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Agricultural Chemical Usage 2006 Dairy Cattle and Dairy Facilities Summary

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2006 Agricultural Chemical Use Estimates for Dairy Cattle and Dairy Cattle Facilities

Overview: The agricultural chemical use estimates in this report are based on data compiled from the 2007 General Dairy Management Survey. This survey was a cooperative project between the National Agricultural Statistics Service (NASS) and the National Animal Health Monitoring System within the Animal and Plant Health Inspection Service (APHIS). Data collection for the survey began in early January 2007. The 17 Program States in the survey account for approximately 91 percent of the milk cow inventory in the United States, based on the January 2007 Milk Production release published by the United States Department of Agriculture's National Agricultural Statistics Service (USDA-NASS). Dairy cattle inventories are reprinted in this report from a previous NASS release for informational purposes.

This report provides insecticide use information on dairy cattle and dairy facilities in the 17 selected States. The States surveyed were: California (CA), Idaho (ID), Indiana (IN), Iowa (IA), Kentucky (KY), Michigan (MI), Minnesota (MN), Missouri (MO), New Mexico (NM), New York (NY), Ohio (OH), Pennsylvania (PA), Texas (TX), Vermont (VT), Virginia (VA), Washington (WA), and Wisconsin (WI). All data refer to the on-farm use of chemical active ingredients contained in insecticides which were applied during the 2006 calendar year. Insecticides are defined as chemical products used for the control of insects. Insecticides are applied to dairy cattle and dairy facilities to control mange/mites, lice, flies, grubs, and other external pests.

Chemical usage on dairy cattle are provided on a rate per head per application and rate per head per year basis. Some dairy cattle received no chemical applications in 2006, whereas, other dairy cattle received multiple applications of the same chemical. In yet other cases, dairy cattle received applications of several different chemicals. The number of times a chemical was applied varied 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.

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

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

Insecticide use information on chemical applications made to dairy facilities is also included in this report. For survey purposes, milking parlors, pens, drylots, stalls, hutches, sheds, and barns are examples of dairy cattle facilities. Only those chemical applications that were made to the facilities and structures for the control of insects and pests were included. Herbicides, termite chemicals, disinfectants, and sanitizer applications are excluded, as are all rodenticides.

Highlights
2006 Dairy Cattle and Dairy Cattle Facilities
Agricultural Chemical Use

All Dairy Cattle: Agricultural producers applied a total of 174,000 pounds of insecticides to dairy cattle during 2006 in the 17 States surveyed.

The insecticides most commonly used on dairy cattle during 2006, based on total pounds applied, for all Program States were Piperonyl butoxide, at 44,800 pounds, followed by Permethrin, at 42,300 pounds. Tetrachlorvinphos (Z-isomer) was the third most commonly used active ingredient, with 37,600 total pounds used during 2006 in the States surveyed. These three active ingredients accounted for 72 percent of the total pounds of active ingredients applied to dairy cattle.

The agricultural chemical usage data in this report were summarized based upon the percentage of active ingredient included in an insecticide product. In order to publish data for an active ingredient, there must be a minimum of 5 reports for the specific active ingredient at the summary level (by State or all Program States). In cases where there are not enough reports to publish usage data for a given active ingredient, a list of active ingredients and the States in which they were applied appear on page 22 of this publication.

Of the total chemical applications made to dairy cattle during 2006 in the 17 selected States, 58 percent were made as pour-on applications, 28 percent were made using a sprayer, and 4 percent used dust bags or hand dusters. Ear tags, rubbing devices, and various other methods of application accounted for the remaining 10 percent of applications made to dairy cattle.

Of the total chemical applications made to dairy cattle during 2006 in the 17 Program States, 59 percent of the applications were to control flies, 23 percent for lice, and 9 percent were for mange/mites. All other pests accounted for the remaining 9 percent.

All Cattle Facilities: In the 17 Program States surveyed, a total of 149,100 pounds of insecticide were applied to dairy cattle facilities in 2006. Imidacloprid had the highest total quantity used at 27,500 pounds. Cyfluthrin had the second highest quantity used at 25,300 pounds followed by Piperonyl butoxide at 22,700 pounds. These three active ingredients accounted for 51 percent of the total pounds of active ingredients applied to dairy cattle facilities.

Application data for active ingredients which have 5 or more reports will appear in the Program States or individual State tables. In cases where there are not enough reports to publish usage data for a given active ingredient, a list of active ingredients, and the States in which they were applied, appear on page 23 of this publication.

Of the total chemical applications made to dairy facilities in the 17 Program States in 2006, 24 percent were made to the milking parlor, 18 percent were made to tie stall/stanchion, 17 percent were made to freestall barns, 13 percent to calf hutches, and 9 percent to individual or multi-pens.

Highlights
2006 Dairy Cattle and Dairy Cattle Facilities
Agricultural Chemical Use

