID: ACN 4

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code						ZEAMD	ZEAMD	ZEAMD	SETVI	ABUTH
Rating Data Type						STAND	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit						17.5 FT	percent	percent	percent	percent
Rating Date						07-18-02	05-23-02	06-01-02	06-01-02	06-01-02
Trt-Eval Interval						73 DA-A	17 DA-A	26 DA-A	26 DA-A	26 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code			
1	Untreated							21	0	0
2	Axiom	68	0.978 LB A/A	23.0 OZ/A	PRE A			26	0	0
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A					99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					
3	Define	60	0.788 LB A/A	21.0 OZ/A	PRE A			24	0	0
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A					98
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					95
4	Epic	58	0.471 LB A/A	13.0 OZ/A	PRE A			24	0	0
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A					99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					99
5	USA2001	71.5	0.581 LB A/A	13.0 OZ/A	PRE A			23	0	0
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A					99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					99
6	Acetochlor 75	5.5	3.44 LB A/A	2.5 QT/A	PRE A			23	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					98
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					99
7	Acetochlor 150	5.1	4.33 LB A/A	3.4 QT/A	PRE A			23	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					96
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					96
8	FulTime	4	4.2 LB A/A	4.2 QT/A	PRE A			25	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					96
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					96
9	Guardsman Max	5	2.87 LB A/A	4.6 PT/A	PRE A			24	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					98
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					99
10	Harness Xtra	6	3.45 LB A/A	2.3 QT/A	PRE A			24	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					99
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					98
11	Harness Xtra	5.6	4.2 LB A/A	3.0 QT/A	PRE A			26	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					98
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					98
12	Field Master	4.25	5.3 LB A/A	5.0 QT/A	PRE A			23	0	0
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	PRE A					99
13	Degree Xtra	4.04	3.74 LB A/A	3.7 QT/A	PRE A			25	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					99
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					99

Iowa State University

Weed Code						ZEAMD	ZEAMD	ZEAMD	SETVI	ABUTH
Rating Data Type						STAND	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit						17.5 FT	percent	percent	percent	percent
Rating Date						07-18-02	05-23-02	06-01-02	06-01-02	06-01-02
Trt-Eval Interval						73 DA-A	17 DA-A	26 DA-A	26 DA-A	26 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
14	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE	A	24	0
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE	A	0	0
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE	A	99	98
LSD (P=.05)						4.8	0.0	0.0	2.6	3.2

Iowa State University

Weed Code						AMATA	CHEAL	XANST	ZEAMD	SETVI		
Rating Data Type						CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL		
Rating Unit						percent	percent	percent	percent	percent		
Rating Date						06-01-02	06-01-02	06-01-02	07-24-02	07-24-02		
Trt-Eval Interval						26 DA-A	26 DA-A	26 DA-A	79 DA-A	79 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Product	Rate Rate	Product Product	Rate Rate	Unit Unit	Grow Stg	Appl Code	
1	Untreated							0	0	0	0	
2	Axiom	68	0.978	LB A/A	23.0	OZ/A	PRE	99	99	92	0	88
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE					
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
3	Define	60	0.788	LB A/A	21.0	OZ/A	PRE	99	99	78	0	85
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE					
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
4	Epic	58	0.471	LB A/A	13.0	OZ/A	PRE	99	99	95	0	90
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE					
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
5	USA2001	71.5	0.581	LB A/A	13.0	OZ/A	PRE	99	99	98	0	85
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE					
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
6	Acetochlor 75	5.5	3.44	LB A/A	2.5	QT/A	PRE	99	99	85	0	48
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
7	Acetochlor 150	5.1	4.33	LB A/A	3.4	QT/A	PRE	99	99	88	0	63
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
8	FulTime	4	4.2	LB A/A	4.2	QT/A	PRE	99	99	87	0	57
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
9	Guardzman Max	5	2.87	LB A/A	4.6	PT/A	PRE	99	99	99	0	73
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
10	Harness Xtra	6	3.45	LB A/A	2.3	QT/A	PRE	99	99	93	0	67
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
11	Harness Xtra	5.6	4.2	LB A/A	3.0	QT/A	PRE	99	99	99	0	62
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
12	Field Master	4.25	5.3	LB A/A	5.0	QT/A	PRE	99	99	95	0	58
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	PRE					
13	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	99	99	95	0	87
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
14	Bicep II Magnum	5.5	3.58	LB A/A	2.6	QT/A	PRE	99	99	93	0	75
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE					
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE					
LSD (P=.05)						0.0	0.0	11.6	0.0	13.0		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-24-02 79 DA-A	AMATA CONTROL percent 07-24-02 79 DA-A	CHEAL CONTROL percent 07-24-02 79 DA-A	XANST CONTROL percent 07-24-02 79 DA-A	ZEAMD YIELD BU/A 10-09-02 156 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	18
2	Axiom	68	0.978 LB A/A	23.0 OZ/A	PRE A			67	96	99	67	178
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
3	Define	60	0.788 LB A/A	21.0 OZ/A	PRE A			45	96	99	52	182
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
4	Epic	58	0.471 LB A/A	13.0 OZ/A	PRE A			98	95	99	93	194
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
5	USA2001	71.5	0.581 LB A/A	13.0 OZ/A	PRE A			86	95	98	83	167
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A							
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
6	Acetochlor 75	5.5	3.44 LB A/A	2.5 QT/A	PRE A			70	99	99	58	146
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
7	Acetochlor 150	5.1	4.33 LB A/A	3.4 QT/A	PRE A			73	98	99	80	142
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
8	FulTime	4	4.2 LB A/A	4.2 QT/A	PRE A			57	95	99	68	172
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
9	Guardzman Max	5	2.87 LB A/A	4.6 PT/A	PRE A			63	96	99	87	173
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
10	Harness Xtra	6	3.45 LB A/A	2.3 QT/A	PRE A			87	96	99	78	171
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
11	Harness Xtra	5.6	4.2 LB A/A	3.0 QT/A	PRE A			70	99	99	83	160
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
12	Field Master	4.25	5.3 LB A/A	5.0 QT/A	PRE A			60	99	99	78	160
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	PRE A							
13	Degree Xtra	4.04	3.74 LB A/A	3.7 QT/A	PRE A			77	99	99	72	184
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
14	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A	PRE A			70	99	99	83	171
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
LSD (P=.05)								24.3	4.8	1.0	19.5	31.9

Iowa State University

Axiom, Dual II Magnum, Surpass and Define applied early preplant and preemergence for weed control in no-tillage corn, Ames, Iowa, 2002.

Trial ID: ACN 5

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 03-08-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate various application timings of Axiom, Dual, Surpass and Define for crop phytotoxicity and weed control in no-tillage corn.

Conclusions: No corn injury was observed from any treatments. Heavy grass pressure occurred in the experiment and included green, yellow and giant foxtails. The trend for corn yields could be predicted by weed control. Axiom and Domain yielded significantly higher than Dual II Magnum and Surpass when data was combined. Dual II Magnum yielded significantly higher than Surpass. There were also yield differences between herbicides at each timing. Corn yields were very responsive to application timing. Corn yields improved from EPP2 to EPP1. Corn yield continued to increase from EPP1 and EPP3 to EPP4 and PRE timings. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETSS	FOXTAIL, SETARIA SP.	SETARIA SP.
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN

Variety: GARST 8550

Planting Date: 05-03-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 6

Tillage Type: NO-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: The field was left un-tilled from the soybean cropping year 2001. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 46% at planting. Clarity plus 28%N was applied postemergence to the experiment area on June 5, 2002 at 0.5 lb/A plus 2.0 qt/A to control broadleaves.

Iowa State University

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM
 pH: 7.75 Soil Name: CANISTEO, NICOLLET
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	03-08-02	03-20-02	04-05-02	04-17-02	05-03-02
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	EPP1	EPP2	EPP3	EPP4	PRE
Applic. Placement:	BROSOI	BROSOI	BROSOI	BROSOI	BROSOI
Air Temp., Unit:	39 F	50 F	45 F	64 F	54 F
% Relative Humidity:	99	66	38	51	48
Wind Velocity, Unit:	8 MPH	8 MPH	8 MPH	3 MPH	8 MPH
Soil Temp., Unit:	34 F	39 F	41 F	64 F	52 F
Soil Moisture:	WET	DRY	DRY	WET	WET
% Cloud Cover:	50	0	0	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	ZEAMD -	ZEAMD -	ZEAMD -	ZEAMD -	ZEAMD -
Stage Scale:	-	-	-	-	-
	-	-	-	-	-

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code, Stage:	SETSS -	SETSS -	SETSS -	SETSS 1 LEAF	SETSS 1-2 LEAF
Stage Scale:	-	-	-	0.25 IN	0.25 IN
Density, Unit:	- -	- -	- -	0-10 FT2	10-5 FT2
Weed 2 Code, Stage:	CHEAL -	CHEAL -	CHEAL -	CHEAL 2 LEAF	CHEAL 2-8 LEAF
Stage Scale:	-	-	-	0.25 IN	0.25-2 IN
Density, Unit:	- -	- -	- -	0-25 FT2	5-20 FT2
Weed 3 Code, Stage:	ABUTH -	ABUTH -	ABUTH -	ABUTH COTYLEDON	ABUTH COTYL-1
Stage Scale:	-	-	-	0.25 IN	0.25 IN
Density, Unit:	- -	- -	- -	0-2 FT2	0-2 FT2
Weed 4 Code, Stage:	XANST -	XANST -	XANST -	XANST -	XANST COTYLEDON
Stage Scale:	-	-	-	-	0.5 IN
Density, Unit:	- -	- -	- -	- -	0-1 FT2

APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	HAND BOOM	HAND BOOM	HAND BOOM	HAND BOOM	HAND BOOM
Operating Pressure:	25	25	25	25	25
Nozzle Type:	11003	11003	11003	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

Iowa State University

Axiom, Dual II Magnum, Surpass and Define applied early preplant and preemergence for weed control in no-tillage corn, Ames, Iowa, 2002.

Trial ID: ACN 5

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETSS	AMATA	CHEAL
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent	percent
Rating Date							07-15-02	05-23-02	05-31-02	05-31-02	05-31-02	05-31-02
Trt-Eval Interval							73 DA-E	20 DA-E	28 DA-E	28 DA-E	28 DA-E	28 DA-E
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Appl Stg	Code				
1	Untreated								21	0	0	0
2	Axiom Roundup Ultra	68 4	0.978 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	EPP1 A EPP1 A		24	0	0	93 98 88
3	Axiom Roundup Ultra	68 4	0.978 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	EPP2 B EPP2 B		24	0	0	89 97 82
4	Axiom Roundup Ultra	68 4	0.978 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	EPP3 C EPP3 C		25	0	0	95 98 95
5	Axiom Roundup Ultra	68 4	0.978 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	EPP4 D EPP4 D		25	0	0	96 98 97
6	Axiom Roundup Ultra	68 4	0.98 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	PRE E PRE E		24	0	0	99 99 98
7	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	EPP1 A EPP1 A		25	0	0	79 96 40
8	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	EPP2 B EPP2 B		24	0	0	74 96 28
9	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	EPP3 C EPP3 C		24	0	0	79 96 28
10	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	EPP4 D EPP4 D		25	0	0	88 98 63
11	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	PRE E PRE E		25	0	0	96 98 81
12	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	EPP1 A EPP1 A		24	0	0	54 96 42
13	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	EPP2 B EPP2 B		23	0	0	44 96 47
14	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	EPP3 C EPP3 C		25	0	0	58 97 58
15	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	EPP4 D EPP4 D		25	0	0	87 98 88
16	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	PRE E PRE E		23	0	0	98 98 98
17	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	EPP1 A EPP1 A		23	0	0	93 96 73
18	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	EPP2 B EPP2 B		25	0	0	86 96 45
19	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	EPP3 C EPP3 C		23	0	0	93 96 63
20	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	EPP4 D EPP4 D		26	0	0	97 98 91

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Weed Code							ZEAMD	ZEAMD	ZEAMD	SETSS	AMATA	CHEAL	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	percent	
Rating Date							07-15-02	05-23-02	05-31-02	05-31-02	05-31-02	05-31-02	
Trt-Eval Interval							73 DA-E	20 DA-E	28 DA-E	28 DA-E	28 DA-E	28 DA-E	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
21	Define	60	0.788	LB A/A	21.0	OZ/A	PRE E	25	0	0	97	98	
	Roundup Ultra	4	0.75	LB A/A	24.0	FL OZ/A	PRE E					93	
LSD (P=.05)								2.7	0.0	0.0	5.6	2.1	14.8

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Weed Code							SETSS	SETSS	ZEAMD
Rating Data Type							CONTROL	CONTROL	YIELD
Rating Unit							percent	percent	BU/A
Rating Date							07-08-02	09-26-02	10-08-02
Trt-Eval Interval							66 DA-E	146 DA-E	158 DA-E
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Stg	Appl Code	
1	Untreated								0 0 2
2	Axiom Roundup Ultra	68 4	0.978 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	EPP1 A EPP1 A		71 62 146
3	Axiom Roundup Ultra	68 4	0.978 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	EPP2 B EPP2 B		64 50 132
4	Axiom Roundup Ultra	68 4	0.978 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	EPP3 C EPP3 C		78 68 158
5	Axiom Roundup Ultra	68 4	0.978 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	EPP4 D EPP4 D		83 73 158
6	Axiom Roundup Ultra	68 4	0.98 0.75	LB A/A LB A/A	23.0 24.0	OZ/A FL OZ/A	PRE E PRE E		89 69 165
7	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	EPP1 A EPP1 A		60 48 104
8	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	EPP2 B EPP2 B		55 44 81
9	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	EPP3 C EPP3 C		57 48 113
10	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	EPP4 D EPP4 D		71 55 142
11	Dual II Magnum Roundup Ultra	7.64 4	1.91 0.75	LB A/A LB A/A	2.0 24.0	PT/A FL OZ/A	PRE E PRE E		78 68 145
12	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	EPP1 A EPP1 A		41 33 65
13	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	EPP2 B EPP2 B		30 22 24
14	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	EPP3 C EPP3 C		42 32 63
15	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	EPP4 D EPP4 D		58 45 107
16	Surpass Roundup Ultra	6.4 4	2.4 0.75	LB A/A LB A/A	3.0 24.0	PT/A FL OZ/A	PRE E PRE E		71 58 143
17	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	EPP1 A EPP1 A		68 56 137
18	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	EPP2 B EPP2 B		64 49 117
19	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	EPP3 C EPP3 C		74 61 135
20	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	EPP4 D EPP4 D		83 73 166
21	Define Roundup Ultra	60 4	0.788 0.75	LB A/A LB A/A	21.0 24.0	OZ/A FL OZ/A	PRE E PRE E		87 78 170
LSD (P=.05)							6.6	11.5	25.5

Iowa State University

Balance Pro, Atrazine, and Define applied preemergence and Liberty and Option applied postemergence for weed control in corn, Ames, IA, 2002.

Trial ID: ACS 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-03-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate corn injury and weed control from preemergence applied Balance Pro, Atrazine and Define and postemergence applications of Liberty, Option, Distinct and Buctril plus Atrazine.

Conclusions: No significant differences in corn stand were observed between treatments. No corn injury was observed on May 23 and June 5 from any preemergence (PRE) or early postemergence (EPOST) applied herbicide treatment. PRE Balance Pro plus Atrazine, Balance Pro plus Define, Balance Pro plus Define plus Atrazine, and Balance Pro afforded excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed control on June 5. PRE Define provided excellent giant foxtail control on June 5, fair common waterhemp and poor velvetleaf and common lambsquarters control.

Corn injury ranging from 0 to 17% was observed on June 21, sixteen days after mid-postemergence (MPOST) treatments were applied. Treatments that included Option caused the most serious injury, followed by Buctril plus Atrazine. Excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters and Pennsylvania smartweed control was noted on June 21 and July 24 from all treatment combinations and application timings. Common cocklebur control was excellent with all treatments, except Balance Pro plus Define, which provided fair control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD

Variety: PIONEER 33P69 LL

Planting Date: 05-03-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.25 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Site Type: FIELD

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-04-02	05-31-02	06-05-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	68 F	86 F	73 F
% Relative Humidity:	58	46	64
Wind Velocity, Unit:	8 MPH	6 MPH	4 MPH
Soil Temp., Unit:	54 F	75 F	66 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	0	10	80

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V4	ZEAMD V6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	4 IN	7 IN

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WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF	SETFA 2-4 LEAF
Stage Scale:	-	1-2.5 IN	0.5-5 IN
Density, Unit:	- -	0-20 FT2	0-6 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-4	ABUTH COTYL-4
Stage Scale:	-	0.25-2 IN	0.25-4 IN
Density, Unit:	- -	0-5 FT2	0-3 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-4	AMATA -
Stage Scale:	-	0.25-2 IN	-
Density, Unit:	- -	0-30 FT2	- -
Weed 4 Code, Stage:	CHEAL -	CHEAL COTYL-4	CHEAL COTYL-NUM
Stage Scale:	-	0.25-2 IN	0.5-5 IN
Density, Unit:	- -	0-5 FT2	0-3 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-4 LEAF	POLPY COTYL-6
Stage Scale:	-	1-2 IN	0.5-6 IN
Density, Unit:	- -	0-3 FT2	0-6 FT2
Weed 6 Code, Stage:	XANST -	XANST COTYL-3	XANST COTYL-4
Stage Scale:	-	1-4 IN	1-6 IN
Density, Unit:	- -	0-1 FT2	0-2 FT2

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	TERRA PRO
Operating Pressure:	30	30	30
Nozzle Type:	11002	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Balance Pro, Atrazine, and Define applied preemergence and Liberty and Option applied postemergence for weed control in corn, Ames, IA, 2002.

Trial ID: ACS 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent	percent
Rating Date							07-19-02	05-23-02	06-05-02	06-05-02	06-05-02	06-05-02
Trt-Eval Interval							76 DA-A	19 DA-A	5 DA-B	0 DA-C	0 DA-C	0 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code				
1	Untreated								26	0	0	0
2	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE	A		29	0	0	95
	Atrazine	90	0.5	LB A/A	0.556 LB/A	PRE	A					99
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	MPOST	C					
	Atrazine	90	0.5	LB A/A	0.556 LB/A	MPOST	C					
	AMS		3.0	LB/A	3.0 LB/A	MPOST	C					
3	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE	A		30	0	0	95
	Atrazine	90	0.5	LB A/A	0.556 LB/A	PRE	A					98
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C					
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C					
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C					
4	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	PRE	A		32	0	0	98
	Define	60	0.45	LB A/A	12.0 OZ/A	PRE	A					99
5	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	PRE	A		30	0	0	93
	Atrazine	90	1.5	LB A/A	1.67 LB/A	PRE	A					99
6	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	PRE	A		29	0	0	99
	Define	60	0.487	LB A/A	13.0 OZ/A	PRE	A					99
	Atrazine	90	1.5	LB A/A	1.67 LB/A	PRE	A					
7	Define	60	0.375	LB A/A	10.0 OZ/A	PRE	A		28	0	0	92
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	MPOST	C					27
	Atrazine	90	1.0	LB A/A	1.11 LB/A	MPOST	C					
	AMS		3.0	LB/A	3.0 LB/A	MPOST	C					78
8	Define	60	0.375	LB A/A	10.0 OZ/A	PRE	A		31	0	0	92
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C					28
	Distinct	70	0.131	LB A/A	3.0 OZ/A	MPOST	C					
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C					
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C					
9	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	EPOST	B		28	0	0	0
	Atrazine	90	1.5	LB A/A	1.67 LB/A	EPOST	B					0
	AMS		3.0	LB/A	3.0 LB/A	EPOST	B					
10	Define	60	0.675	LB A/A	18.0 OZ/A	PRE	A		29	0	0	95
	Buctril + Atrazine	3	0.75	LB A/A	2.0 PT/A	MPOST	C					37
11	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	PRE	A		30	0	0	92
	Buctril + Atrazine	3	0.75	LB A/A	2.0 PT/A	MPOST	C					99
12	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C		29	0	0	0
	Distinct	70	0.131	LB A/A	3.0 OZ/A	MPOST	C					0
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C					
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C					
LSD (P=.05)							3.3	0.0	0.0	3.9	6.5	4.9

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-05-02 0 DA-C	POLPY CONTROL percent 06-05-02 0 DA-C	ZEAMD PHYGEN percent 06-21-02 16 DA-C	SETFA CONTROL percent 06-21-02 16 DA-C	ABUTH CONTROL percent 06-21-02 16 DA-C			
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Balance Pro	4	0.047	LB	A/A	1.5	FL OZ/A	PRE	A	99	96	0	99	99
	Atrazine	90	0.5	LB	A/A	0.556	LB/A	PRE	A					
	Liberty	1.67	0.365	LB	A/A	28.0	FL OZ/A	MPOST	C					
	Atrazine	90	0.5	LB	A/A	0.556	LB/A	MPOST	C					
	AMS		3.0	LB	A/A	3.0	LB/A	MPOST	C					
3	Balance Pro	4	0.047	LB	A/A	1.5	FL OZ/A	PRE	A	99	98	10	99	99
	Atrazine	90	0.5	LB	A/A	0.556	LB/A	PRE	A					
	Option	70	0.0656	LB	A/A	1.5	OZ/A	MPOST	C					
	28% UAN		2.0	QT	A/A	2.0	QT/A	MPOST	C					
	MSO		1.5	PT	A/A	1.5	PT/A	MPOST	C					
4	Balance Pro	4	0.094	LB	A/A	3.0	FL OZ/A	PRE	A	99	93	0	98	99
	Define	60	0.45	LB	A/A	12.0	OZ/A	PRE	A					
5	Balance Pro	4	0.094	LB	A/A	3.0	FL OZ/A	PRE	A	99	98	2	96	99
	Atrazine	90	1.5	LB	A/A	1.67	LB/A	PRE	A					
6	Balance Pro	4	0.07	LB	A/A	2.25	FL OZ/A	PRE	A	99	99	3	99	98
	Define	60	0.487	LB	A/A	13.0	OZ/A	PRE	A					
	Atrazine	90	1.5	LB	A/A	1.67	LB/A	PRE	A					
7	Define	60	0.375	LB	A/A	10.0	OZ/A	PRE	A	62	30	0	99	99
	Liberty	1.67	0.365	LB	A/A	28.0	FL OZ/A	MPOST	C					
	Atrazine	90	1.0	LB	A/A	1.11	LB/A	MPOST	C					
	AMS		3.0	LB	A/A	3.0	LB/A	MPOST	C					
8	Define	60	0.375	LB	A/A	10.0	OZ/A	PRE	A	53	27	8	99	96
	Option	70	0.0656	LB	A/A	1.5	OZ/A	MPOST	C					
	Distinct	70	0.131	LB	A/A	3.0	OZ/A	MPOST	C					
	MSO		1.5	PT	A/A	1.5	PT/A	MPOST	C					
	28% UAN		2.0	QT	A/A	2.0	QT/A	MPOST	C					
9	Liberty	1.67	0.365	LB	A/A	28.0	FL OZ/A	EPOST	B	0	0	0	96	92
	Atrazine	90	1.5	LB	A/A	1.67	LB/A	EPOST	B					
	AMS		3.0	LB	A/A	3.0	LB/A	EPOST	B					
10	Define	60	0.675	LB	A/A	18.0	OZ/A	PRE	A	75	42	5	98	98
	Buctril + Atrazine	3	0.75	LB	A/A	2.0	PT/A	MPOST	C					
11	Balance Pro	4	0.07	LB	A/A	2.25	FL OZ/A	PRE	A	99	99	5	93	99
	Buctril + Atrazine	3	0.75	LB	A/A	2.0	PT/A	MPOST	C					
12	Option	70	0.0656	LB	A/A	1.5	OZ/A	MPOST	C	0	0	17	95	96
	Distinct	70	0.131	LB	A/A	3.0	OZ/A	MPOST	C					
	MSO		1.5	PT	A/A	1.5	PT/A	MPOST	C					
	28% UAN		2.0	QT	A/A	2.0	QT/A	MPOST	C					
LSD (P=.05)							6.0	6.3	2.9	4.1	2.3			

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-21-02 16 DA-C	CHEAL CONTROL percent 06-21-02 16 DA-C	POLPY CONTROL percent 06-21-02 16 DA-C	XANST CONTROL percent 06-21-02 16 DA-C	ZEAMD PHYGEN percent 07-24-02 49 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Balance Pro	4	0.047	LB	A/A	1.5 FL OZ/A	PRE	A	99	99	99	99	0
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	PRE	A					
	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	MPOST	C					
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	MPOST	C					
	AMS		3.0	LB	A	3.0 LB/A	MPOST	C					
3	Balance Pro	4	0.047	LB	A/A	1.5 FL OZ/A	PRE	A	99	99	99	99	0
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	PRE	A					
	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C					
	28% UAN		2.0	QT	A	2.0 QT/A	MPOST	C					
	MSO		1.5	PT	A	1.5 PT/A	MPOST	C					
4	Balance Pro	4	0.094	LB	A/A	3.0 FL OZ/A	PRE	A	99	99	93	77	0
	Define	60	0.45	LB	A/A	12.0 OZ/A	PRE	A					
5	Balance Pro	4	0.094	LB	A/A	3.0 FL OZ/A	PRE	A	99	99	98	90	0
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	PRE	A					
6	Balance Pro	4	0.07	LB	A/A	2.25 FL OZ/A	PRE	A	98	99	98	88	0
	Define	60	0.487	LB	A/A	13.0 OZ/A	PRE	A					
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	PRE	A					
7	Define	60	0.375	LB	A/A	10.0 OZ/A	PRE	A	99	99	99	99	0
	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	MPOST	C					
	Atrazine	90	1.0	LB	A/A	1.11 LB/A	MPOST	C					
	AMS		3.0	LB	A	3.0 LB/A	MPOST	C					
8	Define	60	0.375	LB	A/A	10.0 OZ/A	PRE	A	98	99	99	98	0
	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C					
	Distinct	70	0.131	LB	A/A	3.0 OZ/A	MPOST	C					
	MSO		1.5	PT	A	1.5 PT/A	MPOST	C					
	28% UAN		2.0	QT	A	2.0 QT/A	MPOST	C					
9	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	EPOST	B	98	99	99	96	0
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	EPOST	B					
	AMS		3.0	LB	A	3.0 LB/A	EPOST	B					
10	Define	60	0.675	LB	A/A	18.0 OZ/A	PRE	A	99	99	99	98	0
	Buctril + Atrazine	3	0.75	LB	A/A	2.0 PT/A	MPOST	C					
11	Balance Pro	4	0.07	LB	A/A	2.25 FL OZ/A	PRE	A	99	99	99	99	0
	Buctril + Atrazine	3	0.75	LB	A/A	2.0 PT/A	MPOST	C					
12	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C	88	99	99	99	0
	Distinct	70	0.131	LB	A/A	3.0 OZ/A	MPOST	C					
	MSO		1.5	PT	A	1.5 PT/A	MPOST	C					
	28% UAN		2.0	QT	A	2.0 QT/A	MPOST	C					
LSD (P=.05)									3.6	0.0	5.7	8.4	0.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 07-24-02 49 DA-C	ABUTH CONTROL percent 07-24-02 49 DA-C	AMATA CONTROL percent 07-24-02 49 DA-C	CHEAL CONTROL percent 07-24-02 49 DA-C	POLPY CONTROL percent 07-24-02 49 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Balance Pro	4	0.047	LB	A/A	1.5 FL OZ/A	PRE	A	99	99	99	99	99
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	PRE	A					
	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	MPOST	C					
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	MPOST	C					
	AMS		3.0	LB	A/A	3.0 LB/A	MPOST	C					
3	Balance Pro	4	0.047	LB	A/A	1.5 FL OZ/A	PRE	A	95	99	98	99	99
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	PRE	A					
	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C					
	28% UAN		2.0	QT	A/A	2.0 QT/A	MPOST	C					
	MSO		1.5	PT	A/A	1.5 PT/A	MPOST	C					
4	Balance Pro	4	0.094	LB	A/A	3.0 FL OZ/A	PRE	A	93	99	99	99	93
	Define	60	0.45	LB	A/A	12.0 OZ/A	PRE	A					
5	Balance Pro	4	0.094	LB	A/A	3.0 FL OZ/A	PRE	A	93	99	99	99	98
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	PRE	A					
6	Balance Pro	4	0.07	LB	A/A	2.25 FL OZ/A	PRE	A	98	98	96	99	98
	Define	60	0.487	LB	A/A	13.0 OZ/A	PRE	A					
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	PRE	A					
7	Define	60	0.375	LB	A/A	10.0 OZ/A	PRE	A	99	98	99	99	99
	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	MPOST	C					
	Atrazine	90	1.0	LB	A/A	1.11 LB/A	MPOST	C					
	AMS		3.0	LB	A/A	3.0 LB/A	MPOST	C					
8	Define	60	0.375	LB	A/A	10.0 OZ/A	PRE	A	96	99	99	99	99
	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C					
	Distinct	70	0.131	LB	A/A	3.0 OZ/A	MPOST	C					
	MSO		1.5	PT	A/A	1.5 PT/A	MPOST	C					
	28% UAN		2.0	QT	A/A	2.0 QT/A	MPOST	C					
9	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	EPOST	B	93	92	98	99	99
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	EPOST	B					
	AMS		3.0	LB	A/A	3.0 LB/A	EPOST	B					
10	Define	60	0.675	LB	A/A	18.0 OZ/A	PRE	A	96	98	99	99	99
	Buctril + Atrazine	3	0.75	LB	A/A	2.0 PT/A	MPOST	C					
11	Balance Pro	4	0.07	LB	A/A	2.25 FL OZ/A	PRE	A	92	99	99	99	99
	Buctril + Atrazine	3	0.75	LB	A/A	2.0 PT/A	MPOST	C					
12	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C	90	93	87	99	99
	Distinct	70	0.131	LB	A/A	3.0 OZ/A	MPOST	C					
	MSO		1.5	PT	A/A	1.5 PT/A	MPOST	C					
	28% UAN		2.0	QT	A/A	2.0 QT/A	MPOST	C					
LSD (P=.05)									4.3	2.4	2.4	0.0	5.7

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 07-24-02 49 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Unit	Grow Stg	Appl Code	
1	Untreated								0
2	Balance Pro	4	0.047	LB	A/A	1.5 FL OZ/A	PRE	A	99
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	PRE	A	
	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	MPOST	C	
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	MPOST	C	
	AMS		3.0	LB	A/A	3.0 LB/A	MPOST	C	
3	Balance Pro	4	0.047	LB	A/A	1.5 FL OZ/A	PRE	A	99
	Atrazine	90	0.5	LB	A/A	0.556 LB/A	PRE	A	
	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C	
	28% UAN		2.0	QT	A/A	2.0 QT/A	MPOST	C	
	MSO		1.5	PT	A/A	1.5 PT/A	MPOST	C	
4	Balance Pro	4	0.094	LB	A/A	3.0 FL OZ/A	PRE	A	78
	Define	60	0.45	LB	A/A	12.0 OZ/A	PRE	A	
5	Balance Pro	4	0.094	LB	A/A	3.0 FL OZ/A	PRE	A	91
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	PRE	A	
6	Balance Pro	4	0.07	LB	A/A	2.25 FL OZ/A	PRE	A	90
	Define	60	0.487	LB	A/A	13.0 OZ/A	PRE	A	
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	PRE	A	
7	Define	60	0.375	LB	A/A	10.0 OZ/A	PRE	A	98
	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	MPOST	C	
	Atrazine	90	1.0	LB	A/A	1.11 LB/A	MPOST	C	
	AMS		3.0	LB	A/A	3.0 LB/A	MPOST	C	
8	Define	60	0.375	LB	A/A	10.0 OZ/A	PRE	A	99
	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C	
	Distinct	70	0.131	LB	A/A	3.0 OZ/A	MPOST	C	
	MSO		1.5	PT	A/A	1.5 PT/A	MPOST	C	
	28% UAN		2.0	QT	A/A	2.0 QT/A	MPOST	C	
9	Liberty	1.67	0.365	LB	A/A	28.0 FL OZ/A	EPOST	B	96
	Atrazine	90	1.5	LB	A/A	1.67 LB/A	EPOST	B	
	AMS		3.0	LB	A/A	3.0 LB/A	EPOST	B	
10	Define	60	0.675	LB	A/A	18.0 OZ/A	PRE	A	99
	Buctril + Atrazine	3	0.75	LB	A/A	2.0 PT/A	MPOST	C	
11	Balance Pro	4	0.07	LB	A/A	2.25 FL OZ/A	PRE	A	99
	Buctril + Atrazine	3	0.75	LB	A/A	2.0 PT/A	MPOST	C	
12	Option	70	0.0656	LB	A/A	1.5 OZ/A	MPOST	C	98
	Distinct	70	0.131	LB	A/A	3.0 OZ/A	MPOST	C	
	MSO		1.5	PT	A/A	1.5 PT/A	MPOST	C	
	28% UAN		2.0	QT	A/A	2.0 QT/A	MPOST	C	
LSD (P=.05)									7.9

Iowa State University

Preemergence and postemergence applied herbicide programs including glyphosate
for weed control in corn, Ames, IA, 2002.

Trial ID: ACS 2
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University

TRIAL LOCATION

Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Initiation Date: 04-01-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate preemergence applied Degree, Degree Xtra, Bicep II Magnum and postemergence applied Roundup UltraMAX, Marksman, Touchdown IQ, and Callisto for crop injury and weed control in corn.

Conclusions: No significant differences in corn stand between treatments were observed. Preemergence (PRE) applied treatments demonstrated excellent crop safety when observed on May 23 and June 3. Excellent giant foxtail and common waterhemp control was observed with PRE treatments on June 3, before any postemergence applications. Velvetleaf control was generally poor to fair with these treatments. Common lambsquarters and Pennsylvania smartweed control was good to excellent, except with Degree and Dual II Magnum.

Following the postemergence application timings, significant corn injury was observed on June 20 and 24 with several treatments. On July 24 and August 21, excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, Pennsylvania smartweed, and common cocklebur control was attained with all treatment combinations and application timings, except PRE Bicep II Magnum for velvetleaf control. Treatment corn yields were all significantly higher than the untreated control. Several treatments had significantly higher corn yields than others. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD Variety: DEKALB DKC 57-40 RR
Planting Date: 05-06-02 Planting Method: DIRECT DRILLED
Rate: 27700 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

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SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM
 pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	05-07-02	06-03-02	06-10-02	06-26-02
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	POST	SPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	61 F	81 F	81 F	91 F
% Relative Humidity:	71	85	83	59
Wind Velocity, Unit:	8 MPH	8 MPH	10 MPH	8 MPH
Soil Temp., Unit:	63 F	70 F	73 F	86 F
Soil Moisture:	DRY	WET	DRY	DRY
% Cloud Cover:	50	50	90	10

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V4	ZEAMD V5	ZEAMD V9
Stage Scale:	-	DESC	DESC	DESC
Height, Unit:	-	7 IN	10 IN	28 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	SETFA -	SETFA 3-4 LEAF	SETFA 1-4 LEAF	SETFA 1-4 LEAF
Stage Scale:	-	2-4 IN	0.25-4 IN	0.25-4 IN
Density, Unit:	- -	5-35 FT2	1-2 FT2	0-15 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-5	ABUTH COTYL-6	ABUTH 4-6 LEAF
Stage Scale:	-	0.25-3 IN	0.25-6 IN	3-6 IN
Density, Unit:	- -	0-5 FT2	0-15 FT2	0-2 FT2
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS	AMATA NUMEROUS	AMATA NUMEROUS
Stage Scale:	-	1-3 IN	1-3 IN	1-2 IN
Density, Unit:	- -	2-10 FT2	0-1 FT2	0-3 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS	CHEAL 2-10 LEAF	CHEAL -
Stage Scale:	-	1-2 IN	1-3.5 IN	-
Density, Unit:	- -	0-1 FT2	0-3 FT2	- -
Weed 5 Code, Stage:	POLPY -	POLPY 2-6 LEAF	POLPY 3-6 LEAF	POLPY 4-6 LEAF
Stage Scale:	-	1-3 IN	1-5 IN	2-6 IN
Density, Unit:	- -	0-1 FT2	0-2 FT2	0-1 FT2
Weed 6 Code, Stage:	XANST -	XANST -	XANST 4-5 LEAF	XANST 4-6 LEAF
Stage Scale:	-	-	3-5 IN	5-6 IN
Density, Unit:	- -	- -	0-1 FT2	0-1 FT2

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APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	TERRA PRO	HAND BOOM	TERRA PRO	HAND BOOM
Operating Pressure:	30	25	30	25
Nozzle Type:	11002	11003	11002	15003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA

Iowa State University

Preemergence and postemergence applied herbicide programs including glyphosate for weed control in corn, Ames, IA, 2002.

Trial ID: ACS 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

							ZEAMD STAND	ZEAMD PHYGEN	ZEAMD PHYGEN	SETFA CONTROL	ABUTH CONTROL		
							17.5 ft	percent	percent	percent	percent		
							07-22-02	05-23-02	06-03-02	06-03-02	06-03-02		
							76 DA-A	16 DA-A	0 DA-B	0 DA-B	0 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code					
1	Untreated								26	0	0	0	0
2	Roundup UltraMAX AMS	3.7	0.75 LB AE/A 8.5 LB/100 GAL	26.0 FL OZ/A	EPOST B				27	0	0	0	0
	Roundup UltraMAX AMS	3.7	0.56 LB AE/A 8.5 LB/100 GAL	19.4 OZ/A	SPOST D								
				8.5 LB/100 GAL	SPOST D								
3	Degree	3.8	1.1 LB A/A	2.32 PT/A	PRE	A			27	0	0	92	17
	Roundup UltraMAX AMS	3.7	0.75 LB AE/A 8.5 LB/100 GAL	26.0 FL OZ/A	POST	C							
				8.5 LB/100 GAL	POST	C							
4	Degree Xtra	4.04	1.75 LB A/A	1.73 QT/A	PRE	A			27	0	0	90	25
	Roundup UltraMAX AMS	3.7	0.75 LB AE/A 8.5 LB/100 GAL	26.0 FL OZ/A	POST	C							
				8.5 LB/100 GAL	POST	C							
5	Dual II Magnum Marksman	7.64	1.6 LB A/A	1.67 PT/A	PRE	A			27	0	0	95	13
		3.2	1.4 LB A/A	3.5 PT/A	EPOST	B							
6	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A	PRE	A			28	0	0	95	67
7	Bicep II Magnum Spirit	5.5	3.58 LB A/A	2.6 QT/A	PRE	A			27	0	0	96	58
	NIS	57	0.035 LB A/A	0.98 OZ/A	POST	C							
	28% UAN		0.25 % V/V	0.25 % V/V	POST	C							
			2.5 % V/V	2.5 % V/V	POST	C							
8	Bicep II Magnum Touchdown IQ AMS	5.5	1.79 LB A/A	1.3 QT/A	PRE	A			27	0	0	92	40
		3	0.75 LB AE/A	32.0 FL OZ/A	POST	C							
			8.5 LB/100 GAL	8.5 LB/100 GAL	POST	C							
9	FulTime Glyphomax Plus AMS	4	1.95 LB A/A	1.95 QT/A	PRE	A			28	0	0	95	48
		3	0.75 LB AE/A	32 FL OZ/A	POST	C							
			8.5 LB/100 GAL	8.5 LB/100 GAL	POST	C							
10	Leadoff Accent Gold COC 28% UAN	5	1.4 LB A/A	1.12 QT/A	PRE	A			28	0	0	95	55
		83.8	0.152 LB A/A	2.9 OZ/A	EPOST	B							
			1.0 QT/A	1.0 QT/A	EPOST	B							
			4.0 QT/A	4.0 QT/A	EPOST	B							
11	Celebrity Plus NIS 28% UAN	70	0.201 LB A/A	4.6 OZ/A	EPOST	B			28	0	0	0	0
			0.25 % V/V	0.25 % V/V	EPOST	B							
			4.0 QT/A	4.0 QT/A	EPOST	B							
12	Bicep II Magnum Callisto COC 28% UAN	5.5	3.58 LB A/A	2.6 QT/A	PRE	A			28	0	0	95	68
		4	0.094 LB A/A	3.0 FL OZ/A	EPOST	B							
			1.0 % V/V	1.0 % V/V	EPOST	B							
			2.5 % V/V	2.5 % V/V	EPOST	B							
LSD (P=.05)							2.9	0.0	0.0	5.3	18.0		

Iowa State University

Weed Code							AMATA	CHEAL	POLPY	ZEAMD	ZEAMD	
Rating Data Type							CONTROL	CONTROL	CONTROL	PHYGEN	PHYGEN	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-03-02	06-03-02	06-03-02	06-20-02	06-27-02	
Trt-Eval Interval							0 DA-B	0 DA-B	0 DA-B	10 DA-C	24 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	EPOST B		0	0	0	2	
	Roundup UltraMAX AMS	3.7	0.56 LB AE/A	19.4 OZ/A	8.5 LB/100 GAL	SPOST D					2	
3	Degree Roundup UltraMAX AMS	3.8	1.1 LB A/A	2.32 PT/A	8.5 LB/100 GAL	PRE A		96	72	27	0	
		3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C					2	
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C						
4	Degree Xtra Roundup UltraMAX AMS	4.04	1.75 LB A/A	1.73 QT/A	8.5 LB/100 GAL	PRE A		98	99	93	0	
		3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C					0	
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C						
5	Dual II Magnum Marksman	7.64	1.6 LB A/A	1.67 PT/A		PRE A		99	72	27	15	
		3.2	1.4 LB A/A	3.5 PT/A		EPOST B					15	
6	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	99	0	
7	Bicep II Magnum Spirit	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	99	10	
	NIS	57	0.035 LB A/A	0.98 OZ/A		POST C					8	
	28% UAN		0.25 % V/V	0.25 % V/V		POST C						
			2.5 % V/V	2.5 % V/V		POST C						
8	Bicep II Magnum Touchdown IQ AMS	5.5	1.79 LB A/A	1.3 QT/A	8.5 LB/100 GAL	PRE A		96	96	95	2	
		3	0.75 LB AE/A	32.0 FL OZ/A		POST C					2	
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C						
9	FulTime Glyphomax Plus AMS	4	1.95 LB A/A	1.95 QT/A	8.5 LB/100 GAL	PRE A		99	98	87	0	
		3	0.75 LB AE/A	32 FL OZ/A		POST C					2	
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C						
10	Leadoff Accent Gold	5	1.4 LB A/A	1.12 QT/A		PRE A		99	93	88	7	
		83.8	0.152 LB A/A	2.9 OZ/A		EPOST B					5	
	COC		1.0 QT/A	1.0 QT/A		EPOST B						
	28% UAN		4.0 QT/A	4.0 QT/A		EPOST B						
11	Celebrity Plus NIS	70	0.201 LB A/A	4.6 OZ/A		EPOST B		0	0	0	15	
			0.25 % V/V	0.25 % V/V		EPOST B					15	
	28% UAN		4.0 QT/A	4.0 QT/A		EPOST B						
12	Bicep II Magnum Callisto	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	99	0	
		4	0.094 LB A/A	3.0 FL OZ/A		EPOST B					0	
	COC		1.0 % V/V	1.0 % V/V		EPOST B						
	28% UAN		2.5 % V/V	2.5 % V/V		EPOST B						
LSD (P=.05)								3.8	8.3	8.3	3.0	5.2

Iowa State University

Weed Code							SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							06-27-02	06-27-02	06-27-02	06-27-02	
Trt-Eval Interval							24 DA-B	24 DA-B	24 DA-B	24 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	EPOST B		85	72	95	99
	Roundup UltraMAX AMS	3.7	0.56 LB AE/A	19.4 OZ/A	8.5 LB/100 GAL	SPOST D					
3	Degree	3.8	1.1 LB A/A	2.32 PT/A		PRE A		99	99	99	99
	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C					
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C					
4	Degree Xtra	4.04	1.75 LB A/A	1.73 QT/A		PRE A		99	99	99	99
	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C					
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C					
5	Dual II Magnum Marksman	7.64	1.6 LB A/A	1.67 PT/A		PRE A		95	99	99	99
		3.2	1.4 LB A/A	3.5 PT/A		EPOST B					
6	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE A		95	48	99	99
7	Bicep II Magnum Spirit	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	99	99
	NIS	57	0.035 LB A/A	0.98 OZ/A		POST C					
	28% UAN		0.25 % V/V	0.25 % V/V		POST C					
			2.5 % V/V	2.5 % V/V		POST C					
8	Bicep II Magnum Touchdown IQ AMS	5.5	1.79 LB A/A	1.3 QT/A		PRE A		99	99	99	99
		3	0.75 LB AE/A	32.0 FL OZ/A		POST C					
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C					
9	FulTime Glyphomax Plus AMS	4	1.95 LB A/A	1.95 QT/A		PRE A		99	99	99	99
		3	0.75 LB AE/A	32 FL OZ/A		POST C					
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C					
10	Leadoff Accent Gold	5	1.4 LB A/A	1.12 QT/A		PRE A		99	88	99	99
	COC	83.8	0.152 LB A/A	2.9 OZ/A		EPOST B					
	28% UAN		1.0 QT/A	1.0 QT/A		EPOST B					
			4.0 QT/A	4.0 QT/A		EPOST B					
11	Celebrity Plus NIS	70	0.201 LB A/A	4.6 OZ/A		EPOST B		99	80	95	99
	28% UAN		0.25 % V/V	0.25 % V/V		EPOST B					
			4.0 QT/A	4.0 QT/A		EPOST B					
12	Bicep II Magnum Callisto	5.5	3.58 LB A/A	2.6 QT/A		PRE A		96	99	99	99
	COC	4	0.094 LB A/A	3.0 FL OZ/A		EPOST B					
	28% UAN		1.0 % V/V	1.0 % V/V		EPOST B					
			2.5 % V/V	2.5 % V/V		EPOST B					
LSD (P=.05)								1.1	12.0	0.0	0.0

Iowa State University

Weed Code							POLPY	XANST	ZEAMD	SETFA	ABUTH	
Rating Data Type							CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-27-02	06-27-02	07-24-02	07-24-02	07-24-02	
Trt-Eval Interval							24 DA-B	24 DA-B	51 DA-B	51 DA-B	51 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	EPOST B		99	96	0	99	
	Roundup UltraMAX AMS	3.7	0.56 LB AE/A	19.4 OZ/A	8.5 LB/100 GAL	SPOST D						
3	Degree Roundup UltraMAX AMS	3.8	1.1 LB A/A	2.32 PT/A	8.5 LB/100 GAL	PRE A		80	99	0	98	
		3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C						
				8.5 LB/100 GAL		POST C						
4	Degree Xtra Roundup UltraMAX AMS	4.04	1.75 LB A/A	1.73 QT/A	8.5 LB/100 GAL	PRE A		98	98	0	98	
		3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C						
				8.5 LB/100 GAL		POST C						
5	Dual II Magnum Marksman	7.64	1.6 LB A/A	1.67 PT/A		PRE A		99	99	0	95	
		3.2	1.4 LB A/A	3.5 PT/A		EPOST B						
6	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	80	0	93	
7	Bicep II Magnum Spirit	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	0	99	
	NIS	57	0.035 LB A/A	0.98 OZ/A		POST C						
	28% UAN		0.25 % V/V	0.25 % V/V		POST C						
			2.5 % V/V	2.5 % V/V		POST C						
8	Bicep II Magnum Touchdown IQ AMS	5.5	1.79 LB A/A	1.3 QT/A	8.5 LB/100 GAL	PRE A		99	99	0	98	
		3	0.75 LB AE/A	32.0 FL OZ/A		POST C						
				8.5 LB/100 GAL		POST C						
9	FulTime Glyphomax Plus AMS	4	1.95 LB A/A	1.95 QT/A	8.5 LB/100 GAL	PRE A		99	99	0	98	
		3	0.75 LB AE/A	32 FL OZ/A		POST C						
				8.5 LB/100 GAL		POST C						
10	Leadoff Accent Gold	5	1.4 LB A/A	1.12 QT/A		PRE A		99	99	0	96	
		83.8	0.152 LB A/A	2.9 OZ/A		EPOST B						
	COC		1.0 QT/A	1.0 QT/A		EPOST B						
	28% UAN		4.0 QT/A	4.0 QT/A		EPOST B						
11	Celebrity Plus NIS	70	0.201 LB A/A	4.6 OZ/A		EPOST B		99	98	0	83	
			0.25 % V/V	0.25 % V/V		EPOST B						
	28% UAN		4.0 QT/A	4.0 QT/A		EPOST B						
12	Bicep II Magnum Callisto	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	0	93	
		4	0.094 LB A/A	3.0 FL OZ/A		EPOST B						
	COC		1.0 % V/V	1.0 % V/V		EPOST B						
	28% UAN		2.5 % V/V	2.5 % V/V		EPOST B						
LSD (P=.05)								2.7	4.0	0.0	3.6	11.8

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Weed Code							AMATA	CHEAL	POLPY	XANST	ZEAMD	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							07-24-02	07-24-02	07-24-02	07-24-02	08-21-02	
Trt-Eval Interval							51 DA-B	51 DA-B	51 DA-B	51 DA-B	56 DA-D	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	EPOST B		99	99	99	99	
	Roundup UltraMAX AMS	3.7	0.56 LB AE/A	19.4 OZ/A	8.5 LB/100 GAL	SPOST D						
3	Degree Roundup UltraMAX AMS	3.8	1.1 LB A/A	2.32 PT/A	8.5 LB/100 GAL	PRE A		99	99	85	99	
		3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C						
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C						
4	Degree Xtra Roundup UltraMAX AMS	4.04	1.75 LB A/A	1.73 QT/A	8.5 LB/100 GAL	PRE A		99	99	98	98	
		3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C						
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C						
5	Dual II Magnum Marksman	7.64	1.6 LB A/A	1.67 PT/A		PRE A		99	99	99	99	
		3.2	1.4 LB A/A	3.5 PT/A		EPOST B						
6	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	99	80	
7	Bicep II Magnum Spirit	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	99	99	
	NIS	57	0.035 LB A/A	0.98 OZ/A		POST C						
	28% UAN		0.25 % V/V	0.25 % V/V		POST C						
			2.5 % V/V	2.5 % V/V		POST C						
8	Bicep II Magnum Touchdown IQ AMS	5.5	1.79 LB A/A	1.3 QT/A	8.5 LB/100 GAL	PRE A		99	99	99	98	
		3	0.75 LB AE/A	32.0 FL OZ/A	8.5 LB/100 GAL	POST C						
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C						
9	FulTime Glyphomax Plus AMS	4	1.95 LB A/A	1.95 QT/A	8.5 LB/100 GAL	PRE A		99	99	99	99	
		3	0.75 LB AE/A	32 FL OZ/A	8.5 LB/100 GAL	POST C						
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C						
10	Leadoff Accent Gold	5	1.4 LB A/A	1.12 QT/A		PRE A		99	99	99	99	
		83.8	0.152 LB A/A	2.9 OZ/A		EPOST B						
	COC		1.0 QT/A	1.0 QT/A		EPOST B						
	28% UAN		4.0 QT/A	4.0 QT/A		EPOST B						
11	Celebrity Plus NIS	70	0.201 LB A/A	4.6 OZ/A		EPOST B		93	99	99	98	
			0.25 % V/V	0.25 % V/V		EPOST B						
	28% UAN		4.0 QT/A	4.0 QT/A		EPOST B						
12	Bicep II Magnum Callisto	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	99	99	
		4	0.094 LB A/A	3.0 FL OZ/A		EPOST B						
	COC		1.0 % V/V	1.0 % V/V		EPOST B						
	28% UAN		2.5 % V/V	2.5 % V/V		EPOST B						
LSD (P=.05)								1.4	0.0	1.1	3.2	0.0

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Weed Code								SETFA	ABUTH	AMATA	CHEAL
Rating Data Type								CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit								percent	percent	percent	percent
Rating Date								08-21-02	08-21-02	08-21-02	08-21-02
Trt-Eval Interval								56 DA-D	56 DA-D	56 DA-D	56 DA-D
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	EPOST B		98	99	99	99
	Roundup UltraMAX AMS	3.7	0.56 LB AE/A	19.4 OZ/A	8.5 LB/100 GAL	SPOST D					
3	Degree	3.8	1.1 LB A/A	2.32 PT/A		PRE A		95	99	99	99
	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C					
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C					
4	Degree Xtra	4.04	1.75 LB A/A	1.73 QT/A		PRE A		96	99	99	99
	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C					
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C					
5	Dual II Magnum Marksman	7.64	1.6 LB A/A	1.67 PT/A		PRE A		92	96	99	99
		3.2	1.4 LB A/A	3.5 PT/A		EPOST B					
6	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE A		90	45	99	99
7	Bicep II Magnum Spirit	5.5	3.58 LB A/A	2.6 QT/A		PRE A		95	99	99	99
	NIS	57	0.035 LB A/A	0.98 OZ/A		POST C					
	28% UAN		0.25 % V/V	0.25 % V/V		POST C					
			2.5 % V/V	2.5 % V/V		POST C					
8	Bicep II Magnum Touchdown IQ AMS	5.5	1.79 LB A/A	1.3 QT/A		PRE A		95	99	99	99
		3	0.75 LB AE/A	32.0 FL OZ/A		POST C					
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C					
9	FulTime Glyphomax Plus AMS	4	1.95 LB A/A	1.95 QT/A		PRE A		96	99	99	99
		3	0.75 LB AE/A	32 FL OZ/A		POST C					
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C					
10	Leadoff Accent Gold	5	1.4 LB A/A	1.12 QT/A		PRE A		93	88	99	99
	COC	83.8	0.152 LB A/A	2.9 OZ/A		EPOST B					
	28% UAN		1.0 QT/A	1.0 QT/A		EPOST B					
			4.0 QT/A	4.0 QT/A		EPOST B					
11	Celebrity Plus NIS	70	0.201 LB A/A	4.6 OZ/A		EPOST B		82	68	93	99
	28% UAN		0.25 % V/V	0.25 % V/V		EPOST B					
			4.0 QT/A	4.0 QT/A		EPOST B					
12	Bicep II Magnum Callisto	5.5	3.58 LB A/A	2.6 QT/A		PRE A		92	99	99	99
	COC	4	0.094 LB A/A	3.0 FL OZ/A		EPOST B					
	28% UAN		1.0 % V/V	1.0 % V/V		EPOST B					
			2.5 % V/V	2.5 % V/V		EPOST B					
LSD (P=.05)								6.6	12.6	1.4	0.0

Iowa State University

Weed Code							POLPY	XANST	ZEAMD	
Rating Data Type							CONTROL	CONTROL	YIELD	
Rating Unit							percent	percent	BU/A	
Rating Date							08-21-02	08-21-02	10-09-02	
Trt-Eval Interval							56 DA-D	56 DA-D	155 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated							0	0	78
2	Roundup UltraMAX AMS	3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	EPOST B		99	99	214
	Roundup UltraMAX AMS	3.7	0.56 LB AE/A	19.4 OZ/A	8.5 LB/100 GAL	SPOST D				
3	Degree Roundup UltraMAX AMS	3.8	1.1 LB A/A	2.32 PT/A	8.5 LB/100 GAL	PRE A		85	99	216
		3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C				
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C				
4	Degree Xtra Roundup UltraMAX AMS	4.04	1.75 LB A/A	1.73 QT/A	8.5 LB/100 GAL	PRE A		98	98	215
		3.7	0.75 LB AE/A	26.0 FL OZ/A	8.5 LB/100 GAL	POST C				
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C				
5	Dual II Magnum Marksman	7.64	1.6 LB A/A	1.67 PT/A		PRE A		99	99	202
		3.2	1.4 LB A/A	3.5 PT/A		EPOST B				
6	Bicep II Magnum	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	80	217
7	Bicep II Magnum Spirit	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	196
	NIS	57	0.035 LB A/A	0.98 OZ/A		POST C				
	28% UAN		0.25 % V/V	0.25 % V/V		POST C				
			2.5 % V/V	2.5 % V/V		POST C				
8	Bicep II Magnum Touchdown IQ AMS	5.5	1.79 LB A/A	1.3 QT/A	8.5 LB/100 GAL	PRE A		99	98	217
		3	0.75 LB AE/A	32.0 FL OZ/A	8.5 LB/100 GAL	POST C				
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C				
9	FulTime Glyphomax Plus AMS	4	1.95 LB A/A	1.95 QT/A	8.5 LB/100 GAL	PRE A		99	99	225
		3	0.75 LB AE/A	32 FL OZ/A	8.5 LB/100 GAL	POST C				
			8.5 LB/100 GAL	8.5 LB/100 GAL		POST C				
10	Leadoff Accent Gold	5	1.4 LB A/A	1.12 QT/A		PRE A		99	99	229
		83.8	0.152 LB A/A	2.9 OZ/A		EPOST B				
	COC		1.0 QT/A	1.0 QT/A		EPOST B				
	28% UAN		4.0 QT/A	4.0 QT/A		EPOST B				
11	Celebrity Plus NIS	70	0.201 LB A/A	4.6 OZ/A		EPOST B		99	96	196
			0.25 % V/V	0.25 % V/V		EPOST B				
	28% UAN		4.0 QT/A	4.0 QT/A		EPOST B				
12	Bicep II Magnum Callisto	5.5	3.58 LB A/A	2.6 QT/A		PRE A		99	99	218
		4	0.094 LB A/A	3.0 FL OZ/A		EPOST B				
	COC		1.0 % V/V	1.0 % V/V		EPOST B				
	28% UAN		2.5 % V/V	2.5 % V/V		EPOST B				
LSD (P=.05)							1.1	3.3	23.4	

Iowa State University

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	06-07-02
Application Method:	SPRAY
Application Timing:	LPOST
Applic. Placement:	BROFOL
Air Temp., Unit:	82 F
% Relative Humidity:	56
Wind Velocity, Unit:	12 MPH
Soil Temp., Unit:	73 F
Soil Moisture:	DRY
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD V5
Stage Scale:	DESC
Height, Unit:	11 IN

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WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 3-4 LEAF
Stage Scale:	6-8 IN
Density, Unit:	15 FT2
Weed 2 Code, Stage:	SETLU 3-4 LEAF
Stage Scale:	6-8 IN
Density, Unit:	0-5 FT2
Weed 3 Code, Stage:	ABUTH 5-6 LEAF
Stage Scale:	5-8 IN
Density, Unit:	1-2 FT2
Weed 4 Code, Stage:	AMATA NUMEROUS
Stage Scale:	5-8 IN
Density, Unit:	1-4 FT2
Weed 5 Code, Stage:	CHEAL NUMEROUS
Stage Scale:	4-8 IN
Density, Unit:	0-2 FT2
Weed 6 Code, Stage:	POLPY NUMEROUS
Stage Scale:	4-7 IN
Density, Unit:	0-1 FT2
Weed 7 Code, Stage:	XANST 6-9 LEAF
Stage Scale:	6-12 IN
Density, Unit:	0-3 FT2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

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Postemergence applications of Liberty alone and in tank-mixture with Callisto,
Atrazine, Distinct or Clarity for weed control in corn, Ames, IA, 2002.

Trial ID: ACS 3

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	SETFA	SETLU	ABUTH	AMATA
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit								17.5 ft	percent	percent	percent	percent	percent
Rating Date								07-22-02	06-20-02	06-20-02	06-20-02	06-20-02	06-20-02
Trt-Eval Interval								45 DA-A	13 DA-A	13 DA-A	13 DA-A	13 DA-A	13 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								25	0	0	0	0
2	Liberty AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	29	3	99	82	83
			3.0	LB/A	3.0	LB/A	LPOST A						78
3	Liberty AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A	A	27	3	99	87	90
			3.0	LB/A	3.0	LB/A	LPOST A						82
4	Liberty AMS	1.67	0.417	LB A/A	32.0	FL OZ/A	LPOST A	A	29	5	99	91	80
			3.0	LB/A	3.0	LB/A	LPOST A						73
5	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	27	3	99	87	99
		4	0.0312	LB A/A	1.0	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A						88
6	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	28	7	99	83	99
		4	0.047	LB A/A	1.5	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A						87
7	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	28	2	99	85	99
		4	0.0625	LB A/A	2.0	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A						87
8	Liberty Atrazine AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	28	2	99	95	99
		4	1.0	LB A/A	1.0	QT/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A						98
9	Liberty Atrazine AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A	A	28	5	99	98	99
		4	1.25	LB A/A	1.25	QT/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A						96
10	Liberty Distinct AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	28	3	99	92	99
		70	0.0875	LB A/A	2.0	OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A						93
11	Liberty Callisto AMS COC	1.67	0.209	LB A/A	16.0	FL OZ/A	LPOST A	A	28	7	99	73	99
		4	0.094	LB A/A	3.0	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A						92
			1.0	% V/V	1.0	% V/V	LPOST A						
12	Liberty Clarity AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	27	8	99	80	98
		4	0.25	LB A/A	8.0	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A						85
LSD (P=.05)								2.5	5.4	0.0	6.1	10.6	9.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 06-20-02 13 DA-A	POLPY CONTROL percent 06-20-02 13 DA-A	XANST CONTROL percent 06-20-02 13 DA-A	ZEAMD PHYGEN percent 07-12-02 35 DA-A	SETFA CONTROL percent 07-12-02 35 DA-A	SETLU CONTROL percent 07-12-02 35 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Rate Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Liberty AMS	1.67 3.0	0.313 LB/A/A	24.0 FL OZ/A	LPOST A					78	68	96	0	93	80
3	Liberty AMS	1.67 3.0	0.365 LB/A/A	28.0 FL OZ/A	LPOST A					85	72	98	0	95	87
4	Liberty AMS	1.67 3.0	0.417 LB/A/A	32.0 FL OZ/A	LPOST A					80	65	96	0	93	87
5	Liberty Callisto AMS	1.67 4	0.313 0.0312 LB/A/A	24.0 1.0 FL OZ/A	LPOST A					98	82	99	0	95	83
6	Liberty Callisto AMS	1.67 4	0.313 0.047 LB/A/A	24.0 1.5 FL OZ/A	LPOST A					96	88	99	0	95	82
7	Liberty Callisto AMS	1.67 4	0.313 0.0625 LB/A/A	24.0 2.0 FL OZ/A	LPOST A					98	82	99	0	93	82
8	Liberty Atrazine AMS	1.67 4	0.313 1.0 LB/A/A	24.0 1.0 QT/A	LPOST A					99	99	99	0	96	95
9	Liberty Atrazine AMS	1.67 4	0.365 1.25 LB/A/A	28.0 1.25 QT/A	LPOST A					99	98	99	0	95	93
10	Liberty Distinct AMS	1.67 70	0.313 0.0875 LB/A/A	24.0 2.0 OZ/A	LPOST A					96	88	99	0	95	88
11	Liberty Callisto AMS COC	1.67 4	0.209 0.094 LB/A/A	16.0 3.0 FL OZ/A	LPOST A					98	88	99	0	87	68
12	Liberty Clarity AMS	1.67 4	0.313 0.25 LB/A/A	24.0 8.0 FL OZ/A	LPOST A					96	85	98	0	92	73
LSD (P=.05)										7.9	9.3	3.3	0.0	4.3	7.6

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ABUTH CONTROL percent 07-12-02 35 DA-A	AMATA CONTROL percent 07-12-02 35 DA-A	CHEAL CONTROL percent 07-12-02 35 DA-A	POLPY CONTROL percent 07-12-02 35 DA-A	XANST CONTROL percent 07-12-02 35 DA-A	ZEAMD PHYGEN percent 07-31-02 54 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Liberty AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		82	73	72	67	90	0
			3.0	LB/A	3.0	LB/A	LPOST A							
3	Liberty AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A		90	77	80	68	93	0
			3.0	LB/A	3.0	LB/A	LPOST A							
4	Liberty AMS	1.67	0.417	LB A/A	32.0	FL OZ/A	LPOST A		80	68	77	63	93	0
			3.0	LB/A	3.0	LB/A	LPOST A							
5	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		99	83	98	77	93	0
		4	0.0312	LB A/A	1.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
6	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		99	80	98	87	95	0
		4	0.047	LB A/A	1.5	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
7	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		99	82	98	83	96	0
		4	0.0625	LB A/A	2.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
8	Liberty Atrazine AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		99	96	99	99	96	0
		4	1.0	LB A/A	1.0	QT/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
9	Liberty Atrazine AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A		98	93	99	99	98	0
		4	1.25	LB A/A	1.25	QT/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
10	Liberty Distinct AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		98	85	96	90	96	0
		70	0.0875	LB A/A	2.0	OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
11	Liberty Callisto AMS COC	1.67	0.209	LB A/A	16.0	FL OZ/A	LPOST A		99	92	99	88	98	0
		4	0.094	LB A/A	3.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
			1.0	% V/V	1.0	% V/V	LPOST A							
12	Liberty Clarity AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		96	77	99	78	98	0
		4	0.25	LB A/A	8.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
LSD (P=.05)									11.3	8.9	4.8	9.3	4.8	0.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL percent 07-31-02 54 DA-A	SETLU CONTROL percent 07-31-02 54 DA-A	ABUTH CONTROL percent 07-31-02 54 DA-A	AMATA CONTROL percent 07-31-02 54 DA-A	CHEAL CONTROL percent 07-31-02 54 DA-A	POLPY CONTROL percent 07-31-02 54 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Liberty AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		95	80	78	67	62	65
			3.0	LB/A	3.0	LB/A	LPOST A							
3	Liberty AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A		95	83	87	70	73	67
			3.0	LB/A	3.0	LB/A	LPOST A							
4	Liberty AMS	1.67	0.417	LB A/A	32.0	FL OZ/A	LPOST A		93	85	80	63	65	72
			3.0	LB/A	3.0	LB/A	LPOST A							
5	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		95	80	99	78	96	75
		4	0.0312	LB A/A	1.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
6	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		93	78	98	75	98	85
		4	0.047	LB A/A	1.5	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
7	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		92	80	99	75	96	82
		4	0.0625	LB A/A	2.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
8	Liberty Atrazine AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		96	93	96	93	99	99
		4	1.0	LB A/A	1.0	QT/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
9	Liberty Atrazine AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A		95	92	98	92	98	99
		4	1.25	LB A/A	1.25	QT/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
10	Liberty Distinct AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		95	83	96	82	96	86
		70	0.0875	LB A/A	2.0	OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
11	Liberty Callisto AMS COC	1.67	0.209	LB A/A	16.0	FL OZ/A	LPOST A		87	62	99	92	99	86
		4	0.094	LB A/A	3.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
			1.0	% V/V	1.0	% V/V	LPOST A							
12	Liberty Clarity AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		90	67	96	73	99	77
		4	0.25	LB A/A	8.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
LSD (P=.05)									4.8	11.3	12.5	9.5	6.3	13.7

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Weed Code								XANST
Rating Data Type								CONTROL
Rating Unit								percent
Rating Date								07-31-02
Trt-Eval Interval								54 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code
1	Untreated							0
2	Liberty AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	88
			3.0	LB/A	3.0	LB/A	LPOST A	
3	Liberty AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A	92
			3.0	LB/A	3.0	LB/A	LPOST A	
4	Liberty AMS	1.67	0.417	LB A/A	32.0	FL OZ/A	LPOST A	92
			3.0	LB/A	3.0	LB/A	LPOST A	
5	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	92
		4	0.0312	LB A/A	1.0	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
6	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	95
		4	0.047	LB A/A	1.5	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
7	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	96
		4	0.0625	LB A/A	2.0	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
8	Liberty Atrazine AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	96
		4	1.0	LB A/A	1.0	QT/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
9	Liberty Atrazine AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A	95
		4	1.25	LB A/A	1.25	QT/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
10	Liberty Distinct AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	95
		70	0.0875	LB A/A	2.0	OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
11	Liberty Callisto AMS COC	1.67	0.209	LB A/A	16.0	FL OZ/A	LPOST A	98
		4	0.094	LB A/A	3.0	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
			1.0	% V/V	1.0	% V/V	LPOST A	
12	Liberty Clarity AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	98
		4	0.25	LB A/A	8.0	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
LSD (P=.05)								5.1

Iowa State University

Preemergence applied Bicep II Magnum, Dual II Magnum and others followed by postemergence Callisto, Touchdown IQ and Northstar in corn, Ames, IA, 2002.

Trial ID: ACS 4

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-06-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate various preemergence applied herbicides followed by postemergence applications of Callisto, Northstar, Touchdown IQ, Option, Distinct, Roundup UltraMAX and others for crop phytotoxicity and weed control in corn.

Conclusions: Corn stand was not significantly affected by herbicide treatment when observed on July 22. No corn injury was observed from any preemergence (PRE) applied herbicide when observed on May 23, sixteen days after application. On June 14, corn injury was observed with most early postemergence (EPOST) and postemergence (POST) applied treatments. Giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed control was good to excellent with all PRE plus EPOST and POST treatment combinations when observed on June 22, and July 12. On August 7, treatments continued to demonstrate good to excellent control overall, except POST applied Define plus Option. Giant foxtail, common waterhemp, and common lambsquarters were acceptable with this treatment on August 7, but velvetleaf and Pennsylvania smartweed were not. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.

Crop 1: ZEAMD CORN, FIELD

Variety: DEKALB DKC 57-40 RR

Planting Date: 05-06-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

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SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM
 pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-07-02	05-30-02	06-06-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	POST
Applic. Placement:	BROSOL	BROFOL	BROFOL
Air Temp., Unit:	61 F	90 F	79 F
% Relative Humidity:	71	63	50
Wind Velocity, Unit:	8 MPH	4 MPH	10 MPH
Soil Temp., Unit:	63 F	73 F	70 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	50	30	5

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V3	ZEAMD V5
Stage Scale:	-	DESC	DESC
Height, Unit:	-	3.5 IN	8 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-3 LEAF	SETFA 1 LEAF
Stage Scale:	-	0.25-2 IN	0.5 IN
Density, Unit:	- -	0-30 FT2	0-1 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-2	ABUTH 1-5 LEAF
Stage Scale:	-	0.25-2 IN	0.5-3 IN
Density, Unit:	- -	0-5 FT2	0-5 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-4	AMATA NUMEROUS
Stage Scale:	-	0.5 IN	0.5-2 IN
Density, Unit:	- -	0-8 FT2	0-3 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL COTYL-2	CHEAL NUMEROUS
Stage Scale:	-	0.75 IN	0.5-2 IN
Density, Unit:	- -	0-5 FT2	0-5 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-4 LEAF	POLPY 2-8 LEAF
Stage Scale:	-	0.5 IN	0.5-3 IN
Density, Unit:	- -	0-3 FT2	0-1 FT2

Iowa State University

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	TERRA PRO
Operating Pressure:	30	30	30
Nozzle Type:	11002	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

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Preemergence applied Bicep II Magnum, Dual II Magnum and others followed by postemergence Callisto, Touchdown IQ and Northstar in corn, Ames, IA, 2002.

