



Welcome to the 2004 Weed Control Results for the Iowa State University Weed Science Program. We are pleased to present this report to you in an electronic format. Included are the individual experiments and supplemental information. We hope you find this format convenient and useful.

Sections of the 2004 report are listed to the left in the **bookmarks** pane. Click on a section or study to view it in the main window. To search for weed species, products or anything else in the 2004 report, select **Search** from the bookmarks or click the box below to open the search box.



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Caveat

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- FMC Corporation
- Garst Seeds
- Janson Ag Service – Asgrow Seed
- K-I Chemical USA, Inc.
- Makhteshim-Agan of North America
- Monsanto Company
- Pioneer Hybrid International
- Plastipak Packaging
- Popcorn Board
- Sipcam Agro USA, Inc.
- Spraying Systems Company
- Syngenta Crop Protection, Inc.
- UAP – Loveland Industries
- United Suppliers, Inc.
- Valent USA Corporation

Abbreviations

Results contained in the ISU Weed Control Results report are generated by Agriculture Research Manager (ARM) software and uses various abbreviations for treatment, application timing, crop and weed species, and observation information.

Treatment and application information

<u>Abbreviation</u>	<u>Description</u>
% 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
DPOST	Directed postemergence timing
DPRE	Delayed preemergence timing
EPOST	Early postemergence timing
EPP	Early preplant timing
FL OZ/A	Fluid ounces product per acre
GAL/100 GAL	Gallons per 100 gallons mix
LB A/A	Pounds active ingredient 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 timing
MPOST	Mid-postemergence timing
OZ WT/A	Ounces dry product per acre
POST	Postemergence timing
PPI	Preplant incorporated timing
PRE	Preemergence timing
PT/100 GAL	Pints per 100 gallons mix
PT/A	Pints material per acre
QT/A	Quarts material per acre
SPOST	Sequential postemergence timing

Crop and weed species information

Crop and weed species are designated with the 5-letter Bayer code.

<u>Abbreviation</u>	<u>Common name</u>	<u>Genus species</u>
ABUTH	velvetleaf	<i>Abutilon theophrasti</i>
AMATA	common waterhemp	<i>Amaranthus rudis</i>
AMBEL	common ragweed	<i>Ambrosia elatior</i> L.
CHEAL	common lambsquarters	<i>Chenopodium album</i>
ERBVI	woolly cupgrass	<i>Eriochloa villosa</i>

Abbreviations (continued)

Crop and weed species information

<u>Abbreviation</u>	<u>Common name</u>	<u>Genus species</u>
ERICA	horseweed	<i>Erigeron canadensis</i> L.
GLXMA	soybean	<i>Glycine max</i>
IPOHE	ivyleaf morningglory	<i>Ipomoea hederacea</i> (L.) Jacq.
POLPY	Pennsylvania smartweed	<i>Polygonum pensylvanicum</i>
SETFA	giant foxtail	<i>Setaria faberi</i>
SETSS	foxtail species mix	<i>Setaria</i>
SORVU	shattercane	<i>Sorghum bicolor</i> (L) Moench.
TAROF	common dandelion	<i>Taraxacum officinale</i>
THLAR	field pennycress	<i>Thlaspi arvense</i> L.
XANST	common cocklebur	<i>Xanthium strumarium</i>
ZEAMD	corn	<i>Zea mays</i>
ZEAME	popcorn	<i>Zea mays</i>

Observation information

Visual estimates of % crop phytotoxicity and weed control are compared to an untreated control 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). Corn stand for 30 inch row spacing is measured at 17.42 row feet and is equivalent to 1/1000th acre.

<u>Abbreviation</u>	<u>Description</u>
BU/A	Bushels per acre
CONTROL	% control
DA-A	Days after application timing code A
LBS/A	Pounds per acre
LODGE	Corn lodging
PHYGEN	% phytotoxicity – crop injury
STAND	Crop stand

Products used in 2004 Research Program

Commercial Name or Experimental Number	Common Name or Experimental Number	Company
Herbicide		
2, 4-D LV4 3.8 SL	2, 4-D LV4	Agrilience
Accent 75 DG	Nicosulfuron	Dupont
Aim 2 EW	Carfentrazone	FMC
Assure II 0.88 EC	Quizalofop-P	Dupont
Atrazine 4 L (AAtrex)	Atrazine	Syngenta
Atrazine 90 DF (AAtrex Nine-O)	Atrazine	Syngenta
Authority 75 DF	Sulfentrazone	Dupont
Balance Pro 4 SC	Isoxaflutole	Bayer CropScience
Beacon 75 DF	Primisulfuron	Syngenta
Callisto 4 SC	Mesotrione	Syngenta
Clarity 4 SL	Dicamba	BASF
Clearout 41 Plus 3 SL (lb ae)	Glyphosate	Monsanto
Command 3 ME	Clomazone	FMC
Define 4 SC	Flufenacet	Bayer CropScience
DPX-E9636 25 DF	Rimsulfuron	Dupont
Dual II Magnum 7.64 EC	S-metolachlor & CGA-154281	Syngenta
Equip 32 WG	Foramsulfuron	Bayer CropScience
FirstRate 84 WG	Cloransulam	Dow AgroSciences
Flexstar 1.88 HL	Fomesafen & adjuvant	Syngenta
GF-1279 5.4 SL	Glyphosate	Dow AgroSciences
Glyphomax Plus 3 SL (lb ae)	Glyphosate	Dow AgroSciences
Glystar Plus 3 SL	Glyphosate	Monsanto
Gramoxone MAX 3 SL	Paraquat	Syngenta
Harmony GT 75 DF	Thifensulfuron	Dupont
INTRRO 4 EC	Alachlor	Monsanto
KIH-485 60 WG	-	Kumiai Chemical
Liberty 1.67 SL	Glufosinate	Bayer CropScience
MANA-282 7.88 EC	Metolachlor	Makhteshim-Agan
MANA-Met 75 DF	Metribuzin	Makhteshim-Agan
Option 35 WDG	Foramsulfuron	Bayer CropScience
Outlook 6 EC	Dimethenamid-P	BASF
Parallel II 7.8 EC	Metolachlor	Makhteshim-Agan
Pendimax 3.3 EC	Pendimethalin	Dow AgroSciences
Phoenix 2 EC	Lactofen	Valent
Princep 4 L	Simazine	Syngenta
Prowl 3.3 EC	Pendimethalin	BASF

Products used in 2004 Research Program (continued)

Commercial Name or Experimental Number	Common Name or Experimental Number	Company
Herbicide		
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
Roundup Original 3 SL (lb ae)	Glyphosate	Monsanto
Roundup Original Max 4.5 SL (lb ae)	Glyphosate	Monsanto
Roundup Ultra MAX II 4.5 SL (lb ae)	Glyphosate	Monsanto
Roundup WeatherMAX 4.5 SL (lb ae)	Glyphosate	Monsanto
Scepter 70 DG	Imazaquin	BASF
Select 2 EC	Clethodim	Valent
Sencor 75 DF	Metribuzin	Bayer CropScience
Starane 1.5 EC	Fluroxypyr	Dow AgroSciences
Stinger 3 SL	Clopyralid	Dow AgroSciences
Surpass 6.4 EC	Acetochlor & dichlormid	Dow AgroSciences
Touchdown High Tech 5 SL (lb ae)	Glyphosate	Syngenta
Touchdown IQ 3 SL (lb ae)	Glyphosate	Syngenta
Touchdown Total 4.17 L (lb ae)	Glyphosate	Syngenta
Ultra Blazer 2 SL	Acifluorfen	BASF
USA 2005 4SC	-	-
V-10137 1 EC	-	-
V-10148 50 WG	-	-
V-10149 25 WG	-	-
Valor SX 51 WG	Flumioxazin	Valent
Herbicide Prepackage Mixture		
Axiom 68 DF	Flufenacet & metribuzin	Bayer CropScience
Basis 75 SG	Rimsulfuron & thifensulfuron	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
Boundary 6.5 EC	S-metolachlor & metribuzin & CGA-154281	Syngenta
Buctril+Atrazine 3 SC	Bromoxynil & atrazine	Bayer CropScience
Canopy XL 56.3 WG	Sulfentrazone & chlorimuron	Dupont
Celebrity Plus 70 WG	Dicamba & diflufenzopyr & nicosulfuron	BASF
Cinch ATZ 5.5 L	S-metolachlor & atrazine	Dupont
Cinch ATZ Lite 6 L	S-metolachlor & atrazine	Dupont

Products used in 2004 Research Program (continued)

Commercial Name or Experimental Number	Common Name or Experimental Number	Company
Herbicide Prepackage Mixture		
Distinct 70 WG	Dicamba & diflufenzopyr	BASF
Domain 60 DF	Flufenacet & metribuzin	Bayer CropScience
Epic 58 DF	Flufenacet & isoxaflutole	Bayer CropScience
Extreme 2.17 SL	Imazethapyr & glyphosate	BASF
FulTime 4 SC	Acetochlor & safener & atrazine	Dow AgroSciences
Fusion 2.66 EC	Fluazifop-P & fenoxaprop	Syngenta
Gangster	Cloransulam-methyl & flumioxazin	Valent USA Corp.
G-Max Lite 5 SL	Dimethenamid & atrazine	BASF
Guardsman Max 5 SC	Dimethenamid-P & atrazine	BASF
Harness Xtra 5.6 EC	Acetochlor & safener & atrazine	Monsanto
Harness Xtra 6 SE	Acetochlor & safener & atrazine	Monsanto
Hornet WDG 68.5 WG	Flumetsulam & clopyralid	Dow AgroSciences
Keystone 5.25 SE	Acetochlor & atrazine	Dow AgroSciences
KIH-485/Atrazine 55.7 WG	KIH-485/Atrazine	Kumiai Chemical
KIH-485/Atrazine 57.8 WG	KIH-485/Atrazine	Kumiai Chemical
Laddok S12 5 FL	Bentazon & atrazine	Sipcam Agro USA
Lexar 3.7 SE	S-metolachlor & mesotrione & atrazine	Syngenta
Lightning 70 DG	Imazethapyr & imazapyr	BASF
Lumax 3.95 SE	S-metolachlor & mesotrione & atrazine	Syngenta
MANA-283 5.97 SL	Metolachlor & atrazine	Makhteshim-Agan
Marksman 3.2 FL	Dicamba & atrazine	BASF
Northstar 47.4 WG	Primisulfuron & dicamba	Syngenta
Pursuit Plus 2.95 SL	Imazethapyr & pendimethalin	BASF
Spirit 57 WG	Prosulfuron & primisulfuron	Syngenta
Stalwart Xtra 5.5 L	Atrazine & metolachlor	Sipcam Agro USA
Steadfast 75 WG	Nicosulfuron & rimsulfuron	Dupont
Steadfast ATZ 89.3 WG	Nicosulfuron & rimsulfuron & atrazine	Dupont
Fungicide		
Bravo Weather Stik	Chlorothalonil	Syngenta
Folicur 3.6 F	Tebuconazole	Bayer CropScience
Headline 2.09 EC	Pyraclostrobin	BASF
Pristine	Pyraclostrobin & boscalid	BASF
Quadris 2.08 FS	Azoxystrobin	Syngenta
Stratego 2.08 EC	Propiconazole & trifloxystrobin	Bayer CropScience
Tilt 41.8	Propiconazole	Syngenta

Products used in 2004 Research Program (continued)

Commercial Name or Experimental Number	Common Name or Experimental Number	Company
Insecticide		
Asana XL 0.66 EC	Esfenvalerate	Dupont
Lorsban 4 EC	Chlorpyrifos	Dow AgroSciences
Warrior 1 EC	Lambda-cyhalothrin	Syngenta
Additive & Classification		
28% UAN	Urea ammonium nitrate	United Suppliers
Alliance	AMS replacement	Agrilience, LLC
AMS (Ammonium sulfate)	Ammonium sulfate	Terra Industries
AMSol	Liquid ammonium sulfate	United Suppliers
APGNIS	Non-ionic surfactant	Agrilience, LLC
Blend Master	Concentrated liquid water conditioning agents and surfactants	UAP-Loveland Ind.
Choice Weather Master	Water conditioning agent	UAP-Loveland Ind.
Class Act NG (Next Generation)	Ammonium sulfate/non-ionic surfactant blend	Agrilience, LLC
COC [Herbimax (Crop Oil Concentrate)]	Oil-surfactant adjuvant	UAP-Loveland Ind.
Dispatch 111	Additive	UAP-Loveland Ind.
Effective	Premium oil surfactant/water conditioner	UAP-Loveland Ind.
HFCS	High fructose corn syrup	Agrilience, LLC
Interlock	Drift and deposition agent	Agrilience, LLC
Liberate	Penetrating deposition aid and drift control agent	UAP-Loveland Ind.
LI 168	Water conditioner	UAP-Loveland Ind.
MSO (Meth Oil)	Methylated seed oil plus surfactant	UAP-Loveland Ind.
MSO (Succeed)	Methylated seed oil plus surfactant	United Suppliers
NIS (Activator 90)	Non-ionic surfactant/penetrant	UAP-Loveland Ind.
Placement	Drift control agent and deposition aid	Agrilience, LLC
Placement ProPak	Encapsulating drift control/deposition aid	Agrilience, LLC
Valid	Deposition aid and drift control agent antifoam - defoamer	UAP-Loveland Ind.
Weather Gard	Deposition aid, drift control agent, antifoam defoamer, water conditioner	UAP-Loveland Ind.

Weather Data – Year 2004

Data obtained from Iowa State University, Department of Agronomy, Crop, Soil, and Environmental Sciences, Iowa Environmental Mesonet - Iowa Ag Climate Network. Web address:
<http://mesonet.agron.iastate.edu/agclimate/index.php>

Experiment locations

Ames, IA

Nashua, IA

Ogden, IA (Ames, IA weather data used for Ogden experiment location)

Temperature and Precipitation, Year 2004
Ames, IA

Day	April			May			June			July			August		
	temp °F max	temp °F min	precip inches	temp °F max	temp °F min	precip inches	temp °F max	temp °F min	precip inches	temp °F max	temp °F min	precip inches	temp °F max	temp °F min	precip inches
1	56	26	0.00	58	39	0.00	67	54	0.00	85	61	0.00	78	60	0.73
2	62	28	0.00	52	33	0.00	69	32	0.00	78	67	0.24	85	65	0.08
3	56	35	0.00	62	28	0.00	76	51	0.00	73	65	0.21	86	66	1.44
4	57	25	0.00	71	45	0.00	79	56	0.00	83	63	0.00	76	61	0.01
5	69	33	0.00	81	39	0.00	75	60	0.00	77	62	0.23	73	55	0.00
6	71	44	0.00	79	59	0.00	82	57	0.01	71	59	0.00	73	51	0.00
7	73	37	0.00	62	51	0.00	89	69	0.00	69	56	0.00	76	55	0.00
8	61	36	0.00	85	51	0.41	86	73	0.00	74	59	0.00	79	60	0.00
9	56	33	0.00	80	60	0.03	82	69	0.00	79	64	0.33	75	55	0.00
10	47	26	0.00	76	62	0.00	78	67	0.25	82	61	0.00	64	54	0.00
11	49	20	0.00	83	58	0.00	85	69	0.27	76	66	0.50	62	48	0.00
12	51	27	0.00	75	56	0.16	84	62	0.41	84	64	0.00	68	47	0.00
13	59	23	0.00	56	42	0.43	80	60	0.00	85	64	0.00	69	47	0.00
14	71	33	0.00	56	37	0.12	79	62	0.33	80	61	0.00	73	50	0.00
15	74	48	0.00	62	39	0.00	79	61	0.00	82	61	0.00	74	46	0.00
16	87	45	0.00	74	45	0.00	77	61	0.70	81	65	0.00	78	54	0.05
17	81	49	0.00	74	57	0.44	75	58	0.00	77	59	0.00	76	59	0.60
18	81	59	0.35	69	53	0.00	66	56	0.00	79	59	0.00	73	52	0.21
19	62	43	0.00	72	54	0.00	67	47	0.00	85	61	0.00	67	45	0.00
20	61	44	0.56	82	64	0.00	69	55	0.00	88	69	0.00	74	49	0.00
21	60	45	0.00	86	64	0.00	75	56	0.92	87	71	0.12	73	48	0.00
22	59	40	0.00	79	60	3.18	76	50	0.00	82	67	0.00	81	60	0.00
23	65	41	0.00	65	51	0.21	80	58	0.00	74	61	0.00	82	65	0.28
24	56	42	0.65	67	47	1.19	61	48	0.21	70	57	0.00	77	64	0.06
25	60	41	0.19	63	48	0.00	72	43	0.00	75	50	0.00	76	62	0.43
26	59	36	0.00	70	47	0.00	77	49	0.00	78	52	0.00	85	65	0.64
27	69	31	0.00	74	56	0.00	74	57	0.05	77	52	0.00	80	62	0.01
28	86	53	0.00	78	53	0.12	75	52	0.01	77	54	0.00	72	56	0.00
29	70	49	0.00	79	60	0.45	79	53	0.00	80	61	0.06	73	52	0.00
30	57	44	0.13	73	56	0.35	80	54	0.00	77	60	0.00	80	56	0.00
31				73	53	0.03				83	56	0.00	81	54	0.00
	avg temp		total precip	avg temp		total precip	avg temp		total precip	avg temp		total precip	avg temp		total precip
	max °F	min °F	inches	max °F	min °F	inches	max °F	min °F	inches	max °F	min °F	inches	max °F	min °F	inches
	64	38	1.89	71	51	7.12	76	57	3.16	79	61	1.69	75	56	4.54

Temperature and Precipitation, Year 2004
Nashua, IA

Day	April			May			June			July			August		
	temp °F max	temp °F min	precip inches	temp °F max	temp °F min	precip inches	temp °F max	temp °F min	precip inches	temp °F max	temp °F min	precip inches	temp °F max	temp °F min	precip inches
1	54	28	0.00	59	36	0.00	61	55	0.10	86	62	0.00	82	66	0.20
2	61	28	0.00	54	36	0.00	71	55	0.05	84	64	0.00	84	64	0.97
3	54	35	0.00	62	28	0.00	74	50	0.00	73	65	1.57	83	67	0.15
4	54	25	0.00	70	44	0.00	77	54	0.00	82	64	0.00	76	59	0.00
5	68	32	0.00	80	36	0.00	77	58	0.13	80	61	2.38	72	54	0.00
6	69	41	0.00	74	56	0.00	83	60	0.01	73	57	0.26	76	50	0.00
7	70	35	0.00	64	48	0.00	89	67	0.00	65	52	0.00	76	55	0.02
8	60	35	0.00	72	50	0.89	89	71	0.00	75	47	0.00	81	59	0.00
9	56	28	0.00	83	56	0.00	86	66	0.14	73	60	0.36	74	60	0.00
10	45	26	0.00	76	56	0.03	70	61	0.17	82	59	0.00	61	50	0.00
11	48	19	0.00	82	52	0.00	85	61	0.41	79	66	0.18	61	45	0.00
12	49	24	0.00	76	58	0.37	86	60	0.00	86	64	0.00	68	50	0.00
13	59	24	0.00	58	43	0.74	82	62	0.03	83	64	0.01	71	48	0.00
14	72	32	0.00	55	40	0.03	78	60	0.07	80	59	0.00	73	43	0.00
15	73	43	0.00	63	34	0.00	81	57	0.00	82	61	0.00	75	46	0.00
16	87	43	0.10	75	47	0.00	83	63	0.99	81	63	0.02	73	57	0.54
17	77	48	0.00	75	56	0.57	76	58	0.00	77	58	0.00	77	59	0.00
18	83	55	0.56	69	50	0.00	67	54	0.02	78	58	0.00	76	51	0.00
19	59	41	0.00	77	49	0.00	68	46	0.00	85	60	0.00	68	42	0.00
20	53	39	0.54	80	62	0.00	69	54	0.00	87	67	0.00	72	45	0.00
21	57	42	0.00	64	57	3.66	75	54	0.51	86	69	1.22	71	39	0.00
22	61	32	0.00	78	58	1.70	76	49	0.00	81	64	0.00	80	58	0.01
23	65	40	0.00	69	48	0.44	80	57	0.03	73	57	0.00	84	65	0.06
24	56	39	0.40	64	46	0.54	63	46	0.26	74	54	0.00	79	64	0.04
25	58	42	0.12	63	45	0.00	71	42	0.00	76	49	0.00	78	64	0.00
26	55	36	0.00	69	44	0.00	74	52	0.00	79	52	0.00	86	66	0.91
27	64	28	0.00	75	55	0.00	71	52	0.00	78	51	0.00	80	59	0.01
28	87	47	0.00	74	50	0.00	75	49	0.00	79	55	0.00	72	55	0.00
29	69	50	0.00	73	53	2.00	81	53	0.00	82	61	0.04	74	51	0.00
30	53	44	0.03	75	60	0.25	81	54	0.00	77	56	0.07	77	55	0.00
31				73	55	0.02					53	0.00	80	51	0.00
	<u>avg temp</u>		<u>total precip</u>	<u>avg temp</u>		<u>total precip</u>	<u>avg temp</u>		<u>total precip</u>	<u>avg temp</u>		<u>total precip</u>	<u>avg temp</u>		<u>total precip</u>
	max °F	min °F	inches	max °F	min °F	inches	max °F	min °F	inches	max °F	min °F	inches	max °F	min °F	inches
	63	36	1.75	70	49	11.24	77	72	2.92	79	59	6.11	75	55	2.91

Experiment Directory

Ames, IA field corn experiments

No-tillage

- ACN-1 Early preplant, preplant incorporated and preemergence applied Balance Pro, Define, Atrazine, USA 2005 and Lumax for weed control in corn, Ames, IA, 2004
- ACN-2 Two pass systems including applications of early preplant and preemergence followed by postemergence for weed control in no-tillage corn, Ames, IA, 2004
- ACN-3 MANA-282 and Dual II Magnum applied early preplant and preemergence in corn, Ames, IA, 2004

Minimum-tillage

- ACC-1 Preemergence applied Keystone, Hornet, FulTime and postemergence applied Hornet, Atrazine, Starane, Stinger, and Glyphomax Plus in corn, Ames, IA, 2004
- ACC-2 Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ames, IA, 2004
- ACC-3 Cinch ATZ, Basis, and Atrazine applied preemergence and postemergence applied Roundup WeatherMAX, Steadfast, Callisto, and Cinch ATZ in corn, Ames, IA, 2004
- ACC-4 Preemergence applied Stalwart Xtra, Bicep II Magnum, Keystone, Harness Xtra and Lumax in corn, Ames, IA, 2004
- ACC-5 Preemergence applied 1x and 2x rates of Lexar, Lumax, Bicep II Magnum, Epic, Harness Xtra, Keystone, and Guardsman Max in corn, Ames, IA, 2004
- ACC-6 Dual II Magnum, MANA-282, Bicep II Magnum, Atrazine, MANA-283, and Parallel II applied preemergence in corn, Ames, IA, 2004
- ACC-7 Preemergence applied Lexar, Bicep II Magnum, Lumax, Guardsman Max, Harness Xtra, Epic, Keystone, Define, Balance Pro, and Axiom in corn, Ames, IA, 2004
- ACC-8 Bicep II Magnum, Lumax, Lexar, Harness Xtra, and Epic applied preemergence and post-emergence applied Callisto, Lumax, and Distinct in corn, Ames, 2004
- ACC-9 Preemergence applied Bicep II Magnum, MANA-283, Parallel II, Atrazine, Callisto, and Lumax in corn, Ames, IA, 2004
- ACC-10 Axiom, Atrazine, and Define applied preemergence and early postemergence for weed control in corn, Ames, IA, 2004
- ACC-11 One-pass delayed preemergence, two-pass preemergence followed by postemergence and one-pass postemergence applications in corn, Ames, IA, 2004
- ACC-12 Two-pass corn herbicide programs utilizing Bicep II Magnum, Guardsman Max, Callisto, Hornet, Steadfast, Equip, and Roundup WeatherMax, Ames, IA, 2004
- ACC-13 Postemergence applications of Liberty, Option, Equip and Steadfast alone or with various tank-mix partners for weed control in corn, Ames, IA, 2004
- ACC-14 Preemergence applied Dual II Magnum, MANA-282, MANA-283, and Bicep II Magnum and postemergence Roundup WeatherMAX in corn, Ames, IA, 2004
- ACC-15 Preemergence applied Outlook and Guardsman Max and postemergence Roundup tank-mixes with Clarity, Distinct, Prowl or Guardsman Max in corn, Ames, IA, 2004
- ACC-16 Preemergence applications of Balance Pro, Atrazine, Define, Lumax, Epic and others for weed control in corn, Ames, IA, 2004
- ACC-17 Preemergence applied Cinch ATZ, Basis, Atrazine, Cinch, and postemergence Steadfast, Callisto, Atrazine, Distinct, and Lumax in corn, Ames, IA, 2004

Experiment Directory (continued)

Ames, IA field corn experiments

- ACC-18 Balance Pro, Define, Epic, Axiom applied preemergence and postemergence applied Liberty, Option, Equip, and Define for weed control in corn, Ames, IA, 2004
- ACC-19 Postemergence applied Buctril, Buctril plus Atrazine, and Liberty in tank-mixture with various rates of Callisto for weed control in corn, Ames, IA, 2004
- ACC-20 Postemergence applications of Option with Callisto and Atrazine in corn, Ames, IA, 2004
- ACC-21 Aim and Roundup WeatherMAX applied postemergence for weed control in corn, Ames, IA, 2004
- ACC-22 Postemergence Steadfast applications with various adjuvants in corn, Ames, IA, 2004
- SHC-1 Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ames, IA, 2004

Ames, IA popcorn experiments

Minimum-tillage

- ACP-1 Effect of postemergence applied herbicides on crop phytotoxicity and yield of seven popcorn varieties, Ames, IA, 2004
- ACP-2 Effect of postemergence applied herbicides on crop phytotoxicity and yield of eight popcorn varieties, Ames, IA, 2004
- ACP-3 Effect of preemergence applied herbicides on crop phytotoxicity and yield of eight popcorn varieties, Ames, IA, 2004

Ames, IA soybean experiments

Minimum-tillage

- ASC-1 One and two-pass herbicide programs for weed control in soybean, Ames, IA, 2004
- ASC-2 Postemergence tank-mixture applications of Phoenix plus Roundup UltraMAX II in soybean, Ames, IA, 2004
- ASC-3 Preemergence applied Valor SX, FirstRate and Boundary followed by postemergence applied Roundup UltraMAX II in soybean, Ames, IA, 2004
- ASC-4 Postemergence applied of V10137 and Select with Roundup UltraMAX II for control of glyphosate and glufosinate-resistant corn in soybean, Ames, IA, 2004
- ASC-5 Postemergence applications of Assure II and Select with Roundup WeatherMAX for glyphosate and glufosinate-resistant corn control in soybean, Ames, IA, 2004
- ASC-6 Postemergence applications of Roundup Original with Scepter for glyphosate and glufosinate-resistant corn control in soybean, Ames, IA, 2004
- ASC-7 Preemergence applied INTRRO, Prowl, Valor SX, Canopy XL, and FirstRate followed by post-emergence Roundup WeatherMAX in soybean, Ames, IA, 2004
- ASC-8 Preemergence applied Gangster, Python, Valor, and Pendimax and postemergence applied FirstRate, and Glyphomax Plus in soybean, Ames, IA, 2004
- ASC-9 Preemergence applied MANA-Met and Sencor in soybean, Ames, IA, 2004
- ASC-10 Roundup WeatherMAX tank-mixes with fungicides and insecticides in soybean, Ames, IA, 2004

Experiment Directory (continued)

Ames, IA soybean experiments

Minimum-tillage

- ASC-11 Preemergence applied MANA-Met and Sencor alone and in tank-mixture with Prowl, Dual II Magnum, Command and Pursuit in soybean, Ames, IA, 2004
- ASC-12 Touchdown HiTech applied postemergence alone and with various adjuvants including HFCS, APGNIS, AMS, and Class Act NG in soybean, Ames, IA, 2004
- ASC-13 Postemergence applications of glyphosate with various adjuvants in soybean, Ames, IA, 2004

Ames, IA fallow experiments

- ANF-1 Aim, 2, 4-D LV4, and Roundup WeatherMAX applied in no-tillage conditions for burndown weed control, Ames, IA, 2004
- ANF-2 Weed control with postemergence applications of Roundup WeatherMAX, Roundup Original MAX and other glyphosate products, Ames, IA, 2004

Nashua, IA corn experiments

- NCC-1 Preemergence and postemergence applied herbicides in corn, Nashua, IA, 2004
- NCC-2 Preemergence applied Outlook and postemergence applied glyphosate alone or in tank-mixture with Clarity or Distinct in corn, Nashua, IA, 2004
- NCC-3 Preemergence applied Stalwart Xtra, Bicep II Magnum, Keystone, Harness Xtra and Lumax in corn, Nashua, IA, 2004
- NCC-4 Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Nashua, IA, 2004

Nashua, IA soybean experiment

- NSC-1 Preemergence and postemergence applied herbicides in soybean, Nashua, IA, 2004

Ogden, IA corn experiments

- OCW-1 Postemergence applied of Liberty, Option, Equip and Steadfast alone or with various tank-mix partners for woolly cupgrass control in corn, Ogden, IA, 2004
- OCW-2 Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ogden, IA, 2004

Ogden, IA soybean experiment

- OSW-1 V10137 and Select applied postemergence for woolly cupgrass control in soybean, Ogden, IA, 2004

Iowa State University

Early preplant, preplant incorporated and preemergence applied Balance Pro, Define, Atrazine, USA 2005 and Lumax for weed control in corn, Ames, IA, 2004.
 Trial ID: ACN 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:** 04-16-04
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, preplant incorporated, and preemergence herbicide application timings for crop phytotoxicity and weed control. Herbicides included Balance Pro, Define, Atrazine, USA 2005, and Lumax.

Conclusions: No significant differences in corn stand between treatments were observed on July 29, except for the untreated control. No corn injury was noted with the treatments on any of the observation dates. Early preplant (EPP), preplant incorporated (PPI) and preemergence (PRE) treatments provided excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters and Pennsylvania smartweed control on May 17. Furthermore, all treatments afforded good to excellent control of these species when observed on June 2. Generally, no significant differences in control of the species were noted between treatments on either May 17 or June 2. The exceptions were Roundup WeatherMAX treatments which failed to provide acceptable control in the absence of a companion residual herbicide. On June 28, EPP, PPI and PRE treatments provided 82 to 93% giant foxtail control. Velvetleaf control ranged from 50 to 96%. USA 2005 plus Atrazine applied PPI and Lumax plus Atrazine applied PPI or PRE provided 90% and higher velvetleaf control. Common waterhemp, common lambsquarters, and Pennsylvania smartweed control on June 28 was good to excellent with all the treatments, regardless of 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.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.

Crop 1: ZEAMD CORN, FIELD **Variety:** PIONEER 33R79
Planting Date: 05-03-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: The experiment was left un-tilled from the soybean cropping year 2003. Fertilization included 127 lb/A actual N applied as urea. Preplant treatments (PPI) were incorporated one pass with a field cultivator operating 2 to 3 inches deep. Crop residue on the soil surface in the un-tilled area was 57% at planting.

SOIL DESCRIPTION

% OM: 5.0 **Texture:** CLAY LOAM
pH: 7.6 **Soil Name:** CANISTEO, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	04-16-04	05-03-04
Application Method:	SPRAY	SPRAY
Application Timing:	EPP	PPI & PRE
Applic. Placement:	BROSOI	BROSOI
Air Temp., Unit:	82 F	55 F
% Relative Humidity:	46	46
Wind Velocity, Unit:	12 MPH	11 MPH
Soil Temp., Unit:	58 F	51 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	20	20

CROP STAGE AT EACH APPLICATION

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

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-3 LEAF
Stage Scale:	-	0.5 IN
Density, Unit:	- -	0-2 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYLEDON
Stage Scale:	-	0.25 IN
Density, Unit:	- -	< 1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -
Stage Scale:	-	-
Density, Unit:	- -	- -
Weed 4 Code, Stage:	CHEAL 2-4 LEAF	CHEAL 2-8 LEAF
Stage Scale:	0.5 IN	0.5-1.5
Density, Unit:	0-5 FT2	0-3 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-4 LEAF
Stage Scale:	-	0.5-1 IN
Density, Unit:	- -	0-1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Early preplant, preplant incorporated and preemergence applied Balance Pro, Define, Atrazine, USA 2005 and Lumax for weed control in corn, Ames, IA, 2004.

Trial ID: ACN 1 Study Dir.: Owen/Lux/Franzenburg
 Location: Ames Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								07-29-04	05-17-04	05-17-04	05-17-04	05-17-04	05-17-04	05-17-04	
Trt-Eval Interval								104 DA-A	14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									22	0	0	0	0	0
2	Untreated (PPI) - RdupWM			0.77	LB AE/A	22.0	FL OZ/A	PPI	B	31	0	77	48	96	98
3	Untreated (PRE) - RdupWM			0.77	LB AE/A	22.0	FL OZ/A	PRE	C	29	0	90	75	98	94
4	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	EPP	A	32	0	95	96	99	99
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	EPP	A						
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	EPP	A						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A						
5	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PPI	B	31	0	96	95	99	99
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	PPI	B						
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PPI	B						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B						
6	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	C	29	0	99	99	99	99
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	PRE	C						
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PRE	C						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C						
7	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	EPP	A	31	0	98	98	99	99
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	EPP	A						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A						
8	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	PPI	B	30	0	98	96	99	99
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PPI	B						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B						
9	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	PRE	C	30	0	96	99	99	99
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PRE	C						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C						
10	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	EPP	A	31	0	95	95	99	99
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	EPP	A						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A						
11	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	PPI	B	31	0	93	96	99	99
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	PPI	B						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B						
12	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	PRE	C	32	0	98	98	99	99
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	PRE	C						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C						
LSD (P=.05)								5.8	0.0	8.1	14.7	1.6	4.0	3.6	

Iowa State University

Weed Code								ZEAMD	SETFA	ABUTH	AMATA	CHEAL	POLPY	SETFA		
Rating Data Type								PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								06-02-04	06-02-04	06-02-04	06-02-04	06-02-04	06-02-04	06-28-04		
Trt-Eval Interval								30 DA-B	30 DA-B	30 DA-B	30 DA-B	30 DA-B	30 DA-B	56 DA-B		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Untreated (PPI) - RdupWM			0.77	LB AE/A	22.0	FL OZ/A	PPI	B	0	52	13	53	88	85	
3	Untreated (PRE) - RdupWM			0.77	LB AE/A	22.0	FL OZ/A	PRE	C	0	57	30	70	85	88	
4	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	EPP	A	0	95	85	98	99	99	
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	EPP	A							
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	EPP	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A							
5	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PPI	B	0	98	95	99	99	99	
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	PPI	B							
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PPI	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B							
6	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	C	0	99	98	99	99	99	
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	PRE	C							
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
7	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	EPP	A	0	96	92	96	99	95	
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	EPP	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A							
8	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	PPI	B	0	98	93	99	99	98	
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PPI	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B							
9	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	PRE	C	0	99	95	99	99	99	
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
10	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	EPP	A	0	95	95	99	99	99	
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	EPP	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A							
11	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	PPI	B	0	96	96	99	99	99	
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	PPI	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B							
12	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	PRE	C	0	99	99	99	99	99	
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
LSD (P=.05)										0.0	6.4	10.1	5.2	2.7	3.5	9.3

Iowa State University

Weed Code										ABUTH	AMATA	CHEAL	POLPY
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-28-04	06-28-04	06-28-04	06-28-04
Trt-Eval Interval										56 DA-B	56 DA-B	56 DA-B	56 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated									0	0	0	0
2	Untreated (PPI) - RdupWM			0.77	LB AE/A	22.0	FL OZ/A	PPI	B	7	40	65	85
3	Untreated (PRE) - RdupWM			0.77	LB AE/A	22.0	FL OZ/A	PRE	C	28	57	70	85
4	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	EPP	A	50	85	91	95
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	EPP	A				
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	EPP	A				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A				
5	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PPI	B	67	99	99	99
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	PPI	B				
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PPI	B				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B				
6	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	C	70	95	98	96
	Define SC	4	SC	0.53	LB A/A	17.0	FL OZ/A	PRE	C				
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PRE	C				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
7	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	EPP	A	60	83	96	93
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	EPP	A				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A				
8	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	PPI	B	90	98	99	95
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PPI	B				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B				
9	USA 2005	4	SC	0.875	LB A/A	28.0	FL OZ/A	PRE	C	72	96	99	98
	Atrazine	4	L	1.0	LB A/A	2.0	PT/A	PRE	C				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
10	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	EPP	A	83	99	99	99
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	EPP	A				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A				
11	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	PPI	B	95	99	99	98
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	PPI	B				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PPI	B				
12	Lumax	3.95	SE	2.97	LB A/A	3.0	QT/A	PRE	C	96	99	99	99
	Atrazine	4	L	0.25	LB A/A	0.5	PT/A	PRE	C				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
LSD (P=.05)										14.1	10.2	10.0	6.0

Iowa State University

Two pass systems including applications of early preplant and preemergence followed by postemergence for weed control in no-tillage corn, Ames, IA, 2004.

Trial ID: ACN 2
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: 04-02-04
Country: USA

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

Objective: The purpose of this study was to evaluate two pass systems for weed control in no-tillage corn. Early preplant and preemergence applications followed by postemergence applications were evaluated for crop phytotoxicity and weed efficacy. Potential tank-mix partners and rates in combination with postemergence applied Option or Equip were evaluated. **Conclusions:** No significant differences in corn stand between treatments were determined on July 29, except for the untreated control. No corn injury was observed on May 18 following early preplant (EPP1, EPP2) and preemergence (PRE) applications. Treatments afforded 90% and higher giant foxtail control when observed on May 18, 46, 32 and 15 days after EPP1, EPP2, and PRE applications, respectively. Woolly cupgrass control ranged from 63 to 92% and in general PRE treatments provided the best control. Velvetleaf, common waterhemp, and common lambsquarters control was good to excellent on May 18 with all application timings. EPP1 applied Dual II Magnum, however, did not control velvetleaf.

No corn injury was observed on June 3. Treatments provided 77 to 92% giant foxtail control with PRE achieving 88% control and higher on June 3. EPP1 and EPP2 treatments failed to control woolly cupgrass; PRE treatments provided fair control. Velvetleaf control was variable on June 3 with few treatments providing acceptable control. PRE treatments provided 93% and higher common waterhemp control. Common lambsquarters control was good to excellent with all treatment timings on June 3.

Mid-postemergence (MPOST) treatments of Option and Equip resulted in corn injury when observed on June 16, 8 days after application. Treatments that included Liberty did not result in corn injury. Observations on June 25 demonstrated that MPOST applications involving Liberty resulted in 99% control of giant foxtail and woolly cupgrass. Giant foxtail control improved with treatments involving MPOST Option and Equip as well, with control ranging from 83 to 95%. Option and Equip treatments improved woolly cupgrass control when observed on June 25 and the best control occurred where PRE treatments preceded MPOST. MPOST treatments that included Callisto and/or Atrazine resulted in excellent velvetleaf, common waterhemp and common lambsquarters control on June 25. Weed control observations on July 28 reflected trends demonstrated on June 25. (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.	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.

Crop 1: ZEAMD CORN, FIELD Variety: PIONEER 33R79
Planting Date: 05-03-04 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: The experiment was left un-tilled from the soybean cropping year 2003. Fertilization included 127 lb/A actual N applied as urea. Crop residue on the soil surface was 57% at planting.

SOIL DESCRIPTION

% OM: 5.0 Texture: CLAY LOAM
pH: 7.6 Soil Name: CANISTEO, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

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APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	04-02-04	04-16-04	05-03-04	06-08-04
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	EPP1	EPP2	PRE	MPOST
Applic. Placement:	BROSOI	BROSOI	BROSOI	BROFOL
Air Temp., Unit:	68 F	82 F	55 F	86 F
% Relative Humidity:	27	46	46	74
Wind Velocity, Unit:	3 MPH	12 MPH	11 MPH	6 MPH
Soil Temp., Unit:	41 F	58 F	51 F	78 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	0	20	20	100

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	ZEAMD -	ZEAMD -	ZEAMD -	ZEAMD V 6
Stage Scale:	-	-	-	DESC
Height, Unit:	-	-	-	11 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	SETFA -	SETFA -	SETFA 1-3 LEAF	SETFA 1-4 L, 2T
Stage Scale:	-	-	0.5 IN	0.5-3 IN
Density, Unit:	- -	- -	0-2 FT2	0-2 FT2
Weed 2 Code, Stage:	ERBVI -	ERBVI -	ERBVI 1-4 LEAF	ERBVI 1-4 L, 4T
Stage Scale:	-	-	0.5-1 IN	0.5-6 IN
Density, Unit:	- -	- -	0-1 FT2	0-3 FT2
Weed 3 Code, Stage:	ABUTH -	ABUTH -	ABUTH COTYLEDON	ABUTH COTYL-6 L
Stage Scale:	-	-	0.25 IN	0.5-5 IN
Density, Unit:	- -	- -	< 1 FT2	0-2 FT2
Weed 4 Code, Stage:	AMATA -	AMATA -	AMATA -	AMATA NUMEROUS
Stage Scale:	-	-	-	0.5-5 IN
Density, Unit:	- -	- -	- -	0-3 FT2
Weed 5 Code, Stage:	CHEAL COTYL-2 L	CHEAL 2-8 LEAF	CHEAL NUMEROUS	CHEAL NUMEROUS
Stage Scale:	0.25 IN	0.5 IN	0.5-1.5	0.5-3 IN
Density, Unit:	0-3 FT2	0-5 FT2	0-3 FT2	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Two pass systems including applications of early preplant and preemergence followed by postemergence for weed control in no-tillage corn, Ames, IA, 2004.

Trial ID: ACN 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	SETFA	ERBVI	ABUTH	AMATA	CHEAL	
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								07-29-04	05-18-04	05-18-04	05-18-04	05-18-04	05-18-04	05-18-04	
Trt-Eval Interval								87 DA-C	15 DA-C	15 DA-C	15 DA-C	15 DA-C	15 DA-C	15 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									22	0	0	0	0	0
2	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	30	0	90	78	96	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A						
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D						
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D						
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D						
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D						
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D						
3	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	32	0	92	77	98	98
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A						
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D						
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D						
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D						
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D						
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D						
4	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	30	0	92	83	96	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A						
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D						
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D						
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D						
5	Dual II Magnum	7.64	EC	1.59	LB A/A	1.67	PT/A	EPP1	A	32	0	93	63	50	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A						
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	MPOST	D						
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D						
	COC		L	2.0	PT/A	2.0	PT/A	MPOST	D						
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D						
6	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	31	0	90	75	93	98
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B						
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D						
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D						
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D						
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D						
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D						
7	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	32	0	92	73	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B						
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D						
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D						
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D						
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D						
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D						
8	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	30	0	93	78	93	98
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B						
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B						
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D						
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D						
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D						

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ZEAMD STAND 17.42 FT 07-29-04 87 DA-C	ZEAMD PHYGEN PERCENT 05-18-04 15 DA-C	SETFA CONTROL PERCENT 05-18-04 15 DA-C	ERBVI CONTROL PERCENT 05-18-04 15 DA-C	ABUTH CONTROL PERCENT 05-18-04 15 DA-C	AMATA CONTROL PERCENT 05-18-04 15 DA-C	CHEAL CONTROL PERCENT 05-18-04 15 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
9	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	C	30	0	93	87	98	99	98
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
10	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	C	31	0	95	83	96	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
11	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	30	0	93	85	92	99	96
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
12	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	32	0	93	92	93	99	98
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
13	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	31	0	95	88	88	99	92
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D							
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D							
14	Cinch ATZ	5.5	SL	1.36	LB A/A	1.0	QT/A	PRE	C	30	0	95	85	90	99	98
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Steadfast	75	WG	0.0352	LB A/A	0.75	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	COC		L	1.0	QT/A	1.0	QT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
LSD (P=.05)										3.0	0.0	4.8	16.8	12.4	1.8	3.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ZEAMD PHYGEN PERCENT 06-03-04 31 DA-C	SETFA CONTROL PERCENT 06-03-04 31 DA-C	ERBVI CONTROL PERCENT 06-03-04 31 DA-C	ABUTH CONTROL PERCENT 06-03-04 31 DA-C	AMATA CONTROL PERCENT 06-03-04 31 DA-C	CHEAL CONTROL PERCENT 06-03-04 31 DA-C	ZEAMD PHYGEN PERCENT 06-16-04 8 DA-D	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	0	78	60	70	77	99	10
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
3	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	0	78	57	75	77	99	10
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A							
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
4	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	0	78	65	73	82	99	0
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A							
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D							
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D							
5	Dual II Magnum	7.64	EC	1.59	LB A/A	1.67	PT/A	EPP1	A	0	87	50	38	92	88	2
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A							
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	COC		L	2.0	PT/A	2.0	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
6	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	0	77	57	70	87	98	10
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
7	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	0	78	55	80	83	99	10
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B							
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
8	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	0	83	60	68	78	98	0
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B							
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D							
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D							
9	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	C	0	90	82	82	96	98	7
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							

Iowa State University

Weed Code										ZEAMD	SETFA	ERBVI	ABUTH	AMATA	CHEAL	ZEAMD
Rating Data Type										PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-03-04	06-03-04	06-03-04	06-03-04	06-03-04	06-03-04	06-16-04
Trt-Eval Interval										31 DA-C	31 DA-C	31 DA-C	31 DA-C	31 DA-C	31 DA-C	8 DA-D
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
10	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	C	0	88	82	88	95	99	10
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX Equip	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Callisto	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Atrazine	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	MSO	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	AMS	L		1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS	DF		1.5	LB/A	1.5	LB/A	MPOST	D							
11	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	0	90	78	77	96	98	10
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO	L		1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS	DF		1.5	LB/A	1.5	LB/A	MPOST	D							
12	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	0	90	85	83	93	96	8
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX Equip	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Callisto	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Atrazine	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	MSO	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	AMS	L		1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS	DF		1.5	LB/A	1.5	LB/A	MPOST	D							
13	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	0	92	82	73	95	93	0
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D							
	AMS	DF		3.0	LB/A	3.0	LB/A	MPOST	D							
14	Cinch ATZ	5.5	SL	1.36	LB A/A	1.0	QT/A	PRE	C	0	90	73	75	93	96	10
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Steadfast	75	WG	0.0352	LB A/A	0.75	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	COC	L		1.0	QT/A	1.0	QT/A	MPOST	D							
	AMS	DF		1.5	LB/A	1.5	LB/A	MPOST	D							
LSD (P=.05)										0.0	8.0	14.9	27.0	7.4	3.2	2.3

Iowa State University

Weed Code										ZEAMD	SETFA	ERBVI	ABUTH	AMATA	CHEAL	SETFA
Rating Data Type										PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-25-04	06-25-04	06-25-04	06-25-04	06-25-04	06-25-04	07-28-04
Trt-Eval Interval										17 DA-D	17 DA-D	17 DA-D	17 DA-D	17 DA-D	17 DA-D	50 DA-D
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	2	88	70	99	99	99	93
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
3	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	2	90	73	99	99	99	93
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A							
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
4	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	0	99	99	99	99	99	96
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A							
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D							
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D							
5	Dual II Magnum	7.64	EC	1.59	LB A/A	1.67	PT/A	EPP1	A	3	87	53	99	99	99	90
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A							
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	COC		L	2.0	PT/A	2.0	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
6	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	5	83	58	99	99	99	92
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
7	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	3	85	67	99	99	99	93
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B							
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							
8	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	0	99	99	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B							
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D							
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D							
9	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	C	0	95	92	99	99	99	96
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D							

Iowa State University

Weed Code										ZEAMD	SETFA	ERBVI	ABUTH	AMATA	CHEAL	SETFA
Rating Data Type										PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-25-04	06-25-04	06-25-04	06-25-04	06-25-04	06-25-04	07-28-04
Trt-Eval Interval										17 DA-D	17 DA-D	17 DA-D	17 DA-D	17 DA-D	17 DA-D	50 DA-D
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
10	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	C	2	92	88	99	99	99	92
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX Equip	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Callisto	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Atrazine	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	MSO	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	AMS	L		1.5	PT/A	1.5	PT/A	MPOST	D							
		DF		1.5	LB/A	1.5	LB/A	MPOST	D							
11	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	5	92	82	99	99	99	95
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	MSO	L		1.5	PT/A	1.5	PT/A	MPOST	D							
	AMS	DF		1.5	LB/A	1.5	LB/A	MPOST	D							
12	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	2	93	88	99	99	99	95
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX Equip	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Callisto	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D							
	Atrazine	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	MSO	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	AMS	L		1.5	PT/A	1.5	PT/A	MPOST	D							
		DF		1.5	LB/A	1.5	LB/A	MPOST	D							
13	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	2	99	99	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D							
	AMS	DF		3.0	LB/A	3.0	LB/A	MPOST	D							
14	Cinch ATZ	5.5	SL	1.36	LB A/A	1.0	QT/A	PRE	C	2	90	87	99	99	99	95
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C							
	Steadfast	75	WG	0.0352	LB A/A	0.75	OZ WT/A	MPOST	D							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D							
	COC	L		1.0	QT/A	1.0	QT/A	MPOST	D							
	AMS	DF		1.5	LB/A	1.5	LB/A	MPOST	D							
LSD (P=.05)										3.8	4.4	12.3	0.0	0.0	0.0	3.3

Iowa State University

Weed Code										ERBVI	ABUTH	AMATA	CHEAL
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-28-04	07-28-04	07-28-04	07-28-04
Trt-Eval Interval										50 DA-D	50 DA-D	50 DA-D	50 DA-D
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated									0	0	0	0
2	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	68	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A				
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
3	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	72	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A				
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
4	Balance Pro	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPP1	A	96	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP1	A				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A				
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D				
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D				
5	Dual II Magnum	7.64	EC	1.59	LB A/A	1.67	PT/A	EPP1	A	60	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP1	A				
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	COC		L	2.0	PT/A	2.0	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
6	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	60	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B				
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
7	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	63	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B				
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
8	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	EPP2	B	95	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	EPP2	B				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP2	B				
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D				
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D				
9	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	C	92	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				

Iowa State University

Weed Code										ERBVI	ABUTH	AMATA	CHEAL
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-28-04	07-28-04	07-28-04	07-28-04
Trt-Eval Interval										50 DA-D	50 DA-D	50 DA-D	50 DA-D
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
10	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	C	88	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
11	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	80	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
	Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
12	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	87	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
13	Define SC	4	SC	0.375	LB A/A	12.0	FL OZ/A	PRE	C	96	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	C				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
	Liberty	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	D				
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	D				
14	Cinch ATZ	5.5	SL	1.36	LB A/A	1.0	QT/A	PRE	C	85	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	PRE	C				
	Steadfast	75	WG	0.0352	LB A/A	0.75	OZ WT/A	MPOST	D				
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	D				
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	D				
	COC		L	1.0	QT/A	1.0	QT/A	MPOST	D				
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	D				
LSD (P=.05)										15.9	0.0	0.0	0.0

Iowa State University

MANA-282 and Dual II Magnum applied early preplant and preemergence in corn, Ames, IA, 2004.

Trial ID: ACN 3
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: 05-03-04
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 MANA-282 and Dual II Magnum herbicides applied early preplant and preemergence .
Conclusions: No significant differences in corn stand between treatments were determined on July 30, except for the untreated control. Giant foxtail, velvetleaf, common waterhemp and common lambsquarters control with early preplant (EPP) treatments of MANA-282 plus Roundup WeatherMAX and Dual II Magnum plus WeatherMAX was good to excellent on May 18, 15 days after application. Preemergence (PRE) treatments demonstrated similar results when observed on June 3, 17 days after application. Few significant differences in giant foxtail, common waterhemp and common lambsquarters control between EPP and PRE treatments were observed. Velvetleaf control was an exception on June 3, however, with both EPP and PRE treatments. Significant velvetleaf germination was observed following EPP and PRE applied treatments. MANA-282 and Dual II Magnum did not demonstrate velvetleaf control on June 3 or any subsequent evaluation date.

Significant differences in giant foxtail control between EPP and PRE treatments were observed on June 21, July 7 and 30. In general, PRE treatments provided a higher level of giant foxtail control than EPP. Furthermore, significant differences in control between application rates of MAN-282 and Dual II Magnum were observed. In general, the highest application rate of 2.0 pt/A of each was necessary to provide acceptable giant foxtail control, especially when observed at the later evaluation dates. The level of control was similar at the 2.0 pt/A rate of MANA-282 and Dual II Magnum.

EPP treatment control of common waterhemp with MAN-282 and Dual II Magnum was similar when observed on June 21, July 7, and 30. The lower rates of each achieved only poor to fair control, while the 2.0 pt/A rate of each provided good control. PRE applied MANA-282 at 1.45 and 2.0 pt/A and Dual II Magnum at 0.67, 1.0 and 2.0 pt/A rates generally provided similar, but good common waterhemp control on June 21. On July 7 and 30 poor to fair common waterhemp control was observed with PRE MANA-282, while fair to good control with PRE Dual II Magnum (1.0 and 2.0 pt/A) was observed. MANA-282 applied at 1.0 pt/A provided only poor common waterhemp control on all three dates.

EPP treatment control of common lambsquarters with all rates of MAN-282 and the two lower rates of Dual II Magnum was generally poor to fair when observed on June 21, July 7 and 30. EPP Dual II Magnum applied at 2.0 pt/A provided good control on June 21 and July 7, and fair control in July 30. PRE applied MANA-282 and Dual II Magnum generally provided similar common lambsquarters control when observed on June 21, July 7, and 30. The highest rate of each gave good control on June 21 and poor to good control on July 7 and 30. The lower two rates of PRE MANA-282 and Dual II Magnum generally provided only poor control on July 30. (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: DEKALB DKC53-34
Planting Date: 05-17-04 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: The experiment was left un-tilled from the soybean cropping year 2003. Fertilization included 127 lb/A actual N applied as urea. Crop residue on the soil surface was 57% at planting.

SOIL DESCRIPTION

% OM: 5.0 Texture: CLAY LOAM
pH: 7.6 Soil Name: CANISTEO, NICOLLET
Fert. Level: EXCELLENT

Iowa State University

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A	B
Application Date:	05-03-04	05-17-04
Application Method:	SPRAY	SPRAY
Application Timing:	EPP	PRE
Applic. Placement:	BROS0I	BROS0I
Air Temp., Unit:	55 F	65 F
% Relative Humidity:	46	78
Wind Velocity, Unit:	11 MPH	5 MPH
Soil Temp., Unit:	51 F	64 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	20	100

CROP STAGE AT EACH APPLICATION

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

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA 1-3 LEAF	SETFA 2-4 LEAF
Stage Scale:	0.5 IN	0.5-1 IN
Density, Unit:	0-2 FT2	0-5 FT2
Weed 2 Code, Stage:	ABUTH COTYLEDON	ABUTH COTYL-3 L
Stage Scale:	0.25 IN	0.25-1 IN
Density, Unit:	< 1 FT2	<1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 2-8 LEAF
Stage Scale:	-	0.5-1 IN
Density, Unit:	- -	0-1 FT2
Weed 4 Code, Stage:	CHEAL NUMEROUS	CHEAL NUMEROUS
Stage Scale:	0.5-1.5	0.5-6 IN
Density, Unit:	0-3 FT2	0-3 FT2

APPLICATION EQUIPMENT

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

Iowa State University

**MANA-282 and Dual II Magnum applied early preplant and preemergence in corn,
Ames, IA, 2004.**

Trial ID: ACN 3

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	SETFA	ABUTH	AMATA	CHEAL	ZEAMD	SETFA	
Rating Data Type								STAND	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								07-30-04	05-18-04	05-18-04	05-18-04	05-18-04	06-03-04	06-03-04	
Trt-Eval Interval								88 DA-A	15 DA-A	15 DA-A	15 DA-A	15 DA-A	17 DA-B	17 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code							
1	Untreated								19	0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A 17.0 LB/100 GAL	22.0 FL OZ/A 17.0 LB/100 GAL	EPP A EPP A			28	93	90	99	98	0	40
3	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	0.985 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	EPP A EPP A EPP A			30	95	83	99	99	0	93
4	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	1.43 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.45 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	EPP A EPP A EPP A			30	96	93	98	99	0	95
5	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	1.97 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	2.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	EPP A EPP A EPP A			29	96	96	99	99	0	96
6	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	0.64 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	0.67 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	EPP A EPP A EPP A			30	95	92	99	98	0	92
7	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	0.955 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	EPP A EPP A EPP A			30	96	98	99	96	0	96
8	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	1.91 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	2.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	EPP A EPP A EPP A			28	95	96	99	98	0	96
9	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A 17.0 LB/100 GAL	22.0 FL OZ/A 17.0 LB/100 GAL	PRE B PRE B			29	0	0	0	0	0	65
10	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	0.985 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE B PRE B PRE B			29	0	0	0	0	0	98
11	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	1.43 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.45 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE B PRE B PRE B			30	0	0	0	0	0	98
12	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	1.97 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	2.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE B PRE B PRE B			30	0	0	0	0	0	99
13	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	0.64 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	0.67 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE B PRE B PRE B			30	0	0	0	0	0	98
14	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	0.955 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE B PRE B PRE B			29	0	0	0	0	0	98
15	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	1.91 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	2.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE B PRE B PRE B			30	0	0	0	0	0	99
LSD (P=.05)									2.9	2.2	6.3	1.0	1.9	0.0	3.8

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ABUTH CONTROL PERCENT 06-03-04 17 DA-B	AMATA CONTROL PERCENT 06-03-04 17 DA-B	CHEAL CONTROL PERCENT 06-03-04 17 DA-B	ZEAMD PHYGEN PERCENT 06-21-04 35 DA-B	SETFA CONTROL PERCENT 06-21-04 35 DA-B	ABUTH CONTROL PERCENT 06-21-04 35 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A	22.0	FL OZ/A	EPP A	A	20	63	93	0	17	12
3	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	0.985	LB A/A	1.0	PT/A	EPP A	A	10	95	95	0	65	7
4	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	1.43	LB A/A	1.45	PT/A	EPP A	A	17	96	93	0	87	15
5	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	1.97	LB A/A	2.0	PT/A	EPP A	A	8	95	98	0	88	8
6	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	0.64	LB A/A	0.67	PT/A	EPP A	A	5	95	93	0	55	5
7	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	0.955	LB A/A	1.0	PT/A	EPP A	A	10	98	98	0	68	5
8	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	1.91	LB A/A	2.0	PT/A	EPP A	A	53	99	99	0	92	15
9	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A	22.0	FL OZ/A	PRE B	B	62	68	87	0	28	32
10	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	0.985	LB A/A	1.0	PT/A	PRE B	B	33	95	98	0	80	33
11	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	1.43	LB A/A	1.45	PT/A	PRE B	B	23	98	95	0	88	13
12	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	1.97	LB A/A	2.0	PT/A	PRE B	B	45	99	99	0	92	23
13	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	0.64	LB A/A	0.67	PT/A	PRE B	B	38	98	98	0	73	30
14	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	0.955	LB A/A	1.0	PT/A	PRE B	B	35	99	96	0	87	35
15	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	1.91	LB A/A	2.0	PT/A	PRE B	B	52	98	96	0	93	43
LSD (P=.05)										28.6	10.8	4.7	0.0	9.2	20.3

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									AMATA CONTROL PERCENT 06-21-04 35 DA-B	CHEAL CONTROL PERCENT 06-21-04 35 DA-B	ZEAMD PHYGEN PERCENT 07-07-04 35 DA-B	SETFA CONTROL PERCENT 07-07-04 35 DA-B	ABUTH CONTROL PERCENT 07-07-04 35 DA-B	AMATA CONTROL PERCENT 07-07-04 35 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A	22.0	FL OZ/A	EPP	A	17	43	0	8	2	10
3	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	0.985	LB A/A	1.0	PT/A	EPP	A	68	52	0	50	2	58
4	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	1.43	LB A/A	1.45	PT/A	EPP	A	77	73	0	77	2	65
5	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	1.97	LB A/A	2.0	PT/A	EPP	A	90	67	0	83	2	82
6	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	0.64	LB A/A	0.67	PT/A	EPP	A	57	73	0	48	0	53
7	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	0.955	LB A/A	1.0	PT/A	EPP	A	75	65	0	57	2	65
8	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	1.91	LB A/A	2.0	PT/A	EPP	A	95	93	0	87	10	88
9	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A	22.0	FL OZ/A	PRE	B	43	57	0	10	8	30
10	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	0.985	LB A/A	1.0	PT/A	PRE	B	47	78	0	73	5	42
11	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	1.43	LB A/A	1.45	PT/A	PRE	B	88	72	0	83	2	78
12	MANA-282 Roundup WeatherMAX AMS	7.88	EC SL DF	1.97	LB A/A	2.0	PT/A	PRE	B	87	90	0	90	15	77
13	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	0.64	LB A/A	0.67	PT/A	PRE	B	82	75	0	65	15	73
14	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	0.955	LB A/A	1.0	PT/A	PRE	B	93	85	0	82	20	85
15	Dual II Magnum Roundup WeatherMAX AMS	7.64	EC SL DF	1.91	LB A/A	2.0	PT/A	PRE	B	90	92	0	93	38	85
LSD (P=.05)										27.6	19.9	0.0	14.6	16.0	23.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									CHEAL CONTROL PERCENT 07-07-04 35 DA-B	ZEAMD PHYGEN PERCENT 07-30-04 74 DA-B	SETFA CONTROL PERCENT 07-30-04 74 DA-B	ABUTH CONTROL PERCENT 07-30-04 74 DA-B	AMATA CONTROL PERCENT 07-30-04 74 DA-B	CHEAL CONTROL PERCENT 07-30-04 74 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A 17.0 LB/100 GAL	22.0 FL OZ/A 17.0 LB/100 GAL		EPP A EPP A		38	0	8	2	10	37
3	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	0.985 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		EPP A EPP A EPP A		40	0	50	0	55	40
4	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	1.43 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.45 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		EPP A EPP A EPP A		62	0	73	0	63	53
5	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	1.97 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	2.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		EPP A EPP A EPP A		50	0	80	0	80	47
6	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	0.64 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	0.67 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		EPP A EPP A EPP A		62	0	47	0	55	55
7	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	0.955 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		EPP A EPP A EPP A		50	0	52	0	62	48
8	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	1.91 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	2.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		EPP A EPP A EPP A		83	0	87	0	87	70
9	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A 17.0 LB/100 GAL	22.0 FL OZ/A 17.0 LB/100 GAL		PRE B PRE B		48	0	10	3	30	42
10	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	0.985 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE B PRE B PRE B		57	0	72	2	42	55
11	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	1.43 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.45 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE B PRE B PRE B		57	0	83	2	70	55
12	MANA-282 Roundup WeatherMAX AMS	7.88 4.5	EC SL DF	1.97 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	2.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE B PRE B PRE B		78	0	90	10	67	67
13	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	0.64 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	0.67 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE B PRE B PRE B		60	0	62	12	72	52
14	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	0.955 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE B PRE B PRE B		70	0	82	10	80	58
15	Dual II Magnum Roundup WeatherMAX AMS	7.64 4.5	EC SL DF	1.91 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	2.0 PT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE B PRE B PRE B		82	0	93	33	82	72
LSD (P=.05)									20.2	0.0	15.8	14.2	23.4	20.1

Iowa State University

Preemergence applied Keystone, Hornet, FulTime and postemergence applied Hornet, Atrazine, Starane, Stinger, and Glyphomax Plus in corn, Ames, IA, 2004.
 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:** 04-23-04
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 herbicides in corn for phytotoxicity and weed control. Keystone plus Hornet, and FulTime were evaluated as one pass preemergence applied treatments. Hornet, Atrazine, Callisto, Starane, Stinger, and Glyphomax Plus were evaluated as postemergence applied treatments in a two pass system following preemergence applications. GF-1279 and Roundup WeatherMAX herbicides was evaluated as one pass postemergent treatments.

Conclusions: No significant differences in corn stand between treatments were observed on July 29. Preemergence (PRE) applied treatments exhibited excellent crop safety when observed on May 22 and June 2, prior to postemergence applications. PRE treatments provided excellent giant foxtail, common waterhemp and common lambsquarters control on June 2. Velvetleaf control was poor to good. PRE Keystone plus Hornet WDG provided the best velvetleaf control.

Postemergence (POST1) applied treatments resulted in 3 to 15% corn injury when observed on June 10, eight days after application. The most serious injury was caused by treatments including Starane plus Atrazine, Starane plus Stinger and Starane plus Stinger plus Atrazine. Negligible injury was observed on June 25 with these and POST2 applied treatments. On June 25, nineteen days following POST3 applications, all treatments provided good to excellent giant foxtail, velvetleaf, common waterhemp, and common lambsquarters control. Exceptions were PRE applied Keystone plus Hornet WDG and FulTime where velvetleaf control was poor to fair. Trends in weed control on July 29 with the treatments were similar to that observed on June 25. In general, with the exceptions noted, good to excellent control continued with the treatments on July 29. (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:** DEKALB DKC53-34
Planting Date: 04-23-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 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.	SOYBEAN	NONE	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 20% at planting.

SOIL DESCRIPTION

% OM: 5.0 **Texture:** CLAY LOAM
pH: 7.6 **Soil Name:** CANISTEO, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	04-27-04	06-02-04	06-06-04	06-09-04
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST1	POST2	POST3
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	67 F	60 F	77 F	80 F
% Relative Humidity:	32	69	68	77
Wind Velocity, Unit:	15 MPH	5 MPH	2 MPH	5 MPH
Soil Temp., Unit:	53 F	64 F	70 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	0	95	75	75

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 5	ZEAMD V 5	ZEAMD V 6
Stage Scale:	-	DESC	DESC	DESC
Height, Unit:	-	9 IN	13 IN	18 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF	SETFA 2-4 L, 3T	SETFA 1-2 LEAF
Stage Scale:	-	0.5-1 IN	0.5-6 IN	0.5-3 IN
Density, Unit:	-	< 1 FT2	0-4 FT2	0-5 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-5 L	ABUTH COTYL-7 L	ABUTH COTYL8 L
Stage Scale:	-	0.5-4 IN	0.5-7 IN	0.5-7 IN
Density, Unit:	- -	0-2 FT2	0-1 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -	AMATA NUMEROUS	AMATA -
Stage Scale:	-	-	0.5-8 IN	-
Density, Unit:	- -	- -	0-3 FT2	- FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL -	CHEAL NUMEROUS	CHEAL -
Stage Scale:	-	-	0.5-8 IN	-
Density, Unit:	- -	- -	< 1 FT2	- -

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied Keystone, Hornet, FulTime and postemergence applied Hornet, Atrazine, Starane, Stinger, and Glyphomax Plus in corn, Ames, IA, 2004.

