United States Department of Agriculture

National Agricultural Statistics Service

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Agricultural Chemical Usage

1999 Cattle and Cattle Facilities

April 2000

1999 Agricultural Chemical Use Estimates for Cattle and Cattle Facilities

Overview: The agricultural chemical use estimates in this report are based on data compiled from a survey conducted in the fall of 1999.

This report provides insecticide use information on the cattle sector of agriculture. Data are published separately for beef cattle and dairy cattle. All data refer to the on-farm use of chemical active ingredients contained in insecticides applied during the 1999 calendar year.

Insecticides are applied to cattle and cattle facilities to control pasture and confinement flies, lice, grubs, and other pests.

This report excludes pharmaceutical products that treat cattle for only internal pests. A pharmaceutical is classified as a drug and is regulated by the Federal Drug Administration (FDA). Pharmaceuticals generally target internal livestock pests such as viruses, bacteria, and worms. Some products can be classified as either a pesticide or a pharmaceutical because they can treat both external and internal pests. Examples of dual purpose products are Doramectin, Eprinomectin, and Ivermectin. These products can be applied to cattle internally as an injectable or orally, or externally as a pour-on, and are included in this report.

Some active ingredients, such as xylene, piperonyl butoxide, and petroleum distillate are primarily carriers, diluents, synergists, or repellents. These are classified by the Environmental Protection Agency (EPA) as pesticides and are included in this report.

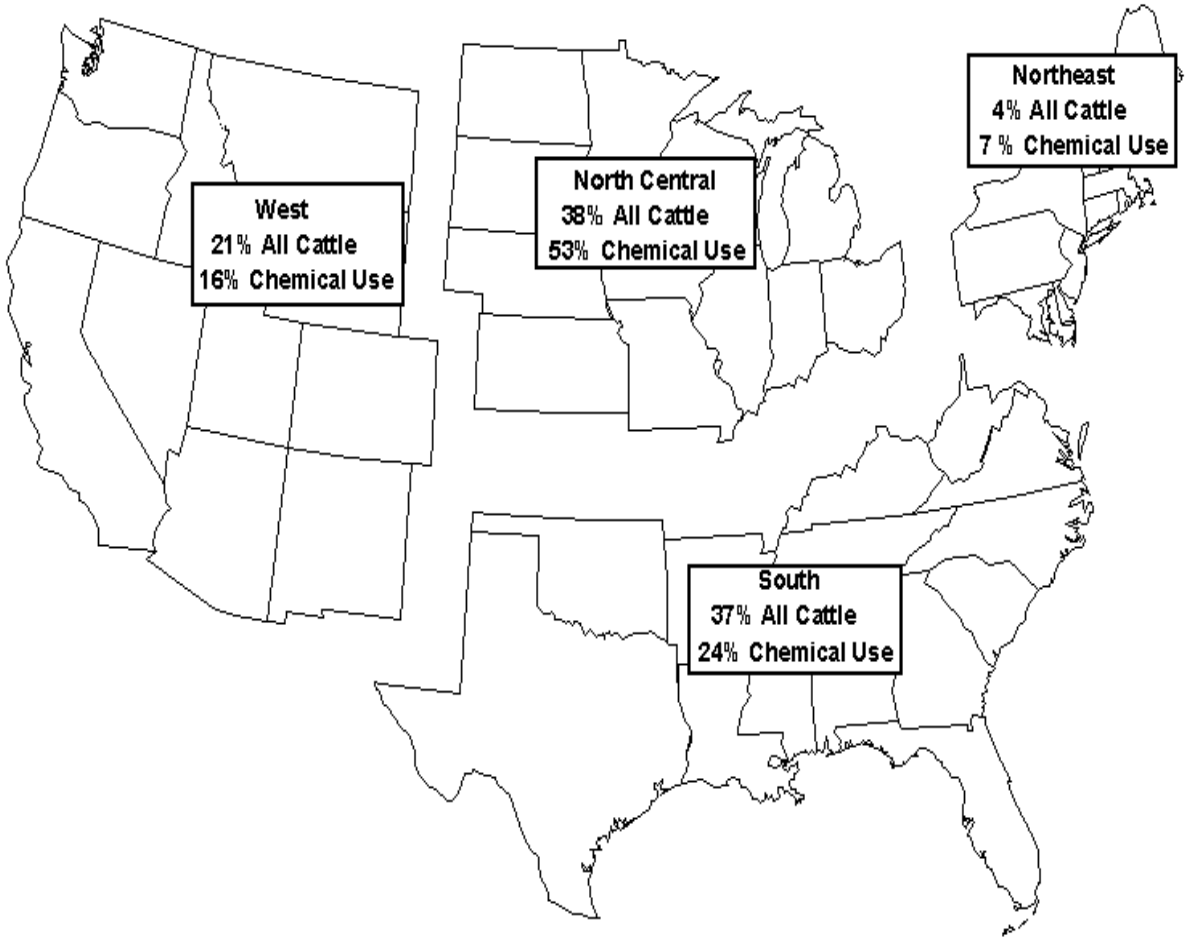
Cattle inventories by State, region, and U.S. are reprinted in this report from a previous NASS release. This table is included for informational purposes only.

Chemical data are provided on a rate per head per application and rate per head per year basis. Some cattle received no chemical applications in 1999, other cattle received multiple applications of the same chemical, and other cattle received applications of different chemicals. The number of times a chemical is applied varies significantly based on product formulation, method of application and pest stress at particular locations. The rate per head data cannot be used to calculate the actual number of head treated with a particular chemical.

Insecticide use information on chemical applications made to cattle facilities is also included in this report. Herbicide and termite chemical applications are excluded. Insecticide use data on cattle facilities are published separately for beef and dairy.

Sample sizes were adequate to publish data only by region and U.S. level.

Cattle Inventory and Cattle Chemical Use Percent of Total by Region, 1999 1/



Regions:

Northeast	CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT
North Central	IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI
South	AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, WV
West	AZ, CA, CO, ID, MT, NV, NM, OR, UT, WA, WY

Alaska and Hawaii were not included in the survey.