Trial ID: ACS 4

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	
Rating Date							07-22-02	05-23-02	06-06-02	06-06-02	06-06-02	
Trt-Eval Interval							76 DA-A	16 DA-A	7 DA-B	30 DA-A	30 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							24	0	0	0	
2	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A		PRE	A	25	0	0	93	
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		POST	C				90	
	COC		1.0 % V/V	1.0 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
3	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A		PRE	A	27	0	0	90	
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		POST	C				67	
	Atrazine	4	0.5 LB A/A	1.0 PT/A		POST	C					
	COC		1.0 % V/V	1.0 % V/V		POST	C					
	28% UAN		1.0 % V/V	1.0 % V/V		POST	C					
4	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		EPOST	B	26	0	0	0	
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B				0	
	COC		1.0 % V/V	1.0 % V/V		EPOST	B					
	28% UAN		1.0 % V/V	1.0 % V/V		EPOST	B					
5	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		PRE	A	26	0	0	96	
	Northstar	47.4	0.148 LB A/A	5.0 OZ/A		POST	C				91	
	NIS		0.25 % V/V	0.25 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
6	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		PRE	A	27	0	0	96	
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A		POST	C				93	
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C					
7	Leadoff	5	2.8 LB A/A	4.5 PT/A		PRE	A	28	0	0	95	
	Basis Gold	89.5	0.78 LB A/A	14.0 OZ/A		POST	C				90	
	COC		1.0 % V/V	1.0 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
8	Outlook	6	0.94 LB A/A	20.0 FL OZ/A		PRE	A	25	0	0	0	
	Marksman	3.2	1.4 LB A/A	3.5 PT/A		EPOST	B				0	
9	Guardsman Max	5	2.7 LB A/A	4.3 PT/A		PRE	A	26	0	0	98	
	Distinct	70	0.175 LB A/A	4.0 OZ/A		POST	C				96	
	NIS		0.25 % V/V	0.25 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
10	Define	60	0.71 LB A/A	19.0 OZ/A		PRE	A	25	0	0	90	
	Option	35	0.0328 LB A/A	1.5 OZ/A		POST	C				50	
	NIS		0.25 % V/V	0.25 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
11	Topnotch	3.2	2.2 LB A/A	2.75 QT/A		PRE	A	25	0	0	96	
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A		POST	C				77	
	NIS		0.25 % V/V	0.25 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
12	Harness	7	2.19 LB A/A	2.5 PT/A		PRE	A	24	0	0	98	
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A		POST	C				82	
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C					
LSD (P=.05)								3.3	0.0	0.0	5.1	19.6

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-06-02 30 DA-A	CHEAL CONTROL percent 06-06-02 30 DA-A	POLPY CONTROL percent 06-06-02 30 DA-A	ZEAMD PHYGEN percent 06-14-02 8 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	PRE	A		99	99	99	0
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
3	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A	PRE	A		99	72	93	2
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST	C					
	Atrazine	4	0.5 LB A/A	1.0 PT/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		1.0 % V/V	1.0 % V/V	POST	C					
4	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	EPOST	B		0	0	0	10
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	EPOST	B					
	COC		1.0 % V/V	1.0 % V/V	EPOST	B					
	28% UAN		1.0 % V/V	1.0 % V/V	EPOST	B					
5	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	PRE	A		99	99	99	5
	Northstar	47.4	0.148 LB A/A	5.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
6	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	PRE	A		99	99	99	0
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	POST	C					
7	Leadoff	5	2.8 LB A/A	4.5 PT/A	PRE	A		99	99	99	7
	Basis Gold	89.5	0.78 LB A/A	14.0 OZ/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
8	Outlook	6	0.94 LB A/A	20.0 FL OZ/A	PRE	A		0	0	0	3
	Marksman	3.2	1.4 LB A/A	3.5 PT/A	EPOST	B					
9	Guardsman Max	5	2.7 LB A/A	4.3 PT/A	PRE	A		99	99	99	7
	Distinct	70	0.175 LB A/A	4.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
10	Define	60	0.71 LB A/A	19.0 OZ/A	PRE	A		99	77	90	7
	Option	35	0.0328 LB A/A	1.5 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
11	Topnotch	3.2	2.2 LB A/A	2.75 QT/A	PRE	A		99	96	99	10
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
12	Harness	7	2.19 LB A/A	2.5 PT/A	PRE	A		99	95	96	5
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	POST	C					
LSD (P=.05)								0.0	12.2	7.7	7.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD PHYGEN percent 06-22-02 16 DA-C	SETFA CONTROL percent 06-22-02 16 DA-C	ABUTH CONTROL percent 06-22-02 16 DA-C	AMATA CONTROL percent 06-22-02 16 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	2	95	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	3	93	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C				
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	8	95	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B				
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	5	96	99	99
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	0	99	99	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	7	99	99	99
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	5	98	98	99
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B				
9	Guardsman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	10	99	99	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	5	95	83	98
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	8	95	98	99
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	3	99	99	99
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
LSD (P=.05)									6.1	3.0	2.1	1.1

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-22-02 16 DA-C	POLPY CONTROL percent 06-22-02 16 DA-C	ZEAMD PHYGEN percent 07-12-02 36 DA-C	SETFA CONTROL percent 07-12-02 36 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	99	99	0	93
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	99	99	0	92
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C				
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	99	99	0	93
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B				
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	99	3	95
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	99	0	98
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	99	99	3	96
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	99	99	3	98
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B				
9	Guardman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	99	99	3	98
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	90	87	0	95
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	98	99	3	95
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	99	99	0	95
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
LSD (P=.05)									1.1	1.4	2.9	3.2

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-12-02 36 DA-C	AMATA CONTROL percent 07-12-02 36 DA-C	CHEAL CONTROL percent 07-12-02 36 DA-C	POLPY CONTROL percent 07-12-02 36 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	99	99	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	99	99	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C				
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	99	99	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B				
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	98	99	99	99
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	98	99	99	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	98	99	99	99
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	99	99	99	99
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B				
9	Guardsman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	99	99	99	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	83	98	90	87
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	99	99	98	99
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	98	99	99	99
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
LSD (P=.05)									2.8	1.1	1.1	1.4

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD PHYGEN percent 08-07-02 62 DA-C	SETFA CONTROL percent 08-07-02 62 DA-C	ABUTH CONTROL percent 08-07-02 62 DA-C	AMATA CONTROL percent 08-07-02 62 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	0	92	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	0	90	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C				
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	0	93	98	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B				
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	0	93	96	99
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	0	95	95	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	0	95	96	99
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	0	95	99	99
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B				
9	Guardsman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	0	95	99	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	0	95	78	95
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	0	93	99	99
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	0	93	95	98
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
LSD (P=.05)									0.0	3.9	2.4	2.5

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Weed Code							CHEAL	POLPY		
Rating Data Type							CONTROL	CONTROL		
Rating Unit							percent	percent		
Rating Date							08-07-02	08-07-02		
Trt-Eval Interval							62 DA-C	62 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated								0	0
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C		
	COC		1.0	% V/V	1.0	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C		
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C		
	COC		1.0	% V/V	1.0	% V/V	POST	C		
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C		
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B		
	COC		1.0	% V/V	1.0	% V/V	EPOST	B		
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B		
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	99
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C		
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	99	99
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C		
	COC		1.0	% V/V	1.0	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	99	99
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B		
9	Guardsman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	99	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	85	78
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	98	99
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	99	99
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C		
LSD (P=.05)							2.7	1.4		

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

A	
Application Date:	05-31-02
Application Method:	SPRAY
Application Timing:	EPOST
Applic. Placement:	BROFOL
Air Temp., Unit:	86 F
% Relative Humidity:	45
Wind Velocity, Unit:	6 MPH
Soil Temp., Unit:	75 F
Soil Moisture:	DRY
% Cloud Cover:	10

CROP STAGE AT EACH APPLICATION

A	
Crop 1 Code, Stage:	ZEAMD V4
Stage Scale:	DESC
Height, Unit:	5 IN

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WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-4 LEAF
Stage Scale:	0.25-3 IN
Density, Unit:	75 FT2
Weed 2 Code, Stage:	SETLU 1-4 LEAF
Stage Scale:	0.25-3 IN
Density, Unit:	0-3 FT2
Weed 3 Code, Stage:	ABUTH COTYL-4
Stage Scale:	0.25-3 IN
Density, Unit:	0-5 FT2
Weed 4 Code, Stage:	AMATA COTYL-4
Stage Scale:	0.25-2 IN
Density, Unit:	0-10 FT2
Weed 5 Code, Stage:	CHEAL COTYL-6
Stage Scale:	0.25-2 IN
Density, Unit:	0-20 FT2
Weed 6 Code, Stage:	POLPY 2-4 LEAF
Stage Scale:	1-4 IN
Density, Unit:	0-3 FT2
Weed 7 Code, Stage:	XANST COTYL-4
Stage Scale:	1-4 IN
Density, Unit:	0-5 FT2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

**Evaluation of postemergence applied Liberty in tank-mixture with various rates
of Define for crop phytotoxicity and weed control in corn, Ames, IA, 2002.**

Trial ID: ACS 5

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD STAND 17.5 ft 07-22-02 52 DA-A	ZEAMD PHYGEN percent 06-14-02 14 DA-A	SETFA CONTROL percent 06-14-02 14 DA-A	SETLU CONTROL percent 06-14-02 14 DA-A	ABUTH CONTROL percent 06-14-02 14 DA-A	AMATA CONTROL percent 06-14-02 14 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Stg	Appl Code						
1	Untreated							24	0	0	0	0	
2	Liberty AMS	1.67 3.0	0.313 LB A/A LB/A	24.0 FL OZ/A LB/A	EPOST A EPOST A			27	5	92	70	78	
3	Liberty Define AMS	1.67 60 3.0	0.313 LB A/A LB/A	24.0 FL OZ/A LB/A	EPOST A EPOST A			28	3	98	75	82	
4	Liberty Define AMS	1.67 60 3.0	0.313 LB A/A LB/A	24.0 FL OZ/A LB/A	EPOST A EPOST A			29	5	99	78	83	
5	Liberty Define AMS	1.67 60 3.0	0.313 LB A/A LB/A	24.0 FL OZ/A LB/A	EPOST A EPOST A			29	5	99	85	83	
6	Liberty ATZ AMS	4.3 3.0	1.34 LB A/A LB/A	40.0 FL OZ/A LB/A	EPOST A EPOST A			28	3	99	96	98	
7	Liberty Define Atrazine AMS	1.67 60 4 3.0	0.313 LB A/A LB/A	24.0 FL OZ/A LB/A	EPOST A EPOST A			27	5	99	98	99	
8	Liberty Bicep II Magnum AMS	1.67 5.5 3.0	0.365 LB A/A LB/A	28.0 FL OZ/A LB/A	EPOST A EPOST A			30	5	99	98	98	
9	Liberty FullTime AMS	1.67 4 3.0	0.365 LB A/A LB/A	28.0 FL OZ/A LB/A	EPOST A EPOST A			27	8	99	99	99	
10	Liberty Guardman Max AMS	1.67 5 3.0	0.365 LB A/A LB/A	28.0 FL OZ/A LB/A	EPOST A EPOST A			27	5	98	98	96	
LSD (P=.05)								2.5	3.6	2.2	5.6	8.7	6.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-14-02 14 DA-A	POLPY CONTROL percent 06-14-02 14 DA-A	ZEAMD PHYGEN percent 06-28-02 28 DA-A	SETFA CONTROL percent 06-28-02 28 DA-A	SETLU CONTROL percent 06-28-02 28 DA-A			
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated									0	33	0	0	0
2	Liberty AMS	1.67 3.0	0.313 LB/A	24.0 FL OZ/A	EPOST A					82	99	0	90	65
3	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.15 LB/A	24.0 FL OZ/A 4.0 OZ/A	EPOST A EPOST A					82	98	0	98	83
4	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.225 LB/A	24.0 FL OZ/A 6.0 OZ/A	EPOST A EPOST A					90	94	0	98	87
5	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.3 LB/A	24.0 FL OZ/A 8.0 OZ/A	EPOST A EPOST A					83	93	0	98	88
6	Liberty ATZ AMS	4.3 3.0	1.34 LB/A	40.0 FL OZ/A	EPOST A					99	99	0	93	92
7	Liberty Define Atrazine AMS	1.67 60 4 3.0	0.313 LB/A 0.15 LB/A	24.0 FL OZ/A 4.0 OZ/A	EPOST A EPOST A					99	99	0	98	98
8	Liberty Bicep II Magnum AMS	1.67 5.5 3.0	0.365 LB/A 1.65 LB/A	28.0 FL OZ/A 1.2 QT/A	EPOST A EPOST A					99	99	0	99	98
9	Liberty FulTime AMS	1.67 4 3.0	0.365 LB/A 1.65 LB/A	28.0 FL OZ/A 1.65 QT/A	EPOST A EPOST A					99	98	0	99	99
10	Liberty Guardsman Max AMS	1.67 5 3.0	0.365 LB/A 1.25 LB/A	28.0 FL OZ/A 2.0 PT/A	EPOST A EPOST A					98	99	0	98	98
LSD (P=.05)							8.3	31.3	0.0	3.3	8.0			

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 06-28-02 28 DA-A	AMATA CONTROL percent 06-28-02 28 DA-A	CHEAL CONTROL percent 06-28-02 28 DA-A	POLPY CONTROL percent 06-28-02 28 DA-A	XANST CONTROL percent 06-28-02 28 DA-A			
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Liberty AMS	1.67 3.0	0.313 LB/A	24.0 FL OZ/A	EPOST A					65	72	73	98	53
3	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.15 LB/A	24.0 FL OZ/A 4.0 OZ/A	EPOST A EPOST A					77	92	80	98	60
4	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.225 LB/A	24.0 FL OZ/A 6.0 OZ/A	EPOST A EPOST A					70	93	85	98	53
5	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.3 LB/A	24.0 FL OZ/A 8.0 OZ/A	EPOST A EPOST A					68	90	78	98	60
6	Liberty ATZ AMS	4.3 3.0	1.34 LB/A	40.0 FL OZ/A	EPOST A					98	99	99	99	73
7	Liberty Define Atrazine AMS	1.67 60 4 3.0	0.313 LB/A 0.15 LB/A	24.0 FL OZ/A 4.0 OZ/A	EPOST A EPOST A					96	99	99	99	85
8	Liberty Bicep II Magnum AMS	1.67 5.5 3.0	0.365 LB/A 1.65 LB/A	28.0 FL OZ/A 1.2 QT/A	EPOST A EPOST A					93	98	99	99	78
9	Liberty FulTime AMS	1.67 4 3.0	0.365 LB/A 1.65 LB/A	28.0 FL OZ/A 1.65 QT/A	EPOST A EPOST A					98	99	99	99	80
10	Liberty Guardsman Max AMS	1.67 5 3.0	0.365 LB/A 1.25 LB/A	28.0 FL OZ/A 2.0 PT/A	EPOST A EPOST A					96	99	99	99	85
LSD (P=.05)							12.5	4.9	9.8	2.0	19.1			

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD PHYGEN percent 07-18-02 48 DA-A	SETFA CONTROL percent 07-18-02 48 DA-A	SETLU CONTROL percent 07-18-02 48 DA-A	ABUTH CONTROL percent 07-18-02 48 DA-A	AMATA CONTROL percent 07-18-02 48 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Liberty AMS	1.67 3.0	0.313 LB/A	24.0 3.0	FL OZ/A LB/A	EPOST EPOST	A A	0	85	78	67 73	
3	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.15 LB/A 3.0 LB/A	24.0 4.0 3.0	FL OZ/A OZ/A LB/A	EPOST EPOST EPOST	A A A	0	95	90	75 92	
4	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.225 LB/A 3.0 LB/A	24.0 6.0 3.0	FL OZ/A OZ/A LB/A	EPOST EPOST EPOST	A A A	0	96	92	70 93	
5	Liberty Define AMS	1.67 60 3.0	0.313 LB/A 0.3 LB/A 3.0 LB/A	24.0 8.0 3.0	FL OZ/A OZ/A LB/A	EPOST EPOST EPOST	A A A	0	93	92	68 88	
6	Liberty ATZ AMS	4.3 3.0	1.34 LB/A 3.0 LB/A	40.0 3.0	FL OZ/A LB/A	EPOST EPOST	A A	0	93	90	95 99	
7	Liberty Define Atrazine AMS	1.67 60 4 3.0	0.313 LB/A 0.15 LB/A 1.0 LB/A 3.0 LB/A	24.0 4.0 1.0 3.0	FL OZ/A OZ/A QT/A LB/A	EPOST EPOST EPOST EPOST	A A A A	0	96	96	95 99	
8	Liberty Bicep II Magnum AMS	1.67 5.5 3.0	0.365 LB/A 1.65 LB/A 3.0 LB/A	28.0 1.2 3.0	FL OZ/A QT/A LB/A	EPOST EPOST EPOST	A A A	0	98	98	92 98	
9	Liberty FulTime AMS	1.67 4 3.0	0.365 LB/A 1.65 LB/A 3.0 LB/A	28.0 1.65 3.0	FL OZ/A QT/A LB/A	EPOST EPOST EPOST	A A A	0	99	99	98 99	
10	Liberty Guardsman Max AMS	1.67 5 3.0	0.365 LB/A 1.25 LB/A 3.0 LB/A	28.0 2.0 3.0	FL OZ/A PT/A LB/A	EPOST EPOST EPOST	A A A	0	98	98	95 99	
LSD (P=.05)								0.0	4.0	4.3	13.6	6.2

Iowa State University

Weed Code							CHEAL	POLPY	XANST	
Rating Data Type							CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	
Rating Date							07-18-02	07-18-02	07-18-02	
Trt-Eval Interval							48 DA-A	48 DA-A	48 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit Stg	Appl Code			
1	Untreated							0	0	0
2	Liberty AMS	1.67	0.313	LB A/A	24.0 FL OZ/A	EPOST A		72	98	53
			3.0	LB/A	3.0 LB/A	EPOST A				
3	Liberty Define AMS	1.67	0.313	LB A/A	24.0 FL OZ/A	EPOST A		80	98	60
		60	0.15	LB A/A	4.0 OZ/A	EPOST A				
			3.0	LB/A	3.0 LB/A	EPOST A				
4	Liberty Define AMS	1.67	0.313	LB A/A	24.0 FL OZ/A	EPOST A		85	98	53
		60	0.225	LB A/A	6.0 OZ/A	EPOST A				
			3.0	LB/A	3.0 LB/A	EPOST A				
5	Liberty Define AMS	1.67	0.313	LB A/A	24.0 FL OZ/A	EPOST A		77	98	60
		60	0.3	LB A/A	8.0 OZ/A	EPOST A				
			3.0	LB/A	3.0 LB/A	EPOST A				
6	Liberty ATZ AMS	4.3	1.34	LB A/A	40.0 FL OZ/A	EPOST A		99	99	73
			3.0	LB/A	3.0 LB/A	EPOST A				
7	Liberty Define AMS	1.67	0.313	LB A/A	24.0 FL OZ/A	EPOST A		99	99	85
		60	0.15	LB A/A	4.0 OZ/A	EPOST A				
	Atrazine	4	1.0	LB A/A	1.0 QT/A	EPOST A				
			3.0	LB/A	3.0 LB/A	EPOST A				
8	Liberty Bicep II Magnum AMS	1.67	0.365	LB A/A	28.0 FL OZ/A	EPOST A		99	99	73
		5.5	1.65	LB A/A	1.2 QT/A	EPOST A				
			3.0	LB/A	3.0 LB/A	EPOST A				
9	Liberty FulTime AMS	1.67	0.365	LB A/A	28.0 FL OZ/A	EPOST A		99	99	77
		4	1.65	LB A/A	1.65 QT/A	EPOST A				
			3.0	LB/A	3.0 LB/A	EPOST A				
10	Liberty Guardsman Max AMS	1.67	0.365	LB A/A	28.0 FL OZ/A	EPOST A		99	99	83
		5	1.25	LB A/A	2.0 PT/A	EPOST A				
			3.0	LB/A	3.0 LB/A	EPOST A				
LSD (P=.05)								11.7	2.0	21.4

Iowa State University

Evaluation of weed control with preemergence and postemergence applied herbicide combinations including Lightning, Distinct, Callisto and others, Ames, IA, 2002.

Trial ID: ACS 6

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-03-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate various preemergence and postemergence applied herbicide combinations for crop injury and weed control in corn.

Conclusions: Significant differences in corn stand between herbicide treatments were determined on July 22. These differences, however, were attributable to factors such as variability in seeding rate and unfavorable environmental conditions following planting, rather than herbicide treatment. No corn injury was detected from PRE applied treatments (data not shown). Significant injury, however, was observed on June 6, 14, and 19 from several EPOST or MPOST applied treatments. Generally, all PRE, PRE plus EPOST or MPOST, EPOST and MPOST applied treatments achieved good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and common cocklebur control when observed on June 19, July 19, and August 20. Exceptions included PRE Guardsman Max control of velvetleaf and common cocklebur, PRE Guardsman Max plus Balance Pro and G-Max Lite plus Lightning control of common cocklebur, and EPOST Lightning control of common waterhemp. Significant differences in corn yield between treatments were determined. These differences were generally attributed to the crop injury caused by the treatments and to the variations in corn stand. Corn yields from all of the treatments were significantly higher than the untreated control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD

Variety: GARST 8464 IT

Planting Date: 05-03-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT

Plot Length, Unit: 25 FT

Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-04-02	05-31-02	06-06-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	68 F	86 F	79 F
% Relative Humidity:	58	45	50
Wind Velocity, Unit:	8 MPH	6 MPH	10 MPH
Soil Temp., Unit:	54 F	75 F	70 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	0	10	5

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V4	ZEAMD V5
Stage Scale:	-	DESC	DESC
Height, Unit:	-	4 IN	10 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF	SETFA 1-4LF, 4T
Stage Scale:	-	0.25-4 IN	0.5-7 IN
Density, Unit:	- -	100 FT2	100 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-4	ABUTH COTYL-6
Stage Scale:	-	0.25-3 IN	0.25-5 IN
Density, Unit:	- -	0-5 FT2	0-3 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-NUM	AMATA NUMEROUS
Stage Scale:	-	0.25-3 IN	1-4 IN
Density, Unit:	- -	0-15 FT2	0-3 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 4-NUM	CHEAL NUMEROUS
Stage Scale:	-	2-3 IN	1-4 IN
Density, Unit:	- -	0-5 FT2	0-1 FT2
Weed 5 Code, Stage:	XANST -	XANST COTYL-4	XANST COTYL-9
Stage Scale:	-	1-4 IN	1-9 IN
Density, Unit:	- -	0-3 FT2	0-5 FT2

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	TERRA PRO
Operating Pressure:	30	30	30
Nozzle Type:	11002	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

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Evaluation of weed control with preemergence and postemergence applied herbicide combinations including Lightning, Distinct, Callisto and others, Ames, IA, 2002.

Trial ID: ACS 6

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD
Rating Data Type								STAND	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Rating Unit								17.5 ft	percent	percent	percent	percent
Rating Date								07-22-02	05-23-02	06-06-02	06-14-02	06-19-02
Trt-Eval Interval								79 DA-A	19 DA-A	6 DA-B	14 DA-B	13 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							23	0	0	0	0
2	Guardsman Max	5	2.5 LB A/A	4.0 PT/A		PRE	A	31	0	0	0	0
3	Guardsman Max Balance Pro	5 4	2.5 LB A/A 0.047 LB A/A	4.0 PT/A 1.5 FL OZ/A		PRE	A	28	0	0	0	0
4	G-Max Lite Lightning	5 70	1.88 LB A/A 0.056 LB A/A	3.0 PT/A 1.28 OZ/A		PRE	A	27	0	0	0	0
5	Guardsman Max Distinct NIS AMS	5 70	2.5 LB A/A 0.175 LB A/A 0.25 % V/V 5.0 LB/100 GAL	4.0 PT/A 4.0 OZ/A 0.25 % V/V 5.0 LB/100 GAL		PRE MPOST	A C C C	29	0	0	7	5
6	Guardsman Max Clarity AMS	5 4	2.5 LB A/A 0.5 LB A/A 2.5 LB/A	4.0 PT/A 1.0 PT/A 2.5 LB/A		PRE EPOST	A B B	29	0	12	5	3
7	Outlook Marksman	6 3.2	0.94 LB A/A 1.4 LB A/A	20.0 FL OZ/A 3.5 PT/A		PRE EPOST	A B	29	0	3	2	0
8	Outlook Distinct NIS AMS	6 70	0.94 LB A/A 0.175 LB A/A 0.25 % V/V 5.0 LB/100 GAL	20.0 FL OZ/A 4.0 OZ/A 0.25 % V/V 5.0 LB/100 GAL		PRE MPOST	A C C C	29	0	0	3	2
9	Outlook Clarity AMS	6 4	0.94 LB A/A 0.5 LB A/A 2.5 LB/A	20.0 FL OZ/A 1.0 PT/A 2.5 LB/A		PRE EPOST	A B B	28	0	15	5	3
10	G-Max Lite Distinct NIS AMS	5 70	2.5 LB A/A 0.175 LB A/A 0.25 % V/V 5.0 LB/100 GAL	4.0 PT/A 4.0 OZ/A 0.25 % V/V 5.0 LB/100 GAL		PRE MPOST	A C C C	28	0	0	5	3
11	Lightning Distinct NIS AMS	70 70	0.056 LB A/A 0.175 LB A/A 0.25 % V/V 12.0 LB/100 GAL	1.28 OZ/A 4.0 OZ/A 0.25 % V/V 12.0 LB/100 GAL		MPOST	C C C C	28	0	0	13	15
12	Atrazine Lightning Distinct NIS AMS	90 70 70	1.0 LB A/A 0.056 LB A/A 0.175 LB A/A 0.25 % V/V 12.0 LB/100 GAL	1.11 LB/A 1.28 OZ/A 4.0 OZ/A 0.25 % V/V 12.0 LB/100 GAL		PRE EPOST	A B B B B	27	0	17	3	2
13	G-Max Lite Lightning Distinct NIS AMS	5 70 70	0.94 LB A/A 0.056 LB A/A 0.175 LB A/A 0.25 % V/V 12.0 LB/100 GAL	1.5 PT/A 1.28 OZ/A 4.0 OZ/A 0.25 % V/V 12.0 LB/100 GAL		PRE MPOST	A C C C C	26	0	0	8	5

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD STAND 17.5 ft 07-22-02 79 DA-A	ZEAMD PHYGEN percent 05-23-02 19 DA-A	ZEAMD PHYGEN percent 06-06-02 6 DA-B	ZEAMD PHYGEN percent 06-14-02 14 DA-B	ZEAMD PHYGEN percent 06-19-02 13 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
14	Outlook Lightning Distinct NIS AMS	6 70 70	0.56 LB A/A 0.056 LB A/A 0.175 LB A/A	12.0 OZ/A 1.28 OZ/A 4.0 OZ/A	12.0 OZ/A 1.28 OZ/A 4.0 OZ/A	PRE EPOST EPOST	A B B	26	0	15	5	2
			0.25 % V/V 12.0 LB/100 GAL	0.25 % V/V 12.0 LB/100 GAL	0.25 % V/V 12.0 LB/100 GAL	EPOST EPOST	B B					
15	Lightning Marksman NIS AMS	70 3.2	0.056 LB A/A 1.0 LB A/A	1.28 OZ/A 2.5 PT/A	1.28 OZ/A 2.5 PT/A	EPOST EPOST	B B	27	0	12	12	13
			0.25 % V/V 12.0 LB/100 GAL	0.25 % V/V 12.0 LB/100 GAL	0.25 % V/V 12.0 LB/100 GAL	EPOST EPOST	B B					
16	Lightning Callisto Atrazine COC AMS	70 4	0.056 LB A/A 0.0625 LB A/A	1.28 OZ/A 2.0 OZ/A	1.28 OZ/A 2.0 OZ/A	EPOST EPOST	B B	29	0	17	10	7
		90	0.25 LB A/A 1.0 % V/V 12.0 LB A/100 GAL	0.278 LB/A 1.0 % V/V 12.0 LB/100 GAL	0.278 LB/A 1.0 % V/V 12.0 LB/100 GAL	EPOST EPOST EPOST	B B B					
17	Lightning Callisto Atrazine COC AMS	70 4	0.056 LB A/A 0.047 LB A/A	1.28 OZ/A 1.5 OZ/A	1.28 OZ/A 1.5 OZ/A	EPOST EPOST	B B	29	0	15	8	8
		90	0.25 LB A/A 1.0 % V/V 12.0 LB/100 GAL	0.278 LB/A 1.0 % V/V 12.0 LB/100 GAL	0.278 LB/A 1.0 % V/V 12.0 LB/100 GAL	EPOST EPOST EPOST	B B B					
18	Lightning NIS AMS	70	0.056 LB A/A 0.25 % V/V 12.0 LB/100 GAL	1.28 OZ/A 0.25 % V/V 12.0 LB/100 GAL	1.28 OZ/A 0.25 % V/V 12.0 LB/100 GAL	EPOST EPOST EPOST	B B B	28	0	10	10	8
LSD (P=.05)								3.0	0.0	3.9	5.1	4.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL percent 06-19-02 13 DA-C	ABUTH CONTROL percent 06-19-02 13 DA-C	AMATA CONTROL percent 06-19-02 13 DA-C	CHEAL CONTROL percent 06-19-02 13 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	96	47	99	99
3	Guardsman Max Balance Pro	5 4	2.5 0.047	LB A/A LB A/A	4.0 1.5	PT/A FL OZ/A	PRE PRE	A A	96	99	99	99
4	G-Max Lite Lightning	5 70	1.88 0.056	LB A/A LB A/A	3.0 1.28	PT/A OZ/A	PRE PRE	A A	99	93	99	99
5	Guardsman Max Distinct NIS AMS	5 70	2.5 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.0 4.0 0.25 5.0	PT/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	98	99	99	99
6	Guardsman Max Clarity AMS	5 4	2.5 0.5 2.5	LB A/A LB A/A LB/A	4.0 1.0 2.5	PT/A PT/A LB/A	PRE EPOST EPOST	A B B	98	99	99	99
7	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	99	98	99	99
8	Outlook Distinct NIS AMS	6 70	0.94 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	20.0 4.0 0.25 5.0	FL OZ/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	99	99	99
9	Outlook Clarity AMS	6 4	0.94 0.5 2.5	LB A/A LB A/A LB/A	20.0 1.0 2.5	FL OZ/A PT/A LB/A	PRE EPOST EPOST	A B B	99	99	99	99
10	G-Max Lite Distinct NIS AMS	5 70	2.5 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.0 4.0 0.25 5.0	PT/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	99	99	99
11	Lightning Distinct NIS AMS	70 70	0.056 0.175 0.25 12.0	LB A/A LB A/A % V/V LB/100 GAL	1.28 4.0 0.25 12.0	OZ/A OZ/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	C C C C	83	96	93	95
12	Atrazine Lightning Distinct NIS AMS	90 70 70	1.0 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.11 1.28 4.0 0.25 12.0	LB/A OZ/A OZ/A % V/V LB/100 GAL	PRE EPOST EPOST EPOST EPOST	A B B B B	99	98	99	99
13	G-Max Lite Lightning Distinct NIS AMS	5 70 70	0.94 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.5 1.28 4.0 0.25 12.0	PT/A OZ/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	99	98	99	98
14	Outlook Lightning Distinct NIS AMS	6 70 70	0.56 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	12.0 1.28 4.0 0.25 12.0	OZ/A OZ/A OZ/A % V/V LB/100 GAL	PRE EPOST EPOST EPOST EPOST	A B B B B	99	98	99	99

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Weed Code							SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							06-19-02	06-19-02	06-19-02	06-19-02	
Trt-Eval Interval							13 DA-C	13 DA-C	13 DA-C	13 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
15	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST B		93	99	94	99
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		EPOST B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST B					
16	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST B		95	99	99	99
	Callisto	4	0.0625 LB A/A	2.0 OZ/A		EPOST B					
	Atrazine	90	0.25 LB A/A	0.278 LB/A		EPOST B					
	COC		1.0 % V/V	1.0 % V/V		EPOST B					
	AMS		12.0 LB A/100 GAL	12.0 LB/100 GAL		EPOST B					
17	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST B		95	99	99	99
	Callisto	4	0.047 LB A/A	1.5 OZ/A		EPOST B					
	Atrazine	90	0.25 LB A/A	0.278 LB/A		EPOST B					
	COC		1.0 % V/V	1.0 % V/V		EPOST B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST B					
18	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST B		96	99	53	96
	NIS		0.25 % V/V	0.25 % V/V		EPOST B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST B					
LSD (P=.05)							3.0	2.6	10.1	1.3	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								XANST CONTROL percent 06-19-02 13 DA-C	ZEAMD PHYGEN percent 07-19-02 43 DA-C	SETFA CONTROL percent 07-19-02 43 DA-C	ABUTH CONTROL percent 07-19-02 43 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	62	0	93	47
3	Guardsman Max Balance Pro	5 4	2.5 0.047	LB A/A LB A/A	4.0 1.5	PT/A FL OZ/A	PRE PRE	A A	65	0	93	95
4	G-Max Lite Lightning	5 70	1.88 0.056	LB A/A LB A/A	3.0 1.28	PT/A OZ/A	PRE PRE	A A	48	0	95	92
5	Guardsman Max Distinct NIS AMS	5 70	2.5 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.0 4.0 0.25 5.0	PT/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	0	95	96
6	Guardsman Max Clarity AMS	5 4	2.5 0.5 2.5	LB A/A LB A/A LB/A	4.0 1.0 2.5	PT/A PT/A LB/A	PRE EPOST EPOST	A B B	99	0	93	98
7	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	99	0	95	96
8	Outlook Distinct NIS AMS	6 70	0.94 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	20.0 4.0 0.25 5.0	FL OZ/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	0	95	99
9	Outlook Clarity AMS	6 4	0.94 0.5 2.5	LB A/A LB A/A LB/A	20.0 1.0 2.5	FL OZ/A PT/A LB/A	PRE EPOST EPOST	A B B	99	0	95	98
10	G-Max Lite Distinct NIS AMS	5 70	2.5 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.0 4.0 0.25 5.0	PT/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	0	86	99
11	Lightning Distinct NIS AMS	70 70	0.056 0.175 0.25 12.0	LB A/A LB A/A % V/V LB/100 GAL	1.28 4.0 0.25 12.0	OZ/A OZ/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	C C C C	99	7	90	98
12	Atrazine Lightning Distinct NIS AMS	90 70 70	1.0 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.11 1.28 4.0 0.25 12.0	LB/A OZ/A OZ/A % V/V LB/100 GAL	PRE EPOST EPOST EPOST EPOST	A B B B B	99	0	92	98
13	G-Max Lite Lightning Distinct NIS AMS	5 70 70	0.94 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.5 1.28 4.0 0.25 12.0	PT/A OZ/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	96	0	95	99
14	Outlook Lightning Distinct NIS AMS	6 70 70	0.56 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	12.0 1.28 4.0 0.25 12.0	OZ/A OZ/A OZ/A % V/V LB/100 GAL	PRE EPOST EPOST EPOST EPOST	A B B B B	99	0	93	96

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Weed Code							XANST	ZEAMD	SETFA	ABUTH		
Rating Data Type							CONTROL	PHYGEN	CONTROL	CONTROL		
Rating Unit							percent	percent	percent	percent		
Rating Date							06-19-02	07-19-02	07-19-02	07-19-02		
Trt-Eval Interval							13 DA-C	43 DA-C	43 DA-C	43 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
15	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	5	92	98
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
16	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	3	90	98
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B				
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		12.0	LB A/100 GAL	12.0	LB/100 GAL	EPOST	B				
17	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	98	2	90	99
	Callisto	4	0.047	LB A/A	1.5	OZ/A	EPOST	B				
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
18	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	2	92	99
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
LSD (P=.05)							12.8	2.3	8.0	3.7		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 07-19-02 43 DA-C	CHEAL CONTROL percent 07-19-02 43 DA-C	XANST CONTROL percent 07-19-02 43 DA-C	ZEAMD PHYGEN percent 08-20-02 75 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	99	99	57	0
3	Guardsman Max Balance Pro	5 4	2.5 0.047	LB A/A LB A/A	4.0 1.5	PT/A FL OZ/A	PRE PRE	A A	99	99	65	0
4	G-Max Lite Lightning	5 70	1.88 0.056	LB A/A LB A/A	3.0 1.28	PT/A OZ/A	PRE PRE	A A	99	99	48	0
5	Guardsman Max Distinct NIS AMS	5 70	2.5 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.0 4.0 0.25 5.0	PT/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	99	98	0
6	Guardsman Max Clarity AMS	5 4	2.5 0.5 2.5	LB A/A LB A/A LB/A	4.0 1.0 2.5	PT/A PT/A LB/A	PRE EPOST EPOST	A B B	99	99	96	0
7	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	99	99	99	0
8	Outlook Distinct NIS AMS	6 70	0.94 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	20.0 4.0 0.25 5.0	FL OZ/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	99	96	0
9	Outlook Clarity AMS	6 4	0.94 0.5 2.5	LB A/A LB A/A LB/A	20.0 1.0 2.5	FL OZ/A PT/A LB/A	PRE EPOST EPOST	A B B	99	99	98	0
10	G-Max Lite Distinct NIS AMS	5 70	2.5 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.0 4.0 0.25 5.0	PT/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	99	96	0
11	Lightning Distinct NIS AMS	70 70	0.056 0.175 0.25 12.0	LB A/A LB A/A % V/V LB/100 GAL	1.28 4.0 0.25 12.0	OZ/A OZ/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	C C C C	96	96	95	0
12	Atrazine Lightning Distinct NIS AMS	90 70 70	1.0 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.11 1.28 4.0 0.25 12.0	LB/A OZ/A OZ/A % V/V LB/100 GAL	PRE EPOST EPOST EPOST EPOST	A B B B B	98	99	96	0
13	G-Max Lite Lightning Distinct NIS AMS	5 70 70	0.94 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.5 1.28 4.0 0.25 12.0	PT/A OZ/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99	96	0
14	Outlook Lightning Distinct NIS AMS	6 70 70	0.56 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	12.0 1.28 4.0 0.25 12.0	OZ/A OZ/A OZ/A % V/V LB/100 GAL	PRE EPOST EPOST EPOST EPOST	A B B B B	99	99	98	0

Iowa State University

Weed Code							AMATA	CHEAL	XANST	ZEAMD	
Rating Data Type							CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-19-02	07-19-02	07-19-02	08-20-02	
Trt-Eval Interval							43 DA-C	43 DA-C	43 DA-C	75 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
15	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST B		88	99	96	0
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		EPOST B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST B					
16	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST B		99	99	95	0
	Callisto	4	0.0625 LB A/A	2.0 OZ/A		EPOST B					
	Atrazine	90	0.25 LB A/A	0.278 LB/A		EPOST B					
	COC		1.0 % V/V	1.0 % V/V		EPOST B					
	AMS		12.0 LB A/100 GAL	12.0 LB/100 GAL		EPOST B					
17	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST B		99	99	90	0
	Callisto	4	0.047 LB A/A	1.5 OZ/A		EPOST B					
	Atrazine	90	0.25 LB A/A	0.278 LB/A		EPOST B					
	COC		1.0 % V/V	1.0 % V/V		EPOST B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST B					
18	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST B		53	96	98	0
	NIS		0.25 % V/V	0.25 % V/V		EPOST B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST B					
LSD (P=.05)							10.0	1.3	11.4	0.0	

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL percent 08-20-02 75 DA-C	ABUTH CONTROL percent 08-20-02 75 DA-C	AMATA CONTROL percent 08-20-02 75 DA-C	CHEAL CONTROL percent 08-20-02 75 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	93	45	99	99
3	Guardsman Max Balance Pro	5 4	2.5 0.047	LB A/A LB A/A	4.0 1.5	PT/A FL OZ/A	PRE PRE	A A	93	95	99	99
4	G-Max Lite Lightning	5 70	1.88 0.056	LB A/A LB A/A	3.0 1.28	PT/A OZ/A	PRE PRE	A A	95	92	99	99
5	Guardsman Max Distinct NIS AMS	5 70	2.5 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.0 4.0 0.25 5.0	PT/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	93	98	99	99
6	Guardsman Max Clarity AMS	5 4	2.5 0.5 2.5	LB A/A LB A/A LB/A	4.0 1.0 2.5	PT/A PT/A LB/A	PRE EPOST EPOST	A B B	92	99	99	99
7	Outlook Marksman	6 3.2	0.94 1.4	LB A/A LB A/A	20.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	93	96	99	99
8	Outlook Distinct NIS AMS	6 70	0.94 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	20.0 4.0 0.25 5.0	FL OZ/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	92	99	99	99
9	Outlook Clarity AMS	6 4	0.94 0.5 2.5	LB A/A LB A/A LB/A	20.0 1.0 2.5	FL OZ/A PT/A LB/A	PRE EPOST EPOST	A B B	95	96	99	99
10	G-Max Lite Distinct NIS AMS	5 70	2.5 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.0 4.0 0.25 5.0	PT/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	96	99	99	99
11	Lightning Distinct NIS AMS	70 70	0.056 0.175 0.25 12.0	LB A/A LB A/A % V/V LB/100 GAL	1.28 4.0 0.25 12.0	OZ/A OZ/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	C C C C	93	99	95	99
12	Atrazine Lightning Distinct NIS AMS	90 70 70	1.0 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.11 1.28 4.0 0.25 12.0	LB/A OZ/A OZ/A % V/V LB/100 GAL	PRE EPOST EPOST EPOST EPOST	A B B B B	90	96	98	99
13	G-Max Lite Lightning Distinct NIS AMS	5 70 70	0.94 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.5 1.28 4.0 0.25 12.0	PT/A OZ/A OZ/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	93	99	99	99
14	Outlook Lightning Distinct NIS AMS	6 70 70	0.56 0.056 0.175 0.25 12.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	12.0 1.28 4.0 0.25 12.0	OZ/A OZ/A OZ/A % V/V LB/100 GAL	PRE EPOST EPOST EPOST EPOST	A B B B B	92	93	99	99

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 08-20-02 75 DA-C	ABUTH CONTROL percent 08-20-02 75 DA-C	AMATA CONTROL percent 08-20-02 75 DA-C	CHEAL CONTROL percent 08-20-02 75 DA-C			
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
15	Lightning Marksman NIS AMS	70 3.2	0.056 1.0	LB A/A LB A/A % V/V LB/100 GAL	1.28 2.5 0.25 12.0	OZ/A PT/A % V/V LB/100 GAL	EPOST EPOST EPOST EPOST	B B B B	90	96	82	99	
16	Lightning Callisto Atrazine COC AMS	70 4	0.056 0.0625	LB A/A LB A/A LB A/A % V/V LB A/100 GAL	1.28 2.0 0.278 1.0 12.0	OZ/A OZ/A LB/A % V/V LB/100 GAL	EPOST EPOST EPOST EPOST EPOST	B B B B B	90	98	99	99	
17	Lightning Callisto Atrazine COC AMS	70 4	0.056 0.047	LB A/A LB A/A LB A/A % V/V LB/100 GAL	1.28 1.5 0.278 1.0 12.0	OZ/A OZ/A LB/A % V/V LB/100 GAL	EPOST EPOST EPOST EPOST EPOST	B B B B B	90	99	99	99	
18	Lightning NIS AMS	70	0.056	LB A/A % V/V LB/100 GAL	1.28 0.25 12.0	OZ/A % V/V LB/100 GAL	EPOST EPOST EPOST	B B B	93	99	48	96	
LSD (P=.05)										3.7	4.3	10.8	0.9

Iowa State University

Weed Code								XANST	ZEAMD	
Rating Data Type								CONTROL	YIELD	
Rating Unit								percent	BU/A	
Rating Date								08-20-02	10-09-02	
Trt-Eval Interval								75 DA-C	158 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated								0	25
2	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	57	202
3	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	65	209
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A		
4	G-Max Lite	5	1.88	LB A/A	3.0	PT/A	PRE	A	47	206
	Lightning	70	0.056	LB A/A	1.28	OZ/A	PRE	A		
5	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	96	205
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C		
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C		
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C		
6	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	96	191
	Clarity	4	0.5	LB A/A	1.0	PT/A	EPOST	B		
	AMS		2.5	LB/A	2.5	LB/A	EPOST	B		
7	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	99	212
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B		
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	95	198
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C		
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C		
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C		
9	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	98	188
	Clarity	4	0.5	LB A/A	1.0	PT/A	EPOST	B		
	AMS		2.5	LB/A	2.5	LB/A	EPOST	B		
10	G-Max Lite	5	2.5	LB A/A	4.0	PT/A	PRE	A	96	198
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C		
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C		
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C		
11	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C	96	157
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C		
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C		
12	Atrazine	90	1.0	LB A/A	1.11	LB/A	PRE	A	95	189
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B		
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B		
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B		
13	G-Max Lite	5	0.94	LB A/A	1.5	PT/A	PRE	A	96	191
	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C		
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C		
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C		
14	Outlook	6	0.56	LB A/A	12.0	OZ/A	PRE	A	98	214
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B		
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B		
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B		

Iowa State University

Weed Code							XANST	ZEAMD		
Rating Data Type							CONTROL	YIELD		
Rating Unit							percent	BU/A		
Rating Date							08-20-02	10-09-02		
Trt-Eval Interval							75 DA-C	158 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
15	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	96	182
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B		
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B		
16	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	93	202
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B		
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B		
	COC		1.0	% V/V	1.0	% V/V	EPOST	B		
	AMS		12.0	LB A/100 GAL	12.0	LB/100 GAL	EPOST	B		
17	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	88	175
	Callisto	4	0.047	LB A/A	1.5	OZ/A	EPOST	B		
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B		
	COC		1.0	% V/V	1.0	% V/V	EPOST	B		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B		
18	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	98	183
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B		
LSD (P=.05)							11.6	28.2		

Iowa State University

Evaluation of Hornet WDG, Callisto, Atrazine and Glyphomax Plus following soil applied herbicides for weed control in corn, Ames, IA, 2002.

Trial ID: ACS 7

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-06-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate postemergence applications of Hornet WDG, Callisto, Atrazine, and Glyphomax Plus following soil applied herbicides for crop phytotoxicity and weed control in corn.

Conclusions: Differences in corn stand between treatments were observed and determined significant. These differences were a result of poor emergence and stand establishment rather than a herbicide affect. Preemergence (PRE) applied treatments resulted in corn injury when observed on June 1 and 7. PRE FulTime, FulTime plus Hornet WDG, Topnotch plus Hornet WDG, and Surpass plus Hornet WDG provided good to excellent giant foxtail, common waterhemp, common lambsquarters, and Pennsylvania smartweed control on June 7, and prior to any sequential postemergence (POST) applications. Velvetleaf and common cocklebur control was fair to good with these PRE treatments. PRE Surpass provided excellent giant foxtail, common waterhemp and Pennsylvania smartweed control, fair common lambsquarters control, and poor common cocklebur control.

Corn injury resulting from POST Hornet WDG plus Atrazine, Hornet WDG plus Callisto plus Atrazine, and Glyphomax Plus with Hornet WDG was observed on June 14. POST Glyphomax Plus applied alone did not cause crop injury. Excellent broad-spectrum weed control was observed on June 29 and August 7 with PRE followed by POST applied treatments. PRE treatments that did not include a sequential POST application demonstrated similar control trends on June 29 and August 7 as those observed earlier. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD

Variety: DEKALB DKC 57-40 RR

Planting Date: 05-06-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT

Plot Length, Unit: 25 FT

Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM

pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-07-02	06-07-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	60 F	83 F
% Relative Humidity:	71	56
Wind Velocity, Unit:	8 MPH	12 MPH
Soil Temp., Unit:	62 F	73 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	50	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V5
Stage Scale:	-	DESC
Height, Unit:	-	9 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF
Stage Scale:	-	1-4 IN
Density, Unit:	- -	0-15 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 2-5 LEAF
Stage Scale:	-	1-5 IN
Density, Unit:	- -	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS
Stage Scale:	-	1-6 IN
Density, Unit:	- -	0-3 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	1-4 IN
Density, Unit:	- -	0-4 FT2
Weed 5 Code, Stage:	XANST -	XANST 5-7 LEAF
Stage Scale:	-	4-6 IN
Density, Unit:	- -	0-1 FT2

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APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Evaluation of Hornet WDG, Callisto, Atrazine and Glyphomax Plus following soil applied herbicides for weed control in corn, Ames, IA, 2002.

Trial ID: ACS 7

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	percent	
Rating Date							07-24-02	06-01-02	06-07-02	06-07-02	06-07-02	06-07-02	
Trt-Eval Interval							78 DA-A	25 DA-A	0 DA-B	0 DA-B	0 DA-B	0 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
1	Untreated							21	0	0	0	0	
2	FulTime	4	3.0 LB A/A	3.0 QT/A	3.0 QT/A	PRE A	A	22	8	7	95	88	99
3	FulTime Hornet WDG	4 68.5	3.0 LB A/A 0.128 LB AE/A	3.0 QT/A 3.0 OZ/A	3.0 QT/A 3.0 OZ/A	PRE A PRE A	A	21	8	5	98	93	99
4	Topnotch Hornet WDG	3.2 68.5	2.0 LB A/A 0.171 LB AE/A	2.5 QT/A 4.0 OZ/A	2.5 QT/A 4.0 OZ/A	PRE A PRE A	A	22	10	3	96	93	99
5	Surpass Hornet WDG	6.4 68.5	2.0 LB A/A 0.171 LB AE/A	2.5 PT/A 4.0 OZ/A	2.5 PT/A 4.0 OZ/A	PRE A PRE A	A	20	10	7	98	77	99
6	FulTime Hornet WDG Atrazine 28% UAN COC	4 68.5 90	3.0 LB A/A 0.128 LB AE/A 0.75 LB A/A 2.5 % V/V 1.0 % V/V	3.0 QT/A 3.0 OZ/A 0.83 LB/A 2.5 % V/V 1.0 % V/V	3.0 QT/A 3.0 OZ/A 0.83 LB/A 2.5 % V/V 1.0 % V/V	PRE A POST B POST B POST B POST B	A	19	3	2	93	80	99
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 LB A/A 0.128 LB AE/A 0.047 LB A/A 0.252 LB A/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.5 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.5 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V	PRE A POST B POST B POST B POST B POST B	A	22	3	5	95	27	99
8	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 LB A/A 0.128 LB AE/A 0.0312 LB A/A 0.252 LB A/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.0 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.0 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V	PRE A POST B POST B POST B POST B POST B	A	22	7	5	95	30	99
9	FulTime Glyphomax Plus AMS	4 4	2.0 LB A/A 1.0 LB A/A 1.5 % W/W	2.0 QT/A 2.0 PT/A 1.5 % W/W	2.0 QT/A 2.0 PT/A 1.5 % W/W	PRE A POST B POST B	A	25	5	2	95	80	99
10	Surpass Glyphomax Plus AMS	6.4 4	1.6 LB A/A 1.0 LB A/A 1.5 % W/W	2.0 PT/A 2.0 PT/A 1.5 % W/W	2.0 PT/A 2.0 PT/A 1.5 % W/W	PRE A POST B POST B	A	20	5	3	95	27	99
11	Glyphomax Plus AMS	4	1.0 LB A/A 1.5 % W/W	2.0 PT/A 1.5 % W/W	2.0 PT/A 1.5 % W/W	POST B POST B	B	24	0	0	0	0	0
12	Glyphomax Plus Hornet WDG AMS NIS	4 68.5	1.0 LB A/A 0.128 LB AE/A 1.5 % W/W 0.25 % V/V	2.0 PT/A 3.0 OZ/A 1.5 % W/W 0.25 % V/V	2.0 PT/A 3.0 OZ/A 1.5 % W/W 0.25 % V/V	POST B POST B POST B POST B	B	25	0	0	0	0	0
LSD (P=.05)								5.0	4.5	3.5	2.5	16.8	0.0

Iowa State University

Weed Code							CHEAL	POLPY	XANST	ZEAMD	ZEAMD	
Rating Data Type							CONTROL	CONTROL	CONTROL	PHYGEN	PHYGEN	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-07-02	06-07-02	06-07-02	06-14-02	06-29-02	
Trt-Eval Interval							0 DA-B	0 DA-B	0 DA-B	7 DA-B	22 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	FulTime	4	3.0 LB A/A	3.0 QT/A		PRE A		99	99	87	2	
3	FulTime Hornet WDG	4 68.5	3.0 LB A/A 0.128 LB AE/A	3.0 QT/A 3.0 OZ/A		PRE A PRE A		99	99	95	0	
4	Topnotch Hornet WDG	3.2 68.5	2.0 LB A/A 0.171 LB AE/A	2.5 QT/A 4.0 OZ/A		PRE A PRE A		99	99	82	0	
5	Surpass Hornet WDG	6.4 68.5	2.0 LB A/A 0.171 LB AE/A	2.5 PT/A 4.0 OZ/A		PRE A PRE A		96	99	70	2	
6	FulTime Hornet WDG Atrazine 28% UAN COC	4 68.5 90	3.0 LB A/A 0.128 LB AE/A 0.75 LB A/A 2.5 % V/V 1.0 % V/V	3.0 QT/A 3.0 OZ/A 0.83 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B		99	99	75	5	
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 LB A/A 0.128 LB AE/A 0.047 LB A/A 0.252 LB A/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.5 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B POST B		67	93	27	5	
8	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 LB A/A 0.128 LB AE/A 0.0312 LB A/A 0.252 LB A/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.0 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B POST B		73	95	43	8	
9	FulTime Glyphomax Plus AMS	4 4	2.0 LB A/A 1.0 LB A/A 1.5 % W/W	2.0 QT/A 2.0 PT/A 1.5 % W/W		PRE A POST B POST B		99	99	78	0	
10	Surpass Glyphomax Plus AMS	6.4 4	1.6 LB A/A 1.0 LB A/A 1.5 % W/W	2.0 PT/A 2.0 PT/A 1.5 % W/W		PRE A POST B POST B		80	92	37	0	
11	Glyphomax Plus AMS	4	1.0 LB A/A 1.5 % W/W	2.0 PT/A 1.5 % W/W		POST B POST B		0	0	0	0	
12	Glyphomax Plus Hornet WDG AMS NIS	4 68.5	1.0 LB A/A 0.128 LB AE/A 1.5 % W/W 0.25 % V/V	2.0 PT/A 3.0 OZ/A 1.5 % W/W 0.25 % V/V		POST B POST B POST B POST B		0	0	0	2	
LSD (P=.05)								10.1	3.2	12.8	4.1	2.3

Iowa State University

Weed Code							SETFA	ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-29-02	06-29-02	06-29-02	06-29-02	06-29-02	
Trt-Eval Interval							22 DA-B	22 DA-B	22 DA-B	22 DA-B	22 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	FulTime	4	3.0 LB A/A	3.0 QT/A		PRE A		95	70	99	99	
3	FulTime Hornet WDG	4 68.5	3.0 LB A/A 0.128 LB AE/A	3.0 QT/A 3.0 OZ/A		PRE A PRE A		96	90	99	99	
4	Topnotch Hornet WDG	3.2 68.5	2.0 LB A/A 0.171 LB AE/A	2.5 QT/A 4.0 OZ/A		PRE A PRE A		93	93	99	99	
5	Surpass Hornet WDG	6.4 68.5	2.0 LB A/A 0.171 LB AE/A	2.5 PT/A 4.0 OZ/A		PRE A PRE A		92	95	99	96	
6	FulTime Hornet WDG Atrazine 28% UAN COC	4 68.5 90	3.0 LB A/A 0.128 LB AE/A 0.75 LB A/A 2.5 % V/V 1.0 % V/V	3.0 QT/A 3.0 OZ/A 0.83 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B		95	99	99	99	
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 LB A/A 0.128 LB AE/A 0.047 LB A/A 0.252 LB A/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.5 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B POST B		95	99	99	99	
8	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 LB A/A 0.128 LB AE/A 0.0312 LB A/A 0.252 LB A/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.0 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B POST B		95	99	99	99	
9	FulTime Glyphomax Plus AMS	4 4	2.0 LB A/A 1.0 LB A/A 1.5 % W/W	2.0 QT/A 2.0 PT/A 1.5 % W/W		PRE A POST B POST B		99	99	99	99	
10	Surpass Glyphomax Plus AMS	6.4 4	1.6 LB A/A 1.0 LB A/A 1.5 % W/W	2.0 PT/A 2.0 PT/A 1.5 % W/W		PRE A POST B POST B		98	99	99	99	
11	Glyphomax Plus AMS	4	1.0 LB A/A 1.5 % W/W	2.0 PT/A 1.5 % W/W		POST B POST B		99	99	99	99	
12	Glyphomax Plus Hornet WDG AMS NIS	4 68.5	1.0 LB A/A 0.128 LB AE/A 1.5 % W/W 0.25 % V/V	2.0 PT/A 3.0 OZ/A 1.5 % W/W 0.25 % V/V		POST B POST B POST B POST B		99	99	99	99	
LSD (P=.05)								2.7	14.7	0.0	1.1	7.2

Iowa State University

Weed Code							XANST	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-29-02	08-07-02	08-07-02	08-07-02	08-07-02
Trt-Eval Interval							22 DA-B	61 DA-B	61 DA-B	61 DA-B	61 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FulTime	4	3.0 LB A/A	3.0 QT/A		PRE A		93	90	60	99
3	FulTime Hornet WDG	4 68.5	3.0 LB A/A 0.128 LB AE/A	3.0 QT/A 3.0 OZ/A		PRE A PRE A		93	92	90	99
4	Topnotch Hornet WDG	3.2 68.5	2.0 LB A/A 0.171 LB AE/A	2.5 QT/A 4.0 OZ/A		PRE A PRE A		58	88	93	99
5	Surpass Hornet WDG	6.4 68.5	2.0 LB A/A 0.171 LB AE/A	2.5 PT/A 4.0 OZ/A		PRE A PRE A		50	85	93	99
6	FulTime Hornet WDG Atrazine 28% UAN COC	4 68.5 90	3.0 LB A/A 0.128 LB AE/A 0.75 LB A/A 2.5 % V/V 1.0 % V/V	3.0 QT/A 3.0 OZ/A 0.83 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B		99	92	98	99
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 LB A/A 0.128 LB AE/A 0.047 LB A/A 0.252 LB A/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.5 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B POST B		98	90	99	99
8	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 LB A/A 0.128 LB AE/A 0.0312 LB A/A 0.252 LB A/A 2.5 % V/V 1.0 % V/V	2.5 PT/A 3.0 OZ/A 1.0 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V		PRE A POST B POST B POST B POST B POST B		99	88	99	99
9	FulTime Glyphomax Plus AMS	4 4	2.0 LB A/A 1.0 LB A/A 1.5 % W/W	2.0 QT/A 2.0 PT/A 1.5 % W/W		PRE A POST B POST B		98	92	98	99
10	Surpass Glyphomax Plus AMS	6.4 4	1.6 LB A/A 1.0 LB A/A 1.5 % W/W	2.0 PT/A 2.0 PT/A 1.5 % W/W		PRE A POST B POST B		96	92	96	96
11	Glyphomax Plus AMS	4	1.0 LB A/A 1.5 % W/W	2.0 PT/A 1.5 % W/W		POST B POST B		99	83	90	93
12	Glyphomax Plus Hornet WDG AMS NIS	4 68.5	1.0 LB A/A 0.128 LB AE/A 1.5 % W/W 0.25 % V/V	2.0 PT/A 3.0 OZ/A 1.5 % W/W 0.25 % V/V		POST B POST B POST B POST B		99	87	99	96
LSD (P=.05)							9.1	4.6	16.4	3.9	3.3

Iowa State University

Weed Code							POLPY	XANST
Rating Data Type							CONTROL	CONTROL
Rating Unit							percent	percent
Rating Date							08-07-02	08-07-02
Trt-Eval Interval							61 DA-B	61 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Appl Stg Code
1	Untreated						0	0
2	FulTime	4	3.0	LB A/A	3.0	QT/A	PRE	A 91 81
3	FulTime Hornet WDG	4 68.5	3.0 0.128	LB A/A LB AE/A	3.0 3.0	QT/A OZ/A	PRE PRE	A 99 90
4	Topnotch Hornet WDG	3.2 68.5	2.0 0.171	LB A/A LB AE/A	2.5 4.0	QT/A OZ/A	PRE PRE	A 98 55
5	Surpass Hornet WDG	6.4 68.5	2.0 0.171	LB A/A LB AE/A	2.5 4.0	PT/A OZ/A	PRE PRE	A 98 47
6	FulTime Hornet WDG Atrazine 28% UAN COC	4 68.5 90	3.0 0.128 0.75	LB A/A LB AE/A LB A/A	3.0 3.0 0.83	QT/A OZ/A LB/A	PRE POST POST	A 99 99 B B B B
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.047 0.252	LB A/A LB AE/A LB A/A LB A/A	2.5 3.0 1.5 0.28	PT/A OZ/A FL OZ/A LB/A	PRE POST POST POST	A 99 98 B B B B B
8	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.0312 0.252	LB A/A LB AE/A LB A/A LB A/A	2.5 3.0 1.0 0.28	PT/A OZ/A FL OZ/A LB/A	PRE POST POST POST	A 99 99 B B B B B
9	FulTime Glyphomax Plus AMS	4 4	2.0 1.0	LB A/A LB A/A	2.0 2.0	QT/A PT/A	PRE POST	A 99 95 B
10	Surpass Glyphomax Plus AMS	6.4 4	1.6 1.0	LB A/A LB A/A	2.0 2.0	PT/A PT/A	PRE POST	A 93 88 B
11	Glyphomax Plus AMS	4	1.0	LB A/A	2.0	PT/A	POST	B 87 87
12	Glyphomax Plus Hornet WDG AMS NIS	4 68.5	1.0 0.128	LB A/A LB AE/A	2.0 3.0	PT/A OZ/A	POST POST	B 96 99 B B B
LSD (P=.05)							8.0	11.2

Iowa State University

Evaluation of potential corn injury from Counter 20CR insecticide followed by Callisto, Steadfast, or Option herbicide, Ames, IA, 2002.

Trial ID: ACS 8

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-07-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to assess the potential for corn injury from Counter 20CR applied in a T band at planting and interacting with Callisto, Steadfast, and Option.

Conclusions: Considerable variability in sweet corn stand caused by planter skips and poor emergence resulted in large LSD values. Consequently, no significant differences in sweet corn stand between herbicide treatments to Counter 20CR treated (+CR) or non-treated (-CR) were determined. Significant corn injury was observed on five different dates following the herbicide treatments. Generally, all herbicide treatments caused injury to Counter treated and non-treated corn. On June 3, seventeen days following the delayed preemergence (DPRE) Callisto application, 6% corn injury was observed (+CR treated) compared to 4% (-CR non-treated). On June 3, four days after early postemergence (EPOST) treatments were applied, Callisto resulted in 50% corn injury (+CR) compared to 33% (-CR). EPOST Callisto plus Steadfast resulted in 26% injury (+CR) compared to 23% (-CR), and Option 26% injury (+CR) compared to 25% (-CR). When observed on June 28, twenty-nine days after EPOST herbicide applications, the degree of injury associated with the treatments had declined, but generally the trends were still evident.

Herbicide treatment and Counter 20CR did not greatly affect corn pollen and silking dates. Days after planting for pollen and silking were very similar when comparing herbicide treatments applied to Counter (+CR) treated corn and non-treated (-CR) corn. Pollen dates appeared slightly delayed when comparing herbicide treatments to Counter treated corn with the Counter only treatment (no herbicide). The pollen date for the EPOST Callisto and Callisto plus Steadfast treatment to Counter treated corn was significantly delayed by two days when compared to the Counter only treatment.

EPOST applied Callisto plus Steadfast to Counter treated corn resulted in significantly shorter corn compared to several other treatments. No significant differences in corn height were determined between herbicide treatments occurring on non-treated corn. Overall, corn height differences between the herbicide treatments to Counter treated versus non-treated corn were inconsistent.

There were no significant differences in the number of tons of corn yield/A between the herbicide treatments applied to Counter treated corn. However, DPRE applied Callisto yielded significantly higher compared to others when applied to non-treated corn. Corn yields from herbicide treatments applied to Counter treated corn were always lower or equal to that from treatments applied to non-treated corn. Finally, the Counter (+CR) and non-treated (-CR) corn treatment that did not include a herbicide treatment [in addition to Guardsman Max applied PRE (see field prep/maintenance comments)], yielded less than or equal to the other treatments. This treatment was not maintained weed free and the competition from weed escapes likely caused some corn yield loss. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
2.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD

Variety: JUBILEE

Planting Date: 05-07-02

Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

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SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 4
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting. Guardsman Max was applied preemergence to the experiment area at 2.69 lb/A.

SOIL DESCRIPTION

% OM: 4.0 Texture: CLAY LOAM
pH: 7.05 Soil Name: CANISTEO, CLARION, WEBSTER, HAYDEN-STORD
Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-17-02	05-30-02
Application Method:	SPRAY	SPRAY
Application Timing:	DPRE	EPOST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	59 F	91 F
% Relative Humidity:	50	63
Wind Velocity, Unit:	8 MPH	4 MPH
Soil Temp., Unit:	55 F	73 F
Soil Moisture:	WET	DRY
% Cloud Cover:	5	30

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V2
Stage Scale:	-	DESC
Height, Unit:	-	3 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	ABUTH COTYLEDON	ABUTH COTYLEDON
Stage Scale:	0.25 IN	0.5 IN
Density, Unit:	0-1 FT2	0-1 FT2
Weed 2 Code, Stage:	XANST COTYLEDON	XANST COTYL-2
Stage Scale:	0.25 IN	1-2.5 IN
Density, Unit:	0-1 FT2	0-1 FT2

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APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	HAND BOOM	TERRA PRO
Operating Pressure:	25	30
Nozzle Type:	11003	11002
Spray Volume, Unit:	20 GPA	20 GPA

Trt No	Treatment Application Comment
	Rows 1 and 2 of each plot received Counter 20 CR. Rows 3 and 4 did not.

Iowa State University

**Evaluation of potential corn injury from Counter 20CR insecticide followed by
Callisto, Steadfast, or Option herbicide, Ames, IA, 2002.**

Trial ID: ACS 8

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	ZEAMD	
Rating Data Type							STAND + CR	STAND - CR	STAND + CR	STAND - CR	
Rating Unit							17.5 FT	17.5 FT	17.5 FT	17.5 FT	
Rating Date							06-06-02	06-06-02	07-24-02	07-24-02	
Trt-Eval Interval							7 DA-B	7 DA-B	55 DA-B	55 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code				
1	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	27	22	22	19
2	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	27	23	19	18
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B				
	COC		1.0 % V/V	1.0 % V/V		EPOST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPOST	B				
3	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	24	25	19	21
	Callisto	4	0.187 LB A/A	6.0 FL OZ/A		DPRE	A				
	COC		1.0 % V/V	1.0 % V/V		DPRE	A				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		DPRE	A				
4	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	22	21	19	19
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B				
	Steadfast	75	0.035 LB A/A	0.75 OZ/A		EPOST	B				
	COC		1.0 % V/V	1.0 % V/V		EPOST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPOST	B				
5	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	25	22	20	17
	Option	70	0.0656 LB A/A	1.5 OZ/A		EPOST	B				
	MSO		1.5 PT/A	1.5 PT/A		EPOST	B				
	AMS		2.0 LB/A	2.0 LB/A		EPOST	B				
LSD (P=.05)								8.4	8.5	6.9	5.7

Iowa State University

Weed Code							ZEAMD	ZEAMD	ZEAMD	ZEAMD	
Rating Data Type							PHYTO + CR	PHYTO - CR	PHYTO + CR	PHYTO - CR	
Rating Unit							percent	percent	percent	percent	
Rating Date							06-03-02	06-03-02	06-06-02	06-06-02	
Trt-Eval Interval							4 DA-B	4 DA-B	7 DA-B	7 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	1	0	1	0
2	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	50	33	45	23
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B				
	COC		1.0 % V/V	1.0 % V/V		EPOST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPOST	B				
3	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	6	4	5	1
	Callisto	4	0.187 LB A/A	6.0 FL OZ/A		DPRE	A				
	COC		1.0 % V/V	1.0 % V/V		DPRE	A				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		DPRE	A				
4	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	26	23	51	33
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B				
	Steadfast	75	0.035 LB A/A	0.75 OZ/A		EPOST	B				
	COC		1.0 % V/V	1.0 % V/V		EPOST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPOST	B				
5	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	26	25	39	29
	Option	70	0.0656 LB A/A	1.5 OZ/A		EPOST	B				
	MSO		1.5 PT/A	1.5 PT/A		EPOST	B				
	AMS		2.0 LB/A	2.0 LB/A		EPOST	B				
LSD (P=.05)							10.5	9.9	13.3	11.9	

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Weed Code							ZEAMD	ZEAMD	ZEAMD	ZEAMD		
Rating Data Type							PHYTO + CR	PHYTO - CR	PHYTO + CR	PHYTO - CR		
Rating Unit							percent	percent	percent	percent		
Rating Date							06-13-02	06-13-02	06-22-02	06-22-02		
Trt-Eval Interval							14 DA-B	14 DA-B	23 DA-B	23 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Counter	20	1.2 OZ A/A	6.0 OZ/1000 ROW-FT	T-BAND A			0	0	0	0	
2	Counter	20	1.2 OZ A/A	6.0 OZ/1000 ROW-FT	T-BAND A			31	14	13	6	
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	EPOST B							
	COC		1.0 % V/V	1.0 % V/V	EPOST B							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPOST B							
3	Counter	20	1.2 OZ A/A	6.0 OZ/1000 ROW-FT	T-BAND A			6	0	5	1	
	Callisto	4	0.187 LB A/A	6.0 FL OZ/A	DPRE A							
	COC		1.0 % V/V	1.0 % V/V	DPRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	DPRE A							
4	Counter	20	1.2 OZ A/A	6.0 OZ/1000 ROW-FT	T-BAND A			44	26	28	14	
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	EPOST B							
	Steadfast	75	0.035 LB A/A	0.75 OZ/A	EPOST B							
	COC		1.0 % V/V	1.0 % V/V	EPOST B							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	EPOST B							
5	Counter	20	1.2 OZ A/A	6.0 OZ/1000 ROW-FT	T-BAND A			31	24	16	13	
	Option	70	0.0656 LB A/A	1.5 OZ/A	EPOST B							
	MSO		1.5 PT/A	1.5 PT/A	EPOST B							
	AMS		2.0 LB/A	2.0 LB/A	EPOST B							
LSD (P=.05)							10.6	11.4	12.1	8.6		

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Weed Code							ZEAMD	ZEAMD	ZEAMD		
Rating Data Type							PHYTO + CR	PHYTO - CR	POLLEN + CR		
Rating Unit							percent	percent	DAPLANT		
Rating Date							06-28-02	06-28-02			
Trt-Eval Interval							29 DA-B	29 DA-B			
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Counter	20	1.2	OZ A/A	6.0	OZ/1000 ROW-FT	T-BAND	A	0	0	61
2	Counter	20	1.2	OZ A/A	6.0	OZ/1000 ROW-FT	T-BAND	A	6	5	63
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B			
	COC		1.0	% V/V	1.0	% V/V	EPOST	B			
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	EPOST	B			
3	Counter	20	1.2	OZ A/A	6.0	OZ/1000 ROW-FT	T-BAND	A	4	1	61
	Callisto	4	0.187	LB A/A	6.0	FL OZ/A	DPRE	A			
	COC		1.0	% V/V	1.0	% V/V	DPRE	A			
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	DPRE	A			
4	Counter	20	1.2	OZ A/A	6.0	OZ/1000 ROW-FT	T-BAND	A	29	15	63
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B			
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B			
	COC		1.0	% V/V	1.0	% V/V	EPOST	B			
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	EPOST	B			
5	Counter	20	1.2	OZ A/A	6.0	OZ/1000 ROW-FT	T-BAND	A	10	9	62
	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B			
	MSO		1.5	PT/A	1.5	PT/A	EPOST	B			
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B			
LSD (P=.05)							8.1	7.0	1.8		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD POLLEN - CR DAPLANT	ZEAMD SILK + CR DAPLANT	ZEAMD SILK - CR DAPLANT	ZEAMD HEIGHT + CR INCHES 07-03-02 34 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	61	64	65	36
2	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	61	65	65	37
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B				
	COC		1.0 % V/V	1.0 % V/V		EPOST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPOST	B				
3	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	61	63	64	38
	Callisto	4	0.187 LB A/A	6.0 FL OZ/A		DPRE	A				
	COC		1.0 % V/V	1.0 % V/V		DPRE	A				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		DPRE	A				
4	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	62	65	64	33
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B				
	Steadfast	75	0.035 LB A/A	0.75 OZ/A		EPOST	B				
	COC		1.0 % V/V	1.0 % V/V		EPOST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPOST	B				
5	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	62	65	65	37
	Option	70	0.0656 LB A/A	1.5 OZ/A		EPOST	B				
	MSO		1.5 PT/A	1.5 PT/A		EPOST	B				
	AMS		2.0 LB/A	2.0 LB/A		EPOST	B				
LSD (P=.05)								0.9	1.6	1.5	3.8

Iowa State University

Weed Code							ZEAMD	ZEAMD	ZEAMD	
Rating Data Type							HEIGHT - CR	YIELD + CR	YIELD - CR	
Rating Unit							INCHES	TON/A	TON/A	
Rating Date							07-03-02	07-24-02	07-24-02	
Trt-Eval Interval							34 DA-B	55 DA-B	55 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	37	6	7
2	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	37	8	8
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B			
	COC		1.0 % V/V	1.0 % V/V		EPOST	B			
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPOST	B			
3	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	37	7	9
	Callisto	4	0.187 LB A/A	6.0 FL OZ/A		DPRE	A			
	COC		1.0 % V/V	1.0 % V/V		DPRE	A			
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		DPRE	A			
4	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	36	6	7
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B			
	Steadfast	75	0.035 LB A/A	0.75 OZ/A		EPOST	B			
	COC		1.0 % V/V	1.0 % V/V		EPOST	B			
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		EPOST	B			
5	Counter	20	1.2 OZ A/A	6.0 OZ/1000	ROW-FT	T-BAND	A	35	7	7
	Option	70	0.0656 LB A/A	1.5 OZ/A		EPOST	B			
	MSO		1.5 PT/A	1.5 PT/A		EPOST	B			
	AMS		2.0 LB/A	2.0 LB/A		EPOST	B			
LSD (P=.05)							3.3	2.3	1.9	

Iowa State University

Evaluation of postemergence CHA4535, Roundup UltraMAX and Glyphos X-TRA for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACS 9
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Ames **Trial Status:** ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50011 **Initiation Date:** 05-21-02
Country: USA

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

Objective: The purpose of this study was to evaluate postemergence applications of CHA4535, Roundup UltraMAX, and Glyphos X-TRA for crop phytotoxicity and weed control in corn.