Trial ID: ACC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL		
Rating Data Type								STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								07-29-04	05-22-04	06-02-04	06-02-04	06-02-04	06-02-04	06-02-04		
Trt-Eval Interval								93 DA-A	25 DA-A	36 DA-A	36 DA-A	36 DA-A	36 DA-A	36 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Untreated									31	0	0	0	0	0	
2	Keystone Hornet WDG	5.25	SE	3.48	LB A/A	2.65	QT/A	PRE	A	30	0	0	99	87	99	
		68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	PRE	A							
3	Keystone Hornet WDG Atrazine 28% UAN COC	5.25	SE	3.48	LB A/A	2.65	QT/A	PRE	A	30	0	0	98	75	99	
		68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	POST1	B							
		90	DF	0.75	LB A/A	0.83	LB/A	POST1	B							
		L		2.5	% V/V	2.5	% V/V	POST1	B							
4	Keystone Hornet WDG Callisto Atrazine 28% UAN COC	5.25	SE	3.48	LB A/A	2.65	QT/A	PRE	A	31	0	0	99	70	99	
		68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	POST1	B							
		4	SC	0.0234	LB A/A	0.75	FL OZ/A	POST1	B							
		90	DF	0.25	LB A/A	0.28	LB/A	POST1	B							
		L		2.5	% V/V	2.5	% V/V	POST1	B							
		L		1.0	% V/V	1.0	% V/V	POST1	B							
5	FulTime	4	CS	3.35	LB A/A	3.35	QT/A	PRE	A	30	0	0	99	72	99	99
6	Surpass Starane	6.4	EC	2.0	LB A/A	2.5	PT/A	PRE	A	31	0	0	99	13	99	
		1.5	EC	0.126	LB A/A	0.67	PT/A	POST1	B							
7	Surpass Starane Atrazine COC	6.4	EC	2.0	LB A/A	2.5	PT/A	PRE	A	32	0	0	96	12	99	
		1.5	EC	0.126	LB A/A	0.67	PT/A	POST1	B							
		90	DF	0.75	LB A/A	0.83	LB/A	POST1	B							
		L		1.0	% V/V	1.0	% V/V	POST1	B							
8	Surpass Starane Stinger	6.4	EC	2.0	LB A/A	2.5	PT/A	PRE	A	30	0	0	96	8	99	
		1.5	EC	0.094	LB A/A	0.5	PT/A	POST1	B							
		3	SL	0.094	LB A/A	4.0	FL OZ/A	POST1	B							
9	Surpass Starane Stinger Atrazine COC	6.4	EC	2.0	LB A/A	2.5	PT/A	PRE	A	31	0	0	98	13	99	
		1.5	EC	0.094	LB A/A	0.5	PT/A	POST1	B							
		3	SL	0.094	LB A/A	4.0	FL OZ/A	POST1	B							
		90	DF	0.75	LB A/A	0.83	LB/A	POST1	B							
		L		1.0	% V/V	1.0	% V/V	POST1	B							
		L		1.0	% V/V	1.0	% V/V	POST1	B							
10	FulTime Glyphomax Plus AMS	4	CS	2.25	LB A/A	2.25	QT/A	PRE	A	30	0	0	99	58	99	
		3	SL	0.75	LB AE/A	2.0	PT/A	POST3	D							
		DF		2.5	LB/A	2.5	LB/A	POST3	D							
11	Keystone Glyphomax Plus AMS	5.25	SE	2.3	LB A/A	1.75	QT/A	PRE	A	30	0	0	98	53	99	
		3	SL	0.75	LB AE/A	2.0	PT/A	POST3	D							
		DF		2.5	LB/A	2.5	LB/A	POST3	D							
12	GF-1279 AMS	5.4	SL	1.0	LB A/A	1.5	PT/A	POST2	C	30	0	0	0	0	0	
		DF		2.5	LB/A	2.5	LB/A	POST2	C							
13	Roundup WeatherMAX AMS	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	POST2	C	31	0	0	0	0	0	
LSD (P=.05)								2.2	0.0	0.0	2.5	13.5	0.0	1.5		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ZEAMD PHYGEN PERCENT 06-10-04 8 DA-B	ZEAMD PHYGEN PERCENT 06-25-04 19 DA-C	SETFA CONTROL PERCENT 06-25-04 19 DA-C	ABUTH CONTROL PERCENT 06-25-04 19 DA-C	AMATA CONTROL PERCENT 06-25-04 19 DA-C	CHEAL CONTROL PERCENT 06-25-04 19 DA-C	SETFA CONTROL PERCENT 07-29-04 50 DA-D	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Keystone Hornet WDG	5.25 68.5	SE WG	3.48	LB A/A LB AE/A	2.65 3.0	QT/A OZ WT/A	PRE PRE	A A	0	0	93	77	99	99	
3	Keystone Hornet WDG Atrazine 28% UAN COC	5.25 68.5 90 L L	SE WG DF L L	3.48	LB A/A LB AE/A LB A/A % V/V % V/V	2.65 3.0 0.83 2.5 1.0	QT/A OZ WT/A LB/A % V/V % V/V	PRE POST1 POST1 POST1 POST1	A B B B B	10	0	96	99	99	99	
4	Keystone Hornet WDG Callisto Atrazine 28% UAN COC	5.25 68.5 4 90 L L	SE WG SC DF L L	3.48	LB A/A LB AE/A LB A/A LB A/A % V/V % V/V	2.65 3.0 0.75 0.28 2.5 1.0	QT/A OZ WT/A FL OZ/A LB/A % V/V % V/V	PRE POST1 POST1 POST1 POST1 POST1	A B B B B B	3	0	95	99	99	99	
5	FulTime	4	CS	3.35	LB A/A	3.35	QT/A	PRE	A	0	0	88	43	98	99	
6	Surpass Starane	6.4 1.5	EC EC	2.0	LB A/A LB A/A	2.5 0.67	PT/A PT/A	PRE POST1	A B	8	3	88	99	99	96	
7	Surpass Starane Atrazine COC	6.4 1.5 90 L	EC EC DF L	2.0	LB A/A LB A/A LB A/A % V/V	2.5 0.67 0.83 1.0	PT/A PT/A LB/A % V/V	PRE POST1 POST1 POST1	A B B B	13	3	95	99	99	99	
8	Surpass Starane Stinger	6.4 1.5 3	EC EC SL	2.0	LB A/A LB A/A LB A/A	2.5 0.5 4.0	PT/A PT/A FL OZ/A	PRE POST1 POST1	A B B	12	3	92	99	99	96	
9	Surpass Starane Stinger Atrazine COC	6.4 1.5 3 90 L	EC EC SL DF L	2.0	LB A/A LB A/A LB A/A LB A/A % V/V	2.5 0.5 4.0 0.83 1.0	PT/A PT/A FL OZ/A LB/A % V/V	PRE POST1 POST1 POST1 POST1	A B B B B	15	5	96	99	99	99	
10	FulTime Glyphomax Plus AMS	4 3 DF	CS SL DF	2.25	LB A/A LB AE/A LB/A	2.25	QT/A PT/A LB/A	PRE POST3 POST3	A D D	3	0	99	99	99	99	
11	Keystone Glyphomax Plus AMS	5.25 3 DF	SE SL DF	2.3	LB A/A LB AE/A LB/A	1.75 2.0 2.5	QT/A PT/A LB/A	PRE POST3 POST3	A D D	0	0	99	99	99	99	
12	GF-1279 AMS	5.4	SL DF	1.0	LB A/A LB/A	1.5 2.5	PT/A LB/A	POST2 POST2	C C	0	2	99	99	99	99	
13	Roundup WeatherMAX AMS	4.5	SL DF	0.75	LB AE/A % W/W	21.3 2.0	FL OZ/A % W/W	POST2 POST2	C C	0	2	99	99	99	99	
LSD (P=.05)										4.6	2.6	4.1	10.9	1.1	1.6	3.7

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ABUTH CONTROL PERCENT 07-29-04 50 DA-D	AMATA CONTROL PERCENT 07-29-04 50 DA-D	CHEAL CONTROL PERCENT 07-29-04 50 DA-D	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated									0	0	0
2	Keystone Hornet WDG	5.25 68.5	SE WG	3.48 0.128	LB A/A LB AE/A	2.65 3.0	QT/A OZ WT/A	PRE PRE	A A	77	98	99
3	Keystone Hornet WDG Atrazine 28% UAN COC	5.25 68.5 90 L L	SE WG DF L L	3.48 0.128 0.75 2.5 1.0	LB A/A LB AE/A LB A/A % V/V % V/V	2.65 3.0 0.83 2.5 1.0	QT/A OZ WT/A LB/A % V/V % V/V	PRE POST1 POST1 POST1 POST1	A B B B B	99	99	99
4	Keystone Hornet WDG Callisto Atrazine 28% UAN COC	5.25 68.5 4 90 L L	SE WG SC DF L L	3.48 0.128 0.0234 0.25 2.5 1.0	LB A/A LB AE/A LB A/A LB A/A % V/V % V/V	2.65 3.0 0.75 0.28 2.5 1.0	QT/A OZ WT/A FL OZ/A LB/A % V/V % V/V	PRE POST1 POST1 POST1 POST1 POST1	A B B B B B	93	99	99
5	FulTime	4	CS	3.35	LB A/A	3.35	QT/A	PRE	A	43	98	99
6	Surpass Starane	6.4 1.5	EC EC	2.0 0.126	LB A/A LB A/A	2.5 0.67	PT/A PT/A	PRE POST1	A B	82	98	93
7	Surpass Starane Atrazine COC	6.4 1.5 90 L	EC EC DF L	2.0 0.126 0.75 1.0	LB A/A LB A/A LB A/A % V/V	2.5 0.67 0.83 1.0	PT/A PT/A LB/A % V/V	PRE POST1 POST1 POST1	A B B B	95	99	99
8	Surpass Starane Stinger	6.4 1.5 3	EC EC SL	2.0 0.094 0.094	LB A/A LB A/A LB A/A	2.5 0.5 4.0	PT/A PT/A FL OZ/A	PRE POST1 POST1	A B B	92	98	95
9	Surpass Starane Stinger Atrazine COC	6.4 1.5 3 90 L	EC EC SL DF L	2.0 0.094 0.094 0.75 1.0	LB A/A LB A/A LB A/A LB A/A % V/V	2.5 0.5 4.0 0.83 1.0	PT/A PT/A FL OZ/A LB/A % V/V	PRE POST1 POST1 POST1 POST1	A B B B B	98	99	99
10	FulTime Glyphomax Plus AMS	4 3 DF	CS SL DF	2.25 0.75 2.5	LB A/A LB AE/A LB/A	2.25 2.0 2.5	QT/A PT/A LB/A	PRE POST3 POST3	A D D	96	99	99
11	Keystone Glyphomax Plus AMS	5.25 3 DF	SE SL DF	2.3 0.75 2.5	LB A/A LB AE/A LB/A	1.75 2.0 2.5	QT/A PT/A LB/A	PRE POST3 POST3	A D D	99	99	99
12	GF-1279 AMS	5.4 DF	SL DF	1.0 2.5	LB A/A LB/A	1.5 2.5	PT/A LB/A	POST2 POST2	C C	99	98	99
13	Roundup WeatherMAX AMS	4.5 DF	SL DF	0.75 2.0	LB AE/A % W/W	21.3 2.0	FL OZ/A % W/W	POST2 POST2	C C	99	99	99
LSD (P=.05)										12.8	2.4	3.2

Iowa State University

Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ames, IA, 2004.

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: 04-23-04

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 KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for crop phytotoxicity and weed control in corn.

Conclusions: Significant differences in corn stand between treatments were not due to the herbicides, but rather to variability in seeding rate. No corn injury was observed on any of the observation dates. Both giant and green foxtail species were evaluated as one foxtail rating. The 5.95 oz wt/A and 2.0 pt/A rates of preemergence (PRE) applied KIH-485 and Dual II Magnum, respectively, provided 85% control of foxtail on May 18. Both herbicides demonstrated a rate response up to 95 and 93% control, respectively. Foxtail control with the higher rate of Dual II Magnum (4.0 pt/A), KIH-485 & Atrazine, and Bicep II Magnum ranged from 93 to 99%. KIH-485 & Atrazine provided 96 to 98% velvetleaf control. Velvetleaf control by all other treatments did not exceed 88%. All treatments provided excellent control of common waterhemp. Common lambsquarters control ranged from 88 to 99%.

Foxtail control remained similar for the treatments when observed on June 1. Velvetleaf control on June 1 was rate responsive (from 62 to 90% control) for KIH-485. KIH-485 & Atrazine provided 98% velvetleaf control at both application rates. Dual II Magnum and Bicep II Magnum provided 10 to 70% velvetleaf control. Common waterhemp and common lambsquarters control was good to excellent with all of the treatments. Little change in weed control was observed on June 30. Velvetleaf control was reduced most significantly with the Bicep II Magnum treatment. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD Variety: DEKALB DKC53-34

Planting Date: 04-23-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 20% at planting.

SOIL DESCRIPTION

% OM: 5.0 Texture: CLAY LOAM

pH: 7.6 Soil Name: CANISTEO, NICOLLET

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	04-27-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	67 F
% Relative Humidity:	32
Wind Velocity, Unit:	15 MPH
Soil Temp., Unit:	53 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	SETSS	ABUTH	AMATA	CHEAL	ZEAMD	SETSS		
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL		
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								08-02-04	05-18-04	05-18-04	05-18-04	05-18-04	05-18-04	06-01-04	06-01-04		
Trt-Eval Interval								97 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A	35 DA-A	35 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code								
1	Untreated									29	0	0	0	0	0	0	
2	KIH-485	60	WG	0.223	LB A/A	5.95	OZ WT/A	PRE	A	32	0	85	50	99	90	0	87
3	KIH-485	60	WG	0.268	LB A/A	7.15	OZ WT/A	PRE	A	30	0	87	55	99	98	0	87
4	KIH-485	60	WG	0.446	LB A/A	11.9	OZ WT/A	PRE	A	32	0	95	88	99	96	0	96
5	Dual II Magnum	7.64	EC	1.91	LB A/A	2.0	PT/A	PRE	A	30	0	85	25	98	88	0	83
6	Dual II Magnum	7.64	EC	3.82	LB A/A	4.0	PT/A	PRE	A	31	0	93	35	99	95	0	96
7	KIH-485/Atrazine	57.8	WG	1.65	LB A/A	45.7	OZ WT/A	PRE	A	33	0	96	96	99	99	0	98
8	KIH-485/Atrazine	55.7	WG	2.187	LB A/A	63.0	OZ WT/A	PRE	A	31	0	99	98	99	99	0	96
9	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	30	0	93	73	99	99	0	93
LSD (P=.05)								1.5	0.0	3.2	9.8	1.3	5.5	0.0	4.5		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ABUTH CONTROL PERCENT 06-01-04 35 DA-A	AMATA CONTROL PERCENT 06-01-04 35 DA-A	CHEAL CONTROL PERCENT 06-01-04 35 DA-A	ZEAMD PHYGEN PERCENT 06-30-04 64 DA-A	SETSS CONTROL PERCENT 06-30-04 64 DA-A	ABUTH CONTROL PERCENT 06-30-04 64 DA-A	AMATA CONTROL PERCENT 06-30-04 64 DA-A	CHEAL CONTROL PERCENT 06-30-04 64 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate	Grow Unit	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	KIH-485	60	WG	0.223	LB A/A	5.95	OZ WT/A	PRE	A	62	99	90	0	88	65	98	88
3	KIH-485	60	WG	0.268	LB A/A	7.15	OZ WT/A	PRE	A	70	99	96	0	88	75	99	95
4	KIH-485	60	WG	0.446	LB A/A	11.9	OZ WT/A	PRE	A	90	99	98	0	96	90	98	96
5	Dual II Magnum	7.64	EC	1.91	LB A/A	2.0	PT/A	PRE	A	10	96	87	0	80	10	93	87
6	Dual II Magnum	7.64	EC	3.82	LB A/A	4.0	PT/A	PRE	A	20	99	95	0	96	18	99	90
7	KIH-485/Atrazine	57.8	WG	1.65	LB A/A	45.7	OZ WT/A	PRE	A	98	99	99	0	95	93	99	99
8	KIH-485/Atrazine	55.7	WG	2.187	LB A/A	63.0	OZ WT/A	PRE	A	98	99	99	0	96	93	99	99
9	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	70	99	99	0	95	45	99	99
LSD (P=.05)										7.0	1.3	4.8	0.0	5.8	7.6	2.5	3.8

Iowa State University

Cinch ATZ, Basis, and Atrazine applied preemergence and postemergence applied Roundup WeatherMAX, Steadfast, Callisto, and Cinch ATZ in corn, Ames, IA, 2004.	
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:** 04-23-04
Country: USA

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

Objective: The purpose of this study was to evaluate preemergence followed by postemergence and postemergence applied herbicides for crop phytotoxicity and weed control in corn. Cinch ATZ, Basis, and Atrazine were applied preemergence and postemergence applications included Roundup WeatherMAX, DPX-E9636, Atrazine, Steadfast, Callisto, Cinch ATZ, and Cinch.

Conclusions: No significant differences in corn stand between treatments were observed on July 30. Early postemergence (EPOST) applied treatments demonstrated excellent crop safety when observed on May 26, eight days after application. Significant corn injury from the mid-postemergence (MPOST) applications of Roundup WeatherMAX plus DPX-E9636 with and without Atrazine, and Steadfast plus Callisto plus Atrazine was observed on June 8, six days after application. Good to excellent giant foxtail, velvetleaf, common waterhemp and common lambsquarters control was provided by the treatments when observed on June 8. Few significant differences were determined between the treatments for giant foxtail and velvetleaf control. No significant differences in weed control were determined between treatments for common waterhemp and common lambsquarters.

No corn injury was observed on June 18, July 5, and 29 from the treatments. In general, good to excellent giant foxtail, common waterhemp and common lambsquarters control was observed with the treatments on June 18. Velvetleaf control ranged from fair (70%) to excellent (99%). Postemergence (POST) Roundup WeatherMAX, without the addition of a residual herbicide in the treatment, did not adequately control giant foxtail, velvetleaf and common waterhemp on June 18, thirty one days after application. However, common lambsquarters control was good. Emergence following initial control with this treatment was light.

On July 5 and 29, poor to good giant foxtail and velvetleaf control was observed with the treatments. Common waterhemp control was good to excellent, except for POST Roundup WeatherMAX. Common lambsquarters control was good to excellent on July 5 and 29.

Corn yields ranged from 223 to 253 bu/A with no significant differences determined between treatments. Treatment yields were all significantly greater from 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.

Crop 1: ZEAMD CORN, FIELD **Variety:** DEKALB DKC53-34
Planting Date: 04-23-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 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.	SOYBEAN	NONE	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 20% at planting.

SOIL DESCRIPTION

% OM: 5.0 **Texture:** CLAY LOAM
pH: 7.6 **Soil Name:** CANISTEO, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	04-27-04	05-18-04	06-02-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	67 F	69 F	60 F
% Relative Humidity:	32	53	69
Wind Velocity, Unit:	15 MPH	7 MPH	5 MPH
Soil Temp., Unit:	53 F	63 F	64 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	0	10	95

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 2	ZEAMD V 4 - V 5
Stage Scale:	-	DESC	DESC
Height, Unit:	-	2.5 IN	7 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF	SETFA 2-4 LEAF
Stage Scale:	-	0.5-1.5	1-5 IN
Density, Unit:	- -	0-10 FT2	5-25 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-3	ABUTH COTYL-6
Stage Scale:	-	0.5-1 IN	0.5-5 IN
Density, Unit:	- -	0-1 FT2	0-3 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-4	AMATA NUMEROUS
Stage Scale:	-	0.5 IN	0.5-4 IN
Density, Unit:	- -	< 1 FT2	0-1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 4-8 LEAF	CHEAL NUMEROUS
Stage Scale:	-	0.5-1 IN	1-5 IN
Density, Unit:	- -	0-1 FT2	0-1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Cinch ATZ, Basis, and Atrazine applied preemergence and postemergence applied Roundup WeatherMAX, Steadfast, Callisto, and Cinch ATZ in corn, Ames, IA, 2004.

Trial ID: ACC 3 Study Dir.: Owen/Lux/Franzenburg
 Location: Ames Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL		
Rating Data Type								STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								07-30-04	05-26-04	06-08-04	06-08-04	06-08-04	06-08-04	06-08-04		
Trt-Eval Interval								94 DA-A	8 DA-B	21 DA-B	21 DA-B	21 DA-B	21 DA-B	21 DA-B		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Untreated									29	0	0	0	0	0	
2	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	31	0	0	99	98	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
3	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	31	0	17	99	96	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	DPX-E9636	25	DF	0.0117	LB A/A	0.75	OZ WT/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
4	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	31	0	10	98	96	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	DPX-E9636	25	DF	0.0117	LB A/A	0.75	OZ WT/A	MPOST	C							
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
5	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	31	0	15	88	99	99	
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C							
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C							
	COC		L	1.0	% V/V	1.0	% V/V	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
6	Basis	75	WG	0.0234	LB A/A	0.5	OZ WT/A	PRE	A	31	0	0	99	98	99	
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	PRE	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
7	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	31	0	0	99	99	99	
	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	30	0	0	99	99	99	
	Cinch	7.64	EC	0.955	LB A/A	1.0	PT/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
9	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	30	0	0	99	99	99	
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
10	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	30	0	0	99	99	99	
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
11	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	30	2	0	99	99	99	
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST	B							
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B							
	COC		L	1.0	% V/V	1.0	% V/V	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
12	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	PRE	A	31	0	0	99	99	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
LSD (P=.05)										2.3	1.4	2.9	5.0	2.3	0.0	0.0

Iowa State University

Weed Code									ZEAMD	SETFA	ABUTH	AMATA	CHEAL	ZEAMD	SETFA	
Rating Data Type									PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									06-18-04	06-18-04	06-18-04	06-18-04	06-18-04	07-05-04	07-05-04	
Trt-Eval Interval									16 DA-C	16 DA-C	16 DA-C	16 DA-C	16 DA-C	33 DA-C	33 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	0	92	88	99	99	0	92
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
3	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	0	92	92	98	99	0	92
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	DPX-E9636	25	DF	0.0117	LB A/A	0.75	OZ WT/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
4	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	0	93	88	99	99	0	93
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	DPX-E9636	25	DF	0.0117	LB A/A	0.75	OZ WT/A	MPOST	C							
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
5	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	0	93	99	99	99	0	95
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C							
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C							
	COC		L	1.0	% V/V	1.0	% V/V	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
6	Basis	75	WG	0.0234	LB A/A	0.5	OZ WT/A	PRE	A	0	88	87	99	99	0	85
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	PRE	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
7	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	0	93	80	98	99	0	93
	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	0	90	83	96	98	0	90
	Cinch	7.64	EC	0.955	LB A/A	1.0	PT/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
9	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	0	67	70	73	94	0	58
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
10	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	0	85	80	96	99	0	77
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
11	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	0	90	83	98	99	0	85
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST	B							
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B							
	COC		L	1.0	% V/V	1.0	% V/V	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
12	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	PRE	A	0	83	83	96	99	0	77
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
LSD (P=.05)										0.0	8.1	8.6	3.1	2.2	0.0	7.7

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ABUTH CONTROL PERCENT 07-05-04 33 DA-C	AMATA CONTROL PERCENT 07-05-04 33 DA-C	CHEAL CONTROL PERCENT 07-05-04 33 DA-C	ZEAMD PHYGEN PERCENT 07-29-04 57 DA-C	SETFA CONTROL PERCENT 07-29-04 57 DA-C	ABUTH CONTROL PERCENT 07-29-04 57 DA-C	AMATA CONTROL PERCENT 07-29-04 57 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	78	96	98	0	92	72	96
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
3	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	82	99	99	0	92	78	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	DPX-E9636	25	DF	0.0117	LB A/A	0.75	OZ WT/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
4	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	80	99	99	0	95	83	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	DPX-E9636	25	DF	0.0117	LB A/A	0.75	OZ WT/A	MPOST	C							
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
5	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	96	99	99	0	98	98	99
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C							
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C							
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C							
	COC		L	1.0	% V/V	1.0	% V/V	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
6	Basis	75	WG	0.0234	LB A/A	0.5	OZ WT/A	PRE	A	82	98	99	0	83	82	96
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	PRE	A							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
7	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	52	96	99	0	93	47	96
	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	55	95	95	0	90	53	93
	Cinch	7.64	EC	0.955	LB A/A	1.0	PT/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
9	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	47	53	93	0	53	42	50
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
10	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	62	95	99	0	77	60	95
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
11	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	65	93	99	0	85	62	93
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST	B							
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B							
	COC		L	1.0	% V/V	1.0	% V/V	EPOST	B							
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B							
12	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	PRE	A	72	95	99	0	75	72	93
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C							
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C							
LSD (P=.05)										19.1	2.9	1.7	0.0	9.4	20.9	3.2

Iowa State University

Weed Code										CHEAL	ZEAMD
Rating Data Type										CONTROL	YIELD
Rating Unit										PERCENT	BU/A
Rating Date										07-29-04	10-05-04
Trt-Eval Interval										57 DA-C	161 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated									0	175
2	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	96	223
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C		
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C		
3	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	98	236
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C		
	DPX-E9636	25	DF	0.0117	LB A/A	0.75	OZ WT/A	MPOST	C		
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C		
4	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	99	241
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C		
	DPX-E9636	25	DF	0.0117	LB A/A	0.75	OZ WT/A	MPOST	C		
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C		
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C		
5	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	99	226
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C		
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C		
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C		
	COC		L	1.0	% V/V	1.0	% V/V	MPOST	C		
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C		
6	Basis	75	WG	0.0234	LB A/A	0.5	OZ WT/A	PRE	A	99	237
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	PRE	A		
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C		
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C		
7	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	98	253
	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	EPOST	B		
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B		
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	95	244
	Cinch	7.64	EC	0.955	LB A/A	1.0	PT/A	EPOST	B		
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B		
9	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	92	245
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B		
10	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPOST	B	96	243
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B		
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B		
11	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	99	249
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST	B		
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B		
	COC		L	1.0	% V/V	1.0	% V/V	EPOST	B		
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B		
12	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	PRE	A	99	235
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	MPOST	C		
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C		
LSD (P=.05)										3.6	39.7

Iowa State University

Preemergence applied Stalwart Xtra, Bicep II Magnum, Keystone, Harness Xtra and Lumax in corn, Ames, IA, 2004.

Trial ID: ACC 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: 04-23-04

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 prepackaged and tank-mixed herbicides for crop phytotoxicity and weed control in corn. Treatments of reduced rates of preemergence applied Stalwart and Bicep II Magnum followed by postemergence Roundup WeatherMAX were also evaluated.

Conclusions: Corn stands were consistent and no significant differences between treatments were observed on July 30. Treatments demonstrated excellent crop safety on all observation dates. Preemergence (PRE) applied treatments generally provided good to excellent giant foxtail, common waterhemp, and common lambsquarters control when observed on May 20. Velvetleaf control was good to excellent with most treatments, except for half rates (1.3 qt/A) of Stalwart Xtra and Bicep II Magnum.

On June 9, the postemergence (POST) application timing date, giant foxtail control was fair to good with the treatments. PRE Stalwart Xtra and Bicep II Magnum applied at 1.3 qt/A provided 77 and 83% control, respectively, while all other treatments provided 88% or more. Velvetleaf control on June 9 was poor to fair and ranged from 48 to 83%. Common waterhemp and common lambsquarters control was excellent on June 9.

POST applied Roundup WeatherMAX following PRE Stalwart and Bicep II Magnum (1.3 qt/A application rates) improved giant foxtail and velvetleaf control to excellent when observed on July 1 and August 6. Giant foxtail and velvetleaf control with the remaining treatments demonstrated trends that were observed earlier. Good to excellent common waterhemp and common lambsquarters control continued to be observed on July 1 and August 6. (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: DEKALB DKC53-34

Planting Date: 04-23-04 Planting Method: DIRECT DRILLED

Rate: 30200 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.	SOYBEAN	NONE	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 20% at planting.

SOIL DESCRIPTION

% OM: 5.0 Texture: CLAY LOAM

pH: 7.6 Soil Name: CANISTEO, NICOLLET

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	04-27-04	06-09-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	67 F	80 F
% Relative Humidity:	32	77
Wind Velocity, Unit:	15 MPH	5 MPH
Soil Temp., Unit:	53 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	0	75

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 6
Stage Scale:	-	DESC
Height, Unit:	-	18 IN

WEED STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied Stalwart Xtra, Bicep II Magnum, Keystone, Harness Xtra and Lumax in corn, Ames, IA, 2004.

Trial ID: ACC 4
 Location: Ames

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

Weed Code								ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	ZEAMD
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date								07-30-04	05-20-04	05-20-04	05-20-04	05-20-04	05-20-04	06-09-04
Trt-Eval Interval								94 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	43 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								30	0	0	0	0	0
2	Stalwart Xtra	5.5 L		3.57 LB A/A	2.6 QT/A		PRE A		31	0	93	87	99	99
3	Stalwart Xtra Balance Pro	5.5 L 4 SC		3.57 LB A/A 0.047 LB A/A	2.6 QT/A 1.5 FL OZ/A		PRE A PRE A		30	0	96	95	99	99
4	Stalwart Xtra Roundup WeatherMAX AMS	5.5 L 4.5 SL DF		1.79 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.3 QT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE A POST B POST B		31	0	82	53	99	99
5	Bicep II Magnum	5.5 L		3.57 LB A/A	2.6 QT/A		PRE A		29	0	95	78	99	99
6	Bicep II Magnum Balance Pro	5.5 L 4 SC		3.57 LB A/A 0.047 LB A/A	2.6 QT/A 1.5 FL OZ/A		PRE A PRE A		30	0	95	93	99	99
7	Bicep II Magnum Roundup WeatherMAX AMS	5.5 L 4.5 SL DF		1.79 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.3 QT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE A POST B POST B		31	0	83	60	99	99
8	Keystone	5.25 SE		3.94 LB A/A	3.0 QT/A		PRE A		30	0	96	90	99	99
9	Harness Xtra	5.6 SC		4.2 LB A/A	3.0 QT/A		PRE A		31	0	98	87	99	99
10	Lumax	3.95 SE		2.96 LB A/A	3.0 QT/A		PRE A		30	0	90	98	99	99
LSD (P=.05)									2.0	0.0	5.1	11.0	0.0	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL PERCENT 06-09-04 43 DA-A	ABUTH CONTROL PERCENT 06-09-04 43 DA-A	AMATA CONTROL PERCENT 06-09-04 43 DA-A	CHEAL CONTROL PERCENT 06-09-04 43 DA-A	ZEAMD PHYGEN PERCENT 06-19-04 10 DA-B	ZEAMD PHYGEN PERCENT 07-01-04 22 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Stalwart Xtra	5.5 L		3.57 LB A/A	2.6 QT/A		PRE	A	92	72	98	99	0	0
3	Stalwart Xtra Balance Pro	5.5 L 4 SC		3.57 LB A/A 0.047 LB A/A	2.6 QT/A 1.5 FL OZ/A		PRE PRE	A A	96	83	99	99	0	0
4	Stalwart Xtra Roundup WeatherMAX AMS	5.5 L 4.5 SL DF		1.79 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.3 QT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE POST POST	A B B	77	48	98	99	0	0
5	Bicep II Magnum	5.5 L		3.57 LB A/A	2.6 QT/A		PRE	A	92	55	99	99	0	0
6	Bicep II Magnum Balance Pro	5.5 L 4 SC		3.57 LB A/A 0.047 LB A/A	2.6 QT/A 1.5 FL OZ/A		PRE PRE	A A	95	75	99	99	0	0
7	Bicep II Magnum Roundup WeatherMAX AMS	5.5 L 4.5 SL DF		1.79 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.3 QT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE POST POST	A B B	83	57	99	99	0	0
8	Keystone	5.25 SE		3.94 LB A/A	3.0 QT/A		PRE	A	93	78	99	99	0	0
9	Harness Xtra	5.6 SC		4.2 LB A/A	3.0 QT/A		PRE	A	95	75	99	99	0	0
10	Lumax	3.95 SE		2.96 LB A/A	3.0 QT/A		PRE	A	88	83	99	99	0	0
LSD (P=.05)									5.6	21.7	1.8	0.0	0.0	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									SETFA CONTROL PERCENT 07-01-04 22 DA-B	ABUTH CONTROL PERCENT 07-01-04 22 DA-B	AMATA CONTROL PERCENT 07-01-04 22 DA-B	CHEAL CONTROL PERCENT 07-01-04 22 DA-B	SETFA CONTROL PERCENT 08-06-04 58 DA-B	ABUTH CONTROL PERCENT 08-06-04 58 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Stalwart Xtra	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	92	60	96	99	90	57
3	Stalwart Xtra Balance Pro	5.5 4	L SC	3.57 0.047	LB A/A LB A/A	2.6	QT/A FL OZ/A	PRE PRE	A A	93	85	99	99	93	88
4	Stalwart Xtra Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.79 0.77 17.0	LB A/A LB AE/A LB/100 GAL	1.3	QT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	99	99	99	98	96
5	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	92	45	98	99	90	43
6	Bicep II Magnum Balance Pro	5.5 4	L SC	3.57 0.047	LB A/A LB A/A	2.6	QT/A FL OZ/A	PRE PRE	A A	95	72	99	99	95	77
7	Bicep II Magnum Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.79 0.77 17.0	LB A/A LB AE/A LB/100 GAL	1.3	QT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	99	99	99	99	93
8	Keystone	5.25	SE	3.94	LB A/A	3.0	QT/A	PRE	A	90	72	99	99	90	70
9	Harness Xtra	5.6	SC	4.2	LB A/A	3.0	QT/A	PRE	A	90	70	99	99	90	72
10	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	87	78	98	99	85	73
LSD (P=.05)										3.1	21.0	2.2	0.0	4.1	23.2

Iowa State University

Weed Code										AMATA	CHEAL
Rating Data Type										CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT
Rating Date										08-06-04	08-06-04
Trt-Eval Interval										58 DA-B	58 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated									0	0
2	Stalwart Xtra	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	96	99
3	Stalwart Xtra Balance Pro	5.5 4	L SC	3.57 0.047	LB A/A LB A/A	2.6 1.5	QT/A FL OZ/A	PRE PRE	A A	99	98
4	Stalwart Xtra Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.79 0.77 17.0	LB A/A LB AE/A LB/100 GAL	1.3 22.0 17.0	QT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	99
5	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	96	98
6	Bicep II Magnum Balance Pro	5.5 4	L SC	3.57 0.047	LB A/A LB A/A	2.6 1.5	QT/A FL OZ/A	PRE PRE	A A	99	99
7	Bicep II Magnum Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.79 0.77 17.0	LB A/A LB AE/A LB/100 GAL	1.3 22.0 17.0	QT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	99
8	Keystone	5.25	SE	3.94	LB A/A	3.0	QT/A	PRE	A	99	98
9	Harness Xtra	5.6	SC	4.2	LB A/A	3.0	QT/A	PRE	A	99	99
10	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	98	99
LSD (P=.05)										2.0	2.2

Iowa State University

Preemergence applied 1x and 2x rates of Lexar, Lumax, Bicep II Magnum, Epic, Harness Xtra, Keystone, and Guardsman Max in corn, Ames, IA, 2004.

Trial ID: ACC 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:** 04-23-04
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 1x and 2x rates of Lexar, Lumax, Bicep II Magnum, and other prepackaged and tank-mixed treatments for crop injury and corn yield. The study was maintained weed free with cultivation and hand-weeding.

Conclusions: Significant differences in corn stand between several treatments were observed on July 27. Differences were mostly due to the inherent variability in seed planting rate; however, there was a slight reduction in stand with Epic applied at 30 oz wt/A. Although corn injury was observed with a number of the treatments on May 10, 26, June 7 and 28, it was not considered severe. Injury associated with Epic was usually significantly higher when compared to the other treatments. Corn yield response to the herbicide and rate applied was variable. While significant differences were determined between treatments, no trends were observed indicating 2x herbicide application rates impacted corn yields anymore than 1x rates. Corn yield response from Epic 1x and 2x application rates; however, did appear to be negatively impacted. Injury was the highest with these treatments. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD **Variety:** Dekalb DKC53-34
Planting Date: 04-23-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Temperature: 56 F **Soil Moisture:** NORMAL **Emergence Date:** 05-02-04

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 6
Tillage Type: MINIMUM-TILL **Study Design:** RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	SOYBEAN	NONE	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 20% at planting. The experiment was maintained weed free with cultivation and hand-weeding.

SOIL DESCRIPTION

% OM: 5.0 **Texture:** CLAY LOAM
pH: 7.6 **Soil Name:** CANISTEO, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A
Application Date:	04-27-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	67 F
% Relative Humidity:	32
Wind Velocity, Unit:	15 MPH
Soil Temp., Unit:	53 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	0

Iowa State University

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied 1x and 2x rates of Lexar, Lumax, Bicep II Magnum, Epic, Harness Xtra, Keystone, and Guardsman Max in corn, Ames, IA, 2004.

Trial ID: ACC 5
 Location: Ames

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

Weed Code								ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD	
Rating Data Type								STAND	PHYGEN	PHYGEN	PHYGEN	PHYGEN	YIELD	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	BU/A	
Rating Date								07-27-04	05-10-04	05-26-04	06-07-04	06-28-04	10-04-04	
Trt-Eval Interval								91 DA-A	14 DA-A	29 DA-A	41 DA-A	62 DA-A	160 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Unit	Grow Stg	Appl Code						
1	Untreated								30	0	0	0	0	229
2	Lexar	3.7	SE	3.24	LB	A/A		PRE A	31	0	0	0	0	227
3	Lexar	3.7	SE	6.5	LB	A/A		PRE A	31	0	0	0	0	233
4	Lumax	3.95	SE	2.96	LB	A/A		PRE A	31	1	0	0	0	242
5	Lumax	3.95	SE	5.9	LB	A/A		PRE A	30	0	0	0	0	243
6	Bicep II Magnum	5.5	L	3.57	LB	A/A		PRE A	30	0	0	1	1	238
7	Bicep II Magnum	5.5	L	7.15	LB	A/A		PRE A	30	1	0	0	0	234
8	Epic	58	WG	0.544	LB	A/A		PRE A	31	3	3	2	2	215
9	Epic	58	WG	1.09	LB	A/A		PRE A	29	12	12	13	10	220
10	Harness Xtra	5.6	SC	4.2	LB	A/A		PRE A	31	0	0	0	0	239
11	Harness Xtra	5.6	SC	8.4	LB	A/A		PRE A	31	0	1	0	0	247
12	Keystone	5.25	SE	4.2	LB	A/A		PRE A	30	0	0	0	0	230
13	Keystone	5.25	SE	8.4	LB	A/A		PRE A	31	1	2	0	0	218
14	Guardsman Max	5	SC	2.88	LB	A/A		PRE A	30	1	0	0	0	247
15	Guardsman Max	5	SC	5.75	LB	A/A		PRE A	31	1	0	1	1	221
16	Keystone Hornet WDG	5.25 68.5	SE WG	4.2 0.128	LB LB	A/A AE/A		PRE A PRE A	31	0	0	0	0	235
17	Keystone Hornet WDG	5.25 68.5	SE WG	8.4 0.257	LB LB	A/A AE/A		PRE A PRE A	30	0	1	3	2	241
18	Harness Xtra Balance Pro	5.6 4	SC SC	2.1 0.07	LB LB	A/A A/A		PRE A PRE A	31	0	0	0	0	228
19	Harness Xtra Balance Pro	5.6 4	SC SC	4.2 0.14	LB LB	A/A A/A		PRE A PRE A	30	1	0	0	0	230
LSD (P=.05)									1.3	1.7	2.0	2.0	1.9	22.4

Iowa State University

Dual II Magnum, MANA-282, Bicep II Magnum, Atrazine, MANA-283, and Parallel II applied preemergence in corn, Ames, IA, 2004.

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: 05-17-04
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 Dual II Magnum, MANA-282, Bicep II Magnum, Atrazine, MANA-283, and Parallel II for crop phytotoxicity and weed control in corn.

Conclusions: No significant differences in corn stand between treatments were observed on July 26. Treatments demonstrated excellent crop safety on all observation dates. The study was established in an area with heavy giant foxtail, medium velvetleaf, common waterhemp, and common lambsquarters, and light common cocklebur pressure. Weed control with Dual II Magnum and MANA-282 was rate responsive with highest rates of each providing good to excellent giant foxtail, common waterhemp, and common lambsquarters control when observed on June 16, twenty-nine days after application. Velvetleaf and common cocklebur control was unacceptable with all rates of Dual II Magnum and MANA-282. All rates of Bicep II Magnum, MANA-283 plus Atrazine, and MANA-283 generally provided good to excellent giant foxtail, common waterhemp, and common lambsquarters control when observed on June 16. Velvetleaf and common cocklebur control was fair to good with higher rates generally providing the best control. All rates of Parallel II provided good to excellent giant foxtail, common waterhemp, and common lambsquarters control on June 16, and poor velvetleaf and common cocklebur control.

Weed control on July 2, 20, and August 31 reflected trends noted for June 16, although treatments now exhibited reduced control overall. Furthermore, lower rates of Dual II Magnum and MANA-282 treatments provided only poor giant foxtail, common waterhemp and common lambsquarters control, especially by August 31. Generally, when comparing Dual II Magnum and MANA-282 rate for rate, no significant differences were observed between them in giant foxtail, common waterhemp and common lambsquarters control. Bicep II Magnum, MANA-283 plus Atrazine, and MANA-283 continued to provide mostly good to excellent giant foxtail, common waterhemp, and common lambsquarters control on July 2, 20, and August 31. Velvetleaf and common cocklebur control with these treatments ranged from poor to good. On July 2, 20, and August 31 all rates of Parallel II generally provided good giant foxtail, common waterhemp and common lambsquarters control. Exceptions were the lower rates for common waterhemp and common lambsquarters control, especially when observed on August 31. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8545
Planting Date: 05-17-04 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 13% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM
pH: 7.8 Soil Name: CANISTEO, HARPS
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-18-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSUI
Air Temp., Unit:	65 F
% Relative Humidity:	53
Wind Velocity, Unit:	7 MPH
Soil Temp., Unit:	53 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Dual II Magnum, MANA-282, Bicep II Magnum, Atrazine, MANA-283, and Parallel II applied preemergence in corn, Ames, IA, 2004.

Trial ID: ACC 6
 Location: Ames

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

Weed Code								ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	XANST	ZEAMD	
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								07-26-04	06-16-04	06-16-04	06-16-04	06-16-04	06-16-04	06-16-04	07-02-04	
Trt-Eval Interval								69 DA-A	29 DA-A	29 DA-A	29 DA-A	29 DA-A	29 DA-A	29 DA-A	45 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product	Product Rate	Grow Stg	Appl Code								
1	Untreated								29	0	0	0	0	0	0	
2	Dual II Magnum	7.64	EC	0.64	LB A/A	0.67	PT/A	PRE A	30	0	77	7	85	78	10	
3	Dual II Magnum	7.64	EC	0.955	LB A/A	1.0	PT/A	PRE A	30	0	80	20	82	77	25	
4	Dual II Magnum	7.64	EC	1.43	LB A/A	1.5	PT/A	PRE A	28	0	92	30	92	88	42	
5	Dual II Magnum	7.64	EC	1.91	LB A/A	2.0	PT/A	PRE A	30	0	93	22	95	92	28	
6	MANA-282	7.88	EC	0.985	LB A/A	1.0	PT/A	PRE A	31	0	78	12	83	90	12	
7	MANA-282	7.88	EC	1.48	LB A/A	1.5	PT/A	PRE A	28	0	85	12	87	87	7	
8	MANA-282	7.88	EC	1.97	LB A/A	2.0	PT/A	PRE A	30	0	92	20	90	92	10	
9	MANA-282	7.88	EC	2.22	LB A/A	2.25	PT/A	PRE A	31	0	95	23	93	88	10	
10	MANA-282	7.88	EC	2.96	LB A/A	3.0	PT/A	PRE A	31	0	95	38	92	92	33	
11	Bicep II Magnum	5.5	L	1.79	LB A/A	1.3	QT/A	PRE A	31	0	95	83	98	99	90	
12	Bicep II Magnum	5.5	L	2.68	LB A/A	1.95	QT/A	PRE A	28	0	93	75	96	99	88	
13	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE A	30	0	95	95	96	99	96	
14	MANA-283	5.97	L	1.43	LB A/A	0.96	QT/A	PRE A	30	0	88	78	98	99	85	
	Atrazine	4	SL	0.35	LB A/A	0.35	QT/A	PRE A								
15	MANA-283	5.97	L	2.15	LB A/A	1.44	QT/A	PRE A	30	0	95	77	95	99	90	
	Atrazine	4	SL	0.53	LB A/A	0.53	QT/A	PRE A								
16	MANA-283	5.97	L	2.85	LB A/A	1.91	QT/A	PRE A	30	0	95	93	98	99	92	
	Atrazine	4	SL	0.7	LB A/A	0.7	QT/A	PRE A								
17	MANA-283	5.97	L	3.22	LB A/A	2.16	QT/A	PRE A	30	2	98	90	99	99	77	
18	MANA-283	5.97	L	4.3	LB A/A	2.87	QT/A	PRE A	28	0	96	93	99	99	91	
19	Parallel II	7.8	EC	0.975	LB A/A	1.0	PT/A	PRE A	29	0	90	45	93	93	42	
20	Parallel II	7.8	EC	1.46	LB A/A	1.5	PT/A	PRE A	29	0	90	22	90	87	30	
21	Parallel II	7.8	EC	1.95	LB A/A	2.0	PT/A	PRE A	29	0	93	23	90	90	32	
22	Parallel II	7.8	EC	2.2	LB A/A	2.25	PT/A	PRE A	30	0	93	30	95	95	42	
23	Parallel II	7.8	EC	2.93	LB A/A	3.0	PT/A	PRE A	29	0	95	35	96	98	33	
LSD (P=.05)									3.2	1.0	7.1	19.8	5.6	6.4	26.6	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										SETFA CONTROL PERCENT 07-02-04 45 DA-A	ABUTH CONTROL PERCENT 07-02-04 45 DA-A	AMATA CONTROL PERCENT 07-02-04 45 DA-A	CHEAL CONTROL PERCENT 07-02-04 45 DA-A	XANST CONTROL PERCENT 07-02-04 45 DA-A	ZEAMD PHYGEN PERCENT 07-20-04 63 DA-A	SETFA CONTROL PERCENT 07-20-04 63 DA-A	ABUTH CONTROL PERCENT 07-20-04 63 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	Dual II Magnum	7.64	EC	0.64	LB A/A	0.67	PT/A	PRE	A	63	0	70	65	10	0	62	0
3	Dual II Magnum	7.64	EC	0.955	LB A/A	1.0	PT/A	PRE	A	63	17	70	68	22	0	60	5
4	Dual II Magnum	7.64	EC	1.43	LB A/A	1.5	PT/A	PRE	A	83	10	87	85	40	0	83	2
5	Dual II Magnum	7.64	EC	1.91	LB A/A	2.0	PT/A	PRE	A	88	18	87	87	20	0	88	7
6	MANA-282	7.88	EC	0.985	LB A/A	1.0	PT/A	PRE	A	60	12	67	80	12	0	58	7
7	MANA-282	7.88	EC	1.48	LB A/A	1.5	PT/A	PRE	A	72	3	73	78	3	0	70	2
8	MANA-282	7.88	EC	1.97	LB A/A	2.0	PT/A	PRE	A	83	5	82	80	5	0	82	0
9	MANA-282	7.88	EC	2.22	LB A/A	2.25	PT/A	PRE	A	90	10	88	85	3	0	90	0
10	MANA-282	7.88	EC	2.96	LB A/A	3.0	PT/A	PRE	A	92	28	87	85	25	0	90	5
11	Bicep II Magnum	5.5	L	1.79	LB A/A	1.3	QT/A	PRE	A	85	72	93	96	90	0	82	67
12	Bicep II Magnum	5.5	L	2.68	LB A/A	1.95	QT/A	PRE	A	88	67	93	98	85	0	85	62
13	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	92	87	96	99	96	0	90	87
14	MANA-283 Atrazine	5.97 4	L SL	1.43 0.35	LB A/A LB A/A	0.96 0.35	QT/A QT/A	PRE PRE	A A	78	70	92	96	83	0	78	67
15	MANA-283 Atrazine	5.97 4	L SL	2.15 0.53	LB A/A LB A/A	1.44 0.53	QT/A QT/A	PRE PRE	A A	90	72	93	98	87	0	90	65
16	MANA-283 Atrazine	5.97 4	L SL	2.85 0.7	LB A/A LB A/A	1.91 0.7	QT/A QT/A	PRE PRE	A A	88	83	95	99	90	0	88	83
17	MANA-283	5.97	L	3.22	LB A/A	2.16	QT/A	PRE	A	96	83	96	99	70	0	95	82
18	MANA-283	5.97	L	4.3	LB A/A	2.87	QT/A	PRE	A	92	87	98	99	91	0	92	82
19	Parallel II	7.8	EC	0.975	LB A/A	1.0	PT/A	PRE	A	83	25	88	87	33	0	83	13
20	Parallel II	7.8	EC	1.46	LB A/A	1.5	PT/A	PRE	A	83	13	85	77	30	0	82	7
21	Parallel II	7.8	EC	1.95	LB A/A	2.0	PT/A	PRE	A	88	13	88	83	25	0	87	2
22	Parallel II	7.8	EC	2.2	LB A/A	2.25	PT/A	PRE	A	87	5	93	95	13	0	85	2
23	Parallel II	7.8	EC	2.93	LB A/A	3.0	PT/A	PRE	A	92	25	93	95	25	0	92	10
LSD (P=.05)										12.8	19.1	11.6	11.8	27.6	0.0	12.9	16.7

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										AMATA CONTROL PERCENT 07-20-04 63 DA-A	CHEAL CONTROL PERCENT 07-20-04 63 DA-A	XANST CONTROL PERCENT 07-20-04 63 DA-A	SETFA CONTROL PERCENT 08-31-04 105 DA-A	ABUTH CONTROL PERCENT 08-31-04 105 DA-A	AMATA CONTROL PERCENT 08-31-04 105 DA-A	CHEAL CONTROL PERCENT 08-31-04 105 DA-A	XANST CONTROL PERCENT 08-31-04 105 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	Dual II Magnum	7.64	EC	0.64	LB A/A	0.67	PT/A	PRE	A	57	57	10	58	0	53	48	0
3	Dual II Magnum	7.64	EC	0.955	LB A/A	1.0	PT/A	PRE	A	57	52	22	58	0	53	50	0
4	Dual II Magnum	7.64	EC	1.43	LB A/A	1.5	PT/A	PRE	A	82	78	28	78	0	78	70	0
5	Dual II Magnum	7.64	EC	1.91	LB A/A	2.0	PT/A	PRE	A	82	77	5	83	0	80	73	0
6	MANA-282	7.88	EC	0.985	LB A/A	1.0	PT/A	PRE	A	63	75	12	58	0	57	68	0
7	MANA-282	7.88	EC	1.48	LB A/A	1.5	PT/A	PRE	A	65	72	0	67	0	60	65	0
8	MANA-282	7.88	EC	1.97	LB A/A	2.0	PT/A	PRE	A	75	72	3	77	0	67	67	0
9	MANA-282	7.88	EC	2.22	LB A/A	2.25	PT/A	PRE	A	78	67	3	88	0	73	63	0
10	MANA-282	7.88	EC	2.96	LB A/A	3.0	PT/A	PRE	A	82	73	3	87	0	72	70	0
11	Bicep II Magnum	5.5	L	1.79	LB A/A	1.3	QT/A	PRE	A	87	93	90	80	63	87	93	90
12	Bicep II Magnum	5.5	L	2.68	LB A/A	1.95	QT/A	PRE	A	92	96	83	83	62	90	93	83
13	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	96	99	93	88	85	95	98	91
14	MANA-283 Atrazine	5.97 4	L SL	1.43 0.35	LB A/A LB A/A	0.96 0.35	QT/A QT/A	PRE PRE	A A	90	95	83	77	65	88	95	83
15	MANA-283 Atrazine	5.97 4	L SL	2.15 0.53	LB A/A LB A/A	1.44 0.53	QT/A QT/A	PRE PRE	A A	92	98	88	88	60	92	95	88
16	MANA-283 Atrazine	5.97 4	L SL	2.85 0.7	LB A/A LB A/A	1.91 0.7	QT/A QT/A	PRE PRE	A A	95	99	90	87	82	95	98	90
17	MANA-283	5.97	L	3.22	LB A/A	2.16	QT/A	PRE	A	96	99	70	92	80	96	99	67
18	MANA-283	5.97	L	4.3	LB A/A	2.87	QT/A	PRE	A	96	98	91	92	80	96	98	90
19	Parallel II	7.8	EC	0.975	LB A/A	1.0	PT/A	PRE	A	82	80	22	80	0	77	68	0
20	Parallel II	7.8	EC	1.46	LB A/A	1.5	PT/A	PRE	A	83	75	30	80	0	80	70	0
21	Parallel II	7.8	EC	1.95	LB A/A	2.0	PT/A	PRE	A	87	80	12	85	0	82	73	0
22	Parallel II	7.8	EC	2.2	LB A/A	2.25	PT/A	PRE	A	88	90	8	85	0	83	87	0
23	Parallel II	7.8	EC	2.93	LB A/A	3.0	PT/A	PRE	A	92	92	17	92	0	92	88	0
LSD (P=.05)										13.6	15.3	25.3	15.2	15.0	16.7	19.3	10.1

Iowa State University

Preemergence applied Lexar, Bicep II Magnum, Lumax, Guardsman Max, Harness Xtra, Epic, Keystone, Define, Balance Pro, and Axiom in corn, Ames, IA, 2004.

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:** 05-17-04
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 Lexar at various rates, Bicep II Magnum, Lumax, Guardsman MAX, Harness Xtra and others for crop phytotoxicity and weed control in corn.

Conclusions: Significant differences in corn stand between treatments were observed on July 26. Differences were attributable to variability in seeding rate, poor emergence following flooding, and herbicide phytotoxicity. Ten to 17% corn injury was observed on June 2 from preemergence (PRE) applied Epic, Keystone, Balance Pro plus Define plus Atrazine and Axiom plus Balance Pro. Other treatments resulted in negligible corn injury. On June 11 and July 2, the above treatments continued to cause corn injury.

The study was established in an area with heavy giant foxtail, and light to medium velvetleaf, common waterhemp and common lambsquarters pressure. Giant foxtail, common waterhemp and common lambsquarters control was excellent and ranged from 96 to 99% with the treatments when observed on June 11. Velvetleaf control was good to excellent, ranging from 82 to 99%. Treatments continued to provide good to excellent giant foxtail, common waterhemp and common lambsquarters control when observed on July 2 and August 2. Velvetleaf control was more variable on July 2 and August 2. Bicep II Magnum, Guardsman Max, Harness Xtra and Keystone provided 65 to 77% velvetleaf control on July 2 and 55 to 73% control on August 2. All other treatments afforded between 85 to 99% velvetleaf control on these dates.

Significant differences in corn yield were determined with most treatments yielding significantly higher than the untreated control. Several treatment yields including Epic, Balance Pro plus Define plus Atrazine, and Axiom plus Balance Pro were not significantly different than the untreated control. Significant corn injury was observed from these treatments and likely contributed to these lower yields. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD **Variety:** GARST 8545
Planting Date: 05-17-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 13% at planting.

SOIL DESCRIPTION

% OM: 4.7 **Texture:** CLAY LOAM, LOAM
pH: 7.8 **Soil Name:** CANISTEO, HARPS
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-18-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOL
Air Temp., Unit:	65 F
% Relative Humidity:	53
Wind Velocity, Unit:	7 MPH
Soil Temp., Unit:	53 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied Lexar, Bicep II Magnum, Lumax, Guardsman Max, Harness Xtra, Epic, Keystone, Define, Balance Pro, and Axiom in corn, Ames, IA, 2004.

Trial ID: ACC 7 Study Dir.: Owen/Lux/Franzenburg
 Location: Ames Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	ZEAMD	
Rating Data Type								STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								07-26-04	06-02-04	06-11-04	06-11-04	06-11-04	06-11-04	06-11-04	07-02-04	
Trt-Eval Interval								69 DA-A	15 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	45 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									29	0	0	0	0	0	0
2	Lexar	3.7	SE	2.31	LB A/A	2.5	QT/A	PRE	A	30	2	0	96	91	99	99
3	Lexar	3.7	SE	2.78	LB A/A	3.0	QT/A	PRE	A	31	2	0	98	98	99	99
4	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	31	3	0	98	96	99	99
5	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	29	3	0	98	87	99	99
6	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	30	2	0	98	93	99	99
7	Lexar Princep	3.7	SE	2.78	LB A/A	3.0	QT/A	PRE	A	28	3	0	96	95	98	99
		4	L	1.0	LB A/A	1.0	QT/A	PRE	A							
8	Guardsman Max	5	SC	2.13	LB A/A	3.4	PT/A	PRE	A	28	3	2	96	82	98	99
9	Harness Xtra	5.6	SC	3.22	LB A/A	2.3	QT/A	PRE	A	30	3	0	96	82	99	99
10	Epic	58	WG	0.435	LB A/A	12.0	OZ WT/A	PRE	A	28	17	10	96	98	98	99
11	Keystone	5.25	SE	3.94	LB A/A	3.0	QT/A	PRE	A	29	10	3	96	82	98	99
12	Keystone Hornet WDG	5.25	SE	3.48	LB A/A	2.6	QT/A	PRE	A	30	8	7	96	96	99	99
		68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	PRE	A							
13	Balance Pro	4	SC	0.070	LB A/A	2.25	FL OZ/A	PRE	A	27	13	13	98	99	98	99
	Define SC	4	SC	0.594	LB A/A	19.0	FL OZ/A	PRE	A							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
14	Axiom DF	68	WG	0.89	LB A/A	21.0	OZ WT/A	PRE	A	28	17	18	98	99	99	99
	Balance Pro	4	SC	0.070	LB A/A	2.25	FL OZ/A	PRE	A							
LSD (P=.05)								3.4	5.9	3.7	3.4	7.7	2.3	0.0	4.1	

Iowa State University

Weed Code									SETFA	ABUTH	AMATA	CHEAL	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type									CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-02-04	07-02-04	07-02-04	07-02-04	08-02-04	08-02-04	08-02-04	08-02-04	
Trt-Eval Interval									45 DA-A	45 DA-A	45 DA-A	45 DA-A	76 DA-A	76 DA-A	76 DA-A	76 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	Lexar	3.7	SE	2.31	LB A/A	2.5	QT/A	PRE	A	92	86	99	98	92	85	99	98
3	Lexar	3.7	SE	2.78	LB A/A	3.0	QT/A	PRE	A	93	96	98	99	93	96	98	99
4	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	95	93	98	98	93	91	98	98
5	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	93	77	99	96	93	73	99	96
6	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	93	90	98	99	93	90	98	99
7	Lexar Princep	3.7 4	SE L	2.78 1.0	LB A/A LB A/A	3.0 1.0	QT/A QT/A	PRE PRE	A A	93	91	96	96	93	88	96	95
8	Guardsman Max	5	SC	2.13	LB A/A	3.4	PT/A	PRE	A	93	72	93	99	92	63	92	99
9	Harness Xtra	5.6	SC	3.22	LB A/A	2.3	QT/A	PRE	A	92	72	98	99	90	67	96	99
10	Epic	58	WG	0.435	LB A/A	12.0	OZ WT/A	PRE	A	92	98	93	99	90	98	93	99
11	Keystone	5.25	SE	3.94	LB A/A	3.0	QT/A	PRE	A	90	65	96	99	90	55	96	99
12	Keystone Hornet WDG	5.25 68.5	SE WG	3.48 0.128	LB A/A LB AE/A	2.6 3.0	QT/A OZ WT/A	PRE PRE	A A	92	95	95	99	90	95	95	99
13	Balance Pro Define SC Atrazine	4 4 4	SC SC SL	0.070 0.594 1.0	LB A/A LB A/A LB A/A	2.25 19.0 2.0	FL OZ/A FL OZ/A PT/A	PRE PRE PRE	A A A	96	99	96	99	93	99	96	99
14	Axiom DF Balance Pro	68 4	WG SC	0.89 0.070	LB A/A LB A/A	21.0 2.25	OZ WT/A FL OZ/A	PRE PRE	A A	92	99	98	99	92	99	98	99
LSD (P=.05)										3.8	15.9	4.7	2.1	5.2	20.0	4.2	1.7

Iowa State University

Weed Code										ZEAMD
Rating Data Type										YIELD
Rating Unit										BU/A
Rating Date										10-18-04
Trt-Eval Interval										153 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated									199
2	Lexar	3.7	SE	2.31	LB A/A	2.5	QT/A	PRE	A	235
3	Lexar	3.7	SE	2.78	LB A/A	3.0	QT/A	PRE	A	238
4	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	252
5	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	245
6	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	242
7	Lexar Princep	3.7 4	SE L	2.78 1.0	LB A/A LB A/A	3.0 1.0	QT/A QT/A	PRE PRE	A A	226
8	Guardsman Max	5	SC	2.13	LB A/A	3.4	PT/A	PRE	A	236
9	Harness Xtra	5.6	SC	3.22	LB A/A	2.3	QT/A	PRE	A	237
10	Epic	58	WG	0.435	LB A/A	12.0	OZ WT/A	PRE	A	215
11	Keystone	5.25	SE	3.94	LB A/A	3.0	QT/A	PRE	A	231
12	Keystone Hornet WDG	5.25 68.5	SE WG	3.48 0.128	LB A/A LB AE/A	2.6 3.0	QT/A OZ WT/A	PRE PRE	A A	244
13	Balance Pro Define SC Atrazine	4 4 4	SC SC SL	0.070 0.594 1.0	LB A/A LB A/A LB A/A	2.25 19.0 2.0	FL OZ/A FL OZ/A PT/A	PRE PRE PRE	A A A	188
14	Axiom DF Balance Pro	68 4	WG SC	0.89 0.070	LB A/A LB A/A	21.0 2.25	OZ WT/A FL OZ/A	PRE PRE	A A	203
LSD (P=.05)										32.6

Iowa State University

Bicep II Magnum, Lumax, Lexar, Harness Xtra, and Epic applied preemergence and postemergence applied Callisto, Lumax, and Distinct in corn, Ames, 2004.
 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:** 05-17-04
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 prepackaged and tank-mixtures for crop phytotoxicity and weed control. Postemergence applications of Callisto, Aatrex, Lumax, Marksman, and Distinct were also evaluated.

Conclusions: Corn stands were variable between the treatments and significant differences were observed. Differences were likely attributable to seeding rate variability, poor emergence following flooding, and herbicide phytotoxicity. Significant corn injury was observed on June 2 and 11 from preemergence (PRE) applied Epic and Keystone plus Balance Pro. Injury persisted with these treatments on June 26 and July 6. Corn injury was also observed on these dates following early postemergence (EPOST) Marksman and postemergence (POST) Distinct applications.

PRE applied prepackaged and tank-mixed treatments provided good to excellent giant foxtail, common waterhemp, and common lambsquarters control when observed on June 11. Velvetleaf and common cocklebur control was fair to excellent with these treatments. Nearly all PRE treatments continued to provide good to excellent giant foxtail, common waterhemp, and common lambsquarters control when observed on July 6 and August 6. Velvetleaf and common cocklebur control with several treatments was no longer acceptable on these dates. PRE treatments followed by EPOST or POST achieved excellent control of all species when observed on July 6 and August 6.

Considerable variability was observed in corn yields with significant differences determined between treatments. A number of treatment yields were not significantly different from 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 8545
Planting Date: 05-17-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 13% at planting.

SOIL DESCRIPTION

% OM: 4.7 **Texture:** CLAY LOAM, LOAM
pH: 7.8 **Soil Name:** CANISTEO, HARPS
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-18-04	06-11-04	06-16-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	POST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	65 F	85 F	73 F
% Relative Humidity:	53	66	88
Wind Velocity, Unit:	7 MPH	5 MPH	0 MPH
Soil Temp., Unit:	53 F	73 F	74 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	0	80	100

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 4.5	ZEAMD V 5
Stage Scale:	-	DESC	DESC
Height, Unit:	-	9 IN	11 IN

WEED STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Bicep II Magnum, Lumax, Lexar, Harness Xtra, and Epic applied preemergence and postemergence applied Callisto, Lumax, and Distinct in corn, Ames, 2004.

Trial ID: ACC 8 Study Dir.: Owen/Lux/Franzenburg
 Location: Ames Investigator: Owen/Hartzler/Pringnitz

Weed Code									ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type									STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-26-04	06-02-04	06-11-04	06-11-04	06-11-04	06-11-04	06-11-04	
Trt-Eval Interval									69 DA-A	15 DA-A	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									28	2	0	0	0	0	0
2	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	28	0	0	95	82	99	99
3	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	30	0	0	93	85	98	98
4	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	30	0	0	98	92	99	99
5	Lumax Atrazine	3.95 4	SE SL	2.96 1.0	LB A/A LB A/A	3.0 1.0	QT/A QT/A	PRE PRE	A A	30	2	0	96	90	99	99
6	Lexar Princep	3.7 4	SE L	3.24 1.0	LB A/A LB A/A	3.5 1.0	QT/A QT/A	PRE PRE	A A	30	2	0	96	87	98	99
7	Bicep II Magnum Callisto Atrazine COC 28% UAN	5.5 4 4 L L	SC SC SL L L	3.58 0.094 0.5 1.0 2.5	LB A/A LB A/A LB A/A % V/V % V/V	2.6 3.0 1.0 1.0 2.5	QT/A FL OZ/A PT/A % V/V % V/V	PRE POST POST POST POST	A C C C C	29	2	0	96	82	98	99
8	Harness Xtra	5.6	SC	4.2	LB A/A	3.0	QT/A	PRE	A	30	0	0	95	68	98	99
9	Epic	58	WG	0.544	LB A/A	15.0	OZ WT/A	PRE	A	27	20	12	93	99	96	99
10	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	30	5	2	98	92	99	99
11	Keystone Hornet WDG	5.25 68.5	SE WG	4.2 0.128	LB A/A LB AE/A	3.2 3.0	QT/A OZ WT/A	PRE PRE	A A	29	5	0	95	91	99	99
12	Keystone Balance Pro	5.25 4	SE SC	2.1 0.094	LB A/A LB A/A	1.6 3.0	QT/A FL OZ/A	PRE PRE	A A	29	18	10	93	98	99	99
13	Lumax Lumax	3.95 3.95	SE SE	1.48 1.48	LB A/A LB A/A	1.5 1.5	QT/A QT/A	PRE EPOST	A B	29	0	0	96	73	99	99
14	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	30	0	0	96	40	98	98
15	Guardsman Max Distinct NIS AMS	5 70 L DF	SC WG L DF	2.8 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.5 4.0 0.25 5.0	PT/A OZ WT/A % V/V LB/100 GAL	PRE POST POST POST	A C C C	28	3	3	98	83	99	98
LSD (P=.05)										2.9	3.6	4.2	4.2	9.8	2.3	1.7

Iowa State University

Weed Code										XANST	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										CONTROL	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-11-04	06-26-04	07-06-04	07-06-04	07-06-04	07-06-04	07-06-04
Trt-Eval Interval										0 DA-B	15 DA-B	25 DA-B	25 DA-B	25 DA-B	25 DA-B	25 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	75	0	0	95	80	96	99
3	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	93	0	0	93	85	96	98
4	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	90	0	0	95	92	98	96
5	Lumax Atrazine	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	93	0	0	93	90	98	98
		4	SL	1.0	LB A/A	1.0	QT/A	PRE	A							
6	Lexar Princep	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	90	0	0	96	87	98	98
		4	L	1.0	LB A/A	1.0	QT/A	PRE	A							
7	Bicep II Magnum Callisto Atrazine COC 28% UAN	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	78	0	0	99	99	99	99
		4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	C							
		4	SL	0.5	LB A/A	1.0	PT/A	POST	C							
		L		1.0	% V/V	1.0	% V/V	POST	C							
		L		2.5	% V/V	2.5	% V/V	POST	C							
8	Harness Xtra	5.6	SC	4.2	LB A/A	3.0	QT/A	PRE	A	73	0	0	92	60	98	99
9	Epic	58	WG	0.544	LB A/A	15.0	OZ WT/A	PRE	A	85	10	10	93	99	93	99
10	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	88	3	0	95	90	98	96
11	Keystone Hornet WDG	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	93	0	0	92	88	99	99
		68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	PRE	A							
12	Keystone Balance Pro	5.25	SE	2.1	LB A/A	1.6	QT/A	PRE	A	90	8	7	90	98	98	98
		4	SC	0.094	LB A/A	3.0	FL OZ/A	PRE	A							
13	Lumax Lumax	3.95	SE	1.48	LB A/A	1.5	QT/A	PRE	A	70	0	0	99	99	99	99
		3.95	SE	1.48	LB A/A	1.5	QT/A	EPOST	B							
14	Outlook Marksman	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	A	38	5	3	98	99	99	99
		3.2	FL	1.4	LB A/A	3.5	PT/A	EPOST	B							
15	Guardsman Max Distinct NIS AMS	5	SC	2.8	LB A/A	4.5	PT/A	PRE	A	70	8	10	99	98	99	99
		70	WG	0.175	LB A/A	4.0	OZ WT/A	POST	C							
		L		0.25	% V/V	0.25	% V/V	POST	C							
		DF		5.0	LB/100 GAL	5.0	LB/100 GAL	POST	C							
LSD (P=.05)										13.9	3.7	3.5	4.1	10.7	3.6	2.3

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										XANST CONTROL PERCENT 07-06-04 25 DA-B	SETFA CONTROL PERCENT 08-06-04 56 DA-B	ABUTH CONTROL PERCENT 08-06-04 56 DA-B	AMATA CONTROL PERCENT 08-06-04 56 DA-B	CHEAL CONTROL PERCENT 08-06-04 56 DA-B	XANST CONTROL PERCENT 08-06-04 56 DA-B	ZEAMD YIELD BU/A 10-11-04 146 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	204
2	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	75	93	67	96	98	75	224
3	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	87	93	78	96	98	87	236
4	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	90	92	92	98	95	90	228
5	Lumax Atrazine	3.95 4	SE SL	2.96 1.0	LB A/A LB A/A	3.0 1.0	QT/A QT/A	PRE PRE	A A	90	92	83	98	98	88	220
6	Lexar Princep	3.7 4	SE L	3.24 1.0	LB A/A LB A/A	3.5 1.0	QT/A QT/A	PRE PRE	A A	76	93	82	98	95	76	232
7	Bicep II Magnum Callisto Atrazine COC 28% UAN	5.5 4 4 L L	SC SC SL L L	3.58 0.094 0.5 1.0 2.5	LB A/A LB A/A LB A/A % V/V % V/V	2.6 3.0 1.0 1.0 2.5	QT/A FL OZ/A PT/A % V/V % V/V	PRE POST POST POST POST	A C C C C	99	98	99	99	99	99	249
8	Harness Xtra	5.6	SC	4.2	LB A/A	3.0	QT/A	PRE	A	48	92	53	98	99	48	231
9	Epic	58	WG	0.544	LB A/A	15.0	OZ WT/A	PRE	A	75	92	99	93	99	73	214
10	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	73	93	85	98	95	70	241
11	Keystone Hornet WDG	5.25 68.5	SE WG	4.2 0.128	LB A/A LB AE/A	3.2 3.0	QT/A OZ WT/A	PRE PRE	A A	90	90	88	99	98	86	235
12	Keystone Balance Pro	5.25 4	SE SC	2.1 0.094	LB A/A LB A/A	1.6 3.0	QT/A FL OZ/A	PRE PRE	A A	80	88	96	98	98	80	237
13	Lumax Lumax	3.95 3.95	SE SE	1.48 1.48	LB A/A LB A/A	1.5 1.5	QT/A QT/A	PRE EPOST	A B	99	96	99	99	99	98	245
14	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	99	96	99	99	99	99	228
15	Guardsman Max Distinct NIS AMS	5 70 L DF	SC WG L DF	2.8 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.5 4.0 0.25 5.0	PT/A OZ WT/A % V/V LB/100 GAL	PRE POST POST POST	A C C C	99	96	98	99	99	99	226
LSD (P=.05)										24.7	6.0	17.8	3.6	3.0	26.3	27.2

Iowa State University

Preemergence applied Bicep II Magnum, MANA-283, Parallel II, Atrazine, Callisto, and Lumax in corn, Ames, IA, 2004.

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: 05-17-04

Country: USA

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

Objective: The purpose of this study was to evaluate corn phytotoxicity and weed control from preemergence applied Bicep II Magnum, MANA-283, Parallel II, Atrazine, Callisto and Lumax.

Conclusions: Significant differences in corn stand between several treatments on July 15 were due to variability in planting rate and not from the herbicides. Treatments exhibited excellent crop safety on all observation dates.