1 Percent of total quantity of chemical active ingredients applied to cattle and cattle facilities.

Number of Summarized Reports

Cattle Chemical Use by Region and U.S., 1999

Treatment Site	Region				United States
	North-east	North Central	South	West	
	Number	*Number*	*Number*	*Number*	*Number*
Beef Cattle	94	3,779	4,098	1,897	9,868
Dairy Cattle	217	489	162	53	921
All Cattle	311	4,268	4,260	1,950	10,789

Cattle Facility Chemical Use by Region and U.S., 1999

Treatment Site	Region				United States
	North-east	North Central	South	West	
	Number	*Number*	*Number*	*Number*	*Number*
Beef Cattle Facilities	20	122	137	67	346
Dairy Cattle Facilities	227	378	98	58	761
All Cattle Facilities	247	500	235	125	1,107

Cattle Inventories: Total Number of Head, by State and Region, 1999 [1]

State and Region	All Cattle	State and Region	All Cattle
	1,000 Head		*1,000 Head*
CT	65	AL	1,500
DE	29	AR	1,820
ME	102	FL	1,830
MD	250	GA	1,300
MA	58	KY	2,420
NH	47	LA	900
NJ	53	MS	1,160
NY	1,460	NC	980
PA	1,670	OK	5,300
RI	6	SC	480
VT	310	TN	2,180
		TX	14,100
Northeast	4,050	VA	1,700
		WV	440
IL	1,510	South	36,110
IN	1,010		
IA	3,700	AZ	810
KS	6,550	CA	5,100
MI	1,050	CO	3,200
MN	2,500	ID	1,900
MO	4,400	MT	2,600
NE	6,700	NV	510
ND	1,920	NM	1,630
OH	1,230	OR	1,530
SD	3,900	UT	890
WI	3,400	WA	1,170
		WY	1,560
North Central	37,870		
		West	20,900
US [2]	98,930		

[1] January 1, 1999.
[2] Excluding AK and HI.

Highlights

All Cattle: Agricultural producers applied 2.16 million pounds of insecticides to beef and dairy cattle in 1999. Applications made to beef cattle accounted for 72 percent of the total while insecticide use on dairy cattle accounted for 28 percent.

Xylene was the top active ingredient in total quantity used at 459,700 pounds followed by tetrachlorvinphos at 287,300 pounds and piperonyl butoxide at 154,300 pounds. These three active ingredients accounted for 42 percent of the U.S. total.

Of the total chemical applications made to cattle in 1999, the method of application was 37 percent by spray, 28 percent by pour-on, 9 percent by rubbing device, 9 percent by dust and 7 percent by injectable shot. All other methods (dip, mineral block, pill, ear tags, and other) accounted for the remaining 10 percent of applications.

Beef Cattle: A total of 1.55 million pounds of insecticides was applied to beef cattle in 1999. The top active ingredients in total pounds used on beef cattle were xylene, at 452,400 pounds, tetrachlorvinphos at 219,300 pounds, malathion at 140,900 pounds and famphur at 129,200 pounds.

Of the total chemical applications made to beef cattle in 1999, the method of application was 39 percent by pour-on, 18 percent by spray, and 11 percent by injectable shot. All other methods (dip, dust, mineral block, rubbing device, pill, ear tags, and other) accounted for the remaining 32 percent of applications.

Dairy Cattle: A total of 606,400 pounds of insecticides was applied to dairy cattle in 1999. Piperonyl butoxide was the predominant active ingredient in total quantity used on dairy cattle at 101,700 pounds. Dichlorvos had the second highest quantity used at 96,200 pounds followed by cyfluthrin with 92,200 pounds.

Of the total chemical applications made to dairy cattle in 1999, the method of application was 65 percent by spray, 13 percent by pour-on, and 10 percent by both rubbing device and dust. All other methods (dip, mineral block, injectable shots, pill, ear tags, and other) accounted for the remaining 2 percent of applications.

All Cattle Facilities: A total of 354,400 pounds of insecticides was applied to cattle facilities in 1999. Tetrachlorvinphos had the highest quantity used at 125,200 pounds. Dimethoate had the second highest quantity used at 98,700 pounds followed by diazinon with 39,300 pounds.

Beef Cattle Facilities: A total of 148,400 pounds of insecticides was used to treat beef cattle facilities in 1999. Diazinon was the predominant active ingredient in treating beef cattle facilities with 39,300 pounds used. Malathion had the second highest quantity used at 15,100 pounds followed by dichlorvos with 14,600 pounds.

Dairy Cattle Facilities: A total of 206,000 pounds of insecticides was applied to milk cattle facilities in 1999. Dimethoate accounted for 48 percent of the total at 98,700 pounds. Piperonyl butoxide accounted for 29,500 pounds or 14 percent of the total.

Insecticide Use by Region, 1999
Total Amount Applied

Region	All Cattle	Beef Cattle	Dairy Cattle
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*
Northeast	118.9	6.5	112.4
North Central	1,164.2	786.2	378.1
South	544.2	431.8	112.4
West	328.0	324.5	3.5
United States	2,155.3	1,548.9	606.4

All Cattle: Agricultural Chemical Applications, Total Applied, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
Insecticides:					
Acephate		*	*		*
Amitraz	*		*		*
Bendiocarb		*	*	*	0.2
Bomyl			*		*
Butoxypolypr. glycol		*	0.9	*	2.1
Carbaryl		83.5	23.4	0.1	107.0
Chlorpyrifos		2.8	*	*	6.5
Coumaphos	0.8	20.6	26.3	10.4	58.1
Crotoxyphos		*			*
Cyfluthrin	14.9	78.9	1.0	0.2	95.0
Cypermethrin		0.4	*	*	0.5
Cyromazine		*	*		0.2
Diazinon	*	17.3	19.5	*	47.2
Dichlorvos	*	88.9	21.1	*	114.9
Diflubenzuron	*	*	*		4.1
Dimethoate	*	*	3.6		8.4
Dioxathion		*	*		0.4
Dipropyl isocinchom.		0.7	*	*	0.7
Doramectin	*	1.5	*	1.0	3.2
Eprinomectin	0.2	0.3	0.4	0.1	1.0
Ethion		4.8	3.7	0.4	8.8
Famphur		72.9	*	*	131.3
Fenthion	*	14.2	*	6.2	26.1
Fenvalerate		0.5	0.5	0.1	1.1
Flucythrinate		*	*	*	0.4
Ivermectin	0.4	3.6	5.5	1.3	10.9
Lambda-cyhalothrin		1.5	*	*	5.3
Lindane		*	11.3	*	11.3
Malathion	*	30.8	107.6	*	143.3
Methomyl		*	*		*
Methoprene		2.1	0.3	0.2	2.6
Methoxychlor	43.9	*	62.4	*	111.6
Mineral Oil			*		*
Moxidectin	*	0.4	0.4	*	6.8
N-octy-bicycloheptene	*	1.7	*		1.7
Naled		*	*	*	8.2
Permethrin	10.1	67.6	36.3	8.6	122.6
Petroleum distillate	*	38.7	77.7	*	122.0
Phosmet		*	13.5	*	24.0
Piperonyl butoxide	14.1	128.4	10.4	1.5	154.3
Potassium Salts			*		*
Pirimiphos-methyl	*	2.1	2.0	*	4.9
Pyrethrins	2.3	20.1	*	*	22.9
Pyriproxyfen		*			*
Sulfur		*	*	*	*
Tetrachlorvinphos	17.5	182.3	76.1	11.3	287.3
Toxaphene		*	*		1.7
Trichlorfon		*	4.5	*	5.1
Xylene		255.2	*	*	459.7
Zeta-cypermethrin		*	0.7	*	1.3
Total Insecticides	118.9	1,164.2	544.2	328.0	2,155.3

* Chemical reported but not published to avoid disclosure.