Conclusions: No significant differences in corn stand between treatments were determined. Postemergence, POST1 and POST2 treatments, were applied on June 16 and June 28, respectively. All treatments and application timings demonstrated excellent crop safety. POST1 applied CHA4535, Roundup UltraMAX, and Glyphos X-TRA at the 0.75 lb/A rate provided good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and common cocklebur control when observed on June 28, twelve days after application. Pennsylvania smartweed control was fair to good. On June 28, POST1 applications of CHA4535, Roundup UltraMAX, and Glyphos X-TRA at the 0.375 lb/A rate provided excellent control of giant foxtail and common cocklebur, and poor to fair control of velvetleaf, common waterhemp, common lambsquarters and Pennsylvania smartweed. Generally, at the two rates evaluated, Glyphos-X-TRA provided slightly better velvetleaf, common waterhemp, common lambsquarters and Pennsylvania smartweed control at twelve days after application than either CHA4535 or Roundup UltraMAX.

On July 25 and August 27, good to excellent weed control was observed following POST1 (0.75 lb/A) and sequential POST2 (0.75 lb/A) applications of CHA4535, Roundup UltraMAX, and Glyphos X-TRA. Generally, no or little control difference between the herbicides was observed. Observations on July 25 and August 27 of POST1 (0.375 lb/A) followed by POST2 (0.375 lb/A) applications of CHA4535, Roundup UltraMAX, and Glyphos X-TRA demonstrated excellent giant foxtail and common cocklebur control. Velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed control was generally fair to good. The POST1 (0.375 lb/A) and sequential POST2 (0.375 lb/A) treatment of Glyphos X-TRA provided slightly better velvetleaf, common waterhemp, common lambsquarters and Pennsylvania smartweed control than the other herbicides applied at equivalent rates.

POST2 treatments of CHA4535, Roundup UltraMAX, and Glyphos X-TRA, applied at 0.375 lb/A and not followed by a sequential POST, provided fair to good giant foxtail control and excellent common cocklebur control when observed on July 25 and August 27. These treatments provided poor control of velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed. Generally, Glyphos X-TRA gave slightly better control of velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed than the other herbicides. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD **Variety:** DeKalb DKC57-40 RR
Planting Date: 05-21-02 **Planting Method:** DIRECT DRILLED
Rate: 27700 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE

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SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM

pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS

Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	06-16-02	06-28-02
Application Method:	SPRAY	SPRAY
Application Timing:	POST1	POST2
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	77 F	86 F
% Relative Humidity:	64	64
Wind Velocity, Unit:	2 MPH	4 MPH
Soil Temp., Unit:	72 F	84 F
Soil Moisture:	DAMP	DRY
% Cloud Cover:	0	40

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD V5	ZEAMD V8
Stage Scale:	DESC	DESC
Height, Unit:	10.5 IN	24 IN

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WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA 2-4, 1-2T	SETFA 2-4 LF,3T
Stage Scale:	0.5-6 IN	3-13 IN
Density, Unit:	20 FT2	0-30 FT2
Weed 2 Code, Stage:	ABUTH COTYL-7	ABUTH 4-12 LEAF
Stage Scale:	0.5-7 IN	4-18 IN
Density, Unit:	0-3 FT2	0-5 FT2
Weed 3 Code, Stage:	AMATA 2-NUM	AMATA NUMEROUS
Stage Scale:	0.5-8 IN	10-18 IN
Density, Unit:	0-1 FT2	0-5 FT2
Weed 4 Code, Stage:	CHEAL 2-NUM	CHEAL 4-NUM
Stage Scale:	0.5-8 IN	3-17 IN
Density, Unit:	0-1 FT2	0-3 FT2
Weed 5 Code, Stage:	POLPY 2-8 LEAF	POLPY SEVERAL
Stage Scale:	1-5 IN	12-18 IN
Density, Unit:	0-1 FT2	0-3 FT2
Weed 6 Code, Stage:	XANST 2-8 LEAF	XANST NUMEROUS
Stage Scale:	2-8 IN	8-18 IN
Density, Unit:	0-1 FT2	0-1 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	HAND BOOM	HAND BOOM
Operating Pressure:	25	25
Nozzle Type:	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Evaluation of postemergence CHA4535, Roundup UltraMAX and Glyphos X-TRA for crop phytotoxicity and weed control in corn, Ames, IA, 2002.

Trial ID: ACS 9
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	percent	
Rating Date							07-15-02	06-21-02	06-28-02	06-28-02	06-28-02	06-28-02	
Trt-Eval Interval							29 DA-A	5 DA-A	12 DA-A	12 DA-A	12 DA-A	12 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
1	Untreated							26	0	0	0	0	
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A		27	0	0	99	85	
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B						93	
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A		28	0	0	95	45	
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B						63	
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B		29	0	0	0	0	
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A		28	0	0	99	85	
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B						95	
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A		27	0	0	96	47	
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B						72	
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B		28	0	0	0	0	
8	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A		28	0	0	99	88	
	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B						99	
9	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A		28	0	0	95	50	
	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B						78	
10	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B		28	0	0	0	0	
LSD (P=.05)								2.4	0.0	0.0	1.3	6.6	8.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-28-02 12 DA-A	POLPY CONTROL percent 06-28-02 12 DA-A	XANST CONTROL percent 06-28-02 12 DA-A	ZEAMD PHYGEN percent 07-25-02 27 DA-B	SETFA CONTROL percent 07-25-02 27 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	96	78	99	0	
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				99	
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	75	53	99	0	
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				99	
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	0	0	0	0	
											85	
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	96	82	99	0	
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				99	
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	83	53	99	0	
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				99	
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	0	0	0	0	
											88	
8	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A	A	98	85	99	0	
	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B	B				99	
9	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A	A	75	62	99	0	
	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B				99	
10	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B	0	0	0	0	
											88	
LSD (P=.05)								8.1	7.8	0.0	0.0	5.1

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-25-02 27 DA-B	AMATA CONTROL percent 07-25-02 27 DA-B	CHEAL CONTROL percent 07-25-02 27 DA-B	POLPY CONTROL percent 07-25-02 27 DA-B	XANST CONTROL percent 07-25-02 27 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	99	98	95	92	
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B					
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	62	80	72	72	
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B					
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	30	45	42	42	
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	96	99	96	93	
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B					
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	73	87	82	73	
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B					
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	38	57	52	45	
8	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A	A	99	99	96	93	
	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B	B					
9	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A	A	83	93	82	85	
	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B					
10	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B	43	53	55	50	
LSD (P=.05)								7.6	11.2	10.3	11.0	0.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD PHYGEN percent 08-27-02 60 DA-B	SETFA CONTROL percent 08-27-02 60 DA-B	ABUTH CONTROL percent 08-27-02 60 DA-B	AMATA CONTROL percent 08-27-02 60 DA-B	CHEAL CONTROL percent 08-27-02 60 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	0	99	99	99	
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				95	
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	0	99	72	82	
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				67	
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	0	78	27	42	
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	0	99	99	99	
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				95	
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	0	99	72	88	
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				78	
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	0	85	33	48	
8	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A	A	0	99	99	99	
	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B	B				92	
9	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A	A	0	99	80	93	
	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B				73	
10	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B	0	83	38	47	
LSD (P=.05)								0.0	8.2	12.3	12.7	11.0

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Weed Code							POLPY	XANST
Rating Data Type							CONTROL	CONTROL
Rating Unit							percent	percent
Rating Date							08-27-02	08-27-02
Trt-Eval Interval							60 DA-B	60 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code	
1	Untreated							0
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A		92
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B		99
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A		63
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B		99
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B		38
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A		91
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B		99
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A		70
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B		99
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B		42
8	Glyfos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A		87
	Glyfos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B		99
9	Glyfos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A		77
	Glyfos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B		99
10	Glyfos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B		47
LSD (P=.05)							11.1	0.0

Iowa State University

Preemergence applied Bicep II Magnum, Dual II Magnum and others followed by postemergence Callisto, Touchdown IQ and Northstar in corn, Ames, IA, 2002.

Trial ID: ACS 10

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-21-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate various preemergence applied herbicides followed by postemergence applications of Callisto, Northstar, Touchdown IQ, Option, Distinct, Roundup UltraMAX and others for crop phytotoxicity and weed control in corn.

Conclusions: Significant differences in corn stand between treatments were determined. These differences were a result of poor emergence and stand establishment and not due to herbicide treatment. Good to excellent giant foxtail, crabgrass, and common waterhemp control was achieved with all preemergence (PRE) applied treatments when observed on June 13. Velvetleaf control was unacceptable with most PRE treatments on June 13, and common lambsquarters control was good to excellent. Exceptions were Dual II Magnum and Define. Neither provided acceptable common lambsquarters control.

Significant corn injury was observed with early postemergence (EPOST) and postemergence (POST) treatments on June 21, seven days after applications. On July 15, good to excellent broad-spectrum weed control was observed with nearly all of the treatment combinations and application timings. PRE Leadoff followed by POST Basis Gold provided fair velvetleaf control, while PRE Define plus POST Option provided fair velvetleaf and common lambsquarters control. On August 14, giant foxtail control with a number of treatments was no longer excellent, while broadleaf control remained good to excellent. Corn yields ranged from 176 to 210 bu/A with significant differences occurring between a number of treatments. Yields somewhat reflected the level of crop injury and weed control afforded by the treatments. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	DIGSS	CRABGRASS, DIGITARIA SP.	DIGITARIA SSP.
3.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
5.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: ZEAMD CORN, FIELD

Variety: DEKALB DKC57-40 RR

Planting Date: 05-21-02

Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 125 lb/A actual N applied as urea. Crop residue on the soil surface was 12% at planting.

SOIL DESCRIPTION

% OM: 4.65 Texture: CLAY LOAM
 pH: 7.8 Soil Name: CANISTEO, NICOLLET, CLARION, HARPS
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-21-02	06-06-02	06-14-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	POST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	63 F	79 F	75 F
% Relative Humidity:	46	50	60
Wind Velocity, Unit:	10 MPH	10 MPH	8 MPH
Soil Temp., Unit:	55 F	70 F	66 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	0	5	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 3	ZEAMD V 5
Stage Scale:	-	DESC	DESC
Height, Unit:	-	4 IN	10 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF	SETFA 1-4 LEAF
Stage Scale:	-	0.25-2 IN	0.5-1 IN
Density, Unit:	- -	30 FT2	0-10 FT2
Weed 2 Code, Stage:	DIGSS -	DIGSS 1-4 LEAF	DIGSS 1-4 LEAF
Stage Scale:	-	0.25-2 IN	0.5-1 IN
Density, Unit:	- -	0-3 FT2	0-1 FT2
Weed 3 Code, Stage:	ABUTH -	ABUTH COTYL-4	ABUTH COTYL-7
Stage Scale:	-	0.25-2 IN	0.25-6 IN
Density, Unit:	- -	0-5 FT2	0-5 FT2
Weed 4 Code, Stage:	AMATA -	AMATA COTYL-4	AMATA COTYL-NUM
Stage Scale:	-	0.25-1 IN	0.25-1 IN
Density, Unit:	- -	0-25 FT2	<1 FT2
Weed 5 Code, Stage:	CHEAL -	CHEAL COTYL-4	CHEAL 2-NUM
Stage Scale:	-	0.25-2 IN	0.25-4 IN
Density, Unit:	- -	0-15 FT2	0-2 FT2

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	TERRA PRO
Operating Pressure:	30	30	30
Nozzle Type:	11002	11002	1102
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Preemergence applied Bicep II Magnum, Dual II Magnum and others followed by postemergence Callisto, Touchdown IQ and Northstar in corn, Ames, IA, 2002.

Trial ID: ACS 10

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	DIGSA	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	
Rating Date							07-18-02	06-01-02	06-13-02	06-13-02	06-13-02	
Trt-Eval Interval							58 DA-A	11 DA-A	7 DA-B	23 DA-A	23 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							27	0	0	0	
2	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A		PRE	A	28	0	0	95	
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		POST	C				93	
	COC		1.0 % V/V	1.0 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
3	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A		PRE	A	29	0	0	95	
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		POST	C				92	
	Atrazine	4	0.5 LB A/A	1.0 PT/A		POST	C					
	COC		1.0 % V/V	1.0 % V/V		POST	C					
	28% UAN		1.0 % V/V	1.0 % V/V		POST	C					
4	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		EPOST	B	26	0	12	96	
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST	B				95	
	COC		1.0 % V/V	1.0 % V/V		EPOST	B					
	28% UAN		1.0 % V/V	1.0 % V/V		EPOST	B					
5	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		PRE	A	28	0	0	93	
	Northstar	47.4	0.148 LB A/A	5.0 OZ/A		POST	C				90	
	NIS		0.25 % V/V	0.25 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
6	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		PRE	A	29	0	0	95	
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A		POST	C				93	
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C					
7	Leadoff	5	2.8 LB A/A	4.5 PT/A		PRE	A	30	0	0	95	
	Basis Gold	89.5	0.78 LB A/A	14.0 OZ/A		POST	C				93	
	COC		1.0 % V/V	1.0 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
8	Outlook	6	0.94 LB A/A	20.0 FL OZ/A		PRE	A	29	0	0	98	
	Marksman	3.2	1.4 LB A/A	3.5 PT/A		EPOST	B				96	
9	Guardsman Max	5	2.7 LB A/A	4.3 PT/A		PRE	A	28	0	0	99	
	Distinct	70	0.175 LB A/A	4.0 OZ/A		POST	C				98	
	NIS		0.25 % V/V	0.25 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
10	Define	60	0.71 LB A/A	19.0 OZ/A		PRE	A	27	0	0	90	
	Option	35	0.0328 LB A/A	1.5 OZ/A		POST	C				90	
	NIS		0.25 % V/V	0.25 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
11	Topnotch	3.2	2.2 LB A/A	2.75 QT/A		PRE	A	29	0	0	99	
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A		POST	C				98	
	NIS		0.25 % V/V	0.25 % V/V		POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V		POST	C					
12	Harness	7	2.19 LB A/A	2.5 PT/A		PRE	A	29	0	0	98	
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A		POST	C				95	
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C					
LSD (P=.05)								2.4	0.0	1.4	3.3	3.9

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 06-13-02 23 DA-A	AMATA CONTROL percent 06-13-02 23 DA-A	CHEAL CONTROL percent 06-13-02 23 DA-A	ZEAMD PHYGEN percent 06-21-02 7 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	PRE	A		40	99	99	0
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
3	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A	PRE	A		13	96	60	0
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST	C					
	Atrazine	4	0.5 LB A/A	1.0 PT/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		1.0 % V/V	1.0 % V/V	POST	C					
4	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	EPOST	B		99	99	99	10
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	EPOST	B					
	COC		1.0 % V/V	1.0 % V/V	EPOST	B					
	28% UAN		1.0 % V/V	1.0 % V/V	EPOST	B					
5	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	PRE	A		40	99	96	3
	Northstar	47.4	0.148 LB A/A	5.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
6	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	PRE	A		30	99	98	0
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	POST	C					
7	Leadoff	5	2.8 LB A/A	4.5 PT/A	PRE	A		33	99	96	13
	Basis Gold	89.5	0.78 LB A/A	14.0 OZ/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
8	Outlook	6	0.94 LB A/A	20.0 FL OZ/A	PRE	A		99	99	99	3
	Marksman	3.2	1.4 LB A/A	3.5 PT/A	EPOST	B					
9	Guardsman Max	5	2.7 LB A/A	4.3 PT/A	PRE	A		50	99	99	2
	Distinct	70	0.175 LB A/A	4.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
10	Define	60	0.71 LB A/A	19.0 OZ/A	PRE	A		23	80	63	15
	Option	35	0.0328 LB A/A	1.5 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
11	Topnotch	3.2	2.2 LB A/A	2.75 QT/A	PRE	A		23	99	92	13
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
12	Harness	7	2.19 LB A/A	2.5 PT/A	PRE	A		23	98	92	0
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	POST	C					
LSD (P=.05)								12.3	1.6	5.8	3.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD PHYGEN percent 06-28-02 14 DA-C	SETFA CONTROL percent 06-28-02 14 DA-C	DIGSA CONTROL percent 06-28-02 14 DA-C	ABUTH CONTROL percent 06-28-02 14 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	0	93	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	2	92	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C				
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	3	92	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B				
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	5	93	93	87
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	0	99	99	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	3	96	98	80
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	0	96	98	99
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B				
9	Guardsman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	5	96	95	91
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	8	96	98	82
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	3	96	96	90
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	0	99	99	99
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
LSD (P=.05)									3.3	3.1	4.7	8.5

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 06-28-02 14 DA-C	CHEAL CONTROL percent 06-28-02 14 DA-C	ZEAMD PHYGEN percent 07-15-02 31 DA-C	SETFA CONTROL percent 07-15-02 31 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	99	99	0	93
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	99	99	0	92
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C				
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	99	99	0	92
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B				
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	96	5	92
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	99	0	98
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	99	99	0	95
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	99	99	0	95
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B				
9	Guardsman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	99	99	5	95
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	98	83	0	95
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	99	96	0	95
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	99	99	0	99
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
LSD (P=.05)									1.1	3.2	0.0	2.7

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							DIGSA CONTROL percent 07-15-02 31 DA-C	ABUTA CONTROL percent 07-15-02 31 DA-C	AMATA CONTROL percent 07-15-02 31 DA-C	CHEAL CONTROL percent 07-15-02 31 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Bicep II Magnum	5.5	3.3 LB A/A	2.4 QT/A	PRE	A		93	99	99	99
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
3	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A	PRE	A		92	99	99	99
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	POST	C					
	Atrazine	4	0.5 LB A/A	1.0 PT/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		1.0 % V/V	1.0 % V/V	POST	C					
4	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	EPOST	B		95	99	99	99
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A	EPOST	B					
	COC		1.0 % V/V	1.0 % V/V	EPOST	B					
	28% UAN		1.0 % V/V	1.0 % V/V	EPOST	B					
5	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	PRE	A		88	90	99	99
	Northstar	47.4	0.148 LB A/A	5.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
6	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	PRE	A		96	99	99	99
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	POST	C					
7	Leadoff	5	2.8 LB A/A	4.5 PT/A	PRE	A		95	82	99	99
	Basis Gold	89.5	0.78 LB A/A	14.0 OZ/A	POST	C					
	COC		1.0 % V/V	1.0 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
8	Outlook	6	0.94 LB A/A	20.0 FL OZ/A	PRE	A		95	99	99	99
	Marksman	3.2	1.4 LB A/A	3.5 PT/A	EPOST	B					
9	Guardzman Max	5	2.7 LB A/A	4.3 PT/A	PRE	A		93	95	99	99
	Distinct	70	0.175 LB A/A	4.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
10	Define	60	0.71 LB A/A	19.0 OZ/A	PRE	A		93	73	94	82
	Option	35	0.0328 LB A/A	1.5 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
11	Topnotch	3.2	2.2 LB A/A	2.75 QT/A	PRE	A		93	92	99	99
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
12	Harness	7	2.19 LB A/A	2.5 PT/A	PRE	A		98	98	99	99
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	POST	C					
LSD (P=.05)								3.3	8.6	4.0	2.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 08-14-02 61 DA-C	DIGSA CONTROL percent 08-14-02 61 DA-C	ABUTH CONTROL percent 08-14-02 61 DA-C	AMATA CONTROL percent 08-14-02 61 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	83	93	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	82	92	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C				
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C				
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	77	95	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B				
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	78	88	90	99
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	98	96	99	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	95	95	82	99
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	93	95	99	99
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B				
9	Guardsman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	92	93	95	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	92	93	77	94
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	93	93	92	99
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	99	98	98	99
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C				
LSD (P=.05)									5.0	3.3	8.0	4.0

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Weed Code							CHEAL	ZEAMD		
Rating Data Type							CONTROL	YIELD		
Rating Unit							percent	BU/A		
Rating Date							08-14-02	10-09-02		
Trt-Eval Interval							61 DA-C	141 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated								0	85
2	Bicep II Magnum	5.5	3.3	LB A/A	2.4	QT/A	PRE	A	99	201
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C		
	COC		1.0	% V/V	1.0	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
3	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	99	199
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C		
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C		
	COC		1.0	% V/V	1.0	% V/V	POST	C		
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C		
4	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	99	184
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B		
	COC		1.0	% V/V	1.0	% V/V	EPOST	B		
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B		
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	191
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
6	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	210
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C		
7	Leadoff	5	2.8	LB A/A	4.5	PT/A	PRE	A	99	198
	Basis Gold	89.5	0.78	LB A/A	14.0	OZ/A	POST	C		
	COC		1.0	% V/V	1.0	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
8	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	99	208
	Marksman	3.2	1.4	LB A/A	3.5	PT/A	EPOST	B		
9	Guardsman Max	5	2.7	LB A/A	4.3	PT/A	PRE	A	99	180
	Distinct	70	0.175	LB A/A	4.0	OZ/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
10	Define	60	0.71	LB A/A	19.0	OZ/A	PRE	A	72	176
	Option	35	0.0328	LB A/A	1.5	OZ/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
11	Topnotch	3.2	2.2	LB A/A	2.75	QT/A	PRE	A	99	195
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C		
12	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	99	196
	Roundup UltraMAX	3.7	0.75	LB AE/A	26.0	FL OZ/A	POST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C		
LSD (P=.05)							2.8	21.6		

Iowa State University

Prowl formulations applied preplant incorporated and preemergence and followed by various postemergence herbicides for weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-28-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate Prowl formulations applied preplant incorporated and preemergence and followed by postemergence applications of Raptor, Ultra Blazer, Storm and Extreme for crop phytotoxicity and weed control in soybean.

Conclusions: Soybean injury observed on June 24 was insignificant. Giant foxtail control at this time was excellent for all preplant incorporated (PPI) treatments. However, preemergence (PRE) treatments provided marginal giant foxtail control. Velvetleaf control on June 24 was unacceptable for all treatments except for excellent control provided by PPI applied Pursuit Plus treatments. Common waterhemp control on June 24 was good to excellent for PPI treatments, while unacceptable for PRE treatments. Common lambsquarters control was good to excellent for all treatments. Common cocklebur control was unacceptable for all treatments, though Pursuit Plus provided significantly better control than the other treatments.

Soybean injury observed on July 2 ranged from 15 to 18% for postemergence (POST) applied Raptor, Ultra Blazer, Storm and Pursuit treatments. Injury from POST Extreme treatments demonstrated about 10% and POST Roundup UltraMAX demonstrated insignificant injury. POST Raptor plus Pursuit plus Cobra demonstrated 20% injury. Giant foxtail control was marginal on July 24 and August 19 for PRE Prowl and Prowl H20 treatments followed by POST Raptor plus Ultra Blazer. Weed control was good to excellent for all other treatments. Soybean yields were lower for PRE Prowl or Prowl H20 with POST Raptor plus Ultra Blazer. There were no significant yield differences among other treatments. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: GLXMA SOYBEAN

Variety: ASGROW AG2402 RR

Planting Date: 05-28-02

Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15% at planting.

SOIL DESCRIPTION

% OM: 3.8 Texture: CLAY LOAM
 pH: 6.85 Soil Name: CANISTEO, CLARION, HAYDEN-STORDEN
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-28-02	05-28-02	06-24-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PPI	PRE	POST
Applic. Placement:	BROSOI	BROSOI	BROFOL
Air Temp., Unit:	63 F	81 F	88 F
% Relative Humidity:	74	74	67
Wind Velocity, Unit:	6 MPH	6 MPH	7 MPH
Soil Temp., Unit:	70 F	70 F	82 F
Soil Moisture:	DRY	DRY	MOIST
% Cloud Cover:	50	50	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA -	GLXMA -	GLXMA V3
Stage Scale:	-	-	DESC
Height, Unit:	-	-	5.5 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA -	SETFA 2-5 LEAF
Stage Scale:	-	-	1 IN
Density, Unit:	- -	- -	0-30 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH -	ABUTH 3-6 LEAF
Stage Scale:	-	-	1-6 IN
Density, Unit:	- -	- -	0-10 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -	AMATA 2-6
Stage Scale:	-	-	1-5 IN
Density, Unit:	- -	- -	0-15 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	-	1-4 IN
Density, Unit:	- -	- -	0-15 FT2
Weed 5 Code, Stage:	XANST -	XANST -	XANST 4-12
Stage Scale:	-	-	1-10 IN
Density, Unit:	- -	- -	0-5 FT2

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	TERRA PRO
Operating Pressure:	30	30	30
Nozzle Type:	11002	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Prowl formulations applied preplant incorporated and preemergence and followed by various postemergence herbicides for weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-24-02	06-24-02	06-24-02	06-24-02	06-24-02
Trt-Eval Interval							27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Prowl	3.3	1.24 LB A/A	3.0 PT/A		PRE	B	3	82	50	48
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A		POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A		POST	C				
	MSO		1.0 % V/V	1.0 % V/V		POST	C				
	AMS		2.5 LB/A	2.5 LB/A		POST	C				
3	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A		PRE	B	5	80	50	38
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A		POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A		POST	C				
	MSO		1.0 % V/V	1.0 % V/V		POST	C				
	AMS		2.5 LB/A	2.5 LB/A		POST	C				
4	Prowl	3.3	1.24 LB A/A	3.0 PT/A		PPI	A	2	95	48	93
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A		POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A		POST	C				
	MSO		1.0 % V/V	1.0 % V/V		POST	C				
	AMS		2.5 LB/A	2.5 LB/A		POST	C				
5	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A		PPI	A	0	95	62	92
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A		POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A		POST	C				
	MSO		1.0 % V/V	1.0 % V/V		POST	C				
	AMS		2.5 LB/A	2.5 LB/A		POST	C				
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A		PPI	A	2	95	62	93
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A		POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A		POST	C				
	MSO		1.0 % V/V	1.0 % V/V		POST	C				
	AMS		2.5 LB/A	2.5 LB/A		POST	C				
7	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A		PPI	A	0	95	55	88
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A		POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A		POST	C				
	MSO		1.0 % V/V	1.0 % V/V		POST	C				
	AMS		2.5 LB/A	2.5 LB/A		POST	C				
8	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A		PPI	A	2	95	99	95
	Storm	4	0.75 LB A/A	1.5 PT/A		POST	C				
	NIS		0.25 % V/V	0.25 % V/V		POST	C				
	AMS		2.5 LB/A	2.5 LB/A		POST	C				
9	Prowl	3.3	1.24 LB A/A	3.0 PT/A		PRE	B	5	77	47	45
	Extreme	2.17	0.81 LB A/A	3.0 PT/A		POST	C				
	NIS		0.125 % V/V	0.125 % V/V		POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C				
10	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A		PRE	B	3	78	50	60
	Extreme	2.17	0.81 LB A/A	3.0 PT/A		POST	C				
	NIS		0.125 % V/V	0.125 % V/V		POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C				

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Weed Code							GLXMA	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-24-02	06-24-02	06-24-02	06-24-02	06-24-02	
Trt-Eval Interval							27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Unit	Grow Stg	Appl Code					
11	Prowl	3.3	1.24 LB A/A	3.0	PT/A	PPI	A	0	93	55	93	95
	Extreme	2.17	0.81 LB A/A	3.0	PT/A	POST	C					
	NIS		0.125 % V/V	0.125	% V/V	POST	C					
	AMS		17.0 LB/100 GAL	17.0	LB/100 GAL	POST	C					
12	Prowl H2O	3.8	1.23 LB A/A	2.6	PT/A	PPI	A	0	95	55	93	90
	Extreme	2.17	0.81 LB A/A	3.0	PT/A	POST	C					
	NIS		0.125 % V/V	0.125	% V/V	POST	C					
	AMS		17.0 LB/100 GAL	17.0	LB/100 GAL	POST	C					
13	Pursuit Plus	2.9	0.91 LB A/A	2.5	PT/A	PPI	A	2	95	99	95	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0	FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0	LB/100 GAL	POST	C					
14	Prowl H2O	3.8	1.23 LB A/A	2.6	PT/A	PPI	A	2	93	60	87	95
	Raptor	1	0.0312 LB A/A	4.0	FL OZ/A	POST	C					
	Pursuit	2	0.0312 LB A/A	2.0	FL OZ/A	POST	C					
	Cobra	2	0.0312 LB A/A	2.0	FL OZ/A	POST	C					
	NIS		0.25 % V/V	0.25	% V/V	POST	C					
	COC		0.5 % V/V	0.5	% V/V	POST	C					
	AMS		17.0 LB/100 GAL	17.0	LB/100 GAL	POST	C					
LSD (P=.05)							3.5	8.7	12.0	10.7	6.0	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval						XANST CONTROL percent 06-24-02 27 DA-A	GLXMA PHYGEN percent 07-02-02 8 DA-C	GLXMA PHYGEN percent 07-09-02 15 DA-C	SETFA CONTROL percent 07-09-02 15 DA-C	ABUTH CONTROL percent 07-09-02 15 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated							0	0	0
2	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PRE	B	30	17	18
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
3	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PRE	B	28	18	20
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
4	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	27	15	18
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
5	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	30	17	17
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	30	15	13
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
7	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	28	18	20
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
8	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PT/A	PPI	A	75	15	10
	Storm	4	0.75 LB A/A	1.5 PT/A	PT/A	POST	C			
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
9	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PRE	B	23	12	12
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C			
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C			
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C			
10	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PRE	B	32	10	8
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C			
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C			
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C			
11	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	37	10	7
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C			
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C			
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C			

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Weed Code						XANST	GLXMA	GLXMA	SETFA	ABUTH		
Rating Data Type						CONTROL	PHYGEN	PHYGEN	CONTROL	CONTROL		
Rating Unit						percent	percent	percent	percent	percent		
Rating Date						06-24-02	07-02-02	07-09-02	07-09-02	07-09-02		
Trt-Eval Interval						27 DA-A	8 DA-C	15 DA-C	15 DA-C	15 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
12	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	30	12	8	99	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C					
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C					
13	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PT/A	PPI	A	63	3	0	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C					
14	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	32	20	15	90	99
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C					
	Pursuit	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST	C					
	Cobra	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST	C					
	COC		0.5 % V/V	0.5 % V/V	% V/V	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C					
LSD (P=.05)						15.1	5.4	5.5	3.8	4.5		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval						AMATA CONTROL percent 07-09-02 15 DA-C	CHEAL CONTROL percent 07-09-02 15 DA-C	XANST CONTROL percent 07-09-02 15 DA-C	GLXMA PHYGEN percent 07-24-02 30 DA-C	SETFA CONTROL percent 07-24-02 30 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated							0	0	0
2	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PRE	B	93	96	99
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			8
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			80
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
3	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PRE	B	96	98	99
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			12
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			77
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
4	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	99	99	98
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			7
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			95
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
5	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	96	96	96
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			8
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			90
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	99	99	99
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			2
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			95
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
7	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	96	90	98
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C			10
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C			92
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
8	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PT/A	PPI	A	99	99	99
	Storm	4	0.75 LB A/A	1.5 PT/A	PT/A	POST	C			3
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST	C			
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C			
9	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PRE	B	96	99	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C			5
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C			99
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C			
10	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PRE	B	95	99	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C			5
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C			99
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C			
11	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	96	99	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C			2
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C			99
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C			

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Weed Code						AMATA	CHEAL	XANST	GLXMA	SETFA		
Rating Data Type						CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL		
Rating Unit						percent	percent	percent	percent	percent		
Rating Date						07-09-02	07-09-02	07-09-02	07-24-02	07-24-02		
Trt-Eval Interval						15 DA-C	15 DA-C	15 DA-C	30 DA-C	30 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
12	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	98	99	99	3	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C					
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C					
13	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PT/A	PPI	A	99	99	99	0	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	FL OZ/A	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C					
14	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	92	96	99	8	92
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C					
	Pursuit	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST	C					
	Cobra	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST	C					
	COC		0.5 % V/V	0.5 % V/V	% V/V	POST	C					
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C					
LSD (P=.05)						3.9	4.9	1.8	6.1	3.2		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval						ABUTH CONTROL percent 07-24-02 30 DA-C	AMATA CONTROL percent 07-24-02 30 DA-C	CHEAL CONTROL percent 07-24-02 30 DA-C	XANST CONTROL percent 07-24-02 30 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PRE	B	98	92	96	99
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
3	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PRE	B	98	93	96	99
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
4	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	93	99	99	96
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
5	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	95	96	96	96
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	94	99	99	99
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
7	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	95	96	90	98
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
8	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PT/A	PPI	A	98	98	99	99
	Storm	4	0.75 LB A/A	1.5 PT/A	PT/A	POST	C				
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
9	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PRE	B	99	96	99	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
10	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PRE	B	99	95	99	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
11	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	99	96	99	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				

Iowa State University

Weed Code							ABUTH	AMATA	CHEAL	XANST	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-24-02	07-24-02	07-24-02	07-24-02	
Trt-Eval Interval							30 DA-C	30 DA-C	30 DA-C	30 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code				
12	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	99	98	99	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
13	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PT/A	PPI	A	99	99	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	FL OZ/A	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
14	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	99	90	96	98
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Pursuit	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST	C				
	Cobra	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST	C				
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST	C				
	COC		0.5 % V/V	0.5 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
LSD (P=.05)							4.5	3.8	4.8	2.2	

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval						SETFA CONTROL percent 08-19-02 56 DA-C	ABUTH CONTROL percent 08-19-02 56 DA-C	AMATA CONTROL percent 08-19-02 56 DA-C	CHEAL CONTROL percent 08-19-02 56 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PRE	B	77	98	90	96
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
3	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PRE	B	70	98	93	96
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
4	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	95	93	99	99
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
5	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	88	93	96	96
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	95	94	99	99
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
7	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	90	95	96	90
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	FL OZ/A	POST	C				
	MSO		1.0 % V/V	1.0 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
8	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PT/A	PPI	A	87	98	98	99
	Storm	4	0.75 LB A/A	1.5 PT/A	PT/A	POST	C				
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST	C				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST	C				
9	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PRE	B	99	99	96	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
10	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PRE	B	99	99	95	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
11	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PT/A	PPI	A	99	99	96	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				

Iowa State University

Weed Code							SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							08-19-02	08-19-02	08-19-02	08-19-02	
Trt-Eval Interval							56 DA-C	56 DA-C	56 DA-C	56 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code				
12	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	99	99	98	99
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	PT/A	POST	C				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
13	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PT/A	PPI	A	99	99	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	FL OZ/A	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
14	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PT/A	PPI	A	90	99	90	96
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST	C				
	Pursuit	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST	C				
	Cobra	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST	C				
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST	C				
	COC		0.5 % V/V	0.5 % V/V	% V/V	POST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	C				
LSD (P=.05)							4.5	5.0	3.9	3.1	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 08-19-02 56 DA-C	GLXMA YIELD BU/A 10-11-02 136 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated							0	20	
2	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PRE	B	99	47
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	POST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	POST	C		
	MSO		1.0	% V/V	1.0	% V/V	POST	C		
	AMS		2.5	LB/A	2.5	LB/A	POST	C		
3	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PRE	B	99	45
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	POST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	POST	C		
	MSO		1.0	% V/V	1.0	% V/V	POST	C		
	AMS		2.5	LB/A	2.5	LB/A	POST	C		
4	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	96	55
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	POST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	POST	C		
	MSO		1.0	% V/V	1.0	% V/V	POST	C		
	AMS		2.5	LB/A	2.5	LB/A	POST	C		
5	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	96	53
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	POST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	POST	C		
	MSO		1.0	% V/V	1.0	% V/V	POST	C		
	AMS		2.5	LB/A	2.5	LB/A	POST	C		
6	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	99	55
	Pursuit	2	0.0625	LB A/A	4.0	FL OZ/A	POST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	POST	C		
	MSO		1.0	% V/V	1.0	% V/V	POST	C		
	AMS		2.5	LB/A	2.5	LB/A	POST	C		
7	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	98	53
	Pursuit	2	0.0625	LB A/A	4.0	FL OZ/A	POST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	POST	C		
	MSO		1.0	% V/V	1.0	% V/V	POST	C		
	AMS		2.5	LB/A	2.5	LB/A	POST	C		
8	Pursuit Plus	2.9	0.91	LB A/A	2.5	PT/A	PPI	A	99	51
	Storm	4	0.75	LB A/A	1.5	PT/A	POST	C		
	NIS		0.25	% V/V	0.25	% V/V	POST	C		
	AMS		2.5	LB/A	2.5	LB/A	POST	C		
9	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PRE	B	99	53
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	POST	C		
	NIS		0.125	% V/V	0.125	% V/V	POST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C		
10	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PRE	B	99	54
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	POST	C		
	NIS		0.125	% V/V	0.125	% V/V	POST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C		
11	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	99	56
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	POST	C		
	NIS		0.125	% V/V	0.125	% V/V	POST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	C		

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Weed Code							XANST	GLXMA	
Rating Data Type							CONTROL	YIELD	
Rating Unit							percent	BU/A	
Rating Date							08-19-02	10-11-02	
Trt-Eval Interval							56 DA-C	136 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code		
12	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A		PPI	A	99	55
	Extreme	2.17	0.81 LB A/A	3.0 PT/A		POST	C		
	NIS		0.125 % V/V	0.125 % V/V		POST	C		
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C		
13	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A		PPI	A	99	56
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST	C		
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C		
14	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A		PPI	A	98	51
	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A		POST	C		
	Pursuit	2	0.0312 LB A/A	2.0 FL OZ/A		POST	C		
	Cobra	2	0.0312 LB A/A	2.0 FL OZ/A		POST	C		
	NIS		0.25 % V/V	0.25 % V/V		POST	C		
	COC		0.5 % V/V	0.5 % V/V		POST	C		
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL		POST	C		
LSD (P=.05)							2.2	7.0	

Iowa State University

Preemergence FirstRate, Authority, Python and Valor followed by postemergence Glyphomax Plus for weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-28-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate preemergence applied FirstRate, Authority, Python, Valor, and Pendimax followed by postemergence applications of Glyphomax Plus for crop phytotoxicity and weed control in soybean.

Conclusions: Soybean injury observed on June 25 resulting from preemergence (PRE) applied treatments was insignificant. Velvetleaf and common waterhemp control provided by FirstRate plus Authority (Gauntlet) on June 25 was rate responsive. Control of both weeds was excellent at higher rates. Giant foxtail control by Gauntlet was inconsistent at lower rates, but excellent at the highest rate (0.281 lb/A). PRE Gauntlet treatments provided excellent common lambsquarters control. PRE Pendimax treatments and Python plus Valor provided good to excellent giant foxtail control. Python, alone, or Python plus Authority or FirstRate provided marginal giant foxtail control. PRE treatments that tank-mixed Python with Authority, Valor, or FirstRate generally demonstrated good to excellent control of velvetleaf, common waterhemp, and common lambsquarters on June 25. Control ranged from 75 to 90% for Python alone or tank-mixed with FirstRate. PRE applied FirstRate and Pendimax, whether alone or tank-mixed, provided marginal control of these three weeds. No PRE treatments provided acceptable control of common cocklebur. Weed control observations in July and August were good to excellent for all treatments containing PRE and POST treatments. Treatments with only POST timings demonstrated less than 77% control of common waterhemp. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: GLXMA SOYBEAN

Variety: ASGROW AG2402 RR

Planting Date: 05-28-02

Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15% at planting.

SOIL DESCRIPTION

% OM: 3.8 Texture: CLAY LOAM
 pH: 6.85 Soil Name: CANISTEO, CLARION, HAYDEN-STORDEN
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-29-02	06-24-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	79 F	88 F
% Relative Humidity:	76	75
Wind Velocity, Unit:	8 MPH	5 MPH
Soil Temp., Unit:	70 F	82 F
Soil Moisture:	DRY	MOIST
% Cloud Cover:	100	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA V3
Stage Scale:	-	DESC
Height, Unit:	-	5.5 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 2-4LF, 4T
Stage Scale:	-	2-8 IN
Density, Unit:	- -	0-10 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 4-8 LEAF
Stage Scale:	-	1.5-6 IN
Density, Unit:	- -	0-3 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 4-8 LEAF
Stage Scale:	-	2-4 IN
Density, Unit:	- -	0-3 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 4-8 LEAF
Stage Scale:	-	1-3 IN
Density, Unit:	- -	0-3 FT2
Weed 5 Code, Stage:	XANST -	XANST 4-6 LEAF
Stage Scale:	-	3-7 IN
Density, Unit:	- -	0-1 FT2

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APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Preemergence FirstRate, Authority, Python and Valor followed by postemergence
Glyphomax Plus for weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-25-02	06-25-02	06-25-02	06-25-02	06-25-02
Trt-Eval Interval							27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0105	LB A/A	0.2	OZ/A	PRE A	2	88	73	87
	Authority	75	0.0834	LB A/A	1.78	OZ/A	PRE A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST B				
	NIS		0.25	% V/V	0.25	% V/V	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				
3	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	PRE A	2	87	90	96
	Authority	75	0.125	LB A/A	2.67	OZ/A	PRE A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST B				
	NIS		0.25	% V/V	0.25	% V/V	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				
4	FirstRate	84	0.021	LB A/A	0.4	OZ/A	PRE A	5	82	93	95
	Authority	75	0.166	LB A/A	3.55	OZ/A	PRE A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST B				
	NIS		0.25	% V/V	0.25	% V/V	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				
5	FirstRate	84	0.0315	LB A/A	0.6	OZ/A	PRE A	2	95	96	98
	Authority	75	0.25	LB A/A	5.33	OZ/A	PRE A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST B				
	NIS		0.25	% V/V	0.25	% V/V	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				
6	Python	80	0.04	LB A/A	0.8	OZ/A	PRE A	3	77	88	95
	Authority	75	0.125	LB A/A	2.67	OZ/A	PRE A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST B				
	NIS		0.25	% V/V	0.25	% V/V	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				
7	Python	80	0.033	LB A/A	0.66	OZ/A	PRE A	5	85	98	96
	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST B				
	NIS		0.25	% V/V	0.25	% V/V	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				
8	Python	80	0.05	LB A/A	1.0	OZ/A	PRE A	2	57	75	83
	Glyphomax Plus	4	1.0	LB A/A	2.0	PT/A	POST B				
	NIS		0.25	% V/V	0.25	% V/V	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				
9	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PRE A	8	92	58	72
	Glyphomax Plus	4	1.0	LB A/A	2.0	PT/A	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				
10	Python	80	0.04	LB A/A	0.8	OZ/A	PRE A	8	92	85	87
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PRE A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST B				
	AMS		1.5	% W/W	1.5	% W/W	POST B				

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								GLXMA PHYGEN percent 06-25-02 27 DA-A	SETFA CONTROL percent 06-25-02 27 DA-A	ABUTH CONTROL percent 06-25-02 27 DA-A	AMATA CONTROL percent 06-25-02 27 DA-A	CHEAL CONTROL percent 06-25-02 27 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
11	FirstRate Glyphomax Plus AMS	84 4	0.0315 0.75 1.5 % W/W	LB A/A LB A/A 1.5 % W/W	0.6 OZ/A 1.5 PT/A 1.5 % W/W	PRE A POST B POST B	A B B	2	80	82	60	82
12	FirstRate Python Glyphomax Plus AMS	84 80 4	0.021 0.025 0.75 1.5 % W/W	LB A/A LB A/A LB A/A 1.5 % W/W	0.4 OZ/A 0.5 OZ/A 1.5 PT/A 1.5 % W/W	PRE A PRE A POST B POST B	A A B B	3	67	85	78	90
13	Pendimax FirstRate Glyphomax Plus NIS AMS	3.3 84 4	1.24 0.0157 0.75 0.25 % V/V 1.5 % W/W	LB A/A LB A/A LB A/A 0.25 % V/V 1.5 % W/W	3.0 PT/A 0.3 OZ/A 1.5 PT/A 0.25 % V/V 1.5 % W/W	PRE A POST B POST B POST B POST B	A B B B B	7	90	50	72	87
14	FirstRate Glyphomax Plus NIS AMS	84 4	0.0157 0.75 0.25 % V/V 1.5 % W/W	LB A/A LB A/A 0.25 % V/V 1.5 % W/W	0.3 OZ/A 1.5 PT/A 0.25 % V/V 1.5 % W/W	POST B POST B POST B POST B	B B B B	0	0	0	0	0
15	Glyphomax Plus AMS	4	1.0 1.5 % W/W	LB A/A 1.5 % W/W	2.0 PT/A 1.5 % W/W	POST B POST B	B B	0	0	0	0	0
LSD (P=.05)								3.4	19.9	13.3	9.7	9.7

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 06-25-02 27 DA-A	GLXMA PHYGEN percent 07-02-02 8 DA-B	GLXMA PHYGEN percent 07-12-02 18 DA-B	GLXMA PHYGEN percent 07-24-02 30 DA-B	SETFA CONTROL percent 07-24-02 30 DA-B	ABUTH CONTROL percent 07-24-02 30 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	0
2	FirstRate	84	0.0105	LB A/A	0.2 OZ/A	PRE	A	53	0	0	0	99
	Authority	75	0.0834	LB A/A	1.78 OZ/A	PRE	A					
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B					
	NIS		0.25	% V/V	0.25 % V/V	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
3	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	PRE	A	70	2	0	0	99
	Authority	75	0.125	LB A/A	2.67 OZ/A	PRE	A					
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B					
	NIS		0.25	% V/V	0.25 % V/V	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
4	FirstRate	84	0.021	LB A/A	0.4 OZ/A	PRE	A	58	0	0	0	99
	Authority	75	0.166	LB A/A	3.55 OZ/A	PRE	A					
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B					
	NIS		0.25	% V/V	0.25 % V/V	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
5	FirstRate	84	0.0315	LB A/A	0.6 OZ/A	PRE	A	78	0	0	0	99
	Authority	75	0.25	LB A/A	5.33 OZ/A	PRE	A					
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B					
	NIS		0.25	% V/V	0.25 % V/V	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
6	Python	80	0.04	LB A/A	0.8 OZ/A	PRE	A	60	0	2	2	99
	Authority	75	0.125	LB A/A	2.67 OZ/A	PRE	A					
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B					
	NIS		0.25	% V/V	0.25 % V/V	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
7	Python	80	0.033	LB A/A	0.66 OZ/A	PRE	A	55	0	3	0	98
	Valor	51	0.048	LB A/A	1.5 OZ/A	PRE	A					
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B					
	NIS		0.25	% V/V	0.25 % V/V	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
8	Python	80	0.05	LB A/A	1.0 OZ/A	PRE	A	62	3	0	0	99
	Glyphomax Plus	4	1.0	LB A/A	2.0 PT/A	POST	B					
	NIS		0.25	% V/V	0.25 % V/V	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
9	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A	23	3	2	0	99
	Glyphomax Plus	4	1.0	LB A/A	2.0 PT/A	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
10	Python	80	0.04	LB A/A	0.8 OZ/A	PRE	A	55	0	0	0	99
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A					
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					
11	FirstRate	84	0.0315	LB A/A	0.6 OZ/A	PRE	A	40	2	0	0	99
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B					
	AMS		1.5	% W/W	1.5 % W/W	POST	B					

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								XANST CONTROL percent 06-25-02 27 DA-A	GLXMA PHYGEN percent 07-02-02 8 DA-B	GLXMA PHYGEN percent 07-12-02 18 DA-B	GLXMA PHYGEN percent 07-24-02 30 DA-B	SETFA CONTROL percent 07-24-02 30 DA-B	ABUTH CONTROL percent 07-24-02 30 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Code						
12	FirstRate	84	0.021 LB A/A	0.4 OZ/A	0.4 OZ/A	PRE	A	52	3	0	0	99	96
	Python	80	0.025 LB A/A	0.5 OZ/A	0.5 OZ/A	PRE	A						
	Glyphomax Plus AMS	4	0.75 LB A/A 1.5 % W/W	1.5 PT/A 1.5 % W/W	1.5 PT/A 1.5 % W/W	POST POST	B B						
13	Pendimax	3.3	1.24 LB A/A	3.0 PT/A	3.0 PT/A	PRE	A	35	2	0	0	98	99
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	0.3 OZ/A	POST	B						
	Glyphomax Plus NIS AMS	4	0.75 LB A/A 0.25 % V/V 1.5 % W/W	1.5 PT/A 0.25 % V/V 1.5 % W/W	1.5 PT/A 0.25 % V/V 1.5 % W/W	POST POST POST	B B B						
14	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	0.3 OZ/A	POST	B	0	3	0	0	98	99
	Glyphomax Plus NIS AMS	4	0.75 LB A/A 0.25 % V/V 1.5 % W/W	1.5 PT/A 0.25 % V/V 1.5 % W/W	1.5 PT/A 0.25 % V/V 1.5 % W/W	POST POST POST	B B B						
15	Glyphomax Plus AMS	4	1.0 LB A/A 1.5 % W/W	2.0 PT/A 1.5 % W/W	2.0 PT/A 1.5 % W/W	POST POST	B B	0	3	0	0	99	96
LSD (P=.05)								20.1	3.3	2.2	1.2	1.7	2.4

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 07-24-02 30 DA-B	CHEAL CONTROL percent 07-24-02 30 DA-B	XANST CONTROL percent 07-24-02 30 DA-B	SETFA CONTROL percent 08-20-02 57 DA-B	ABUTH CONTROL percent 08-20-02 57 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0105	LB A/A	0.2 OZ/A	PRE	A	96	98	99	98
	Authority	75	0.0834	LB A/A	1.78 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B				
	NIS		0.25	% V/V	0.25 % V/V	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
3	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	PRE	A	98	99	99	99
	Authority	75	0.125	LB A/A	2.67 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B				
	NIS		0.25	% V/V	0.25 % V/V	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
4	FirstRate	84	0.021	LB A/A	0.4 OZ/A	PRE	A	98	99	99	99
	Authority	75	0.166	LB A/A	3.55 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B				
	NIS		0.25	% V/V	0.25 % V/V	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
5	FirstRate	84	0.0315	LB A/A	0.6 OZ/A	PRE	A	99	99	98	99
	Authority	75	0.25	LB A/A	5.33 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B				
	NIS		0.25	% V/V	0.25 % V/V	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
6	Python	80	0.04	LB A/A	0.8 OZ/A	PRE	A	99	99	98	98
	Authority	75	0.125	LB A/A	2.67 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B				
	NIS		0.25	% V/V	0.25 % V/V	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
7	Python	80	0.033	LB A/A	0.66 OZ/A	PRE	A	99	98	99	98
	Valor	51	0.048	LB A/A	1.5 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B				
	NIS		0.25	% V/V	0.25 % V/V	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
8	Python	80	0.05	LB A/A	1.0 OZ/A	PRE	A	90	98	99	98
	Glyphomax Plus	4	1.0	LB A/A	2.0 PT/A	POST	B				
	NIS		0.25	% V/V	0.25 % V/V	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
9	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A	90	96	98	99
	Glyphomax Plus	4	1.0	LB A/A	2.0 PT/A	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
10	Python	80	0.04	LB A/A	0.8 OZ/A	PRE	A	93	99	99	99
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				
11	FirstRate	84	0.0315	LB A/A	0.6 OZ/A	PRE	A	88	96	99	98
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	B				
	AMS		1.5	% W/W	1.5 % W/W	POST	B				

Iowa State University

Weed Code							AMATA	CHEAL	XANST	SETFA	ABUTH
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							07-24-02	07-24-02	07-24-02	08-20-02	08-20-02
Trt-Eval Interval							30 DA-B	30 DA-B	30 DA-B	57 DA-B	57 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
12	FirstRate	84	0.021 LB A/A	0.4 OZ/A	PRE	A		93	99	98	96
	Python	80	0.025 LB A/A	0.5 OZ/A	PRE	A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B					
	AMS		1.5 % W/W	1.5 % W/W	POST	B					
13	Pendimax	3.3	1.24 LB A/A	3.0 PT/A	PRE	A		88	96	99	98
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	POST	B					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B					
	NIS		0.25 % V/V	0.25 % V/V	POST	B					
	AMS		1.5 % W/W	1.5 % W/W	POST	B					
14	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	POST	B		77	95	99	98
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B					
	NIS		0.25 % V/V	0.25 % V/V	POST	B					
	AMS		1.5 % W/W	1.5 % W/W	POST	B					
15	Glyphomax Plus	4	1.0 LB A/A	2.0 PT/A	POST	B		75	87	99	98
	AMS		1.5 % W/W	1.5 % W/W	POST	B					
LSD (P=.05)							6.8	3.8	2.0	3.1	2.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 08-20-02 57 DA-B	CHEAL CONTROL percent 08-20-02 57 DA-B	XANST CONTROL percent 08-20-02 57 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code			
1	Untreated							0	0	0
2	FirstRate	84	0.0105 LB A/A	0.2 OZ/A	PRE	A		95	98	99
	Authority	75	0.0834 LB A/A	1.78 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B				
	NIS		0.25 % V/V	0.25 % V/V	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
3	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	PRE	A		98	99	99
	Authority	75	0.125 LB A/A	2.67 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B				
	NIS		0.25 % V/V	0.25 % V/V	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
4	FirstRate	84	0.021 LB A/A	0.4 OZ/A	PRE	A		98	99	99
	Authority	75	0.166 LB A/A	3.55 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B				
	NIS		0.25 % V/V	0.25 % V/V	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
5	FirstRate	84	0.0315 LB A/A	0.6 OZ/A	PRE	A		99	99	98
	Authority	75	0.25 LB A/A	5.33 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B				
	NIS		0.25 % V/V	0.25 % V/V	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
6	Python	80	0.04 LB A/A	0.8 OZ/A	PRE	A		99	99	98
	Authority	75	0.125 LB A/A	2.67 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B				
	NIS		0.25 % V/V	0.25 % V/V	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
7	Python	80	0.033 LB A/A	0.66 OZ/A	PRE	A		99	98	99
	Valor	51	0.048 LB A/A	1.5 OZ/A	PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B				
	NIS		0.25 % V/V	0.25 % V/V	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
8	Python	80	0.05 LB A/A	1.0 OZ/A	PRE	A		90	98	99
	Glyphomax Plus	4	1.0 LB A/A	2.0 PT/A	POST	B				
	NIS		0.25 % V/V	0.25 % V/V	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
9	Pendimax	3.3	1.24 LB A/A	3.0 PT/A	PRE	A		88	96	98
	Glyphomax Plus	4	1.0 LB A/A	2.0 PT/A	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
10	Python	80	0.04 LB A/A	0.8 OZ/A	PRE	A		95	99	99
	Pendimax	3.3	1.24 LB A/A	3.0 PT/A	PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				
11	FirstRate	84	0.0315 LB A/A	0.6 OZ/A	PRE	A		90	95	99
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST	B				
	AMS		1.5 % W/W	1.5 % W/W	POST	B				

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 08-20-02 57 DA-B	CHEAL CONTROL percent 08-20-02 57 DA-B	XANST CONTROL percent 08-20-02 57 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code			
12	FirstRate	84	0.021 LB A/A	0.4 OZ/A	0.4 OZ/A	PRE A	A	93	99	98
	Python	80	0.025 LB A/A	0.5 OZ/A	0.5 OZ/A	PRE A	A			
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	1.5 PT/A	POST B	B			
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST B	B			
13	Pendimax	3.3	1.24 LB A/A	3.0 PT/A	3.0 PT/A	PRE A	A	88	96	99
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	0.3 OZ/A	POST B	B			
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	1.5 PT/A	POST B	B			
	NIS		0.25 % V/V	0.25 % V/V	0.25 % V/V	POST B	B			
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST B	B			
14	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	0.3 OZ/A	POST B	B	73	91	99
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	1.5 PT/A	POST B	B			
	NIS		0.25 % V/V	0.25 % V/V	0.25 % V/V	POST B	B			
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST B	B			
15	Glyphomax Plus	4	1.0 LB A/A	2.0 PT/A	2.0 PT/A	POST B	B	73	82	99
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST B	B			
LSD (P=.05)								8.5	5.7	2.0

Iowa State University

FirstRate, Authority, Pendimax, Python, Domain, Command, Phoenix, Flexstar, Roundup UltraMAX and Touchdown IQ for weed control in soybean, Ames, IA, 2002.
 Trial ID: ASC 3 Study Dir.: Owen/Lux/Franzenburg
 Location: Ames Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
 Affiliation: Iowa State University
 Postal Code: 50011
 Investigator: Owen/Hartzler/Pringnitz
 Affiliation: Iowa State University
 Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL
 State/Prov.: IA
 Postal Code: 50011 Initiation Date: 05-28-02
 Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate soil applied and postemergence herbicide applications for crop efficacy and weed control in soybean.

Conclusions: Soybean injury was observed on June 25 from preemergence (PRE) applied treatments. PRE Pendimax tank-mixed with either FirstRate plus Authority (Gauntlet) or Python caused slightly more injury than other PRE treatments. All PRE treatments provided good or excellent giant foxtail and common lambsquarters control. PRE Pendimax alone demonstrated marginal velvetleaf and common waterhemp control. PRE Domain and Boundary provided less than 76% velvetleaf control. Control of velvetleaf and common waterhemp was good to excellent for remaining PRE treatments. No PRE treatments provided acceptable control of common cocklebur.

July and August evaluations showed excellent weed control for PRE Gauntlet. Common waterhemp control decreased for PRE Python plus Pendimax or FirstRate. Postemergence (POST) applied FirstRate plus Flexstar plus Select following PRE Pendimax also demonstrated decreasing common waterhemp control. POST FirstRate plus Select following PRE Python plus Pendimax provided poor common waterhemp control by August 20. The single POST application of Roundup UltraMAX demonstrated marginal control of velvetleaf, common waterhemp and common lambsquarters. POST Touchdown IQ demonstrated marginal common waterhemp control and excellent control of all other weeds. Treatments with sequential applications (SPOST) provided excellent control of all weeds. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG2402 RR
 Planting Date: 05-28-02 Planting Method: DIRECT DRILLED
 Rate: 154000 SEEDS/A Depth: 1.5 IN
 Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
 Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 20 to 25% at planting.

SOIL DESCRIPTION

% OM: 3.8 Texture: CLAY LOAM
 pH: 6.85 Soil Name: CANISTEO, CLARION, HAYDEN-STORDEN
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-29-02	06-24-02	07-12-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST	SPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	79 F	88 F	75 F
% Relative Humidity:	76	66	50
Wind Velocity, Unit:	8 MPH	7 MPH	8 MPH
Soil Temp., Unit:	70 F	82 F	72 F
Soil Moisture:	DRY	DRY	WET
% Cloud Cover:	100	0	20

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA -	GLXMA V 3	GLXMA R 2
Stage Scale:	-	DESC	DESC
Height, Unit:	-	5.5 IN	20 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 2-4 LEAF	SETFA -
Stage Scale:	-	1-4 IN	-
Density, Unit:	- -	0-30 FT2	- -
Weed 2 Code, Stage:	ABUTH -	ABUTH 3-5 LEAF	ABUTH 4-6 LEAF
Stage Scale:	-	2-6 IN	3-7 IN
Density, Unit:	- -	0-4 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 4-6 LEAF	AMATA NUMEROUS
Stage Scale:	-	1-3 IN	2-6 IN
Density, Unit:	- -	0-3 FT2	0-1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 4-NUM	CHEAL -
Stage Scale:	-	2-6 IN	-
Density, Unit:	- -	0-5 FT2	- -
Weed 5 Code, Stage:	XANST -	XANST 4-10 LEAF	XANST -
Stage Scale:	-	2-9 IN	-
Density, Unit:	- -	0-5 FT2	- -

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	HAND BOOM
Operating Pressure:	30	30	25
Nozzle Type:	11002	11002	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

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FirstRate, Authority, Pendimax, Python, Domain, Command, Phoenix, Flexstar, Roundup UltraMAX and Touchdown IQ for weed control in soybean, Ames, IA, 2002.			
Trial ID: ASC 3	Study Dir.: Owen/Lux/Franzenburg		
Location: Ames	Investigator: Owen/Hartzler/Pringnitz		

Weed Code							GLXMA	SETFA	ABUTH	AMATA	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							06-25-02	06-25-02	06-25-02	06-25-02	
Trt-Eval Interval							27 DA-A	27 DA-A	27 DA-A	27 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0315	0.6	OZ/A	PRE	A	8	96	95	99
	Authority	75	0.25	5.33	OZ/A	PRE	A				
	Pendimax	3.3	1.24	3.0	PT/A	PRE	A				
3	Python	80	0.05	1.0	OZ/A	PRE	A	5	93	93	88
	Pendimax	3.3	1.24	3.0	PT/A	PRE	A				
4	FirstRate	84	0.021	0.4	OZ/A	PRE	A	5	93	83	88
	Python	80	0.025	0.5	OZ/A	PRE	A				
	Pendimax	3.3	1.24	3.0	PT/A	PRE	A				
5	Pendimax	3.3	1.24	3.0	PT/A	PRE	A	5	96	55	75
	FirstRate	84	0.0157	0.3	OZ/A	POST	B				
	Flexstar	1.88	12.0	12.0	FL OZ/A	POST	B				
	Select	2	6.0	6.0	FL OZ/A	POST	B				
	28% UAN		2.5	2.5	% V/V	POST	B				
	NIS		0.125	0.125	% V/V	POST	B				
6	Python	80	0.05	1.0	OZ/A	PRE	A	8	95	86	88
	Pendimax	3.3	1.24	3.0	PT/A	PRE	A				
	FirstRate	84	0.0157	0.3	OZ/A	POST	B				
	Select	2	0.094	6.0	FL OZ/A	POST	B				
	28% UAN		2.5	2.5	% V/V	POST	B				
	NIS		0.125	0.125	% V/V	POST	B				
7	Domain	60	0.488	13.0	OZ/A	PRE	A	2	95	75	95
	Roundup UltraMAX	5	1.02	26.0	FL OZ/A	POST	B				
	AMS		8.5	8.5	LB/100 GAL	POST	B				
8	Sencor	75	0.248	5.3	OZ/A	PRE	A	5	96	88	96
	Prowl	3.3	1.24	3.0	PT/A	PRE	A				
	Roundup UltraMAX	5	1.02	26.0	FL OZ/A	POST	B				
	AMS		8.5	8.5	LB/100 GAL	POST	B				
9	Command	3	0.56	1.5	PT/A	PRE	A	2	95	96	98
	Authority	4	0.25	8.0	FL OZ/A	PRE	A				
	Touchdown IQ	3	0.75	32.0	FL OZ/A	POST	B				
	AMS		8.5	8.5	LB/100 GAL	POST	B				
10	Boundary	7.8	1.3	1.33	PT/A	PRE	A	2	98	72	99
	Touchdown IQ	3	0.75	32.0	FL OZ/A	POST	B				
	AMS		8.5	8.5	LB/100 GAL	POST	B				
11	FirstRate	84	0.0157	0.3	OZ/A	POST	B	0	0	0	0
	Flexstar	1.88	12.0	12.0	FL OZ/A	POST	B				
	Select	2	0.094	6.0	FL OZ/A	POST	B				
	28% UAN		2.5	2.5	% V/V	POST	B				
	NIS		0.125	0.125	% V/V	POST	B				

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							GLXMA PHYGEN percent 06-25-02 27 DA-A	SETFA CONTROL percent 06-25-02 27 DA-A	ABUTH CONTROL percent 06-25-02 27 DA-A	AMATA CONTROL percent 06-25-02 27 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
12	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B	0	0	0	0
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	B				
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5	% V/V	POST	B				
	NIS		0.125	% V/V	0.125	% V/V	POST	B				
13	Roundup UltraMAX AMS	5	1.02	LB A/A	26.0	FL OZ/A	POST	B	0	0	0	0
			8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B				
14	Roundup UltraMAX AMS	5	1.02	LB A/A	26.0	FL OZ/A	POST	B	0	0	0	0
			8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B				
	Roundup UltraMAX AMS	5	0.78	LB A/A	20.0	FL OZ/A	SPOST	C				
			8.5	LB/100 GAL	8.5	LB/100 GAL	SPOST	C				
15	Touchdown IQ AMS	3	0.75	LB AE/A	32.0	OZ/A	POST	B	0	0	0	0
			8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B				
16	Touchdown IQ AMS	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B	0	0	0	0
			8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B				
	Touchdown IQ AMS	3	0.56	LB AE/A	24.0	FL OZ/A	SPOST	C				
			8.5	LB/100 GAL	8.5	LB/100 GAL	SPOST	C				
LSD (P=.05)							3.3	5.0	16.2	7.4		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-25-02 27 DA-A	XANST CONTROL percent 06-25-02 27 DA-A	GLXMA PHYGEN percent 07-02-02 8 DA-B	GLXMA PHYGEN percent 07-18-02 24 DA-B	SETFA CONTROL percent 07-18-02 24 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0315	LB A/A	0.6 OZ/A	PRE	A	99	75	0	0
	Authority	75	0.25	LB A/A	5.33 OZ/A	PRE	A				
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
3	Python	80	0.05	LB A/A	1.0 OZ/A	PRE	A	99	30	0	2
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
4	FirstRate	84	0.021	LB A/A	0.4 OZ/A	PRE	A	98	42	0	0
	Python	80	0.025	LB A/A	0.5 OZ/A	PRE	A				
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
5	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A	85	28	12	5
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B				
	Flexstar	1.88	12.0	FL OZ/A	12.0 FL OZ/A	POST	B				
	Select	2	6.0	FL OZ/A	6.0 FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5 % V/V	POST	B				
	NIS		0.125	% V/V	0.125 % V/V	POST	B				
6	Python	80	0.05	LB A/A	1.0 OZ/A	PRE	A	95	37	7	3
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B				
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5 % V/V	POST	B				
	NIS		0.125	% V/V	0.125 % V/V	POST	B				
7	Domain	60	0.488	LB A/A	13.0 OZ/A	PRE	A	93	30	0	0
	Roundup UltraMAX	5	1.02	LB A/A	26.0 FL OZ/A	POST	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				
8	Sencor	75	0.248	LB A/A	5.3 OZ/A	PRE	A	98	33	2	0
	Prowl	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
	Roundup UltraMAX	5	1.02	LB A/A	26.0 FL OZ/A	POST	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				
9	Command	3	0.56	LB A/A	1.5 PT/A	PRE	A	99	48	0	0
	Authority	4	0.25	LB A/A	8.0 FL OZ/A	PRE	A				
	Touchdown IQ	3	0.75	LB AE/A	32.0 FL OZ/A	POST	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				
10	Boundary	7.8	1.3	LB A/A	1.33 PT/A	PRE	A	96	48	0	0
	Touchdown IQ	3	0.75	LB AE/A	32.0 FL OZ/A	POST	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				
11	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B	0	0	10	7
	Flexstar	1.88	12.0	FL OZ/A	12.0 FL OZ/A	POST	B				
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5 % V/V	POST	B				
	NIS		0.125	% V/V	0.125 % V/V	POST	B				
12	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B	0	0	15	5
	Phoenix	2	0.125	LB A/A	8.0 FL OZ/A	POST	B				
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5 % V/V	POST	B				
	NIS		0.125	% V/V	0.125 % V/V	POST	B				
13	Roundup UltraMAX	5	1.02	LB A/A	26.0 FL OZ/A	POST	B	0	0	3	7
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 06-25-02 27 DA-A	XANST CONTROL percent 06-25-02 27 DA-A	GLXMA PHYGEN percent 07-02-02 8 DA-B	GLXMA PHYGEN percent 07-18-02 24 DA-B	SETFA CONTROL percent 07-18-02 24 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
14	Roundup UltraMAX AMS	5	1.02	LB A/A	26.0	FL OZ/A	POST	B	0	0	3	0	99
			8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B					
	Roundup UltraMAX AMS	5	0.78	LB A/A	20.0	FL OZ/A	SPOST	C					
			8.5	LB/100 GAL	8.5	LB/100 GAL	SPOST	C					
15	Touchdown IQ AMS	3	0.75	LB AE/A	32.0	OZ/A	POST	B	0	0	2	0	99
			8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B					
16	Touchdown IQ AMS	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B	0	0	3	2	99
			8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B					
	Touchdown IQ AMS	3	0.56	LB AE/A	24.0	FL OZ/A	SPOST	C					
			8.5	LB/100 GAL	8.5	LB/100 GAL	SPOST	C					
LSD (P=.05)									4.5	17.9	3.2	4.6	8.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-18-02 24 DA-B	AMATA CONTROL percent 07-18-02 24 DA-B	CHEAL CONTROL percent 07-18-02 24 DA-B	XANST CONTROL percent 07-18-02 24 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0315	LB A/A	0.6 OZ/A	PRE	A	95	98	99	75
	Authority	75	0.25	LB A/A	5.33 OZ/A	PRE	A				
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
3	Python	80	0.05	LB A/A	1.0 OZ/A	PRE	A	98	63	98	23
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
4	FirstRate	84	0.021	LB A/A	0.4 OZ/A	PRE	A	95	40	98	48
	Python	80	0.025	LB A/A	0.5 OZ/A	PRE	A				
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
5	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A	98	82	85	99
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B				
	Flexstar	1.88	12.0	FL OZ/A	12.0 FL OZ/A	POST	B				
	Select	2	6.0	FL OZ/A	6.0 FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5 % V/V	POST	B				
	NIS		0.125	% V/V	0.125 % V/V	POST	B				
6	Python	80	0.05	LB A/A	1.0 OZ/A	PRE	A	99	30	91	99
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B				
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5 % V/V	POST	B				
	NIS		0.125	% V/V	0.125 % V/V	POST	B				
7	Domain	60	0.488	LB A/A	13.0 OZ/A	PRE	A	99	99	99	99
	Roundup UltraMAX	5	1.02	LB A/A	26.0 FL OZ/A	POST	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				
8	Sencor	75	0.248	LB A/A	5.3 OZ/A	PRE	A	99	99	99	98
	Prowl	3.3	1.24	LB A/A	3.0 PT/A	PRE	A				
	Roundup UltraMAX	5	1.02	LB A/A	26.0 FL OZ/A	POST	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				
9	Command	3	0.56	LB A/A	1.5 PT/A	PRE	A	99	99	99	98
	Authority	4	0.25	LB A/A	8.0 FL OZ/A	PRE	A				
	Touchdown IQ	3	0.75	LB AE/A	32.0 FL OZ/A	POST	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				
10	Boundary	7.8	1.3	LB A/A	1.33 PT/A	PRE	A	99	99	99	99
	Touchdown IQ	3	0.75	LB AE/A	32.0 FL OZ/A	POST	B				
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				
11	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B	93	68	37	99
	Flexstar	1.88	12.0	FL OZ/A	12.0 FL OZ/A	POST	B				
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5 % V/V	POST	B				
	NIS		0.125	% V/V	0.125 % V/V	POST	B				
12	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B	96	85	27	99
	Phoenix	2	0.125	LB A/A	8.0 FL OZ/A	POST	B				
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST	B				
	28% UAN		2.5	% V/V	2.5 % V/V	POST	B				
	NIS		0.125	% V/V	0.125 % V/V	POST	B				
13	Roundup UltraMAX	5	1.02	LB A/A	26.0 FL OZ/A	POST	B	85	85	85	99
	AMS		8.5	LB/100 GAL	8.5 LB/100 GAL	POST	B				

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Weed Code								ABUTH	AMATA	CHEAL	XANST	
Rating Data Type								CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit								percent	percent	percent	percent	
Rating Date								07-18-02	07-18-02	07-18-02	07-18-02	
Trt-Eval Interval								24 DA-B	24 DA-B	24 DA-B	24 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
14	Roundup UltraMAX AMS	5	1.02	LB A/A	26.0	FL OZ/A	POST	B	93	95	99	99
				8.5 LB/100 GAL	8.5	LB/100 GAL	POST	B				
	Roundup UltraMAX AMS	5	0.78	LB A/A	20.0	FL OZ/A	SPOST	C				
				8.5 LB/100 GAL	8.5	LB/100 GAL	SPOST	C				
15	Touchdown IQ AMS	3	0.75	LB AE/A	32.0	OZ/A	POST	B	96	92	99	98
				8.5 LB/100 GAL	8.5	LB/100 GAL	POST	B				
16	Touchdown IQ AMS	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B	95	95	99	99
				8.5 LB/100 GAL	8.5	LB/100 GAL	POST	B				
	Touchdown IQ AMS	3	0.56	LB AE/A	24.0	FL OZ/A	SPOST	C				
				8.5 LB/100 GAL	8.5	LB/100 GAL	SPOST	C				
LSD (P=.05)								6.5	14.2	15.0	23.0	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 08-20-02 57 DA-B	ABUTH CONTROL percent 08-20-02 57 DA-B	AMATA CONTROL percent 08-20-02 57 DA-B	CHEAL CONTROL percent 08-20-02 57 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		PRE	A	85	95	98	99
	Authority	75	0.25 LB A/A	5.33 OZ/A		PRE	A				
	Pendimax	3.3	1.24 LB A/A	3.0 PT/A		PRE	A				
3	Python	80	0.05 LB A/A	1.0 OZ/A		PRE	A	80	98	62	98
	Pendimax	3.3	1.24 LB A/A	3.0 PT/A		PRE	A				
4	FirstRate	84	0.021 LB A/A	0.4 OZ/A		PRE	A	90	95	35	96
	Python	80	0.025 LB A/A	0.5 OZ/A		PRE	A				
	Pendimax	3.3	1.24 LB A/A	3.0 PT/A		PRE	A				
5	Pendimax	3.3	1.24 LB A/A	3.0 PT/A		PRE	A	90	98	75	81
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST	B				
	Flexstar	1.88	12.0 FL OZ/A	12.0 FL OZ/A		POST	B				
	Select	2	6.0 FL OZ/A	6.0 FL OZ/A		POST	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST	B				
	NIS		0.125 % V/V	0.125 % V/V		POST	B				
6	Python	80	0.05 LB A/A	1.0 OZ/A		PRE	A	94	99	30	91
	Pendimax	3.3	1.24 LB A/A	3.0 PT/A		PRE	A				
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST	B				
	NIS		0.125 % V/V	0.125 % V/V		POST	B				
7	Domain	60	0.488 LB A/A	13.0 OZ/A		PRE	A	98	99	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST	B				
8	Sencor	75	0.248 LB A/A	5.3 OZ/A		PRE	A	99	99	99	99
	Prowl	3.3	1.24 LB A/A	3.0 PT/A		PRE	A				
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST	B				
9	Command	3	0.56 LB A/A	1.5 PT/A		PRE	A	99	99	99	99
	Authority	4	0.25 LB A/A	8.0 FL OZ/A		PRE	A				
	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A		POST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST	B				
10	Boundary	7.8	1.3 LB A/A	1.33 PT/A		PRE	A	99	99	99	99
	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A		POST	B				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST	B				
11	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST	B	83	93	68	17
	Flexstar	1.88	12.0 FL OZ/A	12.0 FL OZ/A		POST	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST	B				
	NIS		0.125 % V/V	0.125 % V/V		POST	B				
12	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST	B	77	96	82	20
	Phoenix	2	0.125 LB A/A	8.0 FL OZ/A		POST	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST	B				
	NIS		0.125 % V/V	0.125 % V/V		POST	B				
13	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST	B	95	80	78	80
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST	B				

Iowa State University

Weed Code							SETFA	ABUTH	AMATA	CHEAL		
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit							percent	percent	percent	percent		
Rating Date							08-20-02	08-20-02	08-20-02	08-20-02		
Trt-Eval Interval							57 DA-B	57 DA-B	57 DA-B	57 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
14	Roundup UltraMAX AMS	5	1.02 LB A/A 8.5 LB/100 GAL	26.0 FL OZ/A 8.5 LB/100 GAL	26.0 FL OZ/A 8.5 LB/100 GAL	POST B	B	98	96	96	99	
	Roundup UltraMAX AMS	5	0.78 LB A/A 8.5 LB/100 GAL	20.0 FL OZ/A 8.5 LB/100 GAL	20.0 FL OZ/A 8.5 LB/100 GAL	SPOST C	C					
15	Touchdown IQ AMS	3	0.75 LB AE/A 8.5 LB/100 GAL	32.0 OZ/A 8.5 LB/100 GAL	32.0 OZ/A 8.5 LB/100 GAL	POST B	B	96	92	83	95	
16	Touchdown IQ AMS	3	0.75 LB AE/A 8.5 LB/100 GAL	32.0 FL OZ/A 8.5 LB/100 GAL	32.0 FL OZ/A 8.5 LB/100 GAL	POST B	B	99	96	96	99	
	Touchdown IQ AMS	3	0.56 LB AE/A 8.5 LB/100 GAL	24.0 FL OZ/A 8.5 LB/100 GAL	24.0 FL OZ/A 8.5 LB/100 GAL	SPOST C	C					
LSD (P=.05)							11.6	5.6	12.9	16.8		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 08-20-02 57 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated								0
2	FirstRate	84	0.0315	LB A/A	0.6	OZ/A	PRE	A	65
	Authority	75	0.25	LB A/A	5.33	OZ/A	PRE	A	
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PRE	A	
3	Python	80	0.05	LB A/A	1.0	OZ/A	PRE	A	20
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PRE	A	
4	FirstRate	84	0.021	LB A/A	0.4	OZ/A	PRE	A	30
	Python	80	0.025	LB A/A	0.5	OZ/A	PRE	A	
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PRE	A	
5	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PRE	A	99
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B	
	Flexstar	1.88	12.0	FL OZ/A	12.0	FL OZ/A	POST	B	
	Select	2	6.0	FL OZ/A	6.0	FL OZ/A	POST	B	
	28% UAN		2.5	% V/V	2.5	% V/V	POST	B	
	NIS		0.125	% V/V	0.125	% V/V	POST	B	
6	Python	80	0.05	LB A/A	1.0	OZ/A	PRE	A	99
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PRE	A	
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B	
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B	
	28% UAN		2.5	% V/V	2.5	% V/V	POST	B	
	NIS		0.125	% V/V	0.125	% V/V	POST	B	
7	Domain	60	0.488	LB A/A	13.0	OZ/A	PRE	A	98
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	B	
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B	
8	Sencor	75	0.248	LB A/A	5.3	OZ/A	PRE	A	98
	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PRE	A	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	B	
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B	
9	Command	3	0.56	LB A/A	1.5	PT/A	PRE	A	98
	Authority	4	0.25	LB A/A	8.0	FL OZ/A	PRE	A	
	Touchdown IQ	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B	
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B	
10	Boundary	7.8	1.3	LB A/A	1.33	PT/A	PRE	A	99
	Touchdown IQ	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B	
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B	
11	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B	99
	Flexstar	1.88	12.0	FL OZ/A	12.0	FL OZ/A	POST	B	
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B	
	28% UAN		2.5	% V/V	2.5	% V/V	POST	B	
	NIS		0.125	% V/V	0.125	% V/V	POST	B	
12	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B	99
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	B	
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B	
	28% UAN		2.5	% V/V	2.5	% V/V	POST	B	
	NIS		0.125	% V/V	0.125	% V/V	POST	B	
13	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	B	98
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	B	

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Weed Code							XANST
Rating Data Type							CONTROL
Rating Unit							percent
Rating Date							08-20-02
Trt-Eval Interval							57 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code
14	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST	B
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST	B
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		SPOST	C
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		SPOST	C
15	Touchdown IQ	3	0.75 LB AE/A	32.0 OZ/A		POST	B
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST	B
16	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A		POST	B
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST	B
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A		SPOST	C
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		SPOST	C
LSD (P=.05)							22.5

Iowa State University

Evaluation of postemergence combinations of Phoenix with FirstRate, Flexstar and Harmony GT for crop phytotoxicity and weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 4

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-28-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate postemergence applied Phoenix and FirstRate tank-mixtures for crop injury and weed control in soybean.