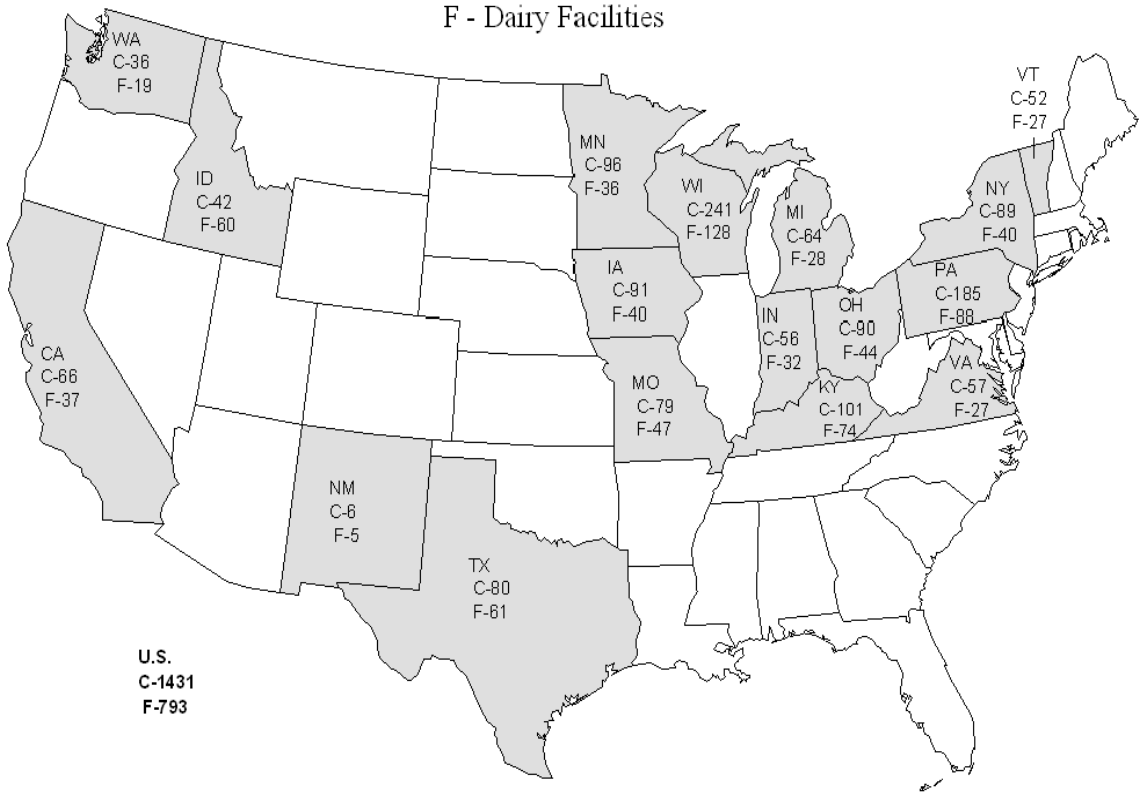
In the 17 States surveyed, there were 1,431 reports summarized for chemicals applied directly to dairy cattle and 793 reports summarized for chemicals applied to dairy facilities.

The U.S. map below depicts graphically the total number of summarized reports for each State in the 2006 survey.

Number of Positive Usable Dairy Cattle and Dairy Facilities Chemical Use Reports

C - Dairy Cattle

F - Dairy Facilities



Dairy Cattle: Milk Cows and Number of Operations
Total and Program State, 2005 and 2006 [1]

State	Milk Cows [2]		Operations with Milk Cows [1]	
	2005	2006	2005	2006
	1,000 Head	*1,000 Head*	*Number*	*Number*
CA	1,771	1,785	2,300	2,300
ID	472	500	850	800
IN	158	166	2,200	2,100
IA	200	205	2,500	2,400
KY	102	94	2,200	2,000
MI	312	324	2,800	2,700
MN	445	455	5,800	5,400
MO	114	115	2,700	2,600
NM	339	360	450	450
NY	650	629	6,700	6,400
OH	273	274	4,400	4,400
PA	557	549	8,900	8,700
TX	324	345	1,500	1,300
VT	143	140	1,300	1,200
VA	104	100	1,400	1,300
WA	237	235	810	790
WI	1,239	1,247	15,300	14,900
Total	7,440	7,523	62,110	59,740

[1] An operation is any place having one or more head of milk cows, excluding cows used to nurse calves, on hand at any time during the year.
[2] Includes dry cows, excludes heifers not yet fresh.

Dairy Cattle: Agricultural Chemical Use,
Total Amount Applied
Program States and Total, 2006

State	Total Applied
	1,000 Pounds
CA	10.0
ID	6.7
IN	8.8
IA	5.3
KY	2.2
MI	4.9
MN	10.8
MO	3.9
NM	9.1
NY	7.9
OH	5.2
PA	14.8
TX	19.7
VT	20.1
VA	10.8
WA	8.8
WI	24.9
Total	174.0

Dairy Cattle: Agricultural Chemical Use
Program State, 2006 [1]

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Amitraz	3.7	8.0	0.4
Chlorpyrifos	0.3	0.3	*
Clorsulon	0.5	0.6	*
Coumaphos	0.2	7.7	2.3
Crotoxyphos	0.4	1.2	*
Cyfluthrin	0.3	1.5	1.8
Diazinon	0.5	1.0	*
Dichlorvos	0.3	7.9	4.9
Dimethoate	0.4	1.6	0.2
Dipropyl isocinchomeronate	0.1	5.9	0.5
Doramectin	0.1	0.6	0.1
Eprinomectin	3.3	6.3	18.4
Fenthion	0.2	0.3	*
Fenvalerate	1.4	1.4	*
Ivermectin	0.2	0.3	0.1
Lambda-cyhalothrin	0.8	1.5	0.2
Malathion	2.8	15.0	1.3
Methomyl	([2])	0.3	*
Moxidectin	0.3	0.6	1.2
Naled	4.0	52.3	9.5
Octacide-264	0.1	2.7	0.5
Permethrin	1.0	10.1	42.3
Piperonyl butoxide	0.8	14.9	44.8
Pirimiphos-methyl	1.2	1.4	*
Pyrethrins	0.2	3.6	6.5
S-Methoprene	([2])	0.4	*
Tetrachlorvinphos (Z-isomer)	3.2	116.6	37.6
Tricosene	0.1	0.9	0.1
Zeta-cypermethrin	0.9	1.0	0.1

* Total applied less than 50 pounds.
[1] States included are CA, ID, IN, IA, KY, MI, MN, MO, NM, NY, OH, PA, TX, VT, VA, WA, and WI.
[2] Rate per head less than .05 grams.

Dairy Cattle: Agricultural Chemical Use
California, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Cyfluthrin	0.3	1.4	0.8
Moxidectin	0.2	0.4	0.1
Permethrin	0.5	5.5	3.3
Piperonyl butoxide	0.9	4.2	1.2
Pyrethrins	0.2	1.0	0.2

Dairy Cattle: Agricultural Chemical Use
Idaho, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Moxidectin	0.6	0.7	*
Permethrin	1.7	5.4	0.4
Tetrachlorvinphos (Z-isomer)	0.4	14.2	2.0

* Total applied less than 50 pounds.