The study was established in an area with heavy giant foxtail, medium velvetleaf, common waterhemp, and common lambsquarters pressure. Good to excellent giant foxtail, common waterhemp and common lambsquarters control was afforded by the preemergence (PRE) applied treatments when observed on June 16, twenty-nine days after application. Significant differences in control between treatments occurred. Velvetleaf control was poor to fair with most treatments and significant differences between treatments were observed. Generally, the best velvetleaf control was achieved by treatments of Lumax and tank-mixtures that included Callisto. On July 2, 20, and August 19, nearly all of the treatments continued to provide good to excellent giant foxtail, common waterhemp and common lambsquarters control and poor to fair velvetleaf control. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8545

Planting Date: 05-17-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 13% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM

pH: 7.8 Soil Name: CANISTEO, HARPS

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A
Application Date:	05-18-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	65 F
% Relative Humidity:	53
Wind Velocity, Unit:	7 MPH
Soil Temp., Unit:	53 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	0

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CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

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Weed Code										ABUTH	AMATA	CHEAL	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type										CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-02-04	07-02-04	07-02-04	07-20-04	07-20-04	07-20-04	07-20-04	07-20-04	07-20-04
Trt-Eval Interval										45 DA-A	45 DA-A	45 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code										
1	Untreated									0	0	0	3	0	0	0	0	0
2	Bicep II Magnum	5.5 L		1.79 LB A/A	1.3 QT/A		PRE	A		47	92	95	0	88	42	92	93	
3	Bicep II Magnum	5.5 L		2.68 LB A/A	1.95 QT/A		PRE	A		65	95	95	0	91	63	92	95	
4	Bicep II Magnum	5.5 L		3.02 LB A/A	2.2 QT/A		PRE	A		40	93	96	0	90	40	91	95	
5	Bicep II Magnum	5.5 L		3.57 LB A/A	2.6 QT/A		PRE	A		65	95	96	0	93	58	93	96	
6	MANA-283 Atrazine	5.97 L 4 SL		1.43 LB A/A 0.35 LB A/A	0.96 QT/A 0.35 QT/A		PRE	A A		73	92	95	0	83	67	92	95	
7	MANA-283 Atrazine	5.97 L 4 SL		2.15 LB A/A 0.54 LB A/A	1.44 QT/A 0.54 QT/A		PRE	A A		48	90	96	0	88	40	88	95	
8	MANA-283 Atrazine	5.97 L 4 SL		2.43 LB A/A 0.6 LB A/A	1.63 QT/A 0.6 QT/A		PRE	A A		52	90	95	0	87	48	88	93	
9	MANA-283 Atrazine	5.97 L 4 SL		2.85 LB A/A 0.7 LB A/A	1.91 QT/A 0.7 QT/A		PRE	A A		43	93	96	0	88	37	88	96	
10	MANA-283	5.97 L		3.22 LB A/A	2.16 QT/A		PRE	A		43	62	96	0	92	40	88	96	
11	MANA-283	5.97 L		3.66 LB A/A	2.45 QT/A		PRE	A		50	93	96	0	92	47	90	96	
12	MANA-283	5.97 L		4.3 LB A/A	2.87 QT/A		PRE	A		53	96	99	0	95	50	95	99	
13	Parallel II Atrazine	7.8 EC 4 SL		0.78 LB A/A 1.0 LB A/A	0.8 PT/A 1.0 QT/A		PRE	A A		48	88	96	0	87	45	80	96	
14	Parallel II Atrazine	7.8 EC 4 SL		1.17 LB A/A 1.51 LB A/A	1.2 PT/A 1.51 QT/A		PRE	A A		32	90	98	0	83	32	83	96	
15	Parallel II Atrazine	7.8 EC 4 SL		1.56 LB A/A 2.0 LB A/A	1.6 PT/A 2.0 QT/A		PRE	A A		55	95	98	0	92	52	92	98	
16	Parallel II Atrazine	7.8 EC 4 SL		1.76 LB A/A 1.46 LB A/A	1.8 PT/A 1.46 QT/A		PRE	A A		50	93	96	0	92	45	90	95	
17	Parallel II Atrazine	7.8 EC 4 SL		1.95 LB A/A 1.66 LB A/A	2.0 PT/A 1.66 QT/A		PRE	A A		42	95	98	0	93	37	92	96	
18	Parallel II Atrazine	7.8 EC 4 SL		2.34 LB A/A 1.95 LB A/A	2.4 PT/A 1.95 QT/A		PRE	A A		50	93	96	0	95	47	92	96	
19	MANA-283 Callisto Atrazine	5.97 L 4 SC 4 SL		2.15 LB A/A 0.15 LB A/A 0.54 LB A/A	1.44 QT/A 4.8 FL OZ/A 0.54 QT/A		PRE	A A A		85	95	98	0	88	85	92	96	
20	MANA-283 Callisto Atrazine	5.97 L 4 SC 4 SL		2.69 LB A/A 0.15 LB A/A 0.78 LB A/A	1.8 QT/A 4.8 FL OZ/A 0.78 QT/A		PRE	A A A		67	96	96	0	88	63	91	96	
21	MANA-283 Callisto	5.97 L 4 SC		3.22 LB A/A 0.15 LB A/A	2.16 QT/A 4.8 FL OZ/A		PRE	A A		77	95	96	0	92	72	91	96	
22	MANA-283 Callisto	5.97 L 4 SC		3.58 LB A/A 0.15 LB A/A	2.4 QT/A 4.8 FL OZ/A		PRE	A A		62	95	96	0	92	58	93	96	
23	MANA-283 Callisto	5.97 L 4 SC		4.3 LB A/A 0.15 LB A/A	2.87 QT/A 4.8 FL OZ/A		PRE	A A		73	96	98	0	95	70	95	96	
24	Lumax	3.95 SE		2.47 LB A/A	2.5 QT/A		PRE	A		78	96	96	0	93	77	93	95	
25	Lumax	3.95 SE		2.96 LB A/A	3.0 QT/A		PRE	A		73	98	98	0	95	70	98	96	
LSD (P=.05)										27.3	17.3	3.7	1.5	7.5	28.8	9.7	4.0	

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Weed Code										ZEAMD	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-19-04	08-19-04	08-19-04	08-19-04	08-19-04
Trt-Eval Interval										93 DA-A	93 DA-A	93 DA-A	93 DA-A	93 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									3	0	0	0	0
2	Bicep II Magnum	5.5	L	1.79 LB A/A	1.3	QT/A	PRE	A		0	88	40	88	92
3	Bicep II Magnum	5.5	L	2.68 LB A/A	1.95	QT/A	PRE	A		0	90	58	90	95
4	Bicep II Magnum	5.5	L	3.02 LB A/A	2.2	QT/A	PRE	A		0	90	42	91	95
5	Bicep II Magnum	5.5	L	3.57 LB A/A	2.6	QT/A	PRE	A		0	93	53	93	96
6	MANA-283 Atrazine	5.97 4	L SL	1.43 LB A/A 0.35 LB A/A	0.96 0.35	QT/A QT/A	PRE PRE	A A		0	85	62	92	93
7	MANA-283 Atrazine	5.97 4	L SL	2.15 LB A/A 0.54 LB A/A	1.44 0.54	QT/A QT/A	PRE PRE	A A		0	88	37	87	93
8	MANA-283 Atrazine	5.97 4	L SL	2.43 LB A/A 0.6 LB A/A	1.63 0.6	QT/A QT/A	PRE PRE	A A		0	88	42	87	93
9	MANA-283 Atrazine	5.97 4	L SL	2.85 LB A/A 0.7 LB A/A	1.91 0.7	QT/A QT/A	PRE PRE	A A		0	88	32	87	92
10	MANA-283	5.97	L	3.22 LB A/A	2.16	QT/A	PRE	A		0	90	40	88	93
11	MANA-283	5.97	L	3.66 LB A/A	2.45	QT/A	PRE	A		0	92	47	90	92
12	MANA-283	5.97	L	4.3 LB A/A	2.87	QT/A	PRE	A		0	95	47	95	96
13	Parallel II Atrazine	7.8 4	EC SL	0.78 LB A/A 1.0 LB A/A	0.8 1.0	PT/A QT/A	PRE PRE	A A		0	85	38	80	92
14	Parallel II Atrazine	7.8 4	EC SL	1.17 LB A/A 1.51 LB A/A	1.2 1.51	PT/A QT/A	PRE PRE	A A		0	85	33	82	95
15	Parallel II Atrazine	7.8 4	EC SL	1.56 LB A/A 2.0 LB A/A	1.6 2.0	PT/A QT/A	PRE PRE	A A		0	92	50	92	96
16	Parallel II Atrazine	7.8 4	EC SL	1.76 LB A/A 1.46 LB A/A	1.8 1.46	PT/A QT/A	PRE PRE	A A		0	92	40	88	93
17	Parallel II Atrazine	7.8 4	EC SL	1.95 LB A/A 1.66 LB A/A	2.0 1.66	PT/A QT/A	PRE PRE	A A		0	93	33	92	95
18	Parallel II Atrazine	7.8 4	EC SL	2.34 LB A/A 1.95 LB A/A	2.4 1.95	PT/A QT/A	PRE PRE	A A		0	95	42	88	95
19	MANA-283 Callisto Atrazine	5.97 4 4	L SC SL	2.15 LB A/A 0.15 LB A/A 0.54 LB A/A	1.44 4.8 0.54	QT/A FL OZ/A QT/A	PRE PRE PRE	A A A		0	85	85	90	96
20	MANA-283 Callisto Atrazine	5.97 4 4	L SC SL	2.69 LB A/A 0.15 LB A/A 0.78 LB A/A	1.8 4.8 0.78	QT/A FL OZ/A QT/A	PRE PRE PRE	A A A		0	87	62	91	96
21	MANA-283 Callisto	5.97 4	L SC	3.22 LB A/A 0.15 LB A/A	2.16 4.8	QT/A FL OZ/A	PRE PRE	A A		0	92	70	90	96
22	MANA-283 Callisto	5.97 4	L SC	3.58 LB A/A 0.15 LB A/A	2.4 4.8	QT/A FL OZ/A	PRE PRE	A A		0	92	52	90	95
23	MANA-283 Callisto	5.97 4	L SC	4.3 LB A/A 0.15 LB A/A	2.87 4.8	QT/A FL OZ/A	PRE PRE	A A		0	95	67	95	95
24	Lumax	3.95	SE	2.47 LB A/A	2.5	QT/A	PRE	A		0	92	73	93	95
25	Lumax	3.95	SE	2.96 LB A/A	3.0	QT/A	PRE	A		0	93	68	96	95
LSD (P=.05)										1.5	8.2	31.3	11.1	5.9

Iowa State University

Axiom, Atrazine, and Define applied preemergence and early postemergence for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 10
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: 05-11-04
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 early postemergence applications of Axiom, Atrazine and Define for crop phytotoxicity and weed control in corn.
Conclusions: No significant differences in corn stand between treatments were observed on July 20. Preemergence (PRE) treatments demonstrated excellent crop safety when observed on June 9, twenty-eight days after application. On June 9, PRE treatments provided good to excellent giant foxtail, common waterhemp, common lambsquarters, and Pennsylvania smartweed control. Velvetleaf control was fair to good with the PRE treatments.

Significant corn injury from early postemergence (EPOST) applied Axiom plus Atrazine was observed on June 19, 25, and July 1. Injury remained evident with these treatments as well as with EPOST Define plus Atrazine when observed on July 27. Other EPOST and mid-postemergence (MPOST) treatments resulted in corn injury on June 19, 25, and July 1, although it was considered negligible. Following EPOST and MPOST applications, treatments achieved excellent control of all weed species when observed on July 1 and 27. (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: PIONEER 33R79
Planting Date: 05-11-04 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 Texture: CLAY LOAM
pH: 7.1 Soil Name: CLARION, WEBSTER, CANISTEO
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

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APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-12-04	06-09-04	06-15-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	65 F	80 F	78 F
% Relative Humidity:	83	66	62
Wind Velocity, Unit:	5 MPH	5 MPH	2 MPH
Soil Temp., Unit:	66 F	75 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	80	90	30

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 5	ZEAMD V 5 - V 6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	7 IN	13 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 LEAF	SETFA 1-3 LEAF
Stage Scale:	-	0.5-2 IN	0.5-1 IN
Density, Unit:	- -	0-1 FT2	< 1 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-2 L	ABUTH COTYL-7 L
Stage Scale:	-	0.5-1 IN	0.5-4 IN
Density, Unit:	- -	0-2 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-6 L	AMATA -
Stage Scale:	-	0.5-1 IN	-
Density, Unit:	- -	0-1 FT2	- -
Weed 4 Code, Stage:	CHEAL -	CHEAL COTYL-6 L	CHEAL -
Stage Scale:	-	0.5-1 IN	-
Density, Unit:	- -	< 1 FT2	- -
Weed 5 Code, Stage:	POLPY -	POLPY 2-4 LEAF	POLPY 2-4 LEAF
Stage Scale:	-	0.5-2 IN	0.5-2 IN
Density, Unit:	- -	< 1 FT2	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Axiom, Atrazine, and Define applied preemergence and early postemergence for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 10

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code									ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type									STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-20-04	06-09-04	06-09-04	06-09-04	06-09-04	06-09-04	06-09-04	
Trt-Eval Interval									69 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Untreated									31	0	0	0	0	0	0
2	Dual II Magnum	7.64	EC	2.0	LB A/A	2.1	PT/A	PRE	A	30	0	99	78	99	99	93
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
3	Define SC	4	SC	0.79	LB A/A	25.0	FL OZ/A	PRE	A	30	0	96	83	98	99	92
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
4	Axiom DF	68	WG	0.98	LB A/A	23.0	OZ WT/A	PRE	A	29	0	98	87	98	99	96
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
5	Define SC	4	SC	0.312	LB A/A	10.0	FL OZ/A	PRE	A	31	0	96	78	95	98	93
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Define SC	4	SC	0.47	LB A/A	15.0	FL OZ/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
6	Axiom DF	68	WG	0.425	LB A/A	10.0	OZ WT/A	PRE	A	29	0	96	85	98	99	93
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Axiom DF	68	WG	0.553	LB A/A	13.0	OZ WT/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
7	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	A	29	0	95	78	99	98	96
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Define SC	4	SC	0.56	LB A/A	18.0	FL OZ/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
8	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	A	30	0	95	87	99	98	92
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Axiom DF	68	WG	0.675	LB A/A	16.0	OZ WT/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
9	Define SC	4	SC	0.56	LB A/A	18.0	FL OZ/A	EPOST	B	30	0	0	0	0	0	0
	Atrazine	4	SL	1.5	LB A/A	3.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
10	Axiom DF	68	WG	0.675	LB A/A	16.0	OZ WT/A	EPOST	B	29	0	0	0	0	0	0
	Atrazine	4	SL	1.5	LB A/A	3.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
LSD (P=.05)										2.8	0.0	2.4	6.9	3.4	2.2	3.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ZEAMD PHYGEN PERCENT 06-19-04 10 DA-B	ZEAMD PHYGEN PERCENT 06-25-04 10 DA-C	ZEAMD PHYGEN PERCENT 07-01-04 16 DA-C	SETFA CONTROL PERCENT 07-01-04 16 DA-C	ABUTH CONTROL PERCENT 07-01-04 16 DA-C	AMATA CONTROL PERCENT 07-01-04 16 DA-C	CHEAL CONTROL PERCENT 07-01-04 16 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Dual II Magnum	7.64	EC	2.0	LB A/A	2.1	PT/A	PRE	A	3	0	0	99	99	99	99
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
3	Define SC	4	SC	0.79	LB A/A	25.0	FL OZ/A	PRE	A	2	0	0	99	99	99	99
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
4	Axiom DF	68	WG	0.98	LB A/A	23.0	OZ WT/A	PRE	A	5	3	0	99	99	99	99
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
5	Define SC	4	SC	0.312	LB A/A	10.0	FL OZ/A	PRE	A	0	3	3	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Define SC	4	SC	0.47	LB A/A	15.0	FL OZ/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
6	Axiom DF	68	WG	0.425	LB A/A	10.0	OZ WT/A	PRE	A	22	13	10	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Axiom DF	68	WG	0.553	LB A/A	13.0	OZ WT/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
7	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	A	0	5	5	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Define SC	4	SC	0.56	LB A/A	18.0	FL OZ/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
8	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	A	23	15	8	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Axiom DF	68	WG	0.675	LB A/A	16.0	OZ WT/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
9	Define SC	4	SC	0.56	LB A/A	18.0	FL OZ/A	EPOST	B	3	3	5	95	99	99	99
	Atrazine	4	SL	1.5	LB A/A	3.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
10	Axiom DF	68	WG	0.675	LB A/A	16.0	OZ WT/A	EPOST	B	25	15	10	98	99	99	99
	Atrazine	4	SL	1.5	LB A/A	3.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
LSD (P=.05)										3.7	3.0	2.3	1.3	0.0	0.0	0.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										POLPY CONTROL PERCENT 07-01-04 16 DA-C	ZEAMD PHYGEN PERCENT 07-27-04 42 DA-C	SETFA CONTROL PERCENT 07-27-04 42 DA-C	ABUTH CONTROL PERCENT 07-27-04 42 DA-C	AMATA CONTROL PERCENT 07-27-04 42 DA-C	CHEAL CONTROL PERCENT 07-27-04 42 DA-C	POLPY CONTROL PERCENT 07-27-04 42 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Dual II Magnum	7.64	EC	2.0	LB A/A	2.1	PT/A	PRE	A	99	0	99	99	99	99	99
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
3	Define SC	4	SC	0.79	LB A/A	25.0	FL OZ/A	PRE	A	99	0	99	99	99	99	99
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
4	Axiom DF	68	WG	0.98	LB A/A	23.0	OZ WT/A	PRE	A	99	0	99	99	99	99	99
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	PRE	A							
	Buctril + Atrazine	3	SC	0.75	LB A/A	2.0	PT/A	MPOST	C							
	Callisto	4	SC	0.0234	LB A/A	0.75	FL OZ/A	MPOST	C							
5	Define SC	4	SC	0.312	LB A/A	10.0	FL OZ/A	PRE	A	99	5	99	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Define SC	4	SC	0.47	LB A/A	15.0	FL OZ/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
6	Axiom DF	68	WG	0.425	LB A/A	10.0	OZ WT/A	PRE	A	99	7	99	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Axiom DF	68	WG	0.553	LB A/A	13.0	OZ WT/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
7	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	A	99	7	99	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Define SC	4	SC	0.56	LB A/A	18.0	FL OZ/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
8	Balance Pro	4	SC	0.0706	LB A/A	2.25	FL OZ/A	PRE	A	99	7	99	99	99	99	99
	Atrazine	4	SL	0.5	LB A/A	1.0	PT/A	PRE	A							
	Axiom DF	68	WG	0.675	LB A/A	16.0	OZ WT/A	EPOST	B							
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
9	Define SC	4	SC	0.56	LB A/A	18.0	FL OZ/A	EPOST	B	99	5	95	99	99	99	99
	Atrazine	4	SL	1.5	LB A/A	3.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
10	Axiom DF	68	WG	0.675	LB A/A	16.0	OZ WT/A	EPOST	B	99	7	98	99	99	99	99
	Atrazine	4	SL	1.5	LB A/A	3.0	PT/A	EPOST	B							
	COC		L	1.0	QT/A	1.0	QT/A	EPOST	B							
LSD (P=.05)										0.0	3.3	1.3	0.0	0.0	0.0	0.0

Iowa State University

One-pass delayed preemergence, two-pass preemergence followed by postemergence and one-pass postemergence applications in corn, Ames, IA, 2004.

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: 05-11-04

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate delayed preemergence, preemergence followed by postemergence and postemergence applied herbicides for crop phytotoxicity and weed control in corn. Herbicides included Outlook, Marksman, Guardsman Max, Distinct, Prowl, Lightning, and others.

Conclusions: Significant differences in corn stand between treatments were observed on July 20. These differences were likely a result in seeding rate variability and poor emergence following flooding, and not due to the herbicides. Delayed preemergence (DPRE) treatments resulted in 3 to 10% corn injury when observed on June 10. Injury was also observed on June 16, 25, July 5, and August 6 from early postemergence (EPOST) and postemergence (POST) applied treatments. Injury did not exceed 10% with any application timing on any of the dates.

DPRE treatments provided excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, Pennsylvania smartweed and common cocklebur control when observed on June 10. Outlook applied preplant incorporated (PPI) and preemergence (PRE) and PRE Guardsman Max afforded good to excellent control of all species, except velvetleaf and common cocklebur on June 10.

Good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, Pennsylvania smartweed, and common cocklebur control was provided by PRE plus EPOST and mid-postemergence (MPOST) treatments when observed on July 5, August 6, and September 20. DPRE treatments continued to exhibit good to excellent control of all species, except velvetleaf when observed on July 5, August 6, and September 20. Fair velvetleaf control was provided by DPRE Outlook plus Marksman and Guardsman plus Atrazine on these dates. (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: GARST 8578 IT

Planting Date: 05-11-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 Texture: CLAY LOAM

pH: 7.1 Soil Name: CLARION, WEBSTER, CANISTEO

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	05-11-04	05-12-04	05-20-04	06-09-04	06-15-04
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PPI	PRE	DPRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	80 F	65 F	76 F	80 F	80 F
% Relative Humidity:	73	83	79	77	61
Wind Velocity, Unit:	10 MPH	5 MPH	5 MPH	7 MPH	2 MPH
Soil Temp., Unit:	68 F	66 F	69 F	75 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	60	80	95	85	30

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	ZEAMD -	ZEAMD -	ZEAMD 0 - SPIKE	ZEAMD V 4	ZEAMD V 6
Stage Scale:	-	-	DESC	DESC	DESC
Height, Unit:	-	-	0.25 IN	5.5 IN	13 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code, Stage:	SETFA -	SETFA -	SETFA 1 LEAF	SETFA 1-2 LEAF	SETFA 1-4 LEAF
Stage Scale:	-	-	0.25 IN	0.5 IN	0.5-1 IN
Density, Unit:	- -	- -	0-5 FT2	< 1 FT2	< 1 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH -	ABUTH COTYLEDON	ABUTH COTYL-5 L	ABUTH COTYL-8 L
Stage Scale:	-	-	0.25 IN	0.5-1.5	0.5-4 IN
Density, Unit:	- -	- -	0-1 FT2	0-1 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -	AMATA -	AMATA COTYL-8 L	AMATA 4-NUM
Stage Scale:	-	-	-	0.5-1.5	0.5-7 IN
Density, Unit:	- -	- -	- -	< 1 FT2	0-1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL -	CHEAL -	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	-	-	-	0.5-1 IN
Density, Unit:	- -	- -	- -	- FT2	< 1 FT2
Weed 5 Code, Stage:	POLPY -	POLPY -	POLPY -	POLPY 2-4 LEAF	POLPY NUMEROUS
Stage Scale:	-	-	-	0.5-1.5	2-8 IN
Density, Unit:	- -	- -	- -	< 1 FT2	< 1 FT2
Weed 6 Code, Stage:	XANST -	XANST -	XANST -	XANST -	XANST 4-NUM
Stage Scale:	-	-	-	-	2-10 IN
Density, Unit:	- -	- -	- -	- FT2	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

One-pass delayed preemergence, two-pass preemergence followed by postemergence and one-pass postemergence applications in corn, Ames, IA, 2004.

Trial ID: ACC 11

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code										ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	POLPY
Rating Data Type										STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-20-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04
Trt-Eval Interval										70 DA-A	30 DA-A	30 DA-A	30 DA-A	30 DA-A	30 DA-A	30 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									32	0	0	0	0	0	0
2	Outlook Marksman	6 EC 3.2 FL		0.98 LB 1.4 LB	A/A A/A	21.0 FL 3.5 PT	OZ/A A	DPRE DPRE	C C	30	3	99	98	99	99	99
3	Guardsman Max Balance Pro	5 SC 4 SC		2.8 LB 0.047 LB	A/A A/A	4.5 PT 1.5 FL	A/A OZ/A	DPRE DPRE	C C	33	10	99	99	99	99	99
4	Guardsman Max Hornet WDG	5 SC 68.5 WG		2.8 LB 0.103 LB	A/A AE/A	4.5 PT 2.4 OZ	A/A WT/A	DPRE DPRE	C C	32	3	99	99	98	99	99
5	Guardsman Max Atrazine	5 SC 4 SL		2.8 LB 1.0 LB	A/A A/A	4.5 PT 1.0 QT	A/A A	DPRE DPRE	C C	30	3	99	96	99	99	99
6	Outlook Marksman	6 EC 3.2 FL		0.98 LB 1.4 LB	A/A A/A	21.0 FL 3.5 PT	OZ/A A	PRE EPOST	B D	30	0	99	23	99	93	94
7	Outlook Distinct NIS AMS	6 EC 70 WG L DF		0.98 LB 0.175 LB 0.25 % 5.0 LB/100	A/A A/A V/V GAL	21.0 FL 4.0 OZ 0.25 % 5.0 LB/100	OZ/A WT/A V/V GAL	PRE MPOST MPOST MPOST	B E E E	32	0	99	13	99	96	94
8	Guardsman Max Clarity	5 SC 4 SL		2.8 LB 0.5 LB	A/A A/A	4.5 PT 16.0 FL	A/A OZ/A	PRE EPOST	B D	31	0	99	68	99	99	99
9	Guardsman Max Distinct NIS AMS	5 SC 70 WG L DF		2.8 LB 0.175 LB 0.25 % 5.0 LB/100	A/A A/A V/V GAL	4.5 PT 4.0 OZ 0.25 % 5.0 LB/100	A/A WT/A V/V GAL	PRE MPOST MPOST MPOST	B E E E	31	0	99	70	99	99	98
10	Outlook Distinct Prowl H2O NIS AMS	6 EC 70 WG 3.8 EC L DF		0.98 LB 0.175 LB 1.19 LB 0.25 % 5.0 LB/100	A/A A/A A/A V/V GAL	21.0 FL 4.0 OZ 2.5 PT 0.25 % 5.0 LB/100	OZ/A WT/A A V/V GAL	PPI MPOST MPOST MPOST MPOST	A E E E E	31	0	99	25	99	93	90
11	Celebrity Plus Prowl H2O NIS AMS	70 WG 3.8 EC L DF		0.204 LB 1.19 LB 0.25 % 5.0 LB/100	A/A A/A V/V GAL	4.67 OZ 2.5 PT 0.25 % 5.0 LB/100	WT/A A V/V GAL	MPOST MPOST MPOST MPOST	E E E E	31	0	0	0	0	0	0
12	Lightning Callisto COC 28% UAN	70 DG 4 SC L L		0.056 LB 0.047 LB 1.0 % 2.5 %	A/A A/A V/V V/V	1.28 OZ 1.5 FL 1.0 % 2.5 %	WT/A OZ/A V/V V/V	MPOST MPOST MPOST MPOST	E E E E	31	0	0	0	0	0	0
LSD (P=.05)										2.1	2.4	0.0	12.7	1.1	4.2	7.1

Iowa State University

Weed Code										XANST	ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA
Rating Data Type										CONTROL	PHYGEN	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-10-04	06-16-04	06-25-04	07-05-04	07-05-04	07-05-04	07-05-04
Trt-Eval Interval										30 DA-A	7 DA-D	10 DA-E	20 DA-E	20 DA-E	20 DA-E	20 DA-E
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	DPRE DPRE	C C	99	0	0	0	98	72	98
3	Guardsman Max Balance Pro	5 4	SC SC	2.8 0.047	LB A/A LB A/A	4.5 1.5	PT/A FL OZ/A	DPRE DPRE	C C	99	7	7	2	96	87	99
4	Guardsman Max Hornet WDG	5 68.5	SC WG	2.8 0.103	LB A/A LB AE/A	4.5 2.4	PT/A OZ WT/A	DPRE DPRE	C C	99	0	0	0	96	93	96
5	Guardsman Max Atrazine	5 4	SC SL	2.8 1.0	LB A/A LB A/A	4.5 1.0	PT/A QT/A	DPRE DPRE	C C	98	0	0	0	99	73	98
6	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	PRE EPOST	B D	30	10	10	10	99	99	99
7	Outlook Distinct NIS AMS	6 70 L DF	EC WG L DF	0.98 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	21.0 4.0 0.25 5.0	FL OZ/A OZ WT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	B E E E	25	0	7	8	99	93	99
8	Guardsman Max Clarity	5 4	SC SL	2.8 0.5	LB A/A LB A/A	4.5 16.0	PT/A FL OZ/A	PRE EPOST	B D	58	7	10	8	98	98	99
9	Guardsman Max Distinct NIS AMS	5 70 L DF	SC WG L DF	2.8 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.5 4.0 0.25 5.0	PT/A OZ WT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	B E E E	87	0	5	8	99	96	99
10	Outlook Distinct Prowl H2O NIS AMS	6 70 3.8 L DF	EC WG EC L DF	0.98 0.175 1.19 0.25 5.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	21.0 4.0 2.5 0.25 5.0	FL OZ/A OZ WT/A PT/A % V/V LB/100 GAL	PPI MPOST MPOST MPOST MPOST	A E E E E	27	0	8	10	99	96	99
11	Celebrity Plus Prowl H2O NIS AMS	70 3.8 L DF	WG EC L DF	0.204 1.19 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.67 2.5 0.25 5.0	OZ WT/A PT/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	E E E E	0	0	5	5	96	93	95
12	Lightning Callisto COC 28% UAN	70 4 L L	DG SC L L	0.056 0.047 1.0 2.5	LB A/A LB A/A % V/V % V/V	1.28 1.5 1.0 2.5	OZ WT/A FL OZ/A % V/V % V/V	MPOST MPOST MPOST MPOST	E E E E	0	0	2	2	96	99	95
LSD (P=.05)										17.5	2.0	3.4	4.8	2.8	14.1	3.1

Iowa State University

Weed Code										CHEAL	POLPY	XANST	ZEAMD	SETFA	ABUTH	AMATA
Rating Data Type										CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-05-04	07-05-04	07-05-04	08-06-04	08-06-04	08-06-04	08-06-04
Trt-Eval Interval										20 DA-E	20 DA-E	20 DA-E	52 DA-E	52 DA-E	52 DA-E	52 DA-E
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Outlook Marksman	6 EC 3.2 FL		0.98 LB 1.4 LB	A/A A/A	21.0 FL 3.5 PT	OZ/A A	DPRE DPRE	C C	99	98	98	0	98	70	98
3	Guardsman Max Balance Pro	5 SC 4 SC		2.8 LB 0.047 LB	A/A A/A	4.5 PT 1.5 FL	A OZ/A	DPRE DPRE	C C	99	96	99	2	96	83	99
4	Guardsman Max Hornet WDG	5 SC 68.5 WG		2.8 LB 0.103 LB	A/A AE/A	4.5 PT 2.4 OZ	A WT/A	DPRE DPRE	C C	99	98	99	0	96	93	95
5	Guardsman Max Atrazine	5 SC 4 SL		2.8 LB 1.0 LB	A/A A/A	4.5 PT 1.0 QT	A A	DPRE DPRE	C C	98	99	98	0	98	77	99
6	Outlook Marksman	6 EC 3.2 FL		0.98 LB 1.4 LB	A/A A/A	21.0 FL 3.5 PT	OZ/A A	PRE EPOST	B D	99	99	99	10	99	99	99
7	Outlook Distinct NIS AMS	6 EC 70 WG L DF		0.98 LB 0.175 LB 0.25 % 5.0 LB/100	A/A A/A V/V GAL	21.0 FL 4.0 OZ 0.25 % 5.0 LB/100	OZ/A WT/A V/V GAL	PRE MPOST MPOST MPOST	B E E E	99	99	99	10	99	99	99
8	Guardsman Max Clarity	5 SC 4 SL		2.8 LB 0.5 LB	A/A A/A	4.5 PT 16.0 FL	A OZ/A	PRE EPOST	B D	99	99	99	7	98	98	99
9	Guardsman Max Distinct NIS AMS	5 SC 70 WG L DF		2.8 LB 0.175 LB 0.25 % 5.0 LB/100	A/A A/A V/V GAL	4.5 PT 4.0 OZ 0.25 % 5.0 LB/100	A WT/A V/V GAL	PRE MPOST MPOST MPOST	B E E E	99	99	99	7	99	99	99
10	Outlook Distinct Prowl H2O NIS AMS	6 EC 70 WG 3.8 EC L DF		0.98 LB 0.175 LB 1.19 LB 0.25 % 5.0 LB/100	A/A A/A A/A V/V GAL	21.0 FL 4.0 OZ 2.5 PT 0.25 % 5.0 LB/100	OZ/A WT/A A V/V GAL	PPI MPOST MPOST MPOST MPOST	A E E E E	98	99	99	13	99	99	99
11	Celebrity Plus Prowl H2O NIS AMS	70 WG 3.8 EC L DF		0.204 LB 1.19 LB 0.25 % 5.0 LB/100	A/A A/A V/V GAL	4.67 OZ 2.5 PT 0.25 % 5.0 LB/100	WT/A A V/V GAL	MPOST MPOST MPOST MPOST	E E E E	98	99	99	5	98	99	99
12	Lightning Callisto COC 28% UAN	70 DG 4 SC L L		0.056 LB 0.047 LB 1.0 % 2.5 %	A/A A/A V/V V/V	1.28 OZ 1.5 FL 1.0 % 2.5 %	WT/A OZ/A V/V V/V	MPOST MPOST MPOST MPOST	E E E E	98	98	99	0	99	99	98
LSD (P=.05)										2.2	3.1	1.6	6.7	2.7	13.7	1.6

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									CHEAL CONTROL PERCENT 08-06-04 52 DA-E	POLPY CONTROL PERCENT 08-06-04 52 DA-E	XANST CONTROL PERCENT 08-06-04 52 DA-E	SETFA CONTROL PERCENT 09-20-04 97 DA-E	ABUTH CONTROL PERCENT 09-20-04 97 DA-E	AMATA CONTROL PERCENT 09-20-04 97 DA-E	CHEAL CONTROL PERCENT 09-20-04 97 DA-E	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	DPRE DPRE	C C	99	98	98	95	70	98	
3	Guardsman Max Balance Pro	5 4	SC SC	2.8 0.047	LB A/A LB A/A	4.5 1.5	PT/A FL OZ/A	DPRE DPRE	C C	98	91	99	95	83	96	
4	Guardsman Max Hornet WDG	5 68.5	SC WG	2.8 0.103	LB A/A LB AE/A	4.5 2.4	PT/A OZ WT/A	DPRE DPRE	C C	99	95	98	95	93	95	
5	Guardsman Max Atrazine	5 4	SC SL	2.8 1.0	LB A/A LB A/A	4.5 1.0	PT/A QT/A	DPRE DPRE	C C	98	98	98	98	77	99	
6	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	PRE EPOST	B D	99	99	99	99	99	99	
7	Outlook Distinct NIS AMS	6 70 L DF	EC WG L DF	0.98 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	21.0 4.0 0.25 5.0	FL OZ/A OZ WT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	B E E E	99	99	99	99	99	99	
8	Guardsman Max Clarity	5 4	SC SL	2.8 0.5	LB A/A LB A/A	4.5 16.0	PT/A FL OZ/A	PRE EPOST	B D	99	99	99	96	98	99	
9	Guardsman Max Distinct NIS AMS	5 70 L DF	SC WG L DF	2.8 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.5 4.0 0.25 5.0	PT/A OZ WT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	B E E E	99	99	99	99	99	98	
10	Outlook Distinct Prowl H2O NIS AMS	6 70 3.8 L DF	EC WG EC L DF	0.98 0.175 1.19 0.25 5.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	21.0 4.0 2.5 0.25 5.0	FL OZ/A OZ WT/A PT/A % V/V LB/100 GAL	PPI MPOST MPOST MPOST MPOST	A E E E E	99	99	99	99	99	98	
11	Celebrity Plus Prowl H2O NIS AMS	70 3.8 L DF	WG EC L DF	0.204 1.19 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.67 2.5 0.25 5.0	OZ WT/A PT/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	E E E E	99	99	99	99	99	99	
12	Lightning Callisto COC 28% UAN	70 4 L L	DG SC L L	0.056 0.047 1.0 2.5	LB A/A LB A/A % V/V % V/V	1.28 1.5 1.0 2.5	OZ WT/A FL OZ/A % V/V % V/V	MPOST MPOST MPOST MPOST	E E E E	99	99	99	99	99	99	
LSD (P=.05)										1.5	3.7	2.0	1.6	13.7	1.8	2.3

Iowa State University

Weed Code										POLPY	XANS
Rating Data Type										CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT
Rating Date										09-20-04	09-20-04
Trt-Eval Interval										97 DA-E	97 DA-E
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated									0	0
2	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	DPRE	C	98	98
	Marksman	3.2	FL	1.4	LB A/A	3.5	PT/A	DPRE	C		
3	Guardsman Max	5	SC	2.8	LB A/A	4.5	PT/A	DPRE	C	93	99
	Balance Pro	4	SC	0.047	LB A/A	1.5	FL OZ/A	DPRE	C		
4	Guardsman Max	5	SC	2.8	LB A/A	4.5	PT/A	DPRE	C	95	99
	Hornet WDG	68.5	WG	0.103	LB AE/A	2.4	OZ WT/A	DPRE	C		
5	Guardsman Max	5	SC	2.8	LB A/A	4.5	PT/A	DPRE	C	96	98
	Atrazine	4	SL	1.0	LB A/A	1.0	QT/A	DPRE	C		
6	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	B	99	99
	Marksman	3.2	FL	1.4	LB A/A	3.5	PT/A	EPOST	D		
7	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	B	99	99
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	MPOST	E		
	NIS	L		0.25	% V/V	0.25	% V/V	MPOST	E		
	AMS	DF		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	E		
8	Guardsman Max	5	SC	2.8	LB A/A	4.5	PT/A	PRE	B	98	99
	Clarity	4	SL	0.5	LB A/A	16.0	FL OZ/A	EPOST	D		
9	Guardsman Max	5	SC	2.8	LB A/A	4.5	PT/A	PRE	B	99	99
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	MPOST	E		
	NIS	L		0.25	% V/V	0.25	% V/V	MPOST	E		
	AMS	DF		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	E		
10	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PPI	A	99	99
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	MPOST	E		
	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	MPOST	E		
	NIS	L		0.25	% V/V	0.25	% V/V	MPOST	E		
	AMS	DF		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	E		
11	Celebrity Plus	70	WG	0.204	LB A/A	4.67	OZ WT/A	MPOST	E	99	99
	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	MPOST	E		
	NIS	L		0.25	% V/V	0.25	% V/V	MPOST	E		
	AMS	DF		5.0	LB/100 GAL	5.0	LB/100 GAL	MPOST	E		
12	Lightning	70	DG	0.056	LB A/A	1.28	OZ WT/A	MPOST	E	99	99
	Callisto	4	SC	0.047	LB A/A	1.5	FL OZ/A	MPOST	E		
	COC	L		1.0	% V/V	1.0	% V/V	MPOST	E		
	28% UAN	L		2.5	% V/V	2.5	% V/V	MPOST	E		
LSD (P=.05)										3.9	1.6

Iowa State University

Two-pass corn herbicide programs utilizing Bicep II Magnum, Guardsman Max, Callisto, Hornet, Steadfast, Equip, and Roundup WeatherMax, Ames, IA, 2004.
 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:** 05-17-04
Country: USA

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

Objective: The purpose of this study was to evaluate various two-pass corn herbicide programs for crop phytotoxicity and weed control in corn. Preemergence herbicides included Bicep II Magnum, Guardsman Max, Keystone, Cinch ATZ, Balance Pro, Atrazine, and Harness Xtra. Preemergence herbicides were followed by various postemergence applications of Callisto, Atrazine, Distinct, Steadfast ATZ, Equip, Roundup WeatherMAX or others.

Conclusions: No significant differences in corn stand between treatments were observed on July 22. Preemergence (PRE) treatments did not result in corn injury when observed on June 2 and 15, and before postemergence (POST) applications were made. Giant foxtail control was good to excellent with PRE treatments on June 15, except with Balance Pro plus Atrazine and the reduced rate of Cinch ATZ. Velvetleaf control with PRE treatments was poor to good with the best control provided by Lexar and Balance Pro plus Atrazine. In general, good to excellent common waterhemp, common lambsquarters and Pennsylvania smartweed control was provided on June 15 by the PRE treatments. Most PRE treatments provided only poor to fair common cocklebur control.

Significant corn injury following POST applications was observed on June 24 and July 5, nine and twenty days after application, respectively. Serious injury from Equip persisted and was observed on July 27 as well. On July 5, twenty days following POST applications, good to excellent control of all species was observed. Control with the treatments remained good to excellent when observed on the remaining observation dates of July 27 and August 30. POST Equip was an exception and provided fair to good giant foxtail control. Most corn yields were not significantly different between herbicide treatments; however, all 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 PENNSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD **Variety:** DEKALB DKC53-34
Planting Date: 05-17-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: SLIGHTLY WET

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 **Texture:** CLAY LOAM
pH: 7.1 **Soil Name:** CLARION, WEBSTER, CANISTEO
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-17-04	06-15-04	06-29-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST	DPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	65 F	80 F	73 F
% Relative Humidity:	78	57	40
Wind Velocity, Unit:	5 MPH	2 MPH	3 MPH
Soil Temp., Unit:	64 F	75 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	10	30	25

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 6	ZEAMD V 7
Stage Scale:	-	DESC	DESC
Height, Unit:	-	13 IN	36 IN

WEED STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Two-pass corn herbicide programs utilizing Bicep II Magnum, Guardsman Max, Callisto, Hornet, Steadfast, Equip, and Roundup WeatherMax, Ames, IA, 2004.

Trial ID: ACC 12 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									17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-22-04	06-02-04	06-15-04	06-15-04	06-15-04	06-15-04	
Trt-Eval Interval									66 DA-A	16 DA-A	0 DA-B	0 DA-B	0 DA-B	0 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									31	0	0	0	0	0
2	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	31	0	0	98	95	98
3	Bicep II Magnum	5.5	SC	3.57	LB A/A	2.6	QT/A	PRE	A	31	0	0	95	80	98
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	Atrazine	4	SL	0.5	LB A/A	0.5	QT/A	POST	B						
	COC	L		1.0	% V/V	1.0	% V/V	POST	B						
28% UAN	L		2.5	% V/V	2.5	% V/V	POST	B							
4	Guardsman Max	5	SC	2.88	LB A/A	2.3	QT/A	PRE	A	28	0	0	96	78	98
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	POST	B						
	NIS	L		0.125	% V/V	0.125	% V/V	POST	B						
	28% UAN	L		2.5	% V/V	2.5	% V/V	POST	B						
5	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	32	0	0	93	82	98
	Hornet WDG	68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	POST	B						
	NIS	L		0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN	L		2.5	% V/V	2.5	% V/V	POST	B						
6	Cinch ATZ	5.5	SL	1.03	LB A/A	0.75	QT/A	PRE	A	30	0	0	77	40	83
	Steadfast ATZ	89.3	WG	0.78	LB A/A	14.0	OZ WT/A	POST	B						
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	COC	L		1.0	% V/V	1.0	% V/V	POST	B						
28% UAN	L		2.5	% V/V	2.5	% V/V	POST	B							
7	Balance Pro	4	SC	0.07	LB A/A	2.25	FL OZ/A	PRE	A	31	0	0	83	92	91
	Atrazine	4	SL	1	LB A/A	1.0	QT/A	PRE	A						
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	POST	B						
	MSO	L		1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN	L		2.5	% V/V	2.5	% V/V	POST	B						
8	Harness Xtra	5.6	EC	1.4	LB A/A	1.0	QT/A	PRE	A	31	0	0	90	42	88
	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B						
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
9	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B	31	0	0	0	0	0
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	0.5	QT/A	DPOST	C						
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	DPOST	C						
10	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	29	0	0	95	75	98
	Northstar	47.4	WG	0.148	LB A/A	5.0	OZ WT/A	POST	B						
	NIS	L		0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN	L		2.5	% V/V	2.5	% V/V	POST	B						
LSD (P=.05)										3.6	0.0	0.0	6.5	10.4	4.9

Iowa State University

Weed Code										CHEAL	POLPY	XANST	ZEAMD	ZEAMD	SETFA
Rating Data Type										CONTROL	CONTROL	CONTROL	PHYGEN	PHYGEN	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-15-04	06-15-04	06-15-04	06-24-04	07-05-04	07-05-04
Trt-Eval Interval										0 DA-B	0 DA-B	0 DA-B	9 DA-B	20 DA-B	20 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	99	99	93	0	0	95
3	Bicep II Magnum	5.5	SC	3.57	LB A/A	2.6	QT/A	PRE	A	99	99	78	5	5	99
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	Atrazine	4	SL	0.5	LB A/A	0.5	QT/A	POST	B						
	COC		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
4	Guardsman Max	5	SC	2.88	LB A/A	2.3	QT/A	PRE	A	99	99	77	8	12	99
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	POST	B						
	NIS		L	0.125	% V/V	0.125	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
5	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	99	99	85	10	2	95
	Hornet WDG	68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	POST	B						
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
6	Cinch ATZ	5.5	SL	1.03	LB A/A	0.75	QT/A	PRE	A	95	96	47	13	2	99
	Steadfast ATZ	89.3	WG	0.78	LB A/A	14.0	OZ WT/A	POST	B						
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	COC		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
7	Balance Pro	4	SC	0.07	LB A/A	2.25	FL OZ/A	PRE	A	99	99	85	35	22	88
	Atrazine	4	SL	1	LB A/A	1.0	QT/A	PRE	A						
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	POST	B						
	MSO		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
8	Harness Xtra	5.6	EC	1.4	LB A/A	1.0	QT/A	PRE	A	95	95	52	0	0	99
	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B						
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
9	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B	0	0	0	0	0	99
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	0.5	QT/A	DPOST	C						
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	DPOST	C						
10	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	99	99	77	3	0	95
	Northstar	47.4	WG	0.148	LB A/A	5.0	OZ WT/A	POST	B						
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
LSD (P=.05)										3.3	2.6	11.2	2.7	3.0	3.8

Iowa State University

Weed Code										ABUTH	AMATA	CHEAL	POLPY	XANST	ZEAMD
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-05-04	07-05-04	07-05-04	07-05-04	07-05-04	07-27-04
Trt-Eval Interval										20 DA-B	20 DA-B	20 DA-B	20 DA-B	20 DA-B	42 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	95	96	99	99	90	0
3	Bicep II Magnum	5.5	SC	3.57	LB A/A	2.6	QT/A	PRE	A	99	99	99	99	99	2
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	Atrazine	4	SL	0.5	LB A/A	0.5	QT/A	POST	B						
	COC		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
4	Guardsman Max	5	SC	2.88	LB A/A	2.3	QT/A	PRE	A	99	99	99	99	99	5
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	POST	B						
	NIS		L	0.125	% V/V	0.125	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
5	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	99	99	99	99	98	0
	Hornet WDG	68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	POST	B						
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
6	Cinch ATZ	5.5	SL	1.03	LB A/A	0.75	QT/A	PRE	A	99	99	99	99	99	0
	Steadfast ATZ	89.3	WG	0.78	LB A/A	14.0	OZ WT/A	POST	B						
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	COC		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
7	Balance Pro	4	SC	0.07	LB A/A	2.25	FL OZ/A	PRE	A	99	99	99	99	99	17
	Atrazine	4	SL	1	LB A/A	1.0	QT/A	PRE	A						
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	POST	B						
	MSO		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
8	Harness Xtra	5.6	EC	1.4	LB A/A	1.0	QT/A	PRE	A	99	99	99	99	99	0
	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B						
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
9	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B	99	99	99	99	99	2
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	0.5	QT/A	DPOST	C						
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	DPOST	C						
10	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	98	99	99	99	99	0
	Northstar	47.4	WG	0.148	LB A/A	5.0	OZ WT/A	POST	B						
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
LSD (P=.05)										1.3	1.3	0.0	0.0	1.3	2.7

Iowa State University

Weed Code										SETFA	ABUTH	AMATA	CHEAL	POLPY	XANST
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-27-04	07-27-04	07-27-04	07-27-04	07-27-04	07-27-04
Trt-Eval Interval										42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	92	95	93	99	99	90
3	Bicep II Magnum	5.5	SC	3.57	LB A/A	2.6	QT/A	PRE	A	99	99	99	99	99	99
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	Atrazine	4	SL	0.5	LB A/A	0.5	QT/A	POST	B						
	COC		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
4	Guardsman Max	5	SC	2.88	LB A/A	2.3	QT/A	PRE	A	99	99	99	99	99	99
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	POST	B						
	NIS		L	0.125	% V/V	0.125	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
5	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	95	99	99	99	99	98
	Hornet WDG	68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	POST	B						
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
6	Cinch ATZ	5.5	SL	1.03	LB A/A	0.75	QT/A	PRE	A	99	99	99	99	99	99
	Steadfast ATZ	89.3	WG	0.78	LB A/A	14.0	OZ WT/A	POST	B						
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	COC		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
7	Balance Pro	4	SC	0.07	LB A/A	2.25	FL OZ/A	PRE	A	83	99	98	99	99	99
	Atrazine	4	SL	1	LB A/A	1.0	QT/A	PRE	A						
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	POST	B						
	MSO		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
8	Harness Xtra	5.6	EC	1.4	LB A/A	1.0	QT/A	PRE	A	99	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B						
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
9	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B	99	99	99	99	99	99
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	0.5	QT/A	DPOST	C						
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	DPOST	C						
10	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	95	98	99	99	99	99
	Northstar	47.4	WG	0.148	LB A/A	5.0	OZ WT/A	POST	B						
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
LSD (P=.05)										4.2	1.3	1.9	0.0	0.0	1.3

Iowa State University

Weed Code										SETFA	ABUTH	AMATA	CHEAL	POLPY	XANST
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-30-04	08-30-04	08-30-04	08-30-04	08-30-04	08-30-04
Trt-Eval Interval										62 DA-C	62 DA-C	62 DA-C	62 DA-C	62 DA-C	62 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	90	95	93	98	99	88
3	Bicep II Magnum	5.5	SC	3.57	LB A/A	2.6	QT/A	PRE	A	99	99	99	99	99	99
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	Atrazine	4	SL	0.5	LB A/A	0.5	QT/A	POST	B						
	COC		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
4	Guardsman Max	5	SC	2.88	LB A/A	2.3	QT/A	PRE	A	98	99	99	98	99	99
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	POST	B						
	NIS		L	0.125	% V/V	0.125	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
5	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	93	99	98	99	99	98
	Hornet WDG	68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	POST	B						
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
6	Cinch ATZ	5.5	SL	1.03	LB A/A	0.75	QT/A	PRE	A	99	99	99	99	99	99
	Steadfast ATZ	89.3	WG	0.78	LB A/A	14.0	OZ WT/A	POST	B						
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B						
	COC		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
7	Balance Pro	4	SC	0.07	LB A/A	2.25	FL OZ/A	PRE	A	83	99	98	99	99	99
	Atrazine	4	SL	1	LB A/A	1.0	QT/A	PRE	A						
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	POST	B						
	MSO		L	1.0	% V/V	1.0	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
8	Harness Xtra	5.6	EC	1.4	LB A/A	1.0	QT/A	PRE	A	99	99	99	98	99	99
	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B						
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
9	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B	99	99	99	99	99	99
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	0.5	QT/A	DPOST	C						
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	DPOST	C						
10	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	95	98	98	99	99	99
	Northstar	47.4	WG	0.148	LB A/A	5.0	OZ WT/A	POST	B						
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B						
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B						
LSD (P=.05)										4.5	1.3	2.7	1.9	0.0	2.1

Iowa State University

Weed Code									ZEAMD	
Rating Data Type									YIELD	
Rating Unit									BU/A	
Rating Date									10-05-04	
Trt-Eval Interval									141 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated									180
2	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	220
3	Bicep II Magnum	5.5	SC	3.57	LB A/A	2.6	QT/A	PRE	A	253
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B	
	Atrazine	4	SL	0.5	LB A/A	0.5	QT/A	POST	B	
	COC		L	1.0	% V/V	1.0	% V/V	POST	B	
4	Guardsman Max	5	SC	2.88	LB A/A	2.3	QT/A	PRE	A	232
	Distinct	70	WG	0.175	LB A/A	4.0	OZ WT/A	POST	B	
	NIS		L	0.125	% V/V	0.125	% V/V	POST	B	
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B	
5	Keystone	5.25	SE	4.2	LB A/A	3.2	QT/A	PRE	A	253
	Hornet WDG	68.5	WG	0.128	LB AE/A	3.0	OZ WT/A	POST	B	
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B	
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B	
6	Cinch ATZ	5.5	SL	1.03	LB A/A	0.75	QT/A	PRE	A	229
	Steadfast ATZ	89.3	WG	0.78	LB A/A	14.0	OZ WT/A	POST	B	
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST	B	
	COC		L	1.0	% V/V	1.0	% V/V	POST	B	
7	Balance Pro	4	SC	0.07	LB A/A	2.25	FL OZ/A	PRE	A	232
	Atrazine	4	SL	1	LB A/A	1.0	QT/A	PRE	A	
	Equip	32	WG	0.03	LB A/A	1.5	OZ WT/A	POST	B	
	MISO		L	1.0	% V/V	1.0	% V/V	POST	B	
8	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B	
	Harness Xtra	5.6	EC	1.4	LB A/A	1.0	QT/A	PRE	A	267
	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B	
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B	
9	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	0.665	QT/A	POST	B	
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B	
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	0.5	QT/A	DPOST	C	
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	DPOST	C	
10	Bicep II Magnum	5.5	SC	3.58	LB A/A	2.6	QT/A	PRE	A	243
	Northstar	47.4	WG	0.148	LB A/A	5.0	OZ WT/A	POST	B	
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B	
	28% UAN		L	2.5	% V/V	2.5	% V/V	POST	B	
LSD (P=.05)									36.5	

Iowa State University

Postemergence applications of Liberty, Option, Equip and Steadfast alone or with various tank-mix partners for weed control in corn, Ames, IA, 2004.

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: 5001

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: 05-11-04

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 Option and Equip alone and with tank-mix partners for crop phytotoxicity and weed control in corn.

Conclusions: Corn stands were consistent, and no significant differences between treatments were observed on July 22. Preemergence (PRE) treatments of Balance Pro did not result in corn injury when observed June 1 and 15, prior to mid-postemergence (MPOST) applications. Foxtail species present in the study area were predominantly yellow foxtail followed by giant foxtail. PRE treatments provided 77 to 83% yellow foxtail, 82 to 88% velvetleaf, 95% common waterhemp, 98 to 99% common lambsquarters, 62 to 70% Pennsylvania smartweed, and 37 to 42% common cocklebur control when observed on June 15.

Corn injury was observed from MPOST treatments on June 24 and July 6, nine and twenty-one days after application, respectively. Injury on June 15 ranged from 0% with Callisto plus Atrazine to 17% with Option (1.5 fl oz/A). Yellow foxtail control improved following MPOST treatments and ranged from 92 to 99% when observed on July 6. An exception was Callisto plus Atrazine which afforded 82% yellow foxtail control. Few significant differences in yellow foxtail control between the treatments were observed. Velvetleaf, common waterhemp, common lambsquarters, Pennsylvania smartweed, and common cocklebur control on July 6 also improved following MPOST treatments. Overall control ranged from 88 to 99%.

On July 27, yellow foxtail control remained good to excellent with the treatments, except MPOST Callisto plus Atrazine. Broadleaf weed control overall also remained good to excellent on July 27. (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.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD Variety: PIONEER 33R79

Planting Date: 05-11-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 Texture: CLAY LOAM

pH: 7.1 Soil Name: CLARION, WEBSTER, CANISTEO

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	05-12-04	06-15-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	MPOST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	65 F	78 F
% Relative Humidity:	83	62
Wind Velocity, Unit:	5 MPH	2 MPH
Soil Temp., Unit:	66 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	80	30

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 5 - V 6
Stage Scale:	-	DESC
Height, Unit:	-	13 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETLU -	SETLU 1-4 L, 3T
Stage Scale:	-	0.5-5 IN
Density, Unit:	- -	0-25 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-5 L
Stage Scale:	-	0.5-2 IN
Density, Unit:	- -	< 1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-NUM
Stage Scale:	-	0.5-2 IN
Density, Unit:	- -	< 1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL COTYL-NUM
Stage Scale:	-	0.5-1 IN
Density, Unit:	- -	< 1 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-8 LEAF
Stage Scale:	-	0.5-4 IN
Density, Unit:	- -	< 1 FT2
Weed 6 Code, Stage:	XANST -	XANST 2-NUM
Stage Scale:	-	1-8 IN
Density, Unit:	- -	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Postemergence applications of Liberty, Option, Equip and Steadfast alone or with various tank-mix partners for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 13

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code									ZEAMD	ZEAMD	ZEAMD	SETLU	ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type									STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-22-04	06-01-04	06-15-04	06-15-04	06-15-04	06-15-04	06-15-04	06-15-04	
Trt-Eval Interval									71 DA-A	20 DA-A	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code								
1	Untreated									28	0	0	0	0	0	0	0
2	Balance Pro Liberty Atrazine AMS	4 1.67 4	SC SL SL	0.047 0.42 1.0	LB A/A LB A/A LB A/A	1.5 32.0 2.0	FL OZ/A FL OZ/A PT/A	PRE MPOST MPOST	A B B	30	0	0	83	88	95	98	68
3	Balance Pro Option MSO AMS	4 35	SC WG	0.047 0.0328	LB A/A LB A/A	1.5 1.5	FL OZ/A OZ WT/A	PRE MPOST MPOST	A B B	30	0	0	80	82	95	99	62
4	Balance Pro Equip MSO AMS	4 32	SC WG	0.047 0.03	LB A/A LB A/A	1.5 1.5	FL OZ/A OZ WT/A	PRE MPOST MPOST	A B B	31	0	0	85	85	95	99	70
5	Balance Pro Option MSO AMS	4 35	SC WG	0.047 0.0383	LB A/A LB A/A	1.5 1.75	FL OZ/A OZ WT/A	PRE MPOST MPOST	A B B	30	0	0	80	85	95	99	70
6	Balance Pro Steadfast COC AMS	4 75	SC WG	0.047 0.0352	LB A/A LB A/A	1.5 0.75	FL OZ/A OZ WT/A	PRE MPOST MPOST	A B B	29	0	0	78	85	95	98	70
7	Balance Pro Option Callisto Atrazine MSO AMS	4 35 4	SC WG SC	0.047 0.0328 0.0625	LB A/A LB A/A LB A/A	1.5 1.5 2.0	FL OZ/A OZ WT/A FL OZ/A	PRE MPOST MPOST	A B B	31	0	0	77	83	95	99	68
8	Balance Pro Equip Callisto Atrazine MSO AMS	4 32 4	SC WG SC SL	0.047 0.03 0.0625 0.25	LB A/A LB A/A LB A/A LB A/A	1.5 1.5 2.0 0.5	FL OZ/A OZ WT/A FL OZ/A PT/A	PRE MPOST MPOST	A B B B	29	0	0	80	87	95	99	68
9	Balance Pro Steadfast Callisto Atrazine COC AMS	4 75 4 4	SC WG SC SL	0.047 0.0352 0.0625 0.25	LB A/A LB A/A LB A/A LB A/A	1.5 0.75 2.0 0.5	FL OZ/A OZ WT/A FL OZ/A PT/A	PRE MPOST MPOST	A B B B	30	0	0	82	83	95	96	63
10	Balance Pro Callisto Atrazine COC 28% UAN	4 4 4	SC SC SL	0.047 0.0625 0.25	LB A/A LB A/A LB A/A	1.5 2.0 0.5	FL OZ/A FL OZ/A PT/A	PRE MPOST MPOST	A B B	30	0	0	80	87	95	99	68
LSD (P=.05)										3.9	0.0	0.0	8.1	10.3	0.0	2.2	6.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										XANST CONTROL PERCENT 06-15-04 0 DA-B	ZEAMD PHYGEN PERCENT 06-24-04 9 DA-B	ZEAMD PHYGEN PERCENT 07-06-04 21 DA-B	SETLU CONTROL PERCENT 07-06-04 21 DA-B	ABUTH CONTROL PERCENT 07-06-04 21 DA-B	AMATA CONTROL PERCENT 07-06-04 21 DA-B	CHEAL CONTROL PERCENT 07-06-04 21 DA-B	POLPY CONTROL PERCENT 07-06-04 21 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	Balance Pro Liberty	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	42	2	3	99	99	99	99	99
	Atrazine	1.67	SL	0.42	LB A/A	32.0	FL OZ/A	MPOST	B								
	AMS	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	B								
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	B								
3	Balance Pro Option	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	37	17	10	93	98	95	99	88
	MSO	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	B								
	AMS		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
4	Balance Pro Equip	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	40	15	10	93	99	96	99	93
	MSO	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	B								
	AMS		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
5	Balance Pro Option	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	37	12	7	96	98	95	99	93
	MSO	35	WG	0.0383	LB A/A	1.75	OZ WT/A	MPOST	B								
	AMS		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
6	Balance Pro Steadfast	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	40	10	5	99	99	96	98	95
	COC	75	WG	0.0352	LB A/A	0.75	OZ WT/A	MPOST	B								
	AMS		L	1.0	QT/A	1.0	QT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
7	Balance Pro Option	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	37	12	5	92	99	99	99	99
	Callisto	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	B								
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	B								
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
8	Balance Pro Equip	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	40	13	10	96	99	99	99	99
	Callisto	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	B								
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	B								
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
9	Balance Pro Steadfast	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	40	13	8	95	99	99	99	99
	Callisto	75	WG	0.0352	LB A/A	0.75	OZ WT/A	MPOST	B								
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	B								
	COC		L	1.0	QT/A	1.0	QT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
10	Balance Pro Callisto	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	38	0	0	82	99	99	99	99
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	B								
	COC		L	1.0	% V/V	1.0	% V/V	MPOST	B								
	28% UAN		L	2.5	% V/V	2.5	% V/V	MPOST	B								
LSD (P=.05)										6.1	6.2	5.6	6.2	1.8	1.8	1.3	2.9

Iowa State University

Weed Code										XANST	ZEAMD	SETLU	ABUTH	AMATA	CHEAL	POLPY	XANST
Rating Data Type										CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-06-04	07-27-04	07-27-04	07-27-04	07-27-04	07-27-04	07-27-04	07-27-04
Trt-Eval Interval										21 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	Balance Pro Liberty	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	0	99	99	99	99	99	99
	Atrazine	4	SL	1.0	LB A/A	2.0	PT/A	MPOST	B								
	AMS		DF	3.0	LB/A	3.0	LB/A	MPOST	B								
3	Balance Pro Option	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	98	3	95	99	95	99	88	99
	MSO	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	B								
	AMS		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
4	Balance Pro Equip	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	7	96	99	96	99	93	99
	MSO	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	B								
	AMS		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
5	Balance Pro Option	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	93	2	96	99	95	98	92	96
	MSO	35	WG	0.0383	LB A/A	1.75	OZ WT/A	MPOST	B								
	AMS		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
6	Balance Pro Steadfast	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	96	0	99	98	95	98	95	96
	COC	75	WG	0.0352	LB A/A	0.75	OZ WT/A	MPOST	B								
	AMS		L	1.0	QT/A	1.0	QT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
7	Balance Pro Option	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	5	92	99	99	99	99	99
	Callisto	35	WG	0.0328	LB A/A	1.5	OZ WT/A	MPOST	B								
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	B								
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
8	Balance Pro Equip	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	7	98	99	99	99	99	99
	Callisto	32	WG	0.03	LB A/A	1.5	OZ WT/A	MPOST	B								
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	B								
	MSO		L	1.5	PT/A	1.5	PT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
9	Balance Pro Steadfast	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	5	98	99	99	99	99	99
	Callisto	75	WG	0.0352	LB A/A	0.75	OZ WT/A	MPOST	B								
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	B								
	COC		L	1.0	QT/A	1.0	QT/A	MPOST	B								
	AMS		DF	1.5	LB/A	1.5	LB/A	MPOST	B								
10	Balance Pro Callisto	4	SC	0.047	LB A/A	1.5	FL OZ/A	PRE	A	99	0	80	99	99	99	99	99
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	MPOST	B								
	COC		L	1.0	% V/V	1.0	% V/V	MPOST	B								
	28% UAN		L	2.5	% V/V	2.5	% V/V	MPOST	B								
LSD (P=.05)										2.4	5.9	6.8	1.3	1.3	1.7	2.8	1.8

Iowa State University

Preemergence applied Dual II Magnum, MANA-282, MANA-283, and Bicep II Magnum and postemergence Roundup WeatherMAX in corn, Ames, IA, 2004.

Trial ID: ACC 14

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: 05-17-04

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate corn phytotoxicity and weed control with MANA-282 and MANA-283 applied preemergence alone and followed by postemergence applied Roundup WeatherMAX. Treatments were compared to standards including Dual II Magnum and Bicep II Magnum.

Conclusions: No significant differences in corn stand between treatments were observed on July 22. No corn injury was observed from the treatments on any of the observation dates. Giant foxtail control was excellent with the preemergence (PRE) treatments when observed on June 7, twenty-one days after application. Few significant differences were determined between treatments. Velvetleaf control on June 7 ranged from poor to good. Control was best with the highest rates of MANA-283 and Bicep II Magnum. Good to excellent common waterhemp and common lambsquarters control was observed on June 7 with the treatments. Poor to excellent Pennsylvania smartweed control was observed on June 7. The highest rates of Dual II Magnum and MANA-282 gave the best control as well as all MANA-283 and Bicep II Magnum treatments.

Giant foxtail control generally continued to be good to excellent when observed on July 2, forty-nine days after PRE applications and seventeen days after postemergence (POST) applications. The POST application of Roundup WeatherMAX following PRE applications improved velvetleaf control to excellent on July 2. Common waterhemp, common lambsquarters and Pennsylvania smartweed control were all excellent on July 2 with treatments that included POST applications of Roundup WeatherMAX. Control of these weeds with PRE only treatments of Dual II Magnum and MANA-282 demonstrated a rate response. However, overall control was considered acceptable.

Control of giant foxtail, velvetleaf, common waterhemp, common lambsquarters and Pennsylvania smartweed on July 21 and August 30 reflected the trends established on earlier observation dates. In general, treatments that included a POST application of Roundup WeatherMAX provided excellent overall control. On July 21 and August 30, several Dual II Magnum and MAN-282 treatments, however, no longer provided adequate common lambsquarters and Pennsylvania smartweed 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.

Crop 1: ZEAMD CORN, FIELD Variety: DEKALB DKC53-34

Planting Date: 05-17-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: SLIGHTLY WET

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 Texture: CLAY LOAM

pH: 7.1 Soil Name: CLARION, WEBSTER, CANISTEO

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	05-17-04	06-15-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	65 F	71 F
% Relative Humidity:	78	82
Wind Velocity, Unit:	5 MPH	3 MPH
Soil Temp., Unit:	64 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	10	100

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 6
Stage Scale:	-	DESC
Height, Unit:	-	14 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 2T
Stage Scale:	-	0.5-3 IN
Density, Unit:	- -	0-1 FT ²
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-8 L
Stage Scale:	-	0.5-6 IN
Density, Unit:	- -	0-2 FT ²
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-NUM
Stage Scale:	-	0.5-3 IN
Density, Unit:	- -	< 1 FT ²
Weed 4 Code, Stage:	CHEAL -	CHEAL NUM
Stage Scale:	-	0.3-3 IN
Density, Unit:	- -	< 1 FT ²
Weed 5 Code, Stage:	POLPY -	POLPY 2-6 LEAF
Stage Scale:	-	1-3 IN
Density, Unit:	- -	< 1 FT ²

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied Dual II Magnum, MANA-282, MANA-283, and Bicep II Magnum and postemergence Roundup WeatherMAX in corn, Ames, IA, 2004.

Trial ID: ACC 14

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code									ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	POLPY
Rating Data Type									STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit									17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date									07-22-04	06-07-04	06-07-04	06-07-04	06-07-04	06-07-04	06-07-04
Trt-Eval Interval									66 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated								29	0	0	0	0	0	0
2	Dual II Magnum	7.64	EC	0.955 LB A/A	1.0 PT/A		PRE	A	29	0	95	15	95	92	58
3	Dual II Magnum	7.64	EC	1.91 LB A/A	2.0 PT/A		PRE	A	30	0	98	17	96	96	85
4	MANA-282	7.88	EC	0.985 LB A/A	1.0 PT/A		PRE	A	29	0	95	10	95	93	50
5	MANA-282	7.88	EC	1.97 LB A/A	2.0 PT/A		PRE	A	31	0	96	12	96	95	88
6	MANA-282	7.88	EC	2.96 LB A/A	3.0 PT/A		PRE	A	29	0	98	13	99	96	98
7	MANA-282	7.88	EC	0.985 LB A/A	1.0 PT/A		PRE	A	29	0	93	8	93	93	50
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
8	MANA-282	7.88	EC	1.97 LB A/A	2.0 PT/A		PRE	A	30	0	96	8	95	93	80
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
9	MANA-282	7.88	EC	2.96 LB A/A	3.0 PT/A		PRE	A	31	0	99	22	96	96	95
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
10	Dual II Magnum	7.64	EC	0.955 LB A/A	1.0 PT/A		PRE	A	30	0	96	8	92	90	52
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
11	Dual II Magnum	7.64	EC	1.91 LB A/A	2.0 PT/A		PRE	A	31	0	99	12	96	95	87
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
12	MANA-283	5.97	L	1.94 LB A/A	1.3 QT/A		PRE	A	31	0	96	62	96	98	95
13	MANA-283	5.97	L	2.9 LB A/A	1.95 QT/A		PRE	A	30	0	98	70	99	99	96
14	MANA-283	5.97	L	3.58 LB A/A	2.4 QT/A		PRE	A	30	0	98	72	99	99	98
15	MANA-283	5.97	L	1.94 LB A/A	1.3 QT/A		PRE	A	31	0	95	58	96	99	96
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
16	MANA-283	5.97	L	2.9 LB A/A	1.95 QT/A		PRE	A	30	0	98	75	98	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
17	MANA-283	5.97	L	3.58 LB A/A	2.4 QT/A		PRE	A	32	0	96	83	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
18	Bicep II Magnum	5.5	SC	1.79 LB A/A	1.3 QT/A		PRE	A	32	0	95	63	96	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
19	Bicep II Magnum	5.5	SC	2.68 LB A/A	1.95 QT/A		PRE	A	30	0	98	75	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
20	Bicep II Magnum	5.5	SC	3.57 LB A/A	2.6 QT/A		PRE	A	30	0	99	85	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A		POST	B							
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL		POST	B							
LSD (P=.05)									3.1	0.0	3.0	15.7	3.3	3.2	10.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ZEAMD PHYGEN PERCENT 07-02-04 17 DA-B	SETFA CONTROL PERCENT 07-02-04 17 DA-B	ABUTH CONTROL PERCENT 07-02-04 17 DA-B	AMATA CONTROL PERCENT 07-02-04 17 DA-B	CHEAL CONTROL PERCENT 07-02-04 17 DA-B	POLPY CONTROL PERCENT 07-02-04 17 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Dual II Magnum	7.64	EC	0.955 LB A/A	1.0 PT/A	PT/A	PRE	A	0	90	13	87	83	48
3	Dual II Magnum	7.64	EC	1.91 LB A/A	2.0 PT/A	PT/A	PRE	A	0	93	13	93	92	70
4	MANA-282	7.88	EC	0.985 LB A/A	1.0 PT/A	PT/A	PRE	A	0	90	10	88	82	52
5	MANA-282	7.88	EC	1.97 LB A/A	2.0 PT/A	PT/A	PRE	A	0	92	3	92	88	80
6	MANA-282	7.88	EC	2.96 LB A/A	3.0 PT/A	PT/A	PRE	A	0	95	8	93	90	90
7	MANA-282	7.88	EC	0.985 LB A/A	1.0 PT/A	PT/A	PRE	A	0	99	99	99	99	91
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
8	MANA-282	7.88	EC	1.97 LB A/A	2.0 PT/A	PT/A	PRE	A	0	99	99	99	99	93
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
9	MANA-282	7.88	EC	2.96 LB A/A	3.0 PT/A	PT/A	PRE	A	0	99	99	99	99	96
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
10	Dual II Magnum	7.64	EC	0.955 LB A/A	1.0 PT/A	PT/A	PRE	A	0	99	99	99	99	92
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
11	Dual II Magnum	7.64	EC	1.91 LB A/A	2.0 PT/A	PT/A	PRE	A	0	99	99	99	99	98
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
12	MANA-283	5.97	L	1.94 LB A/A	1.3 QT/A	QT/A	PRE	A	0	85	57	92	95	85
13	MANA-283	5.97	L	2.9 LB A/A	1.95 QT/A	QT/A	PRE	A	0	93	63	95	95	93
14	MANA-283	5.97	L	3.58 LB A/A	2.4 QT/A	QT/A	PRE	A	0	93	62	95	96	96
15	MANA-283	5.97	L	1.94 LB A/A	1.3 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
16	MANA-283	5.97	L	2.9 LB A/A	1.95 QT/A	QT/A	PRE	A	0	99	99	98	99	98
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
17	MANA-283	5.97	L	3.58 LB A/A	2.4 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
18	Bicep II Magnum	5.5	SC	1.79 LB A/A	1.3 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
19	Bicep II Magnum	5.5	SC	2.68 LB A/A	1.95 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
20	Bicep II Magnum	5.5	SC	3.57 LB A/A	2.6 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
LSD (P=.05)									0.0	3.4	9.6	3.2	8.0	12.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ZEAMD PHYGEN PERCENT 07-21-04 36 DA-B	SETFA CONTROL PERCENT 07-21-04 36 DA-B	ABUTH CONTROL PERCENT 07-21-04 36 DA-B	AMATA CONTROL PERCENT 07-21-04 36 DA-B	CHEAL CONTROL PERCENT 07-21-04 36 DA-B	POLPY CONTROL PERCENT 07-21-04 36 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Dual II Magnum	7.64	EC	0.955 LB A/A	1.0 PT/A	PT/A	PRE	A	0	88	8	83	68	47
3	Dual II Magnum	7.64	EC	1.91 LB A/A	2.0 PT/A	PT/A	PRE	A	0	93	5	90	82	68
4	MANA-282	7.88	EC	0.985 LB A/A	1.0 PT/A	PT/A	PRE	A	0	90	7	85	80	52
5	MANA-282	7.88	EC	1.97 LB A/A	2.0 PT/A	PT/A	PRE	A	0	92	3	85	77	77
6	MANA-282	7.88	EC	2.96 LB A/A	3.0 PT/A	PT/A	PRE	A	0	93	5	92	87	87
7	MANA-282	7.88	EC	0.985 LB A/A	1.0 PT/A	PT/A	PRE	A	0	99	99	99	99	96
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
8	MANA-282	7.88	EC	1.97 LB A/A	2.0 PT/A	PT/A	PRE	A	0	99	99	99	99	98
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
9	MANA-282	7.88	EC	2.96 LB A/A	3.0 PT/A	PT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
10	Dual II Magnum	7.64	EC	0.955 LB A/A	1.0 PT/A	PT/A	PRE	A	0	98	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
11	Dual II Magnum	7.64	EC	1.91 LB A/A	2.0 PT/A	PT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
12	MANA-283	5.97	L	1.94 LB A/A	1.3 QT/A	QT/A	PRE	A	0	85	57	90	93	82
13	MANA-283	5.97	L	2.9 LB A/A	1.95 QT/A	QT/A	PRE	A	0	92	63	95	95	93
14	MANA-283	5.97	L	3.58 LB A/A	2.4 QT/A	QT/A	PRE	A	0	92	62	93	96	95
15	MANA-283	5.97	L	1.94 LB A/A	1.3 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
16	MANA-283	5.97	L	2.9 LB A/A	1.95 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
17	MANA-283	5.97	L	3.58 LB A/A	2.4 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
18	Bicep II Magnum	5.5	SC	1.79 LB A/A	1.3 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
19	Bicep II Magnum	5.5	SC	2.68 LB A/A	1.95 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
20	Bicep II Magnum	5.5	SC	3.57 LB A/A	2.6 QT/A	QT/A	PRE	A	0	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77 LB AE/A	22.0 FL OZ/A	FL OZ/A	POST	B						
	AMS		DF	17.0 LB/100 GAL	17.0 LB/100 GAL	LB/100 GAL	POST	B						
LSD (P=.05)									0.0	3.1	8.6	4.1	9.8	12.7

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									SETFA CONTROL PERCENT 08-30-04 76 DA-B	ABUTH CONTROL PERCENT 08-30-04 76 DA-B	AMATA CONTROL PERCENT 08-30-04 76 DA-B	CHEAL CONTROL PERCENT 08-30-04 76 DA-B	POLPY CONTROL PERCENT 08-30-04 76 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Dual II Magnum	7.64	EC	0.955	LB A/A	1.0	PT/A	PRE	A	90	10	80	63	47
3	Dual II Magnum	7.64	EC	1.91	LB A/A	2.0	PT/A	PRE	A	93	5	90	78	68
4	MANA-282	7.88	EC	0.985	LB A/A	1.0	PT/A	PRE	A	92	7	83	75	50
5	MANA-282	7.88	EC	1.97	LB A/A	2.0	PT/A	PRE	A	92	5	85	75	73
6	MANA-282	7.88	EC	2.96	LB A/A	3.0	PT/A	PRE	A	93	5	88	82	85
7	MANA-282	7.88	EC	0.985	LB A/A	1.0	PT/A	PRE	A	99	99	99	98	98
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
8	MANA-282	7.88	EC	1.97	LB A/A	2.0	PT/A	PRE	A	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
9	MANA-282	7.88	EC	2.96	LB A/A	3.0	PT/A	PRE	A	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
10	Dual II Magnum	7.64	EC	0.955	LB A/A	1.0	PT/A	PRE	A	98	99	99	98	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
11	Dual II Magnum	7.64	EC	1.91	LB A/A	2.0	PT/A	PRE	A	99	99	99	98	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
12	MANA-283	5.97	L	1.94	LB A/A	1.3	QT/A	PRE	A	85	57	90	90	80
13	MANA-283	5.97	L	2.9	LB A/A	1.95	QT/A	PRE	A	92	63	95	93	92
14	MANA-283	5.97	L	3.58	LB A/A	2.4	QT/A	PRE	A	92	58	93	93	95
15	MANA-283	5.97	L	1.94	LB A/A	1.3	QT/A	PRE	A	99	99	99	98	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
16	MANA-283	5.97	L	2.9	LB A/A	1.95	QT/A	PRE	A	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
17	MANA-283	5.97	L	3.58	LB A/A	2.4	QT/A	PRE	A	98	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
18	Bicep II Magnum	5.5	SC	1.79	LB A/A	1.3	QT/A	PRE	A	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
19	Bicep II Magnum	5.5	SC	2.68	LB A/A	1.95	QT/A	PRE	A	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
20	Bicep II Magnum	5.5	SC	3.57	LB A/A	2.6	QT/A	PRE	A	99	99	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B					
LSD (P=.05)										3.5	8.9	4.8	10.6	13.4

Iowa State University

Preemergence applied Outlook and Guardsman Max and postemergence Roundup tank-mixes with Clarity, Distinct, Prowl or Guardsman Max in corn, Ames, IA, 2004.