Conclusions: Soybean injury observed on June 21 was 5 to 8% for preemergence (PRE) applied Valor treatments. Observed injury from postemergence (POST) Phoenix plus FirstRate treatments on July 2 was 15 to 17%, while Cobra plus FirstRate was 20%. POST Flexstar plus FirstRate injury was 8% and FirstRate, alone, caused no injury. Injury was greatest when POST Harmony GT or Synchrony STS was tank-mixed with Phoenix, causing 32 and 25% injury, respectively.

PRE Valor treatments demonstrated good to excellent control of giant foxtail, velvetleaf, common waterhemp, and common lambsquarters on June 21. Common cocklebur control was unacceptable. These treatments maintained good to excellent weed control following POST treatments of Phoenix plus FirstRate plus Select. Marginal velvetleaf control with the lower Valor rate was the only exception. Remaining treatments (that did not contain a PRE application) demonstrated good to excellent giant foxtail and common cocklebur control, as late as July 17. However, control of velvetleaf, common waterhemp, and common lambsquarters was marginal or unacceptable for most of these treatments, largely due to large weed sizes at the POST application timing. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: GLXMA SOYBEAN

Variety: ASGROW AG2402 RR

Planting Date: 05-28-02

Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT

Plot Length, Unit: 25 FT

Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15% at planting.

SOIL DESCRIPTION

% OM: 3.8 Texture: CLAY LOAM
 pH: 6.85 Soil Name: CANISTEO, CLARION, HAYDEN-STORDEN
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-29-02	06-24-02	07-03-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST	SPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	79 F	88 F	90 F
% Relative Humidity:	76	67	74
Wind Velocity, Unit:	8 MPH	7 MPH	6 MPH
Soil Temp., Unit:	70 F	82 F	84 F
Soil Moisture:	DRY	MOIST	MOIST
% Cloud Cover:	100	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA -	GLXMA V3	GLXMA V4-6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	5.5 IN	12 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 2-4 LEAF	SETFA 4 LF, 2T
Stage Scale:	-	4-7 IN	6-10 IN
Density, Unit:	- -	0-30 FT2	0-20 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 2-6 LEAF	ABUTH 4-7 LEAF
Stage Scale:	-	2-6 IN	4-12 IN
Density, Unit:	- -	0-2 FT2	0-5 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 2-8 LEAF	AMATA NUMEROUS
Stage Scale:	-	1-6 IN	6-12 IN
Density, Unit:	- -	0-3 FT2	0-15 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 2-10 LEAF	CHEAL NUMEROUS
Stage Scale:	-	1-7 IN	5-10 IN
Density, Unit:	- -	0-2 FT2	0-10 FT2
Weed 5 Code, Stage:	XANST -	XANST 4-NUM	XANST NUMEROUS
Stage Scale:	-	1-12 IN	8-13 IN
Density, Unit:	- -	0-1 FT2	0-5 FT2

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	HAND BOOM
Operating Pressure:	30	30	25
Nozzle Type:	11002	11002	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Evaluation of postemergence combinations of Phoenix with FirstRate, Flexstar and Harmony GT for crop phytotoxicity and weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 4

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								GLXMA	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type								PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit								percent	percent	percent	percent	percent	
Rating Date								06-21-02	06-21-02	06-21-02	06-21-02	06-21-02	
Trt-Eval Interval								23 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Valor	51	0.048	LB A/A	1.5 OZ/A	PRE		A	5	90	87	99	95
	Phoenix	2	0.125	LB A/A	8.0 FL OZ/A	POST		B					
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST		B					
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST		B					
	NIS		0.25	% V/V	0.25 % V/V	POST		B					
3	Valor	51	0.056	LB A/A	1.75 OZ/A	PRE		A	8	92	90	99	96
	Phoenix	2	0.125	LB A/A	8.0 FL OZ/A	POST		B					
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST		B					
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST		B					
	NIS		0.25	% V/V	0.25 % V/V	POST		B					
4	Phoenix	2	0.15	LB A/A	9.6 FL OZ/A	POST		B	0	0	0	0	0
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST		B					
	NIS		0.25	% V/V	0.25 % V/V	POST		B					
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST		C					
	COC		1.0	% V/V	1.0 % V/V	SPOST		C					
	AMS		2.5	LB/A	2.5 LB/A	SPOST		C					
5	Phoenix	2	0.15	LB A/A	9.6 FL OZ/A	POST		B	0	0	0	0	0
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST		B					
	NIS		0.25	% V/V	0.25 % V/V	POST		B					
	AMS		2.5	LB/A	2.5 LB/A	POST		B					
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST		C					
	COC		1.0	% V/V	1.0 % V/V	SPOST		C					
	AMS		2.5	LB/A	2.5 LB/A	SPOST		C					
6	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST		B	0	0	0	0	0
	COC		1.0	PT/A	1.0 PT/A	POST		B					
	AMS		2.5	LB/A	2.5 LB/A	POST		B					
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST		C					
	COC		1.0	% V/V	1.0 % V/V	SPOST		C					
	AMS		2.5	LB/A	2.5 LB/A	SPOST		C					
7	Flexstar	1.88	0.19	LB A/A	0.81 PT/A	POST		B	0	0	0	0	0
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST		B					
	COC		1.0	PT/A	1.0 PT/A	POST		B					
	AMS		2.5	LB/A	2.5 LB/A	POST		B					
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST		C					
	COC		1.0	% V/V	1.0 % V/V	SPOST		C					
	AMS		2.5	LB/A	2.5 LB/A	SPOST		C					
8	Cobra	2	0.15	LB A/A	9.6 FL OZ/A	POST		B	0	0	0	0	0
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST		B					
	COC		1.0	PT/A	1.0 PT/A	POST		B					
	AMS		2.5	LB/A	2.5 LB/A	POST		B					
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST		C					
	COC		1.0	% V/V	1.0 % V/V	SPOST		C					
	AMS		2.5	LB/A	2.5 LB/A	SPOST		C					

Iowa State University

Weed Code								GLXMA	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type								PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit								percent	percent	percent	percent	percent	
Rating Date								06-21-02	06-21-02	06-21-02	06-21-02	06-21-02	
Trt-Eval Interval								23 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
9	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	0	0	0	0	0
	Harmony GT	75	0.0039	LB A/A	0.083	OZ/A	POST	B					
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	NIS		0.125	% V/V	0.125	% V/V	POST	B					
	AMS		2.0	LB/A	2.0	LB/A	POST	B					
10	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	0	0	0	0	0
	Synchrony STS	42	0.00656	LB A/A	0.25	OZ/A	POST	B					
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	NIS		0.125	% V/V	0.125	% V/V	POST	B					
	AMS		2.0	LB/A	2.0	LB/A	POST	B					
LSD (P=.05)									3.1	1.6	4.1	0.0	1.3

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 06-21-02 23 DA-A	GLXMA PHYGEN percent 06-26-02 2 DA-B	GLXMA PHYGEN percent 07-02-02 8 DA-B	SETFA CONTROL percent 07-02-02 8 DA-B	ABUTH CONTROL percent 07-02-02 8 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	A	25	20	17	93	87
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
3	Valor	51	0.056	LB A/A	1.75	OZ/A	PRE	A	27	20	15	98	90
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
4	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	0	20	15	17	48
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
5	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	0	20	15	20	53
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
6	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B	0	5	0	3	48
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
7	Flexstar	1.88	0.19	LB A/A	0.81	PT/A	POST	B	0	10	8	23	60
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
8	Cobra	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	0	25	20	13	50
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
9	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	0	22	32	85	75
	Harmony GT	75	0.0039	LB A/A	0.083	OZ/A	POST	B					
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	NIS		0.125	% V/V	0.125	% V/V	POST	B					
	AMS		2.0	LB/A	2.0	LB/A	POST	B					

Iowa State University

Weed Code								XANST	GLXMA	GLXMA	SETFA	ABUTH	
Rating Data Type								CONTROL	PHYGEN	PHYGEN	CONTROL	CONTROL	
Rating Unit								percent	percent	percent	percent	percent	
Rating Date								06-21-02	06-26-02	07-02-02	07-02-02	07-02-02	
Trt-Eval Interval								23 DA-A	2 DA-B	8 DA-B	8 DA-B	8 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
10	Phoenix	2	0.15 LB	A/A	9.6 FL	OZ/A	POST	B	0	22	25	85	72
	Synchrony STS	42	0.00656 LB	A/A	0.25 OZ/A		POST	B					
	Select	2	0.125 LB	A/A	8.0 FL	OZ/A	POST	B					
	NIS		0.125 %	V/V	0.125 %	V/V	POST	B					
	AMS		2.0 LB/A		2.0 LB/A		POST	B					
LSD (P=.05)									3.9	2.3	4.0	5.3	9.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 07-02-02 8 DA-B	CHEAL CONTROL percent 07-02-02 8 DA-B	XANST CONTROL percent 07-02-02 8 DA-B	GLXMA PHYGEN percent 07-09-02 15 DA-B	SETFA CONTROL percent 07-09-02 15 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	A	99	95	85	10	95
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
3	Valor	51	0.056	LB A/A	1.75	OZ/A	PRE	A	99	95	87	8	98
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
4	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	70	48	90	12	80
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
5	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	73	48	88	13	80
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
6	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B	40	37	90	0	78
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
7	Flexstar	1.88	0.19	LB A/A	0.81	PT/A	POST	B	77	47	90	5	82
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
8	Cobra	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	63	48	85	15	80
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
9	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	85	68	83	27	90
	Harmony GT	75	0.0039	LB A/A	0.083	OZ/A	POST	B					
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	NIS		0.125	% V/V	0.125	% V/V	POST	B					
	AMS		2.0	LB/A	2.0	LB/A	POST	B					

Iowa State University

Weed Code								AMATA	CHEAL	XANST	GLXMA	SETFA
Rating Data Type								CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL
Rating Unit								percent	percent	percent	percent	percent
Rating Date								07-02-02	07-02-02	07-02-02	07-09-02	07-09-02
Trt-Eval Interval								8 DA-B	8 DA-B	8 DA-B	15 DA-B	15 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
10	Phoenix	2	0.15 LB	A/A	9.6 FL	OZ/A	POST B	85	67	92	17	90
	Synchrony STS	42	0.00656 LB	A/A	0.25 OZ/A		POST B					
	Select	2	0.125 LB	A/A	8.0 FL	OZ/A	POST B					
	NIS		0.125 %	V/V	0.125 %	V/V	POST B					
	AMS		2.0 LB/A		2.0 LB/A		POST B					
LSD (P=.05)								13.3	6.9	7.6	4.6	2.6

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ABUTH CONTROL percent 07-09-02 15 DA-B	AMATA CONTROL percent 07-09-02 15 DA-B	CHEAL CONTROL percent 07-09-02 15 DA-B	XANST CONTROL percent 07-09-02 15 DA-B	GLXMA PHYGEN percent 07-17-02 23 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Valor	51	0.048	LB A/A	1.5 OZ/A	PRE	A		77	99	95	87	0
	Phoenix	2	0.125	LB A/A	8.0 FL OZ/A	POST	B						
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B						
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST	B						
	NIS		0.25	% V/V	0.25 % V/V	POST	B						
3	Valor	51	0.056	LB A/A	1.75 OZ/A	PRE	A		87	99	95	92	0
	Phoenix	2	0.125	LB A/A	8.0 FL OZ/A	POST	B						
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B						
	Select	2	0.094	LB A/A	6.0 FL OZ/A	POST	B						
	NIS		0.25	% V/V	0.25 % V/V	POST	B						
4	Phoenix	2	0.15	LB A/A	9.6 FL OZ/A	POST	B		48	77	42	95	7
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B						
	NIS		0.25	% V/V	0.25 % V/V	POST	B						
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST	C						
	COC		1.0	% V/V	1.0 % V/V	SPOST	C						
	AMS		2.5	LB/A	2.5 LB/A	SPOST	C						
5	Phoenix	2	0.15	LB A/A	9.6 FL OZ/A	POST	B		57	78	47	93	5
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B						
	NIS		0.25	% V/V	0.25 % V/V	POST	B						
	AMS		2.5	LB/A	2.5 LB/A	POST	B						
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST	C						
	COC		1.0	% V/V	1.0 % V/V	SPOST	C						
	AMS		2.5	LB/A	2.5 LB/A	SPOST	C						
6	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B		50	42	38	93	0
	COC		1.0	PT/A	1.0 PT/A	POST	B						
	AMS		2.5	LB/A	2.5 LB/A	POST	B						
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST	C						
	COC		1.0	% V/V	1.0 % V/V	SPOST	C						
	AMS		2.5	LB/A	2.5 LB/A	SPOST	C						
7	Flexstar	1.88	0.19	LB A/A	0.81 PT/A	POST	B		65	80	48	93	2
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B						
	COC		1.0	PT/A	1.0 PT/A	POST	B						
	AMS		2.5	LB/A	2.5 LB/A	POST	B						
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST	C						
	COC		1.0	% V/V	1.0 % V/V	SPOST	C						
	AMS		2.5	LB/A	2.5 LB/A	SPOST	C						
8	Cobra	2	0.15	LB A/A	9.6 FL OZ/A	POST	B		55	75	48	92	5
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	B						
	COC		1.0	PT/A	1.0 PT/A	POST	B						
	AMS		2.5	LB/A	2.5 LB/A	POST	B						
	Select	2	0.094	LB A/A	6.0 FL OZ/A	SPOST	C						
	COC		1.0	% V/V	1.0 % V/V	SPOST	C						
	AMS		2.5	LB/A	2.5 LB/A	SPOST	C						
9	Phoenix	2	0.15	LB A/A	9.6 FL OZ/A	POST	B		80	87	73	83	12
	Harmony GT	75	0.0039	LB A/A	0.083 OZ/A	POST	B						
	Select	2	0.125	LB A/A	8.0 FL OZ/A	POST	B						
	NIS		0.125	% V/V	0.125 % V/V	POST	B						
	AMS		2.0	LB/A	2.0 LB/A	POST	B						

Iowa State University

Weed Code								ABUTH	AMATA	CHEAL	XANST	GLXMA	
Rating Data Type								CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit								percent	percent	percent	percent	percent	
Rating Date								07-09-02	07-09-02	07-09-02	07-09-02	07-17-02	
Trt-Eval Interval								15 DA-B	15 DA-B	15 DA-B	15 DA-B	23 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
10	Phoenix	2	0.15 LB	A/A	9.6 FL	OZ/A	POST	B	80	87	72	95	7
	Synchrony STS	42	0.00656 LB	A/A	0.25 OZ/A		POST	B					
	Select	2	0.125 LB	A/A	8.0 FL	OZ/A	POST	B					
	NIS		0.125 %	V/V	0.125 %	V/V	POST	B					
	AMS		2.0 LB/A		2.0 LB/A		POST	B					
LSD (P=.05)									11.1	10.5	8.1	4.7	4.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL percent 07-17-02 23 DA-B	ABUTH CONTROL percent 07-17-02 23 DA-B	AMATA CONTROL percent 07-17-02 23 DA-B	CHEAL CONTROL percent 07-17-02 23 DA-B	XANST CONTROL percent 07-17-02 23 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	A	95	67	99	93	85
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
3	Valor	51	0.056	LB A/A	1.75	OZ/A	PRE	A	98	82	99	95	92
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
4	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	92	45	72	28	95
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
5	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	93	52	77	40	93
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
6	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B	90	50	28	37	93
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
7	Flexstar	1.88	0.19	LB A/A	0.81	PT/A	POST	B	95	63	67	42	90
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
8	Cobra	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	95	45	75	40	90
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	B					
	COC		1.0	PT/A	1.0	PT/A	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
	Select	2	0.094	LB A/A	6.0	FL OZ/A	SPOST	C					
	COC		1.0	% V/V	1.0	% V/V	SPOST	C					
	AMS		2.5	LB/A	2.5	LB/A	SPOST	C					
9	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	B	95	68	75	68	70
	Harmony GT	75	0.0039	LB A/A	0.083	OZ/A	POST	B					
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST	B					
	NIS		0.125	% V/V	0.125	% V/V	POST	B					
	AMS		2.0	LB/A	2.0	LB/A	POST	B					

Iowa State University

Weed Code								SETFA	ABUTH	AMATA	CHEAL	XANST
Rating Data Type								CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit								percent	percent	percent	percent	percent
Rating Date								07-17-02	07-17-02	07-17-02	07-17-02	07-17-02
Trt-Eval Interval								23 DA-B	23 DA-B	23 DA-B	23 DA-B	23 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
10	Phoenix	2	0.15 LB	A/A	9.6 FL OZ/A	POST	B	95	65	82	75	92
	Synchrony STS	42	0.00656 LB	A/A	0.25 OZ/A	POST	B					
	Select	2	0.125 LB	A/A	8.0 FL OZ/A	POST	B					
	NIS		0.125 %	V/V	0.125 %	V/V	POST	B				
	AMS		2.0 LB/A		2.0 LB/A	POST	B					
LSD (P=.05)								3.9	14.1	11.2	9.4	8.1

Iowa State University

Preemergence applied Valor, Domain, Amplify and Boundary followed by Roundup UltraMAX for weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 5

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-28-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate crop phytotoxicity, efficacy, and soybean yield from preemergence applications of Valor, Domain, Amplify and Boundary followed by postemergence applied Roundup UltraMAX.

Conclusions: Conclusions: Soybean injury from soil applied (PRE) herbicides was observed on June 21, twenty-three days after application. No injury was apparent on July 3, 25 or August 26, following the POST applications of Roundup UltraMAX on July 1. Giant foxtail control with PRE applied treatments was 64 to 91% when observed on July 3. The best giant foxtail control was provided by Domain and Boundary. Valor, Domain, and Amplify achieved 85 to 97% velvetleaf control on July 3, while Boundary provided 76% control. Generally, common waterhemp and common lambsquarters control was good to excellent with PRE treatments, except Amplify did not control common waterhemp. No PRE treatment provided acceptable common cocklebur control on July 3. Excellent broad-spectrum weed control was observed on July 25 and August 26 from PRE treatments followed by POST applied Roundup UltraMAX. Where Roundup UltraMAX did not follow a residual treatment, velvetleaf, common waterhemp, and common lambsquarters control on August 26 was significantly less, compared to all other treatments. All treatments yielded significantly more soybean than the untreated control. No significant differences in yield were determined between the PRE followed by POST Roundup UltraMAX treatments and Roundup UltraMAX applied alone. However, all of the PRE plus POST applied treatments demonstrated considerably higher soybean yields compared to the POST Roundup UltraMAX application, not following a residual treatment. (Dept. of Agronomy, Iowa State University, Ames).

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: GLXMA SOYBEAN

Variety: ASGROW AG 2402 RR

Planting Date: 05-28-02

Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 4

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

Iowa State University

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15% at planting.

SOIL DESCRIPTION

% OM: 3.8 Texture: CLAY LOAM
 pH: 6.85 Soil Name: CANISTEO, CLARION, HAYDEN-STORDEN
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-29-02	07-01-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	79 F	90 F
% Relative Humidity:	76	62
Wind Velocity, Unit:	8 MPH	13 MPH
Soil Temp., Unit:	70 F	84 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	100	5

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA V4-V5
Stage Scale:	-	DESC
Height, Unit:	-	7 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 2-4 LF,2T
Stage Scale:	-	8-15 IN
Density, Unit:	- -	0-25 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 5-11 LEAF
Stage Scale:	-	6-13 IN
Density, Unit:	- -	0-5 FT2
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS
Stage Scale:	-	8-15 IN
Density, Unit:	- -	0-10 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	6-11 IN
Density, Unit:	- -	0-10 FT2
Weed 5 Code, Stage:	XANST -	XANST NUMEROUS
Stage Scale:	-	6-12 IN
Density, Unit:	- -	0-5 FT2

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APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Preemergence applied Valor, Domain, Amplify and Boundary followed by Roundup
UltraMAX for weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 5

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	GLXMA	SETFA	ABUTH	AMATA
Rating Data Type							PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-21-02	07-03-02	07-03-02	07-03-02	07-03-02
Trt-Eval Interval							23 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B		0	0	0	0
3	Valor	51	0.056 LB A/A	1.75 OZ/A	1.75 OZ/A	PRE A		5	0	79	89
	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B					97
4	Valor	51	0.064 LB A/A	2.0 OZ/A	2.0 OZ/A	PRE A		5	0	83	97
	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B					97
5	Valor	51	0.048 LB A/A	1.5 OZ/A	1.5 OZ/A	PRE A		5	0	79	90
	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B					96
6	Domain	60	0.36 LB A/A	9.6 OZ/A	9.6 OZ/A	PRE A		1	0	91	85
	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B					83
7	Amplify	84	0.0157 LB A/A	0.3 OZ/A	0.3 OZ/A	PRE A		1	0	64	87
	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B					55
8	Boundary	7.8	0.78 LB A/A	0.8 PT/A	0.8 PT/A	PRE A		1	0	91	76
	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B					88
LSD (P=.05)							2.4	0.0	7.7	10.4	8.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 07-03-02 35 DA-A	XANST CONTROL percent 07-03-02 35 DA-A	GLXMA PHYGEN percent 07-25-02 24 DA-B	SETFA CONTROL percent 07-25-02 24 DA-B	ABUTH CONTROL percent 07-25-02 24 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST POST	B B	0	0	0	98 97	
3	Valor Roundup UltraMAX AMS	51 5	0.056 LB A/A 1.02 LB A/A 2.5 LB/A	1.75 OZ/A 26.0 FL OZ/A 2.5 LB/A	1.75 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE POST POST	A B B	90	39	0	99 99	
4	Valor Roundup UltraMAX AMS	51 5	0.064 LB A/A 1.02 LB A/A 2.5 LB/A	2.0 OZ/A 26.0 FL OZ/A 2.5 LB/A	2.0 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE POST POST	A B B	95	45	0	99 99	
5	Valor Roundup UltraMAX AMS	51 5	0.048 LB A/A 1.02 LB A/A 2.5 LB/A	1.5 OZ/A 26.0 FL OZ/A 2.5 LB/A	1.5 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE POST POST	A B B	84	46	0	99 99	
6	Domain Roundup UltraMAX AMS	60 5	0.36 LB A/A 1.02 LB A/A 2.5 LB/A	9.6 OZ/A 26.0 FL OZ/A 2.5 LB/A	9.6 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE POST POST	A B B	88	54	0	98 99	
7	Amplify Roundup UltraMAX AMS	84 5	0.0157 LB A/A 1.02 LB A/A 2.5 LB/A	0.3 OZ/A 26.0 FL OZ/A 2.5 LB/A	0.3 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE POST POST	A B B	79	64	0	99 99	
8	Boundary Roundup UltraMAX AMS	7.8 5	0.78 LB A/A 1.02 LB A/A 2.5 LB/A	0.8 PT/A 26.0 FL OZ/A 2.5 LB/A	0.8 PT/A 26.0 FL OZ/A 2.5 LB/A	PRE POST POST	A B B	80	50	0	98 99	
LSD (P=.05)								11.0	14.3	0.0	1.9	2.3

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 07-25-02 24 DA-B	CHEAL CONTROL percent 07-25-02 24 DA-B	XANST CONTROL percent 07-25-02 24 DA-B	GLXMA PHYGEN percent 08-26-02 56 DA-B	SETFA CONTROL percent 08-26-02 56 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B		89	88	99	0	
3	Valor Roundup UltraMAX AMS	51 5	0.056 LB A/A 1.02 LB A/A 2.5 LB/A	1.75 OZ/A 26.0 FL OZ/A 2.5 LB/A	1.75 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	97	99	0	
4	Valor Roundup UltraMAX AMS	51 5	0.064 LB A/A 1.02 LB A/A 2.5 LB/A	2.0 OZ/A 26.0 FL OZ/A 2.5 LB/A	2.0 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	99	99	0	
5	Valor Roundup UltraMAX AMS	51 5	0.048 LB A/A 1.02 LB A/A 2.5 LB/A	1.5 OZ/A 26.0 FL OZ/A 2.5 LB/A	1.5 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	98	99	0	
6	Domain Roundup UltraMAX AMS	60 5	0.36 LB A/A 1.02 LB A/A 2.5 LB/A	9.6 OZ/A 26.0 FL OZ/A 2.5 LB/A	9.6 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	96	99	0	
7	Amplify Roundup UltraMAX AMS	84 5	0.0157 LB A/A 1.02 LB A/A 2.5 LB/A	0.3 OZ/A 26.0 FL OZ/A 2.5 LB/A	0.3 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		98	98	99	0	
8	Boundary Roundup UltraMAX AMS	7.8 5	0.78 LB A/A 1.02 LB A/A 2.5 LB/A	0.8 PT/A 26.0 FL OZ/A 2.5 LB/A	0.8 PT/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	95	97	0	
LSD (P=.05)								3.5	2.5	1.2	0.0	4.5

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 08-26-02 56 DA-B	AMATA CONTROL percent 08-26-02 56 DA-B	CHEAL CONTROL percent 08-26-02 56 DA-B	XANST CONTROL percent 08-26-02 56 DA-B	GLXMA YIELD BU/A 10-09-02	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	15
2	Roundup UltraMAX AMS	5	1.02 LB A/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	26.0 FL OZ/A 2.5 LB/A	POST B POST B		95	81	75	99	42
3	Valor Roundup UltraMAX AMS	51 5	0.056 LB A/A 1.02 LB A/A 2.5 LB/A	1.75 OZ/A 26.0 FL OZ/A 2.5 LB/A	1.75 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	99	94	98	47
4	Valor Roundup UltraMAX AMS	51 5	0.064 LB A/A 1.02 LB A/A 2.5 LB/A	2.0 OZ/A 26.0 FL OZ/A 2.5 LB/A	2.0 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	99	99	96	47
5	Valor Roundup UltraMAX AMS	51 5	0.048 LB A/A 1.02 LB A/A 2.5 LB/A	1.5 OZ/A 26.0 FL OZ/A 2.5 LB/A	1.5 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	99	97	99	53
6	Domain Roundup UltraMAX AMS	60 5	0.36 LB A/A 1.02 LB A/A 2.5 LB/A	9.6 OZ/A 26.0 FL OZ/A 2.5 LB/A	9.6 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		98	99	95	99	53
7	Amplify Roundup UltraMAX AMS	84 5	0.0157 LB A/A 1.02 LB A/A 2.5 LB/A	0.3 OZ/A 26.0 FL OZ/A 2.5 LB/A	0.3 OZ/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	98	97	99	47
8	Boundary Roundup UltraMAX AMS	7.8 5	0.78 LB A/A 1.02 LB A/A 2.5 LB/A	0.8 PT/A 26.0 FL OZ/A 2.5 LB/A	0.8 PT/A 26.0 FL OZ/A 2.5 LB/A	PRE A POST B POST B		99	99	95	97	48
LSD (P=.05)								2.2	6.8	6.9	2.7	11.3

Iowa State University

Evaluation of postemergence applied Clethodim-Agan 2EC and Select 2EC for grass control in soybean, Ames, IA, 2002.

Trial ID: ASC 6

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-30-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate soybean injury and grass control from various rates of postemergence applied Clethodim-Agan and Select.

Conclusions: No soybean injury was observed from any of the treatments. Yellow foxtail was the predominant foxtail species in the experiment. Control of yellow foxtail was rate responsive for Clethodim-Agan at all evaluation dates. However, a rate response for yellow foxtail control by Select was observed only on July 18, 26, and August 7. There were few significant differences in yellow foxtail control between Clethodim-Agan and Select at respective herbicide rates. Select provided significantly better yellow foxtail control on July 3 and August 7 at 0.0625 and 0.094 lb/A, respectively. Clethodim-Agan provided better control on July 18 at the 0.25 lb/A rate. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETSS	FOXTAIL, SETARIA SP.	SETARIA SP.

Crop 1: GLXMA SOYBEAN

Variety: ASGROW AG2402 RR

Planting Date: 05-28-02

Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT

Plot Length, Unit: 25 FT

Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15% at planting. Sencor DF was applied preemergence to the experiment area at 0.5 lb/A on May 30, 2002.

SOIL DESCRIPTION

% OM: 3.8

Texture: CLAY LOAM

pH: 6.85

Soil Name: CANISTEO, CLARION, HAYDEN-STORDEN

Fert. Level: EXCELLENT

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	05-30-02	06-25-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	90 F	90 F
% Relative Humidity:	63	69
Wind Velocity, Unit:	4 MPH	7 MPH
Soil Temp., Unit:	73 F	84 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	30	30

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA V2
Stage Scale:	-	DESC
Height, Unit:	-	4.5 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETSS -	SETSS 1-4LF, 3T
Stage Scale:	-	0.5-7 IN
Density, Unit:	- -	0-25 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Evaluation of postemergence applied Clethodim-Agan 2EC and Select 2EC for grass control in soybean, Ames, IA, 2002.

Trial ID: ASC 6

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	SETLU	GLXMA	SETLU	GLXMA	SETLU
Rating Data Type							PHYGEN	CONTROL	PHYGEN	CONTROL	PHYGEN	CONTROL
Rating Unit							percent	percent	percent	percent	percent	percent
Rating Date							07-03-02	07-03-02	07-09-02	07-09-02	07-18-02	07-18-02
Trt-Eval Interval							8 DA-B	8 DA-B	14 DA-B	14 DA-B	23 DA-B	23 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	0
2	Clethodim-Agan COC	2	0.0625 1.0	LB A/A QT/A	4.0 1.0	FL OZ/A QT/A	POST A POST A	0	72	0	77	0 85
3	Clethodim-Agan COC	2	0.094 1.0	LB A/A QT/A	6.0 1.0	FL OZ/A QT/A	POST A POST A	0	75	0	78	0 87
4	Clethodim-Agan COC	2	0.125 1.0	LB A/A QT/A	8.0 1.0	FL OZ/A QT/A	POST A POST A	0	75	0	82	0 90
5	Clethodim-Agan COC	2	0.187 1.0	LB A/A QT/A	12.0 1.0	FL OZ/A QT/A	POST A POST A	0	77	0	85	0 95
6	Clethodim-Agan COC	2	0.25 1.0	LB A/A QT/A	16.0 1.0	FL OZ/A QT/A	POST A POST A	0	78	0	90	0 98
7	Select COC	2	0.0625 1.0	LB A/A QT/A	4.0 1.0	FL OZ/A QT/A	POST A POST A	0	78	0	80	0 88
8	Select COC	2	0.094 1.0	LB A/A QT/A	6.0 1.0	FL OZ/A QT/A	POST A POST A	0	77	0	82	0 88
9	Select COC	2	0.125 1.0	LB A/A QT/A	8.0 1.0	FL OZ/A QT/A	POST A POST A	0	78	0	82	0 88
10	Select COC	2	0.187 1.0	LB A/A QT/A	12.0 1.0	FL OZ/A QT/A	POST A POST A	0	75	0	85	0 95
11	Select COC	2	0.25 1.0	LB A/A QT/A	16.0 1.0	FL OZ/A QT/A	POST A POST A	0	78	0	87	0 93
LSD (P=.05)							0.0	5.4	0.0	6.3	0.0	4.4

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							GLXMA PHYGEN percent 07-26-02 31 DA-B	SETLU CONTROL percent 07-26-02 31 DA-B	GLXMA PHYGEN percent 08-07-02 43 DA-B	SETLU CONTROL percent 08-07-02 43 DA-B	GLXMA PHYGEN percent 08-16-02 52 DA-B	SETLU CONTROL percent 08-16-02 52 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated							0	0	0	0	0	
2	Clethodim-Agan COC	2 0.0625 1.0	LB A/A QT/A	4.0 1.0	FL OZ/A QT/A	POST POST	A A	0	88	0	92	0 92	
3	Clethodim-Agan COC	2 0.094 1.0	LB A/A QT/A	6.0 1.0	FL OZ/A QT/A	POST POST	A A	0	92	0	92	0 93	
4	Clethodim-Agan COC	2 0.125 1.0	LB A/A QT/A	8.0 1.0	FL OZ/A QT/A	POST POST	A A	0	95	0	96	0 96	
5	Clethodim-Agan COC	2 0.187 1.0	LB A/A QT/A	12.0 1.0	FL OZ/A QT/A	POST POST	A A	0	99	0	99	0 99	
6	Clethodim-Agan COC	2 0.25 1.0	LB A/A QT/A	16.0 1.0	FL OZ/A QT/A	POST POST	A A	0	99	0	99	0 99	
7	Select COC	2 0.0625 1.0	LB A/A QT/A	4.0 1.0	FL OZ/A QT/A	POST POST	A A	0	92	0	92	0 95	
8	Select COC	2 0.094 1.0	LB A/A QT/A	6.0 1.0	FL OZ/A QT/A	POST POST	A A	0	92	0	96	0 96	
9	Select COC	2 0.125 1.0	LB A/A QT/A	8.0 1.0	FL OZ/A QT/A	POST POST	A A	0	92	0	96	0 96	
10	Select COC	2 0.187 1.0	LB A/A QT/A	12.0 1.0	FL OZ/A QT/A	POST POST	A A	0	98	0	98	0 98	
11	Select COC	2 0.25 1.0	LB A/A QT/A	16.0 1.0	FL OZ/A QT/A	POST POST	A A	0	98	0	98	0 98	
LSD (P=.05)								0.0	4.1	0.0	3.4	0.0	3.1

Iowa State University

Postemergence applied Clethodim-Agan 2EC and Select 2EC with Cobra, Pursuit, Storm or FirstRate for grass control in soybean, Ames, IA, 2002.

Trial ID: ASC 7

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011 Initiation Date: 05-30-02

Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate soybean injury and grass control from postemergence applied Clethodim-Agan and Select in combination with Cobra, Pursuit, Storm or FirstRate.

Conclusions: No soybean injury was observed for Clethodim-Agan and Select when applied alone. However, injury was significant when either herbicide was tank mixed with Cobra, Pursuit, or Storm. The degree of injury was similar for Clethodim-Agan and Select, with each of these tank mix partners. Injury was greatest for treatments containing Cobra and less severe for treatments containing Pursuit and Storm. Yellow foxtail was the predominant grass species in the experiment. Control of yellow foxtail was similar for Clethodim-Agan and Select applied alone and with each tank mix partner. The initial weed control evaluation on July 3 indicated significantly improved yellow foxtail control when Cobra, Pursuit, or Storm were tank mixed with Clethodim-Agan or Select. However, the three tank mix partners did not improve yellow foxtail control for the rest of the season, as observed on July 9, 18, 26, and on August 7 and 16. Further, antagonism was very significant on July 18, and thereafter, for Clethodim-Agan and Select treatments tank mixed with Pursuit. Antagonism was also apparent at later dates for tank mixes with FirstRate (July 26 and August 7). There was no effect on yellow foxtail control when observed at later dates for treatments containing Storm.

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETSS	FOXTAIL, SETARIA SP.	SETARIA SP.

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG2402 RR

Planting Date: 05-28-02 Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15% at planting. Sencor DF was applied preemergence to the experiment area at 0.5 lb/A on May 30, 2002.

SOIL DESCRIPTION

% OM: 3.8 Texture: CLAY LOAM

pH: 6.85 Soil Name: CANISTEO, CLARION, HAYDEN-STORDEN

Fert. Level: EXCELLENT

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APPLICATION DESCRIPTION

	A	B
Application Date:	05-30-02	06-25-02
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	90 F	90 F
% Relative Humidity:	63	70
Wind Velocity, Unit:	4 MPH	7 MPH
Soil Temp., Unit:	73 F	84 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	30	45

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA V3
Stage Scale:	-	DESC
Height, Unit:	-	4.5 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETSS -	SETSS 1-4LF, 3T
Stage Scale:	-	0.5-7 IN
Density, Unit:	- -	0-25 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	TERRA PRO
Operating Pressure:	30	30
Nozzle Type:	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA

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Postemergence applied Clethodim-Agan 2EC and Select 2EC with Cobra, Pursuit,
Storm or FirstRate for grass control in soybean, Ames, IA, 2002.

Trial ID: ASC 7

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	SETLU	GLXMA	SETLU	GLXMA	SETLU
Rating Data Type							PHYGEN	CONTROL	PHYGEN	CONTROL	PHYGEN	CONTROL
Rating Unit							percent	percent	percent	percent	percent	percent
Rating Date							07-03-02	07-03-02	07-09-02	07-09-02	07-18-02	07-18-02
Trt-Eval Interval							8 DA-B	8 DA-B	14 DA-B	14 DA-B	23 DA-B	23 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	0
2	Clethodim-Agan	2	0.094 LB A/A	6.0 FL OZ/A	6.0 FL OZ/A	POST A	A	0	73	0	77	0
	AMS		4.0 LB/A	4.0 LB/A	4.0 LB/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
3	Select	2	0.094 LB A/A	6.0 FL OZ/A	6.0 FL OZ/A	POST A	A	0	73	0	80	0
	AMS		4.0 LB/A	4.0 LB/A	4.0 LB/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
4	Clethodim-Agan	2	0.094 LB A/A	6.0 FL OZ/A	6.0 FL OZ/A	POST A	A	20	85	15	83	10
	Cobra	2	0.195 LB A/A	12.5 FL OZ/A	12.5 FL OZ/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
5	Select	2	0.094 LB A/A	6.0 FL OZ/A	6.0 FL OZ/A	POST A	A	20	85	15	83	12
	Cobra	2	0.195 LB A/A	12.5 FL OZ/A	12.5 FL OZ/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
6	Clethodim-Agan	2	0.094 LB A/A	6.0 FL OZ/A	6.0 FL OZ/A	POST A	A	8	78	5	77	0
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	4.0 FL OZ/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
7	Select	2	0.094 LB A/A	6.0 FL OZ/A	6.0 FL OZ/A	POST A	A	10	77	7	75	2
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	4.0 FL OZ/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
8	Clethodim-Agan	2	0.125 LB A/A	8.0 FL OZ/A	8.0 FL OZ/A	POST A	A	10	83	7	83	0
	Storm	4	0.75 LB A/A	1.5 PT/A	1.5 PT/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
9	Select	2	0.125 LB A/A	8.0 FL OZ/A	8.0 FL OZ/A	POST A	A	12	83	7	83	0
	Storm	4	0.75 LB A/A	1.5 PT/A	1.5 PT/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
10	Clethodim-Agan	2	0.094 LB A/A	6.0 FL OZ/A	6.0 FL OZ/A	POST A	A	0	70	0	73	0
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	0.3 OZ/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
11	Select	2	0.094 LB A/A	6.0 FL OZ/A	6.0 FL OZ/A	POST A	A	2	70	2	73	0
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	0.3 OZ/A	POST A	A					
	COC		1.0 QT/A	1.0 QT/A	1.0 QT/A	POST A	A					
LSD (P=.05)							2.7	3.6	2.5	5.4	3.0	5.4

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							GLXMA PHYGEN percent 07-26-02 31 DA-B	SETLU CONTROL percent 07-26-02 31 DA-B	GLXMA PHYGEN percent 08-07-02 43 DA-B	SETLU CONTROL percent 08-07-02 43 DA-B	GLXMA PHYGEN percent 08-16-02 52 DA-B	SETLU CONTROL percent 08-16-02 52 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code						
1	Untreated							0	0	0	0	0	
2	Clethodim-Agan AMS COC	2 4.0 1.0	0.094 LB A/A LB/A QT/A	6.0 FL OZ/A 4.0 LB/A 1.0 QT/A	POST A POST A POST A			0	92	0	93	0	93
3	Select AMS COC	2 4.0 1.0	0.094 LB A/A LB/A QT/A	6.0 FL OZ/A 4.0 LB/A 1.0 QT/A	POST A POST A POST A			0	92	0	93	0	95
4	Clethodim-Agan Cobra COC	2 2 1.0	0.094 LB A/A 0.195 LB A/A QT/A	6.0 FL OZ/A 12.5 FL OZ/A 1.0 QT/A	POST A POST A POST A			7	88	5	85	5	85
5	Select Cobra COC	2 2 1.0	0.094 LB A/A 0.195 LB A/A QT/A	6.0 FL OZ/A 12.5 FL OZ/A 1.0 QT/A	POST A POST A POST A			7	87	7	87	5	85
6	Clethodim-Agan Pursuit COC	2 2 1.0	0.094 LB A/A 0.0625 LB A/A QT/A	6.0 FL OZ/A 4.0 FL OZ/A 1.0 QT/A	POST A POST A POST A			0	70	0	70	0	73
7	Select Pursuit COC	2 2 1.0	0.094 LB A/A 0.0625 LB A/A QT/A	6.0 FL OZ/A 4.0 FL OZ/A 1.0 QT/A	POST A POST A POST A			0	68	0	68	0	72
8	Clethodim-Agan Storm COC	2 4 1.0	0.125 LB A/A 0.75 LB A/A QT/A	8.0 FL OZ/A 1.5 PT/A 1.0 QT/A	POST A POST A POST A			0	87	0	90	0	90
9	Select Storm COC	2 4 1.0	0.125 LB A/A 0.75 LB A/A QT/A	8.0 FL OZ/A 1.5 PT/A 1.0 QT/A	POST A POST A POST A			0	88	0	90	0	90
10	Clethodim-Agan FirstRate COC	2 84 1.0	0.094 LB A/A 0.0157 LB A/A QT/A	6.0 FL OZ/A 0.3 OZ/A 1.0 QT/A	POST A POST A POST A			0	80	0	82	0	87
11	Select FirstRate COC	2 84 1.0	0.094 LB A/A 0.0157 LB A/A QT/A	6.0 FL OZ/A 0.3 OZ/A 1.0 QT/A	POST A POST A POST A			0	80	0	83	0	88
LSD (P=.05)								2.0	10.9	1.5	9.1	0.0	10.0

Iowa State University

Evaluation of Aim, Appeal, Phoenix and Resource with Roundup UltraMAX or Touchdown IQ for weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 8
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Ames Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50011 Initiation Date: 05-24-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate postemergence applications of Roundup UltraMAX, Aim with Roundup UltraMAX, and Appeal with Roundup UltraMAX or Touchdown IQ for soybean phytotoxicity and weed control in soybean.

Conclusions: Significant differences in soybean injury between herbicide treatments were observed on June 25, four days after application. Treatments that included Aim, Phoenix, or Resource with Roundup UltraMAX resulted in the most serious injury. When observed on July 23, thirty-two days after application, injury was still apparent with these treatments, but considered negligible. Giant foxtail, velvetleaf, common waterhemp, common lambsquarters, Pennsylvania smartweed, and common cocklebur control was good to excellent on June 25, four days after application with Aim, Appeal, Phoenix and Resource when tank-mixed with Roundup UltraMAX or Touchdown IQ. Giant foxtail and common cocklebur control was also good to excellent at this time with Roundup UltraMAX and Touchdown IQ applied alone, but only fair control of velvetleaf, common waterhemp, and Pennsylvania smartweed was achieved with these treatments. Generally, all treatments provided acceptable control on July 23 of all species evaluated. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG2402 RR

Planting Date: 05-24-02 Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15% at planting.

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SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM
 pH: 7.5 Soil Name: CANISTEO, NICOLLET, CLARION
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	06-21-02
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	88 F
% Relative Humidity:	74
Wind Velocity, Unit:	9 MPH
Soil Temp., Unit:	82 F
% Cloud Cover:	70

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V3
Stage Scale:	DESC
Height, Unit:	4 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 2-4LF,3 T
Stage Scale:	2-8 IN
Density, Unit:	50 FT ²
Weed 2 Code, Stage:	ABUTH 4-8 LEAF
Stage Scale:	3-8 IN
Density, Unit:	0-2 FT ²
Weed 3 Code, Stage:	AMATA COTY-NUM
Stage Scale:	1-9 IN
Density, Unit:	0-10 FT ²
Weed 4 Code, Stage:	CHEAL 2-NUM
Stage Scale:	1-8 IN
Density, Unit:	5-30 FT ²
Weed 5 Code, Stage:	POLPY 4-8 LEAF
Stage Scale:	2-3 IN
Density, Unit:	0-1 FT ²
Weed 6 Code, Stage:	XANST 4-9 LEAF
Stage Scale:	4-10 IN
Density, Unit:	0-1 FT ²

Iowa State University

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

Evaluation of Aim, Appeal, Phoenix and Resource with Roundup UltraMAX or Touchdown IQ for weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 8

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-25-02	06-25-02	06-25-02	06-25-02	06-25-02	
Trt-Eval Interval							4 DA-A	4 DA-A	4 DA-A	4 DA-A	4 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX Aim	5 2	0.78 0.0039	LB A/A LB A/A	20.0 0.25	FL OZ/A OZ/A	POST A POST A	17	99	95	92	
3	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	POST A	5	98	57	62	
4	Roundup UltraMAX Aim	5 2	1.02 0.0039	LB A/A LB A/A	26.0 0.25	FL OZ/A FL OZ/A	POST A POST A	15	99	96	87	
5	Roundup UltraMAX	5	1.02	LB A/A	26.0	OZ/A	POST A	5	99	67	67	
6	Roundup UltraMAX Appeal LI 700	5 0.91	1.02 0.00427	LB A/A LB A/A	26.0 0.6	OZ/A FL OZ/A	POST A POST A	10	99	99	95	
			0.25	% V/V	0.25	% V/V	POST A					
7	Touchdown IQ Appeal LI 700	3 0.91	0.75 0.00427	LB AE/A LB A/A	32.0 0.6	FL OZ/A FL OZ/A	POST A POST A	5	98	99	95	
			0.25	% V/V	0.25	% V/V	POST A					
8	Touchdown IQ AMS	3	0.75	LB AE/A 2.5 LB/A	32.0 2.5	OZ/A LB/A	POST A POST A	4	96	73	70	
9	Roundup UltraMAX Phoenix AMS	5 2	1.02 0.109	LB A/A LB A/A	26.0 7.0	FL OZ/A FL OZ/A	POST A POST A	25	99	96	96	
			2.5	LB/A	2.5	LB/A	POST A					
10	Roundup UltraMAX Resource AMS	5 0.86	1.02 0.0202	LB A/A LB A/A	26.0 3.0	FL OZ/A OZ/A	POST A POST A	8	98	99	95	
			2.5	LB/A	2.5	LB/A	POST A					
LSD (P=.05)								2.5	2.2	4.6	5.9	3.3

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Weed Code							POLPY	XANST	GLXMA	SETFA	ABUTH
Rating Data Type							CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-25-02	06-25-02	07-05-02	07-05-02	07-05-02
Trt-Eval Interval							4 DA-A	4 DA-A	14 DA-A	14 DA-A	14 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code		
1	Untreated									0	0
2	Roundup UltraMAX Aim	5 2	0.78 0.0039	LB A/A LB A/A	20.0 FL OZ/A 0.25 OZ/A	20.0 FL OZ/A 0.25 FL OZ/A	POST A POST A			92	98
3	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	20.0 FL OZ/A	POST A			62	95
4	Roundup UltraMAX Aim	5 2	1.02 0.0039	LB A/A LB A/A	26.0 FL OZ/A 0.25 FL OZ/A	26.0 FL OZ/A 0.25 FL OZ/A	POST A POST A			90	95
5	Roundup UltraMAX	5	1.02	LB A/A	26.0 OZ/A	26.0 OZ/A	POST A			67	96
6	Roundup UltraMAX Appeal LI 700	5 0.91	1.02 0.00427	LB A/A LB A/A	26.0 OZ/A 0.6 FL OZ/A	26.0 OZ/A 0.6 FL OZ/A	POST A POST A			92	99
			0.25	% V/V	0.25 % V/V	0.25 % V/V	POST A				
7	Touchdown IQ Appeal LI 700	3 0.91	0.75 0.00427	LB AE/A LB A/A	32.0 FL OZ/A 0.6 FL OZ/A	32.0 FL OZ/A 0.6 FL OZ/A	POST A POST A			92	99
			0.25	% V/V	0.25 % V/V	0.25 % V/V	POST A				
8	Touchdown IQ AMS	3	0.75	LB AE/A 2.5 LB/A	32.0 OZ/A 2.5 LB/A	32.0 OZ/A 2.5 LB/A	POST A POST A			67	95
9	Roundup UltraMAX Phoenix AMS	5 2	1.02 0.109	LB A/A LB A/A	26.0 FL OZ/A 7.0 FL OZ/A	26.0 FL OZ/A 7.0 FL OZ/A	POST A POST A			95	98
			2.5	LB/A	2.5 LB/A	2.5 LB/A	POST A				
10	Roundup UltraMAX Resource AMS	5 0.86	1.02 0.0202	LB A/A LB A/A	26.0 FL OZ/A 3.0 OZ/A	26.0 FL OZ/A 3.0 OZ/A	POST A POST A			90	99
			2.5	LB/A	2.5 LB/A	2.5 LB/A	POST A				
LSD (P=.05)							5.0	2.2	3.9	0.0	4.2

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Weed Code							AMATA	CHEAL	POLPY	XANST	GLXMA
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit							percent	percent	percent	percent	percent
Rating Date							07-05-02	07-05-02	07-05-02	07-05-02	07-11-02
Trt-Eval Interval							14 DA-A	14 DA-A	14 DA-A	14 DA-A	20 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code		
1	Untreated									0	0
2	Roundup UltraMAX Aim	5 2	0.78 0.0039	LB A/A LB A/A	20.0 0.25	FL OZ/A OZ/A	POST POST	A A		93	95
3	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	POST	A		93	98
4	Roundup UltraMAX Aim	5 2	1.02 0.0039	LB A/A LB A/A	26.0 0.25	FL OZ/A FL OZ/A	POST POST	A A		93	96
5	Roundup UltraMAX	5	1.02	LB A/A	26.0	OZ/A	POST	A		96	96
6	Roundup UltraMAX Appeal LI 700	5 0.91	1.02 0.00427	LB A/A LB A/A	26.0 0.6	OZ/A FL OZ/A	POST POST	A A		95	96
			0.25	% V/V	0.25	% V/V	POST	A			
7	Touchdown IQ Appeal LI 700	3 0.91	0.75 0.00427	LB AE/A LB A/A	32.0 0.6	FL OZ/A FL OZ/A	POST POST	A A		95	95
			0.25	% V/V	0.25	% V/V	POST	A			
8	Touchdown IQ AMS	3	0.75	LB AE/A	32.0	OZ/A	POST	A		95	96
			2.5	LB/A	2.5	LB/A	POST	A			
9	Roundup UltraMAX Phoenix AMS	5 2	1.02 0.109	LB A/A LB A/A	26.0 7.0	FL OZ/A FL OZ/A	POST POST	A A		95	98
			2.5	LB/A	2.5	LB/A	POST	A			
10	Roundup UltraMAX Resource AMS	5 0.86	1.02 0.0202	LB A/A LB A/A	26.0 3.0	FL OZ/A OZ/A	POST POST	A A		95	96
			2.5	LB/A	2.5	LB/A	POST	A			
LSD (P=.05)							2.9	3.2	3.9	1.9	4.4

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 07-11-02 20 DA-A	ABUTH CONTROL percent 07-11-02 20 DA-A	AMATA CONTROL percent 07-11-02 20 DA-A	CHEAL CONTROL percent 07-11-02 20 DA-A	POLPY CONTROL percent 07-11-02 20 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Roundup UltraMAX Aim	5 2	0.78 0.0039	LB A/A LB A/A	20.0 0.25	FL OZ/A OZ/A	POST POST	A A	99	93	90	92	93
3	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	POST	A	99	90	93	96	93
4	Roundup UltraMAX Aim	5 2	1.02 0.0039	LB A/A LB A/A	26.0 0.25	FL OZ/A FL OZ/A	POST POST	A A	99	96	90	96	95
5	Roundup UltraMAX	5	1.02	LB A/A	26.0	OZ/A	POST	A	99	96	93	96	90
6	Roundup UltraMAX Appeal LI 700	5 0.91	1.02 0.00427	LB A/A LB A/A	26.0 0.6	OZ/A FL OZ/A	POST POST	A A	99	98	92	92	95
			0.25	% V/V	0.25	% V/V	POST	A					
7	Touchdown IQ Appeal LI 700	3 0.91	0.75 0.00427	LB AE/A LB A/A	32.0 0.6	FL OZ/A FL OZ/A	POST POST	A A	99	98	90	93	95
			0.25	% V/V	0.25	% V/V	POST	A					
8	Touchdown IQ AMS	3	0.75	LB AE/A LB/A	32.0 2.5	FL OZ/A LB/A	POST POST	A A	99	98	92	93	92
9	Roundup UltraMAX Phoenix AMS	5 2	1.02 0.109	LB A/A LB A/A	26.0 7.0	FL OZ/A FL OZ/A	POST POST	A A	99	99	92	98	96
			2.5	LB/A	2.5	LB/A	POST	A					
10	Roundup UltraMAX Resource AMS	5 0.86	1.02 0.0202	LB A/A LB A/A	26.0 3.0	FL OZ/A OZ/A	POST POST	A A	99	98	95	96	93
			2.5	LB/A	2.5	LB/A	POST	A					
LSD (P=.05)							0.0	4.2	3.2	4.2	3.5		

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Weed Code							XANST	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							07-11-02	07-23-02	07-23-02	07-23-02	07-23-02
Trt-Eval Interval							20 DA-A	32 DA-A	32 DA-A	32 DA-A	32 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code		
1	Untreated									0	0
2	Roundup UltraMAX Aim	5 2	0.78 0.0039	LB A/A LB A/A	20.0 FL OZ/A 0.25 OZ/A	20.0 FL OZ/A 0.25 FL OZ/A	POST A POST A			99	93
3	Roundup UltraMAX	5	0.78	LB A/A	20.0 FL OZ/A	20.0 FL OZ/A	POST A			99	95
4	Roundup UltraMAX Aim	5 2	1.02 0.0039	LB A/A LB A/A	26.0 FL OZ/A 0.25 FL OZ/A	26.0 FL OZ/A 0.25 FL OZ/A	POST A POST A			98	93
5	Roundup UltraMAX	5	1.02	LB A/A	26.0 OZ/A	26.0 OZ/A	POST A			99	95
6	Roundup UltraMAX Appeal LI 700	5 0.91	1.02 0.00427	LB A/A LB A/A	26.0 OZ/A 0.6 FL OZ/A	26.0 OZ/A 0.6 FL OZ/A	POST A POST A			99	95
			0.25	% V/V	0.25 % V/V	0.25 % V/V	POST A				
7	Touchdown IQ Appeal LI 700	3 0.91	0.75 0.00427	LB AE/A LB A/A	32.0 FL OZ/A 0.6 FL OZ/A	32.0 FL OZ/A 0.6 FL OZ/A	POST A POST A			99	95
			0.25	% V/V	0.25 % V/V	0.25 % V/V	POST A				
8	Touchdown IQ AMS	3	0.75	LB AE/A	32.0 OZ/A	32.0 OZ/A	POST A			99	93
			2.5	LB/A	2.5 LB/A	2.5 LB/A	POST A				
9	Roundup UltraMAX Phoenix AMS	5 2	1.02 0.109	LB A/A LB A/A	26.0 FL OZ/A 7.0 FL OZ/A	26.0 FL OZ/A 7.0 FL OZ/A	POST A POST A			98	93
			2.5	LB/A	2.5 LB/A	2.5 LB/A	POST A				
10	Roundup UltraMAX Resource AMS	5 0.86	1.02 0.0202	LB A/A LB A/A	26.0 FL OZ/A 3.0 OZ/A	26.0 FL OZ/A 3.0 OZ/A	POST A POST A			99	92
			2.5	LB/A	2.5 LB/A	2.5 LB/A	POST A				
LSD (P=.05)							1.8	3.2	6.7	4.6	5.8

Iowa State University

Weed Code							POLPY	XANST
Rating Data Type							CONTROL	CONTROL
Rating Unit							percent	percent
Rating Date							07-23-02	07-23-02
Trt-Eval Interval							32 DA-A	32 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Stg	Appl Code
1	Untreated						0	0
2	Roundup UltraMAX Aim	5 2	0.78 0.0039	LB A/A LB A/A	20.0 0.25	FL OZ/A OZ/A	POST POST	A A
3	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	POST	A
4	Roundup UltraMAX Aim	5 2	1.02 0.0039	LB A/A LB A/A	26.0 0.25	FL OZ/A FL OZ/A	POST POST	A A
5	Roundup UltraMAX	5	1.02	LB A/A	26.0	OZ/A	POST	A
6	Roundup UltraMAX Appeal LI 700	5 0.91	1.02 0.00427	LB A/A LB A/A	26.0 0.6	OZ/A FL OZ/A	POST POST	A A
			0.25	% V/V	0.25	% V/V	POST	A
7	Touchdown IQ Appeal LI 700	3 0.91	0.75 0.00427	LB AE/A LB A/A	32.0 0.6	FL OZ/A FL OZ/A	POST POST	A A
			0.25	% V/V	0.25	% V/V	POST	A
8	Touchdown IQ AMS	3	0.75	LB AE/A LB/A	32.0 2.5	OZ/A LB/A	POST POST	A A
9	Roundup UltraMAX Phoenix AMS	5 2	1.02 0.109	LB A/A LB A/A	26.0 7.0	FL OZ/A FL OZ/A	POST POST	A A
			2.5	LB/A	2.5	LB/A	POST	A
10	Roundup UltraMAX Resource AMS	5 0.86	1.02 0.0202	LB A/A LB A/A	26.0 3.0	FL OZ/A OZ/A	POST POST	A A
			2.5	LB/A	2.5	LB/A	POST	A
LSD (P=.05)							4.0	0.0

Iowa State University

Evaluation of postemergence CHA4535, Roundup UltraMAX and Glyphos X-TRA for crop phytotoxicity and weed control in soybean, Ames, IA, 2002.

Trial ID: ASC 9

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-24-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate crop injury and weed control from postemergence applications of CHA4535, Roundup UltraMAX, and Glyphos X-TRA in soybean.

Conclusions: Soybean injury observed on June 26 and July 3 was light and insignificant. All treatments provided excellent giant foxtail control. In addition, treatments with both postemergence (POST1 and POST2) timings of the 0.75 lb/A rate provided good to excellent weed control. However, there were differences amongst treatments with two timings for the 0.375 lb/A rate; Glyphos X-TRA provided the best broadleaf weed control following the POST1 timing, when observed on July 3. When observed on July 31 and September 16, this margin of control diminished, following the POST2 timing. Broadleaf weed control was generally inadequate for treatments with only a late POST2 timing. An exception was CHA4535, which provided good common waterhemp control through September 16. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: GLXMA SOYBEAN

Variety: ASGROW AG2402 RR

Planting Date: 05-24-02

Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15% at planting.

Iowa State University

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM
 pH: 7.5 Soil Name: CANISTEO, NICOLLET, CLARION
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	06-21-02	07-03-02
Application Method:	SPRAY	SPRAY
Application Timing:	POST1	POST2
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	88 F	90 F
% Relative Humidity:	74	74
Wind Velocity, Unit:	9 MPH	6 MPH
Soil Temp., Unit:	82 F	84 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	70	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA V3	GLXMA V3-5
Stage Scale:	DESC	DESC
Height, Unit:	4 IN	8 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA 3-4LF, 3T	SETFA 4 LF, 4T
Stage Scale:	2-8 IN	8-12 IN
Density, Unit:	5-50 FT ²	5-50 FT ²
Weed 2 Code, Stage:	ABUTH COTYL-3	ABUTH 5-7 LEAF
Stage Scale:	0.5-4 IN	6-13 IN
Density, Unit:	0-1 FT ²	0-5 FT ²
Weed 3 Code, Stage:	AMATA COTYL-8	AMATA NUMEROUS
Stage Scale:	0.5-5 IN	8-14 IN
Density, Unit:	0-25 FT ²	0-10 FT ²
Weed 4 Code, Stage:	CHEAL NUMEROUS	CHEAL NUMEROUS
Stage Scale:	1-8 IN	8-13 IN
Density, Unit:	0-25 FT ²	0-20 FT ²
Weed 5 Code, Stage:	POLPY 3-4 LEAF	POLPY NUMEROUS
Stage Scale:	2-4 IN	5-14 IN
Density, Unit:	0-3 FT ²	0-10 FT ²
Weed 6 Code, Stage:	XANST 4-8 LEAF	XANST NUMEROUS
Stage Scale:	6-9 IN	10-15 IN
Density, Unit:	0-3 FT ²	0-5 FT ²

Iowa State University

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TERRA PRO	HAND BOOM
Operating Pressure:	30	25
Nozzle Type:	11002	11003
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

**Evaluation of postemergence CHA4535, Roundup UltraMAX and Glyphos X-TRA for
crop phytotoxicity and weed control in soybean, Ames, IA, 2002.**

Trial ID: ASC 9

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	GLXMA	SETFA	ABUTH	AMATA
Rating Data Type							PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-26-02	07-03-02	07-03-02	07-03-02	07-03-02
Trt-Eval Interval							5 DA-A	12 DA-A	12 DA-A	12 DA-A	12 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	5	0	99	96
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	2	0	99	70
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	0	0	0	0
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	3	2	99	98
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	3	0	99	70
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	0	0	0	0
8	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A	A	3	2	99	98
	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B	B				
9	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A	A	2	0	99	88
	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B				
10	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B	0	0	0	0
LSD (P=.05)							3.7	2.3	0.0	4.8	3.3

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 07-03-02 12 DA-A	POLPY CONTROL percent 07-03-02 12 DA-A	GLXMA PHYGEN percent 07-11-02 8 DA-B	GLXMA PHYGEN percent 07-31-02 28 DA-B	SETFA CONTROL percent 07-31-02 28 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A		93	85	0	0	
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B					99	
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A		75	57	0	0	
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B					99	
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B		0	0	0	0	
											95	
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A		96	82	2	0	
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B					99	
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A		82	58	0	0	
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B					99	
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B		0	0	0	0	
											95	
8	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A		95	83	2	0	
	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B					99	
9	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A		85	68	0	0	
	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B					99	
10	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B		0	0	0	0	
											95	
LSD (P=.05)								3.7	5.4	2.3	0.0	4.4

Iowa State University

Weed Code							ABUTH	AMATA	CHEAL	POLPY	SETFA
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							07-31-02	07-31-02	07-31-02	07-31-02	09-16-02
Trt-Eval Interval							28 DA-B	28 DA-B	28 DA-B	28 DA-B	75 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	95	96	95	93
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				98
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	77	92	78	82
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				98
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	63	90	55	52
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	95	95	96	92
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				98
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	73	88	80	80
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				98
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	62	85	55	52
8	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A	A	95	95	95	90
	Glyphos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B	B				96
9	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A	A	87	92	83	87
	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B				96
10	Glyphos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B	65	87	48	48
LSD (P=.05)							10.4	6.9	9.6	9.1	4.9

Iowa State University

Weed Code							ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							09-16-02	09-16-02	09-16-02	09-16-02	
Trt-Eval Interval							75 DA-B	75 DA-B	75 DA-B	75 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	99	99	93	96
	CHA4535	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				
3	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	90	92	62	68
	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				
4	CHA4535	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	53	85	35	47
5	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST1 A	A	98	98	95	95
	Roundup UltraMAX	5	0.75 LB A/A	19.2 FL OZ/A	19.2 FL OZ/A	POST2 B	B				
6	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST1 A	A	77	87	67	75
	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B				
7	Roundup UltraMAX	5	0.375 LB A/A	9.6 FL OZ/A	9.6 FL OZ/A	POST2 B	B	53	65	32	30
8	Glyfos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST1 A	A	96	96	92	93
	Glyfos X-TRA	4	0.75 LB A/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 B	B				
9	Glyfos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST1 A	A	90	93	67	75
	Glyfos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B				
10	Glyfos X-TRA	4	0.375 LB A/A	12.0 FL OZ/A	12.0 FL OZ/A	POST2 B	B	53	75	23	28
LSD (P=.05)							12.6	11.5	11.8	12.0	

Iowa State University

Early preplant tank-mixture combinations with Valor followed by Roundup UltraMAX for weed control in no-tillage soybean, Ames, IA, 2002.

Trial ID: ASN 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 04-26-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate Valor alone and in various tank-mixture combinations for soybean phytotoxicity and burndown weed control in no-tillage soybean.

Conclusions: Valor plus 2, 4-D LV4 applied early preplant (EPP1) provided good to excellent burndown control of small, one-half inch tall velvetleaf and common lambsquarters when observed on April 29, three days after application. Partial control of these species was observed with 2, 4-D LV4 applied alone. EPP2 applications of Valor plus Roundup UltraMAX and Valor plus Python plus Roundup UltraMAX provided good to excellent burndown of giant foxtail, velvetleaf, and common lambsquarters when observed on May 6, three days after application. Poor burndown control was observed at three days after application with EPP2 applications of Roundup UltraMAX, Python plus Roundup UltraMAX and Extreme plus Roundup UltraMAX. When observed at fourteen days after application, May 10 for EPP1 and May 17 for EPP2, all treatments demonstrated excellent broad-spectrum weed control.

EPP1 applications of Valor plus 2, 4-D LV4 and 2, 4-D LV4 resulted in 7% soybean injury when observed on June 25, sixty days after application, and prior to postemergence (POST) treatment timing. Additionally, several EPP2 applications resulted in 2 to 3% soybean injury. On June 25, EPP1 2, 4-D LV4 did not provide acceptable giant foxtail, velvetleaf, and common lambsquarters control, while EPP2 Roundup UltraMAX and Python plus Roundup UltraMAX did not provide acceptable giant foxtail control. EPP1 Valor plus 2, 4-D LV4, EPP2 Valor plus Roundup UltraMAX, Valor plus Python plus Roundup UltraMAX and Extreme plus Roundup UltraMAX, provided 82 to 99% giant foxtail and velvetleaf control. Common lambsquarters control was acceptable with most of these treatments, and ranged from 77 to 99%. On June 25, Roundup UltraMAX was applied POST to the entire experiment. When observed on September 23, all treatments demonstrated good to excellent control of giant foxtail, velvetleaf, and common lambsquarters. All treatments resulted in significantly higher soybean yields than the untreated control. Few significant differences were determined; EPP1 2, 4-D LV4 yielded significantly less than a number of treatments. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: GLXMA SOYBEAN

Variety: ASGROW AG2402 RR

Planting Date: 05-10-02 Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A Depth: 1.25 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: NO-TILL Study Design: RANDOMIZED COMPLETE BLOCK

Iowa State University

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: The field was left un-tilled from the corn cropping year 2001. Crop residue on the soil surface at planting was 75 to 80%.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM
 pH: 7.5 Soil Name: CANISTEO, NICOLLET, CLARION
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	04-26-02	05-03-02	06-25-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	EPP1	EPP2	POST
Applic. Placement:	BROSOI	BROSOI	BROFOL
Air Temp., Unit:	55 F	66 F	90 F
% Relative Humidity:	37	48	69
Wind Velocity, Unit:	8 MPH	8 MPH	7 MPH
Soil Temp., Unit:	50 F	52 F	84 F
Soil Moisture:	DRY	MOIST	DRY
% Cloud Cover:	95	0	50

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA -	GLXMA -	GLXMA V5-6
Stage Scale:	-	-	DESC
Height, Unit:	-	-	12 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA 1 LEAF	SETFA 1-2 LEAF	SETFA 4 LEAF
Stage Scale:	0.25 IN	0.25 IN	7-11 IN
Density, Unit:	0-1 FT2	0-1 FT2	0-15 FT2
Weed 2 Code, Stage:	ABUTH COTYLEDON	ABUTH COTYLEDON	ABUTH 5-7 LEAF
Stage Scale:	0.5 IN	0.5 IN	7-12 IN
Density, Unit:	0-1 FT2	0-1 FT2	0-2 FT2
Weed 3 Code, Stage:	CHEAL 2-6 LEAF	CHEAL 2-8 LEAF	CHEAL NUMEROUS
Stage Scale:	0.5 IN	0.5-1.5IN	8-10 IN
Density, Unit:	25 FT2	5-40 FT2	3-15 FT2

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	HAND BOOM	HAND BOOM	TRACTOR
Operating Pressure:	25	25	30
Nozzle Type:	11003	11003	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

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Early preplant tank-mixture combinations with Valor followed by Roundup UltraMAX
for weed control in no-tillage soybean, Ames, IA, 2002.