Dairy Cattle: Agricultural Chemical Use
Indiana, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Eprinomectin	11.4	16.6	0.5
Permethrin	2.4	13.0	2.3
Piperonyl butoxide	3.2	35.5	4.2
Pyrethrins	0.7	11.7	0.7

Dairy Cattle: Agricultural Chemical Use
Iowa, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Dichlorvos	0.4	14.2	0.4
Eprinomectin	4.4	6.9	0.7
Moxidectin	0.6	1.8	0.3
Permethrin	1.1	8.8	2.0
Piperonyl butoxide	0.6	11.8	1.4
Pyrethrins	0.1	3.6	0.2

Dairy Cattle: Agricultural Chemical Use
Kentucky, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Coumaphos	1.1	12.7	0.1
Cyfluthrin	0.7	3.3	0.1
Dichlorvos	0.3	1.4	*
Eprinomectin	6.0	11.1	0.3
Ivermectin	0.2	0.2	*
Moxidectin	0.3	0.6	*
Naled	9.1	51.7	0.7
Permethrin	0.7	9.1	0.6
Piperonyl butoxide	0.6	2.5	0.1
Pyrethrins	0.1	0.6	*
Zeta-cypermethrin	0.6	0.6	*

* Total applied less than 50 pounds.

Dairy Cattle: Agricultural Chemical Use
Michigan, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Eprinomectin	2.4	2.8	0.7
Permethrin	0.8	6.2	1.2
Piperonyl butoxide	0.7	18.4	2.4
Pyrethrins	0.1	2.1	0.2

Dairy Cattle: Agricultural Chemical Use
Minnesota, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Cyfluthrin	0.5	1.0	*
Dichlorvos	0.1	5.7	0.3
Eprinomectin	4.3	5.7	2.9
Moxidectin	0.4	0.4	0.1
Permethrin	1.0	3.4	0.7
Piperonyl butoxide	0.7	19.1	4.5
Pyrethrins	0.1	6.8	0.9

* Total applied less than 50 pounds.

Dairy Cattle: Agricultural Chemical Use
Missouri, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Coumaphos	0.5	6.4	0.3
Cyfluthrin	0.1	0.4	*
Doramectin	0.1	0.2	*
Eprinomectin	2.5	3.7	0.1
Moxidectin	0.2	0.5	*
Octacide-264	([1])	([1])	*
Permethrin	1.1	9.7	2.0
Piperonyl butoxide	0.9	8.6	0.9
Pyrethrins	0.3	3.0	0.1

* Total applied less than 50 pounds.
[1] Rate per head less than .05 grams.

Dairy Cattle: Agricultural Chemical Use
New York, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Eprinomectin	3.8	5.9	1.9
Ivermectin	([1])	0.1	*
Moxidectin	0.2	0.3	*
Permethrin	2.4	15.9	4.6
Piperonyl butoxide	0.3	4.6	0.7
Pyrethrins	([1])	0.7	0.1

* Total applied less than 50 pounds.
[1] Rate per head less than .05 grams.

Dairy Cattle: Agricultural Chemical Use
Ohio, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Cyfluthrin	0.3	1.2	0.1
Eprinomectin	1.9	2.3	0.1
Moxidectin	0.4	0.6	*
Permethrin	4.5	20.0	3.4
Piperonyl butoxide	0.6	14.1	1.0
Pyrethrins	0.1	3.3	0.2

* Total applied less than 50 pounds.

Dairy Cattle: Agricultural Chemical Use
Pennsylvania, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Coumaphos	([1])	0.3	*
Cyfluthrin	0.2	0.7	0.1
Dichlorvos	0.1	0.9	0.1
Eprinomectin	7.4	11.8	1.9
Moxidectin	0.4	0.6	0.1
Permethrin	1.8	8.7	3.6
Piperonyl butoxide	0.3	4.2	1.1
Pyrethrins	0.1	0.9	0.2
Tetrachlorvinphos (Z-isomer)	5.5	240.6	7.7

* Total applied less than 50 pounds.
[1] Rate per head less than .05 grams.

Dairy Cattle: Agricultural Chemical Use
Texas, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Cyfluthrin	0.8	2.5	0.2
Eprinomectin	4.1	9.6	0.4
Ivermectin	0.1	0.1	*
Moxidectin	0.2	1.5	0.2
Permethrin	0.7	12.2	6.2
Piperonyl butoxide	1.5	26.2	10.8
Pyrethrins	0.6	14.6	1.3

Dairy Cattle: Agricultural Chemical Use
Vermont, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Eprinomectin	2.9	6.1	0.4
Moxidectin	0.3	0.5	*
Permethrin	1.0	4.2	0.2
Piperonyl butoxide	0.3	2.1	0.1
Pyrethrins	([1])	0.2	*

* Total applied less than 50 pounds.
[1] Rate per head less than .05 grams.

Dairy Cattle: Agricultural Chemical Use
Virginia, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Cyfluthrin	0.2	0.9	*
Eprinomectin	2.7	5.0	0.5
Ivermectin	0.1	0.3	*
Moxidectin	0.1	0.1	*
Permethrin	1.0	13.1	2.8
Piperonyl butoxide	2.1	49.0	2.2

* Total applied less than 50 pounds.

Dairy Cattle: Agricultural Chemical Use
Washington, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Coumaphos	0.2	41.8	0.6
Moxidectin	0.2	0.5	*
Permethrin	2.4	16.0	1.6

* Total applied less than 50 pounds.

Dairy Cattle: Agricultural Chemical Use
Wisconsin, 2006

Agricultural Chemical	Rate per Head per Application	Rate per Head per Year	Total Applied
	Grams	*Grams*	*1,000 Pounds*
Insecticides:			
Coumaphos	0.3	0.6	*
Cyfluthrin	0.2	0.6	0.1
Dichlorvos	0.5	14.7	3.2
Eprinomectin	3.7	5.2	5.6
Moxidectin	0.2	0.3	0.1
Octacide-264	0.2	2.5	0.3
Permethrin	0.7	9.9	5.8
Piperonyl butoxide	0.3	8.3	6.8
Pyrethrins	0.1	1.5	0.9

* Total applied less than 50 pounds.