Trial ID: ACC 15

Study Dir.: Owen/Lux/Franzenbur

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: 05-17-04

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 tank-mixtures of Roundup with Clarity, Distinct, Prowl H2O, or Guardsman Max for corn tolerance and weed control. Postemergence applied tank-mixture treatments of Roundup with Clarity, or Distinct following Outlook or Guardsman Max applied preemergence were also evaluated.

Conclusions: Corn stands were consistent between treatments when observed on July 22. Significant differences in stand between several treatments were due to variability in planting rate and not from the herbicide treatment. No corn injury from reduced rates of preemergence (PRE) applied Outlook and Guardsman Max was observed on June 10, prior to postemergence (POST) and late-postemergence (LPOST) treatments. Giant foxtail, common waterhemp, common lambsquarters, and Pennsylvania smartweed control was good to excellent with the PRE treatments on June 10. PRE treatments did not provide adequate velvetleaf and common cocklebur control.

Corn injury resulted from POST and LPOST applied treatments when observed on June 16, 23, and July 5. Injury did not exceed 10% from any treatment. Total POST, LPOST, and PRE plus POST treatments provided excellent control of all of the weed species when observed on July 5. On August 6 and September 20, all treatments continued to provide good to excellent control. Corn yields ranged from 217 to 257 bu/A with the treatments. Corn yield of the untreated control was 202 bu/A. All treatments, except POST and LPOST applied Roundup WeatherMAX, LPOST Roundup Original plus Distinct, and PRE Outlook followed by POST Roundup WeatherMAX, resulted in significantly higher corn yields 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 PENNSYLVANICUM L.
6.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1: ZEAMD CORN, FIELD Variety: DEKALB DKC53-34

Planting Date: 05-17-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: SLIGHTLY WET

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 Texture: CLAY LOAM

pH: 7.1 Soil Name: CLARION, WEBSTER, CANISTEO

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

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APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-17-04	06-09-04	06-15-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST	LPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	65 F	80 F	75 F
% Relative Humidity:	78	77	62
Wind Velocity, Unit:	5 MPH	7 MPH	3 MPH
Soil Temp., Unit:	64 F	75 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	10	85	100

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 4	ZEAMD V 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 1-4 L, 2T	SETFA 1-4 L, 3T
Stage Scale:	-	0.5-3 IN	0.5-6 IN
Density, Unit:	- -	0-5 FT2	0-10 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-5 L	ABUTH COTYL-6 L
Stage Scale:	-	0.5-3 IN	0.5-6 IN
Density, Unit:	- -	0-1 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-NUM	AMATA 4-NUM
Stage Scale:	-	0.5-3 IN	0.5-8 IN
Density, Unit:	- -	0-10 FT2	0-10 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL COTYL-NUM	CHEAL 4-NUM
Stage Scale:	-	0.5-4 IN	0.5-8 IN
Density, Unit:	- -	0-1 FT2	0-2 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-6 LF	POLPY NUMEROUS
Stage Scale:	-	0.5-3.5	1-8 IN
Density, Unit:	- -	< 1 FT2	< 1 FT2
Weed 6 Code, Stage:	XANST -	XANST COTYL-8 L	XANST 2-NUM
Stage Scale:	-	0.5-4 IN	1-10 IN
Density, Unit:	- -	< 1 FT2	< 1 FT2

APPLICATION EQUIPMENT

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

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Preemergence applied Outlook and Guardsman Max and postemergence Roundup tank-mixes with Clarity, Distinct, Prowl or Guardsman Max in corn, Ames, IA, 2004.

Trial ID: ACC 15

Study Dir.: Owen/Lux/Franzenbur

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code										ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	POLPY
Rating Data Type										STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-22-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04
Trt-Eval Interval										66 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									31	0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A LB/A	22.0	FL OZ/A LB/A	POST	B B	31	0	0	0	0	0	0
3	Roundup Original Clarity NIS AMS	3 4	SL SL L DF	0.56	LB AE/A LB/A % V/V LB/A	24.0	FL OZ/A LB/A LB/A	POST	B B B B	31	0	0	0	0	0	0
4	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56	LB AE/A LB/A % V/V LB/A	24.0	FL OZ/A LB/A LB/A	POST	B B B B	29	0	0	0	0	0	0
5	Roundup Original Prowl H2O NIS AMS	3 3.8	SL EC L DF	0.56	LB AE/A LB/A % V/V LB/A	24.0	FL OZ/A LB/A LB/A	POST	B B B B	32	0	0	0	0	0	0
6	Roundup Original Prowl H2O Distinct NIS AMS	3 3.8 70	SL EC WG L DF	0.56	LB AE/A LB/A % V/V LB/A	24.0	FL OZ/A LB/A LB/A	POST	B B B B B	31	0	0	0	0	0	0
7	Roundup Original Guardsman Max Distinct NIS AMS	3 5 70	SL SC WG L DF	0.56	LB AE/A LB/A % V/V LB/A	24.0	FL OZ/A LB/A LB/A	POST	B B B B B	31	0	0	0	0	0	0
8	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A LB/A	22.0	FL OZ/A LB/A	LPOST	C C	30	0	0	0	0	0	0
9	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56	LB AE/A LB/A % V/V LB/A	24.0	FL OZ/A LB/A LB/A	LPOST	C C C C	32	0	0	0	0	0	0
10	Outlook Roundup WeatherMAX AMS	6 4.5	EC SL DF	0.56	LB A/A LB AE/A LB/A	12.0	FL OZ/A LB/A LB/A	PRE	A B B	31	0	93	20	95	92	95
11	Outlook Roundup Original Clarity NIS AMS	6 3 4	EC SL SL L DF	0.56	LB A/A LB AE/A LB/A % V/V LB/A	12.0	FL OZ/A LB/A LB/A	PRE	A B B B B	32	0	95	8	98	88	96
12	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56	LB A/A LB AE/A LB/A % V/V LB/A	12.0	FL OZ/A LB/A LB/A	PRE	A B B B B	30	0	95	23	96	90	91
13	Guardsman Max Roundup Original Distinct NIS AMS	5 3 70	SC SL WG L DF	1.4	LB A/A LB AE/A LB/A % V/V LB/A	2.25	PT/A LB/A LB/A	PRE	A B B B B	31	0	96	68	99	94	99
14	Outlook Roundup Original NIS AMS	6 3	EC SL L DF	0.56	LB A/A LB AE/A LB/A % V/V LB/A	12.0	FL OZ/A LB/A LB/A	PRE	A C C C	31	0	93	13	96	83	96

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Weed Code									ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type									STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-22-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04	
Trt-Eval Interval									66 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
15	Outlook	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	30	0	95	8	93	83	81
	Roundup Original	3	SL	0.56	LB AE/A	24.0	FL OZ/A	LPOST	C							
	Distinct	70	WG	0.131	LB A/A	3.0	OZ WT/A	LPOST	C							
	NIS		L	0.25	% V/V	0.25	% V/V	LPOST	C							
	AMS		DF	3.0	LB/A	3.0	LB/A	LPOST	C							
LSD (P=.05)										2.9	0.0	2.8	10.9	3.0	5.3	8.9

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Weed Code									XANST	ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA
Rating Data Type									CONTROL	PHYGEN	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date									06-10-04	06-16-04	06-23-04	07-05-04	07-05-04	07-05-04	07-05-04
Trt-Eval Interval									24 DA-A	7 DA-B	14 DA-B	20 DA-C	20 DA-C	20 DA-C	20 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated								0	0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A	22.0 FL OZ/A	3.0 LB/A	POST	B	0	0	2	0	99	99	99
3	Roundup Original Clarity NIS AMS	3 4	SL SL L DF	0.56 LB AE/A 0.25 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 8.0 FL OZ/A 0.25 % V/V 3.0 LB/A		POST	B	0	8	10	3	99	99	99
4	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A		POST	B	0	5	0	0	99	99	99
5	Roundup Original Prowl H2O NIS AMS	3 3.8	SL EC L DF	0.56 LB AE/A 1.19 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 2.5 PT/A 0.25 % V/V 3.0 LB/A		POST	B	0	0	0	0	99	99	99
6	Roundup Original Prowl H2O Distinct NIS AMS	3 3.8	SL EC L DF	0.56 LB AE/A 1.19 LB A/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 2.5 PT/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A		POST	B	0	5	0	0	99	99	99
7	Roundup Original Guardsman Max Distinct NIS AMS	3 5 70	SL SC WG L DF	0.56 LB AE/A 2.5 LB A/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 4.0 PT/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A		POST	B	0	5	2	2	99	99	99
8	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A	22.0 FL OZ/A	3.0 LB/A	LPOST	C	0	0	0	0	99	99	99
9	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A		LPOST	C	0	0	2	2	99	99	99
10	Outlook Roundup WeatherMAX AMS	6 4.5	EC SL DF	0.56 LB A/A 0.77 LB AE/A 3.0 LB/A	12.0 FL OZ/A 22.0 FL OZ/A 3.0 LB/A		PRE	A	10	0	0	0	99	99	99
11	Outlook Roundup Original Clarity NIS AMS	6 3 4	EC SL SL L DF	0.56 LB A/A 0.56 LB AE/A 0.25 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 8.0 FL OZ/A 0.25 % V/V 3.0 LB/A		PRE	A	7	10	10	5	99	99	99
12	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A		PRE	A	7	5	0	0	99	99	99
13	Guardsman Max Roundup Original Distinct NIS AMS	5 3 70	SC SL WG L DF	1.4 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	2.25 PT/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A		PRE	A	65	5	2	2	99	99	99
14	Outlook Roundup Original NIS AMS	6 3	EC SL L DF	0.56 LB A/A 0.56 LB AE/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 0.25 % V/V 3.0 LB/A		PRE	A	8	0	0	0	99	99	99
15	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A		PRE	A	7	0	0	2	99	99	99
LSD (P=.05)									9.6	1.2	2.5	2.8	0.0	0.0	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									CHEAL CONTROL PERCENT 07-05-04 20 DA-C	POLPY CONTROL PERCENT 07-05-04 20 DA-C	XANST CONTROL PERCENT 07-05-04 20 DA-C	SETFA CONTROL PERCENT 08-06-04 52 DA-C	ABUTH CONTROL PERCENT 08-06-04 52 DA-C	AMATA CONTROL PERCENT 08-06-04 52 DA-C	CHEAL CONTROL PERCENT 08-06-04 52 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated								0	0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A	22.0 FL OZ/A	3.0 LB/A	POST POST	B B	99	99	99	87	96	96	93
3	Roundup Original Clarity NIS AMS	3 4	SL SL L DF	0.56 LB AE/A 0.25 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 8.0 FL OZ/A 0.25 % V/V 3.0 LB/A	FL OZ/A FL OZ/A % V/V LB/A	POST POST POST POST	B B B B	99	99	99	92	99	95	93
4	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	FL OZ/A OZ WT/A % V/V LB/A	POST POST POST POST	B B B B	99	99	99	92	99	96	96
5	Roundup Original Prowl H2O NIS AMS	3 3.8	SL EC L DF	0.56 LB AE/A 1.19 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 2.5 PT/A 0.25 % V/V 3.0 LB/A	FL OZ/A PT/A % V/V LB/A	POST POST POST POST	B B B B	99	99	99	99	99	98	99
6	Roundup Original Prowl H2O Distinct NIS AMS	3 3.8	SL EC L DF	0.56 LB AE/A 1.19 LB A/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 2.5 PT/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	FL OZ/A PT/A OZ WT/A % V/V LB/A	POST POST POST POST POST	B B B B B	99	99	99	99	99	99	99
7	Roundup Original Guardsman Max Distinct NIS AMS	3 5 70	SL SC WG L DF	0.56 LB AE/A 2.5 LB A/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 4.0 PT/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	FL OZ/A PT/A OZ WT/A % V/V LB/A	POST POST POST POST POST	B B B B B	99	99	99	99	99	99	99
8	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A	22.0 FL OZ/A	3.0 LB/A	LPOST LPOST	C C	99	95	99	98	99	99	99
9	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	FL OZ/A OZ WT/A % V/V LB/A	LPOST LPOST LPOST LPOST	C C C C	99	99	99	99	99	99	99
10	Outlook Roundup WeatherMAX AMS	6 4.5	EC SL DF	0.56 LB A/A 0.77 LB AE/A 3.0 LB/A	12.0 FL OZ/A 22.0 FL OZ/A 3.0 LB/A	FL OZ/A FL OZ/A LB/A	PRE POST POST	A B B	99	99	99	93	98	96	93
11	Outlook Roundup Original Clarity NIS AMS	6 3 4	EC SL SL L DF	0.56 LB A/A 0.56 LB AE/A 0.25 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 8.0 FL OZ/A 0.25 % V/V 3.0 LB/A	FL OZ/A FL OZ/A FL OZ/A % V/V LB/A	PRE POST POST POST POST	A B B B B	99	99	99	93	98	95	93
12	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	FL OZ/A FL OZ/A OZ WT/A % V/V LB/A	PRE POST POST POST POST	A B B B B	99	99	99	95	99	96	93
13	Guardsman Max Roundup Original Distinct NIS AMS	5 3 70	SC SL WG L DF	1.4 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	2.25 PT/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	PT/A FL OZ/A OZ WT/A % V/V LB/A	PRE POST POST POST POST	A B B B B	99	99	99	96	99	96	93
14	Outlook Roundup Original NIS AMS	6 3	EC SL L DF	0.56 LB A/A 0.56 LB AE/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 0.25 % V/V 3.0 LB/A	FL OZ/A FL OZ/A % V/V LB/A	PRE LPOST LPOST LPOST	A C C C	99	99	99	99	99	98	98
15	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	FL OZ/A FL OZ/A OZ WT/A % V/V LB/A	PRE LPOST LPOST LPOST LPOST	A C C C C	99	99	99	99	99	99	99
LSD (P=.05)									0.0	1.9	0.0	5.2	1.8	2.7	4.0

Iowa State University

Weed Code									POLPY	XANST	SETFA	ABUTH	AMATA	CHEAL	POLPY
Rating Data Type									CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date									08-06-04	08-06-04	09-20-04	09-20-04	09-20-04	09-20-04	09-20-04
Trt-Eval Interval									52 DA-C	52 DA-C	97 DA-C	97 DA-C	97 DA-C	97 DA-C	97 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated								0	0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A	22.0 FL OZ/A	3.0 LB/A	POST	B	98	96	87	96	96	93	96
3	Roundup Original Clarity NIS AMS	3 4	SL SL L DF	0.56 LB AE/A 0.25 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 8.0 FL OZ/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	POST	B	99	96	88	98	95	96	98
4	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	POST	B	99	99	92	99	96	98	99
5	Roundup Original Prowl H2O NIS AMS	3 3.8	SL EC L DF	0.56 LB AE/A 1.19 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 2.5 PT/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	POST	B	99	96	99	99	98	99	99
6	Roundup Original Prowl H2O Distinct NIS AMS	3 3.8 70	SL EC WG L DF	0.56 LB AE/A 1.19 LB A/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 2.5 PT/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	POST	B	99	96	98	99	99	99	99
7	Roundup Original Guardsman Max Distinct NIS AMS	3 5 70	SL SC WG L DF	0.56 LB AE/A 2.5 LB A/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 4.0 PT/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	POST	B	99	99	99	99	99	99	99
8	Roundup WeatherMAX AMS	4.5	SL DF	0.77 LB AE/A	22.0 FL OZ/A	3.0 LB/A	LPOST	C	96	99	98	99	99	99	98
9	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	LPOST	C	99	98	99	99	99	99	99
10	Outlook Roundup WeatherMAX AMS	6 4.5	EC SL DF	0.56 LB A/A 0.77 LB AE/A 3.0 LB/A	12.0 FL OZ/A 22.0 FL OZ/A 3.0 LB/A	3.0 LB/A	PRE	A	99	96	92	98	96	93	99
11	Outlook Roundup Original Clarity NIS AMS	6 3 4	EC SL SL L DF	0.56 LB A/A 0.56 LB AE/A 0.25 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 8.0 FL OZ/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	PRE	A	98	98	91	98	93	92	98
12	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	PRE	A	99	96	95	98	95	93	98
13	Guardsman Max Roundup Original Distinct NIS AMS	5 3 70	SC SL WG L DF	1.4 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	2.25 PT/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	PRE	A	99	96	96	99	96	95	99
14	Outlook Roundup Original NIS AMS	6 3	EC SL L DF	0.56 LB A/A 0.56 LB AE/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	PRE	A	99	99	99	99	99	99	98
15	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56 LB A/A 0.56 LB AE/A 0.131 LB A/A 0.25 % V/V 3.0 LB/A	12.0 FL OZ/A 24.0 FL OZ/A 3.0 OZ WT/A 0.25 % V/V 3.0 LB/A	3.0 LB/A	PRE	A	99	99	99	99	99	99	99
LSD (P=.05)									1.7	4.1	6.9	2.2	2.6	4.0	2.3

Iowa State University

Weed Code										XANST	ZEAMD
Rating Data Type										CONTROL	YIELD
Rating Unit										PERCENT	BU/A
Rating Date										09-20-04	10-05-04
Trt-Eval Interval										97 DA-C	141 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code		
1	Untreated									0	202
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A	22.0	FL OZ/A	POST	B	95	220
3	Roundup Original Clarity	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	98	243
	NIS	4	SL	0.25	LB A/A	8.0	FL OZ/A	POST	B		
	AMS		L DF	0.25	% V/V	0.25	% V/V	POST	B		
4	Roundup Original Distinct	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	99	242
	NIS	70	WG	0.131	LB A/A	3.0	OZ WT/A	POST	B		
	AMS		L	0.25	% V/V	0.25	% V/V	POST	B		
	AMS		DF	3.0	LB/A	3.0	LB/A	POST	B		
5	Roundup Original Prowl H2O	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	96	257
	NIS	3.8	EC	1.19	LB A/A	2.5	PT/A	POST	B		
	AMS		L	0.25	% V/V	0.25	% V/V	POST	B		
	AMS		DF	3.0	LB/A	3.0	LB/A	POST	B		
6	Roundup Original Prowl H2O	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	96	257
	Distinct	3.8	EC	1.19	LB A/A	2.5	PT/A	POST	B		
	NIS	70	WG	0.131	LB A/A	3.0	OZ WT/A	POST	B		
	AMS		L	0.25	% V/V	0.25	% V/V	POST	B		
	AMS		DF	3.0	LB/A	3.0	LB/A	POST	B		
7	Roundup Original Guardsman Max	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	99	256
	Distinct	5	SC	2.5	LB A/A	4.0	PT/A	POST	B		
	NIS	70	WG	0.131	LB A/A	3.0	OZ WT/A	POST	B		
	AMS		L	0.25	% V/V	0.25	% V/V	POST	B		
	AMS		DF	3.0	LB/A	3.0	LB/A	POST	B		
8	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A	22.0	FL OZ/A	LPOST	C	98	236
9	Roundup Original Distinct	3	SL	0.56	LB AE/A	24.0	FL OZ/A	LPOST	C	98	236
	NIS	70	WG	0.131	LB A/A	3.0	OZ WT/A	LPOST	C		
	AMS		L	0.25	% V/V	0.25	% V/V	LPOST	C		
	AMS		DF	3.0	LB/A	3.0	LB/A	LPOST	C		
10	Outlook Roundup WeatherMAX AMS	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	99	217
	AMS	4.5	SL DF	0.77	LB AE/A	22.0	FL OZ/A	POST	B		
	AMS		DF	3.0	LB/A	3.0	LB/A	POST	B		
11	Outlook Roundup Original Clarity	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	98	244
	NIS	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B		
	AMS	4	SL	0.25	LB A/A	8.0	FL OZ/A	POST	B		
	AMS		L	0.25	% V/V	0.25	% V/V	POST	B		
	AMS		DF	3.0	LB/A	3.0	LB/A	POST	B		
12	Outlook Roundup Original Distinct	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	96	242
	NIS	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B		
	AMS	70	WG	0.131	LB A/A	3.0	OZ WT/A	POST	B		
	AMS		L	0.25	% V/V	0.25	% V/V	POST	B		
	AMS		DF	3.0	LB/A	3.0	LB/A	POST	B		
13	Guardsman Max Roundup Original Distinct	5	SC	1.4	LB A/A	2.25	PT/A	PRE	A	98	250
	NIS	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B		
	AMS	70	WG	0.131	LB A/A	3.0	OZ WT/A	POST	B		
	AMS		L	0.25	% V/V	0.25	% V/V	POST	B		
	AMS		DF	3.0	LB/A	3.0	LB/A	POST	B		
14	Outlook Roundup Original NIS	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	99	241
	AMS	3	SL	0.56	LB AE/A	24.0	FL OZ/A	LPOST	C		
	AMS		L	0.25	% V/V	0.25	% V/V	LPOST	C		
	AMS		DF	3.0	LB/A	3.0	LB/A	LPOST	C		
15	Outlook Roundup Original Distinct	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	99	242
	NIS	3	SL	0.56	LB AE/A	24.0	FL OZ/A	LPOST	C		
	AMS	70	WG	0.131	LB A/A	3.0	OZ WT/A	LPOST	C		
	AMS		L	0.25	% V/V	0.25	% V/V	LPOST	C		
	AMS		DF	3.0	LB/A	3.0	LB/A	LPOST	C		
LSD (P=.05)										4.5	34.1

Iowa State University

Preemergence applications of Balance Pro, Atrazine, Define, Lumax, Epic and others for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 16

Study Dir.: Iowa State University

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: 05-11-04

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 herbicides for crop safety and residual weed control in corn.

Conclusions: Significant differences in corn stand between treatments were observed on July 23. These differences were attributable to seeding rate variability and not from the herbicides. Treatments resulted in negligible corn injury when observed on May 29, fifteen days after application. No injury was observed on June 18. The study was established in an area with heavy giant foxtail, medium velvetleaf and common waterhemp, and light common lambsquarters pressure. Preemergence (PRE) treatments afforded good to excellent giant foxtail and velvetleaf control when observed on June 18 and July 16. Few significant differences in control were determined between the treatments. Excellent common waterhemp and common lambsquarters control were also provided by the treatments on June 18. Common waterhemp control was good to excellent with the treatments on July 16, while common lambsquarters control was excellent. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD Variety: PIONEER 33R79

Planting Date: 05-11-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 Texture: CLAY LOAM

pH: 7.1 Soil Name: CLARION, WEBSTER, CANISTEO

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A
Application Date:	05-14-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOL
Air Temp., Unit:	52 F
% Relative Humidity:	65
Wind Velocity, Unit:	10 MPH
Soil Temp., Unit:	55 F
Soil Moisture:	EXCESSIVE
% Cloud Cover:	10

Iowa State University

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND BOOM
Operating Pressure:	30
Nozzle Size:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Preemergence applications of Balance Pro, Atrazine, Define, Lumax, Epic and others for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 16

Study Dir.: Iowa State University

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code										ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	ZEAMD
Rating Data Type										STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-23-04	05-29-04	06-18-04	06-18-04	06-18-04	06-18-04	06-18-04	07-16-04
Trt-Eval Interval										70 DA-A	15 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	63 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Product Rate	Product Rate	Grow Stg	Appl Code								
1	Untreated									30	0	0	0	0	0	0	0
2	Balance Pro Atrazine	4 SC 4 L		0.094 1.0	LB A/A LB A/A	3.0 2.0	FL OZ/A PT/A	PRE PRE	A A	29	0	0	92	95	98	99	0
3	Balance Pro Define SC Atrazine	4 SC 4 SC 4 L		0.047 0.69 1.0	LB A/A LB A/A LB A/A	1.5 22.0 2.0	FL OZ/A FL OZ/A PT/A	PRE PRE PRE	A A A	32	2	0	95	95	96	99	0
4	Balance Pro Define SC Atrazine	4 SC 4 SC 4 L		0.071 0.53 1.0	LB A/A LB A/A LB A/A	2.25 17.0 2.0	FL OZ/A FL OZ/A PT/A	PRE PRE PRE	A A A	29	3	0	92	92	99	99	0
5	Balance Pro Define SC Atrazine	4 SC 4 SC 4 L		0.094 0.437 1.0	LB A/A LB A/A LB A/A	3.0 14.0 2.0	FL OZ/A FL OZ/A PT/A	PRE PRE PRE	A A A	30	5	0	95	98	98	99	0
6	Lumax Atrazine	3.95 SE 4 L		2.97 0.25	LB A/A LB A/A	6.0 0.5	PT/A PT/A	PRE PRE	A A	31	2	0	98	98	99	99	0
7	Balance Pro Lumax Atrazine	4 SC 3.95 SE 4 L		0.071 1.98 0.25	LB A/A LB A/A LB A/A	2.25 4.0 0.5	FL OZ/A PT/A PT/A	PRE PRE PRE	A A A	29	2	0	92	98	99	99	0
8	Balance Pro Lumax Atrazine	4 SC 3.95 SE 4 L		0.047 2.97 0.25	LB A/A LB A/A LB A/A	1.5 6.0 0.5	FL OZ/A PT/A PT/A	PRE PRE PRE	A A A	31	0	0	96	99	99	99	0
9	Epic Atrazine	58 WG 4 L		0.437 1.0	LB A/A LB A/A	12.0 2.0	FL OZ/A PT/A	PRE PRE	A A	29	3	0	96	99	99	99	0
10	Epic Atrazine	58 WG 4 L		0.544 1.0	LB A/A LB A/A	15.0 2.0	FL OZ/A PT/A	PRE PRE	A A	29	5	0	95	99	99	99	0
11	USA 2005 Atrazine	4 SC 4 L		0.66 1.0	LB A/A LB A/A	21.0 2.0	FL OZ/A PT/A	PRE PRE	A A	31	0	0	92	98	98	99	0
12	USA 2005 Atrazine	4 SC 4 L		0.725 1.0	LB A/A LB A/A	23.0 2.0	FL OZ/A PT/A	PRE PRE	A A	29	3	0	96	99	99	99	0
13	USA 2005 Atrazine	4 SC 4 L		0.81 1.0	LB A/A LB A/A	26.0 2.0	FL OZ/A PT/A	PRE PRE	A A	28	3	0	93	98	96	99	0
14	USA 2005 Atrazine	4 SC 4 L		0.875 1.0	LB A/A LB A/A	28.0 2.0	FL OZ/A PT/A	PRE PRE	A A	29	5	0	96	96	99	99	0
LSD (P=.05)										2.0	3.4	0.0	4.2	3.6	2.3	0.0	0.0

Iowa State University

Weed Code										SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-16-04	07-16-04	07-16-04	07-16-04
Trt-Eval Interval										63 DA-A	63 DA-A	63 DA-A	63 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated									0	0	0	0
2	Balance Pro Atrazine	4 4	SC L	0.094 1.0	LB A/A LB A/A	3.0 2.0	FL OZ/A PT/A	PRE PRE	A A	85	95	96	99
3	Balance Pro Define SC Atrazine	4 4 4	SC SC L	0.047 0.69 1.0	LB A/A LB A/A LB A/A	1.5 22.0 2.0	FL OZ/A FL OZ/A PT/A	PRE PRE PRE	A A A	90	95	96	99
4	Balance Pro Define SC Atrazine	4 4 4	SC SC L	0.071 0.53 1.0	LB A/A LB A/A LB A/A	2.25 17.0 2.0	FL OZ/A FL OZ/A PT/A	PRE PRE PRE	A A A	87	90	98	99
5	Balance Pro Define SC Atrazine	4 4 4	SC SC L	0.094 0.437 1.0	LB A/A LB A/A LB A/A	3.0 14.0 2.0	FL OZ/A FL OZ/A PT/A	PRE PRE PRE	A A A	91	98	98	99
6	Lumax Atrazine	3.95 4	SE L	2.97 0.25	LB A/A LB A/A	6.0 0.5	PT/A PT/A	PRE PRE	A A	96	95	99	99
7	Balance Pro Lumax Atrazine	4 3.95 4	SC SE L	0.071 1.98 0.25	LB A/A LB A/A LB A/A	2.25 4.0 0.5	FL OZ/A PT/A PT/A	PRE PRE PRE	A A A	92	98	99	99
8	Balance Pro Lumax Atrazine	4 3.95 4	SC SE L	0.047 2.97 0.25	LB A/A LB A/A LB A/A	1.5 6.0 0.5	FL OZ/A PT/A PT/A	PRE PRE PRE	A A A	96	99	99	99
9	Epic Atrazine	58 4	WG L	0.437 1.0	LB A/A LB A/A	12.0 2.0	FL OZ/A PT/A	PRE PRE	A A	93	99	98	99
10	Epic Atrazine	58 4	WG L	0.544 1.0	LB A/A LB A/A	15.0 2.0	FL OZ/A PT/A	PRE PRE	A A	93	99	98	99
11	USA 2005 Atrazine	4 4	SC L	0.66 1.0	LB A/A LB A/A	21.0 2.0	FL OZ/A PT/A	PRE PRE	A A	88	98	96	99
12	USA 2005 Atrazine	4 4	SC L	0.725 1.0	LB A/A LB A/A	23.0 2.0	FL OZ/A PT/A	PRE PRE	A A	93	98	98	99
13	USA 2005 Atrazine	4 4	SC L	0.81 1.0	LB A/A LB A/A	26.0 2.0	FL OZ/A PT/A	PRE PRE	A A	90	96	96	99
14	USA 2005 Atrazine	4 4	SC L	0.875 1.0	LB A/A LB A/A	28.0 2.0	FL OZ/A PT/A	PRE PRE	A A	95	96	98	99
LSD (P=.05)										5.7	4.6	3.4	0.0

Iowa State University

Preemergence applied Cinch ATZ, Basis, Atrazine, Cinch, and postemergence Steadfast, Callisto, Atrazine, Distinct, and Lumax in corn, Ames, IA, 2004.
 Trial ID: ACC 17 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:** 05-17-04
Country: USA

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

Objective: The purpose of this study was to evaluate preemergence followed by postemergence and postemergence applied herbicides for crop phytotoxicity and weed control in corn. Cinch ATZ, Basis plus Atrazine, Cinch, and Atrazine were applied preemergence and followed by various postemergence applied Steadfast tank-mix combinations with Callisto, Atrazine, or Distinct. Postemergence treatments not following a residual preemergence herbicide included Steadfast with Callisto, Atrazine, or Lumax.

Conclusions: Significant differences in corn stand between several treatments on July 23 were due to seeding rate variability and not from the herbicides. Corn injury was observed from early postemergence (EPOST) applied treatments on June 16, seven days after application, although injury was considered negligible. No corn injury was observed from the preemergence (PRE) treatments. Corn injury ranging from 5 to 10% was observed on June 24, nine days following mid-postemergence (MPOST) applications. Most treatments achieved 93% and higher giant foxtail control when observed on June 24. Treatments provided good to excellent velvetleaf, common waterhemp, common lambsquarters, and common cocklebur control. An exception was PRE Cinch ATZ. This treatment did not receive a sequential postemergence application.

Treatments, with the exception of PRE Cinch ATZ, continued to provide good to excellent grass and broadleaf control when observed on July 3 and July 19. There were few instances where control differences between treatments were significant. (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 DKC53-34
Planting Date: 05-17-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 **Texture:** CLAY LOAM
pH: 7.1 **Soil Name:** CLARION, WEBSTER, CANISTEO
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-18-04	06-09-04	06-15-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	69 F	80 F	75 F
% Relative Humidity:	53	77	62
Wind Velocity, Unit:	7 MPH	7 MPH	3 MPH
Soil Temp., Unit:	63 F	75 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	5	85	100

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 4	ZEAMD V 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 1-4 L, 2T	SETFA 1-4 L, 2T
Stage Scale:	-	0.5-2 IN	0.5-4 IN
Density, Unit:	- -	0-5 FT2	0-5 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-5 L	ABUTH COTYL-7 L
Stage Scale:	-	0.5-2 IN	0.5-6 IN
Density, Unit:	- -	0-3 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-NUM	AMATA COTYL-NUM
Stage Scale:	-	0.5-1.5	0.5-6 IN
Density, Unit:	- -	0-10 FT2	0-2 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL COTYL-NUM	CHEAL COTYL-NUM
Stage Scale:	-	0.5-1.5	0.5-6 IN
Density, Unit:	- -	< 1 FT2	0-1 FT2
Weed 5 Code, Stage:	XANST -	XANST COTYL-6 L	XANST 2-NUM
Stage Scale:	-	0.5-4 IN	1-7 IN
Density, Unit:	- -	< 1 FT2	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Weed Code										ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	XANST	
Rating Data Type										STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-23-04	06-16-04	06-24-04	06-24-04	06-24-04	06-24-04	06-24-04	06-24-04	
Trt-Eval Interval										66 DA-A	7 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code									
12	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	31	2	5	93	99	98	99	99	
	Lumax	3.95	SE	0.99	LB A/A	32.0	FL OZ/A	EPOST	B									
	NIS		L	0.125	% V/V	0.125	% V/V	EPOST	B									
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B									
LSD (P=.05)										2.2	2.5	2.9	6.5	1.9	2.9	2.3	5.4	

Iowa State University

Weed Code										XANST
Rating Data Type										CONTROL
Rating Unit										PERCENT
Rating Date										09-03-04
Trt-Eval Interval										80 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated									0
2	Cinch ATZ	5.5	SL	1.72	LB A/A	2.5	PT/A	PRE	A	99
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C	
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C	
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C	
	COC		L	1.0	% V/V	1.0	%V/V	MPOST	C	
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C	
3	Basis	75	WG	0.0234	LB A/A	0.5	OZ WT/A	PRE	A	99
	Atrazine	90	DF	0.75	LB A/A	0.83	LB/A	PRE	A	
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C	
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C	
	Atrazine	90	DF	0.75	LB A/A	0.83	LB/A	MPOST	C	
	COC		L	1.0	% V/V	1.0	%V/V	MPOST	C	
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C	
4	Cinch	7.64	EC	0.64	LB A/A	0.67	PT/A	PRE	A	99
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C	
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C	
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	MPOST	C	
	COC		L	1.0	% V/V	1.0	%V/V	MPOST	C	
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C	
5	Cinch	7.64	EC	0.64	LB A/A	0.67	PT/A	PRE	A	99
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C	
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C	
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	MPOST	C	
	MISO		L	0.5	% V/V	0.5	%V/V	MPOST	C	
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C	
6	Cinch	7.64	EC	0.64	LB A/A	0.67	PT/A	PRE	A	99
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C	
	Distinct	70	WG	0.0875	LB A/A	2.0	OZ WT/A	MPOST	C	
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	MPOST	C	
	MISO		L	0.5	% V/V	0.5	%V/V	MPOST	C	
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C	
7	Atrazine	90	DF	1.25	LB A/A	1.39	LB/A	PRE	A	99
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	MPOST	C	
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	MPOST	C	
	Atrazine	90	DF	0.25	LB A/A	0.278	LB/A	MPOST	C	
	COC		L	1.0	% V/V	1.0	%V/V	MPOST	C	
	AMS		DF	2.0	LB/A	2.0	LB/A	MPOST	C	
8	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	99
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST	B	
	Atrazine	90	DF	1.5	LB A/A	1.67	LB/A	EPOST	B	
	COC		L	1.0	% V/V	1.0	%V/V	EPOST	B	
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B	
9	Cinch ATZ	5.5	SL	2.06	LB A/A	3.0	PT/A	EPOST	B	99
	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST	B	
	NIS		L	0.25	% V/V	0.25	%V/V	EPOST	B	
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B	
10	Cinch ATZ	5.5	SL	3.3	LB A/A	4.8	PT/A	PRE	A	67
11	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	99
	Lumax	3.95	SE	0.99	LB A/A	32.0	FL OZ/A	EPOST	B	
	NIS		L	0.125	% V/V	0.125	% V/V	EPOST	B	
12	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	99
	Lumax	3.95	SE	0.99	LB A/A	32.0	FL OZ/A	EPOST	B	
	NIS		L	0.125	% V/V	0.125	% V/V	EPOST	B	
	AMS		DF	2.0	LB/A	2.0	LB/A	EPOST	B	
LSD (P=.05)										3.7

Iowa State University

Balance Pro, Define, Epic, Axiom applied preemergence and postemergence applied Liberty, Option, Equip, and Define for weed control in corn, Ames, IA, 2004.
 Trial ID: ACC 18 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:** 05-11-04
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 injury and weed control in corn.
Conclusions: Corn stands on July 23 were variable between the treatments and significant differences were determined. Differences were due to variability in planting rate and not from the herbicides. Preemergence (PRE) applied treatments did not result in corn injury when observed on May 26, fourteen days after application. Significant corn injury was observed on June 15, nine days following early postemergence (EPOST) applications. Several mid-postemergence (MPOST) treatments also resulted in significant corn injury on June 24, nine days after application. Injury symptoms persisted with several EPOST and MPOST treatments when observed on July 3 and 27.
 Giant foxtail, common waterhemp, common lambsquarters, and Pennsylvania smartweed control by the treatments was generally good to excellent when observed on June 15, July 3, and July 27. Few significant differences were determined between treatments in control of these species. Velvetleaf control with PRE treatments not followed by MPOST was generally fair to excellent when observed on June 15, July 3, and 27. PRE Define plus Atrazine and Axiom plus Atrazine provided 80 to 83% velvetleaf control on these dates, whereas the other PRE only treatments provided 90% and higher 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.

Crop 1: ZEAMD CORN, FIELD **Variety:** PIONEER 33R79
Planting Date: 05-11-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 17% at planting.

SOIL DESCRIPTION

% OM: 4.2 **Texture:** CLAY LOAM
pH: 7.1 **Soil Name:** CLARION, WEBSTER, CANISTEO
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-12-04	06-06-04	06-15-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	65 F	77 F	80 F
% Relative Humidity:	83	68	61
Wind Velocity, Unit:	5 MPH	2 MPH	2 MPH
Soil Temp., Unit:	66 F	70 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	80	75	30

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 4	ZEAMD V 6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	5 IN	13 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 2-4 L, 1T	SETFA 2-4 L, 3T
Stage Scale:	-	0.5-3 IN	0.5-6 IN
Density, Unit:	- -	0-3 FT ²	0-2 FT ²
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-5 L	ABUTH 1-5 L
Stage Scale:	-	0.5-3 IN	0.5-3 IN
Density, Unit:	- -	0-1 FT ²	< 1 FT ²
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS	AMATA NUMEROUS
Stage Scale:	-	0.5-2 IN	0.5-1 IN
Density, Unit:	- -	0-1 FT ²	< 1 FT ²
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS	CHEAL -
Stage Scale:	-	0.5-2.5	-
Density, Unit:	- -	0-2 FT ²	- -
Weed 5 Code, Stage:	POLPY -	POLPY -	POLPY -
Stage Scale:	-	-	-
Density, Unit:	- -	- -	- -

APPLICATION EQUIPMENT

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

Iowa State University

Weed Code										ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-23-04	05-26-04	06-15-04	06-15-04	06-15-04	06-15-04	06-15-04
Trt-Eval Interval										72 DA-A	14 DA-A	9 DA-B	9 DA-B	9 DA-B	9 DA-B	9 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
16	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST B	B	31	0	28	96	99	99	99
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST B	B							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	EPOST B	B							
	MSO		L	1.5	PT/A	1.5	PT/A	EPOST B	B							
	AMS		DF	1.5	LB/A	1.5	LB/A	EPOST B	B							
LSD (P=.05)										2.2	0.0	2.0	4.7	7.9	1.4	0.0

Iowa State University

Weed Code										POLPY	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										CONTROL	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-15-04	06-24-04	07-03-04	07-03-04	07-03-04	07-03-04	07-03-04
Trt-Eval Interval										9 DA-B	9 DA-C	18 DA-C	18 DA-C	18 DA-C	18 DA-C	18 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
16	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	99	20	15	92	99	99	99
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST	B							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	EPOST	B							
	MSO		L	1.5	PT/A	1.5	PT/A	EPOST	B							
	AMS		DF	1.5	LB/A	1.5	LB/A	EPOST	B							
LSD (P=.05)										6.0	2.7	3.6	4.5	7.0	1.9	0.0

Iowa State University

Weed Code										POLPY	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	POLPY
Rating Data Type										CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-03-04	07-27-04	07-27-04	07-27-04	07-27-04	07-27-04	07-27-04
Trt-Eval Interval										18 DA-C	42 DA-C	42 DA-C	42 DA-C	42 DA-C	42 DA-C	42 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
16	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	EPOST	B	99	8	87	99	99	99	99
	Callisto	4	SC	0.0625	LB A/A	2.0	FL OZ/A	EPOST	B							
	Atrazine	4	SL	0.25	LB A/A	0.5	PT/A	EPOST	B							
	MSO		L	1.5	PT/A	1.5	PT/A	EPOST	B							
	AMS		DF	1.5	LB/A	1.5	LB/A	EPOST	B							
LSD (P=.05)										2.1	3.3	4.3	6.9	1.9	1.0	2.3

Iowa State University

Postemergence applied Buctril, Buctril plus Atrazine, and Liberty in tank-mixture with various rates of Callisto for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 19

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: 05-05-04

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 Buctril, Buctril plus Atrazine, and Liberty in tank-mixture with various rates of Callisto for crop phytotoxicity and weed control in corn.

Conclusions: Significant differences in corn stand between several treatments on July 23 were due to seeding rate variability and not from the herbicides. Mid-postemergence (MPOST) applied treatments exhibited excellent crop safety when observed on June 14, with only negligible injury noted with several treatments. Treatments provided excellent velvetleaf, common lambsquarters, and common cocklebur control on June 26 and July 14, seventeen and thirty-five days after application, respectively. There were few significant differences determined between treatments on these observation dates. Control of common waterhemp on June 26 and July 14 was good to excellent with the treatments. Furthermore, a number of treatments provided significantly better common waterhemp control than others, especially when observed on June 26. Generally, Buctril and Liberty tank-mixed with the higher rates of Callisto provided better common waterhemp control than the lower rates of Callisto. (Dept. of Agronomy, Iowa State University, Ames).

CROP AND WEED DESCRIPTION

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

Crop 1: ZEAMD CORN, FIELD Variety: PIONEER 33R79

Planting Date: 05-05-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 15% at planting.

SOIL DESCRIPTION

% OM: 3.7 Texture: CLAY LOAM

pH: 7.3 Soil Name: CANISTEO, NICOLLET, CLARION

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	06-09-04
Application Method:	SPRAY
Application Timing:	MPOST
Applic. Placement:	BROFOL
Air Temp., Unit:	80 F
% Relative Humidity:	66
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	75 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	90

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD V 7
Stage Scale:	DESC
Height, Unit:	11 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	ABUTH COTYL-10
Stage Scale:	0.5-8 IN
Density, Unit:	0-6 FT2
Weed 2 Code, Stage:	AMATA COTYL-NUM
Stage Scale:	0.5-6 IN
Density, Unit:	0-10 FT2
Weed 3 Code, Stage:	CHEAL NUMEROUS
Stage Scale:	2-7 IN
Density, Unit:	0-3 FT2
Weed 4 Code, Stage:	XANST 6-10 LEAF
Stage Scale:	4-10 IN
Density, Unit:	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Postemergence applied Buctril, Buctril plus Atrazine, and Liberty in tank-mixture with various rates of Callisto for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 19 Study Dir.: Owen/Lux/Franzenburg
 Location: Ames Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	ABUTH	AMATA	CHEAL	XANST	ZEAMD		
Rating Data Type								STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN		
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								07-23-04	06-14-04	06-26-04	06-26-04	06-26-04	06-26-04	06-26-04	07-14-04		
Trt-Eval Interval								44 DA-A	5 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	35 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code								
1	Untreated									29	0	0	0	0	0	0	
2	Buctril	2 EC		0.25 LB A/A	1.0 PT/A			MPOST A		30	0	0	98	88	95	99	
	Callisto	4 SC		0.0156 LB A/A	0.5 FL OZ/A			MPOST A								0	
3	Buctril	2 EC		0.25 LB A/A	1.0 PT/A			MPOST A		30	2	0	99	96	99	99	
	Callisto	4 SC		0.0234 LB A/A	0.75 FL OZ/A			MPOST A								0	
4	Buctril	2 EC		0.25 LB A/A	1.0 PT/A			MPOST A		31	0	0	99	93	98	99	
	Callisto	4 SC		0.0313 LB A/A	1.0 FL OZ/A			MPOST A								0	
5	Buctril + Atrazine	3 SC		0.75 LB A/A	2.0 PT/A			MPOST A		29	0	0	99	99	99	99	
	Callisto	4 SC		0.0156 LB A/A	0.5 FL OZ/A			MPOST A								0	
6	Buctril + Atrazine	3 SC		0.75 LB A/A	2.0 PT/A			MPOST A		28	0	0	99	98	99	99	
	Callisto	4 SC		0.0234 LB A/A	0.75 FL OZ/A			MPOST A								0	
7	Buctril + Atrazine	3 SC		0.75 LB A/A	2.0 PT/A			MPOST A		31	0	0	99	99	99	99	
	Callisto	4 SC		0.0313 LB A/A	1.0 FL OZ/A			MPOST A								0	
8	Liberty	1.67 SL		0.42 LB A/A	32.0 FL OZ/A			MPOST A		29	0	0	99	93	99	99	
	Callisto	4 SC		0.0156 LB A/A	0.5 FL OZ/A			MPOST A								0	
	AMS	DF		3.0 LB/A	3.0 LB/A			MPOST A									
9	Liberty	1.67 SL		0.42 LB A/A	32.0 FL OZ/A			MPOST A		32	0	0	98	95	99	99	
	Callisto	4 SC		0.0234 LB A/A	0.75 FL OZ/A			MPOST A								0	
	AMS	DF		3.0 LB/A	3.0 LB/A			MPOST A									
10	Liberty	1.67 SL		0.42 LB A/A	32.0 FL OZ/A			MPOST A		30	0	0	99	95	98	99	
	Callisto	4 SC		0.0313 LB A/A	1.0 FL OZ/A			MPOST A								0	
	AMS	DF		3.0 LB/A	3.0 LB/A			MPOST A									
11	Liberty	1.67 SL		0.42 LB A/A	32.0 FL OZ/A			MPOST A		29	2	0	99	99	99	99	
	Atrazine	4 SL		1.0 LB A/A	2.0 PT/A			MPOST A								0	
	AMS	DF		3.0 LB/A	3.0 LB/A			MPOST A									
12	Callisto	4 SC		0.094 LB A/A	3.0 FL OZ/A			MPOST A		31	0	0	99	96	95	99	
	Atrazine	4 SL		0.25 LB A/A	0.5 PT/A			MPOST A								0	
	AMS	DF		3.0 LB/A	3.0 LB/A			MPOST A									
LSD (P=.05)										3.4	2.0	0.0	1.6	3.2	1.5	0.0	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ABUTH CONTROL PERCENT 07-14-04 35 DA-A	AMATA CONTROL PERCENT 07-14-04 35 DA-A	CHEAL CONTROL PERCENT 07-14-04 35 DA-A	XANST CONTROL PERCENT 07-14-04 35 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated									0	0	0	0
2	Buctril Callisto	2 4	EC SC	0.25 0.0156	LB A/A LB A/A	1.0 0.5	PT/A FL OZ/A	MPOST MPOST	A A	99	91	96	99
3	Buctril Callisto	2 4	EC SC	0.25 0.0234	LB A/A LB A/A	1.0 0.75	PT/A FL OZ/A	MPOST MPOST	A A	99	99	99	99
4	Buctril Callisto	2 4	EC SC	0.25 0.0313	LB A/A LB A/A	1.0 1.0	PT/A FL OZ/A	MPOST MPOST	A A	99	99	99	99
5	Buctril + Atrazine Callisto	3 4	SC SC	0.75 0.0156	LB A/A LB A/A	2.0 0.5	PT/A FL OZ/A	MPOST MPOST	A A	99	99	99	99
6	Buctril + Atrazine Callisto	3 4	SC SC	0.75 0.0234	LB A/A LB A/A	2.0 0.75	PT/A FL OZ/A	MPOST MPOST	A A	99	99	99	99
7	Buctril + Atrazine Callisto	3 4	SC SC	0.75 0.0313	LB A/A LB A/A	2.0 1.0	PT/A FL OZ/A	MPOST MPOST	A A	99	99	99	99
8	Liberty Callisto AMS	1.67 4	SL SC DF	0.42 0.0156 3.0	LB A/A LB A/A LB/A	32.0 0.5 3.0	FL OZ/A FL OZ/A LB/A	MPOST MPOST MPOST	A A A	99	93	98	99
9	Liberty Callisto AMS	1.67 4	SL SC DF	0.42 0.0234 3.0	LB A/A LB A/A LB/A	32.0 0.75 3.0	FL OZ/A FL OZ/A LB/A	MPOST MPOST MPOST	A A A	99	95	98	99
10	Liberty Callisto AMS	1.67 4	SL SC DF	0.42 0.0313 3.0	LB A/A LB A/A LB/A	32.0 1.0 3.0	FL OZ/A FL OZ/A LB/A	MPOST MPOST MPOST	A A A	99	95	98	99
11	Liberty Atrazine AMS	1.67 4	SL SL DF	0.42 1.0 3.0	LB A/A LB A/A LB/A	32.0 2.0 3.0	FL OZ/A PT/A LB/A	MPOST MPOST MPOST	A A A	99	99	99	99
12	Callisto Atrazine AMS	4 4	SC SL DF	0.094 0.25 3.0	LB A/A LB A/A LB/A	3.0 0.5 3.0	FL OZ/A PT/A LB/A	MPOST MPOST MPOST	A A A	99	96	95	99
LSD (P=.05)										0.0	3.8	2.3	0.0

Iowa State University

Postemergence applications of Option with Callisto and Atrazine in corn, Ames, IA, 2004.

Trial ID: ACC 20

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: 05-05-04

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 for crop phytotoxicity and weed control in corn. Potential tank-mix partners and rates in combination with Option were evaluated.

Conclusions: Corn stands were not significantly different between treatments when observed on July 23. Significant corn injury from the mid-postemergence (MPOST) applied treatments was observed on June 14 and ranged from 10 to 20%. Further, more injury was observed when Atrazine was absent in the tank-mixtures of Option plus Callisto. On June 26, and to a lesser extent, on July 14, observations demonstrated injury persisted with many of the treatments.

Good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and common cocklebur control was observed with the treatments when observed on June 26 and July 14. An exception was poor common waterhemp control with Option applied alone. On June 26, seventeen days after application, treatments that included Atrazine in the tank-mixture with Option and Callisto provided slightly better common waterhemp, common lambsquarters and common cocklebur control than those without Atrazine. These differences in control were not observed on July 14, thirty-five days after application. Steadfast plus Callisto plus Atrazine achieved similar control of these species when 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.	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: PIONEER 33R79

Planting Date: 05-05-04 Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 15% at planting.

SOIL DESCRIPTION

% OM: 3.7 Texture: CLAY LOAM

pH: 7.3 Soil Name: CANISTEO, NICOLLET, CLARION

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	06-09-04
Application Method:	SPRAY
Application Timing:	MPOST
Applic. Placement:	BROFOL
Air Temp., Unit:	80 F
% Relative Humidity:	66
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	75 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	90

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD V 7
Stage Scale:	DESC
Height, Unit:	11 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 2-4 LEAF
Stage Scale:	1-7 IN
Density, Unit:	< 1 FT2
Weed 2 Code, Stage:	ABUTH COTYL-7 L
Stage Scale:	0.5-5 IN
Density, Unit:	0-8 FT2
Weed 3 Code, Stage:	AMATA COTYL-NUM
Stage Scale:	0.5-8 IN
Density, Unit:	0-25 FT2
Weed 4 Code, Stage:	CHEAL NUMEROUS
Stage Scale:	2-5 IN
Density, Unit:	0-3 FT2
Weed 5 Code, Stage:	XANST 6-10 LEAF
Stage Scale:	4-10 IN
Density, Unit:	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Postemergence applications of Option with Callisto and Atrazine in corn, Ames, IA, 2004.

Trial ID: ACC 20

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code										ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	XANST
Rating Data Type										STAND	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-23-04	06-14-04	06-26-04	06-26-04	06-26-04	06-26-04	06-26-04	06-26-04
Trt-Eval Interval										44 DA-A	5 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									30	0	0	0	0	0	0	0
2	Option MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	31	17	7	95	95	45	90	92
3	Option Callisto MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	31	18	10	95	98	92	93	96
4	Option Callisto Atrazine MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	31	15	5	95	99	96	99	99
5	Option Callisto MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	30	18	10	95	99	93	95	95
6	Option Callisto Atrazine MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	30	13	5	95	99	98	99	99
7	Option Callisto MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	31	20	12	95	99	92	95	95
8	Option Callisto Atrazine MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	30	13	8	95	99	99	99	99
9	Option Callisto MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	31	18	12	95	99	93	96	96
10	Option Callisto Atrazine MSO AMS	35 L DF	WG	0.0328	LB A/A	1.5 PT/A	1.5 LB/A	MPOST A	A	31	15	7	95	99	99	99	99
11	Steadfast Callisto Atrazine COC AMS	75 L DF	WG	0.0352	LB A/A	0.75 PT/A	1.5 LB/A	MPOST A	A	29	10	5	95	98	99	99	98
LSD (P=.05)										2.3	3.9	3.4	0.0	1.6	5.4	2.0	2.6

Iowa State University

Weed Code										ZEAMD	SETFA	ABUTH	AMATA	CHEAL	XANST
Rating Data Type										PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-14-04	07-14-04	07-14-04	07-14-04	07-14-04	07-14-04
Trt-Eval Interval										35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Option MSO AMS	35 L DF	WG	0.0328	LB/A/A	1.5	OZ PT/LB/A	MPOST	A	0	95	99	43	90	95
3	Option Callisto MSO AMS	35 4 L DF	WG SC	0.0328 0.0313	LB/A/A	1.5	OZ FL PT/LB/A	MPOST	A	5	95	99	96	99	99
4	Option Callisto Atrazine MSO AMS	35 4 4 L DF	WG SC SL	0.0328 0.0313 0.25	LB/A/A	1.5	OZ FL PT/LB/A	MPOST	A	2	95	99	98	99	99
5	Option Callisto MSO AMS	35 4 L DF	WG SC	0.0328 0.047	LB/A/A	1.5	OZ FL PT/LB/A	MPOST	A	3	95	99	99	99	99
6	Option Callisto Atrazine MSO AMS	35 4 4 L DF	WG SC SL	0.0328 0.047 0.25	LB/A/A	1.5	OZ FL PT/LB/A	MPOST	A	0	95	99	99	99	99
7	Option Callisto MSO AMS	35 4 L DF	WG SC	0.0328 0.0625	LB/A/A	1.5	OZ FL PT/LB/A	MPOST	A	5	95	99	99	99	99
8	Option Callisto Atrazine MSO AMS	35 4 4 L DF	WG SC SL	0.0328 0.0625 0.25	LB/A/A	1.5	OZ FL PT/LB/A	MPOST	A	3	95	99	99	99	99
9	Option Callisto MSO AMS	35 4 L DF	WG SC	0.0328 0.094	LB/A/A	1.5	OZ FL PT/LB/A	MPOST	A	5	95	99	99	99	99
10	Option Callisto Atrazine MSO AMS	35 4 4 L DF	WG SC SL	0.0328 0.094 0.25	LB/A/A	1.5	OZ FL PT/LB/A	MPOST	A	2	95	99	99	99	99
11	Steadfast Callisto Atrazine COC AMS	75 4 4 L DF	WG SC SL	0.0352 0.047 0.25	LB/A/A	0.75	OZ FL QT/LB/A	MPOST	A	0	95	99	99	99	99
LSD (P=.05)										3.0	0.0	0.0	5.4	0.0	2.3

Iowa State University

Aim and Roundup WeatherMAX applied postemergence for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 21

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: 05-06-04

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 postemergence applied Aim and Roundup WeatherMAX.

Conclusions: No significant differences in corn stand between treatments were observed on July 23. Ten percent corn injury was observed on June 14 with postemergence (POST) applied Aim plus Roundup WeatherMAX treatments, three days after application. POST Roundup WeatherMAX applied alone resulted in no corn injury. Five percent corn injury persisted for Aim plus Roundup WeatherMAX treatments through the remaining observation dates.

Giant foxtail control with the treatments was excellent on all observation dates. There were no significant differences in giant foxtail control between them. Velvetleaf control was good to excellent with all treatments. Aim plus Roundup WeatherMAX provided significantly better velvetleaf control on June 18, seven days after application, compared to Roundup WeatherMAX applied alone. On June 18, common waterhemp, common lambsquarters and common cocklebur control was good to excellent with all treatments. No significant differences were determined between treatments for these species.

Velvetleaf, common waterhemp, common lambsquarters, and common cocklebur control remained good to excellent with the treatments when observed on June 26 and July 2. Differences in control between treatments were not significant for any of the species on these dates, except for common cocklebur control on July 2. (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 DKC60-17

Planting Date: 05-06-04 Planting Method: DIRECT DRILLED

Rate: 27700 SEEDS/A Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 15% at planting.

SOIL DESCRIPTION

% OM: 3.7 Texture: CLAY LOAM

pH: 7.3 Soil Name: CANISTEO, NICOLLET, CLARION

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	06-11-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	85 F
% Relative Humidity:	85
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	73 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	80

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD V 5
Stage Scale:	DESC
Height, Unit:	12 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-4 L, 2T
Stage Scale:	0.5-6 IN
Density, Unit:	< 1 FT2
Weed 2 Code, Stage:	ABUTH COTYL-7 L
Stage Scale:	0.5-8 IN
Density, Unit:	0-5 FT2
Weed 3 Code, Stage:	AMATA COTYL-NUM
Stage Scale:	0.5-10 IN
Density, Unit:	0-10 FT2
Weed 4 Code, Stage:	CHEAL NUMEROUS
Stage Scale:	0.5-5 IN
Density, Unit:	0-1 FT2
Weed 5 Code, Stage:	XANST 6-10 LEAF
Stage Scale:	2-12 IN
Density, Unit:	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Aim and Roundup WeatherMAX applied postemergence for weed control in corn, Ames, IA, 2004.

Trial ID: ACC 21

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								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date								07-23-04	06-14-04	06-18-04	06-18-04	06-18-04	06-18-04
Trt-Eval Interval								42 DA-A	3 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated									26	0	0	0
2	Aim Roundup WeatherMAX AMS	2 SL	EW	0.0078	LB A/A	0.5	FL OZ/A	POST	A	27	10	5	99
		4.5 DF	SL	0.56	LB AE/A	16.0	FL OZ/A	POST	A				99
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	A				93
3	Aim Roundup WeatherMAX AMS	2 SL	EW	0.0078	LB A/A	0.5	FL OZ/A	POST	A	25	10	5	99
		4.5 DF	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A				99
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	A				93
4	Roundup WeatherMAX AMS	4.5 DF	SL	0.56	LB AE/A	16.0	FL OZ/A	POST	A	25	0	0	98
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	A				88
													93
5	Roundup WeatherMAX AMS	4.5 DF	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	25	0	0	99
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	A				92
													95
LSD (P=.05)								2.2	0.0	0.0	1.9	3.2	4.7

Iowa State University

Weed Code										CHEAL	XANST	ZEAMD	SETFA	ABUTH	AMATA
Rating Data Type										CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-18-04	06-18-04	06-26-04	06-26-04	06-26-04	06-26-04
Trt-Eval Interval										7 DA-A	7 DA-A	15 DA-A	15 DA-A	15 DA-A	15 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Aim Roundup WeatherMAX AMS	2 4.5	EW SL DF	0.0078 0.56 17.0	LB A/A LB AE/A LB/100 GAL	0.5 16.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST A POST A POST A		93	96	5	99	99	93
3	Aim Roundup WeatherMAX AMS	2 4.5	EW SL DF	0.0078 0.77 17.0	LB A/A LB AE/A LB/100 GAL	0.5 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST A POST A POST A		96	96	5	99	99	93
4	Roundup WeatherMAX AMS	4.5	SL DF	0.56 17.0	LB AE/A LB/100 GAL	16.0 17.0	FL OZ/A LB/100 GAL	POST A POST A		93	99	0	99	98	95
5	Roundup WeatherMAX AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST A POST A		95	98	0	99	95	96
LSD (P=.05)										4.3	3.6	0.0	0.0	4.6	4.2

Iowa State University

Weed Code										CHEAL	XANST	ZEAMD	SETFA	ABUTH	AMATA
Rating Data Type										CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-26-04	06-26-04	07-02-04	07-02-04	07-02-04	07-02-04
Trt-Eval Interval										15 DA-A	15 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Aim Roundup WeatherMAX AMS	2 4.5	EW SL DF	0.0078 0.56 17.0	LB A/A LB AE/A LB/100 GAL	0.5 16.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST A POST A POST A		95	96	5	99	96	93
3	Aim Roundup WeatherMAX AMS	2 4.5	EW SL DF	0.0078 0.77 17.0	LB A/A LB AE/A LB/100 GAL	0.5 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST A POST A POST A		96	98	5	99	96	93
4	Roundup WeatherMAX AMS	4.5	SL DF	0.56 17.0	LB AE/A LB/100 GAL	16.0 17.0	FL OZ/A LB/100 GAL	POST A POST A		95	99	0	99	93	95
5	Roundup WeatherMAX AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST A POST A		95	98	0	99	93	96
LSD (P=.05)										1.9	3.2	0.0	0.0	3.8	4.2

Iowa State University

Weed Code										CHEAL	XANST
Rating Data Type										CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT
Rating Date										07-02-04	07-02-04
Trt-Eval Interval										21 DA-A	21 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated									0	0
2	Aim Roundup WeatherMAX AMS	2 4.5	EW SL DF	0.0078 0.56 17.0	LB A/A LB AE/A LB/100 GAL	0.5 16.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST POST POST	A A A	93	96
3	Aim Roundup WeatherMAX AMS	2 4.5	EW SL DF	0.0078 0.77 17.0	LB A/A LB AE/A LB/100 GAL	0.5 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST POST POST	A A A	96	99
4	Roundup WeatherMAX AMS	4.5	SL DF	0.56 17.0	LB AE/A LB/100 GAL	16.0 17.0	FL OZ/A LB/100 GAL	POST POST	A A	95	99
5	Roundup WeatherMAX AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST POST	A A	96	99
LSD (P=.05)										3.9	1.9

Iowa State University

Postemergence Steadfast applications with various adjuvants in corn, Ames, IA, 2004.

Trial ID: ACC 22

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: 05-17-04

Country: USA

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Objective: The purpose of this study was to evaluate Steadfast with various adjuvants for corn phytotoxicity and weed control in corn.

Conclusions: Variability in seed planting rate and predation by rodents contributed to significant differences in corn stand between several treatments when observed on July 26. No significant difference in corn injury between the postemergence (POST) applied treatments was observed on June 16, seven days after application. Injury ranged from 10 to 13%. Injury was noted with some treatments on June 29, twenty days after application, but was considered negligible.

Giant foxtail, common waterhemp and common lambsquarters pressure was light to medium and consistent throughout the study, while velvetleaf and common cocklebur pressure was light and variable. In general, good to excellent giant foxtail and good common cocklebur control was observed with the treatments on June 29, July 12, and August 8, twenty, thirty-three, and fifty-four days after application, respectively. No significant differences in control between treatments were determined for these dates. Velvetleaf control was generally fair to good with the treatments on June 29, July 12, and August 8. Significant differences in control between several treatments were determined. Common waterhemp control was fair to good with the treatments on June 29 and July 12. On August 8 several treatments provided poor control. Common lambsquarters control was generally fair to good on June 19 and July 12 with the treatments. However, most treatments provided poor to fair control on August 8.

Corn yields ranged from 219 to 241 bu/A with the treatments. All yielded significantly more than the untreated control and significant differences between several treatments were determined. Yields did not necessarily reflect the overall level of weed control achieved by the treatments. Significant yield differences may be attributed more to differences in corn stand that were noted above. (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 8545

Planting Date: 05-17-04

Planting Method: DIRECT DRILLED

Rate: 30200 SEEDS/A

Depth: 1.5 IN

Row Spacing: 30 IN

Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 13% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM

pH: 7.8 Soil Name: CANISTEO, HARPS

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	06-09-04
Application Method:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	80 F
% Relative Humidity:	66
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	75 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	90

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMD V 4
Stage Scale:	DESC
Height, Unit:	7 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-4 LEAF
Stage Scale:	1-5 IN
Density, Unit:	0-10 FT ²
Weed 2 Code, Stage:	ABUTH COTYL-6 L
Stage Scale:	0.5-3 IN
Density, Unit:	0-1 FT ²
Weed 3 Code, Stage:	AMATA COTYL-NUM
Stage Scale:	0.5-3 IN
Density, Unit:	0-15 FT ²
Weed 4 Code, Stage:	CHEAL NUMEROUS
Stage Scale:	0.5-3 IN
Density, Unit:	0-3 FT ²
Weed 5 Code, Stage:	XANST 5-8 LEAF
Stage Scale:	3-8 IN
Density, Unit:	0-1 FT ²

APPLICATION EQUIPMENT

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

Iowa State University

Postemergence Steadfast applications with various adjuvants in corn, Ames, IA, 2004.

Trial ID: ACC 22

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type								STAND	PHYGEN	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								07-26-04	06-16-04	06-23-04	06-29-04	06-29-04	06-29-04	06-29-04		
Trt-Eval Interval								47 DA-A	7 DA-A	14 DA-A	20 DA-A	20 DA-A	20 DA-A	20 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Untreated									28	0	0	0	0	0	0
2	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		31	12	5	3	95	95	85
	Herbimax		L	1.0	% V/V	1.0	%v/v	POST A								
	AMS		DF	2.0	LB/A	2.0	LB/A	POST A								
3	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		30	12	5	0	95	90	73
	Herbimax		L	1.0	% V/V	1.0	%v/v	POST A								
	Choice		L	0.5	% V/V	0.5	%v/v	POST A								
4	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		29	10	3	3	95	92	80
	Herbimax		L	1.0	% V/V	1.0	%v/v	POST A								
	LI 168		L	0.5	% V/V	0.5	%v/v	POST A								
5	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		29	12	5	3	95	92	78
	Liberate		L	0.25	% V/V	0.25	%v/v	POST A								
	AMS		DF	2.0	LB/A	2.0	LB/A	POST A								
6	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		29	12	5	2	96	95	75
	Liberate		L	0.25	% V/V	0.25	%v/v	POST A								
	Choice		L	0.5	% V/V	0.5	%v/v	POST A								
7	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		29	10	5	2	95	87	75
	Liberate		L	0.25	% V/V	0.25	%v/v	POST A								
	LI 168		L	0.5	% V/V	0.5	%v/v	POST A								
8	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		31	10	5	0	96	93	85
	Dispatch 111		L	1.0	% V/V	1.0	%v/v	POST A								
9	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		29	13	5	2	95	95	83
	BlendMaster		L	1.0	% V/V	1.0	% V/V	POST A								
10	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST A		30	13	5	5	96	93	88
	Effective		L	2.5	PT/A	2.5	PT/A	POST A								
LSD (P=.05)								2.4	3.6	1.6	3.9	3.3	5.9	14.6	5.7	

Iowa State University

Weed Code										XANST	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	XANST	SETFA
Rating Data Type										CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-29-04	07-12-04	07-12-04	07-12-04	07-12-04	07-12-04	07-12-04	08-02-04
Trt-Eval Interval										20 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	54 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	95	0	99	95	83	87	93	93
	Herbimax	L		1.0	% V/V	1.0	%v/v	POST	A								
	AMS	DF		2.0	LB/A	2.0	LB/A	POST	A								
3	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	92	0	99	88	68	80	93	96
	Herbimax	L		1.0	% V/V	1.0	%v/v	POST	A								
	Choice	L		0.5	% V/V	0.5	%v/v	POST	A								
4	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	95	0	99	92	80	83	93	95
	Herbimax	L		1.0	% V/V	1.0	%v/v	POST	A								
	LI 168	L		0.5	% V/V	0.5	%v/v	POST	A								
5	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	95	0	99	90	78	87	95	95
	Liberate	L		0.25	% V/V	0.25	%v/v	POST	A								
	AMS	DF		2.0	LB/A	2.0	LB/A	POST	A								
6	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	93	0	99	95	73	82	92	95
	Liberate	L		0.25	% V/V	0.25	%v/v	POST	A								
	Choice	L		0.5	% V/V	0.5	%v/v	POST	A								
7	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	92	0	99	85	75	80	92	95
	Liberate	L		0.25	% V/V	0.25	%v/v	POST	A								
	LI 168	L		0.5	% V/V	0.5	%v/v	POST	A								
8	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	93	0	99	93	85	80	93	93
	Dispatch 111	L		1.0	% V/V	1.0	%v/v	POST	A								
9	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	92	0	99	95	83	82	92	93
	BlendMaster	L		1.0	% V/V	1.0	% V/V	POST	A								
10	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	95	0	99	93	88	90	93	93
	Effective	L		2.5	PT/A	2.5	PT/A	POST	A								
LSD (P=.05)										5.3	0.0	0.0	5.0	16.6	7.0	6.9	4.3

Iowa State University

Weed Code										ABUTH	AMATA	CHEAL	XANST	ZEAMD
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	YIELD
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	BU/A
Rating Date										08-02-04	08-02-04	08-02-04	08-02-04	10-18-04
Trt-Eval Interval										54 DA-A	54 DA-A	54 DA-A	54 DA-A	131 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated									0	0	0	0	172
2	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	93	78	82	92	231
	Herbimax		L	1.0	% V/V	1.0	%v/v	POST	A					
	AMS		DF	2.0	LB/A	2.0	LB/A	POST	A					
3	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	88	63	72	93	237
	Herbimax		L	1.0	% V/V	1.0	%v/v	POST	A					
	Choice		L	0.5	% V/V	0.5	%v/v	POST	A					
4	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	90	80	83	91	219
	Herbimax		L	1.0	% V/V	1.0	%v/v	POST	A					
	LI 168		L	0.5	% V/V	0.5	%v/v	POST	A					
5	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	90	75	82	92	223
	Liberate		L	0.25	% V/V	0.25	%v/v	POST	A					
	AMS		DF	2.0	LB/A	2.0	LB/A	POST	A					
6	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	95	72	73	90	224
	Liberate		L	0.25	% V/V	0.25	%v/v	POST	A					
	Choice		L	0.5	% V/V	0.5	%v/v	POST	A					
7	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	83	68	73	92	228
	Liberate		L	0.25	% V/V	0.25	%v/v	POST	A					
	LI 168		L	0.5	% V/V	0.5	%v/v	POST	A					
8	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	92	80	67	90	238
	Dispatch 111		L	1.0	% V/V	1.0	%v/v	POST	A					
9	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	92	83	73	88	229
	BlendMaster		L	1.0	% V/V	1.0	% V/V	POST	A					
10	Steadfast	75	WG	0.035	LB A/A	0.75	OZ WT/A	POST	A	92	85	88	93	241
	Effective		L	2.5	PT/A	2.5	PT/A	POST	A					
LSD (P=.05)										6.4	21.3	12.7	7.7	16.6

Iowa State University

Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ames, IA, 2004.