Beef Cattle: Agricultural Chemical Applications, Total Applied, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
Insecticides:					
Acephate			*		*
Amitraz			*		*
Bendiocarb		*	*	*	*
Bomyl			*		*
Butoxypolypr. glycol		*	0.9	*	2.1
Carbaryl		*	*	0.1	55.4
Chlorpyrifos		*	*	*	6.1
Coumaphos	0.2	19.2	25.2	10.1	54.8
Crotoxyphos		*			*
Cyfluthrin	*	1.8	0.8	*	2.8
Cypermethrin		0.4	*	*	*
Cyromazine		*	*		*
Diazinon		*	*	*	37.8
Dichlorvos	*	10.1	*	*	18.7
Diflubenzuron	*	*	*		*
Dimethoate	*	*	*		*
Dioxathion		*	*		0.4
Dipropyl isocinchom.		*	*	*	*
Doramectin	*	*	*	*	3.1
Eprinomectin	*	*	0.3	*	0.5
Ethion		*	*	0.4	*
Famphur		*	*	*	129.2
Fenthion	*	*	*	6.2	25.7
Fenvalerate		*	*	0.1	1.0
Flucythrinate		*	*	*	*
Ivermectin	0.1	3.3	5.4	1.2	10.0
Lambda-cyhalothrin		*	*	*	4.1
Lindane		*	11.3	*	11.3
Malathion	*	*	*	*	140.9
Methomyl		*	*		*
Methoprene		0.2	0.3	0.2	0.7
Methoxychlor	*	*	45.8	*	50.7
Mineral Oil			*		*
Moxidectin	*	*	*	*	*
N-octy-bicycloheptene		*	*		0.3
Naled		*	*	*	8.2
Permethrin	4.5	33.2	25.1	8.0	70.7
Petroleum distillate	*	*	*	*	91.1
Phosmet		*	13.5	*	*
Piperonyl butoxide	*	42.4	*	*	52.6
Potassium Salts			*		*
Pirimiphos-methyl		*	1.8	*	4.5
Pyrethrins	*	6.9	*	*	7.4
Pyriproxyfen					
Sulfur		*	*	*	*
Tetrachlorvinphos	*	180.8	*	*	219.3
Toxaphene		*	*		*
Trichlorfon		*	4.5	*	5.1
Xylene		*	*	*	452.4
Zeta-cypermethrin		*	*	*	*
Total Insecticides	6.5	786.2	431.8	324.5	1,548.9

* Chemical reported but not published to avoid disclosure.

Dairy Cattle: Agricultural Chemical Applications, Total Applied, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
Insecticides:					
Acephate		*			*
Amitraz	*				*
Bendiocarb		*			*
Bomyl					
Butoxypolypr. glycol					
Carbaryl		*	*		51.6
Chlorpyrifos		*	*		0.4
Coumaphos	0.6	1.4	1.0	0.2	3.3
Crotoxyphos		*			*
Cyfluthrin	*	77.1	0.2	*	92.2
Cypermethrin			*		*
Cyromazine			*		*
Diazinon	*	*	*	*	9.4
Dichlorvos	*	78.7	*		96.2
Diflubenzuron	*				*
Dimethoate	*	*	*		*
Dioxathion					
Dipropyl isocinchom.		*			*
Doramectin	*	*	*	*	0.1
Eprinomectin	*	*	0.1	*	0.5
Ethion		*	*		*
Famphur		*		*	2.1
Fenthion		*	*		0.4
Fenvalerate		*	*		0.2
Flucythrinate		*			*
Ivermectin	0.3	0.3	0.1	0.1	0.9
Lambda-cyhalothrin		*	*		1.2
Lindane					
Malathion		*	*		2.4
Methomyl			*		*
Methoprene		1.9			1.9
Methoxychlor	*	*	16.6		60.9
Mineral Oil					
Moxidectin		*	*		*
N-octy-bicycloheptene	*	*	*		1.4
Naled					
Permethrin	5.7	34.3	11.2	0.7	51.9
Petroleum distillate	*	*	*		30.9
Phosmet		*			*
Piperonyl butoxide	*	86.0	*	*	101.7
Potassium Salts					
Pirimiphos-methyl	*	*	0.2		0.3
Pyrethrins	*	13.2	*		15.5
Pyriproxyfen		*			*
Sulfur					
Tetrachlorvinphos	*	1.5	*	*	67.9
Toxaphene		*			*
Trichlorfon					
Xylene		*		*	7.3
Zeta-cypermethrin		*	*	*	*
Total Insecticides	112.4	378.1	112.4	3.5	606.4

* Chemical reported but not published to avoid disclosure.

All Cattle: Agricultural Chemical Applications, Rate per Head per Application, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	Grams	*Grams*	*Grams*	*Grams*	*Grams*
Insecticides:					
Acephate		*	*		*
Amitraz	*		*		*
Bendiocarb		*	*	*	2.1
Bomyl			*		*
Butoxypolypr. glycol		*	13.3	*	14.9
Carbaryl		26.4	12.9	1.7	21.3
Chlorpyrifos		4.2	6.8	1.9	4.6
Coumaphos	0.5	2.9	2.1	2.9	2.3
Crotoxyphos		*			*
Cyfluthrin	16.0	19.1	0.7	1.0	14.4
Cypermethrin		1.1	1.0	1.1	1.1
Cyromazine		*	*		0.3
Diazinon	*	12.1	11.0	4.1	10.7
Dichlorvos	0.5	6.2	4.1	4.8	4.1
Diflubenzuron	*	*	*		4.8
Dimethoate	*	30.1	18.8		21.6
Dioxathion		*	30.3		28.4
Dipropyl isocinchom.		1.7	*	*	1.5
Doramectin	0.1	0.2	0.1	0.3	0.2
Eprinomectin	0.3	0.2	0.3	0.4	0.3
Ethion		4.7	6.1	4.3	5.2
Famphur		13.5	13.7	14.6	14.0
Fenthion	*	6.4	4.4	5.7	5.6
Fenvalerate		1.2	0.8	0.9	1.0
Flucythrinate		1.2	0.8	*	0.9
Ivermectin	0.4	0.2	0.1	0.2	0.2
Lambda-cyhalothrin		1.0	0.8	1.3	0.9
Lindane		*	6.3	*	6.2
Malathion	*	18.0	31.7	2.0	19.1
Methomyl		*	*		*
Methoprene		0.3	0.1	0.1	0.1
Methoxychlor	31.3	3.7	20.8	*	23.7
Mineral Oil			*		*
Moxidectin	*	0.2	0.1	0.5	0.4
N-octy-bicycloheptene	*	0.6	0.1		0.5
Naled		*	*	*	89.9
Permethrin	1.6	3.0	2.1	2.5	2.5
Petroleum distillate	*	19.3	17.4	26.2	18.3
Phosmet		11.3	5.4	2.0	6.2
Piperonyl butoxide	1.0	2.6	1.5	1.7	2.2
Potassium Salts			*		*
Pirimiphos-methyl	*	2.7	2.5	2.0	2.5
Pyrethrins	0.2	0.5	0.2	0.6	0.4
Pyriproxyfen		*			*
Sulfur		*	*	*	*
Tetrachlorvinphos	12.5	36.5	6.8	19.8	15.9
Toxaphene		*	3.4		8.5
Trichlorfon		6.8	5.0	*	5.3
Xylene		47.1	28.3	50.9	48.0
Zeta-cypermethrin		1.1	1.1	1.0	1.1