Dairy Cattle: Agricultural Chemical Use,
Percent of Total Applications
by Method of Application, 2006

Application Method	Percent of Total Applications in 17 States
	Percent
Dip	0.2
Dust Bag/Hand Dust	3.8
Ear Tags	2.6
Feed Additive	0.6
Feed/Mineral Block	0.4
Injection	1.1
Oral Drench	0.1
Pills/Bolus	0.1
Pour-On	58.1
Rubbing Device	2.5
Spray	28.1
Other Methods	2.5

Dairy Cattle: Agricultural Chemical Use,
Percent of Total Applications
by Targeted Pest, 2006

Target Pest	Percent of Total Applications in 17 States
	Percent
Flies	58.9
Lice	23.1
Mange/Mites	8.9
Other	9.1

Dairy Cattle: Agricultural Chemical Use,
Percent of Total Applications
by Facility Treated, 2006

Application Method	Percent of Total Applications in 17 States
	Percent
Calf Hutch	13.1
Drylot	2.7
Feed Bunk/Apron	3.5
Freestall Barn	16.9
Individual/Multi-pen	9.2
Loafing Area/Run-in Shed	5.2
Milking Parlor	24.4
Tie Stall/Stanchion	17.8
Other Methods	7.2

Dairy Cattle Facilities: Agricultural Chemical Use,
Total Amount Applied
Program States and Total, 2006

State	Total Applied
	1,000 Pounds
CA	7.4
ID	8.1
IN	7.8
IA	14.8
KY	1.3
MI	2.9
MN	12.5
MO	7.0
NM	0.3
NY	10.2
OH	1.6
PA	16.0
TX	34.8
VT	1.0
VA	1.0
WA	1.9
WI	20.5
Total	149.1

Dairy Cattle Facilities: Agricultural Chemical Use, Program States, 2006 [1]

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Bomyl	*
Cyfluthrin	25.3
Dichlorvos	12.1
Dimethoate	12.7
Esfenvalerate	10.9
Imidacloprid	27.5
Lambda-cyhalothrin	6.5
Malathion	2.1
Methomyl	1.0
Naled	6.8
Octacide-264	0.4
Permethrin	9.0
Piperonyl butoxide	22.7
Pyrethrins	3.1
Pyriproxyfen	*
Tetrachlorvinphos (Z-isomer)	0.8
Trichlorfon	0.4
Tricosene	5.5

* Total applied less than 50 pounds.

[1] States included are CA, ID, IN, IA, KY, MI, MN, MO, NM, NY, OH, PA, TX, VT, VA, WA, and WI.

Dairy Cattle Facilities: Agricultural Chemical Use, California, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Dichlorvos	2.4
Imidacloprid	2.4
Methomyl	*
Naled	1.0
Permethrin	*
Piperonyl butoxide	0.3
Pyrethrins	*
Tricosene	0.5

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Idaho, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	1.6
Dichlorvos	0.4
Imidacloprid	1.2
Methomyl	0.1
Permethrin	*
Piperonyl butoxide	1.0
Pyrethrins	0.1
Tricosene	0.2

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Indiana, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	1.7
Imidacloprid	0.1
Methomyl	*
Permethrin	3.3
Piperonyl butoxide	0.8
Pyrethrins	*
Tricosene	*

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Iowa, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	8.2
Lambda-cyhalothrin	1.6
Piperonyl butoxide	3.4
Pyrethrins	0.2

Dairy Cattle Facilities: Agricultural Chemical Use, Kentucky, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Bomyl	*
Dichlorvos	0.6
Methomyl	*
Permethrin	0.2
Piperonyl butoxide	0.3
Pyrethrins	*
Tricosene	*

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Michigan, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	0.3
Permethrin	0.8
Piperonyl butoxide	0.5
Pyrethrins	*

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Minnesota, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	1.7
Dichlorvos	0.1
Piperonyl butoxide	2.1
Pyrethrins	0.3

Dairy Cattle Facilities: Agricultural Chemical Use, Missouri, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Imidacloprid	0.7
Octacide-264	0.1
Permethrin	1.0
Piperonyl butoxide	1.3
Pyrethrins	0.2
Tricosene	0.1

Dairy Cattle Facilities: Agricultural Chemical Use, New York, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Dimethoate	4.7
Imidacloprid	*
Methomyl	0.2
Piperonyl butoxide	0.7
Pyrethrins	*
Tricosene	*

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Ohio, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	0.4
Lambda-cyhalothrin	0.1
Permethrin	0.2
Piperonyl butoxide	0.4
Pyrethrins	*

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Pennsylvania, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	0.1
Dichlorvos	0.1
Dimethoate	1.5
Esfenvalerate	3.5
Imidacloprid	0.3
Lambda-cyhalothrin	3.0
Methomyl	0.1
Octacide-264	*
Permethrin	1.2
Piperonyl butoxide	1.8
Pyrethrins	*
Pyriproxyfen	*
Tricosene	0.1

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Texas, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	6.0
Imidacloprid	22.3
Methomyl	0.1
Octacide-264	*
Permethrin	0.5
Piperonyl butoxide	0.6
Pyrethrins	0.1
Tricosene	4.5

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Vermont, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Imidacloprid	*
Methomyl	*
Piperonyl butoxide	0.5
Pyrethrins	*
Tricosene	*

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Virginia, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Imidacloprid	0.3
Methomyl	*
Permethrin	0.1
Piperonyl butoxide	*
Pyrethrins	*
Tricosene	0.1

* Total applied less than 50 pounds.

Dairy Cattle Facilities: Agricultural Chemical Use, Wisconsin, 2006

Agricultural Chemical	Total Applied
	1,000 Pounds
Insecticides:	
Cyfluthrin	0.8
Dichlorvos	7.6
Dimethoate	1.5
Methomyl	0.1
Octacide-264	*
Permethrin	0.1
Piperonyl butoxide	8.4
Pyrethrins	1.8
Tricosene	*

* Total applied less than 50 pounds.

Survey Procedures: The estimates in this report are based on the 2006 National Animal Health Monitoring System (NAHMS) General Dairy Management Report conducted in January 2007, in the 17 Program States. This survey was based on a sample of pre-screened operators reporting dairy cattle on the 2006 January Cattle survey. Enumerators collected a variety of information including insecticide applications to dairy cattle and dairy cattle facilities for respondents' entire operation. Data were collected in the State where the operation's headquarters was located.

Estimation Procedures: The chemical applications data, reported by product name or trade name, are reviewed within States and across States for reasonableness and consistency. This review also compares reported data with manufacturers' 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.