Trial ID: SHC 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: 50011 Initiation Date: 04-15-04
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 KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for crop phytotoxicity and weed control in corn.

Conclusions: A significant difference in corn stand was observed on August 15 between the 4.0 pt/A rate of preemergence (PRE) applied Dual II Magnum and several other treatments. This difference was caused by variable stand establishment and not from the herbicide treatment. No corn injury was observed at any of the observation dates. On May 10, KIH-485 applied at 11.9 oz wt/A provided significantly higher shattercane control (78%) than the lower two application rates of KIH-485, Dual II Magnum applied at 2.0 pt/A and Bicep II Magnum. Both KIH-485 & Atrazine treatments and the high rate of Dual II Magnum ranged from 68 to 70% control of shattercane. All treatments provided excellent common lambsquarters control on May 10. Only KIH-485 & Atrazine and Bicep II Magnum provided excellent control of Pennsylvania smartweed.

Shattercane control observed on May 25 was very similar to that of May 10. Common lambsquarters control dropped to 87% for the low rate of Dual II Magnum. Only KIH-485 & Atrazine provided acceptable control of Pennsylvania smartweed. Shattercane control on June 29 improved for all KIH-485 treatments. All other treatments demonstrated reduced control or remained the same. Only KIH-485 & Atrazine provided acceptable control of Pennsylvania smartweed at 92%. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD Variety: GARST 8545
Planting Date: 04-15-04 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.75 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
F Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 25% at planting.

SOIL DESCRIPTION

% OM: 3.5 Texture: CLAY LOAM
pH: 5.9 Soil Name: CLARION, NICOLLET, WEBSTER
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	04-16-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	76 F
% Relative Humidity:	39
Wind Velocity, Unit:	8 MPH
Soil Temp., Unit:	58 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	90

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ames, IA, 2004.

Trial ID: SHC 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	SORVU	CHEAL	POLPY	ZEAMD	SORVU	CHEAL	
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								08-15-04	05-10-04	05-10-04	05-10-04	05-10-04	05-25-04	05-25-04	05-25-04	
Trt-Eval Interval								121 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	39 DA-A	39 DA-A	39 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Untreated									26	0	0	0	0	0	0
2	KIH-485	60	WG	0.223	LB A/A	5.95	OZ WT/A	PRE	A	27	0	43	98	38	0	47
3	KIH-485	60	WG	0.267	LB A/A	7.15	OZ WT/A	PRE	A	26	0	53	99	40	0	55
4	KIH-485	60	WG	0.446	LB A/A	11.9	OZ WT/A	PRE	A	26	0	78	99	65	0	80
5	Dual II Magnum	7.64	EC	1.9	LB A/A	2.0	PT/A	PRE	A	25	0	45	93	38	0	40
6	Dual II Magnum	7.64	EC	3.83	LB A/A	4.0	PT/A	PRE	A	24	0	68	99	50	0	67
7	KIH-485/Atrazine	57.8	WG	1.65	LB A/A	45.7	OZ WT/A	PRE	A	28	0	68	99	94	0	68
8	KIH-485/Atrazine	55.7	WG	2.18	LB A/A	63.0	OZ WT/A	PRE	A	26	0	70	99	99	0	70
9	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	28	0	55	99	93	0	53
LSD (P=.05)								3.4	0.0	12.0	4.5	17.6	0.0	13.5	5.3	

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										POLPY CONTROL PERCENT 05-25-04 39 DA-A	ZEAMD PHYGEN PERCENT 06-29-04 74 DA-A	SORVU CONTROL PERCENT 06-29-04 74 DA-A	CHEAL CONTROL PERCENT 06-29-04 74 DA-A	POLPY CONTROL PERCENT 06-29-04 74 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	KIH-485	60	WG	0.223	LB A/A	5.95	OZ WT/A	PRE	A	40	0	58	98	42
3	KIH-485	60	WG	0.267	LB A/A	7.15	OZ WT/A	PRE	A	38	0	70	98	38
4	KIH-485	60	WG	0.446	LB A/A	11.9	OZ WT/A	PRE	A	53	0	87	99	55
5	Dual II Magnum	7.64	EC	1.9	LB A/A	2.0	PT/A	PRE	A	35	0	30	87	35
6	Dual II Magnum	7.64	EC	3.83	LB A/A	4.0	PT/A	PRE	A	48	0	48	96	45
7	KIH-485/Atrazine	57.8	WG	1.65	LB A/A	45.7	OZ WT/A	PRE	A	88	0	67	99	81
8	KIH-485/Atrazine	55.7	WG	2.18	LB A/A	63.0	OZ WT/A	PRE	A	92	0	68	99	92
9	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	68	0	43	96	68
LSD (P=.05)										18.9	0.0	11.3	4.9	20.2

Iowa State University

Effect of postemergence applied herbicides on crop phytotoxicity and yield of seven popcorn varieties, Ames, IA, 2004.

Trial ID: ACP 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: 50011 Initiation Date: 05-06-04
Country: USA

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

Objective: The objective of this study was to evaluate the effect of postemergence applied herbicides on seven popcorn varieties. Popcorn stand, phytotoxicity, and yield were evaluated.

Conclusions: Data were subjected to a spit-plot analysis and tables contain treatment means. The interaction of treatment by variety for popcorn stand was not significant, therefore the main effect of treatment and variety will be discussed. Differences in popcorn stand between treatments were not significant when averaged across varieties. However, significant differences were observed between varieties when stand was averaged across treatments. Stand was variable and ranged from 29 to 35 plants/17.42 row feet. Significant differences between varieties in stand may have been attributable to the inherent variability in seeding rate and seed size. Stand was significantly higher with "Crookham variety R-98114W" than with any other.

Herbicide treatment by variety interaction for popcorn injury was significant for all evaluation dates. Injury to the varieties from Distinct and Option ranged from 13 to 30% and 20 to 42%, respectively, when observed on June 9, seven days after application (DAA). The order of injury severity to the varieties from Distinct included: "Crookham R-98114W" > "Iowa Acres A-848W" > "Ag-Alumni P625" = "Zangger N-11649" > "Schlessman SH-4862" > "ConAgra VW P211" > "Iowa Acres A-3035". The order of injury severity to the varieties from Option included: "Ag-Alumni P625" > "Iowa Acres A-848W" > "Crookham R-98114W" > "Zangger N-11649" > "Schlessman SH-4862" > "ConAgra VW P211" = "Iowa Acres A-3035".

On June 17, fifteen DAA, injury to the varieties from Distinct and Option ranged from 10 to 20% and 12 to 25%, respectively. The most injury from Distinct occurred on "Crookham variety R-98114W", "Iowa Acres variety A-848W", and "Schlessman variety SH-4862". "Ag-Alumni variety P625", "Iowa Acres variety A-848W", "Zangger variety N-11649", and "Crookham variety R-98114W" exhibited the most injury from Option at 15 DAA. Injury observed at 23 DAA and 30 DAA generally reflected the trends established earlier, however, injury severity overall had diminished. By 41 DAA only Distinct applied to "Iowa Acres variety A-848W" resulted in greater than 10% injury. Most varieties exhibited no injury from Distinct or Option at 41 DAA.

The interaction of treatment by variety for root lodge was not significant. There was no significant difference in root lodging between Option and Distinct when averaged across the varieties. However, Option did result in significantly more root lodging than the untreated control. When root lodging was averaged across treatments, "Ag-Alumni variety P625" root lodged significantly more than "Iowa Acres variety A-3035" and "Schlessman variety SH-4862". There were no significant differences in root lodging between the remaining varieties and "Ag-Alumni variety P625" or "Schlessman variety SH-4862".

There was a significant treatment by variety interaction for stalk lodging. When stalk lodging was averaged across varieties, Distinct resulted in significantly more stalk lodging than either Option or the untreated control. Stalk lodging between Option and the untreated control was not significant. "Zangger variety N-11649" exhibited significantly more stalk lodging than all other varieties, except "ConAgra VW P211", when averaged across treatments. The least amount of stalk lodging occurred with the "Ag-Alumni variety P625"; however, stalk lodging with this variety was not significantly different from four other varieties.

The interaction of treatment by variety for yield was not significant. Treatment and variety differences were significant. The untreated control, when averaged across varieties yielded significantly higher than Distinct and Option, while Distinct was significantly higher than Option. When averaged across the treatments, numerous significant differences in yield were observed between varieties. "Zangger variety N-11649" yielded significantly higher than all other varieties. Yield between "Ag-Alumni variety P625" and "Crookham variety R-98114W" was not significantly different, however, both yielded significantly higher than all varieties, except "Zangger N-11649". "ConAgra variety VW P211" yield was the lowest and significantly less than all other varieties. (Dept. of Agronomy, Iowa State University, Ames)

Crop 1: ZEAME POPCORN Variety: 7 VARIETIES
Planting Date: 05-06-03 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 15% at planting. Dual II Magnum was applied preemergence to the entire experiment at 2.0 pts/A on May 6 to assist in establishment of weed free conditions.

Iowa State University

SOIL DESCRIPTION

% OM: 3.6 **Texture:** CLAY LOAM
pH: 7.3 **Soil Name:** CANISTEO, NICOLLET, CLARION
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A
Application Date:	06-02-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	64 F
% Relative Humidity:	69
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	64 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	95

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAME V 4
Stage Scale:	DESC
Height, Unit:	6 IN

APPLICATION EQUIPMENT

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

Iowa State University

Effect of postemergence applied herbicides on crop phytotoxicity and yield of seven popcorn varieties, Ames, IA, 2004.

Trial ID: ACP 1
 Location: Ames

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

Weed Code				ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD
Rating Data Type				STAND	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Rating Unit				17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date				07-08-04	06-09-04	06-17-04	06-25-04	07-02-04	07-13-04
Trt-Eval Interval				36 DA-A	7 DA-A	15 DA-A	23 DA-A	30 DA-A	41 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code
1	Schlessman SH-4862 variety Untreated control								
2	Schlessman SH-4862 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST A	
	NIS	L		0.25	% V/V	0.25	% V/V	POST A	
	AMS	DF		2.5	LB/A	2.5	LB/A	POST A	
3	Schlessman SH-4862 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST A	
	MSO	L		1.5	PT/A	1.5	PT/A	POST A	
	AMS	DF		1.5	LB/A	1.5	LB/A	POST A	
4	Iowa Acres A-3035 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST A	
	MSO	L		1.5	PT/A	1.5	PT/A	POST A	
	AMS	DF		1.5	LB/A	1.5	LB/A	POST A	
5	Iowa Acres A-3035 variety Untreated control								
6	Iowa Acres A-3035 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST A	
	NIS	L		0.25	% V/V	0.25	% V/V	POST A	
	AMS	DF		2.5	LB/A	2.5	LB/A	POST A	
7	ConAgra VW P211 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST A	
	MSO	L		1.5	PT/A	1.5	PT/A	POST A	
	AMS	DF		1.5	LB/A	1.5	LB/A	POST A	
8	ConAgra VW P211 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST A	
	NIS	L		0.25	% V/V	0.25	% V/V	POST A	
	AMS	DF		2.5	LB/A	2.5	LB/A	POST A	
9	ConAgra VW P211 variety Untreated control								
10	Zangger N-11649 variety Untreated control								
11	Zangger N-11649 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST A	
	NIS	L		0.25	% V/V	0.25	% V/V	POST A	
	AMS	DF		2.5	LB/A	2.5	LB/A	POST A	
12	Zangger N-11649 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST A	
	MSO	L		1.5	PT/A	1.5	PT/A	POST A	
	AMS	DF		1.5	LB/A	1.5	LB/A	POST A	
13	Iowa Acres A-848W variety Untreated control								
14	Iowa Acres A-848W variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST A	
	NIS	L		0.25	% V/V	0.25	% V/V	POST A	
	AMS	DF		2.5	LB/A	2.5	LB/A	POST A	
15	Iowa Acres A-848W variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST A	
	MSO	L		1.5	PT/A	1.5	PT/A	POST A	
	AMS	DF		1.5	LB/A	1.5	LB/A	POST A	
16	Crookham R-98114W variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST A	
	NIS	L		0.25	% V/V	0.25	% V/V	POST A	
	AMS	DF		2.5	LB/A	2.5	LB/A	POST A	

Iowa State University

Weed Code										ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD
Rating Data Type										STAND	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-08-04	06-09-04	06-17-04	06-25-04	07-02-04	07-13-04
Trt-Eval Interval										36 DA-A	7 DA-A	15 DA-A	23 DA-A	30 DA-A	41 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
17	Crookham R-98114W variety Untreated control									35	0	0	0	0	0
18	Crookham R-98114W variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST	A	35	32	17	15	10	2
	MSO		L	1.5	PT/A	1.5	PT/A	POST	A						
	AMS		DF	1.5	LB/A	1.5	LB/A	POST	A						
19	Ag-Alumni P625 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST	A	30	20	10	7	2	0
	NIS		L	0.25	% V/V	0.25	% V/V	POST	A						
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	A						
20	Ag-Alumni P625 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST	A	31	42	25	22	10	3
	MSO		L	1.5	PT/A	1.5	PT/A	POST	A						
	AMS		DF	1.5	LB/A	1.5	LB/A	POST	A						
21	Ag-Alumni P625 variety Untreated control									31	0	0	0	0	0

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Weed Code										ZEAMD	ZEAMD	ZEAMD
Rating Data Type										ROOT LODGE	STALK LODGE	YIELD
Rating Unit										PERCENT	PERCENT	LBS/A
Rating Date										10-06-04	10-06-04	10-08-04
Trt-Eval Interval										126 DA-A	126 DA-A	128 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Schlessman SH-4862 variety Untreated control									0	1	4561
2	Schlessman SH-4862 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST	A	0	5	4490
	NIS		L	0.25	% V/V	0.25	% V/V	POST	A			
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	A			
3	Schlessman SH-4862 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST	A	0	2	4342
	MSO		L	1.5	PT/A	1.5	PT/A	POST	A			
	AMS		DF	1.5	LB/A	1.5	LB/A	POST	A			
4	Iowa Acres A-3035 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST	A	1	10	4278
	MSO		L	1.5	PT/A	1.5	PT/A	POST	A			
	AMS		DF	1.5	LB/A	1.5	LB/A	POST	A			
5	Iowa Acres A-3035 variety Untreated control									1	7	4397
6	Iowa Acres A-3035 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST	A	0	6	4704
	NIS		L	0.25	% V/V	0.25	% V/V	POST	A			
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	A			
7	ConAgra VW P211 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST	A	21	10	2364
	MSO		L	1.5	PT/A	1.5	PT/A	POST	A			
	AMS		DF	1.5	LB/A	1.5	LB/A	POST	A			
8	ConAgra VW P211 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST	A	2	13	3047
	NIS		L	0.25	% V/V	0.25	% V/V	POST	A			
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	A			
9	ConAgra VW P211 variety Untreated control									3	10	3637
10	Zangger N-11649 variety Untreated control									1	17	6909
11	Zangger N-11649 variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST	A	2	24	6802
	NIS		L	0.25	% V/V	0.25	% V/V	POST	A			
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	A			
12	Zangger N-11649 variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST	A	6	10	6333
	MSO		L	1.5	PT/A	1.5	PT/A	POST	A			
	AMS		DF	1.5	LB/A	1.5	LB/A	POST	A			
13	Iowa Acres A-848W variety Untreated control									5	3	4030
14	Iowa Acres A-848W variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST	A	2	7	3629
	NIS		L	0.25	% V/V	0.25	% V/V	POST	A			
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	A			
15	Iowa Acres A-848W variety Option	35	WG	0.0328	LB A/A	1.5	OZ WT/A	POST	A	4	3	3990
	MSO		L	1.5	PT/A	1.5	PT/A	POST	A			
	AMS		DF	1.5	LB/A	1.5	LB/A	POST	A			
16	Crookham R-98114W variety Distinct	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST	A	5	8	4979
	NIS		L	0.25	% V/V	0.25	% V/V	POST	A			
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	A			
17	Crookham R-98114W variety Untreated control									2	8	5493

Iowa State University

Effect of postemergence applied herbicides on crop phytotoxicity and yield of eight popcorn varieties, Ames, IA, 2004.

Trial ID: ACP 2
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: 05-11-04
Country: USA

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

Objective: The objective of this study was to evaluate the effect of postemergence applied herbicides on eight popcorn varieties. Popcorn stand, phytotoxicity, root lodging, yield, and popping characteristics were evaluated.

Conclusions: Data were subjected to a split-plot analysis and tables contain treatment means. The interaction of herbicide treatment by variety for popcorn stand was not significant, nor was the main effect of herbicide treatment. Few significant differences in stand were observed between herbicide treatments, when averaged across varieties. Stands in the 2, 4-D LV4 treatment were significantly less than those in Callisto and Beacon treatments. No other significant differences in stand between herbicide treatments occurred. Green snap was observed with some varieties from the 2, 4-D LV4 treatment. The main effect of variety on stand was significant. Significant differences in stand between varieties were observed, when averaged across herbicide treatments. Variety G (row 8 (R8)) had significantly higher stand than all other varieties. Differences in stand between varieties were probably mostly due to seeding rate variability.

Herbicide treatment by variety interaction for popcorn injury was significant for all evaluation dates. Herbicide injury from the treatments averaged across all varieties ranged from 0 to 18% seven days after application to 0 to 11% twenty-two days after application. Beacon and Spirit, averaged across varieties, resulted in significantly higher (18%) popcorn injury compared to all others, at seven days following application. Injury at seven days from the remaining herbicide treatments, averaged across varieties included: Northstar 15%, Distinct 14%, Aim 13%, Accent 12%, 2, 4-D LV4 10%, Buctril plus Atrazine 8%, Callisto 4%, Laddok 0%. At twenty-two days after application, injury from the herbicide treatments, averaged across varieties, was less overall. Aim and 2, 4-D LV4 treatments resulted in the most injury (11%), and significantly more than all other treatments. Distinct, Northstar, and Spirit resulted in 8, 8, and 6% injury, respectively at twenty-two days. The remaining herbicide treatments resulted in 3% or less injury. Significant differences in injury were observed between varieties on all observation dates when averaged across herbicides. Variety B (row 2) followed by Variety C (row 3), and to a lesser extent Variety D (row 4) consistently demonstrated the most injury from the herbicide treatments compared to all other varieties. Injury from 2, 4-D LV4 applied to Variety B (row 2) was the highest compared to all other varieties and herbicide treatments on all observation dates.

The interaction of herbicide treatment by variety for root lodging was not significant. Differences in root lodging between herbicide treatments were not significant when averaged across varieties. However, significant differences were observed between varieties when root lodging was averaged across herbicide treatments. Variety H (row 8) lodged significantly more than all others. Lodging between Variety D (row 4) and Variety A (row 1) was not significantly different. However, lodging with Variety D and Variety A was significantly more than the remaining varieties. Differences in lodging between the remaining varieties were not significant.

Herbicide treatment by variety interaction was not significant for popcorn yield. There were no significant differences in yield between herbicide treatments averaged across varieties. Significant differences did occur between varieties, however, when averaged across herbicide treatment with Variety G (row 7) yielding significantly higher than all other varieties. Yield was lowest with variety F (row 6). (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAME POPCORN Variety: 8 VARIETIES
Planting Date: 05-11-04 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

SITE AND DESIGN

Plot Width, Unit: 20 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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A of actual N applied as urea. Crop residue on the soil surface was 19% at planting. Dual II Magnum was applied preemergence to the entire experiment at 2.0 pts/A on May 12 to assist in establishment of weed free conditions.

SOIL DESCRIPTION

% OM: 5.5 Texture: CLAY LOAM
pH: 7.3 Soil Name: CANISTEO, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	06-07-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	86 F
% Relative Humidity:	69
Wind Velocity, Unit:	3 MPH
Soil Temp., Unit:	77 F
% Cloud Cover:	20

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAME V 4
Stage Scale:	DESC
Height, Unit:	5.5 IN

APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND
Operating Pressure:	30
Nozzle Size:	11003
Spray Volume, Unit:	20 GPA

Trt No	Treatment Application Comment
	Eight popcorn hybrids per plot
	Row 1 (R1) = Variety A
	Row 2 (R2) = Variety B
	Row 3 (R3) = Variety C
	Row 4 (R4) = Variety D
	Row 5 (R5) = Variety E
	Row 6 (R6) = Variety F
	Row 7 (R7) = Variety G
	Row 8 (R8) = Variety H

Iowa State University

Effect of postemergence applied herbicides on crop phytotoxicity and yield of eight popcorn varieties, Ames, IA, 2004.

Trial ID: ACP 2
 Location: Ames

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

Weed Code		ZEAME R1		ZEAME R2		ZEAME R3		ZEAME R4		ZEAME R5		ZEAME R6		ZEAME R7		
Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	STAND	STAND	STAND	STAND	STAND	STAND	STAND	STAND	STAND	STAND	STAND	STAND	
				17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	
				07-16-04	07-16-04	07-16-04	07-16-04	07-16-04	07-16-04	07-16-04	07-16-04	07-16-04	07-16-04	07-16-04	07-16-04	
				39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Distinct NIS AMS	70	WG L DF	0.262 LB A/A 0.25 % V/V 2.5 LB/A	6.0 OZ WT/A 0.25 % V/V 2.5 LB/A			POST A POST A POST A		30	31	29	31	31	28	31
2	Spirit COC	57	WG L	0.0356 LB A/A 1.0 QT/A	1.0 OZ WT/A 1.0 QT/A			POST A POST A		32	31	28	33	35	29	33
3	Northstar NIS	47.4	WG L	0.148 LB A/A 0.25 % V/V	5.0 OZ WT/A 0.25 % V/V			POST A POST A		29	32	29	32	32	32	32
4	Aim NIS	2	EW L	0.0297 LB A/A 0.25 % V/V	1.9 FL OZ/A 0.25 % V/V			POST A POST A		33	31	32	34	29	30	33
5	Buctril + Atrazine	3	SC	1.13 LB A/A	3.0 PT/A			POST A		36	31	28	31	34	30	32
6	2, 4-D LV4	4	SL	0.335 LB A/A	0.67 PT/A			POST A		29	27	26	27	33	31	33
7	Laddok S12 AMS	5	FL DF	1.46 LB A/A 2.5 LB/A	2.33 PT/A 2.5 LB/A			POST A POST A		33	33	31	32	31	32	32
8	Callisto COC	4	SC L	0.094 LB A/A 1.0 % V/V	3.0 FL OZ/A 1.0 % V/V			POST A POST A		36	34	29	32	34	29	33
9	Accent COC	75	DG L	0.031 LB A/A 1.0 % V/V	0.66 OZ WT/A 1.0 % V/V			POST A POST A		32	31	29	29	32	31	30
10	Beacon NIS	75	DF L	0.0356 LB A/A 0.25 % V/V	0.76 OZ WT/A 0.25 % V/V			POST A POST A		34	33	30	31	34	31	32

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ZEAME R8 STAND 17.42 FT 07-16-04 39 DA-A	ZEAME R1 PHYGEN PERCENT 06-14-04 7 DA-A	ZEAME R2 PHYGEN PERCENT 06-14-04 7 DA-A	ZEAME R3 PHYGEN PERCENT 06-14-04 7 DA-A	ZEAME R4 PHYGEN PERCENT 06-14-04 7 DA-A	ZEAME R5 PHYGEN PERCENT 06-14-04 7 DA-A	ZEAME R6 PHYGEN PERCENT 06-14-04 7 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Distinct NIS AMS	70	WG L DF	0.262 0.25 2.5	LB A/A % V/V LB/A	6.0	OZ WT/A % V/V LB/A	POST A POST A POST A	A	38	10	13	20	22	22	12
2	Spirit COC	57	WG L	0.0356 1.0	LB A/A QT/A	1.0	OZ WT/A QT/A	POST A POST A	A	33	15	20	22	23	17	20
3	Northstar NIS	47.4	WG L	0.148 0.25	LB A/A % V/V	5.0	OZ WT/A % V/V	POST A POST A	A	35	13	20	20	22	18	10
4	Aim NIS	2	EW L	0.0297 0.25	LB A/A % V/V	1.9	FL OZ/A % V/V	POST A POST A	A	33	10	15	15	10	15	15
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST A	A	36	3	12	5	10	10	8
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST A	A	34	10	28	17	7	8	5
7	Laddok S12 AMS	5	FL DF	1.46 2.5	LB A/A LB/A	2.33	PT/A LB/A	POST A POST A	A	35	2	0	0	0	0	0
8	Callisto COC	4	SC L	0.094 1.0	LB A/A % V/V	3.0	FL OZ/A % V/V	POST A POST A	A	36	0	10	5	2	5	5
9	Accent COC	75	DG L	0.031 1.0	LB A/A % V/V	0.66	OZ WT/A % V/V	POST A POST A	A	36	10	10	12	15	13	13
10	Beacon NIS	75	DF L	0.0356 0.25	LB A/A % V/V	0.76	OZ WT/A % V/V	POST A POST A	A	36	12	15	22	22	18	20

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ZEAME R7 PHYGEN PERCENT 06-14-04 7 DA-A	ZEAME R8 PHYGEN PERCENT 06-14-04 7 DA-A	ZEAME R1 PHYGEN PERCENT 06-22-04 15 DA-A	ZEAME R2 PHYGEN PERCENT 06-22-04 15 DA-A	ZEAME R3 PHYGEN PERCENT 06-22-04 15 DA-A	ZEAME R4 PHYGEN PERCENT 06-22-04 15 DA-A	ZEAME R5 PHYGEN PERCENT 06-22-04 15 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Distinct NIS AMS	70	WG L DF	0.262 0.25 2.5	LB A/A % V/V LB/A	6.0	OZ WT/A % V/V LB/A	POST A POST A POST A	A	7	8	10	10	15	18	15
2	Spirit COC	57	WG L	0.0356 1.0	LB A/A QT/A	1.0	OZ WT/A QT/A	POST A POST A	A	12	12	12	18	18	20	12
3	Northstar NIS	47.4	WG L	0.148 0.25	LB A/A % V/V	5.0	OZ WT/A % V/V	POST A POST A	A	7	8	13	15	18	17	15
4	Aim NIS	2	EW L	0.0297 0.25	LB A/A % V/V	1.9	FL OZ/A % V/V	POST A POST A	A	15	13	8	13	13	8	12
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST A	A	10	7	2	8	2	5	7
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST A	A	3	2	13	28	17	7	12
7	Laddok S12 AMS	5	FL DF	1.46 2.5	LB A/A LB/A	2.33	PT/A LB/A	POST A POST A	A	0	2	0	0	0	0	0
8	Callisto COC	4	SC L	0.094 1.0	LB A/A % V/V	3.0	FL OZ/A % V/V	POST A POST A	A	3	2	0	10	5	2	5
9	Accent COC	75	DG L	0.031 1.0	LB A/A % V/V	0.66	OZ WT/A % V/V	POST A POST A	A	13	12	8	10	5	8	8
10	Beacon NIS	75	DF L	0.0356 0.25	LB A/A % V/V	0.76	OZ WT/A % V/V	POST A POST A	A	18	15	8	10	13	13	10

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ZEAME R6 PHYGEN PERCENT 06-22-04 15 DA-A	ZEAME R7 PHYGEN PERCENT 06-22-04 15 DA-A	ZEAME R8 PHYGEN PERCENT 06-22-04 15 DA-A	ZEAME R1 PHYGEN PERCENT 06-29-04 22 DA-A	ZEAME R2 PHYGEN PERCENT 06-29-04 22 DA-A	ZEAME R3 PHYGEN PERCENT 06-29-04 22 DA-A	ZEAME R4 PHYGEN PERCENT 06-29-04 22 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Distinct NIS AMS	70	WG L DF	0.262 0.25 2.5	LB A/A % V/V LB/A	6.0	OZ WT/A % V/V LB/A	POST POST POST	A A A	10	7	5	10	7	10	13
2	Spirit COC	57	WG L	0.0356 1.0	LB A/A QT/A	1.0	OZ WT/A QT/A	POST POST	A A	15	10	7	5	10	10	10
3	Northstar NIS	47.4	WG L	0.148 0.25	LB A/A % V/V	5.0	OZ WT/A % V/V	POST POST	A A	10	7	7	10	10	12	12
4	Aim NIS	2	EW L	0.0297 0.25	LB A/A % V/V	1.9	FL OZ/A % V/V	POST POST	A A	13	13	10	8	12	13	8
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST	A	5	5	3	0	3	2	5
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST	A	5	5	3	15	27	17	8
7	Laddok S12 AMS	5	FL DF	1.46 2.5	LB A/A LB/A	2.33	PT/A LB/A	POST POST	A A	0	0	0	0	0	0	0
8	Callisto COC	4	SC L	0.094 1.0	LB A/A % V/V	3.0	FL OZ/A % V/V	POST POST	A A	5	3	2	0	8	3	2
9	Accent COC	75	DG L	0.031 1.0	LB A/A % V/V	0.66	OZ WT/A % V/V	POST POST	A A	8	7	5	5	3	2	3
10	Beacon NIS	75	DF L	0.0356 0.25	LB A/A % V/V	0.76	OZ WT/A % V/V	POST POST	A A	12	8	8	3	2	5	3

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ZEAME R5 PHYGEN PERCENT 06-29-04 22 DA-A	ZEAME R6 PHYGEN PERCENT 06-29-04 22 DA-A	ZEAME R7 PHYGEN PERCENT 06-29-04 22 DA-A	ZEAME R8 PHYGEN PERCENT 06-29-04 22 DA-A	ZEAME R1 PHYGEN PERCENT 07-06-04 29 DA-A	ZEAME R2 PHYGEN PERCENT 07-06-04 29 DA-A	ZEAME R3 PHYGEN PERCENT 07-06-04 29 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Distinct NIS AMS	70	WG L DF	0.262 0.25 2.5	LB A/A % V/V LB/A	6.0	OZ WT/A	POST A	A	10	5	5	0	8	5	10
2	Spirit COC	57	WG L	0.0356 1.0	LB A/A QT/A	1.0	OZ WT/A QT/A	POST A	A	3	5	2	0	3	5	7
3	Northstar NIS	47.4	WG L	0.148 0.25	LB A/A % V/V	5.0	OZ WT/A % V/V	POST A	A	8	8	3	2	3	5	7
4	Aim NIS	2	EW L	0.0297 0.25	LB A/A % V/V	1.9	FL OZ/A % V/V	POST A	A	12	12	12	10	5	8	10
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST A	A	3	2	3	2	0	0	0
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST A	A	10	5	3	3	12	22	10
7	Laddok S12 AMS	5	FL DF	1.46 2.5	LB A/A LB/A	2.33	PT/A LB/A	POST A	A	0	0	0	0	0	0	0
8	Callisto COC	4	SC L	0.094 1.0	LB A/A % V/V	3.0	FL OZ/A % V/V	POST A	A	3	5	2	0	0	7	3
9	Accent COC	75	DG L	0.031 1.0	LB A/A % V/V	0.66	OZ WT/A % V/V	POST A	A	3	2	3	0	0	0	0
10	Beacon NIS	75	DF L	0.0356 0.25	LB A/A % V/V	0.76	OZ WT/A % V/V	POST A	A	3	3	2	3	0	0	0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ZEAME R4 PHYGEN PERCENT 07-06-04 29 DA-A	ZEAME R5 PHYGEN PERCENT 07-06-04 29 DA-A	ZEAME R6 PHYGEN PERCENT 07-06-04 29 DA-A	ZEAME R7 PHYGEN PERCENT 07-06-04 29 DA-A	ZEAME R8 PHYGEN PERCENT 07-06-04 29 DA-A	ZEAME R1 PHYGEN PERCENT 07-15-04 38 DA-A	ZEAME R2 PHYGEN PERCENT 07-15-04 38 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Distinct NIS AMS	70	WG L DF	0.262 0.25 2.5	LB A/A % V/V LB/A	6.0	OZ WT/A % V/V LB/A	POST A POST A POST A		8	8	3	2	0	5	3
2	Spirit COC	57	WG L	0.0356 1.0	LB A/A QT/A	1.0	OZ WT/A QT/A	POST A POST A		5	2	2	2	0	2	2
3	Northstar NIS	47.4	WG L	0.148 0.25	LB A/A % V/V	5.0	OZ WT/A % V/V	POST A POST A		7	5	2	2	0	0	2
4	Aim NIS	2	EW L	0.0297 0.25	LB A/A % V/V	1.9	FL OZ/A % V/V	POST A POST A		5	7	10	7	8	0	3
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST A		0	0	0	0	0	0	0
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST A		3	5	0	0	0	12	20
7	Laddok S12 AMS	5	FL DF	1.46 2.5	LB A/A LB/A	2.33	PT/A LB/A	POST A POST A		0	0	0	0	0	0	0
8	Callisto COC	4	SC L	0.094 1.0	LB A/A % V/V	3.0	FL OZ/A % V/V	POST A POST A		2	3	2	0	0	0	3
9	Accent COC	75	DG L	0.031 1.0	LB A/A % V/V	0.66	OZ WT/A % V/V	POST A POST A		0	0	0	0	0	0	0
10	Beacon NIS	75	DF L	0.0356 0.25	LB A/A % V/V	0.76	OZ WT/A % V/V	POST A POST A		0	0	0	0	0	0	0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ZEAME R3 PHYGEN PERCENT 07-15-04 38 DA-A	ZEAME R4 PHYGEN PERCENT 07-15-04 38 DA-A	ZEAME R5 PHYGEN PERCENT 07-15-04 38 DA-A	ZEAME R6 PHYGEN PERCENT 07-15-04 38 DA-A	ZEAME R7 PHYGEN PERCENT 07-15-04 38 DA-A	ZEAME R8 PHYGEN PERCENT 07-15-04 38 DA-A	ZEAME R1 ROOT LODGE PERCENT 10-22-04 137 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Distinct NIS AMS	70	WG L DF	0.262 0.25 2.5	LB A/A % V/V LB/A	6.0 0.25 2.5	OZ WT/A % V/V LB/A	POST A POST A POST A		5	5	5	5	0	0	32
2	Spirit COC	57	WG L	0.0356 1.0	LB A/A QT/A	1.0 1.0	OZ WT/A QT/A	POST A POST A		3	5	0	0	0	0	13
3	Northstar NIS	47.4	WG L	0.148 0.25	LB A/A % V/V	5.0 0.25	OZ WT/A % V/V	POST A POST A		2	2	3	0	0	0	19
4	Aim NIS	2	EW L	0.0297 0.25	LB A/A % V/V	1.9 0.25	FL OZ/A % V/V	POST A POST A		5	0	3	5	2	3	13
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST A		0	0	0	0	0	0	35
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST A		10	3	3	0	0	0	2
7	Laddok S12 AMS	5	FL DF	1.46 2.5	LB A/A LB/A	2.33 2.5	PT/A LB/A	POST A POST A		0	0	0	0	0	0	20
8	Callisto COC	4	SC L	0.094 1.0	LB A/A % V/V	3.0 1.0	FL OZ/A % V/V	POST A POST A		3	2	0	0	0	0	61
9	Accent COC	75	DG L	0.031 1.0	LB A/A % V/V	0.66 1.0	OZ WT/A % V/V	POST A POST A		0	0	0	0	0	0	37
10	Beacon NIS	75	DF L	0.0356 0.25	LB A/A % V/V	0.76 0.25	OZ WT/A % V/V	POST A POST A		0	0	0	0	0	0	17

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ZEAME R2 ROOT LODGE PERCENT 10-22-04 137 DA-A	ZEAME R3 ROOT LODGE PERCENT 10-22-04 137 DA-A	ZEAME R4 ROOT LODGE PERCENT 10-22-04 137 DA-A	ZEAME R5 ROOT LODGE PERCENT 10-22-04 137 DA-A	ZEAME R6 ROOT LODGE PERCENT 10-22-04 137 DA-A	ZEAME R7 ROOT LODGE PERCENT 10-22-04 137 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Distinct NIS AMS	70	WG L DF	0.262 0.25 2.5	LB A/A % V/V LB/A	6.0	OZ WT/A % V/V LB/A	POST A POST A POST A		7	1	19	10	29	3
2	Spirit COC	57	WG L	0.0356 1.0	LB A/A QT/A	1.0	OZ WT/A QT/A	POST A POST A		7	0	38	18	0	1
3	Northstar NIS	47.4	WG L	0.148 0.25	LB A/A % V/V	5.0	OZ WT/A % V/V	POST A POST A		3	9	19	1	1	0
4	Aim NIS	2	EW L	0.0297 0.25	LB A/A % V/V	1.9	FL OZ/A % V/V	POST A POST A		2	3	40	6	2	10
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST A		7	5	17	2	1	2
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST A		15	0	4	1	2	4
7	Laddok S12 AMS	5	FL DF	1.46 2.5	LB A/A LB/A	2.33	PT/A LB/A	POST A POST A		4	1	38	0	0	4
8	Callisto COC	4	SC L	0.094 1.0	LB A/A % V/V	3.0	FL OZ/A % V/V	POST A POST A		11	16	32	14	1	1
9	Accent COC	75	DG L	0.031 1.0	LB A/A % V/V	0.66	OZ WT/A % V/V	POST A POST A		3	7	49	20	2	2
10	Beacon NIS	75	DF L	0.0356 0.25	LB A/A % V/V	0.76	OZ WT/A % V/V	POST A POST A		4	0	18	2	0	3

Iowa State University

Weed Code				ZEAME R8		ZEAME R1		ZEAME R2		ZEAME R3		ZEAME R4		ZEAME R5		ZEAME R6	
Rating Data Type				ROOT LODGE		YIELD		YIELD		YIELD		YIELD		YIELD		YIELD	
Rating Unit				PERCENT		LBS/A		LBS/A		LBS/A		LBS/A		LBS/A		LBS/A	
Rating Date				10-22-04		10-22-04		10-22-04		10-22-04		10-22-04		10-22-04		10-22-04	
Trt-Eval Interval				137 DA-A		137 DA-A		137 DA-A		137 DA-A		137 DA-A		137 DA-A		137 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Distinct NIS AMS	70	WG L DF	0.262	LB A/A	6.0	OZ WT/A	POST A	A	40	3650	5143	5067	5265	5224	3048	
2	Spirit COC	57	WG L	0.0356	LB A/A	1.0	OZ WT/A	POST A	A	28	4027	4772	5420	4210	6012	3165	
3	Northstar NIS	47.4	WG L	0.148	LB A/A	5.0	OZ WT/A	POST A	A	23	3687	5143	5490	4936	5277	3876	
4	Aim NIS	2	EW L	0.0297	LB A/A	1.9	FL OZ/A	POST A	A	32	4985	4764	5646	4308	5008	3404	
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST A	A	30	4496	5246	5317	5324	5635	3445	
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST A	A	37	4583	3948	5237	5439	5173	3811	
7	Laddok S12 AMS	5	FL DF	1.46	LB A/A	2.33	PT/A	POST A	A	58	4115	5322	5976	4621	5366	3541	
8	Callisto COC	4	SC L	0.094	LB A/A	3.0	FL OZ/A	POST A	A	32	3508	5293	5360	5063	5450	3297	
9	Accent COC	75	DG L	0.031	LB A/A	0.66	OZ WT/A	POST A	A	38	3762	4989	5310	3911	4683	3438	
10	Beacon NIS	75	DF L	0.0356	LB A/A	0.76	OZ WT/A	POST A	A	50	3911	5100	5430	4616	5661	3699	

Iowa State University

Weed Code										ZEAME R7	ZEAME R8
Rating Data Type										YIELD	YIELD
Rating Unit										LBS/A	LBS/A
Rating Date										10-22-04	10-22-04
Trt-Eval Interval										137 DA-A	137 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Distinct NIS AMS	70	WG	0.262	LB A/A	6.0	OZ WT/A	POST A	A	6351	5367
			L	0.25	% V/V	0.25	% V/V	POST A	A		
			DF	2.5	LB/A	2.5	LB/A	POST A	A		
2	Spirit COC	57	WG	0.0356	LB A/A	1.0	OZ WT/A	POST A	A	6700	5252
			L	1.0	QT/A	1.0	QT/A	POST A	A		
3	Northstar NIS	47.4	WG	0.148	LB A/A	5.0	OZ WT/A	POST A	A	5853	5509
			L	0.25	% V/V	0.25	% V/V	POST A	A		
4	Aim NIS	2	EW	0.0297	LB A/A	1.9	FL OZ/A	POST A	A	5959	5222
			L	0.25	% V/V	0.25	% V/V	POST A	A		
5	Buctril + Atrazine	3	SC	1.13	LB A/A	3.0	PT/A	POST A	A	6474	5804
6	2, 4-D LV4	4	SL	0.335	LB A/A	0.67	PT/A	POST A	A	6051	4927
7	Laddok S12 AMS	5	FL	1.46	LB A/A	2.33	PT/A	POST A	A	6226	4734
			DF	2.5	LB/A	2.5	LB/A	POST A	A		
8	Callisto COC	4	SC	0.094	LB A/A	3.0	FL OZ/A	POST A	A	6185	5756
			L	1.0	% V/V	1.0	% V/V	POST A	A		
9	Accent COC	75	DG	0.031	LB A/A	0.66	OZ WT/A	POST A	A	6164	5407
			L	1.0	% V/V	1.0	% V/V	POST A	A		
10	Beacon NIS	75	DF	0.0356	LB A/A	0.76	OZ WT/A	POST A	A	6279	4706
			L	0.25	% V/V	0.25	% V/V	POST A	A		

Iowa State University

Effect of preemergence applied herbicides on crop phytotoxicity and yield of eight popcorn varieties, Ames, IA, 2004.

Trial ID: ACP 3
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: 05-11-04
Country: USA

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

Objective: The objective of this study was to evaluate the effect of preemergence applied herbicides on eight popcorn varieties. Popcorn stand, crop phytotoxicity, root lodging, yield, and popping characteristics were evaluated.

Conclusions: Data were subjected to a split-plot analysis and tables contain treatment means. The interaction of herbicide treatment by variety for popcorn stand was not significant. The main effect of herbicide treatment was not significant; however, the main effect of variety was significant. When averaged across herbicide treatments, Variety H [row 8 (R8)] had significantly higher stand than five other varieties. Differences in stand between varieties were probably mostly due to seeding rate variability.

Herbicide treatment by variety interaction for popcorn injury was not significant for any of the evaluation dates. Herbicide injury from the treatments, averaged across all varieties was not serious and ranged from 0 to 1%, seventeen days after application. When averaged across herbicide treatment, Variety B (row 2) demonstrated 2% injury compared to 0% with three other varieties. No injury was observed on any remaining evaluation dates from the herbicide treatments.

The interaction of herbicide treatment by variety for root lodging was significant. Differences in root lodging between herbicide treatments were also significant when averaged across varieties. Bicep II Magnum resulted in significantly more lodging than Outlook and Guardsman. No other significant differences in root lodging between herbicide treatments were observed. Significant differences were observed between varieties when root lodging was averaged across herbicide treatments. Varieties H (row 8), A (row 1), and D (row 4) lodged significantly more than all others. Differences in lodging between the remaining varieties were not significant.

Herbicide treatment by variety interaction was not significant for popcorn yield. There were no significant differences in popcorn yield between herbicide treatments, averaged across varieties. Significant differences did occur between varieties, however, when averaged across herbicide treatment with Variety G (row 7) yielding significantly higher than five other varieties. Yield was lowest with Variety F (row 6). (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAME POPCORN Variety: 8 VARIETIES
Planting Date: 05-11-04 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN
Soil Moisture: NORMAL

SITE AND DESIGN

Plot Width, Unit: 20 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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Fertilization included 124 lb/A of actual N applied as urea. Crop residue on the soil surface was 19% at planting. The study area was maintained weed free.

SOIL DESCRIPTION

% OM: 5.5 Texture: CLAY LOAM
pH: 7.3 Soil Name: CANISTEO, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-11-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOL
Air Temp., Unit:	75 F
% Relative Humidity:	73
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	68 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	60

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Trt No	Treatment Application Comment
	Eight popcorn hybrids per plot
	Row 1 (R1) = Variety A
	Row 2 (R2) = Variety B
	Row 3 (R3) = Variety C
	Row 4 (R4) = Variety D
	Row 5 (R5) = Variety E
	Row 6 (R6) = Variety F
	Row 7 (R7) = Variety G
	Row 8 (R8) = Variety H

Iowa State University

Effect of preemergence applied herbicides on crop phytotoxicity and yield of eight popcorn varieties, Ames, IA, 2004.

Trial ID: ACP 3

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAME R1	ZEAME R2	ZEAME R3	ZEAME R4	ZEAME R5	ZEAME R6	ZEAME R7	
Rating Data Type								STAND	STAND	STAND	STAND	STAND	STAND	STAND	
Rating Unit								17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	17.42 FT	
Rating Date								07-08-04	07-08-04	07-08-04	07-08-04	07-08-04	07-08-04	07-08-04	
Trt-Eval Interval								58 DA-A	58 DA-A	58 DA-A	58 DA-A	58 DA-A	58 DA-A	58 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Guardsman Max	5	SC	2.87	LB A/A	4.6	PT/A	PRE	A	29	31	32	31	34	34
2	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	A	35	30	30	32	32	31
3	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	32	33	30	29	33	35
4	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	31	31	30	36	32	32
5	Balance Pro	4	SC	0.117	LB A/A	3.75	FL OZ/A	PRE	A	30	30	31	31	33	33

Iowa State University

Weed Code										ZEAME R8	ZEAME R1	ZEAME R2	ZEAME R3	ZEAME R4	ZEAME R5	ZEAME R6
Rating Data Type										STAND	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-08-04	05-28-04	05-28-04	05-28-04	05-28-04	05-28-04	05-28-04
Trt-Eval Interval										58 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Guardsman Max	5	SC	2.87	LB A/A	4.6	PT/A	PRE	A	36	0	5	0	0	2	0
2	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	A	33	2	0	0	0	0	0
3	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	36	2	2	0	0	0	0
4	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	34	0	2	0	0	2	0
5	Balance Pro	4	SC	0.117	LB A/A	3.75	FL OZ/A	PRE	A	34	2	2	0	0	0	0

Iowa State University

Weed Code										ZEAME R7	ZEAME R8	ZEAME R1	ZEAME R2	ZEAME R3	ZEAME R4	ZEAME R5
Rating Data Type										PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										05-28-04	05-28-04	06-07-04	06-07-04	06-07-04	06-07-04	06-07-04
Trt-Eval Interval										17 DA-A	17 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Guardsman Max	5	SC	2.87	LB A/A	4.6	PT/A	PRE	A	3	2	0	0	0	0	0
2	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	A	0	0	0	0	0	0	0
3	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	2	0	0	0	0	0	0
4	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	2	0	0	0	0	0	0
5	Balance Pro	4	SC	0.117	LB A/A	3.75	FL OZ/A	PRE	A	0	2	0	0	0	0	0

Iowa State University

Weed Code										ZEAME R6	ZEAME R7	ZEAME R8	ZEAME R1	ZEAME R2	ZEAME R3	ZEAME R4
Rating Data Type										PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-07-04	06-07-04	06-07-04	06-14-04	06-14-04	06-14-04	06-14-04
Trt-Eval Interval										27 DA-A	27 DA-A	27 DA-A	34 DA-A	34 DA-A	34 DA-A	34 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Guardsman Max	5	SC	2.87	LB A/A	4.6	PT/A	PRE	A	0	0	0	0	0	0	0
2	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	A	0	0	0	0	0	0	0
3	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	0	0	0	0	0	0	0
4	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	0	0	0	0	0	0	0
5	Balance Pro	4	SC	0.117	LB A/A	3.75	FL OZ/A	PRE	A	0	0	0	0	0	0	0

Iowa State University

Weed Code										ZEAME R5	ZEAME R6	ZEAME R7	ZEAME R8	ZEAME R1	ZEAME R2	ZEAME R3
Rating Data Type										PHYGEN	PHYGEN	PHYGEN	PHYGEN	ROOT LODGE	ROOT LODGE	ROOT LODGE
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-14-04	06-14-04	06-14-04	06-14-04	11-09-04	11-09-04	11-09-04
Trt-Eval Interval										34 DA-A	34 DA-A	34 DA-A	34 DA-A	182 DA-A	182 DA-A	182 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Guardsman Max	5	SC	2.87	LB A/A	4.6	PT/A	PRE	A	0	0	0	0	16	9	0
2	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	A	0	0	0	0	7	1	0
3	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	0	0	0	0	36	4	2
4	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	0	0	0	0	6	3	0
5	Balance Pro	4	SC	0.117	LB A/A	3.75	FL OZ/A	PRE	A	0	0	0	0	14	1	0

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Weed Code										ZEAME R4	ZEAME R5	ZEAME R6	ZEAME R7	ZEAME R8	ZEAME R1
Rating Data Type										ROOT LODGE	ROOT LODGE	ROOT LODGE	ROOT LODGE	ROOT LODGE	YIELD
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	LBS/A
Rating Date										11-09-04	11-09-04	11-09-04	11-09-04	11-09-04	11-09-04
Trt-Eval Interval										182 DA-A	182 DA-A	182 DA-A	182 DA-A	182 DA-A	182 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code						
1	Guardsman Max	5	SC	2.87	LB A/A	4.6	PT/A	PRE	A	2	2	0	0	13	3557
2	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	A	5	2	0	2	25	4351
3	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	13	0	1	1	17	3784
4	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	29	0	0	0	15	4167
5	Balance Pro	4	SC	0.117	LB A/A	3.75	FL OZ/A	PRE	A	15	2	0	4	15	4201

Iowa State University

Weed Code										ZEAME R2	ZEAME R3	ZEAME R4	ZEAME R5	ZEAME R6	ZEAME R7	ZEAME R8
Rating Data Type										YIELD	YIELD	YIELD	YIELD	YIELD	YIELD	YIELD
Rating Unit										LBS/A	LBS/A	LBS/A	LBS/A	LBS/A	LBS/A	LBS/A
Rating Date										11-09-04	11-09-04	11-09-04	11-09-04	11-09-04	11-09-04	11-09-04
Trt-Eval Interval										182 DA-A	182 DA-A	182 DA-A	182 DA-A	182 DA-A	182 DA-A	182 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Guardsman Max	5	SC	2.87	LB A/A	4.6	PT/A	PRE	A	4976	6205	5402	5870	3650	5976	5523
2	Outlook	6	EC	0.98	LB A/A	21.0	FL OZ/A	PRE	A	4855	5925	5497	5445	3643	5971	5089
3	Bicep II Magnum	5.5	L	3.58	LB A/A	2.6	QT/A	PRE	A	5405	5843	5361	5766	3846	6275	5561
4	Lumax	3.95	SE	2.96	LB A/A	3.0	QT/A	PRE	A	4894	5812	5366	5708	4061	5735	5305
5	Balance Pro	4	SC	0.117	LB A/A	3.75	FL OZ/A	PRE	A	5601	6065	5084	5708	3909	6384	5580

Iowa State University

One and two-pass herbicide programs for weed control in soybean, Ames, IA, 2004.

Trial ID: ASC 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: 50011 Initiation Date: 05-28-04
Country: USA

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

Objective: The purpose of this study was to evaluate soil residual weed control in soybean with Domain, Axiom, Sencor, Prowl, and Authority. These were evaluated as set up weed control programs ahead of planned postemergence Roundup WeatherMAX or in combinations as full season residual herbicide programs.

Conclusions: No soybean injury was observed for preemergence (PRE) applied treatments as observed on June 22. PRE Sencor and PRE applied treatments as observed on June 22. PRE Sencor and PRE Domain plus Prowl provided 75% and 82% giant foxtail control, while other PRE and preplant incorporated (PPI) treatments provided at least 88% control. PPI Pursuit Plus, PRE Axiom, and PRE Boundary provided at least 80% control of all broadleaf weeds, while the remaining treatments provided unacceptable velvetleaf control and excellent common waterhemp and common lambsquarters control.

Early postemergence (EPOST) applied Raptor plus Ultra Blazer, Phoenix plus Select, and Fusion plus Flexstar demonstrated at least 20% soybean injury, as observed on June 29. EPOST Extreme demonstrated 15% injury. All injury on July 6 was 15%, or less. Velvetleaf control began to break (below 76%) for treatments with only PRE applications by July 16. All treatments with postemergence (POST) applications demonstrated excellent weed control on July 16. Observations on August 3 and September 1 were very similar to those of July 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.

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG 2403
Planting Date: 05-28-04 Planting Method: DIRECT DRILLED
Rate: 151000 SEEDS/A Depth: 1.25 IN
Row Spacing: 30 IN Seed Bed: FINE
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Crop residue on the soil surface was 13% at planting. Preplant (PPI) treatments were incorporated one pass with a field cultivator operating 2 inches deep.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM
pH: 7.8 Soil Name: CANISTEO, HARPS
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	05-28-04	05-29-04	06-23-04	06-29-04	07-23-04
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PPI	PRE	EPOST	POST	SPOST
Applic. Placement:	BROSOI	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	68 F	72 F	65 F	74 F	75 F
% Relative Humidity:	68	82	71	40	63
Wind Velocity, Unit:	3 MPH	10 MPH	2 MPH	3 MPH	7 MPH
Soil Temp., Unit:	70 F	70 F	72 F	74 F	76 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	90	95	80	25	100

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	GLXMA -	GLXMA -	GLXMA V 2 - V 3	GLXMA V 3	GLXMA R 3
Stage Scale:	-	-	DESC	DESC	DESC
Height, Unit:	-	-	4 IN	8 IN	24 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code, Stage:	SETFA -	SETFA -	SETFA 1-4 L, 3T	SETFA 1-4 L, 3T	SETFA 1-4 LEAF
Stage Scale:	-	-	0.5-4 IN	1-8 IN	1-4 IN
Density, Unit:	- -	- -	0-5 FT2	0-1 FT2	< 1 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH -	ABUTH COTYL-6 L	ABUTH 1-8 LEAF	ABUTH 1-2 LEAF
Stage Scale:	-	-	0.5-4 IN	0.5-8 IN	1-2 IN
Density, Unit:	- -	- -	0-5 FT2	0-1 FT2	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA -	AMATA 4-NUM	AMATA 4-NUM	AMATA -
Stage Scale:	-	-	0.5-4 IN	0.5-12 IN	-
Density, Unit:	- -	- -	0-1 FT2	0-3 FT2	- -
Weed 4 Code, Stage:	CHEAL -	CHEAL -	CHEAL 4-NUM	CHEAL 4-NUM	CHEAL -
Stage Scale:	-	-	0.5-3 IN	0.5-12 IN	-
Density, Unit:	- -	- -	0-1 FT2	0-2 FT2	- -

APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	1	TERRA PRO	TERRA PRO	TERRA PRO	TERRA PRO
Operating Pressure:	30	30	30	30	30
Nozzle Size:	11002	11002	11002	11002	11002
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

Iowa State University

One and two-pass herbicide programs for weed control in soybean, Ames, IA, 2004.

Trial ID: ASC 1
 Location: Ames

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

Weed Code								GLYMA	SETFA	ABUTH	AMATA	CHEAL	GLYMA	
Rating Data Type								PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								06-22-04	06-22-04	06-22-04	06-22-04	06-22-04	06-29-04	
Trt-Eval Interval								25 DA-A	25 DA-A	25 DA-A	25 DA-A	25 DA-A	6 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	0	93	43	93	96
	Raptor	1	SL	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C					
	Ultra Blazer	2	SL	0.187	LB A/A	0.75	PT/A	EPOST	C					
	MSO		L	1.0	% V/V	1.0	% V/V	EPOST	C					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C					
3	Pursuit Plus	2.9	SL	0.91	LB A/A	2.5	PT/A	PPI	A	0	95	87	96	99
	Phoenix	2	EC	0.156	LB A/A	10.0	FL OZ/A	EPOST	C					
	Select	2	EC	0.094	LB A/A	6.0	FL OZ/A	EPOST	C					
	NIS		L	0.25	% V/V	0.25	% V/V	EPOST	C					
4	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	0	93	38	93	96
	Extreme	2.17	SL	0.81	LB A/A	3.0	PT/A	EPOST	C					
	NIS		L	0.125	% V/V	0.125	% V/V	EPOST	C					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C					
5	Pursuit Plus	2.9	SL	0.91	LB A/A	2.5	PT/A	PPI	A	0	93	88	96	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D					
6	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	0	92	58	92	98
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D					
7	INTRRO	4	EC	1.5	LB A/A	1.5	QT/A	PRE	B	0	93	35	99	93
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D					
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D	0	0	0	0	0
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D					
9	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D	0	0	0	0	0
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D					
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	SPOST	E					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	SPOST	E					
10	Domain	60	DF	0.45	LB A/A	12.0	OZ WT/A	PRE	B	0	88	47	95	90
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D					
11	Domain	60	DF	0.6	LB A/A	16.0	OZ WT/A	PRE	B	0	90	55	99	95
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D					
12	Sencor	75	DF	0.375	LB A/A	8.0	OZ WT/A	PRE	B	0	75	62	98	96
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D					
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D					
13	Domain	60	DF	0.6	LB A/A	16.0	OZ WT/A	PRE	B	0	82	70	98	99
	Prowl H2O	3.8	EC	1.03	LB A/A	2.17	PT/A	PRE	B					
	Authority	75	DF	0.234	LB A/A	5.0	OZ WT/A	PRE	B					
14	Axiom	68	DF	0.55	LB A/A	13.0	OZ WT/A	PRE	B	0	95	87	99	99
	Prowl H2O	3.8	EC	1.03	LB A/A	2.17	PT/A	PRE	B					
	Authority	75	DF	0.234	LB A/A	5.0	OZ WT/A	PRE	B					
15	Boundary	6.5	EC	2.44	LB A/A	3.0	PT/A	PRE	B	0	95	80	99	98
16	Boundary	6.5	EC	1.71	LB A/A	2.1	PT/A	PRE	B	0	93	62	99	93
	Touchdown Total	4.17	SL	0.75	LB AE/A	23.0	FL OZ/A	POST	D					
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	D					
17	Boundary	6.5	EC	1.71	LB A/A	2.1	PT/A	PRE	B	0	93	68	99	95
	Flexstar	1.88	SL	0.294	LB A/A	1.25	PT/A	EPOST	C					
	Fusion	2.56	EC	0.208	LB A/A	10.4	FL OZ/A	EPOST	C					
	COC		L	1.0	% V/V	1.0	% V/V	EPOST	C					
	28% UAN		L	2.0	QT/A	2.0	QT/A	EPOST	C					

Iowa State University

Weed Code										GLYMA	SETFA	ABUTH	AMATA	CHEAL	GLYMA
Rating Data Type										PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-22-04	06-22-04	06-22-04	06-22-04	06-22-04	06-29-04
Trt-Eval Interval										25 DA-A	25 DA-A	25 DA-A	25 DA-A	25 DA-A	6 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
18	Touchdown Total	4.17	SL	0.78	LB AE/A	24.0	FL OZ/A	POST	D	0	0	0	0	0	0
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	D						
	Touchdown Total	4.17	SL	0.78	LB AE/A	24.0	FL OZ/A	SPOST	E						
	AMS		DF	2.0	% W/V	2.0	% W/V	SPOST	E						
LSD (P=.05)										0.0	11.1	16.9	3.7	4.4	1.1

Iowa State University

Weed Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	GLYMA PHYGEN PERCENT	GLYMA PHYGEN PERCENT	SETFA CONTROL PERCENT	ABUTH CONTROL PERCENT	AMATA CONTROL PERCENT	CHEAL CONTROL PERCENT						
					07-06-04	07-16-04	07-16-04	07-16-04	07-16-04	07-16-04						
					7 DA-D	23 DA-C	23 DA-C	23 DA-C	23 DA-C	23 DA-C						
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	15	10	98	95	99	99	
	Raptor	1	SL	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C							
	Ultra Blazer	2	SL	0.187	LB A/A	0.75	PT/A	EPOST	C							
	MSO		L	1.0	% V/V	1.0	% V/V	EPOST	C							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C							
3	Pursuit Plus	2.9	SL	0.91	LB A/A	2.5	PT/A	PPI	A	10	3	98	94	99	98	
	Phoenix	2	EC	0.156	LB A/A	10.0	FL OZ/A	EPOST	C							
	Select	2	EC	0.094	LB A/A	6.0	FL OZ/A	EPOST	C							
	NIS		L	0.25	% V/V	0.25	% V/V	EPOST	C							
4	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	5	0	99	99	99	99	
	Extreme	2.17	SL	0.81	LB A/A	3.0	PT/A	EPOST	C							
	NIS		L	0.125	% V/V	0.125	% V/V	EPOST	C							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C							
5	Pursuit Plus	2.9	SL	0.91	LB A/A	2.5	PT/A	PPI	A	0	0	99	99	99	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D							
6	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	0	0	99	99	99	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D							
7	INTRRO	4	EC	1.5	LB A/A	1.5	QT/A	PRE	B	0	0	99	99	99	98	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D							
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D	0	2	99	98	96	98	
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D							
9	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D	0	0	99	96	98	96	
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D							
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	SPOST	E							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	SPOST	E							
10	Domain	60	DF	0.45	LB A/A	12.0	OZ WT/A	PRE	B	0	0	99	99	99	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D							
11	Domain	60	DF	0.6	LB A/A	16.0	OZ WT/A	PRE	B	0	0	99	99	99	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D							
12	Sencor	75	DF	0.375	LB A/A	8.0	OZ WT/A	PRE	B	0	0	99	99	99	99	
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D							
13	Domain	60	DF	0.6	LB A/A	16.0	OZ WT/A	PRE	B	0	0	80	52	96	98	
	Prowl H2O	3.8	EC	1.03	LB A/A	2.17	PT/A	PRE	B							
	Authority	75	DF	0.234	LB A/A	5.0	OZ WT/A	PRE	B							
14	Axiom	68	DF	0.55	LB A/A	13.0	OZ WT/A	PRE	B	0	0	93	75	99	99	
	Prowl H2O	3.8	EC	1.03	LB A/A	2.17	PT/A	PRE	B							
	Authority	75	DF	0.234	LB A/A	5.0	OZ WT/A	PRE	B							
15	Boundary	6.5	EC	2.44	LB A/A	3.0	PT/A	PRE	B	0	0	93	73	99	88	
16	Boundary	6.5	EC	1.71	LB A/A	2.1	PT/A	PRE	B	0	0	99	99	99	99	
	Touchdown Total	4.17	SL	0.75	LB AE/A	23.0	FL OZ/A	POST	D							
	AMS		DF	2.0	% W/W	2.0	% W/W	POST	D							
17	Boundary	6.5	EC	1.71	LB A/A	2.1	PT/A	PRE	B	13	7	96	98	99	99	
	Flexstar	1.88	SL	0.294	LB A/A	1.25	PT/A	EPOST	C							
	Fusion	2.56	EC	0.208	LB A/A	10.4	FL OZ/A	EPOST	C							
	COC		L	1.0	% V/V	1.0	% V/V	EPOST	C							
	28% UAN		L	2.0	QT/A	2.0	QT/A	EPOST	C							
18	Touchdown Total	4.17	SL	0.78	LB AE/A	24.0	FL OZ/A	POST	D	0	2	99	99	96	95	
	AMS		DF	2.0	% W/W	2.0	% W/W	POST	D							
	Touchdown Total	4.17	SL	0.78	LB AE/A	24.0	FL OZ/A	SPOST	E							
	AMS		DF	2.0	% W/W	2.0	% W/W	SPOST	E							
LSD (P=.05)											1.1	2.3	7.9	10.5	1.9	3.5

Iowa State University

Weed Code										SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										09-01-04	09-01-04	09-01-04	09-01-04
Trt-Eval Interval										64 DA-D	64 DA-D	64 DA-D	64 DA-D
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated									0	0	0	0
2	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	93	92	99	99
	Raptor	1	SL	0.0312	LB A/A	4.0	FL OZ/A	EPOST	C				
	Ultra Blazer	2	SL	0.187	LB A/A	0.75	PT/A	EPOST	C				
	MSO		L	1.0	% V/V	1.0	% V/V	EPOST	C				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C				
3	Pursuit Plus	2.9	SL	0.91	LB A/A	2.5	PT/A	PPI	A	96	94	99	98
	Phoenix	2	EC	0.156	LB A/A	10.0	FL OZ/A	EPOST	C				
	Select	2	EC	0.094	LB A/A	6.0	FL OZ/A	EPOST	C				
	NIS		L	0.25	% V/V	0.25	% V/V	EPOST	C				
4	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	98	96	99	99
	Extreme	2.17	SL	0.81	LB A/A	3.0	PT/A	EPOST	C				
	NIS		L	0.125	% V/V	0.125	% V/V	EPOST	C				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	EPOST	C				
5	Pursuit Plus	2.9	SL	0.91	LB A/A	2.5	PT/A	PPI	A	98	98	98	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D				
6	Prowl H2O	3.8	EC	1.19	LB A/A	2.5	PT/A	PPI	A	96	98	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D				
7	INTRRO	4	EC	1.5	LB A/A	1.5	QT/A	PRE	B	95	95	98	98
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D				
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D	95	95	96	95
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D				
9	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D	98	99	99	99
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D				
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	SPOST	E				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	SPOST	E				
10	Domain	60	DF	0.45	LB A/A	12.0	OZ WT/A	PRE	B	98	95	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D				
11	Domain	60	DF	0.6	LB A/A	16.0	OZ WT/A	PRE	B	92	95	96	96
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D				
12	Sencor	75	DF	0.375	LB A/A	8.0	OZ WT/A	PRE	B	93	93	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	D				
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	D				
13	Domain	60	DF	0.6	LB A/A	16.0	OZ WT/A	PRE	B	78	55	95	96
	Prowl H2O	3.8	EC	1.03	LB A/A	2.17	PT/A	PRE	B				
	Authority	75	DF	0.234	LB A/A	5.0	OZ WT/A	PRE	B				
14	Axiom	68	DF	0.55	LB A/A	13.0	OZ WT/A	PRE	B	92	65	99	98
	Prowl H2O	3.8	EC	1.03	LB A/A	2.17	PT/A	PRE	B				
	Authority	75	DF	0.234	LB A/A	5.0	OZ WT/A	PRE	B				
15	Boundary	6.5	EC	2.44	LB A/A	3.0	PT/A	PRE	B	87	70	99	87
16	Boundary	6.5	EC	1.71	LB A/A	2.1	PT/A	PRE	B	96	95	99	99
	Touchdown Total	4.17	SL	0.75	LB AE/A	23.0	FL OZ/A	POST	D				
	AMS		DF	2.0	% W/W	2.0	% W/W	POST	D				
17	Boundary	6.5	EC	1.71	LB A/A	2.1	PT/A	PRE	B	95	95	99	99
	Flexstar	1.88	SL	0.294	LB A/A	1.25	PT/A	EPOST	C				
	Fusion	2.56	EC	0.208	LB A/A	10.4	FL OZ/A	EPOST	C				
	COC		L	1.0	% V/V	1.0	% V/V	EPOST	C				
	28% UAN		L	2.0	QT/A	2.0	QT/A	EPOST	C				
18	Touchdown Total	4.17	SL	0.78	LB AE/A	24.0	FL OZ/A	POST	D	96	99	99	99
	AMS		DF	2.0	% W/W	2.0	% W/W	POST	D				
	Touchdown Total	4.17	SL	0.78	LB AE/A	24.0	FL OZ/A	SPOST	E				
	AMS		DF	2.0	% W/W	2.0	% W/W	SPOST	E				
LSD (P=.05)										8.5	12.7	3.1	4.4

Iowa State University

Postemergence tank-mixture applications of Phoenix plus Roundup UltraMAX II in soybean, Ames, IA, 2004.

Trial ID: ASC 2
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: 06-04-04
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 Phoenix plus Roundup UltraMAX II for soybean phytotoxicity and effect on yield.
Conclusions: Preemergence (PRE) applied Boundary resulted in 10 and 5% soybean injury on June 30 and July 8, respectively. Injury from Boundary persisted at 5 and 4% on July 11 and 17, respectively. On July 11, three days after postemergence (POST) applications, 19 and 16% soybean injury was observed from Roundup UltraMAX II plus Phoenix at 6.0 fl and 4.0 fl oz/A, respectively. Injury from POST Roundup UltraMAX II, alone, was not significant. Soybean injury from the 6.0 fl and 4.0 fl oz/A rates of Phoenix was 26 and 21% on July 17, and 21 and 15% on July 28, respectively.

Although the study was kept weed free following the July 8 POST applications, early weed control observations were made on July 8 (prior to POST) and July 11 (three days following POST). On July 8, Boundary provided good to excellent giant foxtail, velvetleaf, common waterhemp and common lambsquarters control, while common cocklebur control was fair. On July 11, following POST applied Roundup UltraMAX II, control with PRE Boundary remained excellent for all species, except velvetleaf and common cocklebur. POST tank-mixture applications of Phoenix plus Roundup UltraMAX II provided good to excellent control of all the species on July 11. POST Roundup UltraMAX II applied alone did not provide the level of control on July 11 as that of Phoenix plus Roundup UltraMAX II. On July 17, excellent overall weed control was observed with all treatments. These weed-free conditions were maintained through the growing season with a sequential postemergence Roundup UltraMAX II application over the entire experiment area on July 27.

Soybean senescence and defoliation were delayed for the POST Phoenix plus Roundup UltraMAX II treatments compared to the others when observed on September 14, 24, and 28. Soybean yields for PRE Boundary plus POST Roundup UltraMAX II and POST Roundup UltraMAX II, alone, were significantly greater than the high POST Phoenix treatment rate plus Roundup UltraMAX II (55, 57 and 51 bu/A, respectively). The lower treatment rate of POST Phoenix plus Roundup UltraMAX II yielded 53 bu/A. (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 2403
Planting Date: 06-04-04 Planting Method: DIRECT DRILLED
Rate: 151000 SEEDS/A Depth: 1.25 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 9
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting. Roundup UltraMAX II plus AMS (22 fl oz/A plus 17 lb/100 gal) was applied as a sequential postemergence application to the entire experiment area on July 27, to assist in maintaining weed free conditions. Soybean growth stage was R1 to R2.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM
pH: 7.8 Soil Name: CANISTEO, HARPS
Fert. Level: EXCELLENT

Iowa State University

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A	B
Application Date:	06-05-04	07-08-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	75 F	74 F
% Relative Humidity:	54	67
Wind Velocity, Unit:	3 MPH	3 MPH
Soil Temp., Unit:	70 F	69 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	90	50

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA V 4
Stage Scale:	-	DESC
Height, Unit:	-	10 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 3T
Stage Scale:	-	1-12 IN
Density, Unit:	- -	5-20 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-8 L
Stage Scale:	-	0.5-12 IN
Density, Unit:	- -	0-2 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 4-NUM
Stage Scale:	-	0.5-12 IN
Density, Unit:	- -	0-3 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 4-NUM
Stage Scale:	-	0.5-9 IN
Density, Unit:	- -	0-3 FT2
Weed 5 Code, Stage:	XANST -	XANST NUMEROUS
Stage Scale:	-	8-12 IN
Density, Unit:	- -	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Postemergence tank-mixture applications of Phoenix plus Roundup UltraMAX II in soybean, Ames, IA, 2004.