Trial ID: ASN 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ABUTH	CHEAL	ABUTH	CHEAL	SETFA
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							04-29-02	04-29-02	05-03-02	05-03-02	05-06-02
Trt-Eval Interval							3 DA-A	3 DA-A	7 DA-A	7 DA-A	7 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit	Appl Code				
1	Untreated							0	0	0	0
2	Valor	51	0.064 LB A/A	2.0 OZ/A		EPP1 A		83	88	99	99
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A		EPP1 A					
	COC		1.0 PT/A	1.0 PT/A		EPP1 A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C					
	AMS		2.5 LB/A	2.5 LB/A		POST C					
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A		EPP1 A		50	53	52	57
	COC		1.0 PT/A	1.0 PT/A		EPP1 A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C					
	AMS		2.5 LB/A	2.5 LB/A		POST C					
4	Valor	51	0.08 LB A/A	2.5 OZ/A		EPP2 B		0	0	0	91
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B					
	NIS		0.125 % V/V	0.125 % V/V		EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C					
	AMS		2.5 LB/A	2.5 LB/A		POST C					
5	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		EPP2 B		0	0	0	53
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C					
	AMS		2.5 LB/A	2.5 LB/A		POST C					
6	Valor	51	0.048 LB A/A	1.5 OZ/A		EPP2 B		0	0	0	95
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B					
	NIS		0.125 % V/V	0.125 % V/V		EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C					
	AMS		2.5 LB/A	2.5 LB/A		POST C					
7	Valor	51	0.048 LB A/A	1.5 OZ/A		EPP2 B		0	0	0	95
	Python	80	0.033 LB A/A	0.66 OZ/A		EPP2 B					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B					
	NIS		0.125 % V/V	0.125 % V/V		EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C					
	AMS		2.5 LB/A	2.5 LB/A		POST C					
8	Python	80	0.033 LB A/A	0.66 OZ/A		EPP2 B		0	0	0	50
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B					
	NIS		0.125 % V/V	0.125 % V/V		EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C					
	AMS		2.5 LB/A	2.5 LB/A		POST C					
9	Valor	51	0.048 LB A/A	1.5 OZ/A		EPP2 B		0	0	0	80
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C					
	AMS		2.5 LB/A	2.5 LB/A		POST C					

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Weed Code							ABUTH	CHEAL	ABUTH	CHEAL	SETFA	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							04-29-02	04-29-02	05-03-02	05-03-02	05-06-02	
Trt-Eval Interval							3 DA-A	3 DA-A	7 DA-A	7 DA-A	7 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
10	Valor	51	0.048 LB A/A	1.5 OZ/A		EPP2 B		0	0	0	0	95
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B						
	COC		1.0 PT/A	1.0 PT/A		EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C						
	AMS		2.5 LB/A	2.5 LB/A		POST C						
11	Extreme	2.17	0.814 LB A/A	3.0 PT/A		EPP2 B		0	0	0	0	47
	NIS		0.125 % V/V	0.125 % V/V		EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C						
	AMS		2.5 LB/A	2.5 LB/A		POST C						
LSD (P=.05)								3.0	3.2	1.5	3.9	10.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 05-06-02 7 DA-A	CHEAL CONTROL percent 05-06-02 7 DA-A	SETFA CONTROL percent 05-10-02 14 DA-A	ABUTH CONTROL percent 05-10-02 14 DA-A	CHEAL CONTROL percent 05-10-02 14 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	Valor	51	0.064 LB A/A	2.0 OZ/A	2.0 OZ/A	EPP1 A		99	99	99	99
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	1.0 PT/A	EPP1 A					
	COC		1.0 PT/A	1.0 PT/A	1.0 PT/A	EPP1 A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	POST C					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	POST C					
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	1.0 PT/A	EPP1 A		98	88	95	99
	COC		1.0 PT/A	1.0 PT/A	1.0 PT/A	EPP1 A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	POST C					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	POST C					
4	Valor	51	0.08 LB A/A	2.5 OZ/A	2.5 OZ/A	EPP2 B		99	90	99	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	20.0 FL OZ/A	EPP2 B					
	NIS		0.125 % V/V	0.125 % V/V	0.125 % V/V	EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	POST C					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	POST C					
5	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	EPP2 B		62	50	95	99
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	POST C					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	POST C					
6	Valor	51	0.048 LB A/A	1.5 OZ/A	1.5 OZ/A	EPP2 B		99	93	99	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	20.0 FL OZ/A	EPP2 B					
	NIS		0.125 % V/V	0.125 % V/V	0.125 % V/V	EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	POST C					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	POST C					
7	Valor	51	0.048 LB A/A	1.5 OZ/A	1.5 OZ/A	EPP2 B		99	95	99	99
	Python	80	0.033 LB A/A	0.66 OZ/A	0.66 OZ/A	EPP2 B					
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	20.0 FL OZ/A	EPP2 B					
	NIS		0.125 % V/V	0.125 % V/V	0.125 % V/V	EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	POST C					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	POST C					
8	Python	80	0.033 LB A/A	0.66 OZ/A	0.66 OZ/A	EPP2 B		63	57	96	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	20.0 FL OZ/A	EPP2 B					
	NIS		0.125 % V/V	0.125 % V/V	0.125 % V/V	EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	POST C					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	POST C					
9	Valor	51	0.048 LB A/A	1.5 OZ/A	1.5 OZ/A	EPP2 B		99	95	99	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	20.0 FL OZ/A	EPP2 B					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	EPP2 B					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	26.0 FL OZ/A	POST C					
	AMS		2.5 LB/A	2.5 LB/A	2.5 LB/A	POST C					

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Weed Code							ABUTH	CHEAL	SETFA	ABUTH	CHEAL	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							05-06-02	05-06-02	05-10-02	05-10-02	05-10-02	
Trt-Eval Interval							7 DA-A	7 DA-A	14 DA-A	14 DA-A	14 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
10	Valor	51	0.048 LB A/A	1.5 OZ/A		EPP2 B		99	95	99	99	
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B						
	COC		1.0 PT/A	1.0 PT/A		EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C						
	AMS		2.5 LB/A	2.5 LB/A		POST C						
11	Extreme	2.17	0.814 LB A/A	3.0 PT/A		EPP2 B		57	50	96	98	
	NIS		0.125 % V/V	0.125 % V/V		EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C						
	AMS		2.5 LB/A	2.5 LB/A		POST C						
LSD (P=.05)								13.8	10.9	3.6	1.2	6.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 05-17-02 14 DA-A	ABUTH CONTROL percent 05-17-02 14 DA-A	CHEAL CONTROL percent 05-17-02 14 DA-A	GLXMA PHYGEN percent 06-25-02 0 DA-C	SETFA CONTROL percent 06-25-02 0 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	Valor	51	0.064 LB A/A	2.0 OZ/A	EPP1 A			99	99	99	7
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP1 A						
	COC		1.0 PT/A	1.0 PT/A	EPP1 A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP1 A			99	99	99	7
	COC		1.0 PT/A	1.0 PT/A	EPP1 A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
4	Valor	51	0.08 LB A/A	2.5 OZ/A	EPP2 B			99	99	99	3
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	NIS		0.125 % V/V	0.125 % V/V	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
5	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	EPP2 B			99	99	99	0
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
6	Valor	51	0.048 LB A/A	1.5 OZ/A	EPP2 B			99	99	99	3
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	NIS		0.125 % V/V	0.125 % V/V	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
7	Valor	51	0.048 LB A/A	1.5 OZ/A	EPP2 B			99	99	99	2
	Python	80	0.033 LB A/A	0.66 OZ/A	EPP2 B						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	NIS		0.125 % V/V	0.125 % V/V	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
8	Python	80	0.033 LB A/A	0.66 OZ/A	EPP2 B			99	99	99	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	NIS		0.125 % V/V	0.125 % V/V	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
9	Valor	51	0.048 LB A/A	1.5 OZ/A	EPP2 B			99	99	99	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						

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Weed Code							SETFA	ABUTH	CHEAL	GLXMA	SETFA	
Rating Data Type							CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							05-17-02	05-17-02	05-17-02	06-25-02	06-25-02	
Trt-Eval Interval							14 DA-A	14 DA-A	14 DA-A	0 DA-C	0 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
10	Valor	51	0.048 LB A/A	1.5 OZ/A		EPP2 B		99	99	99	2	82
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B						
	COC		1.0 PT/A	1.0 PT/A		EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C						
	AMS		2.5 LB/A	2.5 LB/A		POST C						
11	Extreme	2.17	0.814 LB A/A	3.0 PT/A		EPP2 B		99	99	99	0	90
	NIS		0.125 % V/V	0.125 % V/V		EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C						
	AMS		2.5 LB/A	2.5 LB/A		POST C						
LSD (P=.05)								0.0	0.0	0.0	5.1	19.3

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 06-25-02 0 DA-C	CHEAL CONTROL percent 06-25-02 0 DA-C	SETFA CONTROL percent 09-23-02 90 DA-C	ABUTH CONTROL percent 09-23-02 90 DA-C	CHEAL CONTROL percent 09-23-02 90 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	Valor	51	0.064 LB A/A	2.0 OZ/A	EPP1 A			88	77	95	99
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP1 A						
	COC		1.0 PT/A	1.0 PT/A	EPP1 A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP1 A			77	63	92	96
	COC		1.0 PT/A	1.0 PT/A	EPP1 A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
4	Valor	51	0.08 LB A/A	2.5 OZ/A	EPP2 B			93	93	93	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	NIS		0.125 % V/V	0.125 % V/V	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
5	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	EPP2 B			82	72	90	99
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
6	Valor	51	0.048 LB A/A	1.5 OZ/A	EPP2 B			95	83	96	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	NIS		0.125 % V/V	0.125 % V/V	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
7	Valor	51	0.048 LB A/A	1.5 OZ/A	EPP2 B			98	99	93	99
	Python	80	0.033 LB A/A	0.66 OZ/A	EPP2 B						
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	NIS		0.125 % V/V	0.125 % V/V	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
8	Python	80	0.033 LB A/A	0.66 OZ/A	EPP2 B			91	99	90	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	NIS		0.125 % V/V	0.125 % V/V	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						
9	Valor	51	0.048 LB A/A	1.5 OZ/A	EPP2 B			95	78	93	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A	EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST C						
	AMS		2.5 LB/A	2.5 LB/A	POST C						

Iowa State University

Weed Code							ABUTH	CHEAL	SETFA	ABUTH	CHEAL	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							06-25-02	06-25-02	09-23-02	09-23-02	09-23-02	
Trt-Eval Interval							0 DA-C	0 DA-C	90 DA-C	90 DA-C	90 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
10	Valor	51	0.048 LB A/A	1.5 OZ/A		EPP2 B		95	83	91	99	95
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP2 B						
	COC		1.0 PT/A	1.0 PT/A		EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C						
	AMS		2.5 LB/A	2.5 LB/A		POST C						
11	Extreme	2.17	0.814 LB A/A	3.0 PT/A		EPP2 B		99	99	95	99	99
	NIS		0.125 % V/V	0.125 % V/V		EPP2 B						
	AMS		2.5 LB/A	2.5 LB/A		EPP2 B						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST C						
	AMS		2.5 LB/A	2.5 LB/A		POST C						
LSD (P=.05)							17.1	22.7	9.0	1.2	3.4	

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							GLXMA YIELD BU/A 09-26-02 146 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit Stg	Appl Code	
1	Untreated								21
2	Valor	51	0.064	LB A/A	2.0	OZ/A	EPP1	A	44
	2, 4-D LV4	4	0.5	LB A/A	1.0	PT/A	EPP1	A	
	COC		1.0	PT/A	1.0	PT/A	EPP1	A	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
3	2, 4-D LV4	4	0.5	LB A/A	1.0	PT/A	EPP1	A	35
	COC		1.0	PT/A	1.0	PT/A	EPP1	A	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
4	Valor	51	0.08	LB A/A	2.5	OZ/A	EPP2	B	44
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	EPP2	B	
	NIS		0.125	% V/V	0.125	% V/V	EPP2	B	
	AMS		2.5	LB/A	2.5	LB/A	EPP2	B	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
5	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	EPP2	B	39
	AMS		2.5	LB/A	2.5	LB/A	EPP2	B	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
6	Valor	51	0.048	LB A/A	1.5	OZ/A	EPP2	B	52
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	EPP2	B	
	NIS		0.125	% V/V	0.125	% V/V	EPP2	B	
	AMS		2.5	LB/A	2.5	LB/A	EPP2	B	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
7	Valor	51	0.048	LB A/A	1.5	OZ/A	EPP2	B	46
	Python	80	0.033	LB A/A	0.66	OZ/A	EPP2	B	
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	EPP2	B	
	NIS		0.125	% V/V	0.125	% V/V	EPP2	B	
	AMS		2.5	LB/A	2.5	LB/A	EPP2	B	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
8	Python	80	0.033	LB A/A	0.66	OZ/A	EPP2	B	40
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	EPP2	B	
	NIS		0.125	% V/V	0.125	% V/V	EPP2	B	
	AMS		2.5	LB/A	2.5	LB/A	EPP2	B	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
9	Valor	51	0.048	LB A/A	1.5	OZ/A	EPP2	B	47
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	EPP2	B	
	AMS		2.5	LB/A	2.5	LB/A	EPP2	B	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	

Iowa State University

Weed Code							GLXMA		
Rating Data Type							YIELD		
Rating Unit							BU/A		
Rating Date							09-26-02		
Trt-Eval Interval							146 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code	
10	Valor	51	0.048	LB A/A	1.5	OZ/A	EPP2	B	46
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	EPP2	B	
	COC		1.0	PT/A	1.0	PT/A	EPP2	B	
	AMS		2.5	LB/A	2.5	LB/A	EPP2	B	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
11	Extreme	2.17	0.814	LB A/A	3.0	PT/A	EPP2	B	48
	NIS		0.125	% V/V	0.125	% V/V	EPP2	B	
	AMS		2.5	LB/A	2.5	LB/A	EPP2	B	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	C	
	AMS		2.5	LB/A	2.5	LB/A	POST	C	
LSD (P=.05)									12.5

Iowa State University

Evaluation of early preplant applications of Aim, Glyphomax Plus, 2,4-D LV4 and others for weed control in no-tillage soybean, Ames, IA, 2002

Trial ID: ASN 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Ames

Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 50011

Initiation Date: 05-03-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate early preplant applications of Aim in combination with Glyphomax Plus, 2,4-D LV4, Boundary and others for soybean injury and preplant weed control in no-tillage grown soybean.

Conclusions: All treatments, except Glyphomax applied alone, provided 62 to 77% preplant burndown of giant foxtail on May 6, three days after application. Good to excellent preplant burndown of velvetleaf and common waterhemp was achieved on May 6 with Aim in tank-mixture with Glyphomax Plus, 2,4-D LV4, Boundary, Domain, or FirstRate plus Authority (Gauntlet). Glyphomax Plus applied alone or with 2,4-D LV4 did not reach a similar level of control, at three days after application. On May 13, ten days after application, all treatments provided 99% burndown of giant foxtail, velvetleaf and common lambsquarters. When evaluated on May 25, treatments that included a residual herbicide provided acceptable control of most species, while control for those without a residual, was unacceptable. Gauntlet plus Aim caused 7% soybean injury when observed on May 25. No other treatment caused injury. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.

Crop 1: GLXMA SOYBEAN

Variety: ASGROW AG2402 RR

Planting Date: 05-10-02

Planting Method: DIRECT DRILLED

Rate: 154000 SEEDS/A

Depth: 1.25 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: NO-TILL

Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: The field was left un-tilled from the corn cropping year 2001. Crop residue on the soil surface at planting was 75 to 80%.

Iowa State University

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM
 pH: 7.5 Soil Name: CANISTEO, NICOLLET, CLARION
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	05-03-02
Application Method:	SPRAY
Application Timing:	EPP
Applic. Placement:	BROSOL
Air Temp., Unit:	66 F
% Relative Humidity:	48
Wind Velocity, Unit:	8 MPH
Soil Temp., Unit:	52 F
Soil Moisture:	MOIST
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA -
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-2 LEAF
Stage Scale:	0.25 IN
Density, Unit:	0-1 FT2
Weed 2 Code, Stage:	ABUTH COTYLEDON
Stage Scale:	0.25 IN
Density, Unit:	0-1 FT2
Weed 3 Code, Stage:	AMATA -
Stage Scale:	-
Density, Unit:	- -
Weed 4 Code, Stage:	CHEAL 2-8 LEAF
Stage Scale:	0.25-1.5
Density, Unit:	5-40 FT2
Weed 5 Code, Stage:	POLPY -
Stage Scale:	-
Density, Unit:	- -

Iowa State University

APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND BOOM
Operating Pressure:	25
Nozzle Type:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Evaluation of early preplant applications of Aim, Glyphomax Plus, 2,4-D LV4 and others for weed control in no-tillage soybean, Ames, IA, 2002

Trial ID: ASN 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code						SETFA	ABUTH	CHEAL	SETFA	ABUTH
Rating Data Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit						percent	percent	percent	percent	percent
Rating Date						05-06-02	05-06-02	05-06-02	05-13-02	05-13-02
Trt-Eval Interval						3 DA-A	3 DA-A	3 DA-A	10 DA-A	10 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated							0	0	0
2	Glyphomax Plus AMS	4	0.75 LB A/A 2.0 % W/V	1.5 PT/A 2.0 % W/W	EPP A EPP A			40	60	43
3	Glyphomax Plus Aim AMS	4	0.75 LB A/A 2 0.0078 LB A/A 2.0 % W/V	1.5 PT/A 0.5 FL OZ/A 2.0 % W/W	EPP A EPP A EPP A			72	96	80
4	Glyphomax Plus Aim 2, 4-D LV4 AMS	4	0.5 LB A/A 2 0.0078 LB A/A 4 0.5 LB A/A 2.0 % W/V	1.0 PT/A 0.5 FL OZ/A 1.0 PT/A 2.0 % W/W	EPP A EPP A EPP A EPP A			77	98	95
5	Glyphomax Plus Aim 2, 4-D LV4 AMS	4	0.5 LB A/A 2 0.0078 LB A/A 4 0.125 LB A/A 2.0 % W/V	1.0 PT/A 0.5 FL OZ/A 0.25 PT/A 2.0 % W/W	EPP A EPP A EPP A EPP A			70	98	85
6	Boundary Aim COC	7.8	2.2 LB A/A 2 0.0078 LB A/A 1.0 % V/V	2.25 PT/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A			67	99	92
7	Domain Aim COC	60	0.525 LB A/A 2 0.0078 LB A/A 1.0 % V/V	14.0 OZ/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A			75	99	93
8	FirstRate Authority Aim COC	84	0.0315 LB A/A 75 0.25 LB A/A 2 0.0078 LB A/A 1.0 % V/V	0.6 OZ/A 5.33 OZ/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A EPP A			77	99	95
9	Glyphomax Plus 2, 4-D LV4 AMS	4	0.75 LB A/A 4 1.0 LB A/A 2.0 % W/V	1.5 PT/A 2.0 PT/A 2.0 % W/W	EPP A EPP A EPP A			62	88	63
LSD (P=.05)						18.0	13.5	8.1	0.0	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 05-13-02 10 DA-A	GLXMA PHYGEN percent 05-25-02 22 DA-A	SETFA CONTROL percent 05-25-02 22 DA-A	ABUTH CONTROL percent 05-25-02 22 DA-A	AMATA CONTROL percent 05-25-02 22 DA-A	CHEAL CONTROL percent 05-25-02 22 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code						
1	Untreated							0	0	0	0	0	
2	Glyphomax Plus AMS	4	0.75 LB A/A 2.0 % W/V	1.5 PT/A 2.0 % W/W	EPP A EPP A			99	0	50	68	72	63
3	Glyphomax Plus Aim AMS	4 2	0.75 LB A/A 0.0078 LB A/A 2.0 % W/V	1.5 PT/A 0.5 FL OZ/A 2.0 % W/W	EPP A EPP A EPP A			99	0	52	72	78	73
4	Glyphomax Plus Aim 2, 4-D LV4 AMS	4 2 4	0.5 LB A/A 0.0078 LB A/A 0.5 LB A/A 2.0 % W/V	1.0 PT/A 0.5 FL OZ/A 1.0 PT/A 2.0 % W/W	EPP A EPP A EPP A EPP A			99	0	45	68	67	67
5	Glyphomax Plus Aim 2, 4-D LV4 AMS	4 2 4	0.5 LB A/A 0.0078 LB A/A 0.125 LB A/A 2.0 % W/V	1.0 PT/A 0.5 FL OZ/A 0.25 PT/A 2.0 % W/W	EPP A EPP A EPP A EPP A			99	0	47	70	70	67
6	Boundary Aim COC	7.8 2	2.2 LB A/A 0.0078 LB A/A 1.0 % V/V	2.25 PT/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A			99	0	96	83	87	78
7	Domain Aim COC	60 2	0.525 LB A/A 0.0078 LB A/A 1.0 % V/V	14.0 OZ/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A			99	0	85	73	78	70
8	FirstRate Authority Aim COC	84 75 2	0.0315 LB A/A 0.25 LB A/A 0.0078 LB A/A 1.0 % V/V	0.6 OZ/A 5.33 OZ/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A EPP A			99	7	95	99	99	99
9	Glyphomax Plus 2, 4-D LV4 AMS	4 4	0.75 LB A/A 1.0 LB A/A 2.0 % W/V	1.5 PT/A 2.0 PT/A 2.0 % W/W	EPP A EPP A EPP A			99	0	48	83	77	67
LSD (P=.05)								0.0	3.3	9.8	25.4	12.3	11.8

Iowa State University

Weed Code							POLPY
Rating Data Type							CONTROL
Rating Unit							percent
Rating Date							05-25-02
Trt-Eval Interval							22 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Stg	Appl Code
1	Untreated						0
2	Glyphomax Plus AMS	4	0.75 LB A/A 2.0 % W/V	1.5 PT/A 2.0 % W/W	EPP A EPP A		72
3	Glyphomax Plus Aim AMS	4 2	0.75 LB A/A 0.0078 LB A/A 2.0 % W/V	1.5 PT/A 0.5 FL OZ/A 2.0 % W/W	EPP A EPP A EPP A		73
4	Glyphomax Plus Aim 2, 4-D LV4 AMS	4 2 4	0.5 LB A/A 0.0078 LB A/A 0.5 LB A/A 2.0 % W/V	1.0 PT/A 0.5 FL OZ/A 1.0 PT/A 2.0 % W/W	EPP A EPP A EPP A EPP A		72
5	Glyphomax Plus Aim 2, 4-D LV4 AMS	4 2 4	0.5 LB A/A 0.0078 LB A/A 0.125 LB A/A 2.0 % W/V	1.0 PT/A 0.5 FL OZ/A 0.25 PT/A 2.0 % W/W	EPP A EPP A EPP A EPP A		63
6	Boundary Aim COC	7.8 2	2.2 LB A/A 0.0078 LB A/A 1.0 % V/V	2.25 PT/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A		98
7	Domain Aim COC	60 2	0.525 LB A/A 0.0078 LB A/A 1.0 % V/V	14.0 OZ/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A		96
8	FirstRate Authority Aim COC	84 75 2	0.0315 LB A/A 0.25 LB A/A 0.0078 LB A/A 1.0 % V/V	0.6 OZ/A 5.33 OZ/A 0.5 FL OZ/A 1.0 % V/V	EPP A EPP A EPP A EPP A		99
9	Glyphomax Plus 2, 4-D LV4 AMS	4 4	0.75 LB A/A 1.0 LB A/A 2.0 % W/V	1.5 PT/A 2.0 PT/A 2.0 % W/W	EPP A EPP A EPP A		65
LSD (P=.05)							21.9

Iowa State University

Postemergence applications of Engame, PCC 1216 and Roundup UltraMAX with various surfactants for weed control on fallow ground, Ames, IA, 2002.

Trial ID: AFS 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

Trial Status: ONE-YEAR/FINAL

Initiation Date: 06-28-02

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate weed control in fallow ground from postemergence applications of Engame, PCC 1216, and Roundup UltraMAX with various surfactants.

Conclusions: Weed control was observed in terms of percent chlorosis and necrosis on July 3. There were few significant differences between treatments for chlorosis with yellow foxtail, velvetleaf, and common waterhemp. Postemergence (POST) applied Engame plus COC and PCC 1216 plus LI 700 caused significantly less chlorosis of common cocklebur. There were more significant treatment differences for chlorosis of common lambsquarters; Roundup UltraMAX demonstrated significantly higher levels.

Necrosis on July 3 was minimal for velvetleaf and common waterhemp with most treatments. PCC 1216 alone, and PCC 1216 plus LI 700 demonstrated relatively low necrosis on yellow foxtail. Engame, alone, and Engame plus COC or MSO caused little common cocklebur necrosis. Roundup UltraMAX and PCC 1216 plus L-77 demonstrated generally higher necrosis of common cocklebur and common lambsquarters. Further, PCC 1216 plus X-77, Liberate, or Activator 90 and Engame alone or with LI 700, Activator 90, or Liberate showed higher necrosis levels for common lambsquarters.

Evaluations on July 8, 15, 23, and 29 revealed that all treatments provided good to excellent yellow foxtail control, with exception to slightly less control by PCC 1216 applied with L-77 and PCC 1216, alone. Engame treatments generally provided better control of velvetleaf than Roundup UltraMAX and PCC 1216 treatments, unless applied alone or with COC. Engame treatments also provided better control of common waterhemp than PCC 1216 treatments. Engame demonstrated significantly higher control of common lambsquarters in comparison to PCC 1216 when both were applied without additives. Common cocklebur control was good for all treatments. COC provided generally the least weed control of all the additives. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETLU	FOXTAIL, YELLOW	SETARIA LUTESCENS (WEIG. EX STUNTZ) HUBB
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Crop residue on the soil surface was 10 to 15%.

Iowa State University

SOIL DESCRIPTION

% OM: 3.8 Texture: CLAY LOAM
 pH: 6.85 Soil Name: CANISTEO, CLARION, HAYDEN-STORDEN
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	06-28-02
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	86 F
% Relative Humidity:	64
Wind Velocity, Unit:	6 MPH
Soil Temp., Unit:	82 F
Soil Moisture:	DRY
% Cloud Cover:	15

CROP STAGE AT EACH APPLICATION

	A
	-
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETLU 4-10 LEAF
Stage Scale:	3-9 IN
Density, Unit:	0-10 FT2
Weed 2 Code, Stage:	ABUTH 2-8 LEAF
Stage Scale:	1-9 IN
Density, Unit:	0-3 FT2
Weed 3 Code, Stage:	AMATA 4-NUM
Stage Scale:	7-12 IN
Density, Unit:	0-3 FT2
Weed 4 Code, Stage:	CHEAL 4-NUM
Stage Scale:	2-9 IN
Density, Unit:	0-5 FT2
Weed 5 Code, Stage:	XANST COTYL-NUM
Stage Scale:	4-13 IN
Density, Unit:	0-6 FT2

Iowa State University

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

Postemergence applications of Engame, PCC 1216 and Roundup UltraMAX with various surfactants for weed control on fallow ground, Ames, IA, 2002.

Trial ID: AFS 1
Location: Ames

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							SETLU	ABUTH	AMATA	CHEAL	
Rating Data Type							CHLOROSIS	CHLOROSIS	CHLOROSIS	CHLOROSIS	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-03-02	07-03-02	07-03-02	07-03-02	
Trt-Eval Interval							5 DA-A	5 DA-A	5 DA-A	5 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	
2	Roundup UltraMAX	3.7	0.375 LB AE/A	13.0 FL OZ/A	13.0 FL OZ/A	POST A		82	43	27	
3	ENGAME	1.3	0.375 LB AE/A	37.0 FL OZ/A	37.0 FL OZ/A	POST A		82	43	27	
4	PCC 1216	4	0.375 LB AE/A	12.0 FL OZ/A	12.0 FL OZ/A	POST A		80	43	30	
5	ENGAME LI 700	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A		83	37	30	
6	ENGAME Activator 90	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A		82	37	20	
7	ENGAME Liberate	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A		82	40	30	
8	ENGAME COC	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A		80	40	33	
9	ENGAME MSO	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A		83	40	30	
10	ENGAME L-77	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A		83	43	30	
11	PCC 1216 LI 700	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		73	40	27	
12	PCC 1216 Activator 90	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		80	40	23	
13	PCC 1216 Liberate	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		73	40	23	
14	PCC 1216 COC	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A		77	40	30	
15	PCC 1216 MSO	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A		80	43	23	
16	PCC 1216 L-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		80	43	30	
17	PCC 1216 X-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		73	43	30	
LSD (P=.05)								9.5	10.6	8.5	14.6

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CHLOROSIS percent 07-03-02 5 DA-A	SETLU NECROSIS percent 07-03-02 5 DA-A	ABUTH NECROSIS percent 07-03-02 5 DA-A	AMATA NECROSIS percent 07-03-02 5 DA-A	CHEAL NECROSIS percent 07-03-02 5 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	0
2	Roundup UltraMAX	3.7	0.375 LB AE/A	13.0 FL OZ/A	13.0 FL OZ/A	POST A		77	40	3	10	77
3	ENGAME	1.3	0.375 LB AE/A	37.0 FL OZ/A	37.0 FL OZ/A	POST A		67	47	17	10	63
4	PCC 1216	4	0.375 LB AE/A	12.0 FL OZ/A	12.0 FL OZ/A	POST A		73	30	7	7	43
5	ENGAME LI 700	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A		73	40	10	7	63
6	ENGAME Activator 90	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A		68	43	10	10	70
7	ENGAME Liberate	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A		73	50	10	7	73
8	ENGAME COC	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A		50	37	10	7	43
9	ENGAME MSO	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A		63	43	7	13	50
10	ENGAME L-77	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A		70	53	10	3	67
11	PCC 1216 LI 700	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		57	27	10	10	50
12	PCC 1216 Activator 90	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		73	37	7	7	63
13	PCC 1216 Liberate	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		70	37	7	7	63
14	PCC 1216 COC	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A		73	33	10	3	43
15	PCC 1216 MSO	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A		67	50	7	10	43
16	PCC 1216 L-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		72	40	10	13	60
17	PCC 1216 X-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A		63	33	10	10	63
LSD (P=.05)								19.3	13.0	7.4	9.2	15.6

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST NECROSIS percent 07-03-02 5 DA-A	SETLU CONTROL percent 07-08-02 10 DA-A	ABUTH CONTROL percent 07-08-02 10 DA-A	AMATA CONTROL percent 07-08-02 10 DA-A	CHEAL CONTROL percent 07-08-02 10 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX	3.7	0.375 LB AE/A	13.0 FL OZ/A	13.0 FL OZ/A	POST A	A	70	87	33	33	
3	ENGAME	1.3	0.375 LB AE/A	37.0 FL OZ/A	37.0 FL OZ/A	POST A	A	43	85	73	37	
4	PCC 1216	4	0.375 LB AE/A	12.0 FL OZ/A	12.0 FL OZ/A	POST A	A	63	72	30	37	
5	ENGAME LI 700	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	57	90	65	40	
6	ENGAME Activator 90	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	60	88	83	33	
7	ENGAME Liberate	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	65	87	72	33	
8	ENGAME COC	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A	A	33	80	57	33	
9	ENGAME MSO	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A	A	40	87	77	40	
10	ENGAME L-77	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	50	92	75	30	
11	PCC 1216 LI 700	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	47	72	40	27	
12	PCC 1216 Activator 90	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	60	77	37	27	
13	PCC 1216 Liberate	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	63	77	30	33	
14	PCC 1216 COC	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A	A	57	77	30	30	
15	PCC 1216 MSO	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A	A	50	75	40	30	
16	PCC 1216 L-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	70	70	43	37	
17	PCC 1216 X-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	50	83	37	27	
LSD (P=.05)								22.0	12.2	21.8	11.2	16.3

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 07-08-02 10 DA-A	SETLU CONTROL percent 07-15-02 17 DA-A	ABUTH CONTROL percent 07-15-02 17 DA-A	AMATA CONTROL percent 07-15-02 17 DA-A	CHEAL CONTROL percent 07-15-02 17 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX	3.7	0.375 LB AE/A	13.0 FL OZ/A		POST A		87	92	50	67	
3	ENGAME	1.3	0.375 LB AE/A	37.0 FL OZ/A		POST A		82	93	80	83	
4	PCC 1216	4	0.375 LB AE/A	12.0 FL OZ/A		POST A		88	82	37	62	
5	ENGAME LI 700	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V		POST A POST A		85	93	80	75	
6	ENGAME Activator 90	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V		POST A POST A		87	93	87	65	
7	ENGAME Liberate	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V		POST A POST A		82	93	83	65	
8	ENGAME COC	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V		POST A POST A		72	88	68	57	
9	ENGAME MSO	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V		POST A POST A		75	93	85	82	
10	ENGAME L-77	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V		POST A POST A		82	93	85	72	
11	PCC 1216 LI 700	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A		87	83	57	57	
12	PCC 1216 Activator 90	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A		80	92	53	50	
13	PCC 1216 Liberate	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A		82	88	50	50	
14	PCC 1216 COC	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V		POST A POST A		85	83	40	40	
15	PCC 1216 MSO	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V		POST A POST A		83	85	57	47	
16	PCC 1216 L-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A		83	82	50	53	
17	PCC 1216 X-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A		82	87	50	43	
LSD (P=.05)								8.7	7.8	23.6	18.5	16.2

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 07-15-02 17 DA-A	SETLU CONTROL percent 07-23-02 25 DA-A	ABUTH CONTROL percent 07-23-02 25 DA-A	AMATA CONTROL percent 07-23-02 25 DA-A	CHEAL CONTROL percent 07-23-02 25 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX	3.7	0.375 LB AE/A	13.0 FL OZ/A	13.0 FL OZ/A	POST A	A	96	92	40	70	
3	ENGAME	1.3	0.375 LB AE/A	37.0 FL OZ/A	37.0 FL OZ/A	POST A	A	90	95	80	88	
4	PCC 1216	4	0.375 LB AE/A	12.0 FL OZ/A	12.0 FL OZ/A	POST A	A	90	85	37	60	
5	ENGAME LI 700	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	93	82	72	
6	ENGAME Activator 90	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	93	85	65	
7	ENGAME Liberate	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	93	83	62	
8	ENGAME COC	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A	A	80	93	70	57	
9	ENGAME MSO	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A	A	87	95	82	82	
10	ENGAME L-77	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	92	95	90	75	
11	PCC 1216 LI 700	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	92	90	53	55	
12	PCC 1216 Activator 90	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	87	90	57	48	
13	PCC 1216 Liberate	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	93	50	50	
14	PCC 1216 COC	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A	A	87	90	40	40	
15	PCC 1216 MSO	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A	A	88	90	53	47	
16	PCC 1216 L-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	92	87	43	52	
17	PCC 1216 X-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	92	50	43	
LSD (P=.05)								7.6	6.2	24.0	17.8	18.9

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							XANST CONTROL percent 07-23-02 25 DA-A	SETLU CONTROL percent 07-29-02 31 DA-A	ABUTH CONTROL percent 07-29-02 31 DA-A	AMATA CONTROL percent 07-29-02 31 DA-A	CHEAL CONTROL percent 07-29-02 31 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	Roundup UltraMAX	3.7	0.375 LB AE/A	13.0 FL OZ/A	13.0 FL OZ/A	POST A	A	96	93	37	70	
3	ENGAME	1.3	0.375 LB AE/A	37.0 FL OZ/A	37.0 FL OZ/A	POST A	A	95	92	73	83	
4	PCC 1216	4	0.375 LB AE/A	12.0 FL OZ/A	12.0 FL OZ/A	POST A	A	92	83	37	60	
5	ENGAME LI 700	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	93	93	78	65	
6	ENGAME Activator 90	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	93	93	83	63	
7	ENGAME Liberate	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	95	78	65	
8	ENGAME COC	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A	A	83	93	68	58	
9	ENGAME MSO	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V	POST A POST A	A	87	96	82	77	
10	ENGAME L-77	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V	POST A POST A	A	88	95	87	75	
11	PCC 1216 LI 700	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	90	53	62	
12	PCC 1216 Activator 90	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	87	92	53	48	
13	PCC 1216 Liberate	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	93	47	47	
14	PCC 1216 COC	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A	A	87	90	40	40	
15	PCC 1216 MSO	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V	POST A POST A	A	88	92	53	40	
16	PCC 1216 L-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	90	88	43	48	
17	PCC 1216 X-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V	POST A POST A	A	88	93	50	40	
LSD (P=.05)								7.0	5.1	23.5	21.2	20.0

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Weed Code							XANST
Rating Data Type							CONTROL
Rating Unit							percent
Rating Date							07-29-02
Trt-Eval Interval							31 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Stg	Appl Code
1	Untreated						0
2	Roundup UltraMAX	3.7	0.375 LB AE/A	13.0 FL OZ/A		POST A	96
3	ENGAME	1.3	0.375 LB AE/A	37.0 FL OZ/A		POST A	88
4	PCC 1216	4	0.375 LB AE/A	12.0 FL OZ/A		POST A	90
5	ENGAME LI 700	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V		POST A POST A	92
6	ENGAME Activator 90	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V		POST A POST A	92
7	ENGAME Liberate	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V		POST A POST A	88
8	ENGAME COC	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V		POST A POST A	82
9	ENGAME MSO	1.3	0.375 LB AE/A 0.5 % V/V	37.0 FL OZ/A 0.5 % V/V		POST A POST A	85
10	ENGAME L-77	1.3	0.375 LB AE/A 0.25 % V/V	37.0 FL OZ/A 0.25 % V/V		POST A POST A	85
11	PCC 1216 LI 700	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A	90
12	PCC 1216 Activator 90	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A	88
13	PCC 1216 Liberate	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A	88
14	PCC 1216 COC	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V		POST A POST A	87
15	PCC 1216 MSO	4	0.375 LB AE/A 0.5 % V/V	12.0 FL OZ/A 0.5 % V/V		POST A POST A	88
16	PCC 1216 L-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A	90
17	PCC 1216 X-77	4	0.375 LB AE/A 0.25 % V/V	12.0 FL OZ/A 0.25 % V/V		POST A POST A	87
LSD (P=.05)							7.7

Iowa State University

Balance Pro, Atrazine, and Define applied preemergence and Liberty and Option applied postemergence for woolly cupgrass control in corn, Lewis, IA, 2002.

Trial ID: LCC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Lewis

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Lewis Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 51544-9603

Initiation Date: 05-15-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate crop phytotoxicity and woolly cupgrass control in corn from preemergence applied Balance Pro, Atrazine, and Define and postemergence applied Liberty and Option.

Conclusions: No significant differences in corn stand between treatments were observed. Balance Pro plus Atrazine applied preemergence (PRE) resulted in 10% corn injury when observed on June 5. Several other PRE treatments also caused corn injury. All PRE applied treatments except Define provided excellent woolly cupgrass, velvetleaf, common waterhemp, and common lambsquarters control on June 5. Define applied at 0.675 lb/A provided 80 and 85% control of woolly cupgrass and common waterhemp, respectively. No rate of PRE Define gave acceptable common waterhemp control.

Most early postemergence (EPOST) and postemergence (POST) applied treatments caused corn injury when observed on June 25. Injury was also apparent with a number of the treatments on July 16. Balance Pro plus Atrazine applied PRE and followed by Liberty plus Atrazine MPOST provided excellent woolly cupgrass, velvetleaf, common waterhemp, and common lambsquarters control on July 16. Other treatments providing good to excellent overall weed control on July 16 included PRE Balance Pro plus Define, PRE Define plus MPOST Liberty plus Atrazine, and PRE Balance Pro plus MPOST Buctril plus Atrazine. Remaining treatments gave poor to good woolly cupgrass control, good to excellent velvetleaf control, poor to excellent common waterhemp control, and excellent common lambsquarters control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	ERBVI	CUPGRASS, WOOLLY	ERIOCHLOA VILLOSA (THUNB.) KUNTH
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: ZEAMD CORN, FIELD

Variety: PIONEER 33P69 LL

Planting Date: 05-15-02 Planting Method: DIRECT DRILLED

Rate: 30000 SEEDS/A Depth: 2.0 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

Iowa State University

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Crop residue on the soil surface was 11% at planting.

SOIL DESCRIPTION

% OM: 5.0 Texture: SILTY CLAY LOAM
 pH: 6.0 Soil Name: MARSHALL, EXIRA
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-16-02	06-13-02	06-18-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	61 F	75 F	73 F
% Relative Humidity:	73	40	71
Wind Velocity, Unit:	12 MPH	13 MPH	16 MPH
Soil Temp., Unit:	61 F	70 F	72 F
Soil Moisture:	DRY	MOIST	DRY
% Cloud Cover:	100	60	50

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V4-V5	ZEAMD V6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	9 IN	10 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	ERBVI -	ERBVI 3-4 LEAF	ERBVI 2-4LF, 6T
Stage Scale:	-	0.5-5 IN	2-7 IN
Density, Unit:	- -	0-10 FT2	50 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 3-5 LEAF	ABUTH 3-6 LEAF
Stage Scale:	-	2-4 IN	3-8 IN
Density, Unit:	- -	0-5 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 2-8 LEAF	AMATA 4-NUM
Stage Scale:	-	0.5-4 IN	4-8 IN
Density, Unit:	- -	0-5 FT2	25 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 2-8 LEAF	CHEAL 4-NUM
Stage Scale:	-	0.5-4 IN	2-8 IN
Density, Unit:	- -	0-5 FT2	0-1 FT2

Iowa State University

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	HAND BOOM	HAND BOOM
Operating Pressure:	30	25	25
Nozzle Type:	11002	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Balance Pro, Atrazine, and Define applied preemergence and Liberty and Option applied postemergence for woolly cupgrass control in corn, Lewis, IA, 2002.

Trial ID: LCC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Lewis

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ERBVI	ABUTH	AMATA	ZEAMD
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit								17.5ft	percent	percent	percent	percent	percent
Rating Date								07-02-02	06-05-02	06-05-02	06-05-02	06-05-02	06-25-02
Trt-Eval Interval								47 DA-A	20 DA-A	20 DA-A	20 DA-A	20 DA-A	7 DA-C
Trt No.	Treatment Name	Form Conc	Rate	Product	Product Rate	Grow Unit	Appl Stg	Code					
1	Untreated								27	0	0	0	0
2	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE	A		27	2	90	99	99
	Atrazine	90	0.5	LB A/A	0.556 LB/A	PRE	A						
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	MPOST	C						
	Atrazine	90	0.5	LB A/A	0.556 LB/A	MPOST	C						
	AMS		3.0	LB/A	3.0 LB/A	MPOST	C						
3	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE	A		25	5	87	99	98
	Atrazine	90	0.5	LB A/A	0.556 LB/A	PRE	A						
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C						
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C						
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C						
4	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	PRE	A		28	3	92	99	99
	Define	60	0.45	LB A/A	12.0 OZ/A	PRE	A						
5	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	PRE	A		27	10	90	99	99
	Atrazine	90	1.5	LB A/A	1.67 LB/A	PRE	A						
6	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	PRE	A		26	0	90	98	99
	Define	60	0.487	LB A/A	13.0 OZ/A	PRE	A						
	Atrazine	90	1.5	LB A/A	1.67 LB/A	PRE	A						
7	Define	60	0.375	LB A/A	10.0 OZ/A	PRE	A		26	0	50	53	88
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	MPOST	C						
	Atrazine	90	1.0	LB A/A	1.11 LB/A	MPOST	C						
	AMS		3.0	LB/A	3.0 LB/A	MPOST	C						
8	Define	60	0.375	LB A/A	10.0 OZ/A	PRE	A		28	0	57	47	83
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C						
	Distinct	70	0.131	LB A/A	3.0 OZ/A	MPOST	C						
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C						
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C						
9	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	EPOST	B		27	0	0	0	0
	Atrazine	90	1.5	LB A/A	1.67 LB/A	EPOST	B						
	AMS		3.0	LB/A	3.0 LB/A	EPOST	B						
10	Define	60	0.675	LB A/A	18.0 OZ/A	PRE	A		28	0	80	47	85
	Buctril + Atrazine	3	0.75	LB A/A	2.0 PT/A	MPOST	C						
11	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	PRE	A		26	7	88	99	99
	Buctril + Atrazine	3	0.75	LB A/A	2.0 PT/A	MPOST	C						
12	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C		24	0	0	0	0
	Distinct	70	0.131	LB A/A	3.0 OZ/A	MPOST	C						
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C						
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C						
LSD (P=.05)								3.0	6.4	17.7	8.5	11.6	6.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ERBVI CONTROL percent 06-25-02 12 DA-B	ABUTH CONTROL percent 06-25-02 12 DA-B	AMATA CONTROL percent 06-25-02 12 DA-B	CHEAL CONTROL percent 06-25-02 12 DA-B	ZEAMD PHYGEN percent 07-16-02 28 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE A			99	99	99	99	0
	Atrazine	90	0.5	LB A/A	0.556 LB/A	PRE A							
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	MPOST C							
	Atrazine	90	0.5	LB A/A	0.556 LB/A	MPOST C							
	AMS		3.0	LB/A	3.0 LB/A	MPOST C							
3	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE A			90	99	93	99	7
	Atrazine	90	0.5	LB A/A	0.556 LB/A	PRE A							
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST C							
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST C							
	MSO		1.5	PT/A	1.5 PT/A	MPOST C							
4	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	PRE A			93	99	95	99	0
	Define	60	0.45	LB A/A	12.0 OZ/A	PRE A							
5	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	PRE A			88	99	99	99	0
	Atrazine	90	1.5	LB A/A	1.67 LB/A	PRE A							
6	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	PRE A			83	99	99	99	0
	Define	60	0.487	LB A/A	13.0 OZ/A	PRE A							
	Atrazine	90	1.5	LB A/A	1.67 LB/A	PRE A							
7	Define	60	0.375	LB A/A	10.0 OZ/A	PRE A			96	99	95	99	8
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	MPOST C							
	Atrazine	90	1.0	LB A/A	1.11 LB/A	MPOST C							
	AMS		3.0	LB/A	3.0 LB/A	MPOST C							
8	Define	60	0.375	LB A/A	10.0 OZ/A	PRE A			75	88	88	90	8
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST C							
	Distinct	70	0.131	LB A/A	3.0 OZ/A	MPOST C							
	MSO		1.5	PT/A	1.5 PT/A	MPOST C							
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST C							
9	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	EPOST B			99	99	92	99	7
	Atrazine	90	1.5	LB A/A	1.67 LB/A	EPOST B							
	AMS		3.0	LB/A	3.0 LB/A	EPOST B							
10	Define	60	0.675	LB A/A	18.0 OZ/A	PRE A			72	88	82	99	0
	Buctril + Atrazine	3	0.75	LB A/A	2.0 PT/A	MPOST C							
11	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	PRE A			92	99	96	99	0
	Buctril + Atrazine	3	0.75	LB A/A	2.0 PT/A	MPOST C							
12	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST C			65	88	87	88	10
	Distinct	70	0.131	LB A/A	3.0 OZ/A	MPOST C							
	MSO		1.5	PT/A	1.5 PT/A	MPOST C							
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST C							
LSD (P=.05)									14.5	2.4	5.4	2.7	6.6

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ERBVI CONTROL percent 07-16-02 28 DA-C	ABUTH CONTROL percent 07-16-02 28 DA-C	AMATA CONTROL percent 07-16-02 28 DA-C	CHEAL CONTROL percent 07-16-02 28 DA-C	ZEAMD PHYGEN percent 08-01-02 44 DA-C		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE	A		99	99	99	99	0
	Atrazine	90	0.5	LB A/A	0.556 LB/A	PRE	A						
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	MPOST	C						
	Atrazine	90	0.5	LB A/A	0.556 LB/A	MPOST	C						
	AMS		3.0	LB/A	3.0 LB/A	MPOST	C						
3	Balance Pro	4	0.047	LB A/A	1.5 FL OZ/A	PRE	A		87	99	82	99	0
	Atrazine	90	0.5	LB A/A	0.556 LB/A	PRE	A						
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C						
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C						
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C						
4	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	PRE	A		91	99	95	99	0
	Define	60	0.45	LB A/A	12.0 OZ/A	PRE	A						
5	Balance Pro	4	0.094	LB A/A	3.0 FL OZ/A	PRE	A		82	99	99	99	0
	Atrazine	90	1.5	LB A/A	1.67 LB/A	PRE	A						
6	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	PRE	A		80	99	96	99	0
	Define	60	0.487	LB A/A	13.0 OZ/A	PRE	A						
	Atrazine	90	1.5	LB A/A	1.67 LB/A	PRE	A						
7	Define	60	0.375	LB A/A	10.0 OZ/A	PRE	A		98	99	96	99	2
	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	MPOST	C						
	Atrazine	90	1.0	LB A/A	1.11 LB/A	MPOST	C						
	AMS		3.0	LB/A	3.0 LB/A	MPOST	C						
8	Define	60	0.375	LB A/A	10.0 OZ/A	PRE	A		73	95	92	95	3
	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C						
	Distinct	70	0.131	LB A/A	3.0 OZ/A	MPOST	C						
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C						
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C						
9	Liberty	1.67	0.365	LB A/A	28.0 FL OZ/A	EPOST	B		92	98	83	99	0
	Atrazine	90	1.5	LB A/A	1.67 LB/A	EPOST	B						
	AMS		3.0	LB/A	3.0 LB/A	EPOST	B						
10	Define	60	0.675	LB A/A	18.0 OZ/A	PRE	A		68	88	70	99	0
	Buctril + Atrazine	3	0.75	LB A/A	2.0 PT/A	MPOST	C						
11	Balance Pro	4	0.07	LB A/A	2.25 FL OZ/A	PRE	A		85	99	96	99	0
	Buctril + Atrazine	3	0.75	LB A/A	2.0 PT/A	MPOST	C						
12	Option	70	0.0656	LB A/A	1.5 OZ/A	MPOST	C		63	93	87	95	5
	Distinct	70	0.131	LB A/A	3.0 OZ/A	MPOST	C						
	MSO		1.5	PT/A	1.5 PT/A	MPOST	C						
	28% UAN		2.0	QT/A	2.0 QT/A	MPOST	C						
LSD (P=.05)									13.3	4.1	8.6	0.0	1.9

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ERBVI CONTROL percent 08-01-02 44 DA-C	ABUTH CONTROL percent 08-01-02 44 DA-C	AMATA CONTROL percent 08-01-02 44 DA-C	CHEAL CONTROL percent 08-01-02 44 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Rate Unit	Product Rate	Product Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	98	99	99	99
	Atrazine	90	0.5	LB A/A	0.556	LB/A	PRE	A				
	Liberty	1.67	0.365	LB A/A	28.0	FL OZ/A	MPOST	C				
	Atrazine	90	0.5	LB A/A	0.556	LB/A	MPOST	C				
	AMS		3.0	LB/A	3.0	LB/A	MPOST	C				
3	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	85	99	82	99
	Atrazine	90	0.5	LB A/A	0.556	LB/A	PRE	A				
	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST	C				
	28% UAN		2.0	QT/A	2.0	QT/A	MPOST	C				
	MSO		1.5	PT/A	1.5	PT/A	MPOST	C				
4	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	PRE	A	90	99	93	99
	Define	60	0.45	LB A/A	12.0	OZ/A	PRE	A				
5	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	PRE	A	80	99	98	99
	Atrazine	90	1.5	LB A/A	1.67	LB/A	PRE	A				
6	Balance Pro	4	0.07	LB A/A	2.25	FL OZ/A	PRE	A	75	99	96	99
	Define	60	0.487	LB A/A	13.0	OZ/A	PRE	A				
	Atrazine	90	1.5	LB A/A	1.67	LB/A	PRE	A				
7	Define	60	0.375	LB A/A	10.0	OZ/A	PRE	A	95	99	95	99
	Liberty	1.67	0.365	LB A/A	28.0	FL OZ/A	MPOST	C				
	Atrazine	90	1.0	LB A/A	1.11	LB/A	MPOST	C				
	AMS		3.0	LB/A	3.0	LB/A	MPOST	C				
8	Define	60	0.375	LB A/A	10.0	OZ/A	PRE	A	65	95	90	95
	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST	C				
	Distinct	70	0.131	LB A/A	3.0	OZ/A	MPOST	C				
	MSO		1.5	PT/A	1.5	PT/A	MPOST	C				
	28% UAN		2.0	QT/A	2.0	QT/A	MPOST	C				
9	Liberty	1.67	0.365	LB A/A	28.0	FL OZ/A	EPOST	B	87	98	82	99
	Atrazine	90	1.5	LB A/A	1.67	LB/A	EPOST	B				
	AMS		3.0	LB/A	3.0	LB/A	EPOST	B				
10	Define	60	0.675	LB A/A	18.0	OZ/A	PRE	A	63	85	70	99
	Buctril + Atrazine	3	0.75	LB A/A	2.0	PT/A	MPOST	C				
11	Balance Pro	4	0.07	LB A/A	2.25	FL OZ/A	PRE	A	85	99	95	99
	Buctril + Atrazine	3	0.75	LB A/A	2.0	PT/A	MPOST	C				
12	Option	70	0.0656	LB A/A	1.5	OZ/A	MPOST	C	48	93	87	95
	Distinct	70	0.131	LB A/A	3.0	OZ/A	MPOST	C				
	MSO		1.5	PT/A	1.5	PT/A	MPOST	C				
	28% UAN		2.0	QT/A	2.0	QT/A	MPOST	C				
LSD (P=.05)							15.7	6.7	7.3	0.0		

Iowa State University

Lightning, Distinct, Marksman, Callisto and Atrazine applied postemergence for woolly cupgrass control in corn, Lewis, IA, 2002.

Trial ID: LCC 2

Study Dir.: Owen/Lux/Franzenburg

Location: Lewis

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Lewis Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 51544-9603 Initiation Date: 05-16-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate various preemergence and postemergence herbicide combinations for crop phytotoxicity and woolly cupgrass control in corn.

Conclusions: Significant differences in corn stand between treatments were noted on July 2, but were likely due to variable seeding rate and not the herbicides. Abnormally dry conditions occurred during the growing season that potentially affected the overall performance of the herbicides. Corn injury from most early postemergence (EPOST) and mid-postemergence (MPOST) applied herbicide treatment timings was significant when observed on June 18 and 25. When noted on July 2, injury had persisted with a number of the treatments. Woolly cupgrass control was 82 to 93% on July 2, where EPOST and MPOST applications followed a PRE treatment. When MPOST applied Lightning plus Distinct did not follow a PRE, it was ineffective and achieved only 77% control. All treatments provided excellent velvetleaf, common waterhemp, and common lambsquarters control on July 2. When observed on July 16 and August 1, many treatments no longer provided adequate control of woolly cupgrass. Velvetleaf and common lambsquarters control remained excellent on July 16 and August 1 with all treatments. However, several treatments no longer provided acceptable common waterhemp control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	ERBVI	CUPGRASS, WOOLLY	ERIOCHLOA VILLOSA (THUNB.) KUNTH
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8464 IT

Planting Date: 05-15-02 Planting Method: DIRECT DRILLED

Rate: 30000 SEEDS/A Depth: 2.0 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Crop residue on the soil surface was 11% at planting.

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SOIL DESCRIPTION

% OM: 5.0 Texture: SILTY CLAY LOAM
 pH: 6.0 Soil Name: MARSHALL, EXIRA
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-16-02	06-13-02	06-18-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	61 F	75 F	81 F
% Relative Humidity:	73	40	71
Wind Velocity, Unit:	12 MPH	15 MPH	15 MPH
Soil Temp., Unit:	61 F	70 F	72 F
Soil Moisture:	DRY	DAMP	DRY
% Cloud Cover:	100	60	45

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V4	ZEAMD V4-V5
Stage Scale:	-	DESC	DESC
Height, Unit:	-	9.5 IN	10 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	ERBVI -	ERBVI 4-6 LEAF	ERBVI 2-4 LEAF
Stage Scale:	-	3-5 IN	2-7 IN
Density, Unit:	- -	0-30 FT2	75 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 3-5 LEAF	ABUTH -
Stage Scale:	-	1-4 IN	-
Density, Unit:	- -	0-10 FT2	- -
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS	AMATA NUMEROUS
Stage Scale:	-	1-6 IN	2-8 IN
Density, Unit:	- -	0-15 FT2	0-40 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS	CHEAL NUMEROUS
Stage Scale:	-	0.5-3	4-6 IN
Density, Unit:	- -	0-5 FT2	0-2 FT2

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	TERRA PRO	HAND BOOM
Operating Pressure:	30	30	25
Nozzle Type:	11002	11002	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

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**Lightning, Distinct, Marksman, Callisto and Atrazine applied postemergence for
woolly cupgrass control in corn, Lewis, IA, 2002.**

Trial ID: LCC 2

Study Dir.: Owen/Lux/Franzenburg

Location: Lewis

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	ZEAMD	ERBVI
Rating Data Type								STAND	PHYGEN	PHYGEN	PHYGEN	CONTROL
Rating Unit								17.5ft	percent	percent	percent	percent
Rating Date								07-02-02	06-05-02	06-18-02	06-25-02	06-25-02
Trt-Eval Interval								47 DA-A	20 DA-A	5 DA-B	40 DA-A	40 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							27	0	0	0	0
2	Lightning	70	0.056 LB A/A	1.28 OZ/A		MPOST	C	26	0	0	10	73
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		MPOST	C					
3	Atrazine	90	1.0 LB A/A	1.11 LB/A		PRE	A	29	0	13	7	90
	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B					
	Distinct	70	0.175 LB A/A	4.0 OZ/A		EPOST	B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
4	G-Max Lite	5	0.94 LB A/A	1.5 PT/A		PRE	A	29	0	0	3	82
	Lightning	70	0.056 LB A/A	1.28 OZ/A		MPOST	C					
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		MPOST	C					
5	Outlook	6	0.56 LB A/A	12.0 OZ/A		PRE	A	27	0	8	3	92
	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B					
	Distinct	70	0.175 LB A/A	4.0 OZ/A		EPOST	B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
6	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B	30	0	13	10	87
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		EPOST	B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
7	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B	28	0	13	7	90
	Callisto	4	0.0625 LB A/A	2.0 OZ/A		EPOST	B					
	Atrazine	90	0.25 LB A/A	0.278 LB/A		EPOST	B					
	COC		1.0 % V/V	1.0 % V/V		EPOST	B					
	AMS		12.0 LB A/100 GAL	12.0 LB/100 GAL		EPOST	B					
8	Guardsman Max	5	2.5 LB A/A	4.0 PT/A		PRE	A	31	0	0	0	83
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		5.0 LB/100 GAL	5.0 LB/100 GAL		MPOST	C					
9	Surpass	6.4	1.0 LB A/A	1.25 PT/A		PRE	A	29	0	18	2	92
	Steadfast	75	0.035 LB A/A	0.75 OZ/A		EPOST	B					
	Marksman	3.2	0.4 LB A/A	1.0 PT/A		EPOST	B					
	COC		1.0 % V/V	1.0 % V/V		EPOST	B					
	AMS		2.0 LB/A	2.0 LB/A		EPOST	B					
10	Degree	3.8	0.71 LB A/A	1.5 PT/A		PRE	A	30	0	20	2	88
	Steadfast	75	0.035 LB A/A	0.75 OZ/A		EPOST	B					
	Distinct	70	0.0875 LB A/A	2.0 OZ/A		EPOST	B					
	COC		1.0 % V/V	1.0 % V/V		EPOST	B					
	AMS		2.0 LB/A	2.0 LB/A		EPOST	B					
LSD (P=.05)								3.8	0.0	4.5	4.9	5.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ABUTH CONTROL percent 06-25-02 40 DA-A	AMATA CONTROL percent 06-25-02 40 DA-A	CHEAL CONTROL percent 06-25-02 40 DA-A	ZEAMD PHYGEN percent 07-02-02 47 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C	93	85	95	10
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C				
3	Atrazine	90	1.0	LB A/A	1.11	LB/A	PRE	A	96	90	99	7
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
4	G-Max Lite	5	0.94	LB A/A	1.5	PT/A	PRE	A	95	90	99	3
	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C				
5	Outlook	6	0.56	LB A/A	12.0	OZ/A	PRE	A	96	96	96	0
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
6	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	98	87	99	10
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
7	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	99	99	5
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B				
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		12.0	LB A/100 GAL	12.0	LB/100 GAL	EPOST	B				
8	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	93	96	99	0
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C				
9	Surpass	6.4	1.0	LB A/A	1.25	PT/A	PRE	A	86	96	98	0
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Marksman	3.2	0.4	LB A/A	1.0	PT/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
10	Degree	3.8	0.71	LB A/A	1.5	PT/A	PRE	A	96	96	96	0
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
LSD (P=.05)									8.5	3.9	4.1	3.6

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ERBVI CONTROL percent 07-02-02 47 DA-A	ABUTH CONTROL percent 07-02-02 47 DA-A	AMATA CONTROL percent 07-02-02 47 DA-A	CHEAL CONTROL percent 07-02-02 47 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C	77	96	88	98
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C				
3	Atrazine	90	1.0	LB A/A	1.11	LB/A	PRE	A	92	99	95	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
4	G-Max Lite	5	0.94	LB A/A	1.5	PT/A	PRE	A	82	99	95	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C				
5	Outlook	6	0.56	LB A/A	12.0	OZ/A	PRE	A	93	98	95	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
6	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	90	99	90	99
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
7	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	90	99	99	99
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B				
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		12.0	LB A/100 GAL	12.0	LB/100 GAL	EPOST	B				
8	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	83	98	96	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C				
9	Surpass	6.4	1.0	LB A/A	1.25	PT/A	PRE	A	92	93	98	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Marksman	3.2	0.4	LB A/A	1.0	PT/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
10	Degree	3.8	0.71	LB A/A	1.5	PT/A	PRE	A	88	99	96	98
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
LSD (P=.05)									4.4	4.5	3.9	1.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ZEAMD PHYGEN percent 07-16-02 33 DA-B	ERBVI CONTROL percent 07-16-02 33 DA-B	ABUTH CONTROL percent 07-16-02 33 DA-B	AMATA CONTROL percent 07-16-02 33 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C	10	67	99	87
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C				
3	Atrazine	90	1.0	LB A/A	1.11	LB/A	PRE	A	2	90	99	95
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
4	G-Max Lite	5	0.94	LB A/A	1.5	PT/A	PRE	A	2	77	99	95
	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C				
5	Outlook	6	0.56	LB A/A	12.0	OZ/A	PRE	A	0	90	98	95
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
6	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	8	85	99	82
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
7	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	3	85	99	99
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B				
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		12.0	LB A/100 GAL	12.0	LB/100 GAL	EPOST	B				
8	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	0	77	99	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C				
9	Surpass	6.4	1.0	LB A/A	1.25	PT/A	PRE	A	0	87	93	96
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Marksman	3.2	0.4	LB A/A	1.0	PT/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
10	Degree	3.8	0.71	LB A/A	1.5	PT/A	PRE	A	0	87	98	96
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
LSD (P=.05)									4.1	7.1	4.2	3.0

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Weed Code								CHEAL	ZEAMD	ERBVI	ABUTH	
Rating Data Type								CONTROL	PHYGEN	CONTROL	CONTROL	
Rating Unit								percent	percent	percent	percent	
Rating Date								07-16-02	08-01-02	08-01-02	08-01-02	
Trt-Eval Interval								33 DA-B	49 DA-B	49 DA-B	49 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C	99	7	60	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C				
3	Atrazine	90	1.0	LB A/A	1.11	LB/A	PRE	A	99	0	85	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
4	G-Max Lite	5	0.94	LB A/A	1.5	PT/A	PRE	A	99	2	73	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C				
5	Outlook	6	0.56	LB A/A	12.0	OZ/A	PRE	A	99	0	83	98
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B				
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
6	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	3	80	99
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B				
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B				
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B				
7	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	2	80	99
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B				
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		12.0	LB A/100 GAL	12.0	LB/100 GAL	EPOST	B				
8	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	99	0	65	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C				
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C				
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C				
9	Surpass	6.4	1.0	LB A/A	1.25	PT/A	PRE	A	99	0	80	93
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Marksman	3.2	0.4	LB A/A	1.0	PT/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
10	Degree	3.8	0.71	LB A/A	1.5	PT/A	PRE	A	99	0	80	96
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
LSD (P=.05)								0.0	3.3	10.3	4.3	

Iowa State University

Weed Code								AMATA	CHEAL	
Rating Data Type								CONTROL	CONTROL	
Rating Unit								percent	percent	
Rating Date								08-01-02	08-01-02	
Trt-Eval Interval								49 DA-B	49 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated								0	0
2	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C	80	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C		
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C		
3	Atrazine	90	1.0	LB A/A	1.11	LB/A	PRE	A	92	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B		
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B		
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B		
4	G-Max Lite	5	0.94	LB A/A	1.5	PT/A	PRE	A	95	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C		
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C		
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C		
5	Outlook	6	0.56	LB A/A	12.0	OZ/A	PRE	A	92	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B		
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B		
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B		
6	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	70	99
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B		
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B		
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B		
7	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	99
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B		
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B		
	COC		1.0	% V/V	1.0	% V/V	EPOST	B		
	AMS		12.0	LB A/100 GAL	12.0	LB/100 GAL	EPOST	B		
8	Guardsman Max	5	2.5	LB A/A	4.0	PT/A	PRE	A	98	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C		
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C		
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C		
9	Surpass	6.4	1.0	LB A/A	1.25	PT/A	PRE	A	96	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B		
	Marksman	3.2	0.4	LB A/A	1.0	PT/A	EPOST	B		
	COC		1.0	% V/V	1.0	% V/V	EPOST	B		
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B		
10	Degree	3.8	0.71	LB A/A	1.5	PT/A	PRE	A	95	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B		
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B		
	COC		1.0	% V/V	1.0	% V/V	EPOST	B		
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B		
LSD (P=.05)								6.4	0.0	

Iowa State University

Evaluation of Axiom, Define, Epic and other preemergence applied herbicide applications for woolly cupgrass control in corn, Lewis, IA, 2002.

Trial ID: LCC 3

Study Dir.: Owen/Lux/Franzenburg

Location: Lewis

Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg

Affiliation: Iowa State University

Postal Code: 50011

Investigator: Owen/Hartzler/Pringnitz

Affiliation: Iowa State University

Postal Code: 50011

TRIAL LOCATION

City: Lewis Trial Status: ONE-YEAR/FINAL

State/Prov.: IA

Postal Code: 51544-9603 Initiation Date: 05-15-02

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate preemergence applied Axiom, Define, Epic and others for crop phytotoxicity and woolly cupgrass control in corn.

Conclusions: No significant differences in corn stand between treatments were observed. Preemergence (PRE) applied Epic, Epic plus Atrazine, and Define plus Epic caused 10% or more corn injury when observed on June 5, twenty days after application. All treatments provided good to excellent woolly cupgrass, velvetleaf, and common waterhemp control when observed on June 18 and July 16, except Axiom plus Atrazine and Define plus Atrazine. These treatments failed to adequately control woolly cupgrass and velvetleaf. (Dept. of Agronomy, Iowa State University, Ames)

Crop 1: ZEAMD CORN, FIELD Variety: GOLDEN HARVEST H-9095Bt

Planting Date: 05-15-02 Planting Method: DIRECT DRILLED

Rate: 30000 SEEDS/A Depth: 2.0 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Crop residue on the soil surface was 11% at planting.

SOIL DESCRIPTION

% OM: 5.0 Texture: SILTY CLAY LOAM

pH: 6.0 Soil Name: MARSHALL, EXIRA

Fert. Level: EXCELLENT

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-16-02
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	60 F
% Relative Humidity:	73
Wind Velocity, Unit:	12 MPH
Soil Temp., Unit:	61 F
Soil Moisture:	DRY
% Cloud Cover:	100

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD -
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
	-
Stage Scale:	-
Density, Unit:	- -

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

Evaluation of Axiom, Define, Epic and other preemergence applied herbicide applications for woolly cupgrass control in corn, Lewis, IA, 2002.

Trial ID: LCC 3

Study Dir.: Owen/Lux/Franzenburg

Location: Lewis

Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD STAND	ZEAMD PHYGEN	ZEAMD PHYGEN	ERBVI CONTROL	ABUTH CONTROL	AMATA CONTROL	
Rating Data Type							17.5ft	percent	percent	percent	percent	percent	
Rating Unit							07-02-02	06-05-02	06-18-02	06-18-02	06-18-02	06-18-02	
Rating Date							47 DA-A	20 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	
Trt-Eval Interval													
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Stg						
1	Untreated							28	0	0	0	0	
2	Axiom	68	0.978	LB A/A	23.0	OZ/A	PRE	28	0	0	75	50	
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE					87	
3	Define	60	0.788	LB A/A	21.0	OZ/A	PRE	26	0	0	75	38	
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE					85	
4	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE	22	10	0	93	99	
5	Epic	58	0.471	LB A/A	13.0	OZ/A	PRE	28	13	0	93	99	
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE					96	
6	USA2001	71.5	0.67	LB A/A	15.0	OZ/A	PRE	30	5	0	93	95	
7	USA2001	71.5	0.581	LB A/A	13.0	OZ/A	PRE	29	3	0	88	96	
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE					95	
8	Define	60	0.413	LB A/A	11.0	OZ/A	PRE	29	10	0	92	87	
	Epic	58	0.326	LB A/A	9.0	OZ/A	PRE					99	
9	G-Max Lite	5	2.5	LB A/A	4.0	PT/A	PRE	28	3	0	93	98	
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE					99	
10	FulTime	4	3.75	LB A/A	3.75	QT/A	PRE	30	7	0	96	93	
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE					99	
11	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	29	2	0	94	89	
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE					99	
12	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	PRE	28	0	0	93	94	
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE					96	
LSD (P=.05)								5.9	5.4	0.0	9.4	14.9	5.4

Iowa State University

Weed Code							ERBVI	ABUTH	AMATA
Rating Data Type							PHYGEN	CONTROL	CONTROL
Rating Unit							percent	percent	percent
Rating Date							07-16-02	07-16-02	07-16-02
Trt-Eval Interval							61 DA-A	61 DA-A	61 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Appl Stg	Code	
1	Untreated								0
2	Axiom	68	0.978	LB A/A	23.0	OZ/A	PRE	A	58
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE	A	50
3	Define	60	0.788	LB A/A	21.0	OZ/A	PRE	A	65
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE	A	38
4	Epic	58	0.544	LB A/A	15.0	OZ/A	PRE	A	88
5	Epic	58	0.471	LB A/A	13.0	OZ/A	PRE	A	88
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE	A	99
6	USA2001	71.5	0.67	LB A/A	15.0	OZ/A	PRE	A	90
7	USA2001	71.5	0.581	LB A/A	13.0	OZ/A	PRE	A	80
	Atrazine	90	0.9	LB A/A	1.0	LB/A	PRE	A	95
8	Define	60	0.413	LB A/A	11.0	OZ/A	PRE	A	85
	Epic	58	0.326	LB A/A	9.0	OZ/A	PRE	A	85
9	G-Max Lite	5	2.5	LB A/A	4.0	PT/A	PRE	A	88
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	98
10	FulTime	4	3.75	LB A/A	3.75	QT/A	PRE	A	93
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	93
11	Degree Xtra	4.04	3.74	LB A/A	3.7	QT/A	PRE	A	90
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	89
12	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	PRE	A	90
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	94
LSD (P=.05)							14.2	15.1	7.1

Iowa State University

Evaluation of postemergence applied Steadfast, Distinct, Callisto, Atrazine and Option for woolly cupgrass control in corn, Lewis, IA, 2002.