Estimates of the total amount of active ingredient applied are based on the number of dairy cattle on hand as of January 1, 2007 published in the annual NASS report "**Cattle Report**" [Mt An 2 (2-07)]. The estimates for total amount applied will not be revised even if there are subsequent inventory revisions. Detailed data within a table may not multiply across or add down due to independent rounding of the published values.

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

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. 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 range from 10-65 percent at the U.S. level. Some rate items could have cv's above 100 percent. Those items which have an insufficient number of reports for publication are noted on pages 22 and 23 of the publication.

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.

The active ingredients listed below were reported in States which applied chemicals to dairy cattle. However, there were an insufficient number of reports to publish State level usage data.

Amitraz:	PA, NH, CA, and WA.
Bendiocarb:	KY.
Butoxypolypropylene glycol:	CA and IN.
Chlorpyrifos:	IN, KY, MO, TX, WA, and WA.
Clorsulon:	ID, MN, MI, PA, and TX.
Coumaphos:	CA, ID, IN, MI, MN, NY, OH, TX, VA, and WA.
Crotoxyphos:	KY, MO, PA, WA, and WI.
Cyfluthrin:	IN, IA, MI, NY, NH, and WA.
Cypermethrin:	IN and MO.
Diazinon:	MN, MO, PA, TX, VA, and WI.
Dichlorvos:	CA, ID, IN, KY, MI, MO, NY, OH, TX, NH, and VA.
Diflubenzuron:	PA and NH.
Dimethoate:	CA, IA, KY, NY, OH, PA, and WI.
Dipropyl isocinchom:	IN, MI, MN, NY, PA, and WI.
Doramectin:	CA, ID, KY, MI, MN, OH, PA, TX, NH, VA, and WI.
Eprinomectin:	CA, ID, HM, NY, OH, PA, TX, NH, VA, WA, and WI.
Ethion:	TX.
Fenthion:	NY, PA, and VA.
Fenvalerate:	ID, IA, KY, MO, PA, NH, and WI.
Flucythrinate:	NY and VA.
Imidacloprid:	KY, NY, and TX.
Ivermectin:	CA, ID, IN, MI, MN, MO, OH, PA, TX, NH, WA, and WI.
Lambda-cyhalothrin:	CA, IN, MO, OH, PA, TX, and WA.
Malathion:	CA, ID, IN, IA, KY, MI, MN, and MO.
Methomyl:	CA, ID, KY, MO, NY, OH, PA, and TX.
Methoxychlor:	KY and OH.
Moxidectin:	IN and MI.
Naled:	CA, ID, NY, WA, and WI.
Octacide-264:	IN, IA, MI, MN, NY, OH, PA, and WI.
Permethrin:	NM.
Petroleum distillate:	MN.
Piperonyl butoxide:	ID, NM, and WA.
Pirimiphos-methyl:	ID, MO, PA, and VA.
Pyrethrins:	ID, NM, VA, and WA.
S-Methoprene:	ID, IN, KY, MO, OH, PA, VA, and WI.
Spinosad:	MI, OH, and PA.
Tetrachlorvinphos (Z-isomer):	CA, IN, IA, KY, MI, TX, NH, VA, and WI.
Tricosene:	CA, KY, NY, PA, and TX.
Zeta-cypermethrin:	IN, TX, and WI.

The active ingredients listed below were reported in States which applied chemicals to dairy cattle facilities. However, there were an insufficient number of reports to publish State level usage data.

Abamectin:	CA and NY.
Amitraz:	MI.
Bifenthrin:	ID.
Bomyl:	MI and WI.
Butoxypolypropylene glycol:	PA.
Carbaryl:	IA and TX.
Chlorpyrifos:	MN and VA.
Coumaphos:	ID.
Cyfluthrin:	CA, KY, MO, NY, NH, VA, and WA.
Cypermethrin:	CA.
Deltamethrin:	MI.
Diazinon:	PA.
Dichlorvos:	IN, IA, MI, MO, NY, OH, TX, NH, VA, and WA.
Dimethoate:	CA, ID, IA, MI, MN, MO, OH, and VA.
Dipropyl isocinchomeronate:	CA and PA.
Eprinomectin:	KY.
Esfenvalerate:	IN, MN, and OH.
Imidacloprid:	IA, KY, NM, WA, and WI.
Lambda-cyhalothrin:	ID, IN, MN, MO, NM, TX, NH, VA, WA, and WI.
Lindane:	KY.
Malathion:	IN, MI, MO, OH, and PA.
Methomyl:	IA, MI, MN, MO, PA, and WA.
Methoxychlor:	WI.
Methyl parathion:	ID.
Moxidectin:	IA, PA, and NH.
Naled:	ID, KY, PA, and WA.
Octacide-264:	CA, ID, IN, IA, KY, and VA.
Permethrin:	IA, MN, NM, NY, NH, and WA.
Petroleum distillate:	MO and MN.
Phosmet:	PA.
Piperonyl butoxide:	WA.
Pyrethrins:	WA.
Pyripoxyfen:	PA.
Rimsulfuron:	MI and PA.
S-Kinoprene:	CA.
S-Methoprene:	CA.
Tetrachlorvinphos (Z-isomer):	CA, ID, IN, KY, and WA.
Tetramethrin:	KY.
Thiazine:	ID.
Trichlorfon:	ID, NY, and TX.
Tricosene:	IA, MI, MN, NM, OH, and WA.

Terms and Definitions

Active ingredient: The specific chemical which kills or controls the target pest(s). 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 pesticides.

Application rates: The application rates refer to the average weight of a pesticide active ingredient applied to a volume of product. For this survey, rate per application is the average number of grams applied in one application. Rate per year is the average number of grams applied counting multiple applications.

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.

Dips: Dips are used to eradicate or effectively control parasites. The most common method used to control parasites are through the use of dip vats. Dip vats are used to ensure that the animal is thoroughly covered to prevent the transmitting of the disease.

Drench: Drench treatments for livestock are formulated as pastes to be applied orally with a ready-to-use syringe.

Drylot: An enclosed, unpaved area where the animals can move about freely and where they can feed along a feed apron, except during milking.

Dust Bags/Hand Dusters: Dusts can be applied to animals by hand shakers or in self-treatment dust bags. Dust bags are most effective when used in forced-use situations especially where cattle have to pass under them daily to get to water or feed.

Ear Tags: Ear tags and plastic devices can be impregnated with an insecticide. These ear tags are usually used for ear tick and horn fly control.