Trial ID: ASC 2
Location: Ames

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

Weed Code										GLYMA	GLYMA	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-30-04	07-08-04	07-08-04	07-08-04	07-08-04	07-08-04
Trt-Eval Interval										25 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code						
1	Boundary Roundup UltraMAX II AMS	6.5	EC	2.44	LB A/A	3.0	PT/A	PRE	A	10	5	99	95	99	99
		4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B						
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
2	Phoenix Roundup UltraMAX II AMS	2	EC	0.094	LB A/A	6.0	FL OZ/A	POST	B	0	0	0	0	0	0
		4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B						
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
3	Phoenix Roundup UltraMAX II AMS	2	EC	0.0625	LB A/A	4.0	FL OZ/A	POST	B	0	0	0	0	0	0
		4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B						
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
4	Roundup UltraMAX II AMS	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B	0	0	0	0	0	0
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	B						
LSD (P=.05)										0.0	0.0	0.6	1.7	0.0	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										XANST CONTROL PERCENT 07-08-04 33 DA-A	GLYMA PHYGEN PERCENT 07-11-04 36 DA-A	SETFA CONTROL PERCENT 07-11-04 36 DA-A	ABUTH CONTROL PERCENT 07-11-04 36 DA-A	AMATA CONTROL PERCENT 07-11-04 36 DA-A	CHEAL CONTROL PERCENT 07-11-04 36 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Boundary Roundup UltraMAX II AMS	6.5 4.5	EC SL DF	2.44 0.77 17.0	LB A/A LB AE/A LB/100 GAL	3.0 22.0 17.0	PT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	79	5	99	75	99	96
2	Phoenix Roundup UltraMAX II AMS	2 4.5	EC SL DF	0.094 0.77 17.0	LB A/A LB AE/A LB/100 GAL	6.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST POST POST	B B B	0	19	89	94	98	94
3	Phoenix Roundup UltraMAX II AMS	2 4.5	EC SL DF	0.0625 0.77 17.0	LB A/A LB AE/A LB/100 GAL	4.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST POST POST	B B B	0	16	87	88	96	91
4	Roundup UltraMAX II AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST POST	B B	0	3	76	64	75	71
LSD (P=.05)										4.5	1.9	2.3	3.6	4.1	5.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										XANST CONTROL PERCENT 07-11-04 36 DA-A	GLYMA PHYGEN PERCENT 07-17-04 42 DA-A	SETFA CONTROL PERCENT 07-17-04 42 DA-A	ABUTH CONTROL PERCENT 07-17-04 42 DA-A	AMATA CONTROL PERCENT 07-17-04 42 DA-A	CHEAL CONTROL PERCENT 07-17-04 42 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Boundary Roundup UltraMAX II AMS	6.5 4.5	EC SL DF	2.44 0.77 17.0	LB A/A LB AE/A LB/100 GAL	3.0 22.0 17.0	PT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	76	4	99	99	99	99
2	Phoenix Roundup UltraMAX II AMS	2 4.5	EC SL DF	0.094 0.77 17.0	LB A/A LB AE/A LB/100 GAL	6.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST POST POST	B B B	96	26	99	99	99	99
3	Phoenix Roundup UltraMAX II AMS	2 4.5	EC SL DF	0.0625 0.77 17.0	LB A/A LB AE/A LB/100 GAL	4.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST POST POST	B B B	93	21	99	99	99	99
4	Roundup UltraMAX II AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST POST	B B	72	0	99	99	99	99
LSD (P=.05)										4.2	1.8	0.0	0.0	0.0	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										XANST CONTROL PERCENT 07-17-04 42 DA-A	GLYMA PHYGEN PERCENT 07-28-04 53 DA-A	GLYMA SENESCENCE PERCENT 09-14-04 101 DA-A	GLYMA DEFOLIATION PERCENT 09-24-04 111 DA-A	GLYMA DEFOLIATION PERCENT 09-28-04 115 DA-A	GLYMA YIELD BU/A 10-18-04 135 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Boundary Roundup UltraMAX II AMS	6.5 4.5	EC SL DF	2.44 0.77 17.0	LB A/A LB AE/A LB/100 GAL	3.0 22.0 17.0	PT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	3	28	72	93	55
2	Phoenix Roundup UltraMAX II AMS	2 4.5	EC SL DF	0.094 0.77 17.0	LB A/A LB AE/A LB/100 GAL	6.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST POST POST	B B B	99	21	7	32	82	51
3	Phoenix Roundup UltraMAX II AMS	2 4.5	EC SL DF	0.0625 0.77 17.0	LB A/A LB AE/A LB/100 GAL	4.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST POST POST	B B B	99	15	8	32	81	53
4	Roundup UltraMAX II AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST POST	B B	99	0	29	73	93	57
LSD (P=.05)										0.0	2.1	3.5	5.3	2.7	1.9

Iowa State University

Preemergence applied Valor SX, FirstRate and Boundary followed by postemergence applied Roundup UltraMAX II in soybean, Ames, IA, 2004.

Trial ID: ASC 3
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: 06-04-04
Country: USA

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

Objective: The purpose of this study was to evaluate preemergence applications of Valor SX, Valor SX plus FirstRate, and Boundary followed by postemergence applied Roundup UltraMAX II for crop phytotoxicity and weed control in soybean.

Conclusions: Soybean injury did not exceed 6% for any of the treatments on any of the evaluation dates. Giant foxtail control by preemergence (PRE) applied treatments, observed on July 1, was 98% for Boundary. Giant foxtail control by other PRE treatments ranged from 60 to 83% on July 1. Velvetleaf control by Valor SX on July 1 was rate responsive and ranged from 86 to 94%. Valor SX plus FirstRate, V10148 plus V10149, and Boundary provided from 90 to 95% control of velvetleaf on July 1. PRE treatments demonstrated at least 96% common waterhemp and common lambsquarters control on July 1.

Giant foxtail control was only acceptable for the PRE Boundary treatment when observed on July 13, just prior to the postemergence (POST) Roundup UltraMAX II application timing. Other PRE treatments provided from 54 to 77% giant foxtail control. Velvetleaf control was again rate responsive for Valor SX treatments, ranging from 83 to 93%. The remaining PRE treatments provided from 89 to 91% velvetleaf control. Common waterhemp control was nearly perfect for all treatments, while common lambsquarters control was 93 to 94% for all treatments that contained Valor SX and 96 to 97% control for the remaining PRE treatments.

On July 27, fourteen days after POST Roundup UltraMAX II applications, all treatments demonstrated excellent overall weed control. These results were also apparent on September 7 when final weed control observations were done. Herbicide treatments yielded significantly more soybean than the untreated. Nearly all PRE followed by POST treatments resulted in significantly higher soybean yields than the POST Roundup UltraMAX II, alone, 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.

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG 2403
Planting Date: 06-04-04 Planting Method: DIRECT DRILLED
Rate: 151000 SEEDS/A Depth: 1.25 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 6
Tillage Type: MINIMUM-TILL Study Design: RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	CORN	NONE	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM
pH: 7.8 Soil Name: CANISTEO, HARPS
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	06-05-04	07-13-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	75 F	85 F
% Relative Humidity:	54	62
Wind Velocity, Unit:	3 MPH	7 MPH
Soil Temp., Unit:	70 F	80 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	90	15

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA V 4 - V 5
Stage Scale:	-	DESC
Height, Unit:	-	13 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 4T
Stage Scale:	-	1-18 IN
Density, Unit:	- -	5-20 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH 1-8 LEAF
Stage Scale:	-	0.5-16 IN
Density, Unit:	- -	0-1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS
Stage Scale:	-	0.5-16 IN
Density, Unit:	- -	0-3 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	0.5-18 IN
Density, Unit:	- -	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied Valor SX, FirstRate and Boundary followed by postemergence applied Roundup UltraMAX II in soybean, Ames, IA, 2004.

Trial ID: ASC 3
 Location: Ames

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

Weed Code									GLYMA	SETFA	ABUTH	AMATA	CHEAL	GLYMA	
Rating Data Type									PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-01-04	07-01-04	07-01-04	07-01-04	07-01-04	07-13-04	
Trt-Eval Interval									26 DA-A	26 DA-A	26 DA-A	26 DA-A	26 DA-A	0 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup UltraMAX II AMS	4.5	SL DF	0.77	LB AE/A LB/100 GAL	22.0	FL OZ/A LB/100 GAL	POST	B	0	0	0	0	0	0
3	Valor SX Roundup UltraMAX II AMS	51	WG DF	0.048	LB A/A LB/100 GAL	1.5	OZ WT/A LB/100 GAL	PRE	A	2	62	86	98	96	1
4	Valor SX Roundup UltraMAX II AMS	51	WG DF	0.064	LB A/A LB/100 GAL	2.0	OZ WT/A LB/100 GAL	PRE	A	5	75	89	98	99	3
5	Valor SX Roundup UltraMAX II AMS	51	WG DF	0.08	LB A/A LB/100 GAL	2.5	OZ WT/A LB/100 GAL	PRE	A	6	83	94	99	98	3
6	Valor SX FirstRate Roundup UltraMAX II AMS	51	WG DF	0.048	LB A/A LB/100 GAL	1.5	OZ WT/A LB/100 GAL	PRE	A	3	60	90	99	97	0
7	V10148 V10149 Roundup UltraMAX II AMS	50	WG DF	0.047	LB A/A LB/100 GAL	1.5	OZ WT/A LB/100 GAL	PRE	A	4	62	94	99	98	1
8	Boundary Roundup UltraMAX II AMS	6.5	EC DF	1.71	LB A/A LB/100 GAL	2.1	PT/A LB/100 GAL	PRE	A	8	98	95	99	98	3
LSD (P=.05)										2.3	6.9	6.3	1.0	1.8	2.4

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									SETFA CONTROL PERCENT 07-13-04 0 DA-B	ABUTH CONTROL PERCENT 07-13-04 0 DA-B	AMATA CONTROL PERCENT 07-13-04 0 DA-B	CHEAL CONTROL PERCENT 07-13-04 0 DA-B	GLYMA PHYGEN PERCENT 07-27-04 14 DA-B	SETFA CONTROL PERCENT 07-27-04 14 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup UltraMAX II AMS	4.5	SL DF	0.77	LB AE/A LB/100 GAL	22.0	FL OZ/A LB/100 GAL	POST	B B	0	0	0	0	3	99
3	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.048 0.77 17.0	LB A/A LB AE/A LB/100 GAL	1.5	OZ WT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	58	83	98	94	1	99
4	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.064 0.77 17.0	LB A/A LB AE/A LB/100 GAL	2.0	OZ WT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	69	87	98	93	0	99
5	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.08 0.77 17.0	LB A/A LB AE/A LB/100 GAL	2.5	OZ WT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	77	93	98	94	2	99
6	Valor SX FirstRate Roundup UltraMAX II AMS	51 84 4.5	WG WG SL DF	0.048 0.0157 0.77 17.0	LB A/A LB A/A LB AE/A LB/100 GAL	1.5	OZ WT/A OZ WT/A FL OZ/A LB/100 GAL	PRE PRE POST POST	A A B B	57	90	98	94	0	99
7	V10148 V10149 Roundup UltraMAX II AMS	50 25 4.5	WG WG SL DF	0.047 0.0156 0.77 17.0	LB A/A LB A/A LB AE/A LB/100 GAL	1.5	OZ WT/A OZ WT/A FL OZ/A LB/100 GAL	PRE PRE POST POST	A A B B	54	91	99	97	1	99
8	Boundary Roundup UltraMAX II AMS	6.5 4.5	EC SL DF	1.71 0.77 17.0	LB A/A LB AE/A LB/100 GAL	2.1	PT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	95	89	98	96	0	99
LSD (P=.05)										7.3	8.1	2.1	2.4	2.0	0.0

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ABUTH CONTROL PERCENT 07-27-04 14 DA-B	AMATA CONTROL PERCENT 07-27-04 14 DA-B	CHEAL CONTROL PERCENT 07-27-04 14 DA-B	GLYMA PHYGEN PERCENT 09-07-04 56 DA-B	SETFA CONTROL PERCENT 09-07-04 56 DA-B	ABUTH CONTROL PERCENT 09-07-04 56 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup UltraMAX II AMS	4.5	SL DF	0.77	LB AE/A LB/100 GAL	22.0	FL OZ/A LB/100 GAL	POST	B B	94	99	99	0	97	96
3	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.048	LB A/A LB AE/A LB/100 GAL	1.5	OZ WT/A FL OZ/A LB/100 GAL	PRE	A B B	99	99	99	0	98	99
4	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.064	LB A/A LB AE/A LB/100 GAL	2.0	OZ WT/A FL OZ/A LB/100 GAL	PRE	A B B	99	99	99	0	98	99
5	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.08	LB A/A LB AE/A LB/100 GAL	2.5	OZ WT/A FL OZ/A LB/100 GAL	PRE	A B B	99	99	99	0	98	99
6	Valor SX FirstRate Roundup UltraMAX II AMS	51 84 4.5	WG WG SL DF	0.048	LB A/A LB A/A LB AE/A LB/100 GAL	1.5	OZ WT/A OZ WT/A FL OZ/A LB/100 GAL	PRE	A A B B	99	99	99	0	98	99
7	V10148 V10149 Roundup UltraMAX II AMS	50 25 4.5	WG WG SL DF	0.047	LB A/A LB A/A LB AE/A LB/100 GAL	1.5	OZ WT/A OZ WT/A FL OZ/A LB/100 GAL	PRE	A A B B	99	99	99	0	98	99
8	Boundary Roundup UltraMAX II AMS	6.5 4.5	EC SL DF	1.71	LB A/A LB AE/A LB/100 GAL	2.1	PT/A FL OZ/A LB/100 GAL	PRE	A B B	99	99	99	0	98	99
LSD (P=.05)										1.4	0.0	0.0	0.0	2.2	1.4

Iowa State University

Weed Code									AMATA	CHEAL	GLYMA	
Rating Data Type									CONTROL	CONTROL	YIELD	
Rating Unit									PERCENT	PERCENT	BU/A	
Rating Date									09-07-04	09-07-04	10-13-04	
Trt-Eval Interval									56 DA-B	56 DA-B	130 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated									0	0	36
2	Roundup UltraMAX II AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST POST	B B	96	95	52
3	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.048 0.77 17.0	LB A/A LB AE/A LB/100 GAL	1.5 22.0 17.0	OZ WT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	98	57
4	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.064 0.77 17.0	LB A/A LB AE/A LB/100 GAL	2.0 22.0 17.0	OZ WT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	99	59
5	Valor SX Roundup UltraMAX II AMS	51 4.5	WG SL DF	0.08 0.77 17.0	LB A/A LB AE/A LB/100 GAL	2.5 22.0 17.0	OZ WT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	99	56
6	Valor SX FirstRate Roundup UltraMAX II AMS	51 84 4.5	WG WG SL DF	0.048 0.0157 0.77 17.0	LB A/A LB A/A LB AE/A LB/100 GAL	1.5 0.3 22.0 17.0	OZ WT/A OZ WT/A FL OZ/A LB/100 GAL	PRE PRE POST POST	A A B B	99	99	59
7	V10148 V10149 Roundup UltraMAX II AMS	50 25 4.5	WG WG SL DF	0.047 0.0156 0.77 17.0	LB A/A LB A/A LB AE/A LB/100 GAL	1.5 1.0 22.0 17.0	OZ WT/A OZ WT/A FL OZ/A LB/100 GAL	PRE PRE POST POST	A A B B	99	99	59
8	Boundary Roundup UltraMAX II AMS	6.5 4.5	EC SL DF	1.71 0.77 17.0	LB A/A LB AE/A LB/100 GAL	2.1 22.0 17.0	PT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	99	57
LSD (P=.05)										1.5	2.0	4.4

Iowa State University

Postemergence applied V10137 and Select with Roundup UltraMAX II for control of glyphosate and glufosinate-resistant corn in soybean, Ames, IA, 2004.

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: 06-04-04

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 tank-mixtures of Roundup UltraMAX II with V10137 or Select for control of glyphosate and glufosinate-resistant corn.

Conclusions: Soybean injury did not exceed 5% for any of the treatments. No antagonism was apparent for weed control, as all treatments demonstrated similar control of giant foxtail, velvetleaf common waterhemp, and common lambsquarters for all evaluations. On July 28, the 3.0 fl oz/A rate of postemergence (POST) applied Select provided significantly less control of glyphosate-resistant corn (ZEAMD RR) than the other three treatments. However, there were no differences between treatments in control of glufosinate-resistant corn (ZEAMD LL). Virtually no glyphosate-resistant corn was controlled to the point that dead plants lay on the ground (ON GRD). A significant percentage of glufosinate-resistant corn was on the ground, but there were no significant differences between treatments.

On August 4, the low rate of Select again provided less control of glyphosate-resistant corn than the other treatments. All treatments provided excellent control of glufosinate-resistant corn. The high rate of V10137 controlled (ON GRD) significantly more glyphosate-resistant corn. All treatments completely controlled (ON GRD) glufosinate-resistant corn for all August evaluations.

On August 16, Select and V10137 did not demonstrate a significant rate response for control of glyphosate-resistant corn. However, V10137 provided more control than Select at relative use rates. The high rate of V10137 controlled significantly more glyphosate-resistant corn (ON GRD) than either rate of Select, but not more than the low rate of V10137. (Dept. of Agronomy, Iowa State University, Ames).

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	ZEARR	CORN, GLYPHOSATE RESISTANT	ZEAMAYS
2.	ZEALL	CORN, GLUFOSINATE RESISTANT	ZEAMAYS
3.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
4.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
5.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
6.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG 2403

Planting Date: 06-04-04 Planting Method: DIRECT DRILLED

Rate: 151000 SEEDS/A Depth: 1.25 IN

Row Spacing: 30 in Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting. Glyphosate-resistant Dekalb DKC53-34 and glufosinate-resistant Pioneer 33R79 corn varieties were planted in the plot area on June 5.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM

pH: 7.8 Soil Name: CANISTEO, HARPS

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	07-14-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	80 F
% Relative Humidity:	57
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	79 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	20

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V 5
Stage Scale:	DESC
Height, Unit:	14 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	ZEARR V 5-V 6
Stage Scale:	18-24 IN
Density, Unit:	2 ROWFT
Weed 2 Code, Stage:	ZEALL V 5-V 6
Stage Scale:	18-24 IN
Density, Unit:	2 ROWFT
Weed 3 Code, Stage:	SETFA 1-4 L, 4T
Stage Scale:	1-16 IN
Density, Unit:	5-15 FT2
Weed 4 Code, Stage:	ABUTH 1-8 LEAF
Stage Scale:	0.5-12 IN
Density, Unit:	0-2 FT2
Weed 5 Code, Stage:	AMATA NUMEROUS
Stage Scale:	0.5-18 IN
Density, Unit:	0-2 FT2
Weed 6 Code, Stage:	CHEAL NUMEROUS
Stage Scale:	0.5-12 IN
Density, Unit:	0-1 FT2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND BOOM
Operating Pressure:	30
Nozzle Size:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Postemergence applied V10137 and Select with Roundup UltraMAX II for control of glyphosate and glufosinate-resistant corn in soybean, Ames, IA, 2004.

Trial ID: ASC 4

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								GLYMA	ZEAMD RR	ZEAMD LL	SETFA	ABUTH	AMATA	CHEAL		
Rating Data Type								PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								07-28-04	07-28-04	07-28-04	07-28-04	07-28-04	07-28-04	07-28-04		
Trt-Eval Interval								14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Select Roundup UltraMAX II AMS	2 EC 4.5 SL		0.063 LB 0.77 LB	A/A AE/A	4.0 FL 22.0 FL	OZ/A OZ/A	POST POST	A A	5	65	95	99	98	98	
			DF	17.0 LB/100	GAL	17.0 LB/100	GAL	POST	A							
3	V10137 Roundup UltraMAX II AMS	1 EC 4.5 SL		0.063 LB 0.77 LB	A/A AE/A	8.0 FL 22.0 FL	OZ/A OZ/A	POST POST	A A	3	67	93	99	98	98	
			DF	17.0 LB/100	GAL	17.0 LB/100	GAL	POST	A							
4	Select Roundup UltraMAX II AMS	2 EC 4.5 SL		0.047 LB 0.77 LB	A/A AE/A	3.0 FL 22.0 FL	OZ/A OZ/A	POST POST	A A	2	57	93	99	98	99	
			DF	17.0 LB/100	GAL	17.0 LB/100	GAL	POST	A							
5	V10137 Roundup UltraMAX II AMS	1 EC 4.5 SL		0.047 LB 0.77 LB	A/A AE/A	6.0 FL 22.0 FL	OZ/A OZ/A	POST POST	A A	3	67	92	99	96	98	
			DF	17.0 LB/100	GAL	17.0 LB/100	GAL	POST	A							
LSD (P=.05)										3.4	7.0	4.5	0.0	3.5	2.4	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ZEAMD RR ON GRD PERCENT 07-28-04 14 DA-A	ZEAMD LL ON GRD PERCENT 07-28-04 14 DA-A	GLYMA PHYGEN PERCENT 08-04-04 21 DA-A	ZEAMD RR CONTROL PERCENT 08-04-04 21 DA-A	ZEAMD LL CONTROL PERCENT 08-04-04 21 DA-A	SETFA CONTROL PERCENT 08-04-04 21 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Select Roundup UltraMAX II AMS	2 4.5	EC SL DF	0.063 0.77 17.0	LB A/A LB AE/A LB/100 GAL	4.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST A POST A POST A		0	47	5	75	99	99
3	V10137 Roundup UltraMAX II AMS	1 4.5	EC SL DF	0.063 0.77 17.0	LB A/A LB AE/A LB/100 GAL	8.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST A POST A POST A		2	47	0	80	99	99
4	Select Roundup UltraMAX II AMS	2 4.5	EC SL DF	0.047 0.77 17.0	LB A/A LB AE/A LB/100 GAL	3.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST A POST A POST A		0	32	2	68	99	99
5	V10137 Roundup UltraMAX II AMS	1 4.5	EC SL DF	0.047 0.77 17.0	LB A/A LB AE/A LB/100 GAL	6.0 22.0 17.0	FL OZ/A FL OZ/A LB/100 GAL	POST A POST A POST A		0	38	3	77	99	99
LSD (P=.05)										2.4	22.5	3.2	5.3	0.0	0.0

Iowa State University

Weed Code										ABUTH	AMATA	CHEAL	ZEAMD RR	ZEAMD LL	GLYMA
Rating Data Type										CONTROL	CONTROL	CONTROL	ON GRD	ON GRD	PHYGEN
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-04-04	08-04-04	08-04-04	08-04-04	08-04-04	08-16-04
Trt-Eval Interval										21 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A	33 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Select Roundup UltraMAX II AMS	2 EC 4.5 SL DF		0.063 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL		4.0 FL OZ/A 22.0 FL OZ/A 17.0 LB/100 GAL		POST A POST A POST A		98	99	99	5	99	3
3	V10137 Roundup UltraMAX II AMS	1 EC 4.5 SL DF		0.063 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL		8.0 FL OZ/A 22.0 FL OZ/A 17.0 LB/100 GAL		POST A POST A POST A		98	99	99	22	99	0
4	Select Roundup UltraMAX II AMS	2 EC 4.5 SL DF		0.047 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL		3.0 FL OZ/A 22.0 FL OZ/A 17.0 LB/100 GAL		POST A POST A POST A		98	99	99	3	99	0
5	V10137 Roundup UltraMAX II AMS	1 EC 4.5 SL DF		0.047 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL		6.0 FL OZ/A 22.0 FL OZ/A 17.0 LB/100 GAL		POST A POST A POST A		96	99	99	10	99	0
LSD (P=.05)										3.5	0.0	0.0	8.0	0.0	2.4

Iowa State University

Weed Code										ZEAMD RR	ZEAMD LL	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-16-04	08-16-04	08-16-04	08-16-04	08-16-04	08-16-04
Trt-Eval Interval										33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Select	2	EC	0.063	LB A/A	4.0	FL OZ/A	POST	A	80	99	99	98	99	99
	Roundup UltraMAX II AMS	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A						
3	V10137	1	EC	0.063	LB A/A	8.0	FL OZ/A	POST	A	90	99	99	96	99	99
	Roundup UltraMAX II AMS	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A						
4	Select	2	EC	0.047	LB A/A	3.0	FL OZ/A	POST	A	77	99	99	98	99	99
	Roundup UltraMAX II AMS	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A						
5	V10137	1	EC	0.047	LB A/A	6.0	FL OZ/A	POST	A	85	99	99	96	99	99
	Roundup UltraMAX II AMS	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A						
LSD (P=.05)										5.7	0.0	0.0	2.8	0.0	0.0

Iowa State University

Weed Code										ZEAMD RR	ZEAMD LL	ZEAMD RR	ZEAMD LL	ZEAMD RR	ZEAMD LL
Rating Data Type										ON GRD	ON GRD	CONTROL	CONTROL	ON GRD	ON GRD
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-16-04	08-16-04	08-31-04	08-31-04	08-31-04	08-31-04
Trt-Eval Interval										33 DA-A	33 DA-A	48 DA-A	48 DA-A	48 DA-A	48 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Select Roundup UltraMAX II AMS	2 EC	4.5 SL	0.063 LB/A	0.77 LB/AE/A	4.0 FL OZ/A	22.0 FL OZ/A	POST A		15	99	88	99	40	99
		DF		17.0 LB/100 GAL		17.0 LB/100 GAL		POST A							
3	V10137 Roundup UltraMAX II AMS	1 EC	4.5 SL	0.063 LB/A	0.77 LB/AE/A	8.0 FL OZ/A	22.0 FL OZ/A	POST A		45	99	93	99	68	99
		DF		17.0 LB/100 GAL		17.0 LB/100 GAL		POST A							
4	Select Roundup UltraMAX II AMS	2 EC	4.5 SL	0.047 LB/A	0.77 LB/AE/A	3.0 FL OZ/A	22.0 FL OZ/A	POST A		13	99	83	99	38	99
		DF		17.0 LB/100 GAL		17.0 LB/100 GAL		POST A							
5	V10137 Roundup UltraMAX II AMS	1 EC	4.5 SL	0.047 LB/A	0.77 LB/AE/A	6.0 FL OZ/A	22.0 FL OZ/A	POST A		23	99	92	99	62	99
		DF		17.0 LB/100 GAL		17.0 LB/100 GAL		POST A							
LSD (P=.05)										27.3	0.0	5.7	0.0	26.9	0.0

Iowa State University

Postemergence applications of Assure II and Select with Roundup WeatherMAX for glyphosate and glufosinate-resistant corn control in soybean, Ames, IA, 2004.
 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:** 06-04-04
Country: USA

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

Objective: The purpose of this study was to evaluate glyphosate and glufosinate-resistant corn control in soybean with Assure II and Select when tank-mixed with Roundup WeatherMAX. Assure II and Select treatments were evaluated with and without the addition of NIS to the tank-mixture.
Conclusions: No treatment caused more than 5% soybean injury. None of the treatments combining postemergence (POST) applied Select or Assure II with Roundup WeatherMAX caused antagonism for giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed control on any of the observation dates. There were no significant differences between treatments in % control (chlorosis/necrosis) or % on the ground [ON GRD (on ground)] of glufosinate-resistant corn (ZEAMD LL) on any of observation dates.
 On July 28 and August 4, Roundup WeatherMAX plus Select provided significantly more control of glyphosate-resistant corn (ZEAMD RR) when NIS was included in the treatment than when NIS was not. Assure II treatments provided significantly more control (ON GRD) of glyphosate-resistant corn than Select treatments on all observed dates. By August 4, at least 93% of glyphosate-resistant corn was on the ground with Assure II treatments, compared to only 7 to 8% with Select treatments. On August 16 and 31, the % of glyphosate-resistant corn on the ground was by far greater when NIS was included with Select in the treatment. (Dept. of Agronomy, Iowa State University, Ames).

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	ZEARR	CORN, GLYPHOSATE RESISTANT	ZEAMAYS
2.	ZEALL	CORN, GLUFOSINATE RESISTANT	ZEAMAYS
3.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
4.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
5.	AMATA	WATERHEMP, COMMON	AMARANTHUS TAMARISCINUS NUTT.
6.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
7.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.

Crop 1: GLXMA SOYBEAN **Variety:** ASGROW AG 2403
Planting Date: 06-04-04 **Planting Method:** DIRECT DRILLED
Rate: 151000 SEEDS/A **Depth:** 1.25 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting. Glyphosate-resistant Dekalb DKC53-34 and glufosinate-resistant Pioneer 33R79 corn varieties were planted in the plot area on June 5.

SOIL DESCRIPTION

% OM: 4.7 **Texture:** CLAY LOAM, LOAM
pH: 7.8 **Soil Name:** CANISTEO, HARPS
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	07-14-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	80 F
% Relative Humidity:	57
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	79 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	20

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V 5
Stage Scale:	DESC
Height, Unit:	13 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	ZEARR V 5-V 6
Stage Scale:	12-18 IN
Density, Unit:	2 ROWFT
Weed 2 Code, Stage:	ZEALL V 5-V 6
Stage Scale:	12-18 IN
Density, Unit:	2 ROWFT
Weed 3 Code, Stage:	SETFA 1-4 L, 3T
Stage Scale:	1-16 IN
Density, Unit:	5-15 FT2
Weed 4 Code, Stage:	ABUTH 1-8 LEAF
Stage Scale:	0.5-12 IN
Density, Unit:	0-1 FT2
Weed 5 Code, Stage:	AMATA 4-NUM
Stage Scale:	0.5-14 IN
Density, Unit:	0-2 FT2
Weed 6 Code, Stage:	CHEAL 4-NUM
Stage Scale:	0.5-12 IN
Density, Unit:	0-1 FT2
Weed 7 Code, Stage:	POLPY NUMEROUS
Stage Scale:	4-12 IN
Density, Unit:	< 1 FT2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND BOOM
Operating Pressure:	30
Nozzle Size:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Postemergence applications of Assure II and Select with Roundup WeatherMAX for glyphosate and glufosinate-resistant corn control in soybean, Ames, IA, 2004.

Trial ID: ASC 5

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								GLYMA	ZEAMD RR	ZEAMD LL	SETFA	ABUTH	AMATA	CHEAL		
Rating Data Type								PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								07-28-04	07-28-04	07-28-04	07-28-04	07-28-04	07-28-04	07-28-04		
Trt-Eval Interval								14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Roundup WeatherMAX Assure II AMS	4.5 0.88	SL EC DF	0.77 0.0344 2.0	LB AE/A LB A/A % W/V	22.0 5.0 2.0	FL OZ/A FL OZ/A % W/V	POST A POST A POST A		3	78	93	99	96	96	99
3	Roundup WeatherMAX Assure II NIS AMS	4.5 0.88	SL EC L DF	0.77 0.0344 0.125 2.0	LB AE/A LB A/A % V/V % W/V	22.0 5.0 0.125 2.0	FL OZ/A FL OZ/A % V/V % W/V	POST A POST A POST A POST A		5	85	92	99	98	98	99
4	Roundup WeatherMAX Select AMS	4.5 2	SL EC DF	0.77 0.0625 2.0	LB AE/A LB A/A % W/V	22.0 4.0 2.0	FL OZ/A FL OZ/A % W/V	POST A POST A POST A		3	68	93	99	99	98	99
5	Roundup WeatherMAX Select NIS AMS	4.5 2	SL EC L DF	0.77 0.0625 0.125 2.0	LB AE/A LB A/A % V/V % W/V	22.0 4.0 0.125 2.0	FL OZ/A FL OZ/A % V/V % W/V	POST A POST A POST A POST A		5	78	93	99	99	96	99
6	Roundup WeatherMAX AMS	4.5	SL DF	0.77 2.0	LB AE/A % W/V	22.0 2.0	FL OZ/A % W/V	POST A POST A		3	2	93	99	99	99	99
LSD (P=.05)								4.1	8.2	5.0	0.0	4.4	3.5	0.0		

Iowa State University

Weed Code										POLPY	ZEAMD RR	ZEAMD LL	GLYMA	ZEAMD RR	ZEAMD LL	SETFA
Rating Data Type										CONTROL	ON GRD	ON GRD	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-28-04	07-28-04	07-28-04	08-04-04	08-04-04	08-04-04	08-04-04
Trt-Eval Interval										14 DA-A	14 DA-A	14 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	88	40	58	3	90	99	99
	Assure II	0.88	EC	0.0344	LB A/A	5.0	FL OZ/A	POST	A							
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A							
3	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	87	47	47	5	93	99	99
	Assure II	0.88	EC	0.0344	LB A/A	5.0	FL OZ/A	POST	A							
	NIS		L	0.125	% V/V	0.125	% V/V	POST	A							
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A							
4	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	90	0	45	3	77	99	99
	Select	2	EC	0.0625	LB A/A	4.0	FL OZ/A	POST	A							
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A							
5	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	90	5	52	5	85	98	99
	Select	2	EC	0.0625	LB A/A	4.0	FL OZ/A	POST	A							
	NIS		L	0.125	% V/V	0.125	% V/V	POST	A							
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A							
6	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	92	0	53	0	0	96	99
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A							
LSD (P=.05)										7.0	15.0	18.6	3.2	5.0	4.4	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ABUTH CONTROL PERCENT 08-04-04 21 DA-A	AMATA CONTROL PERCENT 08-04-04 21 DA-A	CHEAL CONTROL PERCENT 08-04-04 21 DA-A	POLPY CONTROL PERCENT 08-04-04 21 DA-A	ZEAMD RR ON GRD PERCENT 08-04-04 21 DA-A	ZEAMD LL ON GRD PERCENT 08-04-04 21 DA-A	GLYMA PHYGEN PERCENT 08-16-04 33 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Roundup WeatherMAX Assure II AMS	4.5 0.88	SL EC DF	0.77 0.0344 2.0	LB AE/A LB A/A % W/V	22.0 5.0 2.0	FL OZ/A FL OZ/A % W/V	POST POST POST	A A A	96	99	99	96	93	99	2
3	Roundup WeatherMAX Assure II NIS AMS	4.5 0.88	SL EC L DF	0.77 0.0344 0.125 2.0	LB AE/A LB A/A % V/V % W/V	22.0 5.0 0.125 2.0	FL OZ/A FL OZ/A % V/V % W/V	POST POST POST POST	A A A A	98	99	99	93	95	99	5
4	Roundup WeatherMAX Select AMS	4.5 2	SL EC DF	0.77 0.0625 2.0	LB AE/A LB A/A % W/V	22.0 4.0 2.0	FL OZ/A FL OZ/A % W/V	POST POST POST	A A A	99	98	99	93	7	99	3
5	Roundup WeatherMAX Select NIS AMS	4.5 2	SL EC L DF	0.77 0.0625 0.125 2.0	LB AE/A LB A/A % V/V % W/V	22.0 4.0 0.125 2.0	FL OZ/A FL OZ/A % V/V % W/V	POST POST POST POST	A A A A	99	96	99	93	8	98	3
6	Roundup WeatherMAX AMS	4.5	SL DF	0.77 2.0	LB AE/A % W/V	22.0 2.0	FL OZ/A % W/V	POST POST	A A	99	99	99	95	0	99	0
LSD (P=.05)										4.4	2.7	0.0	3.8	5.1	1.7	3.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ZEAMD RR CONTROL PERCENT 08-16-04 33 DA-A	ZEAMD LL CONTROL PERCENT 08-16-04 33 DA-A	SETFA CONTROL PERCENT 08-16-04 33 DA-A	ABUTH CONTROL PERCENT 08-16-04 33 DA-A	AMATA CONTROL PERCENT 08-16-04 33 DA-A	CHEAL CONTROL PERCENT 08-16-04 33 DA-A	POLPY CONTROL PERCENT 08-16-04 33 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Roundup WeatherMAX Assure II AMS	4.5 0.88	SL EC DF	0.77 0.0344 2.0	LB AE/A LB A/A % W/V	22.0 5.0 2.0	FL OZ/A FL OZ/A % W/V	POST POST POST	A A A	96	99	99	98	99	99	96
3	Roundup WeatherMAX Assure II NIS AMS	4.5 0.88	SL EC L DF	0.77 0.0344 0.125 2.0	LB AE/A LB A/A % V/V % W/V	22.0 5.0 0.125 2.0	FL OZ/A FL OZ/A % V/V % W/V	POST POST POST POST	A A A A	96	99	99	98	99	99	93
4	Roundup WeatherMAX Select AMS	4.5 2	SL EC DF	0.77 0.0625 2.0	LB AE/A LB A/A % W/V	22.0 4.0 2.0	FL OZ/A FL OZ/A % W/V	POST POST POST	A A A	85	99	99	99	98	99	93
5	Roundup WeatherMAX Select NIS AMS	4.5 2	SL EC L DF	0.77 0.0625 0.125 2.0	LB AE/A LB A/A % V/V % W/V	22.0 4.0 0.125 2.0	FL OZ/A FL OZ/A % V/V % W/V	POST POST POST POST	A A A A	90	99	99	99	96	99	95
6	Roundup WeatherMAX AMS	4.5	SL DF	0.77 2.0	LB AE/A % W/V	22.0 2.0	FL OZ/A % W/V	POST POST	A A	0	96	99	99	99	99	95
LSD (P=.05)										4.5	3.9	0.0	2.5	2.7	0.0	3.0

Iowa State University

Weed Code										ZEAMD RR	ZEAMD LL	ZEAMD RR	ZEAMD LL	ZEAMD RR	ZEAMD LL
Rating Data Type										ON GRD	ON GRD	CONTROL	CONTROL	ON GRD	ON GRD
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-16-04	08-16-04	08-31-04	08-31-04	08-31-04	08-31-04
Trt-Eval Interval										33 DA-A	33 DA-A	48 DA-A	48 DA-A	48 DA-A	48 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	96	99	99	99	99	99
	Assure II	0.88	EC	0.0344	LB A/A	5.0	FL OZ/A	POST	A						
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A						
3	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	96	99	99	99	99	99
	Assure II	0.88	EC	0.0344	LB A/A	5.0	FL OZ/A	POST	A						
	NIS		L	0.125	% V/V	0.125	% V/V	POST	A						
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A						
4	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	17	99	90	99	42	99
	Select	2	EC	0.0625	LB A/A	4.0	FL OZ/A	POST	A						
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A						
5	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	42	99	95	99	87	99
	Select	2	EC	0.0625	LB A/A	4.0	FL OZ/A	POST	A						
	NIS		L	0.125	% V/V	0.125	% V/V	POST	A						
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A						
6	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	0	99	0	96	0	99
	AMS		DF	2.0	% W/V	2.0	% W/V	POST	A						
LSD (P=.05)										15.9	0.0	0.0	3.9	9.9	0.0

Iowa State University

Postemergence applications of Roundup Original with Scepter for glyphosate and glufosinate-resistant corn control in soybean, Ames, IA, 2004.

Trial ID: ASC 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: 06-04-04
Country: USA

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

Objective: The purpose of this study was to evaluate glyphosate and glufosinate-resistant corn control in soybean with postemergence applied Roundup Original tank-mixed with Scepter. Two application timings were evaluated.

Conclusions: Soybean injury was evident from postemergence (POST1) applied Roundup Original plus Scepter when observed on July 21, 28, August 4, 16, and 31. POST2 applications of Scepter plus Roundup Original also resulted in soybean injury. Injury was as high as 18% from POST1 applications (August 4), but never exceeded 13% from POST2 (August 4). Weed control was not rate responsive at any observation dates for giant foxtail, velvetleaf, common waterhemp common lambsquarters, and common cocklebur. POST1 applications provided at least 93% control of all weeds for all observation dates. POST2 applications provided reduced control of velvetleaf and common waterhemp (88 to 90% by August 16).

All treatments provided 99% control of glufosinate-resistant corn (ZEAMD LL) by August 16. Glufosinate-resistant corn control was rate responsive to Scepter plus Roundup Original for only the POST2 application. This was demonstrated on August 4. Glufosinate-resistant corn was controlled [ON GRD (on ground)] for all treatments by August 16. Both application timings were Scepter rate responsive at observation dates that occurred before 99% glufosinate-resistant corn was on the ground.

Control and ON GRD observations for glyphosate-resistant corn (ZEAMD RR) was not rate responsive for any of the observations. Glyphosate-resistant corn control did not exceed 92% for POST1 and 65% for POST2 applications. On ground (ON GRD) observations on August 31 of glyphosate-resistant corn reached only 32% for the POST1 application of the high rate of Scepter. POST2 applications resulted in less than 5% of glyphosate-resistant corn on the ground. (Dept. of Agronomy, Iowa State University, Ames).

CROP AND WEED DESCRIPTION

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

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG 2403
Planting Date: 06-04-04 Planting Method: DIRECT DRILLED
Rate: 151000 SEEDS/A Depth: 1.25 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting. Glyphosate-resistant Dekalb DKC53-34 and glufosinate-resistant Pioneer 33R79 corn varieties were planted in the plot area on June 5.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM
pH: 7.8 Soil Name: CANISTEO, HARPS
Fert. Level: EXCELLENT

Iowa State University

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A	B
Application Date:	07-14-04	07-21-04
Application Method:	SPRAY	SPRAY
Application Timing:	POST1	POST2
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	80 F	86 F
% Relative Humidity:	57	65
Wind Velocity, Unit:	5 MPH	3 MPH
Soil Temp., Unit:	79 F	81 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	20	40

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA V 4 - V 5	GLXMA R 1
Stage Scale:	DESC	DESC
Height, Unit:	12 IN	18 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	ZEARR V 5 - V 6	ZEARR V 7
Stage Scale:	8-14 IN	18-24 IN
Density, Unit:	2 ROWFT	2 ROWFT
Weed 2 Code, Stage:	ZEALL V 5-V 6	ZEALL V 7
Stage Scale:	8-14 IN	18-24 IN
Density, Unit:	2 ROWFT	2 ROWFT
Weed 3 Code, Stage:	SETFA 1-4 L, 3T	SETFA 1-4 L, 4T
Stage Scale:	1-14 IN	18 IN
Density, Unit:	5-15 FT2	5-15 FT2
Weed 4 Code, Stage:	ABUTH 1-7 LEAF	ABUTH 2-10 LEAF
Stage Scale:	0.5-8 IN	4-14 IN
Density, Unit:	0-1 FT2	< 1 FT2
Weed 5 Code, Stage:	AMATA 4-NUM	AMATA NUMEROUS
Stage Scale:	0.5-10 IN	4-24 IN
Density, Unit:	0-1 FT2	< 1 FT2
Weed 6 Code, Stage:	CHEAL 4-NUM	CHEAL NUMEROUS
Stage Scale:	0.5-6 IN	4-24 IN
Density, Unit:	0-1 FT2	< 1 FT2
Weed 7 Code, Stage:	XANST NUMEROUS	XANST NUMEROUS
Stage Scale:	4-13 IN	18-24 IN
Density, Unit:	< 1 FT2	< 1 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	HAND BOOM	HAND BOOM
Operating Pressure:	30	30
Nozzle Size:	11003	11003
Spray Volume, Unit:	20 GPA	20 GPA

Iowa State University

Postemergence applications of Roundup Original with Scepter for glyphosate and glufosinate-resistant corn control in soybean, Ames, IA, 2004.

Trial ID: ASC 6

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code									GLYMA	GLYMA	ZEAMD RR	ZEAMD LL	SETFA	ABUTH	AMATA	
Rating Data Type									PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-21-04	07-28-04	07-28-04	07-28-04	07-28-04	07-28-04	07-28-04	
Trt-Eval Interval									7 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	13	15	67	98	99	99	95
	Scepter	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST1	A							
	NIS		L	0.25	% V/V	0.25	% V/V	POST1	A							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A							
3	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	17	17	65	99	99	99	95
	Scepter	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST1	A							
	NIS		L	0.25	% V/V	0.25	% V/V	POST1	A							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A							
4	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	0	7	38	78	85	57	62
	Scepter	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST2	B							
	NIS		L	0.25	% V/V	0.25	% V/V	POST2	B							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B							
5	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	0	12	38	80	85	60	65
	Scepter	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST2	B							
	NIS		L	0.25	% V/V	0.25	% V/V	POST2	B							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B							
LSD (P=.05)										3.2	4.2	12.0	5.7	6.3	4.4	5.4

Iowa State University

Weed Code										CHEAL	XANST	ZEAMD RR	ZEAMD LL	GLYMA	ZEAMD RR	ZEAMD LL
Rating Data Type										CONTROL	CONTROL	ON GRD	ON GRD	PHYGEN	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-28-04	07-28-04	07-28-04	07-28-04	08-04-04	08-04-04	08-04-04
Trt-Eval Interval										14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-B	14 DA-B	14 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Roundup Original Scepter	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	99	99	0	73	12	77	99
	NIS	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST1	A							
	AMS		L	0.25	% V/V	0.25	% V/V	POST1	A							
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A							
3	Roundup Original Scepter	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	99	99	0	87	18	75	99
	NIS	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST1	A							
	AMS		L	0.25	% V/V	0.25	% V/V	POST1	A							
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A							
4	Roundup Original Scepter	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	88	99	0	0	12	50	88
	NIS	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST2	B							
	AMS		L	0.25	% V/V	0.25	% V/V	POST2	B							
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B							
5	Roundup Original Scepter	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	92	98	0	0	13	55	92
	NIS	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST2	B							
	AMS		L	0.25	% V/V	0.25	% V/V	POST2	B							
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B							
LSD (P=.05)										3.2	1.9	0.0	4.9	5.0	8.0	3.2

Iowa State University

Weed Code										SETFA	ABUTH	AMATA	CHEAL	XANST	ZEAMD RR	ZEAMD LL
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	ON GRD	ON GRD
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-04-04	08-04-04	08-04-04	08-04-04	08-04-04	08-04-04	08-04-04
Trt-Eval Interval										14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	99	98	95	99	99	0	99
	Scepter	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST1	A							
	NIS		L	0.25	% V/V	0.25	% V/V	POST1	A							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A							
3	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	99	98	96	99	99	5	99
	Scepter	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST1	A							
	NIS		L	0.25	% V/V	0.25	% V/V	POST1	A							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A							
4	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	96	88	90	93	99	0	37
	Scepter	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST2	B							
	NIS		L	0.25	% V/V	0.25	% V/V	POST2	B							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B							
5	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	98	90	88	95	98	0	60
	Scepter	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST2	B							
	NIS		L	0.25	% V/V	0.25	% V/V	POST2	B							
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B							
LSD (P=.05)										2.6	2.6	4.0	2.4	1.9	7.3	8.5

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Weed Code										GLYMA	ZEAMD RR	ZEAMD LL	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-16-04	08-16-04	08-16-04	08-16-04	08-16-04	08-16-04	08-16-04
Trt-Eval Interval										33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	8	82	99	99	98	93	99
	Scepter	70	DG	0.0306	LB A/A		0.7 OZ WT/A		A							
	NIS		L	0.25	% V/V		0.25 % V/V		A							
	AMS		DF	17.0	LB/100 GAL		17.0 LB/100 GAL		A							
3	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	10	82	99	99	96	96	99
	Scepter	70	DG	0.061	LB A/A		1.4 OZ WT/A		A							
	NIS		L	0.25	% V/V		0.25 % V/V		A							
	AMS		DF	17.0	LB/100 GAL		17.0 LB/100 GAL		A							
4	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	7	53	99	96	88	90	93
	Scepter	70	DG	0.0306	LB A/A		0.7 OZ WT/A		B							
	NIS		L	0.25	% V/V		0.25 % V/V		B							
	AMS		DF	17.0	LB/100 GAL		17.0 LB/100 GAL		B							
5	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	8	60	99	98	90	88	95
	Scepter	70	DG	0.061	LB A/A		1.4 OZ WT/A		B							
	NIS		L	0.25	% V/V		0.25 % V/V		B							
	AMS		DF	17.0	LB/100 GAL		17.0 LB/100 GAL		B							
LSD (P=.05)										5.8	7.5	0.0	2.6	3.0	3.2	2.4

Iowa State University

Weed Code										XANST	ZEAMD RR	ZEAMD LL	GLYMA	ZEAMD RR	ZEAMD LL
Rating Data Type										CONTROL	ON GRD	ON GRD	PHYGEN	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-16-04	08-16-04	08-16-04	08-31-04	08-31-04	08-31-04
Trt-Eval Interval										33 DA-A	33 DA-A	33 DA-A	41 DA-B	41 DA-B	41 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup Original Scepter	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	99	3	99	3	88	99
	NIS	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST1	A						
	AMS		L	0.25	% V/V	0.25	% V/V	POST1	A						
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A						
3	Roundup Original Scepter	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	99	15	99	5	92	99
	NIS	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST1	A						
	AMS		L	0.25	% V/V	0.25	% V/V	POST1	A						
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A						
4	Roundup Original Scepter	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	99	0	99	5	63	99
	NIS	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST2	B						
	AMS		L	0.25	% V/V	0.25	% V/V	POST2	B						
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B						
5	Roundup Original Scepter	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	98	0	99	5	65	99
	NIS	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST2	B						
	AMS		L	0.25	% V/V	0.25	% V/V	POST2	B						
			DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B						
LSD (P=.05)										1.9	19.4	0.0	8.8	8.3	0.0

Iowa State University

Weed Code										ZEAMD RR	ZEAMD LL
Rating Data Type										ON GRD	ON GRD
Rating Unit										PERCENT	PERCENT
Rating Date										08-31-04	08-31-04
Trt-Eval Interval										41 DA-B	41 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated									0	0
2	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	15	99
	Scepter	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST1	A		
	NIS		L	0.25	% V/V	0.25	% V/V	POST1	A		
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A		
3	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST1	A	32	99
	Scepter	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST1	A		
	NIS		L	0.25	% V/V	0.25	% V/V	POST1	A		
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST1	A		
4	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	2	99
	Scepter	70	DG	0.0306	LB A/A	0.7	OZ WT/A	POST2	B		
	NIS		L	0.25	% V/V	0.25	% V/V	POST2	B		
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B		
5	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST2	B	3	99
	Scepter	70	DG	0.061	LB A/A	1.4	OZ WT/A	POST2	B		
	NIS		L	0.25	% V/V	0.25	% V/V	POST2	B		
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST2	B		
LSD (P=.05)										18.2	0.0

Iowa State University

Preemergence applied INTRRO, Prowl, Valor SX, Canopy XL, and FirstRate followed by postemergence Roundup WeatherMAX in soybean, Ames, IA, 2004.
 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:** 06-04-04
Country: USA

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

Objective: The purpose of this study was evaluate INTRRO, Prowl, Valor SX and other residual herbicides for enhanced management of postemergence applied Roundup WeatherMAX.

Conclusions: Negligible soybean injury was observed on June 30 and July 8 from preemergence (PRE) applied treatments, twenty-five and thirty-three days after application, respectively. PRE treatments provided poor to excellent giant foxtail control when observed on July 8, prior to POST applications. Giant foxtail control was good to excellent with the low rates of PRE INTRRO and Prowl H2O, while Valor SX, Canopy XL, Valor SX plus FirstRate and FirstRate provided poor to fair control. Velvetleaf control was mostly poor to fair, except with Valor SX plus FirstRate which provided excellent control. Good to excellent common waterhemp and common lambsquarters control was provided by all treatments, except for common waterhemp control with FirstRate. Common cocklebur control with PRE treatments was unacceptable.

Excellent crop safety was observed on July 15 and 28 following postemergence (POST) and sequential postemergence (SPOST) Roundup WeatherMAX applications. Roundup WeatherMAX treatments following PRE, applied POST, alone, and POST followed by SPOST resulted in excellent broad spectrum weed control when observed on July 28 and September 7. (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 2403
Planting Date: 06-04-04 **Planting Method:** DIRECT DRILLED
Rate: 151000 SEEDS/A **Depth:** 1.25 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting.

SOIL DESCRIPTION

% OM: 4.7 **Texture:** CLAY LOAM, LOAM
pH: 7.8 **Soil Name:** CANISTEO, HARPS
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	06-05-04	07-08-04	07-28-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST	SPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	75 F	74 F	80 F
% Relative Humidity:	54	67	54
Wind Velocity, Unit:	3 MPH	3 MPH	7 MPH
Soil Temp., Unit:	70 F	69 F	76 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	90	50	90

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA -	GLXMA V 4	GLXMA R 2
Stage Scale:	-	DESC	DESC
Height, Unit:	-	10 IN	22 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 3T	SETFA 1-2 LEAF
Stage Scale:	-	1-8 IN	1-4 IN
Density, Unit:	- -	0-5 FT2	< 1 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-8 L	ABUTH -
Stage Scale:	-	0.5-8 IN	-
Density, Unit:	- -	0-1 FT2	- -
Weed 3 Code, Stage:	AMATA -	AMATA 4-NUM	AMATA 4-7 LEAF
Stage Scale:	-	0.5-12 IN	1-4 IN
Density, Unit:	- -	0-3 FT2	< 1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 4-NUM	CHEAL -
Stage Scale:	-	0.5-8 IN	-
Density, Unit:	- -	0-3 FT2	- -
Weed 5 Code, Stage:	XANST -	XANST NUMEROUS	XANST -
Stage Scale:	-	8-12 IN	-
Density, Unit:	- -	< 1 FT2	- -

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied INTRRO, Prowl, Valor SX, Canopy XL, and FirstRate followed by postemergence Roundup WeatherMAX in soybean, Ames, IA, 2004.

Trial ID: ASC 7

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code									GLYMA	GLYMA	SETFA	ABUTH	AMATA	CHEAL	XANST	
Rating Data Type									PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									06-30-04	07-08-04	07-08-04	07-08-04	07-08-04	07-08-04	07-08-04	
Trt-Eval Interval									25 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	INTRRO	4 EC		1.0 LB	A/A	1.0 QT/A	PRE	A		5	5	95	23	99	90	10
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
3	INTRRO	4 EC		1.25 LB	A/A	1.25 QT/A	PRE	A		5	5	95	23	99	88	20
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
4	INTRRO	4 EC		1.5 LB	A/A	1.5 QT/A	PRE	A		5	5	98	50	99	90	25
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
5	Prowl H2O	3.8 EC		1.0 LB	A/A	2.1 PT/A	PRE	A		5	5	85	67	93	95	32
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
6	Prowl H2O	3.8 EC		1.25 LB	A/A	2.6 PT/A	PRE	A		5	5	90	77	95	98	38
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
7	Valor SX	51 WG		0.032 LB	A/A	1.0 OZ	WT/A	PRE	A	5	3	58	82	98	96	25
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
8	Canopy XL	56.3 WG		0.047 LB	A/A	1.34 OZ	WT/A	PRE	A	0	0	37	50	92	90	23
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
9	Valor SX	51 WG		0.048 LB	A/A	1.5 OZ	WT/A	PRE	A	5	5	73	96	99	98	60
	FirstRate	84 WG		0.016 LB	A/A	0.305 OZ	WT/A	PRE	A							
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
10	FirstRate	84 WG		0.016 LB	A/A	0.305 OZ	WT/A	PRE	A	0	0	43	73	50	90	23
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B							
11	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B	0	0	0	0	0	0	0
12	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	POST	B	0	0	0	0	0	0	0
	Roundup WeatherMAX	4.5 SL		0.75 LB	AE/A	21.3 FL	OZ/A	SPOST	C							
LSD (P=.05)										0.0	1.4	10.0	21.9	4.9	7.4	11.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									GLYMA PHYGEN PERCENT 07-15-04 7 DA-B	GLYMA PHYGEN PERCENT 07-28-04 20 DA-B	SETFA CONTROL PERCENT 07-28-04 20 DA-B	ABUTH CONTROL PERCENT 07-28-04 20 DA-B	AMATA CONTROL PERCENT 07-28-04 20 DA-B	CHEAL CONTROL PERCENT 07-28-04 20 DA-B	XANST CONTROL PERCENT 07-28-04 20 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated								0	0	0	0	0	0	0
2	INTRRO Roundup WeatherMAX	4.5	EC SL	1.0 LB AE/A	1.0 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	99	99	99	99
3	INTRRO Roundup WeatherMAX	4.5	EC SL	1.25 LB AE/A	1.25 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	99	99	99	99
4	INTRRO Roundup WeatherMAX	4.5	EC SL	1.5 LB AE/A	1.5 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	96	99	99	99
5	Prowl H2O Roundup WeatherMAX	4.5	EC SL	1.0 LB AE/A	1.0 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	99	99	99	99
6	Prowl H2O Roundup WeatherMAX	4.5	EC SL	1.25 LB AE/A	1.25 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	99	99	99	99
7	Valor SX Roundup WeatherMAX	4.5	WG SL	0.032 LB AE/A	0.032 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	99	99	99	99
8	Canopy XL Roundup WeatherMAX	4.5	WG SL	0.047 LB AE/A	0.047 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	99	99	99	99
9	Valor SX FirstRate Roundup WeatherMAX	4.5	WG SL	0.048 LB AE/A	0.048 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	99	99	99	99
10	FirstRate Roundup WeatherMAX	4.5	WG SL	0.016 LB AE/A	0.016 LB AE/A	21.3 FL OZ/A	PRE POST	A B	0	0	99	99	99	99	99
11	Roundup WeatherMAX	4.5	SL	0.75 LB AE/A	0.75 LB AE/A	21.3 FL OZ/A	POST	B	0	0	99	99	99	99	99
12	Roundup WeatherMAX Roundup WeatherMAX	4.5	SL SL	0.75 LB AE/A	0.75 LB AE/A	21.3 FL OZ/A	POST SPOST	B C	0	0	99	99	99	99	99
LSD (P=.05)									0.0	0.0	0.0	1.1	0.0	0.0	0.0

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									09-07-04	09-07-04	09-07-04	09-07-04	09-07-04	
Trt-Eval Interval									61 DA-B	61 DA-B	61 DA-B	61 DA-B	61 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	INTRRO Roundup WeatherMAX	4.5	EC SL	1.0	LB AE/A	1.0	QT/A FL OZ/A	PRE POST	A B	99	98	99	98	99
3	INTRRO Roundup WeatherMAX	4.5	EC SL	1.25	LB AE/A	1.25	QT/A FL OZ/A	PRE POST	A B	99	99	98	98	99
4	INTRRO Roundup WeatherMAX	4.5	EC SL	1.5	LB AE/A	1.5	QT/A FL OZ/A	PRE POST	A B	99	96	99	99	99
5	Prowl H2O Roundup WeatherMAX	4.5	EC SL	1.0	LB AE/A	2.1	PT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
6	Prowl H2O Roundup WeatherMAX	4.5	EC SL	1.25	LB AE/A	2.6	PT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
7	Valor SX Roundup WeatherMAX	4.5	WG SL	0.032	LB AE/A	1.0	OZ WT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
8	Canopy XL Roundup WeatherMAX	4.5	WG SL	0.047	LB AE/A	1.34	OZ WT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
9	Valor SX FirstRate Roundup WeatherMAX	4.5	WG SL	0.048	LB AE/A	1.5	OZ WT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
10	FirstRate Roundup WeatherMAX	4.5	WG SL	0.016	LB AE/A	0.305	OZ WT/A FL OZ/A	PRE POST	A B	99	99	99	99	99
11	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	POST	B	99	99	99	98	99
12	Roundup WeatherMAX Roundup WeatherMAX	4.5	SL SL	0.75	LB AE/A	21.3	FL OZ/A SPOST	POST C	B	99	99	99	99	99
LSD (P=.05)										0.0	1.7	1.1	2.0	0.0

Iowa State University

Preemergence applied Gangster, Python, Valor SX, and Pendimax and postemergence applied FirstRate, and Glyphomax Plus in soybean, Ames, IA, 2004.

Trial ID: ASC 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: 06-04-04

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 herbicides in soybean for phytotoxicity and weed control. Gangster, Python, Valor SX, and Pendimax were applied as preemergence treatments, while Glyphomax Plus, and GF-1279 were applied postemergence.

Conclusions: Preemergence (PRE) applied Pendimax and Gangster treatments caused 5 to 10% soybean injury when observed on June 28 and July 8. Injury caused by Gangster treatments was rate responsive. Python plus Valor SX caused only 5% injury on June 28. Injury for Gangster plus Pendimax was 8% on July 15.

On July 8, Gangster plus Pendimax and Python plus Valor SX provided 96 and 93% giant foxtail control, respectively. The remaining PRE treatments ranged from 78 to 88% giant foxtail control. Pendimax gave 75% control of velvetleaf, while all other PRE treatments gave at least 93% velvetleaf control. All PRE treatments provided excellent common waterhemp and common lambsquarters control. PRE Gangster treatments provided 85 to 96% common cocklebur control. Pendimax and Python plus Valor SX did not provide acceptable common cocklebur control.

Postemergence (POST) applied FirstRate plus 1.5 pt/A Glyphomax Plus provided 93% velvetleaf control on July 28 and September 7, and 88% common lambsquarters control on September 7. GF-1279 gave 93% velvetleaf and common waterhemp control on those dates. Glyphomax Plus applied POST, alone, at 2.0 pt/A provided 88% common lambsquarters control on September 7. All remaining treatments provided at least 95% control of all weed species. (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 2403

Planting Date: 06-04-04 Planting Method: DIRECT DRILLED

Rate: 151000 SEEDS/A Depth: 1.25 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM

pH: 7.8 Soil Name: CANISTEO, HARPS

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	06-05-04	07-08-04	07-28-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST	SPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	75 F	74 F	80 F
% Relative Humidity:	54	67	54
Wind Velocity, Unit:	3 MPH	3 MPH	7 MPH
Soil Temp., Unit:	70 F	69 F	76 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	90	50	90

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA -	GLXMA V 4	GLXMA R 2
Stage Scale:	-	DESC	DESC
Height, Unit:	-	10 IN	22 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 3T	SETFA 1-2 LEAF
Stage Scale:	-	1-8 IN	1-5 IN
Density, Unit:	- -	0-3 FT2	< 1 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-8 L	ABUTH 3-4 LEAF
Stage Scale:	-	0.5-12 IN	1-4 IN
Density, Unit:	- -	0-1 FT2	< 1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 4-NUM	AMATA NUMEROUS
Stage Scale:	-	0.5-10 IN	2-5 IN
Density, Unit:	- -	0-3 FT2	< 1 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 4-NUM	CHEAL NUMEROUS
Stage Scale:	-	0.5-12 IN	2-4 IN
Density, Unit:	- -	0-3 FT2	< 1 FT2
Weed 5 Code, Stage:	XANST -	XANST NUMEROUS	XANST -
Stage Scale:	-	6-12 IN	-
Density, Unit:	- -	< 1 FT2	- -

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied Gangster, Python, Valor SX, and Pendimax and postemergence applied FirstRate, and Glyphomax Plus in soybean, Ames, IA, 2004.

Trial ID: ASC 8

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								GLYMA	GLYMA	SETFA	ABUTH	AMATA	CHEAL	XANST		
Rating Data Type								PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								06-28-04	07-08-04	07-08-04	07-08-04	07-08-04	07-08-04	07-08-04		
Trt-Eval Interval								23 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A	33 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Gangster Pendimax	3.3	WG EC	1.24	LB A/A	3.6 3.0	OZ WT/A PT/A	PRE PRE	A A	10	10	96	99	99	99	
3	Gangster Glyphomax Plus AMS	3	WG SL DF	0.56 2.5	LB AE/A LB/A	1.8 1.5 2.5	OZ WT/A PT/A LB/A	PRE POST POST	A B B	5	2	78	94	99	98	
4	Gangster Glyphomax Plus AMS	3	WG SL DF	0.56 2.5	LB AE/A LB/A	2.4 1.5 2.5	OZ WT/A PT/A LB/A	PRE POST POST	A B B	8	5	88	99	99	98	
5	Python Valor SX Glyphomax Plus AMS	80 51 3	WG WG SL DF	0.033 0.048 0.56 2.5	LB A/A LB A/A LB AE/A LB/A	0.66 1.5 1.5 2.5	OZ WT/A OZ WT/A PT/A LB/A	PRE PRE POST POST	A A B B	5	0	93	93	99	99	
6	GF-1279 AMS	5.4	SL DF	1.0 2.5	LB A/A LB/A	1.5 2.5	PT/A LB/A	POST POST	B B	0	0	0	0	0	0	
7	FirstRate Glyphomax Plus AMS	84 3	WG SL DF	0.0157 0.56 2.5	LB A/A LB AE/A LB/A	0.3 1.5 2.5	OZ WT/A PT/A LB/A	POST POST POST	B B B	0	0	0	0	0	0	
8	Pendimax FirstRate Glyphomax Plus AMS	3.3 84 3	EC WG SL DF	1.24 0.0157 0.56 2.5	LB A/A LB A/A LB AE/A LB/A	3.0 0.3 1.5 2.5	PT/A OZ WT/A PT/A LB/A	PRE POST POST POST	A B B B	10	5	88	75	93	99	
9	Glyphomax Plus AMS	3	SL DF	0.75 2.5	LB AE/A LB/A	2.0 2.5	PT/A LB/A	POST POST	B B	0	0	0	0	0	0	
10	Glyphomax Plus AMS Glyphomax Plus AMS	3 3	SL DF SL DF	0.75 2.5 0.75 2.5	LB AE/A LB/A LB AE/A LB/A	2.0 2.5 2.0 2.5	PT/A LB/A PT/A LB/A	POST POST SPOST SPOST	B B C C	0	0	0	0	0	0	
LSD (P=.05)										1.6	1.6	5.5	6.7	1.6	1.7	12.7

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										GLYMA PHYGEN PERCENT 07-15-04 7 DA-B	GLYMA PHYGEN PERCENT 07-28-04 20 DA-B	SETFA CONTROL PERCENT 07-28-04 20 DA-B	ABUTH CONTROL PERCENT 07-28-04 20 DA-B	AMATA CONTROL PERCENT 07-28-04 20 DA-B	CHEAL CONTROL PERCENT 07-28-04 20 DA-B	XANST CONTROL PERCENT 07-28-04 20 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Gangster Pendimax	3.3	WG EC	1.24	LB A/A	3.6 3.0	OZ PT/A	WT/A PRE	A A	8	3	95	99	99	99	95
3	Gangster Glyphomax Plus AMS	3	WG SL DF	0.56 0.56 2.5	LB AE/A LB/A	1.8 1.5 2.5	OZ PT/A LB/A	WT/A PRE POST	A B B	2	0	99	99	99	99	99
4	Gangster Glyphomax Plus AMS	3	WG SL DF	0.56 0.56 2.5	LB AE/A LB/A	2.4 1.5 2.5	OZ PT/A LB/A	WT/A PRE POST	A B B	2	0	99	99	99	99	99
5	Python Valor SX Glyphomax Plus AMS	80 51 3	WG WG SL DF	0.033 0.048 0.56 2.5	LB A/A LB AE/A LB/A	0.66 1.5 1.5 2.5	OZ WT/A OZ WT/A PT/A LB/A	PRE A PRE A POST B POST B	A A B B	0	0	99	99	99	99	99
6	GF-1279 AMS	5.4	SL DF	1.0 2.5	LB A/A LB/A	1.5 2.5	PT/A LB/A	POST POST	B B	0	0	99	93	93	98	99
7	FirstRate Glyphomax Plus AMS	84 3	WG SL DF	0.0157 0.56 2.5	LB A/A LB AE/A LB/A	0.3 1.5 2.5	OZ WT/A PT/A LB/A	POST B POST B POST B	B B B	0	0	98	93	95	96	99
8	Pendimax FirstRate Glyphomax Plus AMS	3.3 84 3	EC WG SL DF	1.24 0.0157 0.56 2.5	LB A/A LB A/A LB AE/A LB/A	3.0 0.3 1.5 2.5	PT/A OZ WT/A PT/A LB/A	PRE B POST B POST B	A B B B	5	0	99	99	99	99	99
9	Glyphomax Plus AMS	3	SL DF	0.75 2.5	LB AE/A LB/A	2.0 2.5	PT/A LB/A	POST POST	B B	0	0	99	95	95	95	99
10	Glyphomax Plus AMS Glyphomax Plus AMS	3 3 3	SL DF SL DF	0.75 2.5 0.75 2.5	LB AE/A LB/A LB AE/A LB/A	2.0 2.5 2.0 2.5	PT/A LB/A PT/A LB/A	POST B POST B SPOST C SPOST C	B B C C	0	0	99	96	95	95	99
LSD (P=.05)										2.5	1.6	1.3	2.3	1.6	1.7	2.4

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										SETFA CONTROL PERCENT 09-07-04 61 DA-B	ABUTH CONTROL PERCENT 09-07-04 61 DA-B	AMATA CONTROL PERCENT 09-07-04 61 DA-B	CHEAL CONTROL PERCENT 09-07-04 61 DA-B	XANST CONTROL PERCENT 09-07-04 61 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Gangster Pendimax	3.3	WG EC	1.24	LB A/A	3.6 3.0	OZ PT/A	WT/A PRE	A A	96	99	99	98	95
3	Gangster Glyphomax Plus AMS	3	WG SL DF		LB AE/A LB/A	1.8 1.5 2.5	OZ PT/A LB/A	WT/A POST POST	A B B	98	99	99	99	99
4	Gangster Glyphomax Plus AMS	3	WG SL DF	0.56	LB AE/A LB/A	2.4 1.5 2.5	OZ PT/A LB/A	WT/A POST POST	A B B	98	99	99	98	99
5	Python Valor SX Glyphomax Plus AMS	80 51 3	WG WG SL DF	0.033 0.048 0.56 2.5	LB A/A LB A/A LB AE/A LB/A	0.66 1.5 1.5 2.5	OZ OZ PT/A LB/A	WT/A PRE POST POST	A A B B	99	99	99	99	99
6	GF-1279 AMS	5.4	SL DF	1.0 2.5	LB A/A LB/A	1.5 2.5	PT/A LB/A	POST POST	B B	99	93	93	95	98
7	FirstRate Glyphomax Plus AMS	84 3	WG SL DF	0.0157 0.56 2.5	LB A/A LB AE/A LB/A	0.3 1.5 2.5	OZ PT/A LB/A	WT/A POST POST	B B B	98	93	95	88	99
8	Pendimax FirstRate Glyphomax Plus AMS	3.3 84 3	EC WG SL DF	1.24 0.0157 0.56 2.5	LB A/A LB A/A LB AE/A LB/A	3.0 0.3 1.5 2.5	PT/A OZ PT/A LB/A	PRE WT/A POST POST	A B B B	99	99	99	98	99
9	Glyphomax Plus AMS	3	SL DF	0.75 2.5	LB AE/A LB/A	2.0 2.5	PT/A LB/A	POST POST	B B	99	95	95	88	99
10	Glyphomax Plus AMS Glyphomax Plus AMS	3 3	SL DF SL DF	0.75 2.5 0.75 2.5	LB AE/A LB/A LB AE/A LB/A	2.0 2.5 2.0 2.5	PT/A LB/A PT/A LB/A	POST POST SPOST SPOST	B B C C	99	98	95	92	99
LSD (P=.05)										2.2	3.3	1.6	3.6	2.6

Iowa State University

Preemergence applied MANA-Met and Sencor in soybean, Ames, IA, 2004.

Trial ID: ASC 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: 06-04-04
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 MANA-Met and Sencor for crop phytotoxicity and weed control in soybean.
Conclusions: Sencor applied preemergence (PRE) at 18.6 oz wt/A, caused 12% soybean injury when observed on June 29. Soybean injury was rate responsive to MANA-Met from 0 to 8% injury on June 29. Injury did not exceed 7% by July 15. On June 29, MANA-Met and Sencor demonstrated rate response for giant foxtail control, (92 to 99%). All PRE treatments provided at least 98% velvetleaf, common waterhemp, and common lambsquarters control. Common cocklebur control was inconsistent and was rate responsive for only Sencor treatments. July 15 giant foxtail control observations were in very similar to those on June 29. Sencor demonstrated a significant rate response for velvetleaf control on July 15; however, MANA-Met did not show a significant response. Treatments provided at least 96% control of common waterhemp and common lambsquarters. Sencor showed a significant rate response for common cocklebur control on July 15. Observations for July 27 and August 20 were very similar to those from July 15. Common lambsquarters control fell as low as 92% on August 20. (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 2403
Planting Date: 06-04-04 Planting Method: DIRECT DRILLED
Rate: 151000 SEEDS/A Depth: 1.25 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: ABOVE NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting. Select plus COC was applied postemergence at 6.0 fl oz/A plus 1.0% v/v to the entire experiment area for giant foxtail control.