* Chemical reported but not published to avoid disclosure.

Beef Cattle: Agricultural Chemical Applications, Rate per Head per Application, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	Grams	*Grams*	*Grams*	*Grams*	*Grams*
Insecticides:					
Acephate			*		*
Amitraz			*		*
Bendiocarb		*	*	*	2.3
Bomyl			*		*
Butoxypolypr. glycol		*	13.3	*	14.9
Carbaryl		25.3	13.2	1.7	18.1
Chlorpyrifos		4.7	10.8	1.9	5.4
Coumaphos	2.3	2.9	2.2	3.9	2.7
Crotoxyphos		*			*
Cyfluthrin	*	1.1	0.7	1.1	1.0
Cypermethrin		1.1	1.0	1.1	1.1
Cyromazine		*	*		0.3
Diazinon		12.6	11.5	4.0	10.9
Dichlorvos	*	2.9	2.6	4.8	2.8
Diflubenzuron	*	*	*		5.1
Dimethoate	*	*	12.8		19.5
Dioxathion		*	30.3		28.4
Dipropyl isocinchom.		2.1	*	*	1.7
Doramectin	*	0.2	0.1	0.3	0.2
Eprinomectin	*	0.1	0.3	0.4	0.3
Ethion		4.7	7.7	4.3	5.3
Famphur		13.6	13.7	14.6	14.0
Fenthion	*	6.3	4.4	5.7	5.6
Fenvalerate		1.1	0.8	0.9	0.9
Flucythrinate		1.2	0.8	*	0.9
Ivermectin	0.3	0.2	0.1	0.2	0.2
Lambda-cyhalothrin		1.0	0.6	1.3	0.8
Lindane		*	6.3	*	6.2
Malathion	*	21.3	33.5	2.0	20.3
Methomyl		*	*		*
Methoprene		0.1	0.1	0.1	0.1
Methoxychlor	*	*	29.6	*	28.7
Mineral Oil			*		*
Moxidectin	*	0.1	0.1	0.5	0.4
N-octy-bicycloheptene		0.9	*		0.8
Naled		*	*	*	89.9
Permethrin	5.9	3.7	2.0	2.8	2.8
Petroleum distillate	*	34.3	23.9	26.2	26.0
Phosmet		12.7	5.4	2.0	6.4
Piperonyl butoxide	0.5	3.7	1.5	1.7	2.8
Potassium Salts			*		*
Pirimiphos-methyl		2.7	2.4	2.0	2.5
Pyrethrins	0.1	0.9	0.2	0.6	0.7
Pyriproxyfen					
Sulfur		*	*	*	*
Tetrachlorvinphos	*	51.5	12.2	18.2	34.3
Toxaphene		*	3.4		8.2
Trichlorfon		6.8	5.0	*	5.3
Xylene		47.3	28.3	50.9	48.1
Zeta-cypermethrin		1.1	1.1	1.0	1.1

* Chemical reported but not published to avoid disclosure.

Dairy Cattle: Agricultural Chemical Applications, Rate per Head per Application, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	Grams	*Grams*	*Grams*	*Grams*	*Grams*
Insecticides:					
Acephate		*			*
Amitraz	*				*
Bendiocarb		*			*
Bomyl					
Butoxypolypr. glycol					
Carbaryl		*	*		26.2
Chlorpyrifos		*	*		1.3
Coumaphos	0.4	2.7	0.9	0.2	0.7
Crotoxyphos		*			*
Cyfluthrin	16.0	31.1	0.8	*	24.8
Cypermethrin			*		*
Cyromazine			*		*
Diazinon	*	*	*	*	10.0
Dichlorvos	0.5	7.2	6.3		4.6
Diflubenzuron	*				*
Dimethoate	*	*	*		*
Dioxathion					
Dipropyl isocinchom.		*			*
Doramectin	*	0.2	*	*	0.1
Eprinomectin	0.3	0.2	0.3	*	0.3
Ethion		*	*		*
Famphur		12.0		*	12.2
Fenthion		7.8	*		7.7
Fenvalerate		*	*		1.5
Flucythrinate		*			*
Ivermectin	0.4	0.3	0.1	0.2	0.3
Lambda-cyhalothrin		*	1.0		1.0
Lindane					
Malathion		5.5	*		4.3
Methomyl			*		*
Methoprene		1.2			1.2
Methoxychlor	*	*	11.5		20.7
Mineral Oil					
Moxidectin		*	*		*
N-octy-bicycloheptene	*	0.6	*		0.5
Naled					
Permethrin	1.0	2.6	2.5	1.3	2.2
Petroleum distillate	*	*	*		9.8
Phosmet		*			*
Piperonyl butoxide	1.1	2.3	1.3	*	2.0
Potassium Salts					
Pirimiphos-methyl	*	*	3.3		3.1
Pyrethrins	0.2	0.4	*		0.4
Pyriproxyfen		*			*
Sulfur					
Tetrachlorvinphos	12.5	1.0	5.4	*	5.8
Toxaphene		*			*
Trichlorfon					
Xylene		42.1		*	42.7
Zeta-cypermethrin		*	*	*	*

* Chemical reported but not published to avoid disclosure.