Feed and Mineral Pesticide Additives: Certain pesticides may be administered as feed or mineral additives. Feed additives are used to prevent the development of fly larvae in animal feces. Feed additives target fly maggots breeding in fresh animal manure by controlling certain fly species whose maggot stages occur in animal manure.

Feed Apron or Feed Bunk: A paved or hard surface along one side of a drylot where feed is provided to the animals.

Freestall Barn: A barn where animals are managed in individual open stalls and are free to roam around. The animals can move about freely.

Injectables: Pesticides applied by subcutaneous injection. Some injectables control internal parasites with added benefit of external control.

Loafing Area: A resting area for cattle. Loafing sheds are structures that have at least one side open to the elements. This three-sided loafing shed offers protection from flies, summer sun, winter wind, rain, and storms. This type of structure is also known as a run-in shed.

Milking Parlor: A facility where lactating cows are managed before, during, and after milking.

Pesticides: As defined by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), pesticides 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.

Pour-Ons: Pour-on insecticides are formulated for direct application to the backlines of animals. The chemical is absorbed through the skin and circulates through the animal's system.

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.

Rubbing Device (Backrubber, Face Rubber): Backrubbers are another method of insecticide self-treatment for cattle. Cattle bothered by insects rub against devices soaked with insecticides. Backrubbers are placed where animals move to and from, such as between watering areas and pasture.

Spot-Ons: Spot-on pesticides are easily applied. This method involves applying a small amount of pesticide with specially designed applicators in a single area or 'spot' on the backlines of animals.

Sprays: Emulsifiable concentrates, or soluble formulations are usually used with smaller sprayers. Animals are usually sprayed with enough solution to cover the animal thoroughly.

Stanchion: A stanchion is a specially designed headgate to hold an animal in place while allowing feeding and resting.

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

Tie Stall Barn: A barn where animals are confined to stalls or stanchions and each cow is individually tied with a strap or chain.

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.

Pesticide Class, Common Names, and Trade Names

The following is a list of the pesticide class, (I=Insecticide), common names, and trade names of active ingredients in this publication. 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 promote the use of any specific trade name.

Class	Common Names	Trade Names
I	Abamectin	Fatal Attraction
I	Amitraz	Takic E.C.
I	Bendiocarb	Ficam D 1% Dust
I	Bifenthrin	Talstar Flowable
I	Bomyl	Purina Fly Bait Granules
I	Butoxypolypr. glycol	Farnam Wipe Citronella Spray II, Famam Wipe Fly Repellent
I	Carbaryl	Sevin Bait (5%), Sevin SL
I	Chlorpyrifos	Dursban 4E, Durban 44, Warrior Insecticide Ear Tags, Max-Con Ear Tags, MEC Chlorpyrifos Premise Spray, Duration
I	Clorsulon	Ivomec Plus Injection
I	Coumaphos	Co-Ral Animal Insecticide 1% Dust, Co-Ral Cattle Insecticide Pour On, Co-Ral Animal Insectiside (25WP), Zipcode 1% Co-Ral Dust, Co-Ral Flowable
I	Crotoxyphos	Purina Lice Powder
I	Cyfluthrin	Tempo 20 WP, Countdown WP Premise Insecticide, Tempo2, Tempo 1% Dust, Countdown EC Premise, Tempo SC Ultra, CyLence Pour-On, Prozap CyLence Animal Insecticide Dust
I	Cypermethrin	Max-Con Ear Tags, Cypermethrin Pro 2.0 EC
I	Deltamethrin	Annihilator WP
I	Diazinon	Diazinon 50W, Spectracide 25, Terminator Ear Tag, Warrior Insecticide Ear Tag
I	Dichlorvos	Pest Strip, Vapona Concentrate Insecticide (4EC), Vapona Plus Spray (1%), Vapona EM-2, Ravap Livestock Spray EC, C-Em-Die, Py-Vona Stock Fly Spray, Pyrethrin Plus Spray with Vapona, Prozap Vip Insect Spray, Dairy Cattle Spray, Prozap Beef and Dairy RTU
I	Diflubenzuron	Vigilante Insecticide
I	Dimethoate	Dimethoate 2.67 EC, Dimethoate 400, Cygon 2-E, Cygon Fly Spray, Cygon 2E, Dimethoate 400
I	Dipropyl isocinchom.	Farnam Wipe Fly Repellent, Tox-O-Wik Insecticide, Dairy Cattle Spray, Fly foil Spray
I	Doramectin	Dectomax Pour-on, Dectomax Injectible
I	Eprinomectin	Eprinex Pour-on, Ivomec Eprinex Pour-On
I	Esfenvalerate	Suspend 30W, Evercide Esfenvalerate 6.4% CS
I	Ethion	Commando Ear Tags
I	Fenthion	Lysoff 7.6% EC, Cutter Blue Ear Tar,
I	Fenvalerate	Ectrin Insecticide Cattle Ear Tag
I	Flucythrinate	Guardian Insecticide Ear Tag
I	Imidacloprid	QuickBayt Fly Bait
I	Ivermectin	Ivomec 1% Injection, Ivomec Pour-On for Cattle, Ivercide, Ivomec Plus Injection, Ivomec Premix for Swine