SOIL DESCRIPTION

% OM: 4.3 Texture: CLAY LOAM
pH: 6.2 Soil Name: CANISTEO, CLARION
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	06-05-04	07-15-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	75 F	80 F
% Relative Humidity:	74	58
Wind Velocity, Unit:	3 MPH	5 MPH
Soil Temp., Unit:	70	80
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	100	5

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA R 1
Stage Scale:	-	DESC
Height, Unit:	-	15 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 5T
Stage Scale:	-	0.5-14 IN
Density, Unit:	- -	0-5 FT ²
Weed 2 Code, Stage:	ABUTH -	ABUTH 2-8 LEAF
Stage Scale:	-	1-12 IN
Density, Unit:	- -	< 1 FT ²
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS
Stage Scale:	-	1-14 IN
Density, Unit:	- -	< 1 FT ²
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	1-14 IN
Density, Unit:	- -	< 1 FT ²
Weed 5 Code, Stage:	XANST -	XANST NUMEROUS
Stage Scale:	-	6-16 IN
Density, Unit:	- -	< 1 FT ²

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied MANA-Met and Sencor in soybean, Ames, IA, 2004.

Trial ID: ASC 9
 Location: Ames

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

Weed Code										GLYMA	SETFA	ABUTH	AMATA	CHEAL	XANST	GLYMA	SETFA
Rating Data Type										PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-29-04	06-29-04	06-29-04	06-29-04	06-29-04	06-29-04	07-15-04	07-15-04
Trt-Eval Interval										24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	40 DA-A	40 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Rate	Grow Stg	Appl Code									
1	Untreated								0	0	0	0	0	0	0	0	0
2	MANA-Met Select COC	75 DF 2 EC L	DF EC L	0.375 LB A/A 0.094 LB A/A 1.0 % V/V	8.0 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	8.0 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B	A	0	92	96	99	99	86	0	92	
3	MANA-Met Select COC	75 DF 2 EC L	DF EC L	0.623 LB A/A 0.094 LB A/A 1.0 % V/V	13.3 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	13.3 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B	A	5	95	99	99	99	87	2	95	
4	MANA-Met Select COC	75 DF 2 EC L	DF EC L	0.87 LB A/A 0.094 LB A/A 1.0 % V/V	18.6 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	18.6 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B	A	8	99	99	99	99	99	3	98	
5	Sencor Select COC	75 DF 2 EC L	DF EC L	0.375 LB A/A 0.094 LB A/A 1.0 % V/V	8.0 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	8.0 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B	A	0	92	99	98	99	75	0	92	
6	Sencor Select COC	75 DF 2 EC L	DF EC L	0.623 LB A/A 0.094 LB A/A 1.0 % V/V	13.3 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	13.3 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B	A	3	99	99	99	99	78	0	95	
7	Sencor Select COC	75 DF 2 EC L	DF EC L	0.87 LB A/A 0.094 LB A/A 1.0 % V/V	18.6 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	18.6 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B	A	12	99	99	99	99	99	7	98	
8	Select COC	2 EC L	EC L	0.094 LB A/A 1.0 % V/V	6.0 FL OZ/A 1.0 % V/V	6.0 FL OZ/A 1.0 % V/V	POST B POST B	B	0	0	0	0	0	0	0	0	
LSD (P=.05)										3.0	2.6	1.4	1.4	0.0	18.7	3.2	3.3

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ABUTH CONTROL PERCENT 07-15-04 40 DA-A	AMATA CONTROL PERCENT 07-15-04 40 DA-A	CHEAL CONTROL PERCENT 07-15-04 40 DA-A	XANST CONTROL PERCENT 07-15-04 40 DA-A	GLYMA PHYGEN PERCENT 07-27-04 52 DA-A	SETFA CONTROL PERCENT 07-27-04 52 DA-A	ABUTH CONTROL PERCENT 07-27-04 52 DA-A	AMATA CONTROL PERCENT 07-27-04 52 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Rate Unit	Grow Stg	Appl Code									
1	Untreated									0	0	0	0	0	0	0	
2	MANA-Met Select COC	75 2	DF EC L	0.375 0.094 1.0	LB A/A LB A/A % V/V	8.0 6.0 1.0	OZ WT/A FL OZ/A % V/V	PRE POST POST	A B B	95	99	96	83	0	95	93	98
3	MANA-Met Select COC	75 2	DF EC L	0.623 0.094 1.0	LB A/A LB A/A % V/V	13.3 6.0 1.0	OZ WT/A FL OZ/A % V/V	PRE POST POST	A B B	96	99	96	83	0	95	96	99
4	MANA-Met Select COC	75 2	DF EC L	0.87 0.094 1.0	LB A/A LB A/A % V/V	18.6 6.0 1.0	OZ WT/A FL OZ/A % V/V	PRE POST POST	A B B	99	99	99	95	0	98	99	99
5	Sencor Select COC	75 2	DF EC L	0.375 0.094 1.0	LB A/A LB A/A % V/V	8.0 6.0 1.0	OZ WT/A FL OZ/A % V/V	PRE POST POST	A B B	92	98	96	70	0	95	90	98
6	Sencor Select COC	75 2	DF EC L	0.623 0.094 1.0	LB A/A LB A/A % V/V	13.3 6.0 1.0	OZ WT/A FL OZ/A % V/V	PRE POST POST	A B B	96	99	96	72	0	95	96	99
7	Sencor Select COC	75 2	DF EC L	0.87 0.094 1.0	LB A/A LB A/A % V/V	18.6 6.0 1.0	OZ WT/A FL OZ/A % V/V	PRE POST POST	A B B	99	99	99	96	3	98	98	99
8	Select COC	2	EC L	0.094 1.0	LB A/A % V/V	6.0 1.0	FL OZ/A % V/V	POST POST	B B	0	0	0	0	0	95	0	0
LSD (P=.05)										3.9	1.4	3.0	21.9	1.8	2.1	6.0	1.9

Iowa State University

Weed Code										CHEAL	XANST	SETFA	ABUTH	AMATA	CHEAL	XANST
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										07-27-04	07-27-04	08-20-04	08-20-04	08-20-04	08-20-04	08-20-04
Trt-Eval Interval										52 DA-A	52 DA-A	76 DA-A	76 DA-A	76 DA-A	76 DA-A	76 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	MANA-Met Select COC	75 DF 2 EC L	0.375 LB A/A 0.094 LB A/A 1.0 % V/V	8.0 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B					96	80	95	92	98	95	76
3	MANA-Met Select COC	75 DF 2 EC L	0.623 LB A/A 0.094 LB A/A 1.0 % V/V	13.3 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B					93	77	95	96	99	92	77
4	MANA-Met Select COC	75 DF 2 EC L	0.87 LB A/A 0.094 LB A/A 1.0 % V/V	18.6 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B					99	95	98	98	99	99	95
5	Sencor Select COC	75 DF 2 EC L	0.375 LB A/A 0.094 LB A/A 1.0 % V/V	8.0 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B					93	60	95	90	98	93	57
6	Sencor Select COC	75 DF 2 EC L	0.623 LB A/A 0.094 LB A/A 1.0 % V/V	13.3 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B					96	58	95	95	99	96	55
7	Sencor Select COC	75 DF 2 EC L	0.87 LB A/A 0.094 LB A/A 1.0 % V/V	18.6 OZ WT/A 6.0 FL OZ/A 1.0 % V/V	PRE A POST B POST B					99	95	98	98	99	99	95
8	Select COC	2 EC L	0.094 LB A/A 1.0 % V/V	6.0 FL OZ/A 1.0 % V/V	POST B POST B					0	0	95	0	0	0	0
LSD (P=.05)										3.3	29.3	2.1	6.3	1.9	4.0	29.2

Iowa State University

Roundup WeatherMAX tank-mixes with fungicides and insecticides in soybean, Ames, IA, 2004.

Trial ID: ASC 10
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: 06-04-04
Country: USA

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

Objective: The objective of this study was to evaluate the efficacy and crop safety of tank-mixtures of Roundup WeatherMAX with fungicides and insecticides in soybean.
Conclusions: Treatments in this study involved postemergence (POST) applied Roundup WeatherMAX at 21.3 fl oz/A tank-mixed mixed with a fungicide and/or insecticide. On July 19, Asana XL resulted in 23% soybean chlorosis (CHLOROS), and Stratego plus Lorsban 18% chlorosis. The remaining treatments resulted in no more than 8% chlorosis. Soybean growth reduction (GRREDUC) on July 19 was no more than 5%. Percent soybean necrosis (NECROS) ranged from 13 to 15% for Stratego and Stratego plus Lorsban, respectively. Bravo Weather Stik resulted in 12% chlorosis. No other treatments exceeded 10% necrosis on July 19.
On July 27, soybean chlorosis caused by the Asana XL treatment was 13%. All other treatments ranged from 2 to 7% chlorosis, with the exception of Roundup WeatherMAX applied alone. Soybean growth reduction on July 27 was negligible for all treatments. Percent soybean necrosis on July 27 was very similar to the July 19 observations. Percent soybean chlorosis and growth reduction did not exceed 8 and 5% on August 3, respectively. Percent necrosis did not exceed 10% on August 3.
Giant foxtail and common lambsquarters control was good to excellent with the treatments when observed on July 19, six days after application. No significant differences were observed between the treatments for giant foxtail control, while there were for common lambsquarters control. Velvetleaf and common waterhemp control was fair to good on July 19 with significant differences observed between treatments. Roundup WeatherMAX tank-mixed with a fungicide and/or insecticide generally provided weed control on July 27 and August 3, fourteen and twenty-one days after application, respectively, that was not significantly different from Roundup WeatherMAX applied alone. (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: GLXMA SOYBEAN Variety: ASGROW AG 2403
Planting Date: 06-04-04 Planting Method: DIRECT DRILLED
Rate: 151000 SEEDS/A Depth: 1.25 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM
pH: 7.8 Soil Name: CANISTEO, HARPS
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	07-13-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	85 F
% Relative Humidity:	62
Wind Velocity, Unit:	4 MPH
Soil Temp., Unit:	80 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	15

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V 4 - V 5
Stage Scale:	DESC
Height, Unit:	12 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-4 L, 3T
Stage Scale:	1-16 IN
Density, Unit:	0-10 FT ²
Weed 2 Code, Stage:	ABUTH 1-8 LEAF
Stage Scale:	1-16 IN
Density, Unit:	0-3 FT ²
Weed 3 Code, Stage:	AMATA NUMEROUS
Stage Scale:	0.5-16 IN
Density, Unit:	0-3 FT ²
Weed 4 Code, Stage:	CHEAL NUMEROUS
Stage Scale:	0.5-12 IN
Density, Unit:	0-2 FT ²

APPLICATION EQUIPMENT

	A
Appl. Equipment:	TERRA PRO
Operating Pressure:	35
Nozzle Size:	11002
Spray Volume, Unit:	22 GPA

Iowa State University

Roundup WeatherMAX tank-mixes with fungicides and insecticides in soybean, Ames, IA, 2004.

Trial ID: ASC 10

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code									GLYMA	GLYMA	GLYMA	SETFA	ABUTH	AMATA
Rating Data Type									CHLOROS	GRREDUC	NECROS	CONTROL	CONTROL	CONTROL
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date									07-19-04	07-19-04	07-19-04	07-19-04	07-19-04	07-19-04
Trt-Eval Interval									6 DA-A	6 DA-A	6 DA-A	6 DA-A	6 DA-A	6 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL		POST A POST A		4	0	3	92	83	87
3	Roundup WeatherMAX Stratego AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.3125 QT/A	POST A POST A		8	2	13	92	83	87
4	Roundup WeatherMAX Tilt AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.125 QT/A	POST A POST A		5	3	10	90	82	87
5	Roundup WeatherMAX Quadris AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.28125 QT/A	POST A POST A		4	0	10	90	72	87
6	Roundup WeatherMAX Folicur AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.25 QT/A	POST A POST A		5	2	10	92	82	87
7	Roundup WeatherMAX Headline AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.25 QT/A	POST A POST A		4	0	10	93	82	87
8	Roundup WeatherMAX Pristine AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	10.0 OZ WT/A	POST A POST A		4	5	8	92	83	90
9	Roundup WeatherMAX Warrior AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.1 QT/A	POST A POST A		4	2	7	92	85	88
10	Roundup WeatherMAX Lorsban AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.5 QT/A	POST A POST A		4	5	10	92	82	87
11	Roundup WeatherMAX Asana XL AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.3 QT/A	POST A POST A		23	5	10	92	80	83
12	Quadris Roundup WeatherMAX Warrior AMS	2.08	FS DF	2.34 OZ A/A 17.0 LB/100 GAL	0.28125 QT/A 17.0 LB/100 GAL		POST A POST A POST A		4	0	10	90	85	88
13	Roundup WeatherMAX Headline Asana XL AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.3 QT/A	POST A POST A POST A		5	0	10	92	83	85
14	Roundup WeatherMAX Stratego Lorsban AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	0.3125 QT/A	POST A POST A POST A		18	3	15	90	82	87
15	Roundup WeatherMAX Bravo Weather Stik AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	2.0 PT/A	POST A POST A POST A		6	2	12	90	83	83
LSD (P=.05)									3.0	3.1	2.6	3.7	8.6	5.8

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									CHEAL CONTROL PERCENT 07-19-04 6 DA-A	GLYMA CHLOROS PERCENT 07-27-04 14 DA-A	GLYMA GRREDUC PERCENT 07-27-04 14 DA-A	GLYMA NECROS PERCENT 07-27-04 14 DA-A	SETFA CONTROL PERCENT 07-27-04 14 DA-A	ABUTH CONTROL PERCENT 07-27-04 14 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.75 LB AE/A 17.0 LB/100 GAL	21.3 FL OZ/A 17.0 LB/100 GAL	FL OZ/A LB/100 GAL	POST A POST A		95	0	2	3	99	93
3	Roundup WeatherMAX Stratego AMS	4.5 2.08	SL EC DF	0.75 LB AE/A 2.6 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.3125 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A		92	5	2	12	99	93
4	Roundup WeatherMAX Tilt AMS	4.5 41.8	SL EC DF	0.75 LB AE/A 0 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.125 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A		93	3	2	10	99	92
5	Roundup WeatherMAX Quadris AMS	4.5 2.08	SL FS DF	0.75 LB AE/A 2.34 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.28125 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A		92	4	0	10	99	93
6	Roundup WeatherMAX Folicur AMS	4.5 3.6	SL SC DF	0.75 LB AE/A 3.6 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.25 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A		92	4	3	10	96	92
7	Roundup WeatherMAX Headline AMS	4.5 2.09	SL EC DF	0.75 LB AE/A 2.1 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.25 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A		93	2	0	10	99	93
8	Roundup WeatherMAX Pristine AMS	4.5 38	SL EC DF	0.75 LB AE/A 0 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 10.0 OZ WT/A 17.0 LB/100 GAL	FL OZ/A OZ WT/A LB/100 GAL	POST A POST A POST A		95	2	3	10	99	93
9	Roundup WeatherMAX Warrior AMS	4.5 1.0	SL EC DF	0.75 LB AE/A 0.4 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.1 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A		93	6	0	7	99	93
10	Roundup WeatherMAX Lorsban AMS	4.5 4.0	SL EC DF	0.75 LB AE/A 8.0 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.5 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A		93	4	2	10	99	91
11	Roundup WeatherMAX Asana XL AMS	4.5 0.66	SL EC DF	0.75 LB AE/A 0.79 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.3 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A		90	13	3	8	99	91
12	Quadris Roundup WeatherMAX Warrior AMS	2.08 4.5 1.0	FS SL EC DF	2.34 OZ A/A 0.75 LB AE/A 0.4 OZ A/A 17.0 LB/100 GAL	0.28125 QT/A 21.3 FL OZ/A 0.1 QT/A 17.0 LB/100 GAL	QT/A FL OZ/A QT/A LB/100 GAL	POST A POST A POST A POST A		93	3	0	10	99	93
13	Roundup WeatherMAX Headline Asana XL AMS	4.5 2.09 0.66	SL EC EC DF	0.75 LB AE/A 2.1 OZ A/A 0.79 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.25 QT/A 0.3 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A QT/A LB/100 GAL	POST A POST A POST A POST A		92	4	0	10	99	92
14	Roundup WeatherMAX Stratego Lorsban AMS	4.5 2.08 4.0	SL EC EC DF	0.75 LB AE/A 2.6 OZ A/A 8.0 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 0.3125 QT/A 0.5 QT/A 17.0 LB/100 GAL	FL OZ/A QT/A QT/A LB/100 GAL	POST A POST A POST A POST A		93	7	2	15	99	93
15	Roundup WeatherMAX Bravo Weather Stik AMS	4.5 6	SL EC DF	0.75 LB AE/A 24.0 OZ A/A 17.0 LB/100 GAL	21.3 FL OZ/A 2.0 PT/A 17.0 LB/100 GAL	FL OZ/A PT/A LB/100 GAL	POST A POST A POST A		90	3	0	10	99	93
LSD (P=.05)									3.6	4.3	3.5	2.5	2.2	6.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									AMATA CONTROL PERCENT 07-27-04 14 DA-A	CHEAL CONTROL PERCENT 07-27-04 14 DA-A	GLYMA CHLOROS PERCENT 08-03-04 21 DA-A	GLYMA GRREDUC PERCENT 08-03-04 21 DA-A	GLYMA NECROS PERCENT 08-03-04 21 DA-A	SETFA CONTROL PERCENT 08-03-04 21 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.75 17.0	LB AE/A LB/100 GAL	21.3 17.0	FL OZ/A LB/100 GAL	POST A POST A	93	99	2	3	2	99
3	Roundup WeatherMAX Stratego AMS	4.5 2.08	SL EC DF	0.75 2.6 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.3125 17.0	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A	92	99	2	2	8	99
4	Roundup WeatherMAX Tilt AMS	4.5 41.8	SL EC DF	0.75 0 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.125 17.0	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A	95	99	3	2	8	99
5	Roundup WeatherMAX Quadris AMS	4.5 2.08	SL FS DF	0.75 2.34 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.28125 17.0	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A	95	99	3	2	7	99
6	Roundup WeatherMAX Folicur AMS	4.5 3.6	SL SC DF	0.75 3.6 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.25 17.0	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A	92	99	3	2	10	99
7	Roundup WeatherMAX Headline AMS	4.5 2.09	SL EC DF	0.75 2.1 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.25 17.0	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A	93	99	2	2	8	99
8	Roundup WeatherMAX Pristine AMS	4.5 38	SL EC DF	0.75 0 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 10.0 17.0	FL OZ/A OZ WT/A LB/100 GAL	POST A POST A POST A	98	99	2	5	7	99
9	Roundup WeatherMAX Warrior AMS	4.5 1.0	SL EC DF	0.75 0.4 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.1 17.0	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A	95	99	0	2	5	99
10	Roundup WeatherMAX Lorsban AMS	4.5 4.0	SL EC DF	0.75 8.0 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.5 17.0	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A	96	99	3	2	5	99
11	Roundup WeatherMAX Asana XL AMS	4.5 0.66	SL EC DF	0.75 0.79 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.3 17.0	FL OZ/A QT/A LB/100 GAL	POST A POST A POST A	90	99	8	3	5	99
12	Quadris Roundup WeatherMAX Warrior AMS	2.08 4.5 1.0	FS SL EC DF	2.34 0.75 0.4 17.0	OZ A/A LB AE/A OZ A/A LB/100 GAL	0.28125 21.3 0.1 17.0	QT/A FL OZ/A QT/A LB/100 GAL	POST A POST A POST A POST A	93	99	0	0	8	99
13	Roundup WeatherMAX Headline Asana XL AMS	4.5 2.09 0.66	SL EC EC DF	0.75 2.1 0.79 17.0	LB AE/A OZ A/A OZ A/A LB/100 GAL	21.3 0.25 0.3 17.0	FL OZ/A QT/A QT/A LB/100 GAL	POST A POST A POST A POST A	90	99	0	0	5	99
14	Roundup WeatherMAX Stratego Lorsban AMS	4.5 2.08 4.0	SL EC EC DF	0.75 2.6 8.0 17.0	LB AE/A OZ A/A OZ A/A LB/100 GAL	21.3 0.3125 0.5 17.0	FL OZ/A QT/A QT/A LB/100 GAL	POST A POST A POST A POST A	92	99	5	2	10	99
15	Roundup WeatherMAX Bravo Weather Stik AMS	4.5 6	SL EC DF	0.75 24.0 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 2.0 17.0	FL OZ/A PT/A LB/100 GAL	POST A POST A POST A	95	99	3	0	8	99
LSD (P=.05)									5.8	0.0	4.2	3.9	3.9	0.0

Iowa State University

Weed Code									ABUTH	AMATA	CHEAL	
Rating Data Type									CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	
Rating Date									08-03-04	08-03-04	08-03-04	
Trt-Eval Interval									21 DA-A	21 DA-A	21 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated									0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.75 17.0	LB AE/A LB/100 GAL	21.3 17.0	FL OZ/A LB/100 GAL	POST POST	A A	93	95	99
3	Roundup WeatherMAX Stratego AMS	4.5 2.08	SL EC DF	0.75 2.6 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.3125 17.0	FL OZ/A QT/A LB/100 GAL	POST POST POST	A A A	95	92	99
4	Roundup WeatherMAX Tilt AMS	4.5 41.8	SL EC DF	0.75 0 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.125 17.0	FL OZ/A QT/A LB/100 GAL	POST POST POST	A A A	93	95	99
5	Roundup WeatherMAX Quadris AMS	4.5 2.08	SL FS DF	0.75 2.34 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.28125 17.0	FL OZ/A QT/A LB/100 GAL	POST POST POST	A A A	93	96	99
6	Roundup WeatherMAX Folicur AMS	4.5 3.6	SL SC DF	0.75 3.6 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.25 17.0	FL OZ/A QT/A LB/100 GAL	POST POST POST	A A A	93	92	99
7	Roundup WeatherMAX Headline AMS	4.5 2.09	SL EC DF	0.75 2.1 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.25 17.0	FL OZ/A QT/A LB/100 GAL	POST POST POST	A A A	95	92	99
8	Roundup WeatherMAX Pristine AMS	4.5 38	SL EC DF	0.75 0 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 10.0 17.0	FL OZ/A OZ WT/A LB/100 GAL	POST POST POST	A A A	93	98	99
9	Roundup WeatherMAX Warrior AMS	4.5 1.0	SL EC DF	0.75 0.4 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.1 17.0	FL OZ/A QT/A LB/100 GAL	POST POST POST	A A A	93	95	99
10	Roundup WeatherMAX Lorsban AMS	4.5 4.0	SL EC DF	0.75 8.0 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.5 17.0	FL OZ/A QT/A LB/100 GAL	POST POST POST	A A A	93	95	99
11	Roundup WeatherMAX Asana XL AMS	4.5 0.66	SL EC DF	0.75 0.79 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 0.3 17.0	FL OZ/A QT/A LB/100 GAL	POST POST POST	A A A	92	92	99
12	Quadris Roundup WeatherMAX Warrior AMS	2.08 4.5 1.0	FS SL EC DF	2.34 0.75 0.4 17.0	OZ A/A LB AE/A OZ A/A LB/100 GAL	0.28125 21.3 0.1 17.0	QT/A FL OZ/A QT/A LB/100 GAL	POST POST POST POST	A A A A	95	93	99
13	Roundup WeatherMAX Headline Asana XL AMS	4.5 2.09 0.66	SL EC EC DF	0.75 2.1 0.79 17.0	LB AE/A OZ A/A OZ A/A LB/100 GAL	21.3 0.25 0.3 17.0	FL OZ/A QT/A QT/A LB/100 GAL	POST POST POST POST	A A A A	93	90	99
14	Roundup WeatherMAX Stratego Lorsban AMS	4.5 2.08 4.0	SL EC EC DF	0.75 2.6 8.0 17.0	LB AE/A OZ A/A OZ A/A LB/100 GAL	21.3 0.3125 0.5 17.0	FL OZ/A QT/A QT/A LB/100 GAL	POST POST POST POST	A A A A	93	92	99
15	Roundup WeatherMAX Bravo Weather Stik AMS	4.5 6	SL EC DF	0.75 24.0 17.0	LB AE/A OZ A/A LB/100 GAL	21.3 2.0 17.0	FL OZ/A PT/A LB/100 GAL	POST POST POST	A A A	95	95	99
LSD (P=.05)									4.3	5.3	0.0	

Iowa State University

Preemergence applied MANA-Met and Sencor alone and in tank-mixture with Prowl, Dual II Magnum, Command and Pursuit in soybean, Ames, IA, 2004.	
Trial ID: ASC 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: 06-04-04
 Country: USA

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

Objective: The purpose of this study was to evaluate soybean phytotoxicity and weed control from preemergence applied MANA-Met and Sencor applied alone, and in tank-mixture with Prowl, Dual II Magnum, Command and Pursuit.

Conclusions: Soybean injury did not exceed 8, 5, and 3% on June 29, July 15, and 26, respectively. All preemergence (PRE) applied treatments provided at least 95% control of the weed species on June 29. On July 15, Prowl plus MANA-Met provided significantly greater giant foxtail control than Prowl plus Sencor with 98 and 93% control, respectively. Velvetleaf control was at least 96% for treatments with Pursuit or Command. The remaining treatments did not provide more than 93% control on July 15. Control of common waterhemp, common lambsquarters, and Pennsylvania smartweed was at least 96% for all treatments on July 15.

Observations on July 26 and August 20 revealed reduced control of velvetleaf for treatments without Command or Pursuit. No significant differences existed between MANA-Met and Sencor treatments with or without tank mix herbicides on those dates. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG 2403
 Planting Date: 06-04-04 Planting Method: DIRECT DRILLED
 Rate: 151000 SEEDS/A Depth: 1.25 IN
 Row Spacing: 30 IN Seed Bed: FINE/TRASHY
 Soil Moisture: ABOVE NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plow and spring field cultivation. Crop residue on the soil surface was 30% at planting.

SOIL DESCRIPTION

% OM: 4.8 Texture: CLAY LOAM
 pH: 7.1 Soil Name: CANISTEO, NICOLLET, CLARION
 Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A
Application Date:	06-05-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	75 F
% Relative Humidity:	74
Wind Velocity, Unit:	3 MPH
Soil Temp., Unit:	70
Soil Moisture:	ADEQUATE
% Cloud Cover:	100

Iowa State University

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied MANA-Met and Sencor alone and in tank-mixture with Prowl, Dual II Magnum, Command and Pursuit in soybean, Ames, IA, 2004.

Trial ID: ASC 11

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								GLYMA	SETFA	ABUTH	AMATA	CHEAL	POLPY	GLYMA	SETFA	
Rating Data Type								PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	
Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								06-29-04	06-29-04	06-29-04	06-29-04	06-29-04	06-29-04	07-15-04	07-15-04	
Trt-Eval Interval								24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	40 DA-A	40 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Rate	Grow Stg	App Code								
1	Untreated								0	0	0	0	0	0	0	0
2	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A	2	98	99	99	99	99	2	95
3	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A	0	98	96	99	99	99	2	93
4	Prowl	3.3	EC	0.825	LB A/A	2.0	PT/A	PRE A	5	99	96	99	99	99	2	98
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A								
5	Prowl	3.3	EC	0.825	LB A/A	2.0	PT/A	PRE A	5	98	98	99	99	99	3	93
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A								
6	Dual II Magnum	7.64	EC	1.6	LB A/A	1.67	PT/A	PRE A	8	99	98	99	99	99	5	99
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A								
7	Dual II Magnum	7.64	EC	1.6	LB A/A	1.67	PT/A	PRE A	8	99	95	99	99	99	3	99
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A								
8	Command	3	ME	1.0	LB A/A	2.67	PT/A	PRE A	3	99	99	99	99	99	3	99
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A								
9	Command	3	ME	1.0	LB A/A	2.67	PT/A	PRE A	5	99	99	99	99	99	2	99
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A								
10	Pursuit	2	SL	0.0625	LB A/A	4.0	FL OZ/A	PRE A	3	98	99	99	99	99	2	95
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A								
11	Pursuit	2	SL	0.0625	LB A/A	4.0	FL OZ/A	PRE A	0	95	96	99	99	99	0	95
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE A								
LSD (P=.05)									3.4	2.3	2.8	0.0	0.0	0.0	4.3	2.4

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ABUTH CONTROL PERCENT 07-15-04 40 DA-A	AMATA CONTROL PERCENT 07-15-04 40 DA-A	CHEAL CONTROL PERCENT 07-15-04 40 DA-A	POLPY CONTROL PERCENT 07-15-04 40 DA-A	GLYMA PHYGEN PERCENT 07-26-04 51 DA-A	SETFA CONTROL PERCENT 07-26-04 51 DA-A	ABUTH CONTROL PERCENT 07-26-04 51 DA-A	AMATA CONTROL PERCENT 07-26-04 51 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	
2	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A	93	99	96	96	2	93	85	99
3	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A	88	99	99	99	0	90	85	99
4	Prowl	3.3	EC	0.825	LB A/A	2.0	PT/A	PRE	A	90	99	96	98	3	95	85	99
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
5	Prowl	3.3	EC	0.825	LB A/A	2.0	PT/A	PRE	A	92	99	98	98	2	92	88	99
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
6	Dual II Magnum	7.64	EC	1.6	LB A/A	1.67	PT/A	PRE	A	92	99	99	99	3	98	83	99
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
7	Dual II Magnum	7.64	EC	1.6	LB A/A	1.67	PT/A	PRE	A	92	99	98	98	3	99	83	99
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
8	Command	3	ME	1.0	LB A/A	2.67	PT/A	PRE	A	99	99	99	99	2	99	99	99
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
9	Command	3	ME	1.0	LB A/A	2.67	PT/A	PRE	A	99	99	99	99	0	99	99	99
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
10	Pursuit	2	SL	0.0625	LB A/A	4.0	FL OZ/A	PRE	A	96	99	98	98	2	93	95	99
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
11	Pursuit	2	SL	0.0625	LB A/A	4.0	FL OZ/A	PRE	A	96	99	98	99	0	95	95	99
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
LSD (P=.05)										5.2	0.0	2.3	2.7	3.8	4.5	9.1	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										CHEAL CONTROL PERCENT 07-26-04 51 DA-A	POLPY CONTROL PERCENT 07-26-04 51 DA-A	GLYMA PHYGEN PERCENT 08-20-04 76 DA-A	SETFA CONTROL PERCENT 08-20-04 76 DA-A	ABUTH CONTROL PERCENT 08-20-04 76 DA-A	AMATA CONTROL PERCENT 08-20-04 76 DA-A	CHEAL CONTROL PERCENT 08-20-04 76 DA-A	POLPY CONTROL PERCENT 08-20-04 76 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A	93	96	0	92	85	99	92	95
3	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A	95	99	0	90	85	99	93	99
4	Prowl	3.3	EC	0.825	LB A/A	2.0	PT/A	PRE	A	95	98	0	95	85	99	93	98
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
5	Prowl	3.3	EC	0.825	LB A/A	2.0	PT/A	PRE	A	96	98	0	90	88	99	96	98
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
6	Dual II Magnum	7.64	EC	1.6	LB A/A	1.67	PT/A	PRE	A	98	99	0	96	83	99	96	99
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
7	Dual II Magnum	7.64	EC	1.6	LB A/A	1.67	PT/A	PRE	A	96	98	0	96	83	99	94	95
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
8	Command	3	ME	1.0	LB A/A	2.67	PT/A	PRE	A	99	98	0	99	99	99	98	98
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
9	Command	3	ME	1.0	LB A/A	2.67	PT/A	PRE	A	98	98	0	98	99	99	98	98
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
10	Pursuit	2	SL	0.0625	LB A/A	4.0	FL OZ/A	PRE	A	96	99	0	93	95	99	96	98
	MANA-Met	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
11	Pursuit	2	SL	0.0625	LB A/A	4.0	FL OZ/A	PRE	A	96	99	0	92	95	99	96	99
	Sencor	75	DF	0.5	LB A/A	10.67	OZ WT/A	PRE	A								
LSD (P=.05)										4.8	2.9	0.0	5.9	9.1	0.0	5.6	4.3

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	07-07-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	68 F
% Relative Humidity:	65
Wind Velocity, Unit:	0 MPH
Soil Temp., Unit:	68 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	35

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V 4
Stage Scale:	DESC
Height, Unit:	9 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-4 L, 3T
Stage Scale:	2-12 IN
Density, Unit:	10-1 FT2
Weed 2 Code, Stage:	ABUTH 1-7 LEAF
Stage Scale:	1-12 IN
Density, Unit:	0-5 FT2
Weed 3 Code, Stage:	AMATA NUMEROUS
Stage Scale:	0.5-12 IN
Density, Unit:	0-5 FT2
Weed 4 Code, Stage:	CHEAL 4-NUM
Stage Scale:	0.5-12 IN
Density, Unit:	0-5 FT2
Weed 5 Code, Stage:	POLPY NUMEROUS
Stage Scale:	6-12 IN
Density, Unit:	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Touchdown HiTech applied postemergence alone and with various adjuvants including HFCS, APGNIS, AMS, and Class Act NG in soybean, Ames, Ia, 2004.

Trial ID: ASC 12

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								GLYMA	SETFA	ABUTH	AMATA	CHEAL	POLPY	GLYMA	
Rating Data Type								PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								07-15-04	07-15-04	07-15-04	07-15-04	07-15-04	07-15-04	07-22-04	
Trt-Eval Interval								8 DA-A	8 DA-A	8 DA-A	8 DA-A	8 DA-A	8 DA-A	15 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Rate	Product Rate	Grow Unit	Appl Code							
1	Untreated								0	0	0	0	0	0	0
2	Touchdown HiTech	5	SL	0.195 LB AE/A	5.0 FL OZ/A		POST A		0	85	58	58	60	33	2
3	Touchdown HiTech HFCS	5	SL L	0.195 LB AE/A 0.5 % V/V	5.0 FL OZ/A 0.5 % V/V		POST A POST A		0	83	58	63	60	38	0
4	Touchdown HiTech APGNIS	5	SL L	0.195 LB AE/A 0.25 % V/V	5.0 FL OZ/A 0.25 % V/V		POST A POST A		3	88	62	70	92	38	2
5	Touchdown HiTech AMS	5	SL DF	0.195 LB AE/A 8.5 LB/100 GAL	5.0 FL OZ/A 8.5 LB/100 GAL		POST A POST A		0	85	55	57	58	37	2
6	Touchdown HiTech HFCS APGNIS	5	SL L L	0.195 LB AE/A 0.5 % V/V 0.25 % V/V	5.0 FL OZ/A 0.5 % V/V 0.25 % V/V		POST A POST A POST A		3	90	72	67	96	40	2
7	Touchdown HiTech HFCS AMS	5	SL L DF	0.195 LB AE/A 0.5 % V/V 8.5 LB/100 GAL	5.0 FL OZ/A 0.5 % V/V 8.5 LB/100 GAL		POST A POST A POST A		2	90	77	73	67	42	3
8	Touchdown HiTech APGNIS AMS	5	SL L DF	0.195 LB AE/A 0.25 % V/V 8.5 LB/100 GAL	5.0 FL OZ/A 0.25 % V/V 8.5 LB/100 GAL		POST A POST A POST A		2	90	65	63	95	38	3
9	Touchdown HiTech HFCS APGNIS AMS	5	SL L L DF	0.195 LB AE/A 0.5 % V/V 0.25 % V/V 8.5 LB/100 GAL	5.0 FL OZ/A 0.5 % V/V 0.25 % V/V 8.5 LB/100 GAL		POST A POST A POST A POST A		3	93	77	75	95	42	3
10	Touchdown HiTech Class Act NG	5	SL L	0.195 LB AE/A 2.5 % V/V	5.0 FL OZ/A 2.5 % V/V		POST A POST A		5	93	85	77	95	42	3
LSD (P=.05)								3.7	3.1	12.8	9.8	9.5	4.3	4.6	

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										SETFA CONTROL PERCENT 07-22-04 15 DA-A	ABUTH CONTROL PERCENT 07-22-04 15 DA-A	AMATA CONTROL PERCENT 07-22-04 15 DA-A	CHEAL CONTROL PERCENT 07-22-04 15 DA-A	POLPY CONTROL PERCENT 07-22-04 15 DA-A	GLYMA PHYGEN PERCENT 07-28-04 21 DA-A	SETFA CONTROL PERCENT 07-28-04 21 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Touchdown HiTech	5	SL	0.195	LB AE/A	5.0	FL OZ/A	POST	A	87	63	63	68	53	2	88
3	Touchdown HiTech HFCS	5	SL L	0.195 0.5	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	90	60	67	65	55	0	92
4	Touchdown HiTech APGNIS	5	SL L	0.195 0.25	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	95	63	75	99	60	2	98
5	Touchdown HiTech AMS	5	SL DF	0.195 8.5	LB AE/A LB/100 GAL	5.0	FL OZ/A LB/100 GAL	POST POST	A A	88	73	70	67	58	0	95
6	Touchdown HiTech HFCS APGNIS	5	SL L L	0.195 0.5 0.25	LB AE/A % V/V % V/V	5.0	FL OZ/A % V/V % V/V	POST POST POST	A A A	96	72	73	96	58	2	99
7	Touchdown HiTech HFCS AMS	5	SL L DF	0.195 0.5 8.5	LB AE/A % V/V LB/100 GAL	5.0	FL OZ/A % V/V LB/100 GAL	POST POST POST	A A A	95	82	78	73	58	3	96
8	Touchdown HiTech APGNIS AMS	5	SL L DF	0.195 0.25 8.5	LB AE/A % V/V LB/100 GAL	5.0	FL OZ/A % V/V LB/100 GAL	POST POST POST	A A A	96	70	70	95	55	3	99
9	Touchdown HiTech HFCS APGNIS AMS	5	SL L L DF	0.195 0.5 0.25 8.5	LB AE/A % V/V % V/V LB/100 GAL	5.0	FL OZ/A % V/V % V/V LB/100 GAL	POST POST POST POST	A A A A	98	73	75	98	62	3	99
10	Touchdown HiTech Class Act NG	5	SL L	0.195 2.5	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	96	85	80	99	63	3	99
LSD (P=.05)										4.9	14.4	11.9	11.4	7.6	4.2	3.9

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval										ABUTH CONTROL PERCENT 07-28-04 21 DA-A	AMATA CONTROL PERCENT 07-28-04 21 DA-A	CHEAL CONTROL PERCENT 07-28-04 21 DA-A	POLPY CONTROL PERCENT 07-28-04 21 DA-A	GLYMA PHYGEN PERCENT 08-06-04 30 DA-A	SETFA CONTROL PERCENT 08-06-04 30 DA-A	ABUTH CONTROL PERCENT 08-06-04 30 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Touchdown HiTech	5	SL	0.195	LB AE/A	5.0	FL OZ/A	POST	A	65	68	73	70	0	90	57
3	Touchdown HiTech HFCS	5	SL L	0.195 0.5	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	62	67	67	67	0	92	58
4	Touchdown HiTech APGNIS	5	SL L	0.195 0.25	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	63	80	99	73	2	96	62
5	Touchdown HiTech AMS	5	SL DF	0.195 8.5	LB AE/A LB/100 GAL	5.0	FL OZ/A LB/100 GAL	POST POST	A A	77	68	67	70	0	95	77
6	Touchdown HiTech HFCS APGNIS	5	SL L L	0.195 0.5 0.25	LB AE/A % V/V % V/V	5.0	FL OZ/A % V/V % V/V	POST POST POST	A A A	70	73	98	77	2	99	70
7	Touchdown HiTech HFCS AMS	5	SL L DF	0.195 0.5 8.5	LB AE/A % V/V LB/100 GAL	5.0	FL OZ/A % V/V LB/100 GAL	POST POST POST	A A A	82	78	72	70	2	96	80
8	Touchdown HiTech APGNIS AMS	5	SL L DF	0.195 0.25 8.5	LB AE/A % V/V LB/100 GAL	5.0	FL OZ/A % V/V LB/100 GAL	POST POST POST	A A A	72	72	96	65	3	99	70
9	Touchdown HiTech HFCS APGNIS AMS	5	SL L L DF	0.195 0.5 0.25 8.5	LB AE/A % V/V % V/V LB/100 GAL	5.0	FL OZ/A % V/V % V/V LB/100 GAL	POST POST POST POST	A A A A	70	77	99	73	2	99	70
10	Touchdown HiTech Class Act NG	5	SL L	0.195 2.5	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	87	80	99	78	2	99	87
LSD (P=.05)										14.5	9.1	8.8	15.6	3.8	3.4	14.0

Iowa State University

Weed Code										AMATA	CHEAL	POLPY
Rating Data Type										CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT
Rating Date										08-06-04	08-06-04	08-06-04
Trt-Eval Interval										30 DA-A	30 DA-A	30 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated									0	0	0
2	Touchdown HiTech	5	SL	0.195	LB AE/A	5.0	FL OZ/A	POST	A	63	68	68
3	Touchdown HiTech HFCS	5	SL L	0.195 0.5	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	67	63	68
4	Touchdown HiTech APGNIS	5	SL L	0.195 0.25	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	78	95	78
5	Touchdown HiTech AMS	5	SL DF	0.195 8.5	LB AE/A LB/100 GAL	5.0	FL OZ/A LB/100 GAL	POST POST	A A	73	60	77
6	Touchdown HiTech HFCS APGNIS	5	SL L L	0.195 0.5 0.25	LB AE/A % V/V % V/V	5.0	FL OZ/A % V/V % V/V	POST POST POST	A A A	72	93	80
7	Touchdown HiTech HFCS AMS	5	SL L DF	0.195 0.5 8.5	LB AE/A % V/V LB/100 GAL	5.0	FL OZ/A % V/V LB/100 GAL	POST POST POST	A A A	77	68	75
8	Touchdown HiTech APGNIS AMS	5	SL L DF	0.195 0.25 8.5	LB AE/A % V/V LB/100 GAL	5.0	FL OZ/A % V/V LB/100 GAL	POST POST POST	A A A	70	95	72
9	Touchdown HiTech HFCS APGNIS AMS	5	SL L L DF	0.195 0.5 0.25 8.5	LB AE/A % V/V % V/V LB/100 GAL	5.0	FL OZ/A % V/V % V/V LB/100 GAL	POST POST POST POST	A A A A	72	95	78
10	Touchdown HiTech Class Act NG	5	SL L	0.195 2.5	LB AE/A % V/V	5.0	FL OZ/A % V/V	POST POST	A A	73	95	85
LSD (P=.05)										10.4	7.8	13.9

Iowa State University

Postemergence applications of glyphosate with various adjuvants in soybean, Ames, IA, 2004.

Trial ID: ASC 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: 06-04-04

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 glyphosate with various adjuvants for soybean phytotoxicity and weed control.

Conclusions: None of the postemergence (POST) applied treatments caused more than 5% soybean injury on any observation date. Also, for all observation dates, all treatments provided nearly perfect control of giant foxtail and common lambsquarters. Common waterhemp control was at least 92% for all treatments, and there were no significant differences between any treatments for all observation dates.

Roundup WeatherMAX plus AMS demonstrated significantly greater control of velvetleaf than all other treatments on July 14. By July 22, it provided greater velvetleaf control than Roundup Original plus Liberate and Choice, only. There were no significant differences in velvetleaf control among other treatments. There were no significant differences on July 28. However, on August 6, Roundup Original plus Liberate and Choice again gave significantly lower velvetleaf control than Roundup WeatherMax plus AMS. Roundup Original plus Liberate and Choice provided significantly less control of Pennsylvania smartweed than several other treatments on July 28 and August 6. There were no other Pennsylvania smartweed control differences among other treatments at those dates. (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.

Crop 1: GLXMA SOYBEAN Variety: ASGROW AG 2403

Planting Date: 06-04-04 Planting Method: DIRECT DRILLED

Rate: 151000 SEEDS/A Depth: 1.25 IN

Row Spacing: 30 IN Seed Bed: FINE/TRASHY

Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring field cultivation. Crop residue on the soil surface was 30% at planting.

SOIL DESCRIPTION

% OM: 4.7 Texture: CLAY LOAM, LOAM

pH: 7.8 Soil Name: CANISTEO, HARPS

Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

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APPLICATION DESCRIPTION

	A
Application Date:	07-07-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	68 F
% Relative Humidity:	65
Wind Velocity, Unit:	0 MPH
Soil Temp., Unit:	68 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	35

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V 4
Stage Scale:	DESC
Height, Unit:	10 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 1-4 L, 3T
Stage Scale:	1-10 IN
Density, Unit:	0-5 FT2
Weed 2 Code, Stage:	ABUTH 1-7 LEAF
Stage Scale:	0.5-8 IN
Density, Unit:	0-1 FT2
Weed 3 Code, Stage:	AMATA 4-NUM
Stage Scale:	0.5-12 IN
Density, Unit:	0-1 FT2
Weed 4 Code, Stage:	CHEAL 4-NUM
Stage Scale:	.5-10 IN
Density, Unit:	0-1 FT2
Weed 5 Code, Stage:	POLPY NUMEROUS
Stage Scale:	4-10 IN
Density, Unit:	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Postemergence applications of glyphosate with various adjuvants in soybean, Ames, IA, 2004.

Trial ID: ASC 13

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code									GLYMA	SETFA	ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type									PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-14-04	07-14-04	07-14-04	07-14-04	07-14-04	07-14-04	
Trt-Eval Interval									7 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST	A	2	98	75	92	99	43
	Liberate		L	2.0	PT/100 GAL	2.0	PT/100 GAL	POST	A						
	Choice		L	0.5	% V/V	0.5	% V/V	POST	A						
3	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST	A	0	99	70	95	99	45
	WeatherGard		L	1.0	% V/V	1.0	%v/v	POST	A						
4	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	2	99	73	95	99	45
	Choice		L	0.5	% V/V	0.5	%v/v	POST	A						
	Valid		L	0.125	% V/V	0.125	%v/v	POST	A						
5	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	5	99	72	95	99	45
	WeatherGard		L	0.5	% V/V	0.5	%v/v	POST	A						
6	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	5	98	72	93	99	45
	Alliance		L	5.0	QT/100 GAL	5.0	QT/100 GAL	POST	A						
	InterLock		L	4.0	FL OZ/A	4.0	FL OZ/A	POST	A						
7	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	2	99	83	95	99	47
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	A						
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	5	98	72	95	98	47
	AMSol		L	5.0	GAL/100 GAL	5.0	GAL/100 GAL	POST	A						
LSD (P=.05)										3.3	2.5	6.2	2.7	1.4	3.2

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									GLYMA PHYGEN PERCENT 07-22-04 15 DA-A	SETFA CONTROL PERCENT 07-22-04 15 DA-A	ABUTH CONTROL PERCENT 07-22-04 15 DA-A	AMATA CONTROL PERCENT 07-22-04 15 DA-A	CHEAL CONTROL PERCENT 07-22-04 15 DA-A	POLPY CONTROL PERCENT 07-22-04 15 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup Original Liberate Choice	3	SL L L	0.75 2.0 0.5	LB AE/A PT/100 GAL % V/V	32.0 2.0 0.5	FL OZ/A PT/100 GAL % V/V	POST POST POST	A A A	2	99	83	92	99	63
3	Roundup Original WeatherGard	3	SL L	0.75 1.0	LB AE/A % V/V	32.0 1.0	FL OZ/A %v/v	POST POST	A A	0	99	85	95	99	68
4	Roundup WeatherMAX Choice Valid	4.5	SL L L	0.77 0.5 0.125	LB AE/A % V/V % V/V	22.0 0.5 0.125	FL OZ/A %v/v %v/v	POST POST POST	A A A	2	99	90	95	99	68
5	Roundup WeatherMAX WeatherGard	4.5	SL L	0.77 0.5	LB AE/A % V/V	22.0 0.5	FL OZ/A %v/v	POST POST	A A	2	99	88	95	99	65
6	Roundup WeatherMAX Alliance InterLock	4.5	SL L L	0.77 5.0 4.0	LB AE/A QT/100 GAL FL OZ/A	22.0 5.0 4.0	FL OZ/A QT/100 GAL FL OZ/A	POST POST POST	A A A	0	99	88	93	99	67
7	Roundup WeatherMAX AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST POST	A A	0	99	93	95	99	67
8	Roundup WeatherMAX AMSol	4.5	SL L	0.77 5.0	LB AE/A GAL/100 GAL	22.0 5.0	FL OZ/A GAL/100 GAL	POST POST	A A	3	99	90	95	99	65
LSD (P=.05)										3.8	0.0	7.8	2.7	0.0	7.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									GLYMA PHYGEN PERCENT 07-28-04 21 DA-A	SETFA CONTROL PERCENT 07-28-04 21 DA-A	ABUTH CONTROL PERCENT 07-28-04 21 DA-A	AMATA CONTROL PERCENT 07-28-04 21 DA-A	CHEAL CONTROL PERCENT 07-28-04 21 DA-A	POLPY CONTROL PERCENT 07-28-04 21 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup Original Liberate Choice	3	SL L L	0.75 2.0 0.5	LB AE/A PT/100 GAL % V/V	32.0 2.0 0.5	FL OZ/A PT/100 GAL % V/V	POST POST POST	A A A	2	99	85	92	99	70
3	Roundup Original WeatherGard	3	SL L	0.75 1.0	LB AE/A % V/V	32.0 1.0	FL OZ/A %v/v	POST POST	A A	0	99	85	95	99	83
4	Roundup WeatherMAX Choice Valid	4.5	SL L L	0.77 0.5 0.125	LB AE/A % V/V % V/V	22.0 0.5 0.125	FL OZ/A %v/v %v/v	POST POST POST	A A A	0	99	93	95	99	82
5	Roundup WeatherMAX WeatherGard	4.5	SL L	0.77 0.5	LB AE/A % V/V	22.0 0.5	FL OZ/A %v/v	POST POST	A A	2	99	88	95	99	80
6	Roundup WeatherMAX Alliance InterLock	4.5	SL L L	0.77 5.0 4.0	LB AE/A QT/100 GAL FL OZ/A	22.0 5.0 4.0	FL OZ/A QT/100 GAL FL OZ/A	POST POST POST	A A A	0	99	90	93	99	82
7	Roundup WeatherMAX AMS	4.5	SL DF	0.77 17.0	LB AE/A LB/100 GAL	22.0 17.0	FL OZ/A LB/100 GAL	POST POST	A A	0	99	95	95	99	85
8	Roundup WeatherMAX AMSol	4.5	SL L	0.77 5.0	LB AE/A GAL/100 GAL	22.0 5.0	FL OZ/A GAL/100 GAL	POST POST	A A	3	99	92	95	99	78
LSD (P=.05)										3.2	0.0	9.9	2.7	0.0	9.3

Iowa State University

Weed Code									GLYMA	SETFA	ABUTH	AMATA	CHEAL	POLPY	
Rating Data Type									PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									08-06-04	08-06-04	08-06-04	08-06-04	08-06-04	08-06-04	
Trt-Eval Interval									30 DA-A	30 DA-A	30 DA-A	30 DA-A	30 DA-A	30 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST	A	0	99	83	92	99	75
	Liberate		L	2.0	PT/100 GAL	2.0	PT/100 GAL	POST	A						
	Choice		L	0.5	% V/V	0.5	% V/V	POST	A						
3	Roundup Original	3	SL	0.75	LB AE/A	32.0	FL OZ/A	POST	A	0	99	87	95	99	87
	WeatherGard		L	1.0	% V/V	1.0	%v/v	POST	A						
4	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	0	99	90	95	99	82
	Choice		L	0.5	% V/V	0.5	%v/v	POST	A						
	Valid		L	0.125	% V/V	0.125	%v/v	POST	A						
5	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	0	99	87	95	99	82
	WeatherGard		L	0.5	% V/V	0.5	%v/v	POST	A						
6	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	0	99	90	95	99	85
	Alliance		L	5.0	QT/100 GAL	5.0	QT/100 GAL	POST	A						
	InterLock		L	4.0	FL OZ/A	4.0	FL OZ/A	POST	A						
7	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	0	99	96	96	99	85
	AMS		DF	17.0	LB/100 GAL	17.0	LB/100 GAL	POST	A						
8	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	A	0	99	92	95	99	82
	AMSol		L	5.0	GAL/100 GAL	5.0	GAL/100 GAL	POST	A						
LSD (P=.05)										0.0	0.0	9.8	3.7	0.0	7.6

Iowa State University

Aim, 2, 4-D LV4, and Roundup WeatherMAX applied in no-tillage conditions for burndown weed control, Ames, IA, 2004.

Trial ID: ANF 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: 50011 Initiation Date: 05-18-04
Country: USA

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

Objective: The purpose of this study was to evaluate burndown weed control with Aim, 2, 4-D LV4, and Roundup WeatherMAX when applied in no-tillage conditions.

Conclusions: Giant foxtail control was 75% with postemergence (POST) applied Aim plus 2, 4-D LV4 when observed on May 24, six days after application. Roundup WeatherMAX provided 83% control. Tank-mixture treatments of Aim plus Roundup WeatherMAX and Aim plus 2, 4-D LV4 plus Roundup WeatherMAX provided 98 and 99% giant foxtail control, respectively. Common lambsquarters control on May 24 was 88 to 96% with the treatments, except for Roundup WeatherMAX applied alone which provided 70% control. Poor to fair horseweed and common dandelion control was provided by the treatments on May 24. Field pennycress control ranged from 47 to 87% with the treatments on May 24. Overall, the highest level of horseweed, common dandelion and field pennycress control on May 24 was provided by treatments that included Aim.

Excellent giant foxtail control was provided by the treatments when observed on June 1 and 17, fourteen and thirty days after application, respectively. An exception was Aim plus 2, 4-D LV4 which provided poor control. On June 1 and 17, good to excellent common lambsquarters control was afforded by the treatments. Horseweed, common dandelion and field pennycress control on June 1 and 17 improved from that observed on May 24. In general, treatments provided good to excellent control of these species on June 17. An exception was Aim plus 2, 4-D LV4 which provided fair horseweed and common dandelion 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.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	ERICA	HORSEWEED	ERIGERON CANADENSIS L.
4.	TAROF	DANDELION, COMMON	TARAXACUM OFFICINALE WEBER IN WIGGERS
5.	THLAR	PENNYCRESS, FIELD	THLASPI ARVENSE L.

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	2003

MAINTENANCE

Field Prep./Maintenance: The experiment area was left un-tilled from the 2003 soybean cropping season.

SOIL DESCRIPTION

% OM: 5.3 Texture: CLAY LOAM
pH: 6.8 Soil Name: CANISTEO, NICOLLET, CLARION, WEBSTER
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-18-04
Application Method:	SPRAY
Application Timing:	EPP
Applic. Placement:	BROFOL
Air Temp., Unit:	69 F
% Relative Humidity:	53
Wind Velocity, Unit:	2 MPH
Soil Temp., Unit:	63 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	10

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	SETFA 2-3 LEAF
Stage Scale:	0.5-0.75
Density, Unit:	0-2 FT2
Weed 2 Code, Stage:	CHEAL NUMEROUS
Stage Scale:	0.5-4 IN
Density, Unit:	0-20 FT2
Weed 3 Code, Stage:	ERICA NUMEROUS
Stage Scale:	0.5-7 IN
Density, Unit:	0-10 FT2
Weed 4 Code, Stage:	TAROF NUMEROUS
Stage Scale:	ROSSETTE
Density, Unit:	< 1 FT2
Weed 5 Code, Stage:	THLAR NUMEROUS
Stage Scale:	4-12 IN
Density, Unit:	< 1 FT2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND BOOM
Operating Pressure:	30
Nozzle Size:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Aim, 2, 4-D LV4, and Roundup WeatherMAX applied in no-tillage conditions for burndown weed control, Ames, IA, 2004.

Trial ID: ANF 1

Study Dir.: Owen/Lux/Franzenburg

Location: Ames

Investigator: Owen/Hartzler/Pringnitz

Weed Code								SETFA	CHEAL	ERICA	TAROF	THLAR	SETFA		
Rating Data Type								CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								05-24-04	05-24-04	05-24-04	05-24-04	05-24-04	06-01-04		
Trt-Eval Interval								6 DA-A	6 DA-A	6 DA-A	6 DA-A	6 DA-A	14 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	75	88	65	75	67	40
	2, 4-D LV4	3.8	EC	0.475	LB A/A	1.0	PT/A	EPP	A						
	COC	L		1.0	% V/V	1.0	% V/V	EPP	A						
3	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	98	93	68	77	87	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A						
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A						
4	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	99	96	75	77	78	99
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	16.0	FL OZ/A	EPP	A						
	2, 4-D LV4	3.8	EC	0.24	LB A/A	0.5	PT/A	EPP	A						
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A						
5	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A	83	70	52	37	47	99
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A						
LSD (P=.05)								16.1	6.8	3.2	10.7	6.8	0.0		

Iowa State University

Weed Code										CHEAL	ERICA	TAROF	THLAR	SETFA	CHEAL
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-01-04	06-01-04	06-01-04	06-01-04	06-17-04	06-17-04
Trt-Eval Interval										14 DA-A	14 DA-A	14 DA-A	14 DA-A	30 DA-A	30 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	95	73	80	87	37	99
	2, 4-D LV4	3.8	EC	0.475	LB A/A	1.0	PT/A	EPP	A						
	COC	L		1.0	% V/V	1.0	% V/V	EPP	A						
3	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	88	93	87	99	99	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A						
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A						
4	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	99	90	82	98	99	99
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	16.0	FL OZ/A	EPP	A						
	2, 4-D LV4	3.8	EC	0.24	LB A/A	0.5	PT/A	EPP	A						
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A						
5	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A	99	96	90	99	99	99
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A						
LSD (P=.05)										16.0	5.5	3.6	2.9	2.4	0.0

Iowa State University

Weed Code										ERICA	TAROF	THLAR
Rating Data Type										CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT
Rating Date										06-17-04	06-17-04	06-17-04
Trt-Eval Interval										30 DA-A	30 DA-A	30 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Untreated									0	0	0
2	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	73	78	99
	2, 4-D LV4	3.8	EC	0.475	LB A/A	1.0	PT/A	EPP	A			
	COC	L		1.0	% V/V	1.0	% V/V	EPP	A			
3	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	98	90	99
	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A			
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A			
4	Aim	2	EW	0.0078	LB A/A	0.5	FL OZ/A	EPP	A	96	90	99
	Roundup WeatherMAX	4.5	SL	0.56	LB AE/A	16.0	FL OZ/A	EPP	A			
	2, 4-D LV4	3.8	EC	0.24	LB A/A	0.5	PT/A	EPP	A			
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A			
5	Roundup WeatherMAX	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	EPP	A	96	93	99
	AMS	DF		17.0	LB/100 GAL	17.0	LB/100 GAL	EPP	A			
LSD (P=.05)										6.1	3.6	0.0

Iowa State University

Weed control with postemergence applications of Roundup WeatherMAX, Roundup Original MAX and other glyphosate products, Ames, IA, 2004.

Trial ID: ANF 2
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: 05-26-04
Country: USA

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

Objective: The purpose of this study was two fold and included: evaluation of alternative recommendations to control common lambsquarters under challenging conditions, and compare efficacy of Roundup WeatherMAX and Roundup Original MAX with other glyphosate products.

Conclusions: Treatments were applied on May 26 with the daytime high air temperature of 70 F. An attempt was made to apply treatments coinciding with the end of a cold front that approximately began on May 23 and ended on May 25. Daytime high temperature for the 6 days prior to May 26 included: 82, 86, 79, 65, 67, and 63 F on May 20, 21, 22, 23, 24, and 25, respectively. Daytime high temperatures for the 6 days following the May 26 application date included: 74, 78, 79, 73, 73, and 67 F on May 27, 28, 29, 30, 31, and June 1, respectively.

Treatments achieved fair giant foxtail, velvetleaf, and common lambsquarters control when observed on June 1, six days after application. Significant differences in control were observed between treatments. Common cocklebur control was excellent with the treatments on June 1, except for Callisto plus Atrazine.

Treatments generally afforded good to excellent giant foxtail, velvetleaf, common lambsquarters, and common cocklebur control when observed on June 8, thirteen days after application. Significant differences in giant foxtail, and common lambsquarters control were observed. All treatments provided significantly better giant foxtail control than Callisto plus Atrazine. Nearly all of the treatments provided significantly greater common lambsquarters control than Glystar Plus. No significant differences were observed between treatments in velvetleaf and common cocklebur control. On June 19, twenty four days after application, treatments had achieved 98 to 99% control of all of the species. The exception again was Callisto plus Atrazine for the control of giant foxtail.

In summary, the overall performance of the herbicides did not appear to be affected by temperature fluctuations experienced prior to, and following the applications. (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.	XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

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	2003

MAINTENANCE

Field Prep./Maintenance: The experiment area was left un-tilled from the 2003 corn cropping season.

SOIL DESCRIPTION

% OM: 4.3 Texture: CLAY LOAM
pH: 6.2 Soil Name: CANISTEO, CLARION
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-26-04
Application Method:	SPRAY
Application Timing:	POST
Applic. Placement:	BROFOL
Air Temp., Unit:	69 F
% Relative Humidity:	59
Wind Velocity, Unit:	3 MPH
Soil Temp., Unit:	64 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	0

WEED STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

	A
Appl. Equipment:	HAND BOOM
Operating Pressure:	30
Nozzle Size:	11003
Spray Volume, Unit:	20 GPA

Iowa State University

Weed control with postemergence applications of Roundup WeatherMAX, Roundup Original MAX and other glyphosate products, Ames, IA, 2004.

Trial ID: ANF 2 Study Dir.: Owen/Lux/Franzenburg
 Location: Ames Investigator: Owen/Hartzler/Pringnitz

Weed Code									SETFA	ABUTH	CHEAL	XANST	SETFA	ABUTH	CHEAL	
Rating Data Type									CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									06-01-04	06-01-04	06-01-04	06-01-04	06-08-04	06-08-04	06-08-04	
Trt-Eval Interval									6 DA-A	6 DA-A	6 DA-A	6 DA-A	13 DA-A	13 DA-A	13 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.75	LB AE/A	21.3	FL OZ/A	POST A		77	53	72	99	99	99	98
3	Roundup WeatherMAX AMS	4.5	SL DF	0.75	LB AE/A	21.3	FL OZ/A	POST A		75	52	68	99	99	99	96
4	Roundup WeatherMAX AMS	4.5	SL DF	1.12	LB AE/A	32.0	FL OZ/A	POST A		78	58	72	99	99	99	99
5	Roundup Original MAX NIS AMS	4.5	SL L DF	0.75	LB AE/A	21.3	FL OZ/A	POST A		73	53	67	99	99	99	98
6	Touchdown IQ AMS	3	SL DF	0.75	LB AE/A	32.0	FL OZ/A	POST A		75	55	70	99	99	99	99
7	Clearout 41 Plus AMS	3	SL DF	0.75	LB AE/A	32.0	FL OZ/A	POST A		75	53	65	99	99	99	95
8	Glyphomax Plus AMS	3	SL DF	0.75	LB AE/A	32.0	FL OZ/A	POST A		77	55	65	99	99	99	93
9	Glystar Plus AMS	3	SL DF	0.75	LB AE/A	32.0	FL OZ/A	POST A		72	52	57	99	99	99	88
10	Roundup WeatherMAX Harmony GT	4.5	SL DF	0.75	LB AE/A	21.3	FL OZ/A	POST A		73	53	72	96	99	99	98
11	Callisto Atrazine COC 28% UAN	4	SC DF L L	0.05	LB A/A	1.6	FL OZ/A	POST A		58	85	12	45	47	99	90
LSD (P=.05)									3.8	5.5	5.9	1.2	1.5	0.0	3.5	

Iowa State University

Weed Code									XANST	SETFA	ABUTH	CHEAL	XANST	
Rating Data Type									CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									06-08-04	06-19-04	06-19-04	06-19-04	06-19-04	
Trt-Eval Interval									13 DA-A	24 DA-A	24 DA-A	24 DA-A	24 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code					
1	Untreated									0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.75 2.0	LB AE/A % W/W	21.3 2.0	FL OZ/A % W/W	POST POST	A A	99	99	99	99	99
3	Roundup WeatherMAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	POST	A	99	99	99	99	99
4	Roundup WeatherMAX AMS	4.5	SL DF	1.12 2.0	LB AE/A % W/W	32.0 2.0	FL OZ/A % W/W	POST POST	A A	99	99	99	99	99
5	Roundup Original MAX NIS AMS	4.5	SL L DF	0.75 0.25 2.0	LB AE/A % V/V % W/W	21.3 0.25 2.0	FL OZ/A % V/V % W/W	POST POST POST	A A A	99	99	99	99	99
6	Touchdown IQ AMS	3	SL DF	0.75 2.0	LB AE/A % W/W	32.0 2.0	FL OZ/A % W/W	POST POST	A A	99	99	99	99	99
7	Clearout 41 Plus AMS	3	SL DF	0.75 2.0	LB AE/A % W/W	32.0 2.0	FL OZ/A % W/W	POST POST	A A	99	99	99	99	99
8	Glyphomax Plus AMS	3	SL DF	0.75 2.0	LB AE/A % W/W	32.0 2.0	FL OZ/A % W/W	POST POST	A A	99	99	99	99	99
9	Glystar Plus AMS	3	SL DF	0.75 2.0	LB AE/A % W/W	32.0 2.0	FL OZ/A % W/W	POST POST	A A	99	99	99	98	99
10	Roundup WeatherMAX Harmony GT	4.5 75	SL DF	0.75 0.0025	LB AE/A LB A/A	21.3 0.0533	FL OZ/A OZ WT/A	POST POST	A A	99	99	99	99	99
11	Callisto Atrazine COC 28% UAN	4 90	SC DF L L	0.05 0.5 1.0 2.5	LB A/A LB A/A % V/V % V/V	1.6 0.556 1.0 2.5	FL OZ/A LB/A % V/V % V/V	POST POST POST POST	A A A A	99	40	99	99	99
LSD (P=.05)										0.0	4.4	0.0	1.2	0.0

Iowa State University

Preemergence and postemergence applied herbicides in corn, Nashua, IA, 2004.

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 Univer
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: 05-07-04
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: Significant differences in corn stand between several treatments on July 29 were due to variability in seeding rate and not from the herbicides. No corn injury resulted from preemergence (PRE) applied treatments when observed on June 10. Giant foxtail and common waterhemp control was good to excellent on June 10 with the PRE treatments. Velvetleaf and Pennsylvania smartweed control was poor to excellent and dependent upon the selectivity of the herbicide and rates applied.
Corn injury was observed on June 17 and July 1 from several early postemergence (EPOST) and mid-postemergence (MPOST) treatments. Following the EPOST and MPOST applications, good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed control was observed on July 1, 20, and August 4. Exceptions, however, were PRE Keystone plus Hornet WDG and USA 2005 plus Atrazine. These treatments provided fair to good 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.

Crop 1: ZEAMD CORN, FIELD Variety: DEKALB DKC53-34
Planting Date: 05-07-04 Planting Method: DIRECT DRILLED
Rate: 33674 SEEDS/A Depth: 1.75 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Tillage included a spring field cultivation. Crop residue on the soil surface was 20% at planting.

SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-07-04	06-11-04	06-17-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	MPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	60 F	80 F	75 F
% Relative Humidity:	48	91	76
Wind Velocity, Unit:	15 MPH	10 MPH	5 MPH
Soil Temp., Unit:	58 F	69 F	71 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	100	80	35

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 5	ZEAMD V 6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	6 IN	13 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 2T	SETFA 1-4L, 3T
Stage Scale:	-	0.5-4 IN	0.5-5 IN
Density, Unit:	- -	0-15 FT ²	0-3 FT ²
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-7 L	ABUTH COTYL-8L
Stage Scale:	-	0.5-3 IN	0.5-5 IN
Density, Unit:	- -	0-2 FT ²	0-2 FT ²
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS	AMATA NUMEROUS
Stage Scale:	-	0.5-1 IN	0.5-4 IN
Density, Unit:	- -	0-1 FT ²	< 1 FT ²
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS	CHEAL NUMEROUS
Stage Scale:	-	0.5-2 IN	0.5-5 IN
Density, Unit:	- -	0-5 FT ²	< 1 FT ²
Weed 5 Code, Stage:	POLPY -	POLPY 4-10 LEAF	POLPY NUMEROUS
Stage Scale:	-	2-5 IN	2-7 IN
Density, Unit:	- -	0-1 FT ²	< 1 FT ²

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence and postemergence applied herbicides in corn, Nashua, IA, 2004.