All Cattle: Agricultural Chemical Applications, Rate per Head per Year, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	Grams	*Grams*	*Grams*	*Grams*	*Grams*
Insecticides:					
Acephate		*	*		*
Amitraz	*		*		*
Bendiocarb		*	*	*	2.1
Bomyl			*		*
Butoxypolypr. glycol		*	42.5	*	58.0
Carbaryl		148.9	39.0	3.5	90.2
Chlorpyrifos		5.8	8.1	1.9	5.5
Coumaphos	2.0	8.0	6.3	8.3	6.9
Crotoxyphos		*			*
Cyfluthrin	42.5	40.3	1.2	1.2	28.7
Cypermethrin		1.1	1.0	1.1	1.1
Cyromazine		*	*		0.9
Diazinon	*	14.7	11.7	4.1	14.1
Dichlorvos	31.7	26.8	20.3	4.8	25.2
Diflubenzuron	*	*	*		35.6
Dimethoate	*	45.8	56.7		47.5
Dioxathion		*	39.7		35.9
Dipropyl isocinchom.		5.1	*	*	3.7
Doramectin	0.2	0.2	0.2	0.3	0.2
Eprinomectin	0.4	0.2	0.4	0.4	0.3
Ethion		7.4	9.5	4.9	8.0
Famphur		14.2	14.1	14.9	14.5
Fenthion	*	7.0	5.9	5.9	6.4
Fenvalerate		1.2	1.0	0.9	1.1
Flucythrinate		1.2	0.8	*	0.9
Ivermectin	0.5	0.2	0.2	0.2	0.2
Lambda-cyhalothrin		1.0	1.4	1.3	1.2
Lindane		*	34.6	*	31.5
Malathion	*	44.1	107.2	19.0	73.1
Methomyl		*	*		*
Methoprene		5.8	0.8	2.9	3.3
Methoxychlor	*	15.2	86.5	*	132.4
Mineral Oil			*		*
Moxidectin	*	0.2	0.2	0.5	0.4
N-octy-bicycloheptene	*	3.4	0.2		2.9
Naled		*	*	*	111.5
Permethrin	6.4	11.6	7.6	4.4	8.6
Petroleum distillate	*	101.1	100.3	36.7	93.8
Phosmet		39.3	13.2	2.1	13.4
Piperonyl butoxide	15.8	25.2	3.2	1.8	15.4
Potassium Salts			*		*
Pirimiphos-methyl	*	2.9	2.6	2.0	2.6
Pyrethrins	6.9	10.9	0.8	1.1	8.2
Pyriproxyfen		*			*
Sulfur		*	*	*	*
Tetrachlorvinphos	99.4	82.0	74.1	57.2	79.2
Toxaphene		*	12.6		21.3
Trichlorfon		7.2	8.3	*	8.3
Xylene		49.5	41.5	52.1	50.3
Zeta-cypermethrin		1.2	1.1	1.0	1.1

* Chemical reported but not published to avoid disclosure.

Beef Cattle: Agricultural Chemical Applications, Rate per Head per Year, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	Grams	*Grams*	*Grams*	*Grams*	*Grams*
Insecticides:					
Acephate			*		*
Amitraz			*		*
Bendiocarb		*	*	*	2.3
Bomyl			*		*
Butoxypolypr. glycol		*	42.5	*	58.0
Carbaryl		100.5	39.8	3.5	60.1
Chlorpyrifos		5.8	10.8	1.9	5.9
Coumaphos	2.7	8.1	6.6	9.4	7.4
Crotoxyphos		*			*
Cyfluthrin	*	1.2	1.1	1.4	1.2
Cypermethrin		1.1	1.0	1.1	1.1
Cyromazine		*	*		1.3
Diazinon		15.1	12.2	4.0	12.0
Dichlorvos	*	3.5	10.8	4.8	5.0
Diflubenzuron	*	*	*		69.3
Dimethoate	*	*	36.5		39.5
Dioxathion		*	39.7		35.9
Dipropyl isocinchom.		4.9	*	*	3.5
Doramectin	*	0.2	0.2	0.3	0.2
Eprinomectin	*	0.1	0.4	0.4	0.3
Ethion		7.5	7.7	4.9	7.3
Famphur		14.2	14.1	14.9	14.5
Fenthion	*	6.9	5.9	5.9	6.4
Fenvalerate		1.1	1.0	0.9	1.0
Flucythrinate		1.2	0.8	*	0.9
Ivermectin	0.4	0.2	0.2	0.2	0.2
Lambda-cyhalothrin		1.0	0.9	1.3	1.0
Lindane		*	34.6	*	31.5
Malathion	*	46.1	111.1	19.0	76.2
Methomyl		*	*		*
Methoprene		0.7	0.8	2.9	1.0
Methoxychlor	*	*	75.1	*	75.7
Mineral Oil			*		*
Moxidectin	*	0.1	0.2	0.5	0.4
N-octy-bicycloheptene		2.0	*		1.5
Naled		*	*	*	111.5
Permethrin	12.1	8.1	6.4	5.1	7.1
Petroleum distillate	*	68.6	103.2	36.7	84.2
Phosmet		40.0	13.2	2.1	13.4
Piperonyl butoxide	2.4	11.4	2.8	1.8	6.8
Potassium Salts			*		*
Pirimiphos-methyl		3.0	2.5	2.0	2.6
Pyrethrins	2.9	11.7	0.8	1.1	6.2
Pyriproxyfen					
Sulfur		*	*	*	*
Tetrachlorvinphos	*	87.9	32.6	63.0	70.7
Toxaphene		*	12.6		21.0
Trichlorfon		7.2	8.3	*	8.3
Xylene		49.4	41.5	52.1	50.3
Zeta-cypermethrin		1.1	1.1	1.0	1.1

* Chemical reported but not published to avoid disclosure.