Pesticide Class, Common Names, and Trade Names

Class	Common Names	Trade Names
I	Lambda-cyhalothrin	Silencer, Warrior, Double Barrel Ear Tags, Excalibur Ear Tag, Saber Extra Ear Tag, Saber Pour-On, Demand CS, Demand PESTAB, Grenade ER Premise Insecticide, Grenade WP (aka Commodore WP)
I	Lindane	Bombane
I	Malathion	Malathion 5 Dust, Malathion 8E, M&M Dairy and Lvst. Dust, 4% Malathion Powder Insecticide, 4% Malathion Powder Insecticide, 2% Malathion Backrubber Solution, Malathion 3% Spray
I	Methomyl	Apache Fly Bait, Golden Malrin Fly Bait, Die Fly (Bait), Stimukil Fly Bait, BlueStreak Fly Bait
I	Methoxychlor	Methoxychlor 2EC, Marlate 50(WP), M & M Dairy and Livestock Dust
I	Methyl parathion	Methyl Parathion 7.5EC
I	Moxidectin	Cydectin
I	Naled	Dibrom 8 Emulsive, Fly Killer D
I	Octacide-264	Pyrocide fogging Concentrate, Purina Fly-A-Rest, Heartland Farm and Dairy Insecticide, CB Farm Dairy Insect Fogger, CB-40 Insecticide, CT 511, Tox-O-Wik Insecticide, Dairy Cattle Spray Dy-Fly I Livestock Spray Heartland Auto-Mist 3 Insect Killer, Fly Foil Spray
I	Permethrin	Arctic 3.2 EC, Permethrin 3.2 EC, Evercide Permethrin Permethrin 10% EC, Permethrin 10 EWC, Atroban 11% EC, Atroban 25% WP, DeLice Pour-On, Delice Pour-On (Synergized), Ectiban D (25%), Ectiban EC, Ectiban WP (25%), Expar 11EC, Expar 1%, Hard Hitter 5.7% EC, Insectaban EC, Insectrin EC, Insectrin WP (25%), GardStar Plus Ear Tags, New Z Permethrin Ear Tag, Permectrin Fly and Louse Dust, Permectrin II 10% EC, Permectrin 25% WP, Permectrin Plus, Durasect, Brute Pour-on for Cattle, Permectrin CD Pour-On(aka Buzz Off), Repel-X RTU, Permethrin 20 MEC Spray, 5% Permethrin Pour-on, 0.25% Permethrin Dust, Raid Wasp and Hornet Killer 13, Synergized Pour-On, Unicom Backup Pour-On, Atroban 42.5% EC, Gardstar 40% EC, Genie Fogger X Insect Killer, MEC Permethrin Premise Spray, Back Side, Boss Pour-On, Backrubber Oil, Dragnet, Permectrin Insecticide Spray, Zema 35-Day Dip, Permethrin 10% WB Multipurpose Concentration, CT Backrubber Oil, Back Side Plus, Ultra Boss Pour-On Insecticide, Kattleguard 1% Permethrin Insecticide, Permethrin Livestock & Premise Spray, Hard Hitter 5.7% Insecticide, Prozap Insectrin Dust, Durasect II, Permethrin 3.2 SFR
I	Petroleum distillate	Malathion 3% Spray
I	Phenothrin	Zema IGR Premise Spray (Knockout)
I	Phosmet	Del-Phos

Pesticide Class, Common Names, and Trade Names

Class	Common Names	Trade Names
I	Piperonyl butoxide	PBO-8 (EC), Pyrenone 25-5 Pyrethrins 5% Spray, Pyrocide fogging Concentrate, Pyrenone General Purpose, DeLice Pour-On (Synergized), Purina Insecticide Mist, Purina Fly- -A-Rest, Permectrin Plus, Python Ear Tags, Excalibur Ear Tag, Saber Extra Ear Tag, Farnam Wipe Citronella Spray II, Dy Fly Dairy Aerosol, LD-44Z Farm Insect Fogger, Heartland Farm and Dairy Insecticide, Farnam Wipe Fly Repellent, Cutter Blue Ear Tag. Permectrin CD Pour-On (aka Buzz Off), Repel-X RTU, CB-80 Insecticide, Fly Spray (generic), CB-38 Insecticide, CB Farm Dairy Insect Fogger, C-Em-Die, Py-Vona Stock Fly Spray, Max-Con Ear Tags, CB-40 Insecticide, CT 511, Pyrethrin Plus Spray with Vapona, C-Em-Die II, Tox-O-Wik Insecticide, Prozap VIP Insect Spray, Synergized Pour-On, Genie Fogger X Insect Killer, Dairy Cattle Spray, Moorman's Fly Spray, Pyrenone Multi-Purpose Knockout Spray, CV-80D Country Vet Farm & Dairy Spray, CV-40 Country Vet Farm & Home Insecticide, Back Side Plus, Kent/ Opticare Dairy Aerosol, Ultra Boss Pour-On Dairy Aerosol, Ultra Boss Pour-On Insecticide, Revenge Farm & Home Fly Bomb Insect Fogger, Super Kill IBA aka Livestock Fogging Spray, CB Purge I Timed Mist, Konk Too Flying Insect Killer, Fly-A-Rest Aerosol II, Dairy Aerosol Insect Spray, Durasect II, Cessco 7 C, Dy-Fly I Livestock Spray, Heartland Auto-Mist 3 Insect Killer, CT-75 Aerosol Insecticide, Fly Foil Spray,
I	Pirimiphos-methyl	Dominator Ear Tags, Double Barrel Ear Tags
I	Pyrethrins	Pyrenone 25-5 Pyrethrins 5% Spray, Pyrocide fogging Concentrate, Pyrenone General Purpose, PyGanic EC 1.4 II, Purina Insecticide Mist, Purina Fly-A-Rest, Farnam Wipe Citronella Spray II, Dy Fly Dairy Aerosol, LD-44Z Farm Insect Fogger, Heartland Farm and Dairy Insecticide, Farnam Wipe Fly Repellent, Repel-X RTU, CB-80 Insecticide, Fly Spray (generic), CB 38 Insecticide, CB Farm Dairy Insect Fogger, C-Em-Die, Py-Vona Stock Fly Spray, CB-40 Insecticide, CT 511, Pyrethrin Plus Spray with Vapona, C-Em-Die II, Tox-O-Wik -O-Wik Insecticide, Prozap VIP Insect Spray, Genie Fogger X Insect Killer, Dairy Cattle Spray, Moorman's Fly Spray, Pyrenone Multi-Purpose Knockout Spray, CV-80D Country Vet Farm & Dairy Spray, CV-40 Country Vet Farm & Home Insecticide, Kent/ Opticare Dairy Aerosol, Revenge Farm & Home Fly Bomb Insect Fogger, Super Kill IBA aka Livestock Fogging Spray, CB Purge I Timed Mist, Konk Too Flying Insect Killer, Fly-A-Rest Aerosol II, Dairy Aerosol Insect Spray, Durasect II, Cessco 7 C, Dy-Fly I Livestock Spray, Heartland Auto-Mist 3 Insect Killer, CT-75 Aerosol Insecticide, Fly Foil Spray