Trial ID: NCC 1
 Location: Nashua

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

Weed Code								ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL		
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								06-10-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04		
Trt-Eval Interval								34 DA-A	34 DA-A	34 DA-A	34 DA-A	34 DA-A	34 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									33	0	0	0	0	0
2	Outlook Marksman	6 EC 3.2 FL		0.98 LB 1.4 LB	A/A A/A	21.0 FL 3.5 PT	OZ/A A/A	PRE EPOST	A B	31	0	99	35	98	82
3	G-Max Lite Distinct NIS AMS	5 SC 70 WG L DF		2.19 LB 0.175 LB 0.25 % 5.0 LB/100	A/A A/A V/V GAL	3.5 PT 4.0 OZ 0.25 % 5.0 LB/100	A/A WT/A V/V GAL	PRE MPOST MPOST MPOST	A C C C	32	0	99	58	99	98
4	Outlook Distinct Prowl H2O NIS AMS	6 EC 70 WG 3.8 EC L DF		0.47 LB 0.175 LB 1.19 LB 0.25 % 5.0 LB/100	A/A A/A A/A V/V GAL	10.0 FL 4.0 OZ 2.5 PT 0.25 % 5.0 LB/100	OZ/A WT/A A/A V/V GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	34	0	95	17	96	65
5	Celebrity Plus Prowl H2O NIS AMS	70 WG 3.8 EC L DF		0.204 LB 1.19 LB 0.25 % 5.0 LB/100	A/A A/A V/V GAL	4.67 OZ 2.5 PT 0.25 % 5.0 LB/100	WT/A A/A V/V GAL	MPOST MPOST MPOST MPOST	C C C C	34	0	0	0	0	0
6	USA 2005 Atrazine	4 SC 4 SL		0.78 LB 1.0 LB	A/A A/A	25.0 FL 1.0 QT	OZ/A A/A	PRE PRE	A A	34	0	96	92	98	99
7	Balance Pro Option Callisto Atrazine MSO AMS	4 SC 35 WG 4 SC 4 SL L DF		0.047 LB 0.0328 LB 0.047 LB 0.5 LB 1.5 PT 1.5 LB/A	A/A A/A A/A A/A A/A A/A	1.5 FL 1.5 OZ 1.5 FL 1.0 PT 1.5 PT 1.5 LB/A	OZ/A WT/A OZ/A A/A A/A A/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	32	0	93	67	92	93
8	Keystone Hornet WDG	5.25 SE 68.5 WG		3.48 LB 0.128 LB	A/A AE/A	2.65 QT 3.0 OZ	A/A WT/A	PRE PRE	A A	34	0	99	83	99	99
9	Keystone Hornet WDG Atrazine COC 28% UAN	5.25 SE 68.5 WG 90 DF L L		3.48 LB 0.128 LB 0.75 LB 1.0 % 2.5 %	A/A AE/A A/A V/V V/V	2.65 QT 3.0 OZ 0.83 LB 1.0 % 2.5 %	A/A WT/A A/A V/V V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	33	0	98	57	99	93
10	FulTime Glyphomax AMS	4 CS 3 SL DF		2.25 LB 0.75 LB 2.5 LB/A	A/A AE/A A/A	2.25 QT 2.0 PT 2.5 LB/A	A/A A/A A/A	PRE MPOST MPOST	A C C	33	0	96	52	98	96
11	Cinch ATZ Steadfast Callisto Atrazine COC AMS	5.5 SL 75 WG 4 SC 90 DF L DF		1.72 LB 0.035 LB 0.0625 LB 0.25 LB 1.0 % 2.0 LB/A	A/A A/A A/A A/A V/V A/A	2.5 PT 0.75 OZ 2.0 FL 4.44 OZ 1.0 % 2.0 LB/A	A/A WT/A OZ/A WT/A V/V A/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	33	0	96	43	96	92
12	Steadfast Callisto Atrazine COC AMS	75 WG 4 SC 90 DF L DF		0.035 LB 0.0625 LB 1.5 LB 1.0 % 2.0 LB/A	A/A A/A A/A V/V A/A	0.75 OZ 2.0 FL 26.7 OZ 1.0 % 2.0 LB/A	WT/A OZ/A WT/A V/V A/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	33	0	0	0	0	0
13	Harness Xtra Roundup WeatherMAX AMS	5.6 SC 4.5 SL DF		2.45 LB 0.77 LB 2.5 LB/A	A/A AE/A A/A	1.75 QT 22.0 FL 2.5 LB/A	A/A OZ/A A/A	PRE MPOST MPOST	A C C	33	0	96	60	98	96
14	Lexar	3.7 SE		3.24 LB	A/A	3.5 QT	A/A	PRE	A	33	0	99	98	99	99
15	Lumax Lumax	3.95 SE 3.95 SE		1.48 LB 1.48 LB	A/A A/A	1.5 QT 1.5 QT	A/A A/A	PRE EPOST	A B	32	0	96	88	98	99

Iowa State University

Weed Code									ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	
Rating Data Type									STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									06-10-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04	
Trt-Eval Interval									34 DA-A	34 DA-A	34 DA-A	34 DA-A	34 DA-A	34 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
16	Bicep Lite II Magnum	6	L	2.25	LB A/A	1.5	QT/A	PRE	A	33	0	96	48	96	90
	Callisto	4	SC	0.094	LB A/A	3.0	FL OZ/A	MPOST	C						
	Atrazine	90	DF	0.5	LB A/A	0.556	LB/A	MPOST	C						
	COC		L	1.0	% V/V	1.0	% V/V	MPOST	C						
	28% UAN		L	2.5	% V/V	2.5	% V/V	MPOST	C						
LSD (P=.05)										2.6	0.0	4.0	15.6	3.2	8.9

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									POLPY CONTROL PERCENT 06-10-04 34 DA-A	ZEAMD PHYGEN PERCENT 06-17-04 6 DA-B	ZEAMD PHYGEN PERCENT 07-01-04 14 DA-C	SETFA CONTROL PERCENT 07-01-04 14 DA-C	ABUTH CONTROL PERCENT 07-01-04 14 DA-C	AMATA CONTROL PERCENT 07-01-04 14 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	87	7	2	99	99	99
3	G-Max Lite Distinct NIS AMS	5 70 L DF	SC WG L DF	2.19 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	3.5 4.0 0.25 5.0	PT/A OZ WT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	98	0	3	96	96	99
4	Outlook Distinct Prowl H2O NIS AMS	6 70 3.8 L DF	EC WG EC L DF	0.47 0.175 1.19 0.25 5.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	10.0 4.0 2.5 0.25 5.0	FL OZ/A OZ WT/A PT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	65	0	2	95	92	96
5	Celebrity Plus Prowl H2O NIS AMS	70 3.8 L DF	WG EC L DF	0.204 1.19 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.67 2.5 0.25 5.0	OZ WT/A PT/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	C C C C	0	0	7	93	92	93
6	USA 2005 Atrazine	4 4	SC SL	0.78 1.0	LB A/A LB A/A	25.0 1.0	FL OZ/A QT/A	PRE PRE	A A	98	0	0	93	88	93
7	Balance Pro Option Callisto Atrazine MSO AMS	4 35 4 4 L DF	SC WG SC SL L DF	0.047 0.0328 0.047 0.5 1.5 1.5	LB A/A LB A/A LB A/A LB A/A PT/A LB/A	1.5 1.5 1.5 1.0 1.5 1.5	FL OZ/A OZ WT/A FL OZ/A PT/A PT/A LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	90	0	5	95	99	99
8	Keystone Hornet WDG	5.25 68.5	SE WG	3.48 0.128	LB A/A LB AE/A	2.65 3.0	QT/A OZ WT/A	PRE PRE	A A	99	0	0	95	85	96
9	Keystone Hornet WDG Atrazine COC 28% UAN	5.25 68.5 90 L L	SE WG DF L L	3.48 0.128 0.75 1.0 2.5	LB A/A LB AE/A LB A/A % V/V % V/V	2.65 3.0 0.83 1.0 2.5	QT/A OZ WT/A LB/A %V/V %V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	91	0	5	98	98	98
10	FulTime Glyphomax AMS	4 3 DF	CS SL DF	2.25 0.75 2.5	LB A/A LB AE/A LB/A	2.25 2.0 2.5	QT/A PT/A LB/A	PRE MPOST MPOST	A C C	95	0	0	99	99	99
11	Cinch ATZ Steadfast Callisto Atrazine COC AMS	5.5 75 4 90 L DF	SL WG SC DF L DF	1.72 0.035 0.0625 0.25 1.0 2.0	LB A/A LB A/A LB A/A LB A/A % V/V LB/A	2.5 0.75 2.0 4.44 1.0 2.0	PT/A OZ WT/A FL OZ/A OZ WT/A %V/V LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	78	0	7	99	99	99
12	Steadfast Callisto Atrazine COC AMS	75 4 90 L DF	WG SC DF L DF	0.035 0.0625 1.5 1.0 2.0	LB A/A LB A/A LB A/A % V/V LB/A	0.75 2.0 26.7 1.0 2.0	OZ WT/A FL OZ/A OZ WT/A %V/V LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	0	12	5	98	99	99
13	Harness Xtra Roundup WeatherMAX AMS	5.6 4.5 DF	SC SL DF	2.45 0.77 2.5	LB A/A LB AE/A LB/A	1.75 22.0 2.5	QT/A FL OZ/A LB/A	PRE MPOST MPOST	A C C	90	0	0	99	99	99
14	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	99	0	0	96	98	98
15	Lumax Lumax	3.95 3.95	SE SE	1.48 1.48	LB A/A LB A/A	1.5 1.5	QT/A QT/A	PRE EPOST	A B	99	0	0	99	99	99
16	Bicep Lite II Magnum Callisto Atrazine COC 28% UAN	6 4 90 L L	L SC DF L L	2.25 0.094 0.5 1.0 2.5	LB A/A LB A/A LB A/A % V/V % V/V	1.5 3.0 0.556 1.0 2.5	QT/A FL OZ/A LB/A % V/V % V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	93	0	7	98	99	99
LSD (P=.05)										9.7	1.7	2.8	2.8	4.0	2.6

Iowa State University

Weed Code									CHEAL	POLPY	ZEAMD	SETFA	ABUTH	AMATA	
Rating Data Type									CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-01-04	07-01-04	07-20-04	07-20-04	07-20-04	07-20-04	
Trt-Eval Interval									14 DA-C	14 DA-C	33 DA-C	33 DA-C	33 DA-C	33 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	99	99	2	96	99	99
3	G-Max Lite Distinct NIS AMS	5 70 L DF	SC WG L DF	2.19 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	3.5 4.0 0.25 5.0	PT/A OZ WT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	98	98	3	99	99	99
4	Outlook Distinct Prowl H2O NIS AMS	6 70 3.8 L DF	EC WG EC L DF	0.47 0.175 1.19 0.25 5.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	10.0 4.0 2.5 0.25 5.0	FL OZ/A OZ WT/A PT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	93	93	5	98	95	98
5	Celebrity Plus Prowl H2O NIS AMS	70 3.8 L DF	WG EC L DF	0.204 1.19 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.67 2.5 0.25 5.0	OZ WT/A PT/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	C C C C	93	93	0	99	96	96
6	USA 2005 Atrazine	4 4	SC SL	0.78 1.0	LB A/A LB A/A	25.0 1.0	FL OZ/A QT/A	PRE PRE	A A	96	96	0	90	88	92
7	Balance Pro Option Callisto Atrazine MSO AMS	4 35 4 4 L DF	SC WG SC SL L DF	0.047 0.0328 0.047 0.5 1.5 1.5	LB A/A LB A/A LB A/A LB A/A PT/A LB/A	1.5 1.5 1.5 1.0 1.5 1.5	FL OZ/A OZ WT/A FL OZ/A PT/A PT/A LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	99	99	0	96	99	99
8	Keystone Hornet WDG	5.25 68.5	SE WG	3.48 0.128	LB A/A LB AE/A	2.65 3.0	QT/A OZ WT/A	PRE PRE	A A	98	99	0	90	85	92
9	Keystone Hornet WDG Atrazine COC 28% UAN	5.25 68.5 90 L L	SE WG DF L L	3.48 0.128 0.75 1.0 2.5	LB A/A LB AE/A LB A/A % V/V % V/V	2.65 3.0 0.83 1.0 2.5	QT/A OZ WT/A LB/A %V/V %V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99	0	98	99	99
10	FulTime Glyphomax AMS	4 3 DF	CS SL DF	2.25 0.75 2.5	LB A/A LB AE/A LB/A	2.25 2.0 2.5	QT/A PT/A LB/A	PRE MPOST MPOST	A C C	99	99	0	95	98	98
11	Cinch ATZ Steadfast Callisto Atrazine COC AMS	5.5 75 4 90 L DF	SL WG SC DF L DF	1.72 0.035 0.0625 0.25 1.0 2.0	LB A/A LB A/A LB A/A LB A/A % V/V LB/A	2.5 0.75 2.0 4.44 1.0 2.0	PT/A OZ WT/A FL OZ/A OZ WT/A %V/V LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	99	99	0	99	99	99
12	Steadfast Callisto Atrazine COC AMS	75 4 90 L DF	WG SC DF L DF	0.035 0.0625 1.5 1.0 2.0	LB A/A LB A/A LB A/A % V/V LB/A	0.75 2.0 26.7 1.0 2.0	OZ WT/A FL OZ/A OZ WT/A %V/V LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	99	99	0	98	99	99
13	Harness Xtra Roundup WeatherMAX AMS	5.6 4.5 DF	SC SL DF	2.45 0.77 2.5	LB A/A LB AE/A LB/A	1.75 22.0 2.5	QT/A FL OZ/A LB/A	PRE MPOST MPOST	A C C	99	99	0	95	99	98
14	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	98	99	0	96	96	98
15	Lumax Lumax	3.95 3.95	SE SE	1.48 1.48	LB A/A LB A/A	1.5 1.5	QT/A QT/A	PRE EPOST	A B	99	99	0	96	99	99
16	Bicep Lite II Magnum Callisto Atrazine COC 28% UAN	6 4 90 L L	L SC DF L L	2.25 0.094 0.5 1.0 2.5	LB A/A LB A/A LB A/A % V/V % V/V	1.5 3.0 0.556 1.0 2.5	QT/A FL OZ/A LB/A % V/V % V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99	2	98	99	99
LSD (P=.05)										2.6	2.2	2.0	2.7	3.6	3.5

Iowa State University

Weed Code									CHEAL	POLPY	ZEAMD	SETFA	ABUTH	AMATA	
Rating Data Type									CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date									07-20-04	07-20-04	08-04-04	08-04-04	08-04-04	08-04-04	
Trt-Eval Interval									33 DA-C	33 DA-C	48 DA-C	48 DA-C	48 DA-C	48 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated									0	0	0	0	0	0
2	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	99	99	0	96	96	99
3	G-Max Lite Distinct NIS AMS	5 70 L DF	SC WG L DF	2.19 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	3.5 4.0 0.25 5.0	PT/A OZ WT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	99	2	99	99	99
4	Outlook Distinct Prowl H2O NIS AMS	6 70 3.8 L DF	EC WG EC L DF	0.47 0.175 1.19 0.25 5.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	10.0 4.0 2.5 0.25 5.0	FL OZ/A OZ WT/A PT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99	5	96	99	98
5	Celebrity Plus Prowl H2O NIS AMS	70 3.8 L DF	WG EC L DF	0.204 1.19 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.67 2.5 0.25 5.0	OZ WT/A PT/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	C C C C	99	99	0	99	99	98
6	USA 2005 Atrazine	4 4	SC SL	0.78 1.0	LB A/A LB A/A	25.0 1.0	FL OZ/A QT/A	PRE PRE	A A	95	96	0	88	88	90
7	Balance Pro Option Callisto Atrazine MSO AMS	4 35 4 4 L DF	SC WG SC SL L DF	0.047 0.0328 0.047 0.5 1.5 1.5	LB A/A LB A/A LB A/A LB A/A PT/A LB/A	1.5 1.5 1.5 1.0 1.5 1.5	FL OZ/A OZ WT/A FL OZ/A PT/A PT/A LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	99	99	0	98	99	99
8	Keystone Hornet WDG	5.25 68.5	SE WG	3.48 0.128	LB A/A LB AE/A	2.65 3.0	QT/A OZ WT/A	PRE PRE	A A	95	99	0	90	83	92
9	Keystone Hornet WDG Atrazine COC 28% UAN	5.25 68.5 90 L L	SE WG DF L L	3.48 0.128 0.75 1.0 2.5	LB A/A LB AE/A LB A/A % V/V % V/V	2.65 3.0 0.83 1.0 2.5	QT/A OZ WT/A LB/A %V/V %V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99	0	95	99	99
10	FulTime Glyphomax AMS	4 3 DF	CS SL DF	2.25 0.75 2.5	LB A/A LB AE/A LB/A	2.25 2.0 2.5	QT/A PT/A LB/A	PRE MPOST MPOST	A C C	96	99	0	95	98	98
11	Cinch ATZ Steadfast Callisto Atrazine COC AMS	5.5 75 4 90 L DF	SL WG SC DF L DF	1.72 0.035 0.0625 0.25 1.0 2.0	LB A/A LB A/A LB A/A LB A/A % V/V LB/A	2.5 0.75 2.0 4.44 1.0 2.0	PT/A OZ WT/A FL OZ/A OZ WT/A %V/V LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	99	99	0	99	99	99
12	Steadfast Callisto Atrazine COC AMS	75 4 90 L DF	WG SC DF L DF	0.035 0.0625 1.5 1.0 2.0	LB A/A LB A/A LB A/A % V/V LB/A	0.75 2.0 26.7 1.0 2.0	OZ WT/A FL OZ/A OZ WT/A %V/V LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	99	99	0	98	99	99
13	Harness Xtra Roundup WeatherMAX AMS	5.6 4.5 DF	SC SL DF	2.45 0.77 2.5	LB A/A LB AE/A LB/A	1.75 22.0 2.5	QT/A FL OZ/A LB/A	PRE MPOST MPOST	A C C	96	99	0	95	99	96
14	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	98	99	0	95	98	96
15	Lumax Lumax	3.95 3.95	SE SE	1.48 1.48	LB A/A LB A/A	1.5 1.5	QT/A QT/A	PRE EPOST	A B	99	99	0	96	99	99
16	Bicep Lite II Magnum Callisto Atrazine COC 28% UAN	6 4 90 L L	L SC DF L L	2.25 0.094 0.5 1.0 2.5	LB A/A LB A/A LB A/A % V/V % V/V	1.5 3.0 0.556 1.0 2.5	QT/A FL OZ/A LB/A % V/V % V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99	0	96	99	99
LSD (P=.05)										1.7	1.0	2.4	4.7	3.5	3.3

Iowa State University

Weed Code									CHEAL	POLPY	
Rating Data Type									CONTROL	CONTROL	
Rating Unit									PERCENT	PERCENT	
Rating Date									08-04-04	08-04-04	
Trt-Eval Interval									48 DA-C	48 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated									0	0
2	Outlook Marksman	6 3.2	EC FL	0.98 1.4	LB A/A LB A/A	21.0 3.5	FL OZ/A PT/A	PRE EPOST	A B	98	99
3	G-Max Lite Distinct NIS AMS	5 70 L AMS	SC WG L DF	2.19 0.175 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	3.5 4.0 0.25 5.0	PT/A OZ WT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST	A C C C	99	99
4	Outlook Distinct Prowl H2O NIS AMS	6 70 3.8 L AMS	EC WG EC L DF	0.47 0.175 1.19 0.25 5.0	LB A/A LB A/A LB A/A % V/V LB/100 GAL	10.0 4.0 2.5 0.25 5.0	FL OZ/A OZ WT/A PT/A % V/V LB/100 GAL	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99
5	Celebrity Plus Prowl H2O NIS AMS	70 3.8 L AMS	WG EC L DF	0.204 1.19 0.25 5.0	LB A/A LB A/A % V/V LB/100 GAL	4.67 2.5 0.25 5.0	OZ WT/A PT/A % V/V LB/100 GAL	MPOST MPOST MPOST MPOST	C C C C	99	99
6	USA 2005 Atrazine	4 4	SC SL	0.78 1.0	LB A/A LB A/A	25.0 1.0	FL OZ/A QT/A	PRE PRE	A A	93	95
7	Balance Pro Option Callisto Atrazine MSO AMS	4 35 4 4 L AMS	SC WG SC SL L DF	0.047 0.0328 0.047 0.5 1.5 1.5	LB A/A LB A/A LB A/A LB A/A PT/A LB/A	1.5 1.5 1.5 1.0 1.5 1.5	FL OZ/A OZ WT/A FL OZ/A PT/A PT/A LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	99	99
8	Keystone Hornet WDG	5.25 68.5	SE WG	3.48 0.128	LB A/A LB AE/A	2.65 3.0	QT/A OZ WT/A	PRE PRE	A A	95	99
9	Keystone Hornet WDG Atrazine COC 28% UAN	5.25 68.5 90 L L	SE WG DF L L	3.48 0.128 0.75 1.0 2.5	LB A/A LB AE/A LB A/A % V/V % V/V	2.65 3.0 0.83 1.0 2.5	QT/A OZ WT/A LB/A %V/V %V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99
10	FulTime Glyphomax AMS	4 3 AMS	CS SL DF	2.25 0.75 2.5	LB A/A LB AE/A LB/A	2.25 2.0 2.5	QT/A PT/A LB/A	PRE MPOST MPOST	A C C	96	99
11	Cinch ATZ Steadfast Callisto Atrazine COC AMS	5.5 75 4 90 L AMS	SL WG SC DF L DF	1.72 0.035 0.0625 0.25 1.0 2.0	LB A/A LB A/A LB A/A LB A/A % V/V LB/A	2.5 0.75 2.0 4.44 1.0 2.0	PT/A OZ WT/A FL OZ/A OZ WT/A %V/V LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A C C C C C	99	99
12	Steadfast Callisto Atrazine COC AMS	75 4 90 L AMS	WG SC DF L DF	0.035 0.0625 1.5 1.0 2.0	LB A/A LB A/A LB A/A % V/V LB/A	0.75 2.0 26.7 1.0 2.0	OZ WT/A FL OZ/A OZ WT/A %V/V LB/A	EPOST EPOST EPOST EPOST EPOST	B B B B B	99	99
13	Harness Xtra Roundup WeatherMAX AMS	5.6 4.5 AMS	SC SL DF	2.45 0.77 2.5	LB A/A LB AE/A LB/A	1.75 22.0 2.5	QT/A FL OZ/A LB/A	PRE MPOST MPOST	A C C	96	99
14	Lexar	3.7	SE	3.24	LB A/A	3.5	QT/A	PRE	A	96	99
15	Lumax Lumax	3.95 3.95	SE SE	1.48 1.48	LB A/A LB A/A	1.5 1.5	QT/A QT/A	PRE EPOST	A B	99	99
16	Bicep Lite II Magnum Callisto Atrazine COC 28% UAN	6 4 90 L L	L SC DF L L	2.25 0.094 0.5 1.0 2.5	LB A/A LB A/A LB A/A % V/V % V/V	1.5 3.0 0.556 1.0 2.5	QT/A FL OZ/A LB/A % V/V % V/V	PRE MPOST MPOST MPOST MPOST	A C C C C	99	99
LSD (P=.05)									2.3	0.0	

Iowa State University

Preemergence applied Outlook and postemergence applied glyphosate alone or in tank-mixture with Clarity or Distinct in corn, Nashua, IA, 2004.

Trial ID: NCC 2
Location: Nashua

Study Dir.: Owen/Lux/Franzenbur
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: 05-07-04
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 tank-mixtures of Roundup with Clarity, Distinct, Prowl H20, or Guardsman Max for corn tolerance and weed control. Postemergence applied tank-mixture treatments of Roundup with Clarity, or Distinct following Outlook or Guardsman Max applied preemergence were also evaluated. **Conclusions:** Differences in corn stand between treatments were not significant when observed on May 26. Reduced rates of preemergence (PRE) applied treatments did not result in corn injury when observed on June 10, prior to postemergence (POST) and late postemergence (LPOST) applications. On June 10, Outlook applied PRE gave good to excellent giant foxtail and common waterhemp control. Velvetleaf and common lambsquarters control was not acceptable with PRE Outlook.

Corn injury was evident from POST and LPOST applied treatments when observed on June 17 and July 1, six and fourteen days after application, respectively. Injury did not exceed 7% on either date. Following all treatment application timings, excellent giant foxtail, velvetleaf, common waterhemp, and common lambsquarters control was observed on July 1. Furthermore, good to excellent control overall was observed with the treatments on August 4 and October 5. Common lambsquarters control was an exception where fair to good control was provided by POST Roundup WeatherMAX and PRE Outlook followed by POST Roundup WeatherMAX. Treatment corn yields were significantly higher than the untreated control. There were no significant differences in corn yield determined 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: DEKALB DKC53-34
Planting Date: 05-07-04 Planting Method: DIRECT DRILLED
Rate: 33674 SEEDS/A Depth: 1.75 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Tillage included a spring field cultivation. Crop residue on the soil surface was 20% at planting.

SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05-07-04	06-11-04	06-17-04
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST	LPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	60 F	80 F	75 F
% Relative Humidity:	48	91	76
Wind Velocity, Unit:	15 MPH	10 MPH	5 MPH
Soil Temp., Unit:	58 F	69 F	71 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	100	80	35

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 5	ZEAMD V 6
Stage Scale:	-	DESC	DESC
Height, Unit:	-	6 IN	13 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 3T	SETFA 1-4 L, 3T
Stage Scale:	-	0.5-4 IN	0.5-8 IN
Density, Unit:	- -	0-15 FT2	0-5 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-7 L	ABUTH COTYL-10
Stage Scale:	-	0.5-3 IN	0.5-7 IN
Density, Unit:	- -	0-2 FT2	0-2 FT2
Weed 3 Code, Stage:	AMATA -	AMATA NUMEROUS	AMATA NUMEROUS
Stage Scale:	-	0.5-4 IN	0.5-10 IN
Density, Unit:	- -	0-3 FT2	0-5 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS	CHEAL NUMEROUS
Stage Scale:	-	0.5-5 IN	0.5-10 IN
Density, Unit:	- -	0-5 FT2	0-3 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied Outlook and postemergence applied glyphosate alone or in tank-mixture with Clarity or Distinct in corn, Nashua, IA, 2004.

Trial ID: NCC 2
 Location: Nashua

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

Weed Code										ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	ZEAMD
Rating Data Type										STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										05-26-04	06-10-04	06-10-04	06-10-04	06-10-04	06-10-04	06-17-04
Trt-Eval Interval										19 DA-A	34 DA-A	34 DA-A	34 DA-A	34 DA-A	34 DA-A	6 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated									32	0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A LB/A	22.0	FL OZ/A LB/A	POST	B	32	0	0	0	0	0	0
3	Roundup Original	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	32	0	0	0	0	0	5
	Clarity	4	SL	0.25	LB A/A	8.0	FL OZ/A	POST	B							
	NIS	L		0.25	% V/V	0.25	% V/V	POST	B							
	AMS	DF		3.0	LB/A	3.0	LB/A	POST	B							
4	Roundup Original	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	33	0	0	0	0	0	7
	Distinct	70	WG	0.131	LB A/A	3.0	OZ WT/A	POST	B							
	NIS	L		0.25	% V/V	0.25	% V/V	POST	B							
	AMS	DF		3.0	LB/A	3.0	LB/A	POST	B							
5	Outlook	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	34	0	95	13	95	35	0
	Roundup WeatherMAX AMS	4.5	SL DF	0.77	LB AE/A LB/A	22.0	FL OZ/A LB/A	POST	B							
6	Outlook	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	32	0	93	10	96	40	0
	Roundup Original	3	SL	0.56	LB AE/A	24.0	FL OZ/A	LPOST	C							
	Distinct	70	WG	0.131	LB A/A	3.0	OZ WT/A	LPOST	C							
	NIS	L		0.25	% V/V	0.25	% V/V	LPOST	C							
	AMS	DF		3.0	LB/A	3.0	LB/A	LPOST	C							
LSD (P=.05)										2.8	0.0	2.1	2.1	3.5	5.0	2.1

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ZEAMD PHYGEN PERCENT 07-01-04 20 DA-B	SETFA CONTROL PERCENT 07-01-04 20 DA-B	ABUTH CONTROL PERCENT 07-01-04 20 DA-B	AMATA CONTROL PERCENT 07-01-04 20 DA-B	CHEAL CONTROL PERCENT 07-01-04 20 DA-B	ZEAMD PHYGEN PERCENT 08-04-04 48 DA-C	SETFA CONTROL PERCENT 08-04-04 48 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Rate	Grow Unit	Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77 3.0	LB AE/A LB/A	22.0	FL OZ/A LB/A	POST POST	B B	2	99	99	99	98	0 95	
3	Roundup Original Clarity NIS AMS	3 4	SL SL L DF	0.56 0.25 0.25 3.0	LB AE/A LB A/A % V/V LB/A	24.0	FL OZ/A FL OZ/A % V/V LB/A	POST POST POST POST	B B B B	7	99	99	99	99	0 93	
4	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56 0.131 0.25 3.0	LB AE/A LB A/A % V/V LB/A	24.0	FL OZ/A OZ WT/A % V/V LB/A	POST POST POST POST	B B B B	5	99	99	99	99	0 98	
5	Outlook Roundup WeatherMAX AMS	6 4.5	EC SL DF	0.56 0.77 3.0	LB A/A LB AE/A LB/A	12.0	FL OZ/A FL OZ/A LB/A	PRE POST POST	A B B	0	99	99	99	98	0 90	
6	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56 0.56 0.131 0.25 3.0	LB A/A LB AE/A LB A/A % V/V LB/A	12.0	FL OZ/A FL OZ/A OZ WT/A % V/V LB/A	PRE LPOST LPOST LPOST LPOST	A C C C C	5	99	99	99	99	0 99	
LSD (P=.05)										2.7	0.0	0.0	0.0	2.2	0.0	4.2

Iowa State University

Weed Code										ABUTH	AMATA	CHEAL	SETFA	ABUTH	AMATA	CHEAL
Rating Data Type										CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-04-04	08-04-04	08-04-04	10-05-04	10-05-04	10-05-04	10-05-04
Trt-Eval Interval										48 DA-C	48 DA-C	48 DA-C	110 DA-C	110 DA-C	110 DA-C	110 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Rate	Product Unit	Grow Stg	Appl Code							
1	Untreated									0	0	0	0	0	0	0
2	Roundup WeatherMAX AMS	4.5	SL DF	0.77 3.0	LB AE/A LB/A	22.0	FL OZ/A 3.0	POST POST	B B	95	95	85	93	95	95	85
3	Roundup Original Clarity NIS AMS	3 4	SL SL L DF	0.56 0.25 0.25 3.0	LB AE/A LB A/A % V/V LB/A	24.0	FL OZ/A 8.0 % V/V 3.0	POST POST POST POST	B B B B	98	96	96	93	98	96	95
4	Roundup Original Distinct NIS AMS	3 70	SL WG L DF	0.56 0.131 0.25 3.0	LB AE/A LB A/A % V/V LB/A	24.0	FL OZ/A 3.0 % V/V 3.0	POST POST POST POST	B B B B	98	99	96	98	98	99	96
5	Outlook Roundup WeatherMAX AMS	6 4.5	EC SL DF	0.56 0.77 3.0	LB A/A LB AE/A LB/A	12.0	FL OZ/A FL OZ/A 3.0	PRE POST POST	A B B	96	93	80	90	96	93	80
6	Outlook Roundup Original Distinct NIS AMS	6 3 70	EC SL WG L DF	0.56 0.56 0.131 0.25 3.0	LB A/A LB AE/A LB A/A % V/V LB/A	12.0	FL OZ/A FL OZ/A 3.0 % V/V 3.0	PRE LPOST LPOST LPOST LPOST	A C C C C	99	99	99	99	99	99	99
LSD (P=.05)										4.0	2.6	3.8	3.5	4.0	2.6	4.4

Iowa State University

Weed Code										ZEAMD
Rating Data Type										YIELD
Rating Unit										BU/A
Rating Date										11-06-04
Trt-Eval Interval										183 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated									163
2	Roundup WeatherMAX AMS	4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B	203
			DF	3.0	LB/A	3.0	LB/A	POST	B	
3	Roundup Original Clarity NIS AMS	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	215
		4	SL	0.25	LB A/A	8.0	FL OZ/A	POST	B	
			L	0.25	% V/V	0.25	% V/V	POST	B	
			DF	3.0	LB/A	3.0	LB/A	POST	B	
4	Roundup Original Distinct NIS AMS	3	SL	0.56	LB AE/A	24.0	FL OZ/A	POST	B	214
		70	WG	0.131	LB A/A	3.0	OZ WT/A	POST	B	
			L	0.25	% V/V	0.25	% V/V	POST	B	
			DF	3.0	LB/A	3.0	LB/A	POST	B	
5	Outlook Roundup WeatherMAX AMS	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	228
		4.5	SL	0.77	LB AE/A	22.0	FL OZ/A	POST	B	
			DF	3.0	LB/A	3.0	LB/A	POST	B	
6	Outlook Roundup Original Distinct NIS AMS	6	EC	0.56	LB A/A	12.0	FL OZ/A	PRE	A	200
		3	SL	0.56	LB AE/A	24.0	FL OZ/A	LPOST	C	
		70	WG	0.131	LB A/A	3.0	OZ WT/A	LPOST	C	
			L	0.25	% V/V	0.25	% V/V	LPOST	C	
			DF	3.0	LB/A	3.0	LB/A	LPOST	C	
LSD (P=.05)										34.3

Iowa State University

Preemergence applied Stalwart Xtra, Bicep II Magnum, Keystone, Harness Xtra and Lumax in corn, Nashua, IA, 2004.

Trial ID: NCC 3
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/INTERIM
State/Prov.: IA
Postal Code: 50658-9270 **Initiation Date:** 05-07-04
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 prepackaged and tank-mixed herbicides for crop phytotoxicity and weed control in corn. Treatments of reduced rates of preemergence applied Stalwart and Bicep II Magnum followed by postemergence Roundup WeatherMAX were also evaluated.
Conclusions: Significant differences in corn stand between treatments were noted. However, these were not attributable to the herbicides, but to variability in seeding rate. No corn injury was observed from the treatments on any of the observation dates. Giant foxtail control was 92% and higher with the preemergence (PRE) and PRE plus postemergence (POST) applied treatments when observed on May 26, June 17, and July 1, nineteen, forty-one, and fifty-five days after application, respectively. Few significant differences in control between treatments were determined on these dates. On August 4, eighty-nine days after application, all treatments continued to provide acceptable giant foxtail control at 87% or more. Velvetleaf control with the treatments on May 26 ranged from 83 to 96%. Significant differences were determined. Treatments including Balance Pro and Lumax provided 93 and 96% control, respectively. On June 17 and July 1, velvetleaf control was 43 to 87% with the treatments, except Lumax and those treatments receiving a POST Roundup WeatherMAX application. These provided 93 to 99% control. Velvetleaf control with the treatments on August 4 reflected that observed on July 1. Good to excellent common waterhemp control with the treatments was observed on May 26, June 17, and July 1. Significant differences were determined between the treatments on June 27 and July 1. On August 4, Stalwart Xtra, Stalwart Xtra plus Balance Pro, and Harness Xtra provided 87% or less common waterhemp control, while remaining treatments gave 92% or more control. Common lambsquarters control was excellent with the treatments on May 26. On June 17, nearly all treatments provided 92% and higher control. Significant differences were determined between the treatments. Prior to receiving a POST Roundup WeatherMAX application, reduced rates of Stalwart Xtra, and Bicep II Magnum provided 85 and 87% common lambsquarters control, respectively. Following the POST application of Roundup WeatherMAX these treatments achieved 99 and 93% common lambsquarters control when observed on July 1, and August 4, respectively. Control with all other treatments on July 1 and August 4 was less than that observed on June 17, and was generally considered poor to good. Nearly all treatments provided good to excellent Pennsylvania smartweed control when observed on June 17, July 1 and August 4 with significant differences determined between a number of 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.	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.

Crop 1: ZEAMD CORN, FIELD **Variety:** DEKALB DKC53-34
Planting Date: 05-07-04 **Planting Method:** DRILLED
Rate: 33674 SEEDS/A **Depth:** 1.75 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Tillage included a spring field cultivation. Crop residue on the soil surface was 20% at planting.

Iowa State University

SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
 pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER
 Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

APPLICATION DESCRIPTION

	A	B
Application Date:	05-07-04	06-17-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	60 F	75 F
% Relative Humidity:	48	76
Wind Velocity, Unit:	15 MPH	5 MPH
Soil Temp., Unit:	58 F	71 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	100	35

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 6
Stage Scale:	-	DESC
Height, Unit:	-	13 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	SETFA -	SETFA 1-4 L, 3T
Stage Scale:	-	0.5-5 IN
Density, Unit:	- -	0-3 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-7 L
Stage Scale:	-	0.5-5 IN
Density, Unit:	- -	0-2 FT2
Weed 3 Code, Stage:	AMATA -	AMATA 2-NUM
Stage Scale:	-	0.5-4 IN
Density, Unit:	- -	0-3 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL 2-NUM
Stage Scale:	-	0.5-5 IN
Density, Unit:	- -	< 1 FT2
Weed 5 Code, Stage:	POLPY -	POLPY 2-NUM
Stage Scale:	-	1-5 IN
Density, Unit:	- -	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied Stalwart Xtra, Bicep II Magnum, Keystone, Harness Xtra and Lumax in corn, Nashua, IA, 2004.

Trial ID: NCC 3
 Location: Nashua

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

Weed Code								ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	ZEAMD	
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								05-26-04	05-26-04	05-26-04	05-26-04	05-26-04	05-26-04	06-17-04	
Trt-Eval Interval								19 DA-A	19 DA-A	19 DA-A	19 DA-A	19 DA-A	19 DA-A	41 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code							
1	Untreated								32	0	0	0	0	0	0
2	Stalwart Xtra	5.5 L		2.9 LB A/A	2.1 QT/A		PRE	A	33	0	98	90	99	99	0
3	Stalwart Xtra Balance Pro	5.5 L 4 SC		2.9 LB A/A 0.047 LB A/A	2.1 QT/A 1.5 FL OZ/A		PRE PRE	A A	32	0	99	93	99	99	0
4	Stalwart Xtra Roundup WeatherMAX AMS	5.5 L 4.5 SL DF		1.51 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.1 QT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE POST POST	A B B	32	0	95	85	99	99	0
5	Bicep II Magnum	5.5 L		2.9 LB A/A	2.1 QT/A		PRE	A	31	0	99	88	99	99	0
6	Bicep II Magnum Balance Pro	5.5 L 4 SC		2.9 LB A/A 0.047 LB A/A	2.1 QT/A 1.5 FL OZ/A		PRE PRE	A A	32	0	99	93	99	99	0
7	Bicep II Magnum Roundup WeatherMAX AMS	5.5 L 4.5 SL DF		1.51 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.1 QT/A 22.0 FL OZ/A 17.0 LB/100 GAL		PRE POST POST	A B B	32	0	96	83	99	99	0
8	Keystone	5.25 SE		3.68 LB A/A	2.8 QT/A		PRE	A	30	0	99	85	99	99	0
9	Harness Xtra	5.6 EC		3.64 LB A/A	2.6 QT/A		PRE	A	32	0	99	85	99	99	0
10	Lumax	3.95 SE		2.47 LB A/A	2.5 QT/A		PRE	A	31	0	99	96	99	99	0
LSD (P=.05)									1.3	0.0	1.9	7.1	0.0	0.0	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL PERCENT 06-17-04 41 DA-A	ABUTH CONTROL PERCENT 06-17-04 41 DA-A	AMATA CONTROL PERCENT 06-17-04 41 DA-A	CHEAL CONTROL PERCENT 06-17-04 41 DA-A	POLPY CONTROL PERCENT 06-17-04 41 DA-A	ZEAMD PHYGEN PERCENT 07-01-04 55 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Stalwart Xtra	5.5	L	2.9 LB A/A	2.1	QT/A	PRE	A	95	58	93	92	90	0
3	Stalwart Xtra Balance Pro	5.5 4	L SC	2.9 LB A/A 0.047 LB A/A	2.1	QT/A 1.5 FL OZ/A	PRE PRE	A A	95	78	95	98	98	0
4	Stalwart Xtra Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.51 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.1	QT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE POST POST	A B B	92	45	92	85	87	0
5	Bicep II Magnum	5.5	L	2.9 LB A/A	2.1	QT/A	PRE	A	95	63	95	93	91	0
6	Bicep II Magnum Balance Pro	5.5 4	L SC	2.9 LB A/A 0.047 LB A/A	2.1	QT/A 1.5 FL OZ/A	PRE PRE	A A	96	83	95	96	96	0
7	Bicep II Magnum Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.51 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.1	QT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE POST POST	A B B	92	43	92	87	73	0
8	Keystone	5.25	SE	3.68 LB A/A	2.8	QT/A	PRE	A	93	58	96	96	88	0
9	Harness Xtra	5.6	EC	3.64 LB A/A	2.6	QT/A	PRE	A	93	60	93	92	93	0
10	Lumax	3.95	SE	2.47 LB A/A	2.5	QT/A	PRE	A	95	95	98	99	99	0
LSD (P=.05)									3.4	17.0	3.4	5.4	13.6	0.0

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								SETFA CONTROL PERCENT 07-01-04 55 DA-A	ABUTH CONTROL PERCENT 07-01-04 55 DA-A	AMATA CONTROL PERCENT 07-01-04 55 DA-A	CHEAL CONTROL PERCENT 07-01-04 55 DA-A	POLPY CONTROL PERCENT 07-01-04 55 DA-A	SETFA CONTROL PERCENT 08-04-04 48 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
1	Untreated								0	0	0	0	0	0
2	Stalwart Xtra	5.5	L	2.9 LB A/A	2.1	QT/A	PRE	A	93	58	92	83	90	90
3	Stalwart Xtra Balance Pro	5.5 4	L SC	2.9 LB A/A 0.047 LB A/A	2.1	QT/A 1.5 FL OZ/A	PRE PRE	A A	93	83	93	87	95	90
4	Stalwart Xtra Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.51 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.1	QT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE POST POST	A B B	99	99	99	99	99	98
5	Bicep II Magnum	5.5	L	2.9 LB A/A	2.1	QT/A	PRE	A	93	58	93	87	91	93
6	Bicep II Magnum Balance Pro	5.5 4	L SC	2.9 LB A/A 0.047 LB A/A	2.1	QT/A 1.5 FL OZ/A	PRE PRE	A A	95	87	93	90	96	95
7	Bicep II Magnum Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.51 LB A/A 0.77 LB AE/A 17.0 LB/100 GAL	1.1	QT/A 22.0 FL OZ/A 17.0 LB/100 GAL	PRE POST POST	A B B	99	99	99	99	99	99
8	Keystone	5.25	SE	3.68 LB A/A	2.8	QT/A	PRE	A	92	50	95	93	88	87
9	Harness Xtra	5.6	EC	3.64 LB A/A	2.6	QT/A	PRE	A	92	55	93	88	93	88
10	Lumax	3.95	SE	2.47 LB A/A	2.5	QT/A	PRE	A	92	93	98	96	99	92
LSD (P=.05)									3.9	13.3	3.7	5.8	11.3	4.9

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval									ABUTH CONTROL PERCENT 08-04-04 48 DA-B	AMATA CONTROL PERCENT 08-04-04 48 DA-B	CHEAL CONTROL PERCENT 08-04-04 48 DA-B	POLPY CONTROL PERCENT 08-04-04 48 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Untreated									0	0	0	0
2	Stalwart Xtra	5.5	L	2.9	LB A/A	2.1	QT/A	PRE	A	45	85	62	85
3	Stalwart Xtra Balance Pro	5.5 4	L SC	2.9 0.047	LB A/A LB A/A	2.1 1.5	QT/A FL OZ/A	PRE PRE	A A	73	87	75	95
4	Stalwart Xtra Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.51 0.77 17.0	LB A/A LB AE/A LB/100 GAL	1.1 22.0 17.0	QT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	96	93	98
5	Bicep II Magnum	5.5	L	2.9	LB A/A	2.1	QT/A	PRE	A	52	92	77	91
6	Bicep II Magnum Balance Pro	5.5 4	L SC	2.9 0.047	LB A/A LB A/A	2.1 1.5	QT/A FL OZ/A	PRE PRE	A A	77	92	85	96
7	Bicep II Magnum Roundup WeatherMAX AMS	5.5 4.5	L SL DF	1.51 0.77 17.0	LB A/A LB AE/A LB/100 GAL	1.1 22.0 17.0	QT/A FL OZ/A LB/100 GAL	PRE POST POST	A B B	99	98	93	98
8	Keystone	5.25	SE	3.68	LB A/A	2.8	QT/A	PRE	A	45	93	83	88
9	Harness Xtra	5.6	EC	3.64	LB A/A	2.6	QT/A	PRE	A	43	87	70	93
10	Lumax	3.95	SE	2.47	LB A/A	2.5	QT/A	PRE	A	93	96	88	99
LSD (P=.05)										15.7	7.1	12.1	12.5

Iowa State University

Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Nashua, IA, 2004.

Trial ID: NCC 4
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/INTERIM
State/Prov.: IA
Postal Code: 50658-9270 Initiation Date: 05-07-04
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 KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for crop phytotoxicity and weed control in corn.

Conclusions: Corn stands were variable when observed on May 26 and significant differences were determined between several treatments. These differences were not a result of herbicide treatment, but rather to variability in seeding rate. The highest application rates of KIH-485 and Dual II Magnum resulted in negligible corn injury when observed on May 26.

Giant foxtail, common waterhemp and common lambsquarters control was good to excellent with all treatments when observed on May 26, June 10, and July 1, nineteen, thirty-four, and fifty-five days after application, respectively. Significant differences in control between treatments were few. Velvetleaf control with KIH-485 was rate responsive. Control was poor with the lowest rate, while the higher rates provided good to excellent control, especially when observed on July 1. The addition of Atrazine to KIH-485 improved velvetleaf control. This prepackaged treatment produced a slightly higher level of control on July 1 than the mid-rate of KIH-485 applied, alone. Bicep II Magnum provided acceptable velvetleaf control on May 26, but not on June 10 and July 1. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD Variety: DEKALB DKC53-34
Planting Date: 05-07-04 Planting Method: DIRECT DRILLED
Rate: 33674 SEEDS/A Depth: 1.75 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Tillage included a spring field cultivation. Crop residue on the soil surface was 20% at planting.

SOIL DESCRIPTION

% OM: 3.3 Texture: LOAM
pH: 6.7 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	05-07-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	60 F
% Relative Humidity:	48
Wind Velocity, Unit:	15 MPH
Soil Temp., Unit:	58 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	100

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Nashua, IA, 2004.

Trial ID: NCC 4
Location: Nashua

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

Weed Code								ZEAMD	ZEAMD	SETFA	ABUTH	AMATA	CHEAL	ZEAMD	SETFA		
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL		
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date								05-26-04	05-26-04	05-26-04	05-26-04	05-26-04	05-26-04	06-10-04	06-10-04		
Trt-Eval Interval								19 DA-A	19 DA-A	19 DA-A	19 DA-A	19 DA-A	19 DA-A	34 DA-A	34 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product	Product Rate	Product Unit	Grow Stg	Appl Code								
1	Untreated									31	0	0	0	0	0	0	
2	KIH-485	60	WG	0.187	LB A/A	5.0	OZ WT/A	PRE	A	32	0	96	42	99	99	0	96
3	KIH-485	60	WG	0.223	LB A/A	5.95	OZ WT/A	PRE	A	33	0	99	63	99	99	0	98
4	KIH-485	60	WG	0.374	LB A/A	9.9	OZ WT/A	PRE	A	33	8	99	87	99	99	3	99
5	Dual II Magnum	7.64	EC	1.6	LB A/A	1.67	PT/A	PRE	A	32	0	99	8	99	99	0	96
6	Dual II Magnum	7.64	EC	3.2	LB A/A	3.34	PT/A	PRE	A	33	2	99	20	99	99	0	99
7	KIH-485/Atrazine	57.8	WG	1.38	LB A/A	38.2	OZ WT/A	PRE	A	33	0	99	90	99	99	0	98
8	KIH-485/Atrazine	55.7	WG	1.83	LB A/A	52.6	OZ WT/A	PRE	A	32	0	99	93	99	99	0	98
9	Bicep II Magnum	5.5	L	2.9	LB A/A	2.1	QT/A	PRE	A	34	0	99	87	99	99	0	96
LSD (P=.05)								2.1	2.5	1.3	5.8	0.0	0.0	1.7	3.4		

Iowa State University

Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval								ABUTH CONTROL PERCENT 06-10-04 34 DA-A	AMATA CONTROL PERCENT 06-10-04 34 DA-A	CHEAL CONTROL PERCENT 06-10-04 34 DA-A	ZEAMD PHYGEN PERCENT 07-01-04 55 DA-A	SETFA CONTROL PERCENT 07-01-04 55 DA-A	ABUTH CONTROL PERCENT 07-01-04 55 DA-A	AMATA CONTROL PERCENT 07-01-04 55 DA-A	CHEAL CONTROL PERCENT 07-01-04 55 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Unit	Grow Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	
2	KIH-485	60	WG	0.187	LB A/A	5.0	OZ WT/A	PRE	A	57	99	98	0	95	67	99	
3	KIH-485	60	WG	0.223	LB A/A	5.95	OZ WT/A	PRE	A	67	99	96	0	96	82	99	
4	KIH-485	60	WG	0.374	LB A/A	9.9	OZ WT/A	PRE	A	95	99	99	0	99	98	99	
5	Dual II Magnum	7.64	EC	1.6	LB A/A	1.67	PT/A	PRE	A	8	99	92	0	95	5	96	
6	Dual II Magnum	7.64	EC	3.2	LB A/A	3.34	PT/A	PRE	A	13	99	96	0	95	12	99	
7	KIH-485/Atrazine	57.8	WG	1.38	LB A/A	38.2	OZ WT/A	PRE	A	78	99	99	0	96	85	99	
8	KIH-485/Atrazine	55.7	WG	1.83	LB A/A	52.6	OZ WT/A	PRE	A	85	99	99	0	96	88	99	
9	Bicep II Magnum	5.5	L	2.9	LB A/A	2.1	QT/A	PRE	A	47	99	98	0	93	45	96	
LSD (P=.05)										7.2	0.0	4.3	0.0	3.0	8.1	1.8	5.2

Iowa State University

Preemergence and postemergence applied herbicides in soybean, Nashua, IA, 2004.

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 Univer
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: 05-07-04
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 soybean.
Conclusions: Negligible soybean injury was observed from some preplant incorporated (PPI) and preemergence (PRE) applied treatments on June 10. Good to excellent giant foxtail and common waterhemp control was provided by PPI and PRE treatments on June 10. Velvetleaf, common lambsquarters, and Pennsylvania smartweed control was good to excellent with PPI Pursuit Plus, PRE Domain, Gangster, and Boundary (3.0 pt/A). All other treatments provided poor to fair velvetleaf and fair to good common lambsquarters and Pennsylvania smartweed control.
Serious soybean injury was observed from early postemergence (EPOST) applied Raptor plus Ultra Blazer, Phoenix plus Select, Extreme, Phoenix, and Flexstar plus Fusion treatments when observed on July 20, nineteen days after application. Other EPOST and postemergence (POST) treatments resulted in less serious injury. On August 8, injury persisted with a number of the above mentioned EPOST treatments. Good to excellent giant foxtail, velvetleaf, common waterhemp, common lambsquarters and Pennsylvania smartweed control was observed on July 20 and August 4. Exceptions were EPOST Phoenix plus Select and Phoenix for Pennsylvania smartweed control and PRE Boundary, alone, for common lambsquarters and Pennsylvania smartweed control.
Treatment soybean yields ranged from 36 to 59 bu/A. Serious soybean injury was observed from several treatments including EPOST Raptor plus Ultra Blazer which yielded significantly less than nearly all 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.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.

Crop 1: GLXMA SOYBEAN Variety: CROW'S 2130
Planting Date: 05-07-04 Planting Method: DIRECT DRILLED
Rate: 196433 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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a spring tandem disking and field cultivation. Preplant incorporated (PPI) treatments were incorporated one pass with a field cultivator operating 1 to 2 inches deep. Crop residue on the soil surface was 85% at planting.

SOIL DESCRIPTION

% OM: 4.5 Texture: LOAM
pH: 6.9 Soil Name: FLOYD, KENYON, OSTRANDER, CLYDE
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	05-07-04	06-17-04	07-01-04	07-28-04
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PPI, PRE	EPOST	POST	SPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	62 F	75 F	80 F	77 F
% Relative Humidity:	48	76	76	75
Wind Velocity, Unit:	15 MPH	5 MPH	0 MPH	4 MPH
Soil Temp., Unit:	58 F	71 F	73 F	75 F
Soil Moisture:	ADEQUATE	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	100	35	10	20

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	GLXMA -	GLXMA V2 - V3	GLXMA R1	GLXMA R 3 - R 4
Stage Scale:	-	DESC	DESC	DESC
Height, Unit:	-	8 IN	15 IN	30 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	SETFA -	SETFA 1-4L, 2T	SETFA 2-4L, 3T	SETFA -
Stage Scale:	-	0.5-4 IN	1-12 IN	-
Density, Unit:	- -	< 1 FT2	0-5 FT2	- -
Weed 2 Code, Stage:	ABUTH	ABUTH COTYL-5L	ABUTH COTYL-5L	ABUTH -
Stage Scale:	-	0.5-3 IN	0.5-3 IN	-
Density, Unit:	- -	0-1 FT2	0-1 FT2	- -
Weed 3 Code, Stage:	AMATA -	AMATA 2-NUM	AMATA NUMEROUS	AMATA -
Stage Scale:	-	0.5-3 IN	0.5-5 IN	-
Density, Unit:	- -	0-1 FT2	0-2 FT2	- -
Weed 4 Code, Stage:	CHEAL -	CHEAL 4-NUM	CHEAL NUMEROUS	CHEAL -
Stage Scale:	-	0.5-3 IN	0.5-10 IN	-
Density, Unit:	- -	0-1 FT2	0-2 FT2	- -
Weed 5 Code, Stage:	POLPY -	POLPY 4-8 LEAF	POLPY NUMEROUS	POLPY NUMEROUS
Stage Scale:	-	1-4 IN	3-14 IN	4-12 IN
Density, Unit:	- -	< 1 FT2	0-1 FT2	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

Postemergence applied Liberty, Option, Equip and Steadfast alone, or with various tank-mix partners for woolly cupgrass control in corn, Ogden, IA, 2004.

Trial ID: OCW 1 Study Dir.: Owen/Lux/Franzenburg
 Location: Ogden 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: Ogden **Trial Status:** ONE-YEAR/FINAL
State/Prov.: IA
Postal Code: 50212 **Initiation Date:** 04-28-04
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 Option and Equip alone, and with tank-mix partners for crop phytotoxicity and weed control in corn.
Conclusions: Significant differences in corn stand between treatments were observed on August 6. These differences, however, were not caused by the herbicide treatment, but rather by the inherent variability in seeding rate. Preemergence (PRE) applied treatments resulted in little to no corn injury when observed June 11, prior to mid-postemergence (MPOST) applications. On June 11, PRE treatments of Balance Pro provided 68 to 80% woolly cupgrass, 89 to 99% velvetleaf, 88 to 96% common waterhemp, and 99% common lambsquarters control. PRE G-Max Lite plus Balance Pro and Harness Xtra plus Balance Pro provided 85 and 82% woolly cupgrass control, respectively, and 93% and higher control of the broadleaf species.
 MPOST treatments resulted in corn injury when observed on June 19 and June 25, seven and thirteen days after application, respectively. MPOST treatments improved the control of woolly cupgrass, velvetleaf, and common waterhemp when observed on June 19 and July 9. The best overall control was provided by Liberty plus Atrazine on these dates. All other treatments provided fair to good woolly cupgrass, and good to excellent velvetleaf, common waterhemp, and 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 33R79
Planting Date: 04-28-04 **Planting Method:** DIRECT DRILLED
Rate: 30200 SEEDS/A **Depth:** 1.5 IN
Row Spacing: 30 IN **Seed Bed:** FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 150 lbs/A actual N applied as urea. Crop residue on the soil surface was 25% at planting.

SOIL DESCRIPTION

% OM: 3.5 **Texture:** SILTY CLAY LOAM
pH: 6.5 **Soil Name:** CANISTEO, CLARION, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	04-29-04	06-12-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	MPOST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	66 F	86 F
% Relative Humidity:	53	40
Wind Velocity, Unit:	5 MPH	2 MPH
Soil Temp., Unit:	62 F	77 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	100	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMD -	ZEAMD V 6
Stage Scale:	-	DESC
Height, Unit:	-	14 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	ERBVI -	ERBVI 1-4 L, 2T
Stage Scale:	-	0.5-2 IN
Density, Unit:	- -	0-5 FT ²
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-4 L
Stage Scale:	-	0.5-2 IN
Density, Unit:	- -	0-1 FT ²
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-NUM
Stage Scale:	-	0.5-1 IN
Density, Unit:	- -	0-1 FT ²
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	0.5-1 IN
Density, Unit:	- -	< 1 FT ²

APPLICATION EQUIPMENT

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

Iowa State University

Postemergence applied Liberty, Option, Equip and Steadfast alone, or with various tank-mix partners for woolly cupgrass control in corn, Ogden, IA, 2004.

Trial ID: OCW 1
Location: Ogden

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

Weed Code										ZEAMD	ZEAMD	ERBVI	ABUTH	AMATA	CHEAL	ZEAMD	ZEAMD
Rating Data Type										STAND	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN	PHYGEN
Rating Unit										17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										08-06-04	06-11-04	06-11-04	06-11-04	06-11-04	06-11-04	06-19-04	06-25-04
Trt-Eval Interval										99 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	7 DA-B	13 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Unit	Product Rate	Product Unit	Grow Stg	Appl Code								
1	Untreated									26	0	0	0	0	0	0	0
2	Balance Pro Liberty Atrazine AMS	4 1.67 4 AMS	SC SL SL DF	0.047 0.42 1.0 3.0	LB A/A LB A/A LB A/A LB/A	1.5 32.0 2.0 3.0	FL OZ/A FL OZ/A PT/A LB/A	PRE MPOST MPOST MPOST	A B B B	28	0	75	98	95	99	0	0
3	Balance Pro Option MSO AMS	4 35 L AMS	SC WG L DF	0.047 0.0328 1.5 1.5	LB A/A LB A/A PT/A LB/A	1.5 1.5 1.5 1.5	FL OZ/A OZ WT/A PT/A LB/A	PRE MPOST MPOST MPOST	A B B B	30	0	77	99	93	99	18	8
4	Balance Pro Equip MSO AMS	4 32 L AMS	SC WG L DF	0.047 0.03 1.5 1.5	LB A/A LB A/A PT/A LB/A	1.5 1.5 1.5 1.5	FL OZ/A OZ WT/A PT/A LB/A	PRE MPOST MPOST MPOST	A B B B	28	0	80	96	93	99	15	8
5	Balance Pro Option MSO AMS	4 35 L AMS	SC WG L DF	0.047 0.0383 1.5 1.5	LB A/A LB A/A PT/A LB/A	1.5 1.75 1.5 1.5	FL OZ/A OZ WT/A PT/A LB/A	PRE MPOST MPOST MPOST	A B B B	27	0	72	89	88	99	15	7
6	Balance Pro Steadfast COC AMS	4 75 L AMS	SC WG L DF	0.047 0.0352 1.0 1.5	LB A/A LB A/A QT/A LB/A	1.5 0.75 1.0 1.5	FL OZ/A OZ WT/A QT/A LB/A	PRE MPOST MPOST MPOST	A B B B	29	0	73	98	88	99	12	5
7	Balance Pro Option Callisto Atrazine MSO AMS	4 35 4 4 L AMS	SC WG SC SL L DF	0.047 0.0328 0.0625 0.25 1.5 1.5	LB A/A LB A/A LB A/A LB A/A PT/A LB/A	1.5 1.5 2.0 0.5 1.5 1.5	FL OZ/A OZ WT/A FL OZ/A PT/A PT/A LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A B B B B B	29	0	77	98	91	99	8	3
8	Balance Pro Equip Callisto Atrazine MSO AMS	4 32 4 4 L AMS	SC WG SC SL L DF	0.047 0.03 0.0625 0.25 1.5 1.5	LB A/A LB A/A LB A/A LB A/A PT/A LB/A	1.5 1.5 2.0 0.5 1.5 1.5	FL OZ/A OZ WT/A FL OZ/A PT/A PT/A LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A B B B B B	28	0	68	94	88	99	12	7
9	Balance Pro Steadfast Callisto Atrazine COC AMS	4 75 4 4 L AMS	SC WG SC SL L DF	0.047 0.0352 0.0625 0.25 1.0 1.5	LB A/A LB A/A LB A/A LB A/A QT/A LB/A	1.5 0.75 2.0 0.5 1.0 1.5	FL OZ/A OZ WT/A FL OZ/A PT/A QT/A LB/A	PRE MPOST MPOST MPOST MPOST MPOST	A B B B B B	29	0	75	98	96	99	8	3
10	Balance Pro Callisto Atrazine COC 28% UAN	4 4 4 L L	SC SC SL L L	0.047 0.0625 0.25 1.0 2.5	LB A/A LB A/A LB A/A % V/V % V/V	1.5 2.0 0.5 1.0 2.5	FL OZ/A FL OZ/A PT/A % V/V % V/V	PRE MPOST MPOST MPOST MPOST	A B B B B	30	0	73	90	90	99	2	0
11	G-Max Lite Balance Pro	5 4	SC SC	2.19 0.047	LB A/A LB A/A	3.5 1.5	PT/A FL OZ/A	PRE PRE	A A	28	3	85	93	98	99	3	2
12	Harness Xtra Balance Pro	6 4	SC SC	3.45 0.047	LB A/A LB A/A	2.3 1.5	QT/A FL OZ/A	PRE PRE	A A	28	0	82	98	99	99	2	0
LSD (P=.05)										2.3	1.4	12.7	12.3	11.7	0.0	3.9	4.5

Iowa State University

Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ogden, IA, 2004.

Trial ID: OCW 2
Location: Ogden

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: Ogden Trial Status: ONE-YEAR/INTERIM
State/Prov.: IA
Postal Code: 50212 Initiation Date: 04-28-04
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 KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for crop phytotoxicity and weed control in corn.

Conclusions: Corn stands were variable when observed on August 6, however, no significant differences between herbicide treatments were determined. Corn injury was noted on May 19 and June 1 with the highest preemergence (PRE) application rates of KIH-485, Dual II Magnum and several other treatments. Woolly cupgrass and velvetleaf control was rate responsive to KIH-485. Generally, control of these species was poor to good with KIH-485. Twenty days after application on May 19, the 5.95 oz wt/A and 7.15 oz wt/A rates of KIH-485 provided 53 and 65% woolly cupgrass control, respectively. Velvetleaf control was 50 and 62%. Control of both species improved with these treatment rates when observed on June 1 and 25, thirty-three and fifty-seven days after application, respectively. On June 25, KIH-485 provided 77 and 87% woolly cupgrass control. Velvetleaf control was 70 and 88% on June 25.

Woolly cupgrass and velvetleaf control with Dual II Magnum was also rate responsive. Generally, woolly cupgrass control was poor to fair and ranged from 40 to 65% on June 19, and 43 to 73% on June 25. Velvetleaf control was unacceptable with Dual II Magnum on all observation dates.

KIH-485 & Atrazine treatments generally provided a similar level of woolly cupgrass control as KIH-485 applied alone, but demonstrated a higher level of velvetleaf control. Bicep II Magnum behaved similarly to the low rate of Dual II Magnum applied alone, but resulted in much better velvetleaf control. (Dept. of Agronomy, Iowa State University, Ames).

Crop 1: ZEAMD CORN, FIELD Variety: PIONEER 33R79
Planting Date: 04-28-04 Planting Method: DIRECT DRILLED
Rate: 30200 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included a fall chisel plowing and spring field cultivation. Fertilization included 150 lbs/A actual N applied as urea. Crop residue on the soil surface was 25% at planting.

SOIL DESCRIPTION

% OM: 3.5 Texture: SILTY CLAY LOAM
pH: 6.5 Soil Name: CANISTEO, CLARION, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A
Application Date:	04-29-04
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	66 F
% Relative Humidity:	53
Wind Velocity, Unit:	5 MPH
Soil Temp., Unit:	60 F
Soil Moisture:	ADEQUATE
% Cloud Cover:	100

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

Iowa State University

Preemergence applied KIH-485, Dual II Magnum, KIH-485 plus Atrazine, and Bicep II Magnum for weed control in corn, Ogden, IA, 2004.

Trial ID: OCW 2

Study Dir.: Owen/Lux/Franzenburg

Location: Ogden

Investigator: Owen/Hartzler/Pringnitz

Weed Code								ZEAMD	ZEAMD	ERBVI	ABUTH	ZEAMD	ERBVI	ABUTH	ZEAMD	
Rating Data Type								STAND	PHYGEN	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	PHYGEN	
Rating Unit								17.42 FT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	
Rating Date								08-06-04	05-19-04	05-19-04	05-19-04	06-01-04	06-01-04	06-01-04	06-25-04	
Trt-Eval Interval								99 DA-A	20 DA-A	20 DA-A	20 DA-A	33 DA-A	33 DA-A	33 DA-A	57 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Rate	Grow Unit	Appl Code								
1	Untreated								26	0	0	0	0	0	0	0
2	KIH-485	60	WG	0.223	LB A/A	5.95	OZ WT/A	PRE A	29	0	53	50	0	67	65	0
3	KIH-485	60	WG	0.267	LB A/A	7.15	OZ WT/A	PRE A	28	0	65	62	2	78	88	0
4	KIH-485	60	WG	0.446	LB A/A	11.9	OZ WT/A	PRE A	28	5	83	75	13	85	88	2
5	Dual II Magnum	7.64	EC	1.9	LB A/A	2.0	PT/A	PRE A	27	0	40	10	0	43	7	0
6	Dual II Magnum	7.64	EC	3.83	LB A/A	4.0	PT/A	PRE A	28	2	65	18	2	72	17	0
7	KIH-485/Atrazine	57.8	WG	1.65	LB A/A	45.7	OZ WT/A	PRE A	27	0	68	85	2	78	92	0
8	KIH-485/Atrazine	55.7	WG	2.18	LB A/A	63.0	OZ WT/A	PRE A	28	2	68	87	0	75	90	0
9	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE A	27	0	52	50	0	55	70	0
LSD (P=.05)									3.0	2.4	9.8	13.9	5.4	12.6	10.4	1.7

Iowa State University

Weed Code										ERBVI	ABUTH
Rating Data Type										CONTROL	CONTROL
Rating Unit										PERCENT	PERCENT
Rating Date										06-25-04	06-25-04
Trt-Eval Interval										57 DA-A	57 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
1	Untreated									0	0
2	KIH-485	60	WG	0.223	LB A/A	5.95	OZ WT/A	PRE	A	77	70
3	KIH-485	60	WG	0.267	LB A/A	7.15	OZ WT/A	PRE	A	87	88
4	KIH-485	60	WG	0.446	LB A/A	11.9	OZ WT/A	PRE	A	90	90
5	Dual II Magnum	7.64	EC	1.9	LB A/A	2.0	PT/A	PRE	A	43	7
6	Dual II Magnum	7.64	EC	3.83	LB A/A	4.0	PT/A	PRE	A	73	15
7	KIH-485/Atrazine	57.8	WG	1.65	LB A/A	45.7	OZ WT/A	PRE	A	85	92
8	KIH-485/Atrazine	55.7	WG	2.18	LB A/A	63.0	OZ WT/A	PRE	A	88	90
9	Bicep II Magnum	5.5	L	3.57	LB A/A	2.6	QT/A	PRE	A	52	52
LSD (P=.05)										10.6	12.0

Iowa State University

V-10137 and Select applied postemergence for woolly cupgrass control in soybean, Ogden, IA, 2004.

Trial ID: OSW 1
Location: Ogden

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: 04-29-04
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 V10137 and Select for woolly cupgrass control in soybean.
Conclusions: Soybean injury ranged from 2 to 10% with the postemergence (POST) applications when observed on June 19, seven days after application. Injury was negligible when observed on June 25, and July 9.
On June 19, woolly cupgrass control was 77 to 83% with V10137 and Select applied alone. Tank-mixtures of V10137 or Select with FirstRate resulted in antagonism and provided 43 to 48% control on June 19. V10137 plus COC plus AMS provided 92% woolly cupgrass control on June 25, compared to 87% control from V10137 plus NIS plus AMS. Furthermore, V10137 plus COC plus AMS provided the same control as Select plus COC plus AMS. On July 9, twenty-seven days after application, woolly cupgrass control was 90 to 95% with V10137 and Select applied alone. Tank-mixtures of V10137 or Select with FirstRate provided 75 to 78% woolly cupgrass control. Common waterhemp and common lambsquarters control was not acceptable with any of the treatments on any evaluation date. (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: GLXMA SOYBEAN Variety: ASGROW AG 2403
Planting Date: 04-29-04 Planting Method: DIRECT DRILLED
Rate: 151000 SEEDS/A Depth: 1.5 IN
Row Spacing: 30 IN Seed Bed: FINE/TRASHY
Soil Moisture: NORMAL

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	2003

MAINTENANCE

Field Prep./Maintenance: Tillage included spring field cultivation. Crop residue on the soil surface was 25% at planting.

SOIL DESCRIPTION

Texture: SILTY CLAY LOAM
Soil Name: CANISTEO, CLARION, NICOLLET
Fert. Level: EXCELLENT

Overall Moisture Conditions: NORMAL

Iowa State University

APPLICATION DESCRIPTION

	A	B
Application Date:	04-29-04	06-12-04
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	66 F	86 F
% Relative Humidity:	53	40
Wind Velocity, Unit:	5 MPH	2 MPH
Soil Temp., Unit:	62 F	77 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	100	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA -	GLXMA V 3
Stage Scale:	-	DESC
Height, Unit:	-	6 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	ERBVI -	ERBVI 1-4 L, 3T
Stage Scale:	-	0.5-5 IN
Density, Unit:	- -	0-10 FT2
Weed 2 Code, Stage:	ABUTH -	ABUTH COTYL-4 L
Stage Scale:	-	0.5-3 IN
Density, Unit:	- -	< 1 FT2
Weed 3 Code, Stage:	AMATA -	AMATA COTYL-NUM
Stage Scale:	-	0.5-4 IN
Density, Unit:	- -	0-5 FT2
Weed 4 Code, Stage:	CHEAL -	CHEAL NUMEROUS
Stage Scale:	-	0.5-4 IN
Density, Unit:	- -	< 1 FT2

APPLICATION EQUIPMENT

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

Iowa State University

V-10137 and Select applied postemergence for woolly cupgrass control in soybean, Ogden, IA, 2004.

Trial ID: OSW 1
 Location: Ogden

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

Weed Code										GLYMA	ERBVI	AMATA	GLYMA	ERBVI	AMATA	GLYMA	ERBVI
Rating Data Type										PHYGEN	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL	PHYGEN	CONTROL
Rating Unit										PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
Rating Date										06-19-04	06-19-04	06-19-04	06-25-04	06-25-04	06-25-04	07-09-04	07-09-04
Trt-Eval Interval										7 DA-B	7 DA-B	7 DA-B	13 DA-B	13 DA-B	13 DA-B	27 DA-B	27 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Product Rate	Product Rate	Grow Unit	Stg	Appl Code								
1	Untreated									0	0	0	0	0	0	0	0
2	Python V10137 NIS AMS	80 WG 1 EC L DF	0.05 LB A/A 0.125 LB A/A 0.25 % V/V 2.5 LB/A	1.0 OZ WT/A 16.0 FL OZ/A 0.25 % V/V 2.5 LB/A	PRE A POST B POST B POST B					3	78	0	3	87	0	2	90
3	Python V10137 COC AMS	80 WG 1 EC L DF	0.05 LB A/A 0.125 LB A/A 1.0 % V/V 2.5 LB/A	1.0 OZ WT/A 16.0 FL OZ/A 1.0 % V/V 2.5 LB/A	PRE A POST B POST B POST B					2	83	0	2	92	0	0	95
4	Python Select COC AMS	80 WG 2 EC L DF	0.05 LB A/A 0.125 LB A/A 1.0 % V/V 2.5 LB/A	1.0 OZ WT/A 8.0 FL OZ/A 1.0 % V/V 2.5 LB/A	PRE A POST B POST B POST B					5	77	0	3	92	0	0	93
5	Python FirstRate Select COC AMS	80 WG 84 WG 2 EC L DF	0.05 LB A/A 0.0157 LB A/A 0.125 LB A/A 1.0 % V/V 2.5 LB/A	1.0 OZ WT/A 0.3 OZ WT/A 8.0 FL OZ/A 1.0 % V/V 2.5 LB/A	PRE A POST B POST B POST B POST B					3	43	10	3	67	13	2	78
6	Python FirstRate V10137 COC AMS	80 WG 84 WG 1 EC L DF	0.05 LB A/A 0.0157 LB A/A 0.125 LB A/A 1.0 % V/V 2.5 LB/A	1.0 OZ WT/A 0.3 OZ WT/A 16.0 FL OZ/A 1.0 % V/V 2.5 LB/A	PRE A POST B POST B POST B POST B					10	48	15	7	63	13	5	75
LSD (P=.05)										3.2	7.0	0.0	4.6	7.2	4.6	2.7	7.0

Iowa State University

Weed Code										AMATA
Rating Data Type										CONTROL
Rating Unit										PERCENT
Rating Date										07-09-04
Trt-Eval Interval										27 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Untreated									0
2	Python	80	WG	0.05	LB A/A	1.0	OZ WT/A	PRE	A	0
	V10137	1	EC	0.125	LB A/A	16.0	FL OZ/A	POST	B	
	NIS		L	0.25	% V/V	0.25	% V/V	POST	B	
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	B	
3	Python	80	WG	0.05	LB A/A	1.0	OZ WT/A	PRE	A	0
	V10137	1	EC	0.125	LB A/A	16.0	FL OZ/A	POST	B	
	COC		L	1.0	% V/V	1.0	% V/V	POST	B	
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	B	
4	Python	80	WG	0.05	LB A/A	1.0	OZ WT/A	PRE	A	0
	Select	2	EC	0.125	LB A/A	8.0	FL OZ/A	POST	B	
	COC		L	1.0	% V/V	1.0	% V/V	POST	B	
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	B	
5	Python	80	WG	0.05	LB A/A	1.0	OZ WT/A	PRE	A	8
	FirstRate	84	WG	0.0157	LB A/A	0.3	OZ WT/A	POST	B	
	Select	2	EC	0.125	LB A/A	8.0	FL OZ/A	POST	B	
	COC		L	1.0	% V/V	1.0	% V/V	POST	B	
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	B	
6	Python	80	WG	0.05	LB A/A	1.0	OZ WT/A	PRE	A	12
	FirstRate	84	WG	0.0157	LB A/A	0.3	OZ WT/A	POST	B	
	V10137	1	EC	0.125	LB A/A	16.0	FL OZ/A	POST	B	
	COC		L	1.0	% V/V	1.0	% V/V	POST	B	
	AMS		DF	2.5	LB/A	2.5	LB/A	POST	B	
LSD (P=.05)										8.3