Dairy Cattle: Agricultural Chemical Applications, Rate per Head per Year, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	Grams	*Grams*	*Grams*	*Grams*	*Grams*
Insecticides:					
Acephate		*			*
Amitraz	*				*
Bendiocarb		*			*
Bomyl					
Butoxypolypr. glycol					
Carbaryl		*	*		195.5
Chlorpyrifos		*	*		2.7
Coumaphos	1.9	7.5	2.7	1.3	3.1
Crotoxyphos		*			*
Cyfluthrin	42.6	160.5	1.3	*	91.3
Cypermethrin			*		*
Cyromazine			*		*
Diazinon	*	*	*	*	44.5
Dichlorvos	32.9	183.2	47.1		114.4
Diflubenzuron	*				*
Dimethoate	*	*	*		*
Dioxathion					
Dipropyl isocinchom.		*			*
Doramectin	*	0.2	*	*	0.2
Eprinomectin	0.4	0.3	0.4	*	0.3
Ethion		*	*		*
Famphur		16.1		*	16.0
Fenthion		7.8	*		7.7
Fenvalerate		*	*		1.5
Flucythrinate		*			*
Ivermectin	0.5	0.4	0.1	0.2	0.3
Lambda-cyhalothrin		*	5.3		5.0
Lindane					
Malathion		27.2	*		21.4
Methomyl			*		*
Methoprene		30.9			30.9
Methoxychlor	*	*	149.7		351.5
Mineral Oil					
Moxidectin		*	*		*
N-octy-bicycloheptene	*	4.1	*		3.6
Naled					
Permethrin	4.6	19.8	13.2	1.6	12.3
Petroleum distillate	*	*	*		141.7
Phosmet		*			*
Piperonyl butoxide	21.8	62.1	6.5	*	43.3
Potassium Salts					
Pirimiphos-methyl	*	*	3.3		3.1
Pyrethrins	7.1	10.6	*		9.7
Pyriproxyfen		*			*
Sulfur					
Tetrachlorvinphos	101.6	9.2	341.2	*	129.8
Toxaphene		*			*
Trichlorfon					
Xylene		56.2		*	56.1
Zeta-cypermethrin		*	*	*	*

* Chemical reported but not published to avoid disclosure.

Cattle: Chemical Applications
Percent of Total Applications by Method of Application, 1999

Method	All Cattle	Beef Cattle	Dairy Cattle
	Percent	*Percent*	*Percent*
Dip	0.1	0.1	0.1
Dust/Bag	8.6	7.7	10.1
Feed/Mineral Block	4.3	7.1	0.2
Pour-on	28.5	38.7	13.3
Rubbing Device	8.8	7.9	10.3
Spray	37.0	18.1	64.9
Injectable Shot	7.0	11.5	0.3
Pill	0.2	0.3	*
Tag	4.5	7.1	0.6
Other	1.0	1.5	0.2
Total	100.0	100.0	100.0

* Method reported but less than 0.1 percent.

Cattle Buildings and Structures: Pesticide Use by Region, 1999
Total Amount Applied

Region	All Cattle	Beef Cattle	Dairy Cattle
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*
Northeast	53.6	0.7	52.9
North Central	159.1	39.1	120.0
South	70.8	41.5	29.3
West	70.8	67.0	3.7
United States	354.4	148.4	206.0

All Cattle Buildings and Structures: Agricultural Chemical Applications, Total Applied, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
Insecticides:					
Acephate			*		*
Bomyl		*	*		0.1
Butoxypolypr. glycol		4.4			4.4
Carbaryl		*	*		2.9
Chlorpyrifos	*	*	4.3		4.6
Coumaphos	*	*	1.1	*	1.3
Cyfluthrin	12.4	9.0	*	*	23.2
Deltamethrin	*				*
Diazinon			*	*	39.3
Dichlorvos	8.1	14.4	2.0	1.1	25.7
Dimethoate	*	75.7	*		98.7
Dipropyl isocinchom.		*			*
Fenthion				*	*
Hydramethylnon			*	*	*
Ivermectin		*			*
Lambda-cyhalothrin	5.8	*	*		17.1
Lindane			*		*
Malathion		4.7	5.1	5.5	15.4
Methomyl	*	*	*	*	0.4
Moxidectin		*			*
N-octy-bicycloheptene	0.1	0.1	4.4		4.6
Naled	*		*		*
Permethrin	7.5	1.7	1.1	0.3	10.7
Petroleum distillate		14.6	*	*	15.1
Phosmet		*	*		4.8
Piperonyl butoxide	2.0	18.2	9.8	1.0	30.9
Pyrethrins	0.3	3.1	2.3	0.1	5.8
Ronnel	*	*	*	*	*
Rotenone		*			*
Sulfur		*	*		*
Temephos			*		*
Tetrachlorvinphos		1.2	*	*	125.2
Tetramethrin			*		*
Toxaphene			*		*
Trichlorfon	*				*
Tricosene	*				*
Xylene			*		*
Total Insecticides	53.6	159.1	70.8	70.8	354.4

* Chemical reported but not published to avoid disclosure.

Beef Cattle Buildings and Structures: Agricultural Chemical Applications, Total Applied, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
Insecticides:					
Acephate			*		*
Bomyl			*		*
Butoxypolypr. glycol		*			*
Carbaryl		*	*		*
Chlorpyrifos			*		0.1
Coumaphos		*	*	*	*
Cyfluthrin		0.1	*	*	0.1
Deltamethrin					
Diazinon			*	*	39.3
Dichlorvos	0.6	12.7	0.9	0.3	14.6
Dimethoate					
Dipropyl isocinchom.					
Fenthion				*	*
Hydramethylnon			*	*	*
Ivermectin		*			*
Lambda-cyhalothrin					
Lindane			*		*
Malathion		*	5.1	*	15.1
Methomyl		*	*	*	*
Moxidectin		*			*
N-octy-bicycloheptene	*		*		*
Naled			*		*
Permethrin	*	0.8	0.9	*	1.9
Petroleum distillate		*	*	*	*
Phosmet		*	*		*
Piperonyl butoxide	0.1	1.1	0.1	0.2	1.5
Pyrethrins	*	0.2	*	*	0.3
Ronnel	*	*	*	*	*
Rotenone		*			*
Sulfur			*		*
Temephos			*		*
Tetrachlorvinphos		*	*	*	1.0
Tetramethrin			*		*
Toxaphene			*		*
Trichlorfon					
Tricosene					
Xylene			*		*
Total Insecticides	0.7	39.1	41.5	67.0	148.4

* Chemical reported but not published to avoid disclosure.

Dairy Cattle Buildings and Structures: Agricultural Chemical Applications, Total Applied, 1999

Agricultural Chemical	Region				United States
	North-east	North Central	South	West	
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
Insecticides:					
Acephate					
Bomyl		*	*		*
Butoxypolypr. glycol		*			*
Carbaryl		*			*
Chlorpyrifos	*	*	*		4.5
Coumaphos	*				*
Cyfluthrin	12.4	9.0	*	*	23.1
Deltamethrin	*				*
Diazinon					
Dichlorvos	7.5	1.7	1.1	0.8	11.1
Dimethoate	*	75.7	*		98.7
Dipropyl isocinchom.		*			*
Fenthion					
Hydramethylnon					
Ivermectin					
Lambda-cyhalothrin	5.8	*	*		17.1
Lindane					
Malathion		*		*	0.3
Methomyl	*	*	*	*	*
Moxidectin					
N-octy-bicycloheptene	*	0.1	*		*
Naled	*				*
Permethrin	*	0.9	0.3	*	8.7
Petroleum distillate		*			*
Phosmet		*	*		*
Piperonyl butoxide	2.0	17.0	9.7	0.8	29.5
Pyrethrins	*	2.9	*	*	5.6
Ronnel	*	*	*	*	*
Rotenone					
Sulfur		*			*
Temephos					
Tetrachlorvinphos		*		*	0.4
Tetramethrin					
Toxaphene					
Trichlorfon	*				*
Tricosene	*				*
Xylene					
Total Insecticides	52.9	120.0	29.3	3.7	206.0

* Chemical reported but not published to avoid disclosure.