Trial ID: LCC 4
Location: Lewis

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Lewis Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Initiation Date: 05-15-02

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate crop phytotoxicity and woolly cupgrass control in corn from postemergence applied Steadfast, Distinct, Callisto, Atrazine and Option.

Conclusions: Significant differences in corn stand between treatments were observed. These were attributable to poor emergence and stand establishment rather than to herbicide treatment. Little to no injury was observed on June 5 from preemergence (PRE) applied treatments. On June 18, 25, and July 2, early postemergence (EPOST) and mid-postemergence (MPOST) applied treatments resulted in corn injury. Significant injury was caused by EPOST Steadfast plus Distinct, Steadfast plus Callisto plus Atrazine, and Option plus Atrazine. Woolly cupgrass control was 85 to 98% on June 25 where PRE treatments were followed by EPOST treatments. MPOST treatments not benefiting from a PRE treatment provided 65 to 72% woolly cupgrass control. Similar trends in woolly cupgrass control were observed on July 2 and 16. Velvetleaf and common lambsquarters control was good to excellent with all treatment combinations and application methods when observed on June 25, July 2 and 16. Common waterhemp control with most treatments was good to excellent on these observation dates. An exception was MPOST Steadfast plus Atrazine. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	ERBVI	CUPGRASS, WOOLLY	ERIOCHLOA VILLOSA (THUNB.) KUNTH
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
4.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.

Crop 1: ZEAMD CORN, FIELD Variety: GOLDEN HARVEST H-9095Bt
Planting Date: 05-15-02 Planting Method: DIRECT DRILLED
Rate: 30000 Seeds/A Depth: 2.0 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Crop residue on the soil surface was 11% at planting.

Iowa State University

SOIL DESCRIPTION

% OM: 5.0 Texture: SILTY CLAY LOAM
 pH: 6.0 Soil Name: MARSHALL, EXIRA
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-16-02	06-13-02	06-18-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	61 F	75 F	81 F
% Relative Humidity:	73	62	71
Wind Velocity, Unit:	12 MPH	18 MPH	16 MPH
Soil Temp., Unit:	61 F	70 F	72 F
Soil Moisture:	DRY	DAMP	DRY
% Cloud Cover:	100	60	45

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V3-5	ZEAMD V6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	6 IN	9 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	ERBVI -	ERBVI 2-4 LEAF	ERBVI 2-4 LEAF
Stage Scale:	-	0.5-5 IN	0.5-7 IN
Density, Unit:	- -	0-25 FT2	60 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 3 LEAF	ABUTH 3-5 LEAF
Stage Scale:	-	0.5-6 IN	0.5-8 IN
Density, Unit:	- -	0-10 FT2	0-3 FT2
Weed 3 Code, Stage:	CHEAL -	CHEAL 4-10 LEAF	CHEAL NUMEROUS
Stage Scale:	-	0.5-5 IN	0.5-6 IN
Density, Unit:	- -	0-5 FT2	0-2 FT
Weed 4 Code, Stage:	AMATA -	AMATA 4-10 LEAF	AMATA NUMEROUS
Stage Scale:	-	0.5-5 IN	0.5-8 IN
Density, Unit:	- -	0-15 FT2	0-50 FT2

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO		HANDBOOM
Operating Pressure:	30		25
Nozzle Type:	11002		11003
Spray Volume, Unit:	20 GPA		20 GPA

Iowa State University

Evaluation of postemergence applied Steadfast, Distinct, Callisto, Atrazine and Option for woolly cupgrass control in corn, Lewis, IA, 2002.

Trial ID: LCC 4
Location: Lewis

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	ZEAMD	ERBVI	ABUTH
Rating Data Type								STAND	PHYGEN	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit								17.5ft	percent	percent	percent	percent	percent
Rating Date								07-02-02	06-05-02	06-18-02	06-25-02	06-25-02	06-25-02
Trt-Eval Interval								47 DA-A	20 DA-A	5 DA-B	12 DA-B	12 DA-B	12 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated							30	0	0	0	0	0
2	Bicep II Magnum	5.5	1.15	0.84	LB A/A	QT/A	PRE A	32	0	20	2	85	93
	Steadfast	75	0.035	0.75	LB A/A	OZ/A	EPOST B						
	Distinct	70	0.0875	2.0	LB A/A	OZ/A	EPOST B						
	COC		1.0	1.0	% V/V	% V/V	EPOST B						
	AMS		2.0	2.0	LB/A	LB/A	EPOST B						
3	Bicep II Magnum	5.5	1.15	0.84	LB A/A	QT/A	PRE A	29	0	13	2	87	99
	Steadfast	75	0.035	0.75	LB A/A	OZ/A	EPOST B						
	Callisto	4	0.047	1.5	LB A/A	FL OZ/A	EPOST B						
	Atrazine	90	0.75	13.3	LB A/A	OZ/A	EPOST B						
	COC		1.0	1.0	% V/V	% V/V	EPOST B						
	AMS		2.0	2.0	LB/A	LB/A	EPOST B						
4	Dual II Magnum	7.64	0.66	0.69	LB A/A	PT/A	PRE A	29	0	15	0	88	99
	Steadfast	75	0.035	0.75	LB A/A	OZ/A	EPOST B						
	Callisto	4	0.047	1.5	LB A/A	FL OZ/A	EPOST B						
	Atrazine	90	0.75	13.3	LB A/A	OZ/A	EPOST B						
	COC		1.0	1.0	% V/V	% V/V	EPOST B						
	AMS		2.0	2.0	LB/A	LB/A	EPOST B						
5	Balance Pro	4	0.047	1.5	LB A/A	FL OZ/A	PRE A	29	3	15	0	98	99
	Option	70	0.0656	1.5	LB A/A	OZ/A	EPOST B						
	Atrazine	90	1.0	17.8	LB A/A	OZ/A	EPOST B						
	MSO		1.0	1.0	% V/V	% V/V	EPOST B						
	AMS		2.0	2.0	LB/A	LB/A	EPOST B						
6	Steadfast	75	0.035	0.75	LB A/A	OZ/A	MPOST C	30	0	0	7	72	90
	Atrazine	90	0.75	13.3	LB A/A	OZ/A	MPOST C						
	COC		1.0	1.0	% V/V	% V/V	MPOST C						
	AMS		2.0	2.0	LB/A	LB/A	MPOST C						
7	Steadfast	75	0.035	0.75	LB A/A	OZ/A	MPOST C	30	0	0	5	65	87
	Callisto	4	0.047	1.5	LB A/A	FL OZ/A	MPOST C						
	COC		1.0	1.0	% V/V	% V/V	MPOST C						
	AMS		2.0	2.0	LB/A	LB/A	MPOST C						
8	Steadfast	75	0.035	0.75	LB A/A	OZ/A	MPOST C	31	0	0	5	68	95
	Callisto	4	0.047	1.5	LB A/A	FL OZ/A	MPOST C						
	Atrazine	90	0.25	4.44	LB A/A	OZ/A	MPOST C						
	COC		1.0	1.0	% V/V	% V/V	MPOST C						
	AMS		2.0	2.0	LB/A	LB/A	MPOST C						
9	Steadfast	75	0.035	0.75	LB A/A	OZ/A	MPOST C	31	0	0	5	70	91
	Callisto	4	0.0625	2.0	LB A/A	FL OZ/A	MPOST C						
	COC		1.0	1.0	% V/V	% V/V	MPOST C						
	AMS		2.0	2.0	LB/A	LB/A	MPOST C						
10	Steadfast	75	0.035	0.75	LB A/A	OZ/A	MPOST C	30	0	0	8	70	98
	Callisto	4	0.0625	2.0	LB A/A	FL OZ/A	MPOST C						
	Atrazine	90	0.25	4.44	LB A/A	OZ/A	MPOST C						
	COC		1.0	1.0	% V/V	% V/V	MPOST C						
	AMS		2.0	2.0	LB/A	LB/A	MPOST C						

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ZEAMD STAND 17.5ft 07-02-02 47 DA-A	ZEAMD PHYGEN percent 06-05-02 20 DA-A	ZEAMD PHYGEN percent 06-18-02 5 DA-B	ZEAMD PHYGEN percent 06-25-02 12 DA-B	ERBVI CONTROL percent 06-25-02 12 DA-B	ABUTH CONTROL percent 06-25-02 12 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code						
11	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST C		29	0	0	8	73	98
	Callisto	4	0.0625	LB A/A	2.0 FL OZ/A	MPOST C							
	Atrazine	90	0.75	LB A/A	13.3 OZ/A	MPOST C							
	COC		1.0	% V/V	1.0 % V/V	MPOST C							
	AMS		2.0	LB/A	2.0 LB/A	MPOST C							
12	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST C		28	0	0	5	65	93
	Callisto	4	0.094	LB A/A	3.0 FL OZ/A	MPOST C							
	COC		1.0	% V/V	1.0 % V/V	MPOST C							
	AMS		2.0	LB/A	2.0 LB/A	MPOST C							
13	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST C		30	0	0	5	70	96
	Callisto	4	0.094	LB A/A	3.0 FL OZ/A	MPOST C							
	Atrazine	90	0.25	LB A/A	4.44 OZ/A	MPOST C							
	COC		1.0	% V/V	1.0 % V/V	MPOST C							
	AMS		2.0	LB/A	2.0 LB/A	MPOST C							
14	Steadfast	75	0.035	LB A/A	0.75 OZ/A	MPOST C		30	0	0	5	72	96
	Callisto	4	0.094	LB A/A	3.0 FL OZ/A	MPOST C							
	Atrazine	90	0.75	LB A/A	13.3 OZ/A	MPOST C							
	COC		1.0	% V/V	1.0 % V/V	MPOST C							
	AMS		2.0	LB/A	2.0 LB/A	MPOST C							
LSD (P=.05)								2.5	1.3	1.3	3.0	5.8	4.4

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-25-02 12 DA-B	CHEAL CONTROL percent 06-25-02 12 DA-B	ZEAMD PHYGEN percent 07-02-02 19 DA-B	ERBVI CONTROL percent 07-02-02 19 DA-B	ABUTH CONTROL percent 07-02-02 19 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	96	99	0	85	93
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
3	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	99	2	87	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
4	Dual II Magnum	7.64	0.66	LB A/A	0.69	PT/A	PRE	A	99	99	0	87	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
5	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	99	0	98	99
	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B					
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
6	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	72	92	7	77	95
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					
7	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	73	85	5	73	98
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					
8	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	90	99	7	75	99
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST	C					
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					
9	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	73	82	5	75	98
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					
10	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	92	98	8	75	99
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C					
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					

Iowa State University

Weed Code							AMATA	CHEAL	ZEAMD	ERBVI	ABUTH		
Rating Data Type							CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL		
Rating Unit							percent	percent	percent	percent	percent		
Rating Date							06-25-02	06-25-02	07-02-02	07-02-02	07-02-02		
Trt-Eval Interval							12 DA-B	12 DA-B	19 DA-B	19 DA-B	19 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
11	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	90	96	8	78	99
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					
12	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	77	93	5	75	96
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					
13	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	83	95	5	75	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	C					
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST	C	85	98	5	75	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST	C					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST	C					
	COC		1.0	% V/V	1.0	% V/V	MPOST	C					
	AMS		2.0	LB/A	2.0	LB/A	MPOST	C					
LSD (P=.05)							13.0	6.7	3.7	5.1	4.1		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 07-02-02 19 DA-B	CHEAL CONTROL percent 07-02-02 19 DA-B	ZEAMD PHYGEN percent 07-16-02 33 DA-B	ERBVI CONTROL percent 07-16-02 33 DA-B	ABUTH CONTROL percent 07-16-02 33 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE A	98	99	0	87
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST B				
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST B				
	COC		1.0	% V/V	1.0	% V/V	EPOST B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST B				
3	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE A	99	99	0	82
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST B				
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST B				
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST B				
	COC		1.0	% V/V	1.0	% V/V	EPOST B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST B				
4	Dual II Magnum	7.64	0.66	LB A/A	0.69	PT/A	PRE A	99	99	0	85
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST B				
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST B				
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST B				
	COC		1.0	% V/V	1.0	% V/V	EPOST B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST B				
5	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE A	99	99	0	93
	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST B				
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST B				
	MSO		1.0	% V/V	1.0	% V/V	EPOST B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST B				
6	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C	72	99	0	83
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST C				
	COC		1.0	% V/V	1.0	% V/V	MPOST C				
	AMS		2.0	LB/A	2.0	LB/A	MPOST C				
7	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C	88	98	0	68
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST C				
	COC		1.0	% V/V	1.0	% V/V	MPOST C				
	AMS		2.0	LB/A	2.0	LB/A	MPOST C				
8	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C	96	99	0	77
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	MPOST C				
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST C				
	COC		1.0	% V/V	1.0	% V/V	MPOST C				
	AMS		2.0	LB/A	2.0	LB/A	MPOST C				
9	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C	83	93	0	78
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST C				
	COC		1.0	% V/V	1.0	% V/V	MPOST C				
	AMS		2.0	LB/A	2.0	LB/A	MPOST C				
10	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C	95	98	0	78
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST C				
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST C				
	COC		1.0	% V/V	1.0	% V/V	MPOST C				
	AMS		2.0	LB/A	2.0	LB/A	MPOST C				

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 07-02-02 19 DA-B	CHEAL CONTROL percent 07-02-02 19 DA-B	ZEAMD PHYGEN percent 07-16-02 33 DA-B	ERBVI CONTROL percent 07-16-02 33 DA-B	ABUTH CONTROL percent 07-16-02 33 DA-B			
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
11	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C		96	99	0	80	99	
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST C							
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST C							
	COC		1.0	% V/V	1.0	% V/V	MPOST C							
	AMS		2.0	LB/A	2.0	LB/A	MPOST C							
12	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C		80	96	0	78	98	
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST C							
	COC		1.0	% V/V	1.0	% V/V	MPOST C							
	AMS		2.0	LB/A	2.0	LB/A	MPOST C							
13	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C		91	99	0	77	99	
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST C							
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST C							
	COC		1.0	% V/V	1.0	% V/V	MPOST C							
	AMS		2.0	LB/A	2.0	LB/A	MPOST C							
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C		93	99	0	82	99	
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST C							
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST C							
	COC		1.0	% V/V	1.0	% V/V	MPOST C							
	AMS		2.0	LB/A	2.0	LB/A	MPOST C							
LSD (P=.05)														
							13.3	2.1	0.0	7.9	5.1			

Iowa State University

Weed Code							AMATA	CHEAL		
Rating Data Type							CONTROL	CONTROL		
Rating Unit							percent	percent		
Rating Date							07-16-02	07-16-02		
Trt-Eval Interval							33 DA-B	33 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code		
11	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C		94	99
	Callisto	4	0.0625	LB A/A	2.0	FL OZ/A	MPOST C			
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST C			
	COC		1.0	% V/V	1.0	% V/V	MPOST C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST C			
12	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C		80	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST C			
	COC		1.0	% V/V	1.0	% V/V	MPOST C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST C			
13	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C		66	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST C			
	Atrazine	90	0.25	LB A/A	4.44	OZ/A	MPOST C			
	COC		1.0	% V/V	1.0	% V/V	MPOST C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST C			
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	MPOST C		93	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	MPOST C			
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	MPOST C			
	COC		1.0	% V/V	1.0	% V/V	MPOST C			
	AMS		2.0	LB/A	2.0	LB/A	MPOST C			
LSD (P=.05)							29.3	1.0		

Iowa State University

Evaluation of Phoenix for crop tolerance and woolly cupgrass control in soybean when tank-mixed with Select, Lewis, IA, 2002.

Trial ID: LSC 1
Location: Lewis

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Lewis Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 51544-4044 Initiation Date: 05-18-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate postemergence applied Phoenix in tank-mixture with Select for crop phytotoxicity and woolly cupgrass control in soybean.

Conclusions: Woolly cupgrass pressure was heavy, and both crop and weeds were drought stressed at application timing. Significant soybean injury was observed on June 25 from postemergence (POST) applied Phoenix, FirstRate, Flexstar, Raptor and Pursuit. Most treatments provided only marginal control of woolly cupgrass when observed on June 25, July 2, and 16. Control of velvetleaf with the treatments was good to excellent overall on June 25, July 2, and 16. Common lambsquarters control was generally unacceptable with the treatments. An exception was Raptor plus Pursuit plus Cobra, which provided 90% control when observed on July 16. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	ERBVI	CUPGRASS, WOOLLY	ERIOCHLOA VILLOSA (THUNB.) KUNTH
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: GLXMA SOYBEAN Variety: PIONEER 93B01
Planting Date: 05-18-02 Planting Method: DIRECT DRILLED
Rate: 9 SEEDS/FT Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Crop residue on the soil surface was 40 to 50% at planting.

SOIL DESCRIPTION

% OM: 5.0 Texture: SILTY CLAY LOAM
pH: 6.0 Soil Name: MARSHALL, EXIRA
Fert. Level: EXCELLENT

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APPLICATION DESCRIPTION

	A
Application Date:	06-18-02
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	81 F
% Relative Humidity:	71
Wind Velocity, Unit:	16 MPH
Soil Temp., Unit:	72 F
Soil Moisture:	DRY
% Cloud Cover:	50

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V3
Stage Scale:	DESC
Height, Unit:	7 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	ERBVI 2-4 L, 3T
Stage Scale:	4-6 IN
Density, Unit:	5-10 FT ²
Weed 2 Code, Stage:	ABUTH 3-7 LEAF
Stage Scale:	4-6 IN
Density, Unit:	5-6 FT ²
Weed 3 Code, Stage:	CHEAL 2-4 LEAF
Stage Scale:	2-6 IN
Density, Unit:	0-2 FT ²

APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND BOOM
Operating Pressure:	25
Nozzle Type:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Evaluation of Phoenix for crop tolerance and woolly cupgrass control in soybean when tank-mixed with Select, Lewis, IA, 2002.

Trial ID: LSC 1
Location: Lewis

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	ERBVI	ABUTH	CHEAL	GLXMA
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-25-02	06-25-02	06-25-02	06-25-02	07-02-02
Trt-Eval Interval							7 DA-A	7 DA-A	7 DA-A	7 DA-A	14 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A	FL OZ/A	POST A	A	18	73	85	55
	Select	2	0.094 LB A/A	6.0 FL OZ/A	FL OZ/A	POST A	A				12
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST A	A				
3	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A	FL OZ/A	POST A	A	18	68	92	57
	Select	2	0.094 LB A/A	6.0 FL OZ/A	FL OZ/A	POST A	A				10
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST A	A				
4	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A	FL OZ/A	POST A	A	18	75	87	63
	Select	2	0.094 LB A/A	6.0 FL OZ/A	FL OZ/A	POST A	A				12
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST A	A				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST A	A				
5	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A	FL OZ/A	POST A	A	18	75	88	55
	Select	2	0.094 LB A/A	6.0 FL OZ/A	FL OZ/A	POST A	A				12
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST A	A				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST A	A				
6	Phoenix	2	0.125 LB A/A	8.0 FL OZ/A	FL OZ/A	POST A	A	17	72	90	60
	Select	2	0.125 LB A/A	8.0 FL OZ/A	FL OZ/A	POST A	A				8
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	OZ/A	POST A	A				
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST A	A				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST A	A				
7	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A	FL OZ/A	POST A	A	18	68	88	57
	Select	2	0.125 LB A/A	8.0 FL OZ/A	FL OZ/A	POST A	A				10
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	OZ/A	POST A	A				
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST A	A				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST A	A				
8	Flexstar	1.88	0.19 LB A/A	0.81 PT/A	PT/A	POST A	A	23	80	95	85
	Fusion	2.56	0.16 LB A/A	8.0 FL OZ/A	FL OZ/A	POST A	A				12
	COC		1.0 PT/A	1.0 PT/A	PT/A	POST A	A				
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST A	A				
9	Select	2	0.094 LB A/A	6.0 FL OZ/A	FL OZ/A	POST A	A	5	53	5	2
	COC		1.0 % V/V	1.0 % V/V	% V/V	POST A	A				2
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST A	A				
10	Raptor	1	0.0312 LB A/A	4.0 FL OZ/A	FL OZ/A	POST A	A	28	78	90	82
	Pursuit	2	0.0312 LB A/A	2.0 FL OZ/A	FL OZ/A	POST A	A				18
	Cobra	2	0.0312 LB A/A	2.0 OZ/A	OZ/A	POST A	A				
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST A	A				
	COC		0.5 % V/V	0.5 % V/V	% V/V	POST A	A				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST A	A				
LSD (P=.05)							5.5	6.0	12.8	11.3	7.1

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ERBVI CONTROL percent 07-02-02 14 DA-A	ABUTH CONTROL percent 07-02-02 14 DA-A	CHEAL CONTROL percent 07-02-02 14 DA-A	GLXMA PHYGEN percent 07-16-02 28 DA-A	ERBVI CONTROL percent 07-16-02 28 DA-A		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	A	78	87	53	7	63
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	A					
	NIS		0.125	% V/V	0.125	% V/V	POST	A					
3	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	A	75	92	55	7	62
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	A					
	NIS		0.25	% V/V	0.25	% V/V	POST	A					
4	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	A	77	87	60	7	72
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	A					
	NIS		0.125	% V/V	0.125	% V/V	POST	A					
	AMS		2.5	LB/A	2.5	LB/A	POST	A					
5	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	A	78	92	55	8	65
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	A					
	NIS		0.25	% V/V	0.25	% V/V	POST	A					
	AMS		2.5	LB/A	2.5	LB/A	POST	A					
6	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST	A	78	93	58	3	77
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST	A					
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	A					
	NIS		0.25	% V/V	0.25	% V/V	POST	A					
	AMS		2.5	LB/A	2.5	LB/A	POST	A					
7	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST	A	75	88	57	5	72
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST	A					
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	A					
	NIS		0.125	% V/V	0.125	% V/V	POST	A					
	AMS		2.5	LB/A	2.5	LB/A	POST	A					
8	Flexstar	1.88	0.19	LB A/A	0.81	PT/A	POST	A	83	95	70	8	68
	Fusion	2.56	0.16	LB A/A	8.0	FL OZ/A	POST	A					
	COC		1.0	PT/A	1.0	PT/A	POST	A					
	AMS		2.5	LB/A	2.5	LB/A	POST	A					
9	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST	A	75	0	0	2	77
	COC		1.0	% V/V	1.0	% V/V	POST	A					
	AMS		2.5	LB/A	2.5	LB/A	POST	A					
10	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	POST	A	83	94	82	10	67
	Pursuit	2	0.0312	LB A/A	2.0	FL OZ/A	POST	A					
	Cobra	2	0.0312	LB A/A	2.0	OZ/A	POST	A					
	NIS		0.25	% V/V	0.25	% V/V	POST	A					
	COC		0.5	% V/V	0.5	% V/V	POST	A					
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	A					
LSD (P=.05)							5.7	12.8	11.1	5.9	12.0		

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Weed Code							ABUTH	CHEAL
Rating Data Type							CONTROL	CONTROL
Rating Unit							percent	percent
Rating Date							07-16-02	07-16-02
Trt-Eval Interval							28 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code
1	Untreated						0	0
2	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST A	80
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST A	50
	NIS		0.125	% V/V	0.125	% V/V	POST A	
3	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST A	93
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST A	53
	NIS		0.25	% V/V	0.25	% V/V	POST A	
4	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST A	85
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST A	53
	NIS		0.125	% V/V	0.125	% V/V	POST A	
	AMS		2.5	LB/A	2.5	LB/A	POST A	
5	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST A	92
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST A	48
	NIS		0.25	% V/V	0.25	% V/V	POST A	
	AMS		2.5	LB/A	2.5	LB/A	POST A	
6	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST A	95
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST A	47
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST A	
	NIS		0.25	% V/V	0.25	% V/V	POST A	
	AMS		2.5	LB/A	2.5	LB/A	POST A	
7	Phoenix	2	0.15	LB A/A	9.6	FL OZ/A	POST A	93
	Select	2	0.125	LB A/A	8.0	FL OZ/A	POST A	45
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST A	
	NIS		0.125	% V/V	0.125	% V/V	POST A	
	AMS		2.5	LB/A	2.5	LB/A	POST A	
8	Flexstar	1.88	0.19	LB A/A	0.81	PT/A	POST A	90
	Fusion	2.56	0.16	LB A/A	8.0	FL OZ/A	POST A	70
	COC		1.0	PT/A	1.0	PT/A	POST A	
	AMS		2.5	LB/A	2.5	LB/A	POST A	
9	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST A	0
	COC		1.0	% V/V	1.0	% V/V	POST A	0
	AMS		2.5	LB/A	2.5	LB/A	POST A	
10	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	POST A	98
	Pursuit	2	0.0312	LB A/A	2.0	FL OZ/A	POST A	90
	Cobra	2	0.0312	LB A/A	2.0	OZ/A	POST A	
	NIS		0.25	% V/V	0.25	% V/V	POST A	
	COC		0.5	% V/V	0.5	% V/V	POST A	
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	POST A	
LSD (P=.05)							18.7	15.7

Iowa State University

Evaluation of crop phytotoxicity and weed control in corn from preemergence and postemergence applied herbicides, Nashua, IA, 2002.

Trial ID: NCC 1
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Nashua Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50658-9270 Initiation Date: 05-14-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate various preemergence and postemergence applied herbicides for crop phytotoxicity and weed control in corn.

Conclusions: There were no significant differences in corn stand between herbicide treatments when observed on July 11. No crop injury was observed from soil applied preemergence (PRE) treatments prior to early postemergence (EPOST) and postemergence (POST) application timings. Excellent giant foxtail and broadleaf weed control was noted on June 7 from PRE applied USA 2001, Epic and Balance Pro. Other PRE treatments achieved excellent giant foxtail control. Broadleaf weed control with these PRE treatments was dependent upon the selectivity of the herbicide. Nearly all provided excellent control of the light infestation of Pennsylvania smartweed, poor to fair velvetleaf control, and fair to good common lambsquarters control. Significant corn injury resulting from EPOST and POST applied treatments was observed on June 24, thirteen and two days after application, respectively. On July 11, injury persisted with several EPOST and POST treatments. Excellent broad-spectrum weed control was observed on August 23 from EPOST and POST applied treatments following a PRE and EPOST treatments not following a PRE. POST applied Steadfast plus Atrazine that did not follow a PRE treatment provided fair giant foxtail control and poor velvetleaf control on August 23. All treatments resulted in significantly higher corn yields than the untreated control, except the POST applied Steadfast plus Atrazine treatment. Yields ranged from 177 to 218 bu/A, with significant differences determined between several treatments. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.

Crop 1: ZEAMD CORN, FIELD Variety: DEKALB DKC 53-32

Planting Date: 05-14-02 Planting Method: DIRECT DRILLED

Rate: 33674 SEEDS/A Depth: 2.0 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 150 lb/A actual N applied as anhydrous ammonia. Crop residue on the soil surface was 10% at planting.

SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
 pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-14-02	06-11-02	06-22-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	POST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	68 F	81 F	90 F
% Relative Humidity:	53	85	71
Wind Velocity, Unit:	2 MPH	3 MPH	6 MPH
Soil Temp., Unit:	55 F	72 F	75 F
Soil Moisture:	DRY	MOIST	DRY
% Cloud Cover:	5	100	15

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V4	ZEAMD V6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	5 IN	13 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF	SETFA 2-4 LEAF
Stage Scale:	-	0.5-4 IN	1-4 IN
Density, Unit:	- -	0-5 FT2	0-10 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYLEDON	ABUTH COTYL-4LF
Stage Scale:	-	0.5-1 IN	0.5-3 IN
Density, Unit:	- -	0-1 FT2	0-2 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -	AMATA 2-8 LEAF
Stage Scale:	-	-	2-5 IN
Density, Unit:	- -	- -	0-1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 2-4 LF	CHEAL 4-NUM
Stage Scale:	-	0.5-2 IN	2-7 IN
Density, Unit:	- -	0-1 FT2	0-2 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-3 LEAF	POLPY 4-8 LEAF
Stage Scale:	-	1-2 IN	4-7 IN
Density, Unit:	- -	0-1 FT2	0-1 FT2

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	HAND BOOM	HAND BOOM
Operating Pressure:	30	25	25
Nozzle Type:	11002	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Evaluation of crop phytotoxicity and weed control in corn from preemergence and postemergence applied herbicides, Nashua, IA, 2002.

Trial ID: NCC 1
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	SETFA	ABUTH	CHEAL		
Rating Data Type							STAND	PHYGEN	CONTROL	CONTROL	CONTROL		
Rating Unit							17.5 ft	percent	percent	percent	percent		
Rating Date							07-11-02	06-07-02	06-07-02	06-07-02	06-07-02		
Trt-Eval Interval								24 DA-A	24 DA-A	24 DA-A	24 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Appl Stg	Code					
1	Untreated								32	0	0	0	0
2	Define	60	0.788	LB A/A	21.0	OZ/A	PRE	A	33	0	98	53	75
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B					
	28% UAN		2.0	QT/A	2.0	QT/A	EPOST	B					
3	Axiom	68	0.978	LB A/A	23.0	OZ/A	PRE	A	33	0	99	78	98
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B					
	28% UAN		2.0	QT/A	2.0	QT/A	EPOST	B					
4	USA2001	71.5	0.581	LB A/A	13.0	OZ/A	PRE	A	33	0	99	93	99
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B					
	28% UAN		2.0	QT/A	2.0	QT/A	EPOST	B					
5	Epic	58	0.435	LB A/A	12.0	OZ/A	PRE	A	32	3	99	99	99
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B					
	28% UAN		2.0	QT/A	2.0	QT/A	EPOST	B					
6	Surpass	6.4	2.0	LB A/A	2.5	PT/A	PRE	A	32	0	99	42	82
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C					
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	POST	C					
	Atrazine	90	0.252	LB A/A	0.28	LB/A	POST	C					
	28% UAN		2.5	% V/V	2.5	% V/V	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
7	Surpass	6.4	2.0	LB A/A	2.5	PT/A	PRE	A	31	0	99	43	80
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C					
	Callisto	4	0.0312	LB A/A	1.0	FL OZ/A	POST	C					
	Atrazine	90	0.252	LB A/A	0.28	LB/A	POST	C					
	28% UAN		2.5	% V/V	2.5	% V/V	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
8	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	34	0	99	30	62
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	POST	C					
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
9	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	32	0	98	33	65
	Aim	2	0.0078	LB A/A	0.5	FL OZ/A	POST	C					
	Hornet WDG	68.5	0.128	LB AE/A	3.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
10	Dual II Magnum	7.64	0.66	LB A/A	0.69	PT/A	PRE	A	31	0	98	20	50
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ZEAMD STAND 17.5 ft 07-11-02	ZEAMD PHYGEN percent 06-07-02 24 DA-A	SETFA CONTROL percent 06-07-02 24 DA-A	ABUTH CONTROL percent 06-07-02 24 DA-A	CHEAL CONTROL percent 06-07-02 24 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
11	Dual II Magnum	7.64	0.66	LB A/A	0.69	PT/A	PRE	A	31	0	98	40	47
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
12	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	31	0	96	68	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
13	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	33	0	96	55	96
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B	33	0	0	0	0
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
15	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B	33	0	0	0	0
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
16	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	32	2	99	98	98
	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B					
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	30	0	0	0	0
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	AMS		2.0	LB/A	2.0	LB/A	POST	C					
18	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	33	0	0	0	0
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	AMS		2.0	LB/A	2.0	LB/A	POST	C					
19	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	32	0	99	45	73
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
	AMS		2.0	% W/W	2.0	% W/W	POST	C					
20	Accent	75	0.0314	LB A/A	0.67	OZ/A	POST	C	32	0	0	0	0
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
LSD (P=.05)									3.0	1.5	2.1	17.2	14.5

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							POLPY CONTROL percent 06-07-02 24 DA-A	ZEAMD PHYGEN percent 06-24-02 13 DA-B	SETFA CONTROL percent 06-24-02 13 DA-B	ABUTH CONTROL percent 06-24-02 13 DA-B	AMATA CONTROL percent 06-24-02 13 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Define Marksman 28% UAN	60 3.2	0.788 1.0	LB A/A LB A/A	21.0 OZ/A 2.5 PT/A 2.0 QT/A	PRE A EPOST B EPOST B			98	5	99	99	99
3	Axiom Marksman 28% UAN	68 3.2	0.978 1.0	LB A/A LB A/A	23.0 OZ/A 2.5 PT/A 2.0 QT/A	PRE A EPOST B EPOST B			99	5	99	99	99
4	USA2001 Marksman 28% UAN	71.5 3.2	0.581 1.0	LB A/A LB A/A	13.0 OZ/A 2.5 PT/A 2.0 QT/A	PRE A EPOST B EPOST B			99	5	99	99	99
5	Epic Marksman 28% UAN	58 3.2	0.435 1.0	LB A/A LB A/A	12.0 OZ/A 2.5 PT/A 2.0 QT/A	PRE A EPOST B EPOST B			99	7	99	99	99
6	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.047 0.252	LB A/A LB AE/A LB A/A LB A/A	2.5 PT/A 3.0 OZ/A 1.5 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V	PRE A POST C POST C POST C POST C POST C			98	10	98	88	99
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.0312 0.252	LB A/A LB AE/A LB A/A LB A/A	2.5 PT/A 3.0 OZ/A 1.0 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V	PRE A POST C POST C POST C POST C POST C			98	13	99	87	99
8	Dual II Magnum Aim Callisto COC NIS	7.64 2 4	1.6 0.0078 0.094	LB A/A LB A/A LB A/A	1.67 PT/A 0.5 FL OZ/A 3.0 FL OZ/A 1.0 % V/V 0.25 % V/V	PRE A POST C POST C POST C POST C			98	15	99	92	99
9	Dual II Magnum Aim Hornet WDG NIS	7.64 2 68.5	1.6 0.0078 0.128	LB A/A LB A/A LB AE/A	1.67 PT/A 0.5 FL OZ/A 3.0 OZ/A 0.25 % V/V	PRE A POST C POST C POST C			95	17	98	93	99
10	Dual II Magnum Steadfast Distinct COC AMS	7.64 75 70	0.66 0.035 0.0875	LB A/A LB A/A LB A/A	0.69 PT/A 0.75 OZ/A 2.0 OZ/A 1.0 % V/V 2.0 LB/A	PRE A EPOST B EPOST B EPOST B EPOST B			96	7	99	98	99
11	Dual II Magnum Steadfast Callisto Atrazine COC AMS	7.64 75 4 90	0.66 0.035 0.047 0.75	LB A/A LB A/A LB A/A LB A/A	0.69 PT/A 0.75 OZ/A 1.5 FL OZ/A 13.3 OZ/A 1.0 % V/V 2.0 LB/A	PRE A EPOST B EPOST B EPOST B EPOST B EPOST B			96	5	99	99	99

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								POLPY CONTROL percent 06-07-02 24 DA-A	ZEAMD PHYGEN percent 06-24-02 13 DA-B	SETFA CONTROL percent 06-24-02 13 DA-B	ABUTH CONTROL percent 06-24-02 13 DA-B	AMATA CONTROL percent 06-24-02 13 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
12	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	98	7	99	98	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
13	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	5	99	99	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B	0	5	99	99	99
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
15	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B	0	7	98	99	99
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
16	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	7	99	99	99
	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B					
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	0	15	65	80	85
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	AMS		2.0	LB/A	2.0	LB/A	POST	C					
18	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	0	13	63	62	63
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	AMS		2.0	LB/A	2.0	LB/A	POST	C					
19	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	98	5	98	62	99
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
	AMS		2.0	% W/W	2.0	% W/W	POST	C					
20	Accent	75	0.0314	LB A/A	0.67	OZ/A	POST	C	0	12	52	57	57
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
LSD (P=.05)									2.2	5.0	6.5	7.0	5.9

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-24-02 13 DA-B	POLPY CONTROL percent 06-24-02 13 DA-B	ZEAMD PHYGEN percent 07-11-02 19 DA-C	SETFA CONTROL percent 07-11-02 19 DA-C	ABUTH CONTROL percent 07-11-02 19 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Define Marksman 28% UAN	60 3.2	0.788 1.0	LB A/A LB A/A	21.0 2.5	OZ/A PT/A	PRE EPOST	A B	99	99	0	99	99
3	Axiom Marksman 28% UAN	68 3.2	0.978 1.0	LB A/A LB A/A	23.0 2.5	OZ/A PT/A	PRE EPOST	A B	99	99	0	99	99
4	USA2001 Marksman 28% UAN	71.5 3.2	0.581 1.0	LB A/A LB A/A	13.0 2.5	OZ/A PT/A	PRE EPOST	A B	99	99	0	99	99
5	Epic Marksman 28% UAN	58 3.2	0.435 1.0	LB A/A LB A/A	12.0 2.5	OZ/A PT/A	PRE EPOST	A B	99	99	0	99	99
6	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.047 0.252	LB A/A LB AE/A LB A/A LB A/A	2.5 3.0 1.5 0.28	PT/A OZ/A FL OZ/A LB/A	PRE POST POST POST	A C C C	85	93	0	98	99
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.0312 0.252	LB A/A LB AE/A LB A/A LB A/A	2.5 3.0 1.0 0.28	PT/A OZ/A FL OZ/A LB/A	PRE POST POST POST	A C C C	85	91	0	99	99
8	Dual II Magnum Aim Callisto COC NIS	7.64 2 4	1.6 0.0078 0.094	LB A/A LB A/A LB A/A	1.67 0.5 3.0	PT/A FL OZ/A FL OZ/A	PRE POST POST	A C C	83	90	10	98	99
9	Dual II Magnum Aim Hornet WDG NIS	7.64 2 68.5	1.6 0.0078 0.128	LB A/A LB A/A LB AE/A	1.67 0.5 3.0	PT/A FL OZ/A OZ/A	PRE POST POST	A C C	90	95	8	96	95
10	Dual II Magnum Steadfast Distinct COC AMS	7.64 75 70	0.66 0.035 0.0875	LB A/A LB A/A LB A/A	0.69 0.75 2.0	PT/A OZ/A OZ/A	PRE EPOST EPOST	A B B	93	98	3	99	99
11	Dual II Magnum Steadfast Callisto Atrazine COC AMS	7.64 75 4 90	0.66 0.035 0.047 0.75	LB A/A LB A/A LB A/A LB A/A	0.69 0.75 1.5 13.3	PT/A OZ/A FL OZ/A OZ/A	PRE EPOST EPOST EPOST	A B B B	99	99	0	99	99

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 06-24-02 13 DA-B	POLPY CONTROL percent 06-24-02 13 DA-B	ZEAMD PHYGEN percent 07-11-02 19 DA-C	SETFA CONTROL percent 07-11-02 19 DA-C	ABUTH CONTROL percent 07-11-02 19 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
12	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	98	99	0	99	98
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
13	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	99	0	99	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B	99	99	0	99	99
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
15	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B	99	99	0	96	99
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
16	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	99	0	99	99
	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B					
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	77	82	7	82	63
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	AMS		2.0	LB/A	2.0	LB/A	POST	C					
18	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	57	58	5	82	96
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	AMS		2.0	LB/A	2.0	LB/A	POST	C					
19	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	70	92	0	96	95
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
	AMS		2.0	% W/W	2.0	% W/W	POST	C					
20	Accent	75	0.0314	LB A/A	0.67	OZ/A	POST	C	58	58	3	78	90
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
LSD (P=.05)									8.4	7.6	2.8	3.2	2.5

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 07-11-02 19 DA-C	CHEAL CONTROL percent 07-11-02 19 DA-C	POLPY CONTROL percent 07-11-02 19 DA-C	SETFA CONTROL percent 08-23-02 62 DA-C	ABUTH CONTROL percent 08-23-02 62 DA-C		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Define Marksman 28% UAN	60 3.2	0.788 1.0	LB A/A LB A/A QT/A	21.0 2.5 2.0	OZ/A PT/A QT/A	PRE EPOST EPOST	A B B	99	99	99	96	99
3	Axiom Marksman 28% UAN	68 3.2	0.978 1.0	LB A/A LB A/A QT/A	23.0 2.5 2.0	OZ/A PT/A QT/A	PRE EPOST EPOST	A B B	99	99	99	99	98
4	USA2001 Marksman 28% UAN	71.5 3.2	0.581 1.0	LB A/A LB A/A QT/A	13.0 2.5 2.0	OZ/A PT/A QT/A	PRE EPOST EPOST	A B B	99	99	99	99	99
5	Epic Marksman 28% UAN	58 3.2	0.435 1.0	LB A/A LB A/A QT/A	12.0 2.5 2.0	OZ/A PT/A QT/A	PRE EPOST EPOST	A B B	99	99	99	98	99
6	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.047 0.252	LB A/A LB AE/A LB A/A LB A/A % V/V % V/V	2.5 3.0 1.5 0.28 2.5 1.0	PT/A OZ/A FL OZ/A LB/A % V/V % V/V	PRE POST POST POST POST POST	A C C C C C	99	99	99	96	99
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.0312 0.252	LB A/A LB AE/A LB A/A LB A/A % V/V % V/V	2.5 3.0 1.0 0.28 2.5 1.0	PT/A OZ/A FL OZ/A LB/A % V/V % V/V	PRE POST POST POST POST POST	A C C C C C	99	99	99	95	99
8	Dual II Magnum Aim Callisto COC NIS	7.64 2 4	1.6 0.0078 0.094	LB A/A LB A/A LB A/A % V/V % V/V	1.67 0.5 3.0 1.0 0.25	PT/A FL OZ/A FL OZ/A % V/V % V/V	PRE POST POST POST POST	A C C C C	99	96	98	92	99
9	Dual II Magnum Aim Hornet WDG NIS	7.64 2 68.5	1.6 0.0078 0.128	LB A/A LB A/A LB AE/A % V/V	1.67 0.5 3.0 0.25	PT/A FL OZ/A OZ/A % V/V	PRE POST POST POST	A C C C	99	90	95	88	93
10	Dual II Magnum Steadfast Distinct COC AMS	7.64 75 70	0.66 0.035 0.0875	LB A/A LB A/A LB A/A % V/V LB/A	0.69 0.75 2.0 1.0 2.0	PT/A OZ/A OZ/A % V/V LB/A	PRE EPOST EPOST EPOST EPOST	A B B B B	99	99	99	98	98
11	Dual II Magnum Steadfast Callisto Atrazine COC AMS	7.64 75 4 90	0.66 0.035 0.047 0.75	LB A/A LB A/A LB A/A LB A/A % V/V LB/A	0.69 0.75 1.5 13.3 1.0 2.0	PT/A OZ/A FL OZ/A OZ/A % V/V LB/A	PRE EPOST EPOST EPOST EPOST EPOST	A B B B B B	99	99	99	98	99

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 07-11-02 19 DA-C	CHEAL CONTROL percent 07-11-02 19 DA-C	POLPY CONTROL percent 07-11-02 19 DA-C	SETFA CONTROL percent 08-23-02 62 DA-C	ABUTH CONTROL percent 08-23-02 62 DA-C	
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
12	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	99	99	99	98
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
13	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	99	99	99	99
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B					
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B	99	99	99	99	99
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B					
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
15	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B	99	99	99	96	99
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
16	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	99	99	99	99
	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B					
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B					
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B					
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	90	92	94	82	57
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	AMS		2.0	LB/A	2.0	LB/A	POST	C					
18	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	99	98	99	83	96
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	AMS		2.0	LB/A	2.0	LB/A	POST	C					
19	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	99	93	99	93	96
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
	AMS		2.0	% W/W	2.0	% W/W	POST	C					
20	Accent	75	0.0314	LB A/A	0.67	OZ/A	POST	C	88	88	98	88	96
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C					
	NIS		0.25	% V/V	0.25	% V/V	POST	C					
LSD (P=.05)									5.4	3.8	3.7	5.2	3.6

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 08-23-02 62 DA-C	CHEAL CONTROL percent 08-23-02 62 DA-C	POLPY CONTROL percent 08-23-02 62 DA-C	ZEAMD YIELD BU/A 10-27-02 166 DA-A			
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code				
1	Untreated									0	0	0	145
2	Define Marksman 28% UAN	60 3.2	0.788 1.0	LB A/A LB A/A	21.0 OZ/A 2.5 PT/A 2.0 QT/A	PRE EPOST EPOST	A B B			99	99	99	189
3	Axiom Marksman 28% UAN	68 3.2	0.978 1.0	LB A/A LB A/A	23.0 OZ/A 2.5 PT/A 2.0 QT/A	PRE EPOST EPOST	A B B			99	99	99	218
4	USA2001 Marksman 28% UAN	71.5 3.2	0.581 1.0	LB A/A LB A/A	13.0 OZ/A 2.5 PT/A 2.0 QT/A	PRE EPOST EPOST	A B B			99	99	99	210
5	Epic Marksman 28% UAN	58 3.2	0.435 1.0	LB A/A LB A/A	12.0 OZ/A 2.5 PT/A 2.0 QT/A	PRE EPOST EPOST	A B B			99	99	99	206
6	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.047 0.252	LB A/A LB AE/A LB A/A LB A/A	2.5 PT/A 3.0 OZ/A 1.5 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V	PRE POST POST POST POST POST	A C C C C C			99	99	99	213
7	Surpass Hornet WDG Callisto Atrazine 28% UAN COC	6.4 68.5 4 90	2.0 0.128 0.0312 0.252	LB A/A LB AE/A LB A/A LB A/A	2.5 PT/A 3.0 OZ/A 1.0 FL OZ/A 0.28 LB/A 2.5 % V/V 1.0 % V/V	PRE POST POST POST POST POST	A C C C C C			99	99	99	198
8	Dual II Magnum Aim Callisto COC NIS	7.64 2 4	1.6 0.0078 0.094	LB A/A LB A/A LB A/A	1.67 PT/A 0.5 FL OZ/A 3.0 FL OZ/A 1.0 % V/V 0.25 % V/V	PRE POST POST POST POST	A C C C C			99	98	98	201
9	Dual II Magnum Aim Hornet WDG NIS	7.64 2 68.5	1.6 0.0078 0.128	LB A/A LB A/A LB AE/A	1.67 PT/A 0.5 FL OZ/A 3.0 OZ/A 0.25 % V/V	PRE POST POST POST	A C C C			99	92	95	194
10	Dual II Magnum Steadfast Distinct COC AMS	7.64 75 70	0.66 0.035 0.0875	LB A/A LB A/A LB A/A	0.69 PT/A 0.75 OZ/A 2.0 OZ/A 1.0 % V/V 2.0 LB/A	PRE EPOST EPOST EPOST EPOST	A B B B B			99	99	99	214
11	Dual II Magnum Steadfast Callisto Atrazine COC AMS	7.64 75 4 90	0.66 0.035 0.047 0.75	LB A/A LB A/A LB A/A LB A/A	0.69 PT/A 0.75 OZ/A 1.5 FL OZ/A 13.3 OZ/A 1.0 % V/V 2.0 LB/A	PRE EPOST EPOST EPOST EPOST EPOST	A B B B B B			99	99	99	212

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 08-23-02 62 DA-C	CHEAL CONTROL percent 08-23-02 62 DA-C	POLPY CONTROL percent 08-23-02 62 DA-C	ZEAMD YIELD BU/A 10-27-02 166 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code				
12	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	99	99	204
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Distinct	70	0.0875	LB A/A	2.0	OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
13	Bicep II Magnum	5.5	1.15	LB A/A	0.84	QT/A	PRE	A	99	99	99	205
	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B				
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B				
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
14	Steadfast	75	0.035	LB A/A	0.75	OZ/A	EPOST	B	99	99	99	213
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	EPOST	B				
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	EPOST	B				
	COC		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
15	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B	99	99	99	222
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B				
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
16	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	99	99	207
	Option	70	0.0656	LB A/A	1.5	OZ/A	EPOST	B				
	Atrazine	90	1.0	LB A/A	17.8	OZ/A	EPOST	B				
	MSO		1.0	% V/V	1.0	% V/V	EPOST	B				
	AMS		2.0	LB/A	2.0	LB/A	EPOST	B				
17	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	88	92	94	177
	Atrazine	90	0.75	LB A/A	13.3	OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	AMS		2.0	LB/A	2.0	LB/A	POST	C				
18	Steadfast	75	0.035	LB A/A	0.75	OZ/A	POST	C	99	99	99	181
	Callisto	4	0.047	LB A/A	1.5	FL OZ/A	POST	C				
	COC		1.0	% V/V	1.0	% V/V	POST	C				
	AMS		2.0	LB/A	2.0	LB/A	POST	C				
19	Harness	7	2.19	LB A/A	2.5	PT/A	PRE	A	99	98	99	211
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	AMS		2.0	% W/W	2.0	% W/W	POST	C				
20	Accent	75	0.0314	LB A/A	0.67	OZ/A	POST	C	92	99	99	193
	Yukon	67.5	0.169	LB A/A	4.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
LSD (P=.05)									4.6	2.6	3.6	33.5

Iowa State University

Bicep Lite II Magnum, Balance Pro, Callisto, A12854, A12909 and Northstar for weed control in corn, Nashua, IA, 2002.

Trial ID: NCC 2
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Nashua Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50658-9270 Initiation Date: 05-14-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate Bicep Lite II Magnum, Balance Pro, Callisto, A12854, A12909, and Northstar for crop phytotoxicity and weed control in corn.

Conclusions: Significant differences in corn stand between treatments were determined. Preemergence applied (PRE) Balance Pro plus Atrazine caused significant corn injury when observed on June 7, resulting in stand reduction. Other PRE treatments caused negligible corn injury. On June 24, 0 to 7% corn injury was observed from early postemergence (EPOST) and POST applied treatments.

All PRE and PRE plus POST treatments provided good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed control on June 24, July 11, and July 26. An exception was Harness Extra, which failed to give satisfactory velvetleaf control. EPOST applications of A12854 and A12909 provided excellent control of the species evaluated on all observation dates. Considerable variation in corn yields between treatments were determined ranging from 188 to 228 bu/A. Several treatments including PRE Harness Xtra, Bicep II Magnum plus Callisto, and Outlook followed by POST Marksman yielded significantly less than a number of treatments. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.

Crop 1: ZEAMD CORN, FIELD Variety: DEKALB DKC 53-32

Planting Date: 05-14-02 Planting Method: DIRECT DRILLED

Rate: 33674 SEEDS/A Depth: 2.0 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 150 lb/A actual N applied as anhydrous ammonia. Crop residue on the soil surface was 10% at planting.

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SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
 pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-14-02	05-30-02	06-15-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	POST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	68 F	84 F	75 F
% Relative Humidity:	53	78	50
Wind Velocity, Unit:	2 MPH	3 MPH	8 MPH
Soil Temp., Unit:	55 F	70 F	68 F
Soil Moisture:	DRY	MOIST	DRY
% Cloud Cover:	5	100	50

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V1	ZEAMD V5
Stage Scale:	-	DESC	DESC
Height, Unit:	-	1.5 IN	7 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-2 LEAF	SETFA 1-3 LEAF
Stage Scale:	-	0.25 IN	0.5-1 IN
Density, Unit:	- -	0-3 FT2	0-2 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL	ABUTH COT-4
Stage Scale:	-	0.25 IN	0.125-1.5
Density, Unit:	- -	0-1 FT2	0-3 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL	AMATA -
Stage Scale:	-	0.25 IN	-
Density, Unit:	- -	<1 FT2	- -
Weed 4 Code, Stage:	CHEAL -	CHEAL COTYL-NUM	CHEAL 4-6 LEAF
Stage Scale:	-	0.25-0.5	1-3 IN
Density, Unit:	- -	0-3 FT2	0-3 FT2
Weed 5 Code, Stage:	POLPY -	POLPY -	POLPY COTYL-2
Stage Scale:	-	-	0.25-1 IN
Density, Unit:	- -	- -	<1 FT2

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	HAND BOOM	HAND BOOM
Operating Pressure:	30	25	25
Nozzle Type:	11002	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Bicep Lite II Magnum, Balance Pro, Callisto, A12854, A12909 and Northstar for weed control in corn, Nashua, IA, 2002.

Trial ID: NCC 2
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	
Rating Unit							17.5 ft	percent	percent	percent	percent	
Rating Date							06-19-02	06-07-02	06-24-02	06-24-02	06-24-02	
Trt-Eval Interval							36 DA-A	8 DA-B	25 DA-B	25 DA-B	25 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							33	0	0	0	0
2	Bicep Lite II Magnum	6	3.3 LB A/A	2.2 QT/A		PRE A		34	0	0	98	91
3	Balance Pro	4	0.094 LB A/A	3.0 FL OZ/A		PRE A		30	20	12	99	99
	Atrazine	4	1.0 LB A/A	1.0 QT/A		PRE A						
4	Harness Xtra	6	3.0 LB A/A	2.0 QT/A		PRE A		34	0	0	99	70
5	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		PRE A		33	0	0	99	99
	Callisto	4	0.187 LB A/A	6.0 FL OZ/A		PRE A						
6	Dual II Magnum	7.64	2 LB A/A	2.1 PT/A		PRE A		30	0	2	99	99
	Callisto	4	0.2 LB A/A	6.4 FL OZ/A		PRE A						
	Atrazine	4	0.75 LB A/A	1.5 PT/A		PRE A						
7	A12854	3.94	2.46 LB A/A	2.5 QT/A		PRE A		33	0	2	99	99
8	A12854	3.94	2.95 LB A/A	3.0 QT/A		PRE A		32	0	2	99	99
9	A12909	3.67	1.84 LB A/A	2.0 QT/A		PRE A		34	0	0	98	99
10	A12909	3.67	2.2 LB A/A	2.4 QT/A		PRE A		33	0	0	99	99
11	A12854	3.94	2.46 LB A/A	2.5 QT/A		EPOST B		33	2	5	99	99
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
12	A12854	3.94	2.95 LB A/A	3.0 QT/A		EPOST B		33	2	5	99	99
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
13	A12909	3.67	1.84 LB A/A	2.0 QT/A		EPOST B		33	0	3	99	99
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
14	A12909	3.67	2.2 LB A/A	2.4 QT/A		EPOST B		33	0	2	99	99
	Accent	75	0.0155 LB A/A	0.33 OZ/A		EPOST B						
15	Outlook	6	0.84 LB A/A	18.0 FL OZ/A		PRE A		34	0	7	99	99
	Marksman	3.2	1.2 LB A/A	3.0 PT/A		POST C						
	COC		1.0 % V/V	1.0 % V/V		POST C						
16	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A		PRE A		32	0	2	98	99
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		POST C						
	COC		1.0 % V/V	1.0 % V/V		POST C						
	28% UAN		2.5 % V/V	2.5 % V/V		POST C						
17	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		PRE A		32	0	0	98	99
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		POST C						
	COC		1.0 % V/V	1.0 % V/V		POST C						
	28% UAN		2.0 % V/V	2.0 % V/V		POST C						
18	Dual II Magnum	7.64	1.6 LB A/A	1.67 PT/A		PRE A		31	0	3	99	99
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		POST C						
	Atrazine	4	0.5 LB A/A	1.0 PT/A		POST C						
	COC		1.0 % V/V	1.0 % V/V		POST C						
	28% UAN		1.0 % V/V	1.0 % V/V		POST C						
19	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A		EPOST B		32	0	3	99	99
	Callisto	4	0.094 LB A/A	3.0 FL OZ/A		EPOST B						
	COC		1.0 % V/V	1.0 % V/V		EPOST B						
	28% UAN		1.0 % V/V	1.0 % V/V		EPOST B						

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Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH			
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL			
Rating Unit							17.5 ft	percent	percent	percent	percent			
Rating Date							06-19-02	06-07-02	06-24-02	06-24-02	06-24-02			
Trt-Eval Interval							36 DA-A	8 DA-B	25 DA-B	25 DA-B	25 DA-B			
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
20	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A		33	0	7	99	99
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C						
	NIS		0.25	% V/V	0.25	% V/V	POST	C						
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C						
LSD (P=.05)							2.8	2.3	4.1	1.7	7.1			

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-24-02 25 DA-B	CHEAL CONTROL percent 06-24-02 25 DA-B	POLPY CONTROL percent 06-24-02 25 DA-B	ZEAMD PHYGEN percent 07-11-02 42 DA-B	SETFA CONTROL percent 07-11-02 42 DA-B			
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	PRE	A		99	99	99	0	98
3	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	PRE	A		99	99	99	5	96
	Atrazine	4	1.0	LB A/A	1.0	QT/A	PRE	A						
4	Harness Xtra	6	3.0	LB A/A	2.0	QT/A	PRE	A		99	99	99	0	99
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A		99	99	99	0	96
	Callisto	4	0.187	LB A/A	6.0	FL OZ/A	PRE	A						
6	Dual II Magnum	7.64	2	LB A/A	2.1	PT/A	PRE	A		99	99	99	0	96
	Callisto	4	0.2	LB A/A	6.4	FL OZ/A	PRE	A						
	Atrazine	4	0.75	LB A/A	1.5	PT/A	PRE	A						
7	A12854	3.94	2.46	LB A/A	2.5	QT/A	PRE	A		99	99	99	0	96
8	A12854	3.94	2.95	LB A/A	3.0	QT/A	PRE	A		99	99	99	0	99
9	A12909	3.67	1.84	LB A/A	2.0	QT/A	PRE	A		99	99	99	0	95
10	A12909	3.67	2.2	LB A/A	2.4	QT/A	PRE	A		99	99	99	0	98
11	A12854	3.94	2.46	LB A/A	2.5	QT/A	EPOST	B		99	99	99	0	98
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B						
12	A12854	3.94	2.95	LB A/A	3.0	QT/A	EPOST	B		99	99	99	0	99
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B						
13	A12909	3.67	1.84	LB A/A	2.0	QT/A	EPOST	B		99	99	99	0	96
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B						
14	A12909	3.67	2.2	LB A/A	2.4	QT/A	EPOST	B		99	99	99	0	98
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B						
15	Outlook	6	0.84	LB A/A	18.0	FL OZ/A	PRE	A		99	99	99	3	98
	Marksman	3.2	1.2	LB A/A	3.0	PT/A	POST	C						
	COC		1.0	% V/V	1.0	% V/V	POST	C						
16	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A		99	99	99	0	98
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C						
	COC		1.0	% V/V	1.0	% V/V	POST	C						
	28% UAN		2.5	% V/V	2.5	% V/V	POST	C						
17	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A		99	99	99	0	96
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C						
	COC		1.0	% V/V	1.0	% V/V	POST	C						
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C						
18	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A		99	99	99	0	98
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C						
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C						
	COC		1.0	% V/V	1.0	% V/V	POST	C						
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C						
19	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B		99	99	99	0	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B						
	COC		1.0	% V/V	1.0	% V/V	EPOST	B						
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B						

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Weed Code							AMATA	CHEAL	POLPY	ZEAMD	SETFA
Rating Data Type							CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-24-02	06-24-02	06-24-02	07-11-02	07-11-02
Trt-Eval Interval							25 DA-B	25 DA-B	25 DA-B	42 DA-B	42 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code		
20	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A		99	99
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C			99
	NIS		0.25	% V/V	0.25	% V/V	POST	C			
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C			
LSD (P=.05)							0.0	0.0	0.0	2.1	3.5

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-11-02 42 DA-B	AMATA CONTROL percent 07-11-02 42 DA-B	CHEAL CONTROL percent 07-11-02 42 DA-B	POLPY CONTROL percent 07-11-02 42 DA-B	ZEAMD PHYGEN percent 07-26-02 57 DA-B			
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	PRE	A		73	99	99	99	0
3	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	PRE	A		99	99	99	99	0
	Atrazine	4	1.0	LB A/A	1.0	QT/A	PRE	A						
4	Harness Xtra	6	3.0	LB A/A	2.0	QT/A	PRE	A		62	99	99	99	0
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A		99	99	99	99	0
	Callisto	4	0.187	LB A/A	6.0	FL OZ/A	PRE	A						
6	Dual II Magnum	7.64	2	LB A/A	2.1	PT/A	PRE	A		99	99	99	99	0
	Callisto	4	0.2	LB A/A	6.4	FL OZ/A	PRE	A						
	Atrazine	4	0.75	LB A/A	1.5	PT/A	PRE	A						
7	A12854	3.94	2.46	LB A/A	2.5	QT/A	PRE	A		99	99	99	99	0
8	A12854	3.94	2.95	LB A/A	3.0	QT/A	PRE	A		99	99	99	99	0
9	A12909	3.67	1.84	LB A/A	2.0	QT/A	PRE	A		99	99	99	99	0
10	A12909	3.67	2.2	LB A/A	2.4	QT/A	PRE	A		99	99	99	99	0
11	A12854	3.94	2.46	LB A/A	2.5	QT/A	EPOST	B		99	99	99	99	0
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B						
12	A12854	3.94	2.95	LB A/A	3.0	QT/A	EPOST	B		99	99	99	99	0
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B						
13	A12909	3.67	1.84	LB A/A	2.0	QT/A	EPOST	B		99	99	99	99	0
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B						
14	A12909	3.67	2.2	LB A/A	2.4	QT/A	EPOST	B		99	99	99	99	0
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B						
15	Outlook	6	0.84	LB A/A	18.0	FL OZ/A	PRE	A		99	99	99	99	0
	Marksman	3.2	1.2	LB A/A	3.0	PT/A	POST	C						
	COC		1.0	% V/V	1.0	% V/V	POST	C						
16	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A		99	99	99	99	0
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C						
	COC		1.0	% V/V	1.0	% V/V	POST	C						
	28% UAN		2.5	% V/V	2.5	% V/V	POST	C						
17	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A		99	99	99	99	0
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C						
	COC		1.0	% V/V	1.0	% V/V	POST	C						
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C						
18	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A		99	99	99	99	0
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C						
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C						
	COC		1.0	% V/V	1.0	% V/V	POST	C						
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C						
19	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B		99	99	99	99	0
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B						
	COC		1.0	% V/V	1.0	% V/V	EPOST	B						
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B						

Iowa State University

Weed Code							ABUTH	AMATA	CHEAL	POLPY	ZEAMD
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit							percent	percent	percent	percent	percent
Rating Date							07-11-02	07-11-02	07-11-02	07-11-02	07-26-02
Trt-Eval Interval							42 DA-B	42 DA-B	42 DA-B	42 DA-B	57 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
20	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	PRE	A	99	99	99	99	0
	Northstar	47.4	0.148 LB A/A	5.0 OZ/A	POST	C					
	NIS		0.25 % V/V	0.25 % V/V	POST	C					
	28% UAN		2.0 % V/V	2.0 % V/V	POST	C					
LSD (P=.05)							5.4	0.0	0.0	0.0	0.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 07-26-02 57 DA-B	ABUTH CONTROL percent 07-26-02 57 DA-B	AMATA CONTROL percent 07-26-02 57 DA-B	CHEAL CONTROL percent 07-26-02 57 DA-B	POLPY CONTROL percent 07-26-02 57 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	PRE	A	95	67	99	99	98
3	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	PRE	A	95	99	99	99	99
	Atrazine	4	1.0	LB A/A	1.0	QT/A	PRE	A					
4	Harness Xtra	6	3.0	LB A/A	2.0	QT/A	PRE	A	93	58	99	99	99
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	95	99	99	99	99
	Callisto	4	0.187	LB A/A	6.0	FL OZ/A	PRE	A					
6	Dual II Magnum	7.64	2	LB A/A	2.1	PT/A	PRE	A	95	98	99	99	99
	Callisto	4	0.2	LB A/A	6.4	FL OZ/A	PRE	A					
	Atrazine	4	0.75	LB A/A	1.5	PT/A	PRE	A					
7	A12854	3.94	2.46	LB A/A	2.5	QT/A	PRE	A	93	99	99	99	99
8	A12854	3.94	2.95	LB A/A	3.0	QT/A	PRE	A	99	99	99	99	99
9	A12909	3.67	1.84	LB A/A	2.0	QT/A	PRE	A	93	99	99	99	99
10	A12909	3.67	2.2	LB A/A	2.4	QT/A	PRE	A	93	99	99	99	99
11	A12854	3.94	2.46	LB A/A	2.5	QT/A	EPOST	B	95	99	99	99	99
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B					
12	A12854	3.94	2.95	LB A/A	3.0	QT/A	EPOST	B	95	99	99	99	99
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B					
13	A12909	3.67	1.84	LB A/A	2.0	QT/A	EPOST	B	92	99	99	99	99
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B					
14	A12909	3.67	2.2	LB A/A	2.4	QT/A	EPOST	B	96	99	99	99	99
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B					
15	Outlook	6	0.84	LB A/A	18.0	FL OZ/A	PRE	A	94	99	99	99	99
	Marksman	3.2	1.2	LB A/A	3.0	PT/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
16	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	93	99	99	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	28% UAN		2.5	% V/V	2.5	% V/V	POST	C					
17	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	92	99	99	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C					
18	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	93	99	99	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C					
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C					
	COC		1.0	% V/V	1.0	% V/V	POST	C					
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C					
19	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	99	99	99	99	99
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B					

Iowa State University

Weed Code							SETFA	ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							07-26-02	07-26-02	07-26-02	07-26-02	07-26-02	
Trt-Eval Interval							57 DA-B	57 DA-B	57 DA-B	57 DA-B	57 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code					
20	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	99	99	99	99
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C				
	NIS		0.25	% V/V	0.25	% V/V	POST	C				
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C				
LSD (P=.05)								5.1	4.1	0.0	0.0	0.9

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Weed Code							ZEAMD		
Rating Data Type							YIELD		
Rating Unit							BU/A		
Rating Date							10-27-02		
Trt-Eval Interval							166 DA-A		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code	
1	Untreated								171
2	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	PRE	A	208
3	Balance Pro	4	0.094	LB A/A	3.0	FL OZ/A	PRE	A	201
	Atrazine	4	1.0	LB A/A	1.0	QT/A	PRE	A	
4	Harness Xtra	6	3.0	LB A/A	2.0	QT/A	PRE	A	189
5	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	214
	Callisto	4	0.187	LB A/A	6.0	FL OZ/A	PRE	A	
6	Dual II Magnum	7.64	2	LB A/A	2.1	PT/A	PRE	A	221
	Callisto	4	0.2	LB A/A	6.4	FL OZ/A	PRE	A	
	Atrazine	4	0.75	LB A/A	1.5	PT/A	PRE	A	
7	A12854	3.94	2.46	LB A/A	2.5	QT/A	PRE	A	223
8	A12854	3.94	2.95	LB A/A	3.0	QT/A	PRE	A	
9	A12909	3.67	1.84	LB A/A	2.0	QT/A	PRE	A	228
10	A12909	3.67	2.2	LB A/A	2.4	QT/A	PRE	A	205
11	A12854	3.94	2.46	LB A/A	2.5	QT/A	EPOST	B	212
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B	
12	A12854	3.94	2.95	LB A/A	3.0	QT/A	EPOST	B	216
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B	
13	A12909	3.67	1.84	LB A/A	2.0	QT/A	EPOST	B	228
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B	
14	A12909	3.67	2.2	LB A/A	2.4	QT/A	EPOST	B	226
	Accent	75	0.0155	LB A/A	0.33	OZ/A	EPOST	B	
15	Outlook	6	0.84	LB A/A	18.0	FL OZ/A	PRE	A	188
	Marksman	3.2	1.2	LB A/A	3.0	PT/A	POST	C	
	COC		1.0	% V/V	1.0	% V/V	POST	C	
16	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	198
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C	
	COC		1.0	% V/V	1.0	% V/V	POST	C	
	28% UAN		2.5	% V/V	2.5	% V/V	POST	C	
17	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	206
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C	
	COC		1.0	% V/V	1.0	% V/V	POST	C	
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C	
18	Dual II Magnum	7.64	1.6	LB A/A	1.67	PT/A	PRE	A	204
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	POST	C	
	Atrazine	4	0.5	LB A/A	1.0	PT/A	POST	C	
	COC		1.0	% V/V	1.0	% V/V	POST	C	
	28% UAN		1.0	% V/V	1.0	% V/V	POST	C	
19	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	EPOST	B	211
	Callisto	4	0.094	LB A/A	3.0	FL OZ/A	EPOST	B	
	COC		1.0	% V/V	1.0	% V/V	EPOST	B	
	28% UAN		1.0	% V/V	1.0	% V/V	EPOST	B	

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Weed Code							ZEAMD		
Rating Data Type							YIELD		
Rating Unit							BU/A		
Rating Date							10-27-02		
Trt-Eval Interval							166 DA-A		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code	
20	Bicep Lite II Magnum	6	2.85	LB A/A	1.9	QT/A	PRE	A	214
	Northstar	47.4	0.148	LB A/A	5.0	OZ/A	POST	C	
	NIS		0.25	% V/V	0.25	% V/V	POST	C	
	28% UAN		2.0	% V/V	2.0	% V/V	POST	C	
LSD (P=.05)									23.7

Iowa State University

Postemergence applications of Liberty alone and in tank-mixture with Callisto, Atrazine, Distinct or Clarity for weed control in corn, Nashua, IA, 2002.

Trial ID: NCC 3 Study Dir.: Owen/Lux/Franzenburg
Location: Nashua Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Nashua Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50658-9270 Initiation Date: 05-14-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate crop injury and weed control from postemergence applied Liberty, and Liberty tank-mixtures with Callisto, Atrazine, Distinct, or Clarity.

Conclusions: Significant differences in corn stand between treatments were not attributable to the herbicides, but to variability in seeding rate. Late postemergence (LPOST) applied Liberty and Liberty tank-mixture combinations resulted in 0 to 13% corn injury when observed on July 1 and 11, seven and seventeen days after application, respectively.

In general, all LPOST Liberty alone and Liberty tank-mixture combinations applied to six to ten inch weeds afforded acceptable overall control, when observed on July 1, 11, and August 23. Excellent giant foxtail and good to excellent yellow foxtail control was observed, especially on the later evaluation dates. Velvetleaf, common waterhemp, and common lambsquarters control was good to excellent with Liberty alone (highest rate), and Liberty in tank-mixture combinations on the three observation dates. Generally, Liberty at 0.313 lb/A and 0.365 lb/A did not provide the level of velvetleaf, common waterhemp and common lambsquarters control, as did the highest rate. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	SETLU	FOXTAIL, YELLOW	SETARIA LUTESCENS (WEIG. EX STUNTZ) HUBB
3.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
5.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: ZEAMD CORN, FIELD Variety: NORTHRUP KING NK N58-D1

Planting Date: 05-14-02 Planting Method: DIRECT DRILLED

Rate: 33674 SEEDS/A Depth: 2.0 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3

Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 150 lb/A actual N applied as anhydrous ammonia. Crop residue on the soil surface was 10% at planting.

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SOIL DESCRIPTION

% OM: 3.5 Texture: LOAM
 pH: 6.85 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	06-24-02
Application Method:	SPRAY
Application Timing:	LPOST
Applic. Placement:	BROFOL
Air Temp., Unit:	90 F
% Relative Humidity:	63
Wind Velocity, Unit:	4 MPH
Soil Temp., Unit:	75 F
% Cloud Cover:	15

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD V6
Stage Scale:	DESC
Height, Unit:	9 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 2-4L,0-2T
Stage Scale:	1-8 IN
Density, Unit:	0-25 FT2
Weed 2 Code, Stage:	SETLU 2-4L,0-2T
Stage Scale:	1-6 IN
Density, Unit:	0-3 FT2
Weed 3 Code, Stage:	ABUTH 2-8 LEAF
Stage Scale:	2-7 IN
Density, Unit:	0-3 FT2
Weed 4 Code, Stage:	AMATA 6-NUM
Stage Scale:	2-10 IN
Density, Unit:	0-3 FT2
Weed 5 Code, Stage:	CHEAL 6-NUM
Stage Scale:	2-10 IN
Density, Unit:	0-5 FT2

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APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND BOOM
Operating Pressure:	25
Nozzle Type:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Postemergence applications of Liberty alone and in tank-mixture with Callisto,
Atrazine, Distinct or Clarity for weed control in corn, Nashua, IA, 2002.