Pesticide Class, Common Names, and Trade Names

Class	Common Names	Trade Names
I	Pyriproxyfen	Zema IGR Premise Spray (Knockout), NYLAR 10EC, SPEER NYLAR EC
I	Rimsulfuron	Pre-Empt Fly Bait
I	Rosemary oil	Ecotrol EC
I	S-Kinoprene	Enstar II
I	S-Methoprene	Altosid, MoorMan's IGR Minerals
I	Spinosad	Elector
I	Tetrachlorvinphos (Z-isomer)	Rabon 3 Livestock Dust, Ravap Livestock Spray EC, Oral Larvacide 97.3%, Rabon 7.76 Oral Larvicide Premix, Mineral Block w/ Rabon
I	Tetramethrin	Raid Wasp and Hornet Killer 13, Zema IGR Premise Spray (Knockout)
I	Thiazine	Quikstrike Fly Abatement Strip
I	Trichlorfon	Dylox 80% SP, Dipterex Roach Bait Insecticide,
I	Tricosene	Golden Malrin Fly Bait, Stimukil Fly Bait, QuickBayt Fly Bait, Pre-Empt Fly Bait
I	Zeta-cypermethrin	Python Ear Tags

G – Chemical Applications/Treatments To Dairy Cattle

Now I have some questions about insecticides and chemical applications/treatments on this site/operation.

10. During 2006, on the operation, were any **insecticides** or **other chemical** products applied to, or used to treat **dairy cattle** to control insects and other external pests (include custom applications)?

☐ YES - (Continue)

☐ NO - (Enter code 3 in box 0800 and go to Section H)

	000
1 – Incomplete 3 – Valid Zero	0800
LINES IN TABLE	0801

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

		1		2	3
		What product(s) were applied to, or used to treat your dairy cattle? (Show product codes from Respondent Booklet)		**Formulation** **Was this product bought in liquid or dry form?** L = Liquid D = Dry	**What was the method of application?** 1 Spray 2 Injection 3 Feed Additive 4 Pour-on 5 Dust Bags 6 Ear Tags 7 Dip 8 Feed/mineral block 9 Rubbing devices 10 Pills/Bolus 11 Oral drench 12 Other
NOTES	**LINE**	**Product**	**Code**	**Unit Code**	**Code**
	802		0810		0811
	803		0810		0811
	804		0810		0811
	805		0810		0811
	806		0810		0811
	807		0810		0811
	808		0810		0811
	809		0810		0811

Line	**(INSECTICIDE)**	**NADA/EPA No. or Tradename and Formulation**	**Form Purchased** (Liquid or Dry)	**Where Purchased** [Ask only if NADA/EPA No. cannot be reported]
_____	_____	_____	_____	_____

G – Chemical Applications/Treatments To Dairy Cattle (cont'd)

	4	5 or 6		7	8	9
LINE	How many head had applications made to, or were treated with this product?	How much (quantity) was applied, or treated, per HEAD per application?	What was the TOTAL amount (quantity) applied, or treated, per application?	1 Pounds 12 Gallons 13 Quarts 14 Pints 15 Ounces (L) 28 Ounces (D) 30 Grams 31 Cc/ml 41 Liters 50 Other	How many times was this applied or treated?	What was the primary target pest for this application? 1 Mange/mites 2 Lice 3 Flies 4 Other
	Head	Amount	Amount	Unit Code	Number	Code
802	0812	0813 .___ ___	0814 .___ ___	0815	0816	0817
803	0812	0813 .___ ___	0814 .___ ___	0815	0816	0817
804	0812	0813 .___ ___	0814 .___ ___	0815	0816	0817
805	0812	0813 .___ ___	0814 .___ ___	0815	0816	0817
806	0812	0813 .___ ___	0814 .___ ___	0815	0816	0817
807	0812	0813 .___ ___	0814 .___ ___	0815	0816	0817
808	0812	0813 .___ ___	0814 .___ ___	0815	0816	0817
809	0812	0813 .___ ___	0814 .___ ___	0815	0816	0817

H – Chemical Applications To Dairy Cattle Facilities

1. In 2006, on this site/operation, did you apply any **insecticides** or **other chemical** products to **dairy cattle facilities** to control insects? Include buildings that are used by the dairy cattle on this operation, such as barns, hutches, stalls, pens, drylots, etc.

   YES ☐ - (Continue)

   NO ☐ - (Enter 3 in code Box 0900 and go to Section I)

	000
1 – Incomplete 3 – Valid Zero	0900
LINES IN TABLE	0901

[ENUMERATOR NOTE: Complete tables for all insecticide applications to **dairy cattle facilities. Dairy cattle facilities** include buildings, structures, etc. Use supplemental tables if necessary. If 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
	LINE	**Facility treated** 10. Individual or multi-pen 11. Freestall barn 12. Tie stall or stanchion barn 13. Milking parlor 14 Calf hutch 15. Drylot 16. Feed bunk/Apron 17. Loafing area/run-in shed 18. Other		**What product(s)were applied to the [column 1] facility?** [Show product codes from Respondent Booklet]		**Was this product bought in liquid or dry form?** L = Liquid D = Dry
NOTES		**Facility**	**Code**	**Product**	**Code**	**Unit Code**
	902		0910		0911	
	903		0910		0911	
	904		0910		0911	
	905		0910		0911	
	906		0910		0911	
	907		0910		0911	
	908		0910		0911	
	909		0910		0911	

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.]
_____	_____	_____	_____	_____

H – Chemical Applications To Dairy Cattle Facilities

LINE	4 What was the TOTAL amount applied per application? Amount	5 1 Pounds 12 Gallons 13 Quarts 14 Pints 15 Ounces (L) 28 Ounces (D) 30 Grams 41 Liters 50 Other Unit Code	6 How many times was this applied? Number
902	0912 .__ __	0913	0914
903	0912 .__ __	0913	0914
904	0912 .__ __	0913	0914
905	0912 .__ __	0913	0914
906	0912 .__ __	0913	0914
907	0912 .__ __	0913	0914
908	0912 .__ __	0913	0914
909	0912 .__ __	0913	0914

Report Features

Released May 23, 2007, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, U.S. Department of Agriculture. For information on "Agricultural Chemical Usage" call Doug Farmer at (202) 720-7492, office hours 7:30 a.m. to 4:00 p.m. ET.

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