Survey Procedures: The estimates in this report are based on the Fall Agricultural Survey conducted in December 1999. This survey was based on a sample of 6,930 segments or parcels of land which average approximately 1 square mile. Enumerators conducting the area survey contacted all farmers having operations within the sampled segments and collected a variety of information, including cattle insecticide applications for their entire operation. Estimates were then calculated, using the selection probability of each segment of land.

Estimation Procedures: The chemical applications data, reported by product name or trade name, are reviewed within region and across regions for reasonableness and consistency. This review also compares reported data with manufacturer's recommendations and with data from other farm operators using the same product. Following this review, product information are converted to an active ingredient level. The chemical usage estimates in this publication consist of survey estimates of those active ingredients.

Detailed data within a table may not sum to totals due to independent rounding of published values.

Reliability: The survey was designed so that the estimates are statistically representative of chemical use on cattle and cattle facilities. The reliability of these survey results is affected by sampling variability and non-sampling errors.

The results of this survey are subject to sampling variability. Sampling variability is a measure of how the estimates would differ if other samples had been drawn. The sampling variability expressed as a percent of the estimate is called the coefficient of variation (cv). Sampling variability of the estimates differed considerably by chemical, class of cattle, and region. In general, the more often the chemical was applied, the smaller the sampling variability. For example, estimates of use of a commonly used product, such as ivermectin will exhibit less variability than a more rarely used product. For more commonly used chemicals, cv's will range from 5-30 percent at the U.S. level and 5-65 percent at the regional level. Some rare items could have cv's near 100 percent. These rare items had an insufficient number of reports for publication and are noted with an asterisk (*).

Non-sampling errors occur during a survey process, and unlike sampling variability, are difficult to measure. They may be caused by interviewers failing to follow instructions, poorly worded questions, non-response, problematic survey procedures, or data handling mistakes between collection and publication. In this survey, all survey procedures and analyses were carried out in a consistent and orderly manner to minimize the occurrence of these types of errors.

Terms and Definitions

Active ingredient: The active ingredient is the specific chemical which kills or controls the target pests. Usage data are reported by pesticide product and are converted to an amount of active ingredient.

Agricultural chemicals: The phrase agricultural chemicals refers to the active ingredients in fertilizers and pesticides.

Carrier: An inert liquid, solid, or gas added to an active ingredient to make a pesticide dispense effectively. A carrier is also the material, usually water or oil, used to dilute the formulated product for application.

Common name: The common name is an officially recognized name for an active ingredient. This report shows active ingredient by common name.

Diluent: Any liquid or solid material used to dilute or carry an active ingredient.

Farm: Any establishment from which $1,000 or more of agricultural products were sold or would normally be sold during the year. Government payments are included in sales. Places with all acreage enrolled in set aside or other government programs are considered operating.

Pesticides: As defined by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); include any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

Repellent: A pesticide used to keep target pests away from a treated area by saturating the area with an odor that is disagreeable to the pest.

Synergist: A material which exhibits synergism. The joint action of different agents results in an effect greater than the sum of their separate effects.

Trade name: A trademark name given to a specific formulation of a pesticide product. A formulation contains a specific concentration of the active ingredient, carrier materials, and other ingredients such as emulsifiers and wetting agents. Some formulations as in the case of pre-mixes, can contain more than one active ingredient.

Trade Name, Active Ingredient, and Pesticide Class

The following is a list of the associated class, (I=insecticide, O=other) and active ingredients included in this report. Also provided are product trade names reported in the survey associated with the listed active ingredients. This list is provided as an aid in reviewing pesticide data. The list is not complete for all trade names used and NASS does not mean to imply the use of any specific trade name.

Class	Active Ingredient	Trade Name
I	Acephate	Orthene
I	Amitraz	Taktic
I	Bendiocarb	Ficam
I	Bomyl	Purina Fly Bait
I	Butoxypolypropylene glycol	Repel X, Straight Arrow Fly Spray
I	Carbaryl	Sevin
I	Chlorpyrifos	Dursban, Lorsban, Max-Con/Warrior Tags
I	Coumaphos	Co-Ral
I	Crotoxyphos	Ciovap, Purina Lice Powder
I	Cyfluthrin	Countdown, Cutter Tags, Cylence, Tempo
I	Cypermethrin	Max-Con/ZetaGard Tags
I	Cyromazine	Larvadex
I	Deltamethrin	Suspend
I	Diazinon	Diazinon, Optimizer/Patriot/ Terminator/Turbo/Warrior Tags
I	Dichlorvos	several
I	Diflubenzuron	Micromite, Vigilante
I	Dimethoate	Cygon
I	Dioxathion	Del-Tox
I	Dipropyl isocinchomeronate	CSA, Tox-O-Wik
I	Doramectin	Dectomax
I	Eprinomectin	Eprinex
I	Ethion	Commando Tags
I	Famphur	Warbex
I	Fenthion	Cutter Tags, Lysoff, Spotton, Tiguvon
I	Fenvalerate	Ectrin
I	Flucythrinate	Guardian Tags
I	Hydramethylnon	Amdro
I	Ivermectin	Ivomec
I	Lambda-cyhalothrin	Demand, Double Barrel/Excalibur Tags, Grenade, Saber, Warrior
I	Lindane	Lindane, Stock Tox
I	Malathion	Malathion
I	Methomyl	Appache/Die Fly/Stimukil Fly Bait
I	Methoprene	Altosid, Diacon, MoorMan
I	Methoxychlor	Marlate, Methoxychlor, Sur-Noxem
O	Mineral oil	Screw-Worm Ear Tick Bomb
I	Moxidectin	Cydectin
I	N-octy-bicycloheptene	several
I	Naled	Fly Killer D
I	Permethrin	several
I	Petroleum distillate	Ciovap, Co-Ral, Stock Tox, Vapona
I	Phosmet	Del-Phos, Lintox, Prolate
I	Piperonyl butoxide	several
I	Pirimiphos-methyl	Dominator/Double Barrel/Rotator/ Tomahawk Tags

--continued

Class	Active Ingredient	Trade Name
I	Potassium salts	Safer Insecticidal Soap
I	Pyrethrins	several
I	Pyriproxyfen	Bio Flea Halt Fogger
I	Ronnel	Golden Marlin Fly Bait
I	Rotenone	Rotenone
I	Sulfur	Sulfur
I	Temephos	Abate
I	Tetrachlorvinphos	Insectaban, Rabon, Ravap, Vigortone
I	Tetramethrin	Raid
I	Toxaphene	Stock Tox
I	Trichlorfon	Dipterex, Neguvon
I	Tricosene	Stimukil Fly Bait
I	Xylene	Stock Tox, Warbex
I	Zeta-cypermethrin	Python Tags

SECTION L - CHEMICAL APPLICATIONS - CATTLE (Beef and Dairy)

1.
[**ENUMERATOR ACTION**.
Were any cattle or calves, regardless of ownership, on this operation at any time since January 1, 1999?]