Trial ID: NCC 3
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	SETFA	SETLU	ABUTH	AMATA
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit								17.5 ft	percent	percent	percent	percent	percent
Rating Date								06-19-02	07-01-02	07-01-02	07-01-02	07-01-02	07-01-02
Trt-Eval Interval									7 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Grow Unit	Stg	Appl Code					
1	Untreated								34	0	0	0	0
2	Liberty AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	33	5	99	88	85
			3.0	LB/A	3.0	LB/A	LPOST A	A					
3	Liberty AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A	A	32	5	99	90	87
			3.0	LB/A	3.0	LB/A	LPOST A	A					
4	Liberty AMS	1.67	0.417	LB A/A	32.0	FL OZ/A	LPOST A	A	34	3	99	95	98
			3.0	LB/A	3.0	LB/A	LPOST A	A					
5	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	34	2	99	93	95
		4	0.0312	LB A/A	1.0	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A	A					
6	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	33	5	99	88	96
		4	0.047	LB A/A	1.5	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A	A					
7	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	33	7	99	93	98
		4	0.0625	LB A/A	2.0	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A	A					
8	Liberty Atrazine AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	33	2	99	90	98
		4	1.0	LB A/A	1.0	QT/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A	A					
9	Liberty Atrazine AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A	A	33	7	99	87	96
		4	1.25	LB A/A	1.25	QT/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A	A					
10	Liberty Distinct AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	35	5	99	90	98
		70	0.0875	LB A/A	2.0	OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A	A					
11	Liberty Callisto AMS COC	1.67	0.209	LB A/A	16.0	FL OZ/A	LPOST A	A	33	10	99	87	98
		4	0.094	LB A/A	3.0	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A	A					
			1.0	% V/V	1.0	% V/V	LPOST A	A					
12	Liberty Clarity AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	A	34	13	99	90	95
		4	0.25	LB A/A	8.0	FL OZ/A	LPOST A	A					
			3.0	LB/A	3.0	LB/A	LPOST A	A					
LSD (P=.05)								2.0	4.8	0.0	6.2	3.4	4.5

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 07-01-02 7 DA-A	ZEAMD PHYGEN percent 07-11-02 17 DA-A	SETFA CONTROL percent 07-11-02 17 DA-A	SETLU CONTROL percent 07-11-02 17 DA-A	ABUTH CONTROL percent 07-11-02 17 DA-A	AMATA CONTROL percent 07-11-02 17 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Liberty AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		85	0	99	95	85	90
			3.0	LB/A	3.0	LB/A	LPOST A							
3	Liberty AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A		88	2	99	95	90	93
			3.0	LB/A	3.0	LB/A	LPOST A							
4	Liberty AMS	1.67	0.417	LB A/A	32.0	FL OZ/A	LPOST A		96	2	99	96	98	99
			3.0	LB/A	3.0	LB/A	LPOST A							
5	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		90	0	99	96	98	95
		4	0.0312	LB A/A	1.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
6	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		90	3	99	94	99	98
		4	0.047	LB A/A	1.5	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
7	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		92	3	99	98	99	96
		4	0.0625	LB A/A	2.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
8	Liberty Atrazine AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		90	2	99	96	99	99
		4	1.0	LB A/A	1.0	QT/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
9	Liberty Atrazine AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A		90	7	99	99	99	99
		4	1.25	LB A/A	1.25	QT/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
10	Liberty Distinct AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		93	3	99	96	99	99
		70	0.0875	LB A/A	2.0	OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
11	Liberty Callisto AMS COC	1.67	0.209	LB A/A	16.0	FL OZ/A	LPOST A		87	8	99	92	98	99
		4	0.094	LB A/A	3.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
			1.0	% V/V	1.0	% V/V	LPOST A							
12	Liberty Clarity AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		93	13	99	95	99	96
		4	0.25	LB A/A	8.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
LSD (P=.05)									5.5	5.0	0.0	5.5	4.4	5.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								CHEAL CONTROL percent 07-11-02 17 DA-A	ZEAMD PHYGEN percent 08-23-02 60 DA-A	SETFA CONTROL percent 08-23-02 60 DA-A	SETLU CONTROL percent 08-23-02 60 DA-A	ABUTH CONTROL percent 08-23-02 60 DA-A	AMATA CONTROL percent 08-23-02 60 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Liberty AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		87	0	99	95	83	88
			3.0	LB/A	3.0	LB/A	LPOST A							
3	Liberty AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A		87	0	99	95	88	93
			3.0	LB/A	3.0	LB/A	LPOST A							
4	Liberty AMS	1.67	0.417	LB A/A	32.0	FL OZ/A	LPOST A		95	0	99	95	98	98
			3.0	LB/A	3.0	LB/A	LPOST A							
5	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		92	0	99	95	98	93
		4	0.0312	LB A/A	1.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
6	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		93	0	99	94	99	96
		4	0.047	LB A/A	1.5	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
7	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		95	0	99	98	99	95
		4	0.0625	LB A/A	2.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
8	Liberty Atrazine AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		98	0	99	98	99	99
		4	1.0	LB A/A	1.0	QT/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
9	Liberty Atrazine AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A		99	0	99	96	99	98
		4	1.25	LB A/A	1.25	QT/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
10	Liberty Distinct AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		98	0	99	96	96	98
		70	0.0875	LB A/A	2.0	OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
11	Liberty Callisto AMS COC	1.67	0.209	LB A/A	16.0	FL OZ/A	LPOST A		93	0	99	92	96	95
		4	0.094	LB A/A	3.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
			1.0	% V/V	1.0	% V/V	LPOST A							
12	Liberty Clarity AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A		99	0	99	95	99	96
		4	0.25	LB A/A	8.0	FL OZ/A	LPOST A							
			3.0	LB/A	3.0	LB/A	LPOST A							
LSD (P=.05)									6.2	0.0	0.0	5.7	3.9	7.3

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Weed Code								CHEAL
Rating Data Type								CONTROL
Rating Unit								percent
Rating Date								08-23-02
Trt-Eval Interval								60 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code
1	Untreated							0
2	Liberty AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	77
			3.0	LB/A	3.0	LB/A	LPOST A	
3	Liberty AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A	82
			3.0	LB/A	3.0	LB/A	LPOST A	
4	Liberty AMS	1.67	0.417	LB A/A	32.0	FL OZ/A	LPOST A	90
			3.0	LB/A	3.0	LB/A	LPOST A	
5	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	90
		4	0.0312	LB A/A	1.0	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
6	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	92
		4	0.047	LB A/A	1.5	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
7	Liberty Callisto AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	93
		4	0.0625	LB A/A	2.0	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
8	Liberty Atrazine AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	98
		4	1.0	LB A/A	1.0	QT/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
9	Liberty Atrazine AMS	1.67	0.365	LB A/A	28.0	FL OZ/A	LPOST A	99
		4	1.25	LB A/A	1.25	QT/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
10	Liberty Distinct AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	94
		70	0.0875	LB A/A	2.0	OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
11	Liberty Callisto AMS COC	1.67	0.209	LB A/A	16.0	FL OZ/A	LPOST A	91
		4	0.094	LB A/A	3.0	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
			1.0	% V/V	1.0	% V/V	LPOST A	
12	Liberty Clarity AMS	1.67	0.313	LB A/A	24.0	FL OZ/A	LPOST A	99
		4	0.25	LB A/A	8.0	FL OZ/A	LPOST A	
			3.0	LB/A	3.0	LB/A	LPOST A	
LSD (P=.05)								9.0

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SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
 pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	05-14-02	06-15-02	06-22-02	07-01-02
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST1	POST2	POST3
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	68 F	75 F	90 F	90 F
% Relative Humidity:	53	50	71	69
Wind Velocity, Unit:	3 MPH	8 MPH	6 MPH	7 MPH
Soil Temp., Unit:	55 F	68 F	75 F	82 F
Soil Moisture:	DRY	DRY	DRY	DRY
% Cloud Cover:	5	0	15	15

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V5	ZEAMD V6	ZEAMD V8
Stage Scale:	-	DESC	DESC	DESC
Height, Unit:	-	7 IN	13 IN	27 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	SETFA -	SETFA 1-4L,1-2T	SETFA 2-4 LEAF	SETFA 1-2 LEAF
Stage Scale:	-	0.25-5 IN	1-4 IN	0.5-2 IN
Density, Unit:	- -	0-15 FT2	0-5 FT2	0-3 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-4	ABUTH COTYL-4	ABUTH -
Stage Scale:	-	0.25-2 IN	0.25-3 IN	-
Density, Unit:	- -	0-3 FT2	0-5 FT2	- -
Weed 3 Code, Stage:	AMATA -	AMATA -	AMATA 2LF-NUM	AMATA -
Stage Scale:	-	-	0.5-10 IN	-
Density, Unit:	- -	- -	0-5 FT2	- -
Weed 4 Code, Stage:	CHEAL -	CHEAL COTYL-6	CHEAL 6-NUM	CHEAL 6-NUM
Stage Scale:	-	0.25-3 IN	0.5-10 IN	0.5-5 IN
Density, Unit:	- -	0-25 FT2	0-5 FT2	0-5 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-3 LEAF	POLPY 4-8 LEAF	POLPY 4-8 LEAF
Stage Scale:	-	1-2 IN	2-8 IN	2-8 IN
Density, Unit:	- -	0-1 FT2	0-1 FT2	0-1 FT2

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APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	TERRA PRO	HAND BOOM	HAND BOOM	HAND BOOM
Operating Pressure:	30	25	25	25
Nozzle Type:	11002	11003	11003	15003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA

Iowa State University

**FulTime, Degree Xtra and Bicep Lite II Magnum followed by postemergence applied
Glyphomax Plus, Roundup UltraMAX or Touchdown IQ in corn, Nashua, IA, 2002.**

Trial ID: NCC 4
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH
Rating Data Type							STAND	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit							17.5 ft	percent	percent	percent	percent
Rating Date							06-19-02	05-30-02	06-24-02	06-24-02	06-24-02
Trt-Eval Interval							36 DA-A	16 DA-A	9 DA-B	9 DA-B	9 DA-B
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							33	0	0	0
2	FulTime	4	2.0 LB A/A	2.0 QT/A	2.0 QT/A	PRE A	A	35	0	0	99
	Glyphomax Plus	4	1.0 LB A/A	2.0 PT/A	2.0 PT/A	POST2 C	C				60
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST2 C	C				
3	Glyphomax Plus	4	1 LB A/A	2.0 PT/A	2.0 PT/A	POST2 C	C	33	0	5	78
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A	3.0 OZ/A	POST2 C	C				40
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST2 C	C				
	NIS		0.25 % W/W	0.25 % W/W	0.25 % W/W	POST2 C	C				
4	Degree	3.8	1.1 LB A/A	2.32 PT/A	2.32 PT/A	PRE A	A	35	0	0	99
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST2 C	C				25
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2 C	C				
5	Degree Xtra	4.04	1.75 LB A/A	1.73 QT/A	1.73 QT/A	PRE A	A	33	0	0	98
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST2 C	C				60
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2 C	C				
6	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST1 B	B	33	0	3	99
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST1 B	B				98
	Roundup UltraMAX	3.7	0.56 LB AE/A	19.4 FL OZ/A	19.4 FL OZ/A	POST3 D	D				
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST3 D	D				
7	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	1.9 QT/A	PRE A	A	34	0	0	98
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 C	C				73
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2 C	C				
8	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A	32.0 FL OZ/A	POST1 B	B	33	0	3	99
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST1 B	B				99
	Touchdown IQ	3	0.56 LB AE/A	23.9 OZ/A	23.9 OZ/A	POST3 D	D				
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST3 D	D				
LSD (P=.05)							2.1	0.0	2.6	4.4	20.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 06-24-02 9 DA-B	CHEAL CONTROL percent 06-24-02 9 DA-B	POLPY CONTROL percent 06-24-02 9 DA-B	ZEAMD PHYGEN percent 07-01-02 9 DA-C	ZEAMD PHYGEN percent 07-11-02 10 DA-D	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code					
1	Untreated							0	0	0	0	
2	FullTime	4	2.0 LB A/A	2.0 QT/A	2.0 QT/A	PRE	A	99	99	99	0	
	Glyphomax Plus	4	1.0 LB A/A	2.0 PT/A	2.0 PT/A	POST2	C				0	
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST2	C				0	
3	Glyphomax Plus	4	1 LB A/A	2.0 PT/A	2.0 PT/A	POST2	C	40	57	47	7	
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A	3.0 OZ/A	POST2	C				2	
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST2	C					
	NIS		0.25 % W/W	0.25 % W/W	0.25 % W/W	POST2	C					
4	Degree	3.8	1.1 LB A/A	2.32 PT/A	2.32 PT/A	PRE	A	99	68	92	0	
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST2	C				0	
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2	C					
5	Degree Xtra	4.04	1.75 LB A/A	1.73 QT/A	1.73 QT/A	PRE	A	99	98	99	0	
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST2	C				0	
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2	C					
6	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST1	B	98	93	98	0	
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST1	B					
	Roundup UltraMAX	3.7	0.56 LB AE/A	19.4 FL OZ/A	19.4 FL OZ/A	POST3	D				0	
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST3	D					
7	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	1.9 QT/A	PRE	A	99	99	99	0	
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2	C				0	
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2	C					
8	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A	32.0 FL OZ/A	POST1	B	99	88	99	0	
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST1	B				0	
	Touchdown IQ	3	0.56 LB AE/A	23.9 OZ/A	23.9 OZ/A	POST3	D				0	
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST3	D					
LSD (P=.05)								5.7	11.0	5.3	1.8	1.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							SETFA CONTROL percent 07-11-02 10 DA-D	ABUTH CONTROL percent 07-11-02 10 DA-D	AMATA CONTROL percent 07-11-02 10 DA-D	CHEAL CONTROL percent 07-11-02 10 DA-D	POLPY CONTROL percent 07-11-02 10 DA-D
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	FullTime	4	2.0 LB A/A	2.0 QT/A	2.0 QT/A	PRE	A	99	96	99	99
	Glyphomax Plus	4	1.0 LB A/A	2.0 PT/A	2.0 PT/A	POST2	C				
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST2	C				
3	Glyphomax Plus	4	1 LB A/A	2.0 PT/A	2.0 PT/A	POST2	C	99	96	98	99
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A	3.0 OZ/A	POST2	C				
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST2	C				
	NIS		0.25 % W/W	0.25 % W/W	0.25 % W/W	POST2	C				
4	Degree	3.8	1.1 LB A/A	2.32 PT/A	2.32 PT/A	PRE	A	99	93	99	96
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST2	C				
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2	C				
5	Degree Xtra	4.04	1.75 LB A/A	1.73 QT/A	1.73 QT/A	PRE	A	99	95	99	99
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST2	C				
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2	C				
6	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST1	B	99	99	99	99
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST1	B				
	Roundup UltraMAX	3.7	0.56 LB AE/A	19.4 FL OZ/A	19.4 FL OZ/A	POST3	D				
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST3	D				
7	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	1.9 QT/A	PRE	A	99	95	99	99
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2	C				
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2	C				
8	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A	32.0 FL OZ/A	POST1	B	99	99	99	95
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST1	B				
	Touchdown IQ	3	0.56 LB AE/A	23.9 OZ/A	23.9 OZ/A	POST3	D				
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST3	D				
LSD (P=.05)								0.0	5.9	1.4	1.4

Iowa State University

Weed Code							ZEAMD	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							07-26-02	07-26-02	07-26-02	07-26-02	07-26-02
Trt-Eval Interval							25 DA-D	25 DA-D	25 DA-D	25 DA-D	25 DA-D
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	FullTime	4	2.0 LB A/A	2.0 QT/A	2.0 QT/A	PRE A		0	99	98	99
	Glyphomax Plus	4	1.0 LB A/A	2.0 PT/A	2.0 PT/A	POST2 C					
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST2 C					
3	Glyphomax Plus	4	1 LB A/A	2.0 PT/A	2.0 PT/A	POST2 C		0	99	98	99
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A	3.0 OZ/A	POST2 C					
	AMS		1.5 % W/W	1.5 % W/W	1.5 % W/W	POST2 C					
	NIS		0.25 % W/W	0.25 % W/W	0.25 % W/W	POST2 C					
4	Degree	3.8	1.1 LB A/A	2.32 PT/A	2.32 PT/A	PRE A		0	99	93	99
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST2 C					
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2 C					
5	Degree Xtra	4.04	1.75 LB A/A	1.73 QT/A	1.73 QT/A	PRE A		0	99	93	99
	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST2 C					
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2 C					
6	Roundup UltraMAX	3.7	0.75 LB AE/A	26.0 FL OZ/A	26.0 FL OZ/A	POST1 B		0	99	99	99
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST1 B					
	Roundup UltraMAX	3.7	0.56 LB AE/A	19.4 FL OZ/A	19.4 FL OZ/A	POST3 D					
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST3 D					
7	Bicep Lite II Magnum	6	2.85 LB A/A	1.9 QT/A	1.9 QT/A	PRE A		0	99	95	99
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A	24.0 FL OZ/A	POST2 C					
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST2 C					
8	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A	32.0 FL OZ/A	POST1 B		0	99	99	99
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST1 B					
	Touchdown IQ	3	0.56 LB AE/A	23.9 OZ/A	23.9 OZ/A	POST3 D					
	AMS		2.0 % W/W	2.0 % W/W	2.0 % W/W	POST3 D					
LSD (P=.05)							0.0	0.0	6.3	1.4	1.4

Iowa State University

Weed Code							POLPY	ZEAMD
Rating Data Type							CONTROL	YIELD
Rating Unit							percent	BU/A
Rating Date							07-26-02	10-30-02
Trt-Eval Interval							25 DA-D	169 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code	
1	Untreated							0 170
2	FulTime	4	2.0 LB	A/A	2.0 QT/A	PRE	A	99 201
	Glyphomax Plus	4	1.0 LB	A/A	2.0 PT/A	POST2	C	
	AMS		1.5 %	W/W	1.5 %	W/W	POST2	C
3	Glyphomax Plus	4	1 LB	A/A	2.0 PT/A	POST2	C	99 197
	Hornet WDG	68.5	0.128 LB	AE/A	3.0 OZ/A	POST2	C	
	AMS		1.5 %	W/W	1.5 %	W/W	POST2	C
	NIS		0.25 %	W/W	0.25 %	W/W	POST2	C
4	Degree	3.8	1.1 LB	A/A	2.32 PT/A	PRE	A	98 220
	Roundup UltraMAX	3.7	0.75 LB	AE/A	26.0 FL	OZ/A	POST2	C
	AMS		2.0 %	W/W	2.0 %	W/W	POST2	C
5	Degree Xtra	4.04	1.75 LB	A/A	1.73 QT/A	PRE	A	99 202
	Roundup UltraMAX	3.7	0.75 LB	AE/A	26.0 FL	OZ/A	POST2	C
	AMS		2.0 %	W/W	2.0 %	W/W	POST2	C
6	Roundup UltraMAX	3.7	0.75 LB	AE/A	26.0 FL	OZ/A	POST1	B
	AMS		2.0 %	W/W	2.0 %	W/W	POST1	B
	Roundup UltraMAX	3.7	0.56 LB	AE/A	19.4 FL	OZ/A	POST3	D
	AMS		2.0 %	W/W	2.0 %	W/W	POST3	D
7	Bicep Lite II Magnum	6	2.85 LB	A/A	1.9 QT/A	PRE	A	99 205
	Touchdown IQ	3	0.56 LB	AE/A	24.0 FL	OZ/A	POST2	C
	AMS		2.0 %	W/W	2.0 %	W/W	POST2	C
8	Touchdown IQ	3	0.75 LB	AE/A	32.0 FL	OZ/A	POST1	B
	AMS		2.0 %	W/W	2.0 %	W/W	POST1	B
	Touchdown IQ	3	0.56 LB	AE/A	23.9 OZ/A	POST3	D	
	AMS		2.0 %	W/W	2.0 %	W/W	POST3	D
LSD (P=.05)							1.4	30.7

Iowa State University

SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
 pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-14-02	06-15-02	06-22-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOL	BROFOL	BROFOL
Air Temp., Unit:	68 F	75 F	90 C
% Relative Humidity:	53	50	71
Wind Velocity, Unit:	3 MPH	8 MPH	6 MPH
Soil Temp., Unit:	55 F	66 F	75 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	0	10	15

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V5	ZEAMD V6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	8 IN	13 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF	SETFA 2-4 LEAF
Stage Scale:	-	0.5-3 IN	0.5-5 IN
Density, Unit:	- -	0-5 FT2	0-5 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-4	ABUTH 4-6 LEAF
Stage Scale:	-	0.25-3 IN	3-6 IN
Density, Unit:	- -	0-3 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-NUM	AMATA NUMEROUS
Stage Scale:	-	0.25-4 IN	0.5-4 IN
Density, Unit:	- -	0-25 FT2	0-1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 2-NUM	CHEAL NUMEROUS
Stage Scale:	-	0.25-4 IN	0.5-4 IN
Density, Unit:	- -	0-15 FT2	0-2 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-6	POLPY 2-6
Stage Scale:	-	1-3.5 IN	1-4 IN
Density, Unit:	- -	0-2 FT2	0-1 FT2

Iowa State University

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	HAND BOOM	HAND BOOM
Operating Pressure:	30	25	25
Nozzle Type:	11002	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

Iowa State University

Evaluation of Lightning, Distinct, Marksman, Callisto and Atrazine applied postemergence for crop phytotoxicity and weed control in corn, Nashua, IA, 2002.

Trial ID: NCC 5
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH
Rating Data Type								STAND	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit								17.5 ft	percent	percent	percent	percent
Rating Date								06-19-02	05-30-02	06-24-02	06-24-02	06-24-02
Trt-Eval Interval								36 DA-A	16 DA-A	9 DA-B	9 DA-B	9 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							32	0	0	0	0
2	G-Max Lite	5	2.5 LB A/A	4.0 PT/A		PRE	A	32	0	0	99	99
	Balance Pro	4	0.047 LB A/A	1.5 FL OZ/A		PRE	A					
3	G-Max Lite	5	1.88 LB A/A	3.0 PT/A		PRE	A	34	0	0	99	99
	Lightning	70	0.056 LB A/A	1.28 OZ/A		PRE	A					
4	Outlook	6	0.94 LB A/A	20.0 FL OZ/A		PRE	A	34	0	7	99	27
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		5.0 LB/100 GAL	5.0 LB/100 GAL		MPOST	C					
5	G-Max Lite	5	2.5 LB A/A	4.0 PT/A		PRE	A	34	0	5	99	78
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		5.0 LB/100 GAL	5.0 LB/100 GAL		MPOST	C					
6	Lightning	70	0.056 LB A/A	1.28 OZ/A		MPOST	C	34	0	5	58	40
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		MPOST	C					
7	G-Max Lite	5	0.94 LB A/A	1.5 PT/A		PRE	A	34	0	5	98	58
	Lightning	70	0.056 LB A/A	1.28 OZ/A		MPOST	C					
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		MPOST	C					
8	Outlook	6	0.56 LB A/A	12.0 OZ/A		PRE	A	33	0	7	99	75
	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B					
	Distinct	70	0.175 LB A/A	4.0 OZ/A		EPOST	B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
9	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B	34	0	10	98	95
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		EPOST	B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
10	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B	34	0	0	98	99
	Callisto	4	0.0625 LB A/A	2.0 OZ/A		EPOST	B					
	Atrazine	90	0.25 LB A/A	0.278 LB/A		EPOST	B					
	COC		1.0 % V/V	1.0 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
LSD (P=.05)								2.6	0.0	2.3	9.8	20.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								AMATA CONTROL percent 06-24-02 9 DA-B	CHEAL CONTROL percent 06-24-02 9 DA-B	POLPY CONTROL percent 06-24-02 9 DA-B	ZEAMD PHYGEN percent 07-11-02 26 DA-B	SETFA CONTROL percent 07-11-02 26 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	G-Max Lite	5	2.5	LB A/A	4.0	PT/A	PRE	A	99	99	99	0	99
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A					
3	G-Max Lite	5	1.88	LB A/A	3.0	PT/A	PRE	A	99	99	99	0	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	PRE	A					
4	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	99	58	75	2	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C					
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C					
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C					
5	G-Max Lite	5	2.5	LB A/A	4.0	PT/A	PRE	A	99	99	99	2	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C					
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C					
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C					
6	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C	50	52	52	2	90
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C					
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C					
7	G-Max Lite	5	0.94	LB A/A	1.5	PT/A	PRE	A	99	90	95	2	98
	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C					
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C					
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C					
8	Outlook	6	0.56	LB A/A	12.0	OZ/A	PRE	A	99	80	92	3	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B					
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B					
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B					
9	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	98	96	98	5	98
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B					
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B					
10	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	99	99	0	98
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B					
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B					
LSD (P=.05)									9.8	8.1	14.9	2.8	2.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ABUTH CONTROL percent 07-11-02 26 DA-B	AMATA CONTROL percent 07-11-02 26 DA-B	CHEAL CONTROL percent 07-11-02 26 DA-B	POLPY CONTROL percent 07-11-02 26 DA-B	SETFA CONTROL percent 08-23-02 69 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated								0	0	0	0	0
2	G-Max Lite	5	2.5	LB A/A	4.0	PT/A	PRE	A	96	99	99	99	98
	Balance Pro	4	0.047	LB A/A	1.5	FL OZ/A	PRE	A					
3	G-Max Lite	5	1.88	LB A/A	3.0	PT/A	PRE	A	99	98	99	99	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	PRE	A					
4	Outlook	6	0.94	LB A/A	20.0	FL OZ/A	PRE	A	95	99	96	98	95
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C					
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C					
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C					
5	G-Max Lite	5	2.5	LB A/A	4.0	PT/A	PRE	A	96	99	99	99	96
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C					
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C					
	AMS		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	C					
6	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C	98	88	99	99	99
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C					
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C					
7	G-Max Lite	5	0.94	LB A/A	1.5	PT/A	PRE	A	99	98	99	99	98
	Lightning	70	0.056	LB A/A	1.28	OZ/A	MPOST	C					
	Distinct	70	0.175	LB A/A	4.0	OZ/A	MPOST	C					
	NIS		0.25	% V/V	0.25	% V/V	MPOST	C					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	MPOST	C					
8	Outlook	6	0.56	LB A/A	12.0	OZ/A	PRE	A	99	99	99	99	99
	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B					
	Distinct	70	0.175	LB A/A	4.0	OZ/A	EPOST	B					
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B					
9	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	98	99	99	95
	Marksman	3.2	1.0	LB A/A	2.5	PT/A	EPOST	B					
	NIS		0.25	% V/V	0.25	% V/V	EPOST	B					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B					
10	Lightning	70	0.056	LB A/A	1.28	OZ/A	EPOST	B	99	99	99	99	98
	Callisto	4	0.0625	LB A/A	2.0	OZ/A	EPOST	B					
	Atrazine	90	0.25	LB A/A	0.278	LB/A	EPOST	B					
	COC		1.0	% V/V	1.0	% V/V	EPOST	B					
	AMS		12.0	LB/100 GAL	12.0	LB/100 GAL	EPOST	B					
LSD (P=.05)									2.0	4.0	1.3	1.3	2.5

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 08-23-02 69 DA-B	AMATA CONTROL percent 08-23-02 69 DA-B	CHEAL CONTROL percent 08-23-02 69 DA-B	POLPY CONTROL percent 08-23-02 69 DA-B	ZEAMD YIELD BU/A 10-29-02 168 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	195
2	G-Max Lite	5	2.5 LB A/A	4.0 PT/A		PRE	A	98	98	96	99	223
	Balance Pro	4	0.047 LB A/A	1.5 FL OZ/A		PRE	A					
3	G-Max Lite	5	1.88 LB A/A	3.0 PT/A		PRE	A	99	96	99	99	234
	Lightning	70	0.056 LB A/A	1.28 OZ/A		PRE	A					
4	Outlook	6	0.94 LB A/A	20.0 FL OZ/A		PRE	A	96	98	96	98	191
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		5.0 LB/100 GAL	5.0 LB/100 GAL		MPOST	C					
5	G-Max Lite	5	2.5 LB A/A	4.0 PT/A		PRE	A	98	98	98	99	214
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		5.0 LB/100 GAL	5.0 LB/100 GAL		MPOST	C					
6	Lightning	70	0.056 LB A/A	1.28 OZ/A		MPOST	C	99	93	99	99	208
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		MPOST	C					
7	G-Max Lite	5	0.94 LB A/A	1.5 PT/A		PRE	A	99	98	99	99	203
	Lightning	70	0.056 LB A/A	1.28 OZ/A		MPOST	C					
	Distinct	70	0.175 LB A/A	4.0 OZ/A		MPOST	C					
	NIS		0.25 % V/V	0.25 % V/V		MPOST	C					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		MPOST	C					
8	Outlook	6	0.56 LB A/A	12.0 OZ/A		PRE	A	99	98	99	99	205
	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B					
	Distinct	70	0.175 LB A/A	4.0 OZ/A		EPOST	B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
9	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B	99	98	99	99	195
	Marksman	3.2	1.0 LB A/A	2.5 PT/A		EPOST	B					
	NIS		0.25 % V/V	0.25 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
10	Lightning	70	0.056 LB A/A	1.28 OZ/A		EPOST	B	99	99	99	99	207
	Callisto	4	0.0625 LB A/A	2.0 OZ/A		EPOST	B					
	Atrazine	90	0.25 LB A/A	0.278 LB/A		EPOST	B					
	COC		1.0 % V/V	1.0 % V/V		EPOST	B					
	AMS		12.0 LB/100 GAL	12.0 LB/100 GAL		EPOST	B					
LSD (P=.05)								2.0	4.9	2.2	1.3	36.8

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Preemergence applied herbicide tank-mixtures and prepackaged mixtures for weed control in no-tillage corn, Nashua, IA, 2002.

Trial ID: NCN 1
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Nashua Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50658-9270 Initiation Date: 05-14-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate preemergence applied Axiom, Atrazine, Epic, FulTime, Degree Xtra and others for crop phytotoxicity and weed control in no-tillage corn.

Conclusions: Significant differences in corn stand between treatments were observed, but were attributable to variability in stand establishment rather than herbicide treatment. Preemergence (PRE) applied Epic caused 8% corn injury when observed on May 30, sixteen days after application. No other treatment caused injury. All treatments provided excellent control of giant foxtail, velvetleaf, common lambsquarters, and Pennsylvania smartweed when observed on June 7. Common dandelion control was good to excellent with the treatments. On July 26, most treatments continued to provided good to excellent control of all of the species. Velvetleaf control was fair with Acetochlor 75 and G-Max Lite. Treatment corn yields ranged from 179 to 224 bu/A. Most treatment yields did not differ significantly between the treatments, and all yielded significantly better than the untreated control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
4.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
5.	TAROF	DANDELION, COMMON	TARAXACUM OFFICINALE WEBER IN WIGGERS

Crop 1: ZEAMD CORN, FIELD Variety: PIONEER 36809
Planting Date: 05-14-02 Planting Method: DIRECT DRILLED
Rate: 32454 SEEDS/A Depth: 2.0 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Tillage Type: NO-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

MAINTENANCE

Field Prep./Maintenance: The field was left un-tilled from the soybean cropping year 2001. Fertilization included 150 lb/A actual N applied as anhydrous ammonia. Crop residue on the soil surface was 60 to 70% at planting.

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SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
 pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A
Application Date:	05-14-02
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOL
Air Temp., Unit:	68 F
% Relative Humidity:	53
Wind Velocity, Unit:	3 MPH
Soil Temp., Unit:	55 F
Soil Moisture:	DRY
% Cloud Cover:	5

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD -
Stage Scale:	-
	-

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-2 LEAF
Stage Scale:	0.25 IN
Density, Unit:	0-1 FT2
Weed 2 Code, Stage:	ABUTH COTYLEDON
Stage Scale:	0.25 IN
Density, Unit:	0-1 FT2
Weed 3 Code, Stage:	CHEAL 4-NUM
Stage Scale:	0.5-1.5
Density, Unit:	0-10 FT2
Weed 4 Code, Stage:	POLPY 2-6 LEAF
Stage Scale:	0.5-1 IN
Density, Unit:	0-2 FT2
Weed 5 Code, Stage:	TAROF NUMEROUS
Stage Scale:	0.5-1 IN
Density, Unit:	0-1 FT2

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APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	30
Nozzle Type:	11002
Spray Volume, Unit:	20 GPA

Iowa State University

Preemergence applied herbicide tank-mixtures and prepackaged mixtures for weed control in no-tillage corn, Nashua, IA, 2002.

Trial ID: NCN 1
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code						ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH
Rating Data Type						stand	PHYGEN	PHYGEN	CONTROL	CONTROL
Rating Unit						17.5 ft	percent	percent	percent	percent
Rating Date						07-11-02	05-30-02	06-07-02	06-07-02	06-07-02
Trt-Eval Interval						58 DA-A	16 DA-A	24 DA-A	24 DA-A	24 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code			
1	Untreated							23	0	0
2	Axiom	68	0.978 LB A/A	23.0 OZ/A	PRE A			26	0	0
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A					99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					96
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					
3	Define	60	0.788 LB A/A	21.0 OZ/A	PRE A			30	0	0
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A					98
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					93
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					
4	Epic	58	0.471 LB A/A	13.0 OZ/A	PRE A			28	0	8
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A					99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					99
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					
5	USA2001	71.5	0.581 LB A/A	13.0 OZ/A	PRE A			26	0	0
	Atrazine	90	0.9 LB A/A	1.0 LB/A	PRE A					96
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					96
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					
6	Acetochlor 75	5.5	2.75 LB A/A	2.0 QT/A	PRE A			29	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					96
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					88
7	Acetochlor 150	5.1	3.44 LB A/A	2.7 QT/A	PRE A			27	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					95
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					93
8	FulTime	4	3.33 LB A/A	3.33 QT/A	PRE A			27	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					96
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					92
9	FulTime	4	3.0 LB A/A	3.0 QT/A	PRE A			28	0	0
	Hornet WDG	68.5	0.128 LB AE/A	3.0 OZ/A	PRE A					98
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	PRE A					95
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					
10	G-Max Lite	5	2.5 LB A/A	4.0 PT/A	PRE A			30	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					96
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					87
11	Harness Xtra	6	3.45 LB A/A	2.3 QT/A	PRE A			28	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					98
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					90
12	Harness Xtra	5.6	3.36 LB A/A	2.4 QT/A	PRE A			30	0	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					98
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					95
13	Field Master	4.25	4.25 LB A/A	4.0 QT/A	PRE A			29	0	0
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	PRE A					95

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Weed Code						ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH		
Rating Data Type						stand	PHYGEN	PHYGEN	CONTROL	CONTROL		
Rating Unit						17.5 ft	percent	percent	percent	percent		
Rating Date						07-11-02	05-30-02	06-07-02	06-07-02	06-07-02		
Trt-Eval Interval						58 DA-A	16 DA-A	24 DA-A	24 DA-A	24 DA-A		
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code					
14	Degree Xtra	4.04	3.74 LB A/A	3.7 QT/A	PRE A			28	0	0	98	95
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
15	Bicep Lite II Magnum	6	3.3 LB A/A	2.2 QT/A	PRE A			27	0	0	96	95
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A							
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A							
LSD (P=.05)						3.7	0.0	1.2	3.7	9.7		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-07-02 24 DA-A	POLPY CONTROL percent 06-07-02 24 DA-A	TAROF CONTROL percent 06-07-02 24 DA-A	SETFA CONTROL percent 07-26-02 73 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated								0	0
2	Axiom	68	0.978	LB	A/A	23.0	OZ/A	PRE A	99	99
	Atrazine	90	0.9	LB	A/A	1.0	LB/A	PRE A		
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		95
3	Define	60	0.788	LB	A/A	21.0	OZ/A	PRE A	99	99
	Atrazine	90	0.9	LB	A/A	1.0	LB/A	PRE A		
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		85
4	Epic	58	0.471	LB	A/A	13.0	OZ/A	PRE A	99	99
	Atrazine	90	0.9	LB	A/A	1.0	LB/A	PRE A		
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		92
5	USA2001	71.5	0.581	LB	A/A	13.0	OZ/A	PRE A	99	99
	Atrazine	90	0.9	LB	A/A	1.0	LB/A	PRE A		
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		90
6	Acetochlor 75	5.5	2.75	LB	A/A	2.0	QT/A	PRE A	99	99
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		88
7	Acetochlor 150	5.1	3.44	LB	A/A	2.7	QT/A	PRE A	99	99
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		92
8	FulTime	4	3.33	LB	A/A	3.33	QT/A	PRE A	99	99
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		88
9	FulTime	4	3.0	LB	A/A	3.0	QT/A	PRE A	99	99
	Hornet WDG	68.5	0.128	LB	AE/A	3.0	OZ/A	PRE A		
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		93
10	G-Max Lite	5	2.5	LB	A/A	4.0	PT/A	PRE A	99	99
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		88
11	Harness Xtra	6	3.45	LB	A/A	2.3	QT/A	PRE A	99	99
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		85
12	Harness Xtra	5.6	3.36	LB	A/A	2.4	QT/A	PRE A	99	99
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		92
13	Field Master	4.25	4.25	LB	A/A	4.0	QT/A	PRE A	99	99
	AMS		17.0	LB/100	GAL	17.0	LB/100 GAL	PRE A		90
14	Degree Xtra	4.04	3.74	LB	A/A	3.7	QT/A	PRE A	99	99
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE A		
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE A		95

Iowa State University

Weed Code							CHEAL	POLPY	TAROF	SETFA	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							06-07-02	06-07-02	06-07-02	07-26-02	
Trt-Eval Interval							24 DA-A	24 DA-A	24 DA-A	73 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
15	Bicep Lite II Magnum	6	3.3	LB A/A	2.2	QT/A	PRE	A	99	99	
	Roundup UltraMAX	5	0.78	LB A/A	20.0	OZ/A	PRE	A		87	
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	PRE	A		92	
LSD (P=.05)							0.0	0.0	9.9	4.7	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-26-02 73 DA-A	CHEAL CONTROL percent 07-26-02 73 DA-A	POLPY CONTROL percent 07-26-02 73 DA-A	TAROF CONTROL percent 07-26-02 73 DA-A	ZEAMD YIELD BU/A 10-29-02 168 DA-A			
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	52	
2	Axiom	68	0.978	LB	A/A	23.0	OZ/A	PRE	A	95	96	99	85	183
	Atrazine	90	0.9	LB	A/A	1.0	LB/A	PRE	A					
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
3	Define	60	0.788	LB	A/A	21.0	OZ/A	PRE	A	80	98	99	85	218
	Atrazine	90	0.9	LB	A/A	1.0	LB/A	PRE	A					
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
4	Epic	58	0.471	LB	A/A	13.0	OZ/A	PRE	A	98	99	98	88	214
	Atrazine	90	0.9	LB	A/A	1.0	LB/A	PRE	A					
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
5	USA2001	71.5	0.581	LB	A/A	13.0	OZ/A	PRE	A	92	98	99	87	223
	Atrazine	90	0.9	LB	A/A	1.0	LB/A	PRE	A					
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
6	Acetochlor 75	5.5	2.75	LB	A/A	2.0	QT/A	PRE	A	68	96	98	83	189
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
7	Acetochlor 150	5.1	3.44	LB	A/A	2.7	QT/A	PRE	A	83	99	98	90	220
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
8	FulTime	4	3.33	LB	A/A	3.33	QT/A	PRE	A	83	99	99	87	195
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
9	FulTime	4	3.0	LB	A/A	3.0	QT/A	PRE	A	93	99	99	90	199
	Hornet WDG	68.5	0.128	LB	AE/A	3.0	OZ/A	PRE	A					
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	FL OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
10	G-Max Lite	5	2.5	LB	A/A	4.0	PT/A	PRE	A	72	99	99	87	224
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
11	Harness Xtra	6	3.45	LB	A/A	2.3	QT/A	PRE	A	80	98	99	82	190
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
12	Harness Xtra	5.6	3.36	LB	A/A	2.4	QT/A	PRE	A	85	96	96	90	201
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					
13	Field Master	4.25	4.25	LB	A/A	4.0	QT/A	PRE	A	85	98	99	83	217
	AMS		17.0	LB/100	GAL	17.0	LB/100 GAL	PRE	A					
14	Degree Xtra	4.04	3.74	LB	A/A	3.7	QT/A	PRE	A	87	99	99	90	179
	Roundup UltraMAX	5	0.78	LB	A/A	20.0	OZ/A	PRE	A					
	AMS		8.5	LB/100	GAL	8.5	LB/100 GAL	PRE	A					

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Weed Code						ABUTH	CHEAL	POLPY	TAROF	ZEAMD
Rating Data Type						CONTROL	CONTROL	CONTROL	CONTROL	YIELD
Rating Unit						percent	percent	percent	percent	BU/A
Rating Date						07-26-02	07-26-02	07-26-02	07-26-02	10-29-02
Trt-Eval Interval						73 DA-A	73 DA-A	73 DA-A	73 DA-A	168 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
15	Bicep Lite II Magnum	6	3.3 LB A/A	2.2 QT/A	PRE A			87	95	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 OZ/A	PRE A					82
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	PRE A					197
LSD (P=.05)						11.6	3.1	2.7	13.2	39.6

Iowa State University

FirstRate, Authority, Valor, Domain soil applied and Glyphomax Plus, Touchdown IQ, Roundup UltraMAX and Phoenix postemergence in soybean, Nashua, IA, 2002.

Trial ID: NSC 1
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
Affiliation: Iowa State University
Postal Code: 50011
Investigator: Owen/Hartzler/Pringnitz
Affiliation: Iowa State University
Postal Code: 50011

TRIAL LOCATION

City: Nashua Trial Status: ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50658-9270 Initiation Date: 05-17-02
Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate preemergence applied Gauntlet, FirstRate, Valor and Domain, and postemergence Glyphomax Plus, Touchdown IQ, Roundup UltraMAX, and Phoenix for crop phytotoxicity and weed control in soybean.

Conclusions: Preemergence (PRE) treatments caused little or no soybean injury, when observed on June 24. PRE applied FirstRate plus Authority (Gauntlet) and Valor treatments demonstrated good to excellent weed control on June 24. FirstRate and Domain provided unacceptable common waterhemp and velvetleaf control, respectively. However, they demonstrated good control of the remaining weeds.

On July 1, POST1 applied FirstRate plus Flexstar plus Select and Roundup UltraMAX plus Aim demonstrated 10 and 17% soybean injury, respectively. Injury from POST1 Phoenix plus FirstRate treatments was 17 and 20% injury for the 0.125 and 0.15 lb/A application rates of Phoenix, respectively. POST1 applications of Cobra plus FirstRate resulted in 25% and Phoenix plus Harmony GT, 32% injury.

Treatments including both PRE and postemergence (POST) timings provided good to excellent weed control. Common lambsquarters and velvetleaf control was marginal for POST1 Phoenix plus Harmony GT. Treatments with POST1 Phoenix, Cobra or Flexstar plus FirstRate demonstrated poor common lambsquarters and marginal Pennsylvania smartweed control. However, control of other weeds by these treatments was good to excellent. Treatments containing only POST timings with Roundup UltraMAX or Touchdown IQ demonstrated excellent control of all weeds present. Soybean yields ranged from 46 to 59 bu/A with the treatments. POST1 Cobra plus FirstRate followed by POST2 Select yielded 46 bu/A, which was significantly less than a number of treatments. POST1 FirstRate plus Flexstar plus Select also yielded significantly less compared to other treatments. All treatment yields were significantly higher than the untreated control. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.

Crop 1: GLXMA SOYBEAN Variety: PIONEER 92B38
Planting Date: 05-17-02 Planting Method: DIRECT DRILLED
Rate: 189417 SEEDS/A Depth: 1.25 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Crop residue on the soil surface was 50% at planting.

SOIL DESCRIPTION

% OM: 4.5 Texture: LOAM
 pH: 6.85 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	05-17-02	06-24-02	07-01-02	07-11-02
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST1	POST2	POST3
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	57 F	90 F	90 F	70 F
% Relative Humidity:	46	63	69	83
Wind Velocity, Unit:	8 MPH	4 MPH	7 MPH	8 MPH
Soil Temp., Unit:	57 F	79 F	82 F	68 F
Soil Moisture:	DRY	DRY	DRY	MOIST
% Cloud Cover:	50	15	15	100

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	GLXMA -	GLXMA V3	GLXMA V6	GLXMA R1-R2
Stage Scale:	-	DESC	DESC	DESC
Height, Unit:	-	7 IN	11 IN	20 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	SETFA -	SETFA 2-4L,0-4T	SETFA 2-4 LEAF	SETFA 2-4 LEAF
Stage Scale:	-	1-8 IN	3-4 IN	3-5 IN
Density, Unit:	- -	0-10 FT2	0-2 FT2	0-1 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 4-6 LEAF	ABUTH 4-6 LEAF	ABUTH 4-10 LEAF
Stage Scale:	-	3-6 IN	3-4 IN	4-7 IN
Density, Unit:	- -	0-5 FT2	0-2 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 4-9 LEAF	AMATA NUMEROUS	AMATA NUMEROUS
Stage Scale:	-	0.5-6 IN	4-10 IN	4-10 IN
Density, Unit:	- -	0-5 FT2	0-1 FT2	0-1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS	CHEAL NUMEROUS	CHEAL NUMEROUS
Stage Scale:	-	2-10 IN	4-12 IN	4-14 IN
Density, Unit:	- -	0-3 FT2	0-2 FT2	0-1 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 4-6 LEAF	POLPY NUMEROUS	POLPY NUMEROUS
Stage Scale:	-	2-4 IN	4-10 IN	4-12 IN
Density, Unit:	- -	0-3 FT2	0-5 FT2	0-1 FT2

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APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	TERRA PRO	HAND BOOM	HAND BOOM	HAND BOOM
Operating Pressure:	30	25	25	25
Nozzle Type:	11002	11003	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA

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FirstRate, Authority, Valor, Domain soil applied and Glyphomax Plus, Touchdown IQ, Roundup UltraMAX and Phoenix postemergence in soybean, Nashua, IA, 2002.

Trial ID: NSC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Nashua

Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	SETFA	ABUTH	AMATA	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							06-24-02	06-24-02	06-24-02	06-24-02	
Trt-Eval Interval							0 DA-B	0 DA-B	0 DA-B	0 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		PRE	A	3	93	96	96
	Authority	75	0.125 LB A/A	2.67 OZ/A		PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
3	FirstRate	84	0.021 LB A/A	0.4 OZ/A		PRE	A	5	95	98	96
	Authority	75	0.166 LB A/A	3.55 OZ/A		PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
4	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		PRE	A	2	90	93	55
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
5	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	0	0	0	0
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
6	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	0	0	0	0
	Flexstar	1.88	0.176 LB A/A	12.0 FL OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST1	B				
	NIS		0.125 % V/V	0.125 % V/V		POST1	B				
7	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	0	0	0	0
	Aim	2	0.0039 LB A/A	0.25 FL OZ/A		POST1	B				
8	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	0	0	0	0
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
9	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	0	0	0	0
10	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A		POST1	B	0	0	0	0
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
11	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	2	95	88	96
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
12	Domain	60	0.36 LB A/A	9.6 OZ/A		PRE	A	0	95	50	93
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				

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Weed Code							GLXMA	SETFA	ABUTH	AMATA	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							06-24-02	06-24-02	06-24-02	06-24-02	
Trt-Eval Interval							0 DA-B	0 DA-B	0 DA-B	0 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Unit	Grow Stg	Appl Code				
13	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	0	93	88	95
	Phoenix	2	0.125 LB A/A	8.0 FL OZ/A		POST1	B				
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
14	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A		POST1	B	0	0	0	0
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST2	C				
	COC		1.0 % V/V	1.0 % V/V		POST2	C				
	AMS		2.5 LB/A	2.5 LB/A		POST2	C				
15	Cobra	2	0.15 LB A/A	9.6 FL OZ/A		POST1	B	0	0	0	0
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B				
	COC		1.0 PT/A	1.0 PT/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST2	C				
	COC		1.0 % V/V	1.0 % V/V		POST2	C				
	AMS		2.5 LB/A	2.5 LB/A		POST2	C				
16	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A		POST1	B	0	0	0	0
	Harmony GT	75	0.0039 LB A/A	0.083 OZ/A		POST1	B				
	Select	2	0.125 LB A/A	8.0 FL OZ/A		POST1	B				
	NIS		0.125 % V/V	0.125 % V/V		POST1	B				
	AMS		2.0 LB/A	2.0 LB/A		POST1	B				
LSD (P=.05)							2.9	1.7	6.1	5.9	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-24-02 0 DA-B	POLPY CONTROL percent 06-24-02 0 DA-B	GLXMA PHYGEN percent 07-01-02 7 DA-B	GLXMA PHYGEN percent 07-11-02 17 DA-B	SETFA CONTROL percent 07-11-02 17 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		PRE	A	99	93	0	0
	Authority	75	0.125 LB A/A	2.67 OZ/A		PRE	A				99
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
3	FirstRate	84	0.021 LB A/A	0.4 OZ/A		PRE	A	99	96	0	0
	Authority	75	0.166 LB A/A	3.55 OZ/A		PRE	A				99
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
4	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		PRE	A	96	88	0	0
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				99
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
5	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	0	0	3	2
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				99
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
6	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	0	0	10	0
	Flexstar	1.88	0.176 LB A/A	12.0 FL OZ/A		POST1	B				87
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST1	B				
	NIS		0.125 % V/V	0.125 % V/V		POST1	B				
7	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	0	0	17	7
	Aim	2	0.0039 LB A/A	0.25 FL OZ/A		POST1	B				99
8	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	0	0	2	0
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
9	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	0	0	0	0
10	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A		POST1	B	0	0	3	0
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				99
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
11	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	93	93	2	0
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				99
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
12	Domain	60	0.36 LB A/A	9.6 OZ/A		PRE	A	96	92	0	0
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				99
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
13	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	96	93	17	5
	Phoenix	2	0.125 LB A/A	8.0 FL OZ/A		POST1	B				93
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-24-02 0 DA-B	POLPY CONTROL percent 06-24-02 0 DA-B	GLXMA PHYGEN percent 07-01-02 7 DA-B	GLXMA PHYGEN percent 07-11-02 17 DA-B	SETFA CONTROL percent 07-11-02 17 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
14	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A	FL OZ/A	POST1	B	0	0	20	10	82
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	OZ/A	POST1	B					
	NIS		0.25 % V/V	0.25 % V/V	% V/V	POST1	B					
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST1	B					
	Select	2	0.094 LB A/A	6.0 FL OZ/A	FL OZ/A	POST2	C					
	COC		1.0 % V/V	1.0 % V/V	% V/V	POST2	C					
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST2	C					
15	Cobra	2	0.15 LB A/A	9.6 FL OZ/A	FL OZ/A	POST1	B	0	0	25	12	85
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A	OZ/A	POST1	B					
	COC		1.0 PT/A	1.0 PT/A	PT/A	POST1	B					
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST1	B					
	Select	2	0.094 LB A/A	6.0 FL OZ/A	FL OZ/A	POST2	C					
	COC		1.0 % V/V	1.0 % V/V	% V/V	POST2	C					
	AMS		2.5 LB/A	2.5 LB/A	LB/A	POST2	C					
16	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A	FL OZ/A	POST1	B	0	0	32	23	88
	Harmony GT	75	0.0039 LB A/A	0.083 OZ/A	OZ/A	POST1	B					
	Select	2	0.125 LB A/A	8.0 FL OZ/A	FL OZ/A	POST1	B					
	NIS		0.125 % V/V	0.125 % V/V	% V/V	POST1	B					
	AMS		2.0 LB/A	2.0 LB/A	LB/A	POST1	B					
LSD (P=.05)								2.7	5.1	3.0	3.0	2.4

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-11-02 17 DA-B	AMATA CONTROL percent 07-11-02 17 DA-B	CHEAL CONTROL percent 07-11-02 17 DA-B	POLPY CONTROL percent 07-11-02 17 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		PRE	A	99	98	99	98
	Authority	75	0.125 LB A/A	2.67 OZ/A		PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
3	FirstRate	84	0.021 LB A/A	0.4 OZ/A		PRE	A	99	99	99	99
	Authority	75	0.166 LB A/A	3.55 OZ/A		PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
4	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		PRE	A	99	99	99	96
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
5	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	99	93	99	95
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
6	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	98	93	55	90
	Flexstar	1.88	0.176 LB A/A	12.0 FL OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST1	B				
	NIS		0.125 % V/V	0.125 % V/V		POST1	B				
7	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	98	99	99	95
	Aim	2	0.0039 LB A/A	0.25 FL OZ/A		POST1	B				
8	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	99	98	99	98
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
9	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	96	98	99	93
10	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A		POST1	B	98	98	99	95
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
11	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	99	99	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
12	Domain	60	0.36 LB A/A	9.6 OZ/A		PRE	A	99	99	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
13	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	93	99	95	95
	Phoenix	2	0.125 LB A/A	8.0 FL OZ/A		POST1	B				
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				

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Weed Code							ABUTH	AMATA	CHEAL	POLPY		
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit							percent	percent	percent	percent		
Rating Date							07-11-02	07-11-02	07-11-02	07-11-02		
Trt-Eval Interval							17 DA-B	17 DA-B	17 DA-B	17 DA-B		
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
14	Phoenix	2	0.15 LB/A/A	9.6 FL OZ/A		POST1	B	88	92	57	87	
	FirstRate	84	0.0157 LB/A/A	0.3 OZ/A		POST1	B					
	NIS		0.25 % V/V	0.25 % V/V		POST1	B					
	AMS		2.5 LB/A	2.5 LB/A		POST1	B					
	Select	2	0.094 LB/A/A	6.0 FL OZ/A		POST2	C					
	COC		1.0 % V/V	1.0 % V/V		POST2	C					
	AMS		2.5 LB/A	2.5 LB/A		POST2	C					
15	Cobra	2	0.15 LB/A/A	9.6 FL OZ/A		POST1	B	88	95	60	85	
	FirstRate	84	0.0157 LB/A/A	0.3 OZ/A		POST1	B					
	COC		1.0 PT/A	1.0 PT/A		POST1	B					
	AMS		2.5 LB/A	2.5 LB/A		POST1	B					
	Select	2	0.094 LB/A/A	6.0 FL OZ/A		POST2	C					
	COC		1.0 % V/V	1.0 % V/V		POST2	C					
	AMS		2.5 LB/A	2.5 LB/A		POST2	C					
16	Phoenix	2	0.15 LB/A/A	9.6 FL OZ/A		POST1	B	72	95	86	92	
	Harmony GT	75	0.0039 LB/A/A	0.083 OZ/A		POST1	B					
	Select	2	0.125 LB/A/A	8.0 FL OZ/A		POST1	B					
	NIS		0.125 % V/V	0.125 % V/V		POST1	B					
	AMS		2.0 LB/A	2.0 LB/A		POST1	B					
LSD (P=.05)							6.3	4.4	19.0	4.3		

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							GLXMA PHYGEN percent 07-26-02 32 DA-B	SETFA CONTROL percent 07-26-02 32 DA-B	ABUTH CONTROL percent 07-26-02 32 DA-B	AMATA CONTROL percent 07-26-02 32 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	PRE	A	0	99	99	98
	Authority	75	0.125	LB A/A	2.67	OZ/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST1	B				
	NIS		0.25	% V/V	0.25	% V/V	POST1	B				
	AMS		1.5	% W/W	1.5	% W/W	POST1	B				
3	FirstRate	84	0.021	LB A/A	0.4	OZ/A	PRE	A	0	99	99	99
	Authority	75	0.166	LB A/A	3.55	OZ/A	PRE	A				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST1	B				
	NIS		0.25	% V/V	0.25	% V/V	POST1	B				
	AMS		1.5	% W/W	1.5	% W/W	POST1	B				
4	FirstRate	84	0.0315	LB A/A	0.6	OZ/A	PRE	A	0	99	99	99
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST1	B				
	AMS		1.5	% W/W	1.5	% W/W	POST1	B				
5	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST1	B	0	99	99	90
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST1	B				
	NIS		0.25	% V/V	0.25	% V/V	POST1	B				
	AMS		1.5	% W/W	1.5	% W/W	POST1	B				
6	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST1	B	0	85	98	92
	Flexstar	1.88	0.176	LB A/A	12.0	FL OZ/A	POST1	B				
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST1	B				
	28% UAN		2.5	% V/V	2.5	% V/V	POST1	B				
	NIS		0.125	% V/V	0.125	% V/V	POST1	B				
7	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST1	B	5	99	95	98
	Aim	2	0.0039	LB A/A	0.25	FL OZ/A	POST1	B				
8	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST1	B	0	99	99	98
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST1	B				
	Roundup UltraMAX	5	0.78	LB A/A	20.0	FL OZ/A	POST3	D				
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST3	D				
9	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST1	B	0	99	96	98
10	Touchdown IQ	3	0.75	LB AE/A	32.0	FL OZ/A	POST1	B	0	99	98	96
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST1	B				
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	POST3	D				
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST3	D				
11	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	A	0	99	99	99
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST1	B				
	AMS		2.5	LB/A	2.5	LB/A	POST1	B				
12	Domain	60	0.36	LB A/A	9.6	OZ/A	PRE	A	0	99	99	99
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST1	B				
	AMS		2.5	LB/A	2.5	LB/A	POST1	B				
13	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	A	2	90	95	99
	Phoenix	2	0.125	LB A/A	8.0	FL OZ/A	POST1	B				
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST1	B				
	Select	2	0.094	LB A/A	6.0	FL OZ/A	POST1	B				
	NIS		0.25	% V/V	0.25	% V/V	POST1	B				

Iowa State University

Weed Code							GLXMA	SETFA	ABUTH	AMATA	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-26-02	07-26-02	07-26-02	07-26-02	
Trt-Eval Interval							32 DA-B	32 DA-B	32 DA-B	32 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
14	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A		POST1 B		7	83	93	92
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1 B					
	NIS		0.25 % V/V	0.25 % V/V		POST1 B					
	AMS		2.5 LB/A	2.5 LB/A		POST1 B					
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST2 C					
	COC		1.0 % V/V	1.0 % V/V		POST2 C					
	AMS		2.5 LB/A	2.5 LB/A		POST2 C					
15	Cobra	2	0.15 LB A/A	9.6 FL OZ/A		POST1 B		5	88	92	95
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1 B					
	COC		1.0 PT/A	1.0 PT/A		POST1 B					
	AMS		2.5 LB/A	2.5 LB/A		POST1 B					
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST2 C					
	COC		1.0 % V/V	1.0 % V/V		POST2 C					
	AMS		2.5 LB/A	2.5 LB/A		POST2 C					
16	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A		POST1 B		13	88	72	95
	Harmony GT	75	0.0039 LB A/A	0.083 OZ/A		POST1 B					
	Select	2	0.125 LB A/A	8.0 FL OZ/A		POST1 B					
	NIS		0.125 % V/V	0.125 % V/V		POST1 B					
	AMS		2.0 LB/A	2.0 LB/A		POST1 B					
LSD (P=.05)							4.0	3.7	4.1	5.0	

Iowa State University

Weed Code							CHEAL	POLPY	SETFA	ABUTH	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-26-02	07-26-02	08-23-02	08-23-02	
Trt-Eval Interval							32 DA-B	32 DA-B	60 DA-B	60 DA-B	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		PRE	A	99	96	99	99
	Authority	75	0.125 LB A/A	2.67 OZ/A		PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
3	FirstRate	84	0.021 LB A/A	0.4 OZ/A		PRE	A	99	99	99	99
	Authority	75	0.166 LB A/A	3.55 OZ/A		PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
4	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		PRE	A	99	98	99	99
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
5	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	99	95	99	99
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
6	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	40	78	85	98
	Flexstar	1.88	0.176 LB A/A	12.0 FL OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST1	B				
	NIS		0.125 % V/V	0.125 % V/V		POST1	B				
7	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	96	95	99	95
	Aim	2	0.0039 LB A/A	0.25 FL OZ/A		POST1	B				
8	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	99	98	99	99
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
9	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	99	93	99	98
10	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A		POST1	B	96	95	99	99
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
11	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	99	99	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
12	Domain	60	0.36 LB A/A	9.6 OZ/A		PRE	A	99	99	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
13	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	91	95	90	95
	Phoenix	2	0.125 LB A/A	8.0 FL OZ/A		POST1	B				
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				

Iowa State University

Weed Code							CHEAL	POLPY	SETFA	ABUTH	
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-26-02	07-26-02	08-23-02	08-23-02	
Trt-Eval Interval							32 DA-B	32 DA-B	60 DA-B	60 DA-B	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
14	Phoenix	2	0.15 LB/A/A	9.6 FL OZ/A		POST1	B	47	78	83	93
	FirstRate	84	0.0157 LB/A/A	0.3 OZ/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
	Select	2	0.094 LB/A/A	6.0 FL OZ/A		POST2	C				
	COC		1.0 % V/V	1.0 % V/V		POST2	C				
	AMS		2.5 LB/A	2.5 LB/A		POST2	C				
15	Cobra	2	0.15 LB/A/A	9.6 FL OZ/A		POST1	B	52	72	88	92
	FirstRate	84	0.0157 LB/A/A	0.3 OZ/A		POST1	B				
	COC		1.0 PT/A	1.0 PT/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
	Select	2	0.094 LB/A/A	6.0 FL OZ/A		POST2	C				
	COC		1.0 % V/V	1.0 % V/V		POST2	C				
	AMS		2.5 LB/A	2.5 LB/A		POST2	C				
16	Phoenix	2	0.15 LB/A/A	9.6 FL OZ/A		POST1	B	77	82	88	72
	Harmony GT	75	0.0039 LB/A/A	0.083 OZ/A		POST1	B				
	Select	2	0.125 LB/A/A	8.0 FL OZ/A		POST1	B				
	NIS		0.125 % V/V	0.125 % V/V		POST1	B				
	AMS		2.0 LB/A	2.0 LB/A		POST1	B				
LSD (P=.05)							20.4	6.9	3.7	3.5	

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							AMATA CONTROL percent 08-23-02 60 DA-B	CHEAL CONTROL percent 08-23-02 60 DA-B	POLPY CONTROL percent 08-23-02 60 DA-B	GLXMA YIELD BU/A 10-18-02 154 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	34
2	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		PRE	A	98	99	96	54
	Authority	75	0.125 LB A/A	2.67 OZ/A		PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
3	FirstRate	84	0.021 LB A/A	0.4 OZ/A		PRE	A	99	99	99	56
	Authority	75	0.166 LB A/A	3.55 OZ/A		PRE	A				
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
4	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		PRE	A	99	99	98	57
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
5	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	90	99	95	55
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				
	AMS		1.5 % W/W	1.5 % W/W		POST1	B				
6	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B	92	35	78	48
	Flexstar	1.88	0.176 LB A/A	12.0 FL OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	28% UAN		2.5 % V/V	2.5 % V/V		POST1	B				
	NIS		0.125 % V/V	0.125 % V/V		POST1	B				
7	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	98	98	95	55
	Aim	2	0.0039 LB A/A	0.25 FL OZ/A		POST1	B				
8	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	98	99	98	59
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
9	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B	98	98	95	53
10	Touchdown IQ	3	0.75 LB AE/A	32.0 FL OZ/A		POST1	B	98	98	96	56
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST1	B				
	Touchdown IQ	3	0.56 LB AE/A	24.0 FL OZ/A		POST3	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL		POST3	D				
11	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	99	99	99	57
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
12	Domain	60	0.36 LB A/A	9.6 OZ/A		PRE	A	99	99	99	56
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST1	B				
	AMS		2.5 LB/A	2.5 LB/A		POST1	B				
13	Valor	51	0.048 LB A/A	1.5 OZ/A		PRE	A	99	90	95	56
	Phoenix	2	0.125 LB A/A	8.0 FL OZ/A		POST1	B				
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1	B				
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST1	B				
	NIS		0.25 % V/V	0.25 % V/V		POST1	B				

Iowa State University

Weed Code							AMATA	CHEAL	POLPY	GLXMA	
Rating Data Type							CONTROL	CONTROL	CONTROL	YIELD	
Rating Unit							percent	percent	percent	BU/A	
Rating Date							08-23-02	08-23-02	08-23-02	10-18-02	
Trt-Eval Interval							60 DA-B	60 DA-B	60 DA-B	154 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
14	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A		POST1 B		92	47	80	51
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1 B					
	NIS		0.25 % V/V	0.25 % V/V		POST1 B					
	AMS		2.5 LB/A	2.5 LB/A		POST1 B					
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST2 C					
	COC		1.0 % V/V	1.0 % V/V		POST2 C					
	AMS		2.5 LB/A	2.5 LB/A		POST2 C					
15	Cobra	2	0.15 LB A/A	9.6 FL OZ/A		POST1 B		95	40	68	46
	FirstRate	84	0.0157 LB A/A	0.3 OZ/A		POST1 B					
	COC		1.0 PT/A	1.0 PT/A		POST1 B					
	AMS		2.5 LB/A	2.5 LB/A		POST1 B					
	Select	2	0.094 LB A/A	6.0 FL OZ/A		POST2 C					
	COC		1.0 % V/V	1.0 % V/V		POST2 C					
	AMS		2.5 LB/A	2.5 LB/A		POST2 C					
16	Phoenix	2	0.15 LB A/A	9.6 FL OZ/A		POST1 B		95	75	82	55
	Harmony GT	75	0.0039 LB A/A	0.083 OZ/A		POST1 B					
	Select	2	0.125 LB A/A	8.0 FL OZ/A		POST1 B					
	NIS		0.125 % V/V	0.125 % V/V		POST1 B					
	AMS		2.0 LB/A	2.0 LB/A		POST1 B					
LSD (P=.05)							5.0	22.8	6.5	8.8	

Iowa State University

Evaluation of preplant incorporated, preemergence and postemergence herbicides including Raptor, Extreme and Glyphomax Plus in soybean, Nashua, IA, 2002.

Trial ID: NSC 2 Study Dir.: Owen/Lux/Franzenburg
 Location: Nashua Investigator: Owen/Hartzler/Pringnitz

GENERAL TRIAL INFORMATION

Study Director: Owen/Lux/Franzenburg
 Affiliation: Iowa State University
 Postal Code: 50011
 Investigator: Owen/Hartzler/Pringnitz
 Affiliation: Iowa State University
 Postal Code: 50011

TRIAL LOCATION

City: Nashua Trial Status: ONE-YEAR/FINAL
 State/Prov.: IA
 Postal Code: 50658-9270 Initiation Date: 05-17-02
 Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate crop phytotoxicity and weed control from various soil applied and postemergence applied herbicides in soybean.

Conclusions: Soybean injury was observed on June 24 as a result of the preplant incorporated (PPI) treatments. PPI and preemergence (PRE) applied treatments provided good to excellent giant foxtail and common waterhemp control on June 24, prior to postemergence (POST) applications. Velvetleaf, common lambsquarters, and Pennsylvania smartweed control was good to excellent with all treatments except PPI Pendimax, Treflan HPF, Prowl, and Prowl H20. These treatments provided unacceptable velvetleaf control and generally marginal common lambsquarters and Pennsylvania smartweed control.

Early postemergence (EPOST) applied treatments caused 7 to 25% soybean injury when observed on July 1, seven days after application. Raptor plus Ultra Blazer caused the most serious injury. Injury symptoms were also evident on July 11 and 26. Several POST applied treatments caused negligible soybean injury when observed on July 11 and 26. On July 11, 26, and August 23, good to excellent grass and broadleaf weed control was observed with nearly all of the PPI and PPI followed by EPOST or POST applied treatments. PPI applied FirstRate plus Python plus Pendimax provided fair to good giant foxtail and common waterhemp control. Several treatments resulted in soybean yields that were significantly less than other treatments. These included PPI FirstRate plus Authority (Gauntlet) plus Pendimax, FirstRate plus Python plus Pendimax, and Prowl followed by EPOST Extreme. (Dept. of Agronomy, Iowa State University, Ames)

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
4.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.

Crop 1: GLXMA SOYBEAN Variety: PIONEER 92B38
 Planting Date: 05-17-02 Planting Method: DIRECT DRILLED
 Rate: 189417 SEEDS/A Depth: 1.25 IN
 Row Spacing: 30 IN Seed Bed: FINE/TRASHY

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
 Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2001

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MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Crop residue on the soil surface was 50% at planting.

SOIL DESCRIPTION

% OM: 4.5 Texture: LOAM
 pH: 6.85 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-17-02	06-24-02	07-01-02
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PPI, PRE	EPOST	POST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	57 F	90 F	90 F
% Relative Humidity:	46	63	69
Wind Velocity, Unit:	8 MPH	4 MPH	7 MPH
Soil Temp., Unit:	57 F	79 F	82 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	50	15	15

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA -	GLXMA V3	GLXMA V6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	7 IN	9 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4L,0-2T	SETFA 2-4L,0-5T
Stage Scale:	-	2-6 IN	3-9 IN
Density, Unit:	- -	0-10 FT2	0-3 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 4-6 LEAF	ABUTH 2-4 LEAF
Stage Scale:	-	3-4 IN	2-4 IN
Density, Unit:	- -	0-3 FT2	0-2 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 2-10 LEAF	AMATA NUMEROUS
Stage Scale:	-	0.5-4 IN	4-10 IN
Density, Unit:	- -	0-5 FT2	0-2 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 2-6 LEAF	CHEAL 2-NUM
Stage Scale:	-	1-3 IN	0.5-10 IN
Density, Unit:	- -	0-3 FT2	0-5 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 4-8 LEAF	POLPY NUMEROUS
Stage Scale:	-	2-6 IN	4-10 IN
Density, Unit:	- -	0-10 FT2	0-3 FT2

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TERRA PRO	HAND BOOM	HAND BOOM
Operating Pressure:	30	25	25
Nozzle Type:	11002	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

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Evaluation of preplant incorporated, preemergence and postemergence herbicides including Raptor, Extreme and Glyphomax Plus in soybean, Nashua, IA, 2002.