☐ **YES** - [Continue.]

☐ **NO** - [Enter 3 in Code Box 111, and go to Section M.]

Now I have some questions about insecticides and chemical applications on this operation. Please consider all applications made to cattle (beef and dairy) and cattle facilities on your total acres operated.

2.
In 1999, on your total acres operated, did you apply any insecticides, or other chemical products on any cattle (beef or dairy) to control insects and other external pests?

☐ **YES** - [Continue.]

☐ **NO** - [Enter 3 in Code Box 111, and go to **Item 4, Page 20.**]

3.
Now I need to get complete information on all insecticides and chemical products applied to cattle (beef and dairy) to control insects and other external pests.

		000
Completion Code for Section L Only	1- Incomplete 3- Valid Zero	111
	LINES IN TABLE	112

[**ENUMERATOR NOTE:** Complete tables for all chemical applications to **cattle**. Use supplemental tables if necessary. Include tags, rubs, etc. If no code is listed in the Respondent Booklet, record the name and formulation of the insecticide product applied, what it was used for, was it liquid or dry, and its EPA registration number.]

NOTES	LINE	**1** Cattle Treated 2 Beef Cattle 3 Dairy Cattle [Enter cattle species and code from above.] Cattle	Code	**2** What product(s) were applied to the [column 1] cattle? [Show product codes from Respondent Booklet.] Product	Code	**3** Formulation Was this product bought in liquid or dry form? [Enter L or D]	**4** What was the method of application? 1 Dip 2 Dust / bag 3 Feed/Mineral Block 4 Pour on 5 Rubbing Device 6 Spray 7 Injectable Shot 8 Pill 9 Tag 10 Other [Enter Code]
	101		113		114		115
	102		113		114		115
	103		113		114		115
	104		113		114		115
	105		113		114		115
	106		113		114		115
	107		113		114		115
	108		113		114		115

LINE	**(Insecticide)**	**EPA No. or Tradename and Formulation**	**Form Purchased (Liquid or Dry)**	**Where Purchased [Ask only if EPA No. cannot be reported.]**

SECTION L - CHEMICAL APPLICATIONS

CATTLE (Beef and Dairy) (continued)

LINE	5 How many head were treated with this product? Number	6 OR 7 How much was applied per HEAD per application?	6 OR 7 What was the TOTAL amount applied per application?	8 1 Pounds 12 Gallons 13 Quarts 14 Pints 15 Ounces 30 Grams 31 CC/ml 35 Tags 37 Pill 41 Liters 50 Other [Enter Unit Code.]	9 What was the number of times applied? Number	10 What was the primary target pest for this application? 1 Pasture Flies 2 Confinement Flies 3 Lice 4 Grubs 5 Scabies 6 Other [Enter Code.]
101	116	117 . _ _	118 . _ _	119	120	121
102	116	117 . _ _	118 . _ _	119	120	121
103	116	117 . _ _	118 . _ _	119	120	121
104	116	117 . _ _	118 . _ _	119	120	121
105	116	117 . _ _	118 . _ _	119	120	121
106	116	117 . _ _	118 . _ _	119	120	121
107	116	117 . _ _	118 . _ _	119	120	121
108	116	117 . _ _	118 . _ _	119	120	121

SECTION L - CHEMICAL APPLICATIONS - CATTLE FACILITIES

4.
In 1999, on your total acres operated, did you apply any insecticides or other chemical products on cattle facilities to control insects?
Include buildings that are used by cattle on this operation, such as milking parlors, bedding barns, feed bunks, loafing or run-in sheds, etc.

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5
Now I need to get complete information on insecticides (exclude herbicides and fungicides) and chemicals applied to cattle facilities on this operation in 1999.

		000
Completion Code for Section L Only	1- Incomplete 3- Valid Zero	122
	LINES IN TABLE	123

[**ENUMERATOR NOTE:** Complete tables for all insecticide applications to the cattle facilities. Cattle facilities include buildings, structures, etc. Use supplemental tables if necessary. **I**f no code is listed in the Respondent Booklet, record the name and formulation of the product applied, what it was used for (insecticide, other), whether it was liquid or dry, and its EPA registration number.]

		1		2		3		4
		Cattle 2 Beef Cattle 3 Dairy Cattle [Enter cattle species code.]		Facility Treated 10 Milking Parlor 11 Barn (Bedding, etc.) 12 Feed Bunk 13 Loafing/Run-in Shed 14 Calf Hutch 15 Other [Enter facility code.]		What product(s) were applied to the [column 2] facility? [Show product codes from Respondent Booklet.]		Was this product bought in liquid or dry form? [Enter L or D]
NOTES	LINE	Cattle	Code	Facility	Code	Product	Code	
	201		113		124		114	
	202		113		124		114	
	203		113		124		114	
	204		113		124		114	
	205		113		124		114	
	206		113		124		114	
	207		113		124		114	
	208		113		124		114	
	209		113		124		114	

LINE	Pesticide Type (Insecticide)	EPA No. or Tradename and Formulation	Form Purchased (Liquid or Dry)	Where Purchased [Ask only if EPA No. cannot be reported.]

LINE	5 What was the TOTAL amount applied per application?	6 1 Pounds 12 Gallons 13 Quarts 14 Pints 15 Ounces 30 Grams 31 CC/ml 41 Liters 50 Other [Enter Unit Code.]	7 What was the number of times applied? Number
201	118 . — —	119	120
202	118 . — —	119	120
203	118 . — —	119	120
204	118 . — —	119	120
205	118 . — —	119	120
206	118 . — —	119	120
207	118 . — —	119	120
208	118 . — —	119	120
209	118 . — —	119	120

Index

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Report Features

Listed below are persons within the National Agricultural Statistics Service to contact for additional information.

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The next "Livestock Agricultural Chemical Usage" report will be "1999 Swine and Swine Facilities" to be released in late 2000.

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