Trial ID: NSC 2
Location: Nashua

Study Dir.: Owen/Lux/Franzenburg
Investigator: Owen/Hartzler/Pringnitz

Weed Code							GLXMA	SETFA	ABUTH	AMATA	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							06-24-02	06-24-02	06-24-02	06-24-02	
Trt-Eval Interval							0 DA-C	0 DA-C	0 DA-C	0 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0315	LB A/A	0.6 OZ/A	PPI	A	7	98	99	99
	Authority	75	0.25	LB A/A	5.33 OZ/A	PPI	A				
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PPI	A				
3	FirstRate	84	0.021	LB A/A	0.4 OZ/A	PPI	A	5	95	98	94
	Python	80	0.025	LB A/A	0.5 OZ/A	PPI	A				
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PPI	A				
4	Python	80	0.05	LB A/A	1.0 OZ/A	PPI	A	7	99	99	98
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PPI	A				
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	EPOST	C				
	Select	2	0.094	LB A/A	6.0 FL OZ/A	EPOST	C				
	28% UAN		2.5	% V/V	2.5 % V/V	EPOST	C				
	NIS		0.125	% V/V	0.125 % V/V	EPOST	C				
5	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PPI	A	2	95	53	93
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	D				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	D				
	NIS		0.25	% V/V	0.25 % V/V	POST	D				
	AMS		1.5	% W/W	1.5 % W/W	POST	D				
6	Python	80	0.033	LB A/A	0.66 OZ/A	PRE	B	2	93	96	98
	Valor	51	0.048	LB A/A	1.5 OZ/A	PRE	B				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	D				
	NIS		0.25	% V/V	0.25 % V/V	POST	D				
	AMS		1.5	% W/W	1.5 % W/W	POST	D				
7	Treflan HPF	4	0.75	LB A/A	1.5 PT/A	PPI	A	0	99	33	93
	Glyphomax Plus	4	1.0	LB A/A	2.0 PT/A	POST	D				
	AMS		1.5	% W/W	1.5 % W/W	POST	D				
8	Command	3	0.56	LB A/A	1.5 PT/A	PRE	B	0	98	96	98
	Authority	4	0.25	LB A/A	8.0 FL OZ/A	PRE	B				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	D				
	NIS		0.25	% V/V	0.25 % V/V	POST	D				
	AMS		1.5	% W/W	1.5 % W/W	POST	D				
9	Prowl	3.3	1.24	LB A/A	3.0 PT/A	PPI	A	3	96	47	96
	Raptor	1	0.0312	LB A/A	4.0 FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0 FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0 % V/V	EPOST	C				
	AMS		2.5	LB/A	2.5 LB/A	EPOST	C				
10	Prowl H2O	3.8	1.23	LB A/A	2.6 PT/A	PPI	A	2	98	45	96
	Raptor	1	0.0312	LB A/A	4.0 FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0 FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0 % V/V	EPOST	C				
	AMS		2.5	LB/A	2.5 LB/A	EPOST	C				

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Weed Code							GLXMA	SETFA	ABUTH	AMATA
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent
Rating Date							06-24-02	06-24-02	06-24-02	06-24-02
Trt-Eval Interval							0 DA-C	0 DA-C	0 DA-C	0 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
11	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PPI	A	0	93	37	93
	Pursuit	2	0.0625 LB A/A	4.0 FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187 LB A/A	12.0 FL OZ/A	EPOST	C				
	MSO		1.0 % V/V	1.0 % V/V	EPOST	C				
	AMS		2.5 LB/A	2.5 LB/A	EPOST	C				
12	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PPI	A	2	96	35	92
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	EPOST	C				
	NIS		0.125 % V/V	0.125 % V/V	EPOST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	EPOST	C				
13	Prowl H2O	3.8	1.23 LB A/A	2.6 PT/A	PPI	A	0	96	37	92
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	EPOST	C				
	NIS		0.125 % V/V	0.125 % V/V	EPOST	C				
	AMS		17.0 LB/100 GAL	17.0 LB/100 GAL	EPOST	C				
14	Pursuit Plus	2.9	0.91 LB A/A	2.5 PT/A	PPI	A	8	98	99	96
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	POST	D				
15	Sencor	75	0.248 LB A/A	5.3 OZ/A	PPI	A	2	98	82	96
	Prowl	3.3	1.24 LB A/A	3.0 PT/A	PPI	A				
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST	D				
	AMS		8.5 LB/100 GAL	8.5 LB/100 GAL	POST	D				
LSD (P=.05)							4.3	4.5	11.2	4.9

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-24-02 0 DA-C	POLPY CONTROL percent 06-24-02 0 DA-C	GLXMA PHYGEN percent 07-01-02 7 DA-C	GLXMA PHYGEN percent 07-11-02 17 DA-C	SETFA CONTROL percent 07-11-02 17 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	FirstRate	84	0.0315	LB A/A	0.6 OZ/A	PPI	A	98	99	2	0
	Authority	75	0.25	LB A/A	5.33 OZ/A	PPI	A				
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PPI	A				
3	FirstRate	84	0.021	LB A/A	0.4 OZ/A	PPI	A	99	96	3	2
	Python	80	0.025	LB A/A	0.5 OZ/A	PPI	A				
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PPI	A				
4	Python	80	0.05	LB A/A	1.0 OZ/A	PPI	A	99	99	7	3
	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PPI	A				
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	EPOST	C				
	Select	2	0.094	LB A/A	6.0 FL OZ/A	EPOST	C				
	28% UAN		2.5	% V/V	2.5 % V/V	EPOST	C				
	NIS		0.125	% V/V	0.125 % V/V	EPOST	C				
5	Pendimax	3.3	1.24	LB A/A	3.0 PT/A	PPI	A	70	88	0	2
	FirstRate	84	0.0157	LB A/A	0.3 OZ/A	POST	D				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	D				
	NIS		0.25	% V/V	0.25 % V/V	POST	D				
	AMS		1.5	% W/W	1.5 % W/W	POST	D				
6	Python	80	0.033	LB A/A	0.66 OZ/A	PRE	B	98	96	0	0
	Valor	51	0.048	LB A/A	1.5 OZ/A	PRE	B				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	D				
	NIS		0.25	% V/V	0.25 % V/V	POST	D				
	AMS		1.5	% W/W	1.5 % W/W	POST	D				
7	Treflan HPF	4	0.75	LB A/A	1.5 PT/A	PPI	A	75	82	0	0
	Glyphomax Plus	4	1.0	LB A/A	2.0 PT/A	POST	D				
	AMS		1.5	% W/W	1.5 % W/W	POST	D				
8	Command	3	0.56	LB A/A	1.5 PT/A	PRE	B	99	95	0	0
	Authority	4	0.25	LB A/A	8.0 FL OZ/A	PRE	B				
	Glyphomax Plus	4	0.75	LB A/A	1.5 PT/A	POST	D				
	NIS		0.25	% V/V	0.25 % V/V	POST	D				
	AMS		1.5	% W/W	1.5 % W/W	POST	D				
9	Prowl	3.3	1.24	LB A/A	3.0 PT/A	PPI	A	88	72	25	10
	Raptor	1	0.0312	LB A/A	4.0 FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0 FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0 % V/V	EPOST	C				
	AMS		2.5	LB/A	2.5 LB/A	EPOST	C				
10	Prowl H2O	3.8	1.23	LB A/A	2.6 PT/A	PPI	A	88	70	23	10
	Raptor	1	0.0312	LB A/A	4.0 FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0 FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0 % V/V	EPOST	C				
	AMS		2.5	LB/A	2.5 LB/A	EPOST	C				
11	Prowl H2O	3.8	1.23	LB A/A	2.6 PT/A	PPI	A	88	70	23	12
	Pursuit	2	0.0625	LB A/A	4.0 FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0 FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0 % V/V	EPOST	C				
	AMS		2.5	LB/A	2.5 LB/A	EPOST	C				

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 06-24-02 0 DA-C	POLPY CONTROL percent 06-24-02 0 DA-C	GLXMA PHYGEN percent 07-01-02 7 DA-C	GLXMA PHYGEN percent 07-11-02 17 DA-C	SETFA CONTROL percent 07-11-02 17 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
12	Prowl Extreme NIS AMS	3.3 2.17	1.24 0.81	LB A/A LB A/A % V/V LB/100 GAL	3.0 3.0 0.125 17.0	PT/A PT/A % V/V LB/100 GAL	PPI EPOST EPOST EPOST	A C C C	70	73	13 5	99	
13	Prowl H2O Extreme NIS AMS	3.8 2.17	1.23 0.81	LB A/A LB A/A % V/V LB/100 GAL	2.6 3.0 0.125 17.0	PT/A PT/A % V/V LB/100 GAL	PPI EPOST EPOST EPOST	A C C C	82	75	15 5	99	
14	Pursuit Plus Roundup UltraMAX AMS	2.9 5	0.91 1.02	LB A/A LB A/A LB/100 GAL	2.5 26.0 8.5	PT/A FL OZ/A LB/100 GAL	PPI POST POST	A D D	99	99	5 5	98	
15	Sencor Prowl Roundup UltraMAX AMS	75 3.3 5	0.248 1.24 1.02	LB A/A LB A/A LB A/A LB/100 GAL	5.3 3.0 26.0 8.5	OZ/A PT/A FL OZ/A LB/100 GAL	PPI PPI POST POST	A A D D	95	89	0 2	99	
LSD (P=.05)									12.1	17.4	3.8	4.0	3.7

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 07-11-02 17 DA-C	AMATA CONTROL percent 07-11-02 17 DA-C	CHEAL CONTROL percent 07-11-02 17 DA-C	POLPY CONTROL percent 07-11-02 17 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated								0	0
2	FirstRate	84	0.0315	LB A/A	0.6	OZ/A	PPI	A	99	98
	Authority	75	0.25	LB A/A	5.33	OZ/A	PPI	A		
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A		
3	FirstRate	84	0.021	LB A/A	0.4	OZ/A	PPI	A	98	94
	Python	80	0.025	LB A/A	0.5	OZ/A	PPI	A		
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A		
4	Python	80	0.05	LB A/A	1.0	OZ/A	PPI	A	99	96
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A		
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	EPOST	C		
	Select	2	0.094	LB A/A	6.0	FL OZ/A	EPOST	C		
	28% UAN		2.5	% V/V	2.5	% V/V	EPOST	C		
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C		
5	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	92	98
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	D		
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D		
	NIS		0.25	% V/V	0.25	% V/V	POST	D		
	AMS		1.5	% W/W	1.5	% W/W	POST	D		
6	Python	80	0.033	LB A/A	0.66	OZ/A	PRE	B	99	99
	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	B		
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D		
	NIS		0.25	% V/V	0.25	% V/V	POST	D		
	AMS		1.5	% W/W	1.5	% W/W	POST	D		
7	Treflan HPF	4	0.75	LB A/A	1.5	PT/A	PPI	A	92	99
	Glyphomax Plus	4	1.0	LB A/A	2.0	PT/A	POST	D		
	AMS		1.5	% W/W	1.5	% W/W	POST	D		
8	Command	3	0.56	LB A/A	1.5	PT/A	PRE	B	99	99
	Authority	4	0.25	LB A/A	8.0	FL OZ/A	PRE	B		
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D		
	NIS		0.25	% V/V	0.25	% V/V	POST	D		
	AMS		1.5	% W/W	1.5	% W/W	POST	D		
9	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	95	98
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C		
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C		
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C		
10	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	96	98
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C		
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C		
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C		
11	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	93	99
	Pursuit	2	0.0625	LB A/A	4.0	FL OZ/A	EPOST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C		
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C		
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C		

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Weed Code							ABUTH	AMATA	CHEAL	POLPY
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent
Rating Date							07-11-02	07-11-02	07-11-02	07-11-02
Trt-Eval Interval							17 DA-C	17 DA-C	17 DA-C	17 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
12	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	99	99
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	EPOST	C		98
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C		
13	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	99	99
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	EPOST	C		98
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C		
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C		
14	Pursuit Plus	2.9	0.91	LB A/A	2.5	PT/A	PPI	A	99	99
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	D		99
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	D		
15	Sencor	75	0.248	LB A/A	5.3	OZ/A	PPI	A	95	99
	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A		96
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	D		
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	D		
LSD (P=.05)							4.3	3.9	2.3	4.9

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							GLXMA PHYGEN percent 07-26-02 32 DA-C	SETFA CONTROL percent 07-26-02 32 DA-C	ABUTH CONTROL percent 07-26-02 32 DA-C	AMATA CONTROL percent 07-26-02 32 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	FirstRate	84	0.0315	LB A/A	0.6	OZ/A	PPI	A	0	93	99	98
	Authority	75	0.25	LB A/A	5.33	OZ/A	PPI	A				
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A				
3	FirstRate	84	0.021	LB A/A	0.4	OZ/A	PPI	A	0	88	98	88
	Python	80	0.025	LB A/A	0.5	OZ/A	PPI	A				
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A				
4	Python	80	0.05	LB A/A	1.0	OZ/A	PPI	A	2	99	99	96
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A				
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	EPOST	C				
	Select	2	0.094	LB A/A	6.0	FL OZ/A	EPOST	C				
	28% UAN		2.5	% V/V	2.5	% V/V	EPOST	C				
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C				
5	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	2	99	96	99
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	D				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D				
	NIS		0.25	% V/V	0.25	% V/V	POST	D				
	AMS		1.5	% W/W	1.5	% W/W	POST	D				
6	Python	80	0.033	LB A/A	0.66	OZ/A	PRE	B	0	98	99	99
	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	B				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D				
	NIS		0.25	% V/V	0.25	% V/V	POST	D				
	AMS		1.5	% W/W	1.5	% W/W	POST	D				
7	Treflan HPF	4	0.75	LB A/A	1.5	PT/A	PPI	A	0	99	95	99
	Glyphomax Plus	4	1.0	LB A/A	2.0	PT/A	POST	D				
	AMS		1.5	% W/W	1.5	% W/W	POST	D				
8	Command	3	0.56	LB A/A	1.5	PT/A	PRE	B	0	99	99	99
	Authority	4	0.25	LB A/A	8.0	FL OZ/A	PRE	B				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D				
	NIS		0.25	% V/V	0.25	% V/V	POST	D				
	AMS		1.5	% W/W	1.5	% W/W	POST	D				
9	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	8	96	96	98
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C				
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C				
10	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	7	98	96	98
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C				
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C				
11	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	7	95	96	99
	Pursuit	2	0.0625	LB A/A	4.0	FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C				
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C				

Iowa State University

Weed Code							GLXMA	SETFA	ABUTH	AMATA	
Rating Data Type							PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit							percent	percent	percent	percent	
Rating Date							07-26-02	07-26-02	07-26-02	07-26-02	
Trt-Eval Interval							32 DA-C	32 DA-C	32 DA-C	32 DA-C	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
12	Prowl	3.3	1.24 LB A/A	3.0	PT/A	PPI	A	5	99	99	99
	Extreme	2.17	0.81 LB A/A	3.0	PT/A	EPOST	C				
	NIS		0.125 % V/V	0.125	% V/V	EPOST	C				
	AMS		17.0 LB/100 GAL	17.0	LB/100 GAL	EPOST	C				
13	Prowl H2O	3.8	1.23 LB A/A	2.6	PT/A	PPI	A	5	99	99	99
	Extreme	2.17	0.81 LB A/A	3.0	PT/A	EPOST	C				
	NIS		0.125 % V/V	0.125	% V/V	EPOST	C				
	AMS		17.0 LB/100 GAL	17.0	LB/100 GAL	EPOST	C				
14	Pursuit Plus	2.9	0.91 LB A/A	2.5	PT/A	PPI	A	3	99	99	99
	Roundup UltraMAX	5	1.02 LB A/A	26.0	FL OZ/A	POST	D				
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	POST	D				
15	Sencor	75	0.248 LB A/A	5.3	OZ/A	PPI	A	0	99	96	99
	Prowl	3.3	1.24 LB A/A	3.0	PT/A	PPI	A				
	Roundup UltraMAX	5	1.02 LB A/A	26.0	FL OZ/A	POST	D				
	AMS		8.5 LB/100 GAL	8.5	LB/100 GAL	POST	D				
LSD (P=.05)							4.2	4.8	3.2	6.9	

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							CHEAL CONTROL percent 07-26-02 32 DA-C	POLPY CONTROL percent 07-26-02 32 DA-C	GLXMA PHYGEN percent 08-23-02 60 DA-C	SETFA CONTROL percent 08-23-02 60 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated								0	0	0	0
2	FirstRate	84	0.0315	LB A/A	0.6	OZ/A	PPI	A	96	98	0	93
	Authority	75	0.25	LB A/A	5.33	OZ/A	PPI	A				
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A				
3	FirstRate	84	0.021	LB A/A	0.4	OZ/A	PPI	A	99	96	0	83
	Python	80	0.025	LB A/A	0.5	OZ/A	PPI	A				
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A				
4	Python	80	0.05	LB A/A	1.0	OZ/A	PPI	A	99	96	2	99
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A				
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	EPOST	C				
	Select	2	0.094	LB A/A	6.0	FL OZ/A	EPOST	C				
	28% UAN		2.5	% V/V	2.5	% V/V	EPOST	C				
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C				
5	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	98	96	0	99
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	D				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D				
	NIS		0.25	% V/V	0.25	% V/V	POST	D				
	AMS		1.5	% W/W	1.5	% W/W	POST	D				
6	Python	80	0.033	LB A/A	0.66	OZ/A	PRE	B	99	98	0	98
	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	B				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D				
	NIS		0.25	% V/V	0.25	% V/V	POST	D				
	AMS		1.5	% W/W	1.5	% W/W	POST	D				
7	Treflan HPF	4	0.75	LB A/A	1.5	PT/A	PPI	A	98	96	0	99
	Glyphomax Plus	4	1.0	LB A/A	2.0	PT/A	POST	D				
	AMS		1.5	% W/W	1.5	% W/W	POST	D				
8	Command	3	0.56	LB A/A	1.5	PT/A	PRE	B	99	98	0	99
	Authority	4	0.25	LB A/A	8.0	FL OZ/A	PRE	B				
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D				
	NIS		0.25	% V/V	0.25	% V/V	POST	D				
	AMS		1.5	% W/W	1.5	% W/W	POST	D				
9	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	98	99	5	95
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C				
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C				
10	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	98	98	3	98
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C				
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C				
11	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	95	99	3	96
	Pursuit	2	0.0625	LB A/A	4.0	FL OZ/A	EPOST	C				
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C				
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C				
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C				

Iowa State University

Weed Code							CHEAL	POLPY	GLXMA	SETFA		
Rating Data Type							CONTROL	CONTROL	PHYGEN	CONTROL		
Rating Unit							percent	percent	percent	percent		
Rating Date							07-26-02	07-26-02	08-23-02	08-23-02		
Trt-Eval Interval							32 DA-C	32 DA-C	60 DA-C	60 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
12	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	99	99	3	99
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	EPOST	C				
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C				
13	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	99	99	2	99
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	EPOST	C				
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C				
14	Pursuit Plus	2.9	0.91	LB A/A	2.5	PT/A	PPI	A	99	99	0	99
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	D				
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	D				
15	Sencor	75	0.248	LB A/A	5.3	OZ/A	PPI	A	99	99	0	99
	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A				
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	D				
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	D				
LSD (P=.05)							2.3	3.5	4.1	4.4		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 08-23-02 60 DA-C	AMATA CONTROL percent 08-23-02 60 DA-C	CHEAL CONTROL percent 08-23-02 60 DA-C	POLPY CONTROL percent 08-23-02 60 DA-C
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated								0	0
2	FirstRate	84	0.0315	LB A/A	0.6	OZ/A	PPI	A	99	96
	Authority	75	0.25	LB A/A	5.33	OZ/A	PPI	A		
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A		
3	FirstRate	84	0.021	LB A/A	0.4	OZ/A	PPI	A	98	88
	Python	80	0.025	LB A/A	0.5	OZ/A	PPI	A		
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A		
4	Python	80	0.05	LB A/A	1.0	OZ/A	PPI	A	99	96
	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A		
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	EPOST	C		
	Select	2	0.094	LB A/A	6.0	FL OZ/A	EPOST	C		
	28% UAN		2.5	% V/V	2.5	% V/V	EPOST	C		
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C		
5	Pendimax	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	96	99
	FirstRate	84	0.0157	LB A/A	0.3	OZ/A	POST	D		
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D		
	NIS		0.25	% V/V	0.25	% V/V	POST	D		
	AMS		1.5	% W/W	1.5	% W/W	POST	D		
6	Python	80	0.033	LB A/A	0.66	OZ/A	PRE	B	99	99
	Valor	51	0.048	LB A/A	1.5	OZ/A	PRE	B		
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D		
	NIS		0.25	% V/V	0.25	% V/V	POST	D		
	AMS		1.5	% W/W	1.5	% W/W	POST	D		
7	Treflan HPF	4	0.75	LB A/A	1.5	PT/A	PPI	A	96	99
	Glyphomax Plus	4	1.0	LB A/A	2.0	PT/A	POST	D		
	AMS		1.5	% W/W	1.5	% W/W	POST	D		
8	Command	3	0.56	LB A/A	1.5	PT/A	PRE	B	99	99
	Authority	4	0.25	LB A/A	8.0	FL OZ/A	PRE	B		
	Glyphomax Plus	4	0.75	LB A/A	1.5	PT/A	POST	D		
	NIS		0.25	% V/V	0.25	% V/V	POST	D		
	AMS		1.5	% W/W	1.5	% W/W	POST	D		
9	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	96	98
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C		
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C		
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C		
10	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	96	98
	Raptor	1	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C		
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C		
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C		
11	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	96	99
	Pursuit	2	0.0625	LB A/A	4.0	FL OZ/A	EPOST	C		
	Ultra Blazer	2	0.187	LB A/A	12.0	FL OZ/A	EPOST	C		
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C		
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C		

Iowa State University

Weed Code							ABUTH	AMATA	CHEAL	POLPY		
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit							percent	percent	percent	percent		
Rating Date							08-23-02	08-23-02	08-23-02	08-23-02		
Trt-Eval Interval							60 DA-C	60 DA-C	60 DA-C	60 DA-C		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
12	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	99	99	99	99
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	EPOST	C				
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C				
13	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	99	99	99	99
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	EPOST	C				
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C				
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C				
14	Pursuit Plus	2.9	0.91	LB A/A	2.5	PT/A	PPI	A	99	99	99	99
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	D				
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	D				
15	Sencor	75	0.248	LB A/A	5.3	OZ/A	PPI	A	96	99	99	99
	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A				
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	D				
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	D				
LSD (P=.05)							2.7	7.0	2.3	3.4		

Iowa State University

Weed Code							GLXMA		
Rating Data Type							YIELD		
Rating Unit							BU/A		
Rating Date							10-18-02		
Trt-Eval Interval							154 DA-A		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated								35
2	FirstRate	84	0.0315	LB	0.6	OZ/A	PPI	A	49
	Authority	75	0.25	LB	5.33	OZ/A	PPI	A	
	Pendimax	3.3	1.24	LB	3.0	PT/A	PPI	A	
3	FirstRate	84	0.021	LB	0.4	OZ/A	PPI	A	47
	Python	80	0.025	LB	0.5	OZ/A	PPI	A	
	Pendimax	3.3	1.24	LB	3.0	PT/A	PPI	A	
4	Python	80	0.05	LB	1.0	OZ/A	PPI	A	51
	Pendimax	3.3	1.24	LB	3.0	PT/A	PPI	A	
	FirstRate	84	0.0157	LB	0.3	OZ/A	EPOST	C	
	Select	2	0.094	LB	6.0	FL OZ/A	EPOST	C	
	28% UAN		2.5	% V/V	2.5	% V/V	EPOST	C	
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C	
5	Pendimax	3.3	1.24	LB	3.0	PT/A	PPI	A	53
	FirstRate	84	0.0157	LB	0.3	OZ/A	POST	D	
	Glyphomax Plus	4	0.75	LB	1.5	PT/A	POST	D	
	NIS		0.25	% V/V	0.25	% V/V	POST	D	
	AMS		1.5	% W/W	1.5	% W/W	POST	D	
6	Python	80	0.033	LB	0.66	OZ/A	PRE	B	54
	Valor	51	0.048	LB	1.5	OZ/A	PRE	B	
	Glyphomax Plus	4	0.75	LB	1.5	PT/A	POST	D	
	NIS		0.25	% V/V	0.25	% V/V	POST	D	
	AMS		1.5	% W/W	1.5	% W/W	POST	D	
7	Treflan HPF	4	0.75	LB	1.5	PT/A	PPI	A	55
	Glyphomax Plus	4	1.0	LB	2.0	PT/A	POST	D	
	AMS		1.5	% W/W	1.5	% W/W	POST	D	
8	Command	3	0.56	LB	1.5	PT/A	PRE	B	54
	Authority	4	0.25	LB	8.0	FL OZ/A	PRE	B	
	Glyphomax Plus	4	0.75	LB	1.5	PT/A	POST	D	
	NIS		0.25	% V/V	0.25	% V/V	POST	D	
	AMS		1.5	% W/W	1.5	% W/W	POST	D	
9	Prowl	3.3	1.24	LB	3.0	PT/A	PPI	A	50
	Raptor	1	0.0312	LB	4.0	FL OZ/A	EPOST	C	
	Ultra Blazer	2	0.187	LB	12.0	FL OZ/A	EPOST	C	
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C	
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C	
10	Prowl H2O	3.8	1.23	LB	2.6	PT/A	PPI	A	52
	Raptor	1	0.0312	LB	4.0	FL OZ/A	EPOST	C	
	Ultra Blazer	2	0.187	LB	12.0	FL OZ/A	EPOST	C	
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C	
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C	
11	Prowl H2O	3.8	1.23	LB	2.6	PT/A	PPI	A	52
	Pursuit	2	0.0625	LB	4.0	FL OZ/A	EPOST	C	
	Ultra Blazer	2	0.187	LB	12.0	FL OZ/A	EPOST	C	
	MSO		1.0	% V/V	1.0	% V/V	EPOST	C	
	AMS		2.5	LB/A	2.5	LB/A	EPOST	C	

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Weed Code							GLXMA		
Rating Data Type							YIELD		
Rating Unit							BU/A		
Rating Date							10-18-02		
Trt-Eval Interval							154 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Unit	Grow Stg	Appl Code	
12	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	48
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	EPOST	C	
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C	
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C	
13	Prowl H2O	3.8	1.23	LB A/A	2.6	PT/A	PPI	A	52
	Extreme	2.17	0.81	LB A/A	3.0	PT/A	EPOST	C	
	NIS		0.125	% V/V	0.125	% V/V	EPOST	C	
	AMS		17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C	
14	Pursuit Plus	2.9	0.91	LB A/A	2.5	PT/A	PPI	A	58
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	D	
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	D	
15	Sencor	75	0.248	LB A/A	5.3	OZ/A	PPI	A	53
	Prowl	3.3	1.24	LB A/A	3.0	PT/A	PPI	A	
	Roundup UltraMAX	5	1.02	LB A/A	26.0	FL OZ/A	POST	D	
	AMS		8.5	LB/100 GAL	8.5	LB/100 GAL	POST	D	
LSD (P=.05)									7.0

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MAINTENANCE

Field Prep./Maintenance: The field was left un-tilled from the corn cropping year 2001. Crop residue on the soil surface at planting was 85 to 90%.

SOIL DESCRIPTION

% OM: 4.5 Texture: LOAM
 pH: 6.85 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
 Fert. Level: EXCELLENT

APPLICATION DESCRIPTION

	A	B
Application Date:	05-13-02	06-24-02
Application Method:	SPRAY	SPRAY
Application Timing:	EPP	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	64 F	90 F
% Relative Humidity:	70	63
Wind Velocity, Unit:	7 MPH	4 MPH
Soil Temp., Unit:	52 F	75 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	0	15

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA V3
Stage Scale:	-	DESC
Height, Unit:	-	6.5 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA 1-2 LEAF	SETFA 3-4L,0-3T
Stage Scale:	0.25 IN	1-8 IN
Density, Unit:	0-1 FT2	0-30 FT2
Weed 2 Code, Stage:	ABUTH COTYL-2	ABUTH 4-6 LEAF
Stage Scale:	0.5-1 IN	3-4 IN
Density, Unit:	0-1 FT2	0-3 FT2
Weed 3 Code, Stage:	AMATA COTYL-2	AMATA SEVERAL
Stage Scale:	0.25 IN	3-12 IN
Density, Unit:	0-1 FT2	0-3 FT2
Weed 4 Code, Stage:	CHEAL 4-NUM	CHEAL NUMEROUS
Stage Scale:	0.5-1.5	3-6 IN
Density, Unit:	0-2 FT2	0-1 FT2
Weed 5 Code, Stage:	POLPY 2-6 LEAF	POLPY NUMEROUS
Stage Scale:	0.5-2 IN	2-8 IN
Density, Unit:	0-3 FT2	0-3 FT2

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APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	HAND BOOM	HAND BOOM
Operating Pressure:	25	25
Nozzle Type:	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA

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Valor, Prowl, Domain and others applied early preplant followed by postemergence
Roundup UltraMAX and Glyphomax Plus in no-tillage soybean, Nashua, IA, 2002.

Trial ID: NSN 1

Study Dir.: Owen/Lux/Franzenburg

Location: Nashua

Investigator: Owen/Hartzler/Pringnitz

Weed Code							CHEAL	POLPY	SETFA	ABUTH	CHEAL
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							05-17-02	05-17-02	05-30-02	05-30-02	05-30-02
Trt-Eval Interval							4 DA-A	4 DA-A	17 DA-A	17 DA-A	17 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit Stg	Appl Code				
1	Untreated							0	0	0	0
2	Valor	51	0.064 LB A/A	2.0 OZ/A		EPP A		98	96	98	99
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A		EPP A					
	COC		1.0 PT/A	1.0 PT/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A		EPP A		90	87	85	98
	COC		1.0 PT/A	1.0 PT/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
4	Valor	51	0.08 LB A/A	2.5 OZ/A		EPP A		93	90	98	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					
	NIS		0.125 % V/V	0.125 % V/V		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
5	Extreme	2.17	0.814 LB A/A	3.0 PT/A		EPP A		35	37	98	99
	NIS		0.125 % V/V	0.125 % V/V		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A		EPP A		55	63	99	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Extreme	2.17	0.81 LB A/A	3.0 PT/A		POST B					
	NIS		0.125 % V/V	0.125 % V/V		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
7	Domain	60	0.487 LB A/A	13.0 OZ/A		EPP A		35	30	99	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
8	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		EPP A		96	95	99	99
	Authority	75	0.25 LB A/A	5.33 OZ/A		EPP A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		EPP A					
	AMS		1.5 % W/W	1.5 % W/W		EPP A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST B					
	NIS		0.25 % V/V	0.25 % V/V		POST B					
	AMS		1.5 % W/W	1.5 % W/W		POST B					
9	Aim	2	0.0078 LB A/A	0.5 FL OZ/A		EPP A		85	83	98	98
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		EPP A					
	AMS		1.5 % W/W	1.5 % W/W		EPP A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST B					
	NIS		0.25 % V/V	0.25 % V/V		POST B					
	AMS		1.5 % W/W	1.5 % W/W		POST B					

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Weed Code							CHEAL	POLPY	SETFA	ABUTH	CHEAL
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							05-17-02	05-17-02	05-30-02	05-30-02	05-30-02
Trt-Eval Interval							4 DA-A	4 DA-A	17 DA-A	17 DA-A	17 DA-A
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
10	Boundary	7.8	1.3	LB A/A	1.33	PT/A	EPP	A	53	50	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	EPP	A			
	NIS		0.25	% V/V	0.25	% V/V	EPP	A			
	AMS		2.5	LB/A	2.5	LB/A	EPP	A			
	Touchdown IQ	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B			
	NIS		0.25	% V/V	0.25	% V/V	POST	B			
	AMS		2.5	LB/A	2.5	LB/A	POST	B			
LSD (P=.05)							15.7	21.1	5.4	1.8	1.7

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							POLPY CONTROL percent 05-30-02 17 DA-A	GLXMA PHYGEN percent 06-24-02 0 DA-B	SETFA CONTROL percent 06-24-02 0 DA-B	ABUTH CONTROL percent 06-24-02 0 DA-B	AMATA CONTROL percent 06-24-02 0 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Valor	51	0.064 LB A/A	2.0 OZ/A	EPP A			98	0	91	87
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP A						
	COC		1.0 PT/A	1.0 PT/A	EPP A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B						
	AMS		2.5 LB/A	2.5 LB/A	POST B						
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP A			72	0	75	62
	COC		1.0 PT/A	1.0 PT/A	EPP A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B						
	AMS		2.5 LB/A	2.5 LB/A	POST B						
4	Valor	51	0.08 LB A/A	2.5 OZ/A	EPP A			99	0	93	92
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP A						
	NIS		0.125 % V/V	0.125 % V/V	EPP A						
	AMS		2.5 LB/A	2.5 LB/A	EPP A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B						
	AMS		2.5 LB/A	2.5 LB/A	POST B						
5	Extreme	2.17	0.814 LB A/A	3.0 PT/A	EPP A			99	0	99	98
	NIS		0.125 % V/V	0.125 % V/V	EPP A						
	AMS		2.5 LB/A	2.5 LB/A	EPP A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B						
	AMS		2.5 LB/A	2.5 LB/A	POST B						
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A	EPP A			96	0	96	83
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP A						
	AMS		2.5 LB/A	2.5 LB/A	EPP A						
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	POST B						
	NIS		0.125 % V/V	0.125 % V/V	POST B						
	AMS		2.5 LB/A	2.5 LB/A	POST B						
7	Domain	60	0.487 LB A/A	13.0 OZ/A	EPP A			99	0	93	48
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP A						
	AMS		2.5 LB/A	2.5 LB/A	EPP A						
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B						
	AMS		2.5 LB/A	2.5 LB/A	POST B						
8	FirstRate	84	0.0315 LB A/A	0.6 OZ/A	EPP A			99	0	98	93
	Authority	75	0.25 LB A/A	5.33 OZ/A	EPP A						
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	EPP A						
	AMS		1.5 % W/W	1.5 % W/W	EPP A						
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST B						
	NIS		0.25 % V/V	0.25 % V/V	POST B						
	AMS		1.5 % W/W	1.5 % W/W	POST B						
9	Aim	2	0.0078 LB A/A	0.5 FL OZ/A	EPP A			91	0	68	48
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	EPP A						
	AMS		1.5 % W/W	1.5 % W/W	EPP A						
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST B						
	NIS		0.25 % V/V	0.25 % V/V	POST B						
	AMS		1.5 % W/W	1.5 % W/W	POST B						

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Weed Code							POLPY	GLXMA	SETFA	ABUTH	AMATA		
Rating Data Type							CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL		
Rating Unit							percent	percent	percent	percent	percent		
Rating Date							05-30-02	06-24-02	06-24-02	06-24-02	06-24-02		
Trt-Eval Interval							17 DA-A	0 DA-B	0 DA-B	0 DA-B	0 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
10	Boundary	7.8	1.3	LB A/A	1.33	PT/A	EPP	A	99	0	98	80	90
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	EPP	A					
	NIS		0.25	% V/V	0.25	% V/V	EPP	A					
	AMS		2.5	LB/A	2.5	LB/A	EPP	A					
	Touchdown IQ	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
LSD (P=.05)							5.8	0.0	14.6	11.4	13.9		

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Weed Code							CHEAL	POLPY	GLXMA	GLXMA	SETFA
Rating Data Type							CONTROL	CONTROL	PHYGEN	PHYGEN	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							06-24-02	06-24-02	07-01-02	07-26-02	07-26-02
Trt-Eval Interval							0 DA-B	0 DA-B	49 DA-A	32 DA-B	32 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Stg	Code			
1	Untreated								0	0	0
2	Valor	51	0.064 LB A/A	2.0 OZ/A		EPP A			98	91	0
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A		EPP A					99
	COC		1.0 PT/A	1.0 PT/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A		EPP A			90	68	0
	COC		1.0 PT/A	1.0 PT/A		EPP A					99
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
4	Valor	51	0.08 LB A/A	2.5 OZ/A		EPP A			93	93	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					99
	NIS		0.125 % V/V	0.125 % V/V		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
5	Extreme	2.17	0.814 LB A/A	3.0 PT/A		EPP A			99	96	0
	NIS		0.125 % V/V	0.125 % V/V		EPP A					99
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A		EPP A			87	87	10
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					99
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Extreme	2.17	0.81 LB A/A	3.0 PT/A		POST B					
	NIS		0.125 % V/V	0.125 % V/V		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
7	Domain	60	0.487 LB A/A	13.0 OZ/A		EPP A			82	80	0
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					99
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
8	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		EPP A			96	93	0
	Authority	75	0.25 LB A/A	5.33 OZ/A		EPP A					99
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		EPP A					
	AMS		1.5 % W/W	1.5 % W/W		EPP A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST B					
	NIS		0.25 % V/V	0.25 % V/V		POST B					
	AMS		1.5 % W/W	1.5 % W/W		POST B					
9	Aim	2	0.0078 LB A/A	0.5 FL OZ/A		EPP A			63	65	0
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		EPP A					99
	AMS		1.5 % W/W	1.5 % W/W		EPP A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST B					
	NIS		0.25 % V/V	0.25 % V/V		POST B					
	AMS		1.5 % W/W	1.5 % W/W		POST B					

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Weed Code							CHEAL	POLPY	GLXMA	GLXMA	SETFA		
Rating Data Type							CONTROL	CONTROL	PHYGEN	PHYGEN	CONTROL		
Rating Unit							percent	percent	percent	percent	percent		
Rating Date							06-24-02	06-24-02	07-01-02	07-26-02	07-26-02		
Trt-Eval Interval							0 DA-B	0 DA-B	49 DA-A	32 DA-B	32 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
10	Boundary	7.8	1.3	LB A/A	1.33	PT/A	EPP	A	95	92	0	0	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	EPP	A					
	NIS		0.25	% V/V	0.25	% V/V	EPP	A					
	AMS		2.5	LB/A	2.5	LB/A	EPP	A					
	Touchdown IQ	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
LSD (P=.05)							10.2	12.6	0.0	0.0	0.0		

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Weed Code							ABUTH	AMATA	CHEAL	POLPY	SETFA
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							percent	percent	percent	percent	percent
Rating Date							07-26-02	07-26-02	07-26-02	07-26-02	09-22-02
Trt-Eval Interval							32 DA-B	32 DA-B	32 DA-B	32 DA-B	90 DA-B
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Stg	Code			
1	Untreated								0	0	0
2	Valor	51	0.064 LB A/A	2.0 OZ/A		EPP A			99	99	99
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A		EPP A					
	COC		1.0 PT/A	1.0 PT/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A		EPP A			99	99	93
	COC		1.0 PT/A	1.0 PT/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
4	Valor	51	0.08 LB A/A	2.5 OZ/A		EPP A			99	99	99
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					
	NIS		0.125 % V/V	0.125 % V/V		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
5	Extreme	2.17	0.814 LB A/A	3.0 PT/A		EPP A			99	98	99
	NIS		0.125 % V/V	0.125 % V/V		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A		EPP A			99	99	98
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Extreme	2.17	0.81 LB A/A	3.0 PT/A		POST B					
	NIS		0.125 % V/V	0.125 % V/V		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
7	Domain	60	0.487 LB A/A	13.0 OZ/A		EPP A			99	99	96
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A		EPP A					
	AMS		2.5 LB/A	2.5 LB/A		EPP A					
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A		POST B					
	AMS		2.5 LB/A	2.5 LB/A		POST B					
8	FirstRate	84	0.0315 LB A/A	0.6 OZ/A		EPP A			99	99	99
	Authority	75	0.25 LB A/A	5.33 OZ/A		EPP A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		EPP A					
	AMS		1.5 % W/W	1.5 % W/W		EPP A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST B					
	NIS		0.25 % V/V	0.25 % V/V		POST B					
	AMS		1.5 % W/W	1.5 % W/W		POST B					
9	Aim	2	0.0078 LB A/A	0.5 FL OZ/A		EPP A			99	96	99
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		EPP A					
	AMS		1.5 % W/W	1.5 % W/W		EPP A					
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A		POST B					
	NIS		0.25 % V/V	0.25 % V/V		POST B					
	AMS		1.5 % W/W	1.5 % W/W		POST B					

Iowa State University

Weed Code							ABUTH	AMATA	CHEAL	POLPY	SETFA		
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit							percent	percent	percent	percent	percent		
Rating Date							07-26-02	07-26-02	07-26-02	07-26-02	09-22-02		
Trt-Eval Interval							32 DA-B	32 DA-B	32 DA-B	32 DA-B	90 DA-B		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
10	Boundary	7.8	1.3	LB A/A	1.33	PT/A	EPP	A	99	98	99	99	99
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	EPP	A					
	NIS		0.25	% V/V	0.25	% V/V	EPP	A					
	AMS		2.5	LB/A	2.5	LB/A	EPP	A					
	Touchdown IQ	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
LSD (P=.05)							0.0	2.0	1.3	4.2	0.0		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval							ABUTH CONTROL percent 09-22-02 90 DA-B	AMATA CONTROL percent 09-22-02 90 DA-B	CHEAL CONTROL percent 09-22-02 90 DA-B	POLPY CONTROL percent 09-22-02 90 DA-B	GLXMA YIELD BU/A 10-18-02 158 DA-A	
Trt No.	Treatment Name	Form Conc	Rate Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated							0	0	0	0	17
2	Valor	51	0.064 LB A/A	2.0 OZ/A	EPP A			99	99	99	99	54
	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP A							
	COC		1.0 PT/A	1.0 PT/A	EPP A							
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B							
	AMS		2.5 LB/A	2.5 LB/A	POST B							
3	2, 4-D LV4	4	0.5 LB A/A	1.0 PT/A	EPP A			99	99	99	99	51
	COC		1.0 PT/A	1.0 PT/A	EPP A							
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B							
	AMS		2.5 LB/A	2.5 LB/A	POST B							
4	Valor	51	0.08 LB A/A	2.5 OZ/A	EPP A			99	99	99	99	52
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP A							
	NIS		0.125 % V/V	0.125 % V/V	EPP A							
	AMS		2.5 LB/A	2.5 LB/A	EPP A							
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B							
	AMS		2.5 LB/A	2.5 LB/A	POST B							
5	Extreme	2.17	0.814 LB A/A	3.0 PT/A	EPP A			99	99	99	99	58
	NIS		0.125 % V/V	0.125 % V/V	EPP A							
	AMS		2.5 LB/A	2.5 LB/A	EPP A							
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B							
	AMS		2.5 LB/A	2.5 LB/A	POST B							
6	Prowl	3.3	1.24 LB A/A	3.0 PT/A	EPP A			99	99	99	99	56
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP A							
	AMS		2.5 LB/A	2.5 LB/A	EPP A							
	Extreme	2.17	0.81 LB A/A	3.0 PT/A	POST B							
	NIS		0.125 % V/V	0.125 % V/V	POST B							
	AMS		2.5 LB/A	2.5 LB/A	POST B							
7	Domain	60	0.487 LB A/A	13.0 OZ/A	EPP A			99	99	99	99	56
	Roundup UltraMAX	5	0.78 LB A/A	20.0 FL OZ/A	EPP A							
	AMS		2.5 LB/A	2.5 LB/A	EPP A							
	Roundup UltraMAX	5	1.02 LB A/A	26.0 FL OZ/A	POST B							
	AMS		2.5 LB/A	2.5 LB/A	POST B							
8	FirstRate	84	0.0315 LB A/A	0.6 OZ/A	EPP A			99	99	99	99	57
	Authority	75	0.25 LB A/A	5.33 OZ/A	EPP A							
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	EPP A							
	AMS		1.5 % W/W	1.5 % W/W	EPP A							
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST B							
	NIS		0.25 % V/V	0.25 % V/V	POST B							
	AMS		1.5 % W/W	1.5 % W/W	POST B							
9	Aim	2	0.0078 LB A/A	0.5 FL OZ/A	EPP A			99	99	99	99	58
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	EPP A							
	AMS		1.5 % W/W	1.5 % W/W	EPP A							
	Glyphomax Plus	4	0.75 LB A/A	1.5 PT/A	POST B							
	NIS		0.25 % V/V	0.25 % V/V	POST B							
	AMS		1.5 % W/W	1.5 % W/W	POST B							

Iowa State University

Weed Code							ABUTH	AMATA	CHEAL	POLPY	GLXMA		
Rating Data Type							CONTROL	CONTROL	CONTROL	CONTROL	YIELD		
Rating Unit							percent	percent	percent	percent	BU/A		
Rating Date							09-22-02	09-22-02	09-22-02	09-22-02	10-18-02		
Trt-Eval Interval							90 DA-B	90 DA-B	90 DA-B	90 DA-B	158 DA-A		
Trt No.	Treatment Name	Form Conc	Rate Rate	Unit Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
10	Boundary	7.8	1.3	LB A/A	1.33	PT/A	EPP	A	99	99	99	99	57
	Touchdown IQ	3	0.56	LB AE/A	24.0	FL OZ/A	EPP	A					
	NIS		0.25	% V/V	0.25	% V/V	EPP	A					
	AMS		2.5	LB/A	2.5	LB/A	EPP	A					
	Touchdown IQ	3	0.75	LB AE/A	32.0	FL OZ/A	POST	B					
	NIS		0.25	% V/V	0.25	% V/V	POST	B					
	AMS		2.5	LB/A	2.5	LB/A	POST	B					
LSD (P=.05)							0.0	0.0	0.0	0.0	4.6		

Corn Weed Management Studies

Brent A. Pringnitz,
extension program specialist,
Robert G. Hartzler, professor,
Department of Agronomy

Introduction

Several studies were conducted in corn to evaluate commercially available herbicides for weed control, crop phytotoxicity, and crop yield. Various herbicide treatment combinations and application methods were evaluated.

Materials and Methods

The studies were established using a randomized complete block design with three replications. Herbicide evaluation plot size was 10 ft by 25 ft. Herbicides were applied in 20 gallons of water per acre. Visual estimates of percentage weed control and crop injury data were made throughout June and July. Weed control observations are compared with an untreated control and made on a zero to 100 rating scale with zero percent equaling no weed control. Crop injury ratings are on a 0 to 100 rating scale, with 0 representing no crop injury. Weed species and populations evaluated included: 50 to 100 foxtail, 30 to 75 waterhemp and two to ten lambsquarters, Pennsylvania smartweed, and velvetleaf/ft².

The soil was a Canisteo clay loam with a pH 6.9 and 7.5% organic matter. The experimental design was a randomized complete block with three replications. The 2001 crop was soybeans. Tillage included spring field cultivation. Fertilization included 287 lbs/A 82-0-0 and 416 lbs/A of 10-25-27. Crop residue on the soil surface was 14% at planting. 'Golden Harvest hybrid 8562' corn was planted 1.75 inches deep on May 15 at 29,900 seeds/A in 30-inch rows. Herbicide application dates and crops stages are

presented in Table 1. A summary of precipitation data is presented in Table 2.

Results and Discussion

KC-meso (Table 3) – Low rainfall following planting limited performance of many preemergence treatments. Treatments 3 and 7 had the highest grain yields of the PRE treatments, with yields comparable to the total-POST treatments.

KC-syst (Table 4) – Early-season foxtail control from preemergence products was generally poor and variable. Clarity, Accent Gold, and Basis Gold provided poor control of waterhemp. Treatments containing an ALS-inhibitor for POST control of grasses (Option, Steadfast, Accent, others) provided the best foxtail control.

KC-pre (Table 5) – Bicep Lite II Magnum failed to control foxtail and many of the broadleaves. Balance Pro in combination with Surpass and atrazine provided the most consistent control of both broadleaves and grasses.

Acknowledgments

Monsanto, BASF and Syngenta provided support for these studies. Bruce Battles, Golden Harvest, provided seed for these studies. The authors also acknowledge Dave Rueber for his assistance with these studies.

Table 1. Treatment dates and crop stages.

Treatment	Corn	
	Date	Crop stage
Preemergence (PRE)	May 15	--
Early Postemergence (EPOST)	June 10	V3 - 8"
Postemergence (POST)	June 14	V4 - 12"

Table 2. Weekly rainfall totals and largest single rainfall following planting.

Weeks after planting	Total rainfall	Largest single rainfall event
	(inches)	(inches)
1	0.00	0.00
2	0.42	0.32
3	1.02	0.88
4	0.66	0.66
5	0.19	0.17
6	0.39	0.25
7	0.00	0.00
8	0.00	0.00

Table 3. Callisto and Dual Magnum premix formulations with and without atrazine (KC-meso)

Trt No.	Treatment Name	Rate	Unit	Grow Stg	Crop injury	Foxtail	Waterhemp	Velvetleaf	Foxtail	Waterhemp	Velvetleaf	Lambsqt.	Crop yield
					Jun-10-02 ^a	Jun-10-02	Jun-10-02	Jun-10-02	Jul-12-02	Jul-12-02	Jul-12-02	Jul-12-02	Oct-11-02
1	Untreated				0 a	0 c	0 c	0 b	0 c	0 c	0 c	0 c	112
2	Lumax	2.5	QT/A	pre	0 a	82 a	89 a	70 a	77 b	96 a	96 a	88 a	161 b
3	Lumax	3	QT/A	pre	0 a	65 ab	94 a	90 a	73 b	96 a	97 a	98 a	171 a
4	Camix	2	QT/A	pre	0 a	50 b	98 a	87 a	70 b	88 b	96 a	96 a	162 b
5	Camix	2.4	QT/A	pre	0 a	70 ab	98 a	96 a	73 b	94 a	99 a	98 a	167 ab
6	Bicep Lite II Magnum	2	QT/A	pre	0 a	47 b	60 b	70 a	73 b	92 ab	77 b	65 b	152 b
7	Balance Pro	3	FL OZ/A	pre	0 a	77 a	98 a	98 a	93 a	99 a	99 a	99 a	179 a
	AAAtrex-DF	1.11	LB/A	pre									
8	Harness Xtra	2	QT/A	pre	0 a	75 a	96 a	70 a	78 b	95 a	73 b	67 b	151 b
9	Topnotch	2.5	QT/A	pre	0 a	83 a	99 a	63 a	82 b	95 a	83 ab	88 a	156 b
	Hornet WDG	2.62	OZ/A	pre									
10	Outlook	0.56	QT/A	pre	0 a	83 a	b		82 b	99 a	99 a	99 a	169 a
	Marksman	1.5	QT/A	post									
	COC	1	% V/V	post									
11	Lumax	2.5	QT/A	e-post	0 a				98 a	99 a	99 a	99 a	172 a
	Accent	0.33	OZ/A	e-post									
12	Lumax	3	QT/A	e-post	0 a				98 a	99 a	99 a	99 a	179 a
	Accent	0.33	OZ/A	e-post									
13	Camix	2	QT/A	e-post	0 a				97 a	99 a	99 a	99 a	178 a
	Accent	0.33	OZ/A	e-post									
14	Camix	2.4	QT/A	e-post	0 a				97 a	99 a	99 a	99 a	179 a
	Accent	0.33	OZ/A	e-post									
LSD (P=.05)					0.0	17.7	20.6	25.2	8.3	4.6	11.0	9.6	16.7

^a The June 10th ratings are based on performance of PRE treatments only. Postemergence treatments had not been applied.

^b Missing data indicates treatments were not completed at that time and were not rated.

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Table 4. Evaluation of various herbicide systems in corn (KC-syst)

Trt No.	Treatment Name	Rate	Rate Unit	Grow Stg	Foxtail	Waterhemp	Crop injury	Foxtail	Velvetleaf	Lambsqt.	Waterhemp	Crop yield
					Jun-10-02	Jun-10-02	Jul-12-02	Jul-12-02	Jul-12-02	Jul-12-02	Jul-12-02	Oct-11-02
1	Dual II Magnum	1.7	PT/A	pre	43 a	27 b	0 a	83 c-f	99 a	99 a	99 a	187 a
	Callisto	3	FL OZ/A	post								
	Atrazine	1	LB A/A	post								
	28% UAN	1	% V/V	post								
	COC	1	% V/V	post								
2	Dual II Magnum	1.7	PT/A	pre	53 a	78 ab	0 a	75 ef	99 a	99 a	99 a	190 a
	Callisto	3	FL OZ/A	post								
	Sencor	0.5	OZ/A	post								
	28% UAN	1	% V/V	post								
	NIS	0.5	% V/V	post								
3	Dual II Magnum	1.7	PT/A	pre	50 a	55 ab	25 a	83 c-f	99 a	99 a	99 a	165 a
	Callisto	3	FL OZ/A	post								
	Sencor	1.0	OZ/A	post								
	28% UAN	1	% V/V	post								
	NIS	0.5	% V/V	post								
4	Dual II Magnum	1.7	PT/A	pre	65 a	50 ab	0 a	73 f	99 a	98 a	99 a	163 a
	Callisto	3	FL OZ/A	post								
	28% UAN	5	QT/A	post								
	COC	1	QT/A	post								
5	Epic	11	OZ/A	pre	43 a	63 ab	0 a	97 ab	99 a	98 a	98 a	189 a
	Option	1.5	OZ/A	post								
	MSO	1.5	PT/A	post								
	28% UAN	1.5	QT/A	post								
6	Option	1.75	OZ/A	post			0 a	92 a-d	99 a	99 a	92 a	177 a
	Callisto	3	FL OZ/A	post								
	COC	1	% V/V	post								
	28% UAN	2.5	% V/V	post								
7	Steadfast	0.5	OZ/A	post			2 a	99 a	99 a	99 a	99 a	182 a
	Callisto	3	FL OZ/A	post								
	COC	1	% V/V	post								
	28% UAN	2.5	% V/V	post								
8	Accent	0.66	OZ/A	post			0 a	98 ab	99 a	95 a	78 b	179 a
	Clarity	4	FL OZ/A	post								
	NIS	0.5	% V/V	post								
	28% UAN	2	QT/A	post								
9	Harness Xtra	2	PT/A	pre	65 a	96 a	0 a	84 b-f	99 a	99 a	99 a	166 a
	Distinct	3	OZ/A	post								
	NIS	0.25	% V/V	post								
	AMS	3	LB/A	post								
10	Bicep Lite II Magnum	1.9	QT/A	pre	50 a	95 a	0 a	88 a-e	99 a	99 a	96 a	172 a
	Northstar	5	OZ/A	post								
	NIS	0.25	% V/V	post								
	28% UAN	2	% V/V	post								
11	Outlook	1	PT/A	pre	40 a	62 ab	0 a	78 ef	99 a	99 a	99 a	173 a
	Aim	0.33	OZ/A	post								
	Atrazine	1	LB/A	post								
	NIS	0.25	% V/V	post								
	28% UAN	2	QT/A	post								
12	Harness	2	PT/A	pre	77 a	99 a	0 a	80 def	99 a	99 a	99 a	165 a
	Yukon	6	OZ/A	post								
	NIS	0.5	% V/V	post								
	28% UAN	2	QT/A	post								

(continued on next page)

Table 4. (continued)

Trt No.	Treatment Name	Rate	Rate Unit	Grow Stg	Foxtail	Waterhemp	Crop injury	Foxtail	Velvetleaf	Lambsqt.	Waterhemp	Crop yield
					Jun-10-02	Jun-10-02	Jul-12-02	Jul-12-02	Jul-12-02	Jul-12-02	Jul-12-02	Oct-11-02
13	Basis Gold	14	OZ/A	post			0 a	94 abc	99 a	76 b	78 b	185 a
	COC	2	PT/A	post								
	28% UAN	2	QT/A	post								
14	Accent Gold	2.9	OZ/A	post			0 a	99 a	98 a	90 a	60 c	182 a
	COC	1	PT/A	post								
	28% UAN	2	QT/A	post								
15	treatment deleted											
16	Leadoff	1.9	PT/A	pre	60 a	88 ab	3 a	98 ab	96 b	99 a	99 a	179 a
	Basis Gold	14	OZ/A	post								
	COC	2	PT/A	post								
	28% UAN	2	QT/A	post								
17	Leadoff	1.9	PT/A	pre	73 a	85 ab	0 a	97 ab	99 a	99 a	99 a	189 a
	Accent Gold	1.5	OZ/A	post								
	Atrazine	0.5	LB A/A	post								
	COC	1	QT/A	post								
	28% UAN	2	QT/A	post								
18	Guardsman Max	4.5	PT/A	pre	68 a	95 a	0 a	93 abc	99 a	99 a	99 a	185 a
	Distinct	4	OZ/A	post								
	NIS	0.25	% V/V	post								
	28% UAN	2	% V/V	post								
19	Leadoff	1.9	PT/A	pre	77 a	78 ab	0 a	99 a	99 a	98 a	98 a	178 a
	Steadfast	0.5	OZ/A	post								
	Clarity	4	FL OZ/A	post								
	COC	1	% V/V	post								
	28% UAN	2	QT/A	post								
20	Untreated						0 a	0 g	0 c	0 c	0 d	120 b
LSD (P=.05)					28.1	38.1	16.5	8.5	1.3	12.2	6.9	15.5

Missing data indicates treatments were not completed at that time and were not rated.

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Table 5. Comparison of preemergence corn herbicides. (KC-pre)

Trt No.	Treatment Name	Rate	Rate Unit	Grow Stg	Foxtail	Waterhemp	Penn. Smartweed	Foxtail	Velvetleaf	Lambsqt.	Waterhemp
					Jun-10-02	Jun-10-02	Jun-10-02	Jun-25-02	Jun-25-02	Jun-25-02	Jun-25-02
1	Bicep Lite II Magnum	1.5	QT/A	pre	30 c	80 a	20 d	60 b	78 a	68 b	80 b
2	Epic	11	OZ/A	pre	33 bc	93 a	30 cd	85 a	95 a	85 ab	82 b
3	Degree Xtra	3.2	QT/A	pre	68 ab	99 a	73 abc	78 ab	86 a	88 ab	95 a
4	FulTime	3.0	QT/A	pre	85 a	99 a	83 ab	86 a	83 a	82 ab	96 a
5	Guardsman Max	4	PT/A	pre	58 abc	96 a	43 bcd	84 a	90 a	78 ab	90 a
6	Bicep Lite II Magnum	1.5	QT/A	pre	50 abc	96 a	99 a	73 ab	87 a	87 ab	94 a
	Callisto	5	FL OZ/A	pre							
7	Dual II Magnum	1.7	PT/A	pre	62 abc	95 a	73 abc	83 a	82 a	75 ab	95 a
	Callisto	5	FL OZ/A	pre							
	AAtrex-DF	0.75	LB A/A	pre							
8	Balance Pro	2.25	FL OZ/A	pre	85 a	99 a	87 ab	92 a	90 a	89 a	96 a
	Surpass	3	PT/A	pre							
	Atrazine	0.75	LB A/A	pre							
9	Bicep Lite II Magnum	1.5	QT/A	pre	60 abc	88 a	75 abc	75 ab	85 a	80 ab	92 a
	Hornet WDG	5	OZ/A	pre							
10	Untreated				0 d	0 b	0 d	0 c	0 b	0 c	0 c
LSD (P=.05)					24.3	15.7	34.5	13.7	12.5	12.4	6.3

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Soybean Weed Management Studies

Brent A. Pringnitz,
extension program specialist,
Robert G. Hartzler, professor,
Department of Agronomy

Introduction

Several studies were conducted in soybeans to evaluate commercially available herbicides for weed control, crop phytotoxicity, and crop yield. Various herbicide treatment combinations and application methods were evaluated.

Materials and Methods

The studies were established using a randomized complete block design with three replications. Herbicide evaluation plot size was 10 ft by 25 ft. Herbicides were applied in 20 gallons of water per acre. Visual estimates of percentage weed control and crop injury data were made in June and July. Weed control observations are compared with an untreated control and made on a zero to 100 rating scale with zero percent equaling no weed control. Crop injury ratings are on a 0 to 100 rating scale, with 0 representing no crop injury. Weed species and populations evaluated included 50 foxtail and three to ten waterhemp, lambsquarters, and velvetleaf/ft².

The soil was a Canisteo clay loam with a pH 6.9 and 6.4% organic matter. The experimental design was a randomized complete block with three replications. The 2001 crop was corn. Tillage included fall chisel plowing and two spring field cultivations. 'Asgrow AG2201' glyphosate-tolerant soybeans were planted 1.75 inches deep on May 15 at 190,000 seeds/A in 30-inch rows. Herbicide application dates and crop stages are presented in Table 1. Precipitation data is presented in Table 2.

Results and Discussion

(KS-glyph, Table 3) – There were no significant differences in control for the various treatments.

(KS-syst, Table 4) – The June 25th ratings are based on performance of the PRE/PPI treatments. Control from these treatments was variable and few significant differences were seen due to low rainfall amounts following planting. Fusion provided poorer foxtail control than many of the other treatments.

Acknowledgments

BASF, Monsanto, and Syngenta provided support for these studies. Cindy Greiman, Asgrow Seed Company, provided seed. The authors also acknowledge Dave Rueber for his assistance with these studies.

Table 1. Herbicide application dates and crop stages.

Treatment	Date	Crop stage
Preemergence/Preplant Incorporated (PRE/PPI)	May 15	-
Postemergence (POST)	June 25	8"
Late Postemergence (LPOST)	July 2	12"

Table 2. Weekly rainfall totals and largest single rainfall following planting.

Weeks after planting	Total rainfall (inches)	Largest single rainfall event (inches)
1	0.00	0.00
2	0.42	0.32
3	1.02	0.88
4	0.66	0.66
5	0.19	0.17
6	0.39	0.25
7	0.00	0.00
8	0.00	0.00

Table 3. Evaluation of glyphosate systems in glyphosate-tolerant soybeans. (KS-glyph)

Trt No.	Treatment Name	Rate	Unit	Grow Stg	Foxtail	Velvetleaf	Lambsqt.	Waterhemp	Crop injury
					Jul-12-02	Jul-12-02	Jul-12-02	Jul-12-02	Jul-12-02
1	Boundary	1.5	PT/A	pre	96 a	99 a	98 a	99 a	2 a
	Touchdown IQ	24	FL OZ/A	post					
	AMS	3	LB/A	post					
2	First Rate	0.75	OZ/A	pre	96 a	98 a	99 a	98 a	0 a
	Glyphomax Plus	24	FL OZ/A	post					
	AMS	3	LB/A	post					
3	Pendimax	3	PT/A	ppi	99 a	99 a	99 a	99 a	0 a
	First Rate	0.3	OZ/A	post					
	Glyphomax Plus	24	FL OZ/A	post					
4	AMS	3	LB/A	post					
	Prowl	3	PT/A	ppi	99 a	99 a	99 a	99 a	0 a
	Extreme	3	PT/A	post					
5	NIS	0.125	% V/V	post					
	AMS	3	LB/A	post					
	Roundup Ultra Max	26	FL OZ/A	post	99 a	99 a	99 a	99 a	3 a
6	Amplify	0.3	OZ/A	post					
	AMS	3	LB/A	post					
7	Roundup Ultra Max	26	FL OZ/A	post	99 a	99 a	99 a	99 a	0 a
	AMS	3	LB/A	post					
8	Touchdown IQ	21	FL OZ/A	post	99 a	99 a	98 a	98 a	0 a
	AMS	3	LB/A	post					
9	Glyphomax Plus	21	FL OZ/A	post	99 a	99 a	99 a	99 a	1 a
	AMS	3	LB/A	post					
10	Roundup Ultra Max	24	FL OZ/A	post	99 a	99 a	99 a	95 a	2 a
	AMS	3	LB/A	post					
	Roundup Ultra Max	20	FL OZ/A	L-post					
	AMS	3	LB/A	L-post					
10	Untreated				0 b	0 b	0 b	0 b	0 a
LSD (P=.05)					1.7	1.3	1.8	3.0	3.8

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Table 4. Evaluation of conventional herbicide systems for weed control in soybeans. (KS-syst)

Trt No.	Treatment Name	Rate	Rate Unit	Grow Stg	Foxtail	Velvetleaf	Lambsqt.	Waterhemp	Foxtail	Velvetleaf	Lambsqt.	Waterhemp	Crop injury
					Jun-25-02 ^a	Jun-25-02	Jun-25-02	Jun-25-02	Jul-23-02	Jul-23-02	Jul-23-02	Jul-23-02	Jul-23-02
1	Prowl	3	PT/A	ppi	90 a	85 ab	91 a	93 a	79 ab	92 ab	94 a	98 a	0 a
	Pursuit	4	FL OZ/A	post									
	Ultra Blazer	1.5	PT/A	post									
	NIS	1	QT/A	post									
	28% UAN	2	QT/A	post									
2	Command Extra B	9.6	FL OZ/A	pre	87 a	91 ab	96 a	98 a	98 a	73 b	98 a	99 a	0 a
	Command Extra G	25.6	FL OZ/A	pre									
	Poast Plus	1.5	PT/A	post									
	COC	1	PT/A	post									
	28% UAN	2	QT/A	post									
3	Gauntlet	7.375	OZ/A	post	90 a	95 a	99 a	99 a	97 a	96 a	99 a	98 a	0 a
	Poast Plus	1.5	PT/A	post									
	COC	1	PT/A	post									
	28% UAN	2	QT/A	post									
4	Authority	7.5	FL OZ/A	pre	83 a	90 ab	98 a	94 a	85 ab	98 a	97 a	99 a	0 a
	Synchrony STS	0.5	OZ/A	post									
	Assure II	8	FL OZ/A	post									
	COC	1	% V/V	post									
	28% UAN	3	PT/A	post									
5	Boundary	1.5	PT/A	pre	53 a	48 b	62 a	60 a	67 b	77 ab	89 ab	90 a	0 a
	Flexstar	1.25	PT/A	post									
	Fusion	8	FL OZ/A	post									
	COC	0.5	% V/V	post									
	28% UAN	2.5	% V/V	post									
6	Valor	3	OZ/A	pre	83 a	88 ab	95 a	96 a	91 ab	55 c	62 c	67 b	0 a
	Select	8	FL OZ/A	post									
	COC	2	PT/A	post									
	28% UAN	2	QT/A	post									
7	First Rate	0.3	OZ/A	pre	81 a	91 ab	98 a	95 a	82 ab	95 a	95 a	98 a	0 a
	Flexstar	12	FL OZ/A	post									
	Select	6	FL OZ/A	post									
	28% UAN	2.5	% V/V	post									
	NIS	0.125	% V/V	post									
8	Ultra Blazer	1.5	PT/A	lpost	b				77 ab	90 ab	77 b	93 a	0 a
	Select	8	FL OZ/A	lpost									
	COC	1	QT/A	lpost									
	AMS	2.5	LB/A	lpost									
9	untreated check				0 b	0 c	0 b	0 b	0 c	0 d	0 d	0 c	0 a
LSD (P=.05)					30.7	28.6	34.5	33.5	16.1	14.3	11.7	13.0	0.0

^a June 25th ratings are based on performance of the PRE/PPI treatments only. Postemergence treatments had not been applied.

^b Missing data indicates treatments were not completed at that time and were not rated.

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Evaluation of Drift Reduction Nozzles for Weed Control in Soybeans

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Introduction

Two studies were conducted to evaluate the effectiveness of drift reduction technologies for weed control in soybeans. The first study compared various nozzle types across two application rates. In the second study a blended-pulse system was compared to conventional spray nozzles. Data presented is a summary of results from 2001 and 2002.

Materials and Methods

The studies were established using a randomized complete block design with three replications. Plot size was 10 ft by 25 ft. Visual estimates of weed control were made July 24. Weed control observations are compared with an untreated control and made on a zero to 100 rating scale with zero percent equaling no weed control. Weed species and populations evaluated included: 75 foxtail, 17 waterhemp, and 1 to 5 velvetleaf and lambsquarters/ft².

The soil was a Canisteo Nicollet clay loam with a pH 6.2 and 5.9% organic matter. The previous crop was corn. Tillage included fall chisel plowing and a spring field cultivation. 'Asgrow AG2101' glyphosate-tolerant soybeans were planted 1.75 inches deep at 190,000 seeds/A in 30-inch rows.

Treatments were applied using an ATV-mounted compressed-CO₂ sprayer. For all treatments in the nozzle comparison study, pressure was constant for all nozzle treatments and GPA was varied by adjusting sprayer speed. For both studies, herbicide rate per acre was also constant, regardless of nozzle or

GPA applied. Weed height was approximately 12" at the time of application.

Two herbicide programs were evaluated: Flexstar, a contact herbicide, at 1.25 pt/A, in combination with Fusion, a systemic grass herbicide, at 8 oz/A, and Roundup Ultra, a systemic herbicide, at 16 oz/A. Appropriate additives and adjuvants were included according to label recommendations.

Results

Nozzle comparison (Table 1)

Application rate (GPA) did not affect weed control when averaged over all nozzle combinations for the Roundup treatments. Flexstar/Fusion provided greater control of velvetleaf at 20 GPA. All nozzle combinations provided acceptable control in the Roundup treatments. There were no significant differences in control between nozzles in the Flexstar/Fusion treatments.

Blended-pulse comparison (Table 2)

Level of control between treatments was more variable in the Flexstar/Fusion treatments than in the Roundup treatments. With the exception of foxtail control, there were no significant differences between pulsing and non-pulsing treatments in the Flexstar/Fusion treatments. In the Roundup treatments, the XR11004 non-pulsing treatment provided less control of lambsquarter than the other applications. The XR11001 non-pulsing application resulted in poorer control of velvetleaf.

Discussion

With a few exceptions, the drift reduction technologies evaluated provided control similar to conventional or 'traditional' nozzles. With systemic herbicides, such as

Roundup, droplet size and coverage has been less of an issue. These herbicides are also more likely to cause off-target injury when drift occurs. Contact herbicides, which do not translocate throughout the plant, need good coverage for adequate weed control.

Broadleaf control with Flexstar was generally equal across the nozzle types tested. The foxtail was more sensitive to droplet size and coverage in the blended-pulse study. Leaf size and orientation may impact the amount of herbicide intercepted when compared to broadleaf weeds.

The results of these studies show that drift-reduction nozzles, such as Turbo TeeJets and air-induction nozzles, can be used to reduce drift without significantly impacting herbicide efficacy.

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Table 1. Comparison of four nozzle types and two application rates across two herbicide programs.

Treatment	Foxtail	Velvetleaf	Waterhemp	Lambsquarters
<i>Roundup applications</i>				
10 GPA	98	89	93	97
20 GPA	<u>98</u>	<u>92</u>	<u>93</u>	<u>97</u>
LSD (0.05)	1	4	3	2
Extended range flat-fan (XR)	97	89	91	95
Turbo TeeJet (TT)	98	90	94	97
Air Induction TeeJet (AI)	98	92	92	98
TurboDrop (TD)	<u>99</u>	<u>92</u>	<u>95</u>	<u>97</u>
LSD (0.05)	2	5	3	2
<i>Flexstar/Fusion applications</i>				
10 GPA	74	80	76	71
20 GPA	<u>80</u>	<u>87</u>	<u>76</u>	<u>73</u>
LSD (0.05)	7	5	6	5
Extended range flat-fan (XR)	77	85	81	76
Turbo TeeJet (TT)	81	85	74	70
Air Induction TeeJet (AI)	73	80	74	71
TurboDrop (TD)	<u>75</u>	<u>84</u>	<u>76</u>	<u>72</u>
LSD (0.05)	9	8	8	7

Table 2. Comparison of equivalent blended-pulse and conventional applications in two herbicide systems.

Treatment	Foxtail	Velvetleaf	Waterhemp	Lambs- quarters
<i>Roundup applications</i>				
XR 11004 at 100% (non-pulsing)	98	96	94	87
XR 11004 at 50%	96	95	96	95
XR 11002 at 100% (non-pulsing)	96	90	95	95
XR 11004 at 25%	99	99	96	96
XR 11001 at 100% (non-pulsing)	<u>95</u>	<u>90</u>	<u>93</u>	<u>92</u>
LSD (0.05)	5	6	5	5
<i>Flexstar/Fusion applications</i>				
XR 11004 at 100% (non-pulsing)	84	94	83	75
XR 11004 at 50%	86	84	81	73
XR 11002 at 100% (non-pulsing)	80	89	84	66
XR 11004 at 25%	73	89	75	66
XR 11001 at 100% (non-pulsing)	<u>73</u>	<u>94</u>	<u>78</u>	<u>65</u>
LSD (0.05)	9	10	10	12

Alfalfa removal in no-till corn

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Experiment location: Boone, IA

Soil: Clarion loam, 4% O.M.

Alfalfa: 3rd year after establishment. 4-7 crowns per sq. ft.

Excellent stand, nearly weed free. A few scattered dandelions were present, but they were not uniform enough to evaluate.

Burndown herbicides applied on April 22

Temp. 58 F

Sky: Sunny

Soil temp (avg 4"): 49F

Alfalfa: 8" tall; 4-7 crowns per square foot

A few dandelions present, no grasses

20 GPA; Turbo TeeJet 10002; 55PSI

Corn planted on May 7, 2002

Early post treatment applied on May 24

Temp. 70 F

Soil temp (avg. 4"): 58 F

Corn height: V2; 4-6"

Late post treatment applied on June 1

Temp. 82 F

Soil temp (avg 4"): 78F

Corn height: V3-V4; 8-10"

Comments: There was no evidence of crop response to any herbicide treatments, and corn stands were not affected by treatment. On May 15 it appeared that alfalfa was dead in all plots except those where Hornet was used as the burndown herbicide. There was no evidence of new growth in the Hornet plots, but the alfalfa still had a pale green cast rather than being brown as in the 2,4-D treated plots. At the final rating (June 13) nearly complete alfalfa control was achieved in all plots. Residual weed control was excellent and there was insufficient weed pressure to evaluate.

				Stand count (#/17.5ft)	% alfalfa control	% alfalfa control
				24-May	24-May	13-Jun
1	2,4-D LVE	1 qt	PRE	28	100	100
	Harness 7	1 qt	PRE			
	Marksman	1.75 qt	POST			
2	Hornet 85.6	3.2 oz	PRE	27	75	100
	NIS + 28%	.25+4%	PRE			
	Harness	1 qt	PRE			
	Marksman	1.75 qt	POST			
3	2,4-D LVE	0.5 pt	PRE	27	100	100
	Banvel	0.5 pt	PRE			
	Harness	1 qt	PRE			
	Marksman	1.75 qt	POST			
4	2,4-D LVE	1 qt	PRE	27	100	100
	Harness 7	1 qt	PRE			
	Distinct	6 oz	POST			
	NIS + AMS	.25+2%	POST			
5	Hornet 85.6	3.2 oz	PRE	29	75	98
	NIS + 28%	.25+4%	PRE			
	Harness	1 qt	PRE			
	Distinct	6 oz	POST			
	NIS + AMS	.25+2%	POST			
6	2,4-D LVE	0.5 pt	PRE	26	100	100
	Banvel	0.5 pt	PRE			
	Harness	1 qt	PRE			
	Distinct	6 oz	POST			
	NIS + AMS	.25+2%	POST			
7	2,4-D LVE	1 qt	PRE	26	98	100
	Harness 7	1 qt	PRE			
	Hornet 85.6	3.2 oz	POST			
	NIS + 28%	.25+4%	POST			
8	2,4-D LVE	0.5 pt	PRE	26	100	100
	Banvel	0.5 pt	PRE			
	Harness	1 qt	PRE			
	Hornet 85.6	3.2 oz	POST			
	NIS + 28%	.25+4%	POST			
9	2,4-D LVE	1 qt	PRE	25	92	98
	Harness 7	1 qt	PRE			
	Liberty	1.07 qt	POST			
	AMS		3% POST			
	Liberty	1.07 qt	LATEPOST			
	AMS		3% LATEPOST			

10	Hornet 85.6	3.2 oz	PRE	27	75	100
	NIS + 28%	.25+4%	PRE			
	Harness	1 qt	PRE			
	Liberty	1.07 qt	POST			
	AMS		3% POST			
	Liberty	1.07 qt	LATEPOST			
	AMS		3% LATEPOST			
11	2,4-D LVE	0.5 pt	PRE	27	100	100
	Banvel	0.5 pt	PRE			
	Harness	1 qt	PRE			
	Liberty	1.07 qt	POST			
	AMS		3% POST			
	Liberty	1.07 qt	LATEPOST			
	AMS		3% LATEPOST			
12	2,4-D LVE	0.5 pt	PRE	27	100	100
	Banvel	0.5 pt	PRE			
	Harness	1 qt	PRE			
	Stinger 3	0.25 qt	POST			
13	2,4-D LVE	1 qt	PRE	27	97	100
	Harness	1 qt	POST			
	Marksman	1.75 qt	POST			
14	Hornet 85.6	3.2 oz	PRE	27	75	98
	NIS + 28%	.25+4%	PRE			
	Harness	1 qt	POST			
	Marksman	1.75 qt	POST			
15	2,4-D LVE	0.5 pt	PRE	28	100	100
	Banvel	0.5 pt	PRE			
	Harness	1 qt	POST			
	Marksman	1.75 qt	POST			
LSD (0.05)				NS	7	NS