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# Agricultural Chemical Usage 2000 Restricted Use Summary

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# USDA





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## 2000 Agricultural Chemical Use Estimates for Restricted Use Pesticides

**Overview:** As determined by the U.S. Environmental Protection Agency (EPA), a restricted use pesticide is a pesticide which is available for purchase and use only by certified pesticide applicators or persons under their direct supervision, and only for the uses covered by the applicator's certification. This group of pesticides is not available for use by the general public because of the very high toxicities or due to the environmental hazards associated with the materials. However, an active ingredient may be restricted for one crop but not for another. This report shows only those active ingredients which are restricted for each specific crop, based on the "Restricted Use Product (RUP) Report, July 2001" published by the EPA.

The agricultural chemical use estimates in this report are based on data compiled from the Agricultural Resource Management Study, the Vegetable Chemical Use Survey, and the 2000 Sheep Chemical Use Study. All field crop and vegetable crop data refer to on-farm use of restricted use pesticides for the 2000 crop year. Data were collected late in the growing season or after the farm operator had indicated that planned applications were completed. "Sheep and Sheep Facilities" restricted use pesticide data were collected in late 2000 through January 2001 and refer to the on-farm use of insecticides applied during calendar year 2000. Trained enumerators personally interviewed farm operators or managers to obtain information on chemical applications made on sampled farm operations.

## Highlights

**Field Crops:** Field crop data on restricted use pesticides were compiled from the Agricultural Resource Management Study (ARMS) in 32 Program States. Targeted crops in the 2000 ARMS included corn, rice, soybeans, sugarbeets, upland cotton, winter wheat, durum wheat and other spring wheat. The Program States accounted for 83 to 98 percent of the U.S. acreage for these crops.

Atrazine was again the most widely used restricted use herbicide applied to program field crops, with 68 percent of the corn acres treated. Acetochlor was used on 25 percent of the corn acres. No other restricted use herbicide was used on more than 10 percent of the planted acreage of the program field crops.

A wide range of restricted use insecticides was reported, particularly on upland cotton, which had 22 different active ingredients applied. Aldicarb, with 26 percent of the acres treated, was the primary restricted use insecticide used on upland cotton. Terbufos was applied to 41 percent of the sugarbeet acreage in the Program States.

Triphenyltin hydroxide was the only restricted use fungicide applied to any program field crop, with 44 percent of the sugarbeet acres reported as being treated. Paraquat, used as a defoliant, was used on 13 percent of the upland cotton acreage.

**Vegetable Crops:** Growers in 21 Program States were surveyed to obtain chemical use data on selected vegetable crops in 2000. The data on restricted use applications cover the period immediately following harvest of the 1999 crop through harvest of the 2000 crop.

Only a few restricted use herbicides were applied to vegetable crops in 2000. Atrazine was applied to 63 percent of the processing sweet corn acreage and to 61 percent of the fresh sweet corn acreage. Pronamide was used on 61 percent of the other lettuce acreage and on 35 percent of the head lettuce acreage.

Several restricted use insecticides were used extensively on vegetable crops in the Program States. Permethrin was applied to 82 percent of the celery acreage and to 73 percent of the fresh spinach acreage. Oxamyl was used on 71 percent of the celery acreage. Other restricted use insecticides applied to more than 50 percent of planted acres were esfenvalerate on artichokes; methomyl on head and other lettuce; oxydemeton-methyl on broccoli; lambda-cyhalothrin on fresh sweet corn; disulfoton on asparagus; and permethrin on head and other lettuce and kraut cabbage.

Methyl bromide, a soil fumigant, was used on 52 percent of the strawberry acreage, 45 percent of the fresh tomato acres and 32 percent of the bell pepper acreage.

**Sheep and Sheep Facilities:** The 2000 Sheep Chemical Use Study collected information concerning chemicals applied to sheep and sheep facilities to control pasture and confinement flies, lice, grubs and other pests. All data refer to the on-farm use of chemical active ingredients contained in insecticides applied during the 2000 calendar year. Sample sizes were adequate to publish data only at the Program States level.

**Corn: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Acetamide	2	1.0	0.50	0.50	792
Acetochlor	25	1.0	1.70	1.73	31,442
Alachlor	4	1.0	1.73	1.74	4,748
Atrazine	68	1.0	1.00	1.07	53,954
Cyanazine	*	1.0	1.36	1.36	865
Paraquat	1	1.0	0.52	0.52	570
<b>Insecticides:</b>					
Carbofuran	*	1.3	0.95	1.25	580
Chlorethoxyfos	*	1.0	0.10	0.10	52
Cyfluthrin	2	1.0	0.006	0.006	10
Fipronil	4	1.0	0.11	0.11	320
Lambda-cyhalothrin	2	1.0	0.02	0.02	25
Methyl parathion	*	1.1	0.41	0.46	246
Permethrin	3	1.0	0.10	0.10	182
Phorate	*	1.0	0.91	0.91	65
Tefluthrin	7	1.0	0.10	0.10	478
Terbufos	3	1.0	1.14	1.23	2,781

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 18 program states were 73.8 million acres. States included are CO, IL, IN, IA, KS, KY, MI, MN, MO, NE, NY, NC, ND, OH, PA, SD, TX, and WI.

**Cotton, Upland: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Cyanazine	10	1.1	0.69	0.76	1,091
<b>Insecticides:</b>					
Aldicarb	26	1.0	0.63	0.65	2,483
Azinphos-methyl	2	1.7	0.26	0.44	143
Bifenthrin	2	1.2	0.06	0.07	19
Carbofuran	5	1.0	0.24	0.25	172
Cyfluthrin	8	1.3	0.08	0.11	122
Cypermethrin	8	1.1	0.06	0.07	79
Deltamethrin	2	1.5	0.09	0.14	35
Dicrotophos	8	1.4	0.22	0.32	364
Diflubenzuron	*	1.0	0.14	0.14	3
Disulfoton	1	1.0	0.76	0.76	141
Emamectin benzoate	2	1.2	0.008	0.01	2
Esfenvalerate	*	1.0	0.04	0.04	5
Fenpropathrin	*	1.1	0.18	0.20	14
Lambda-cyhalothrin	9	1.5	0.02	0.03	46
Methamidophos	2	1.0	0.34	0.35	84
Methomyl	1	1.0	0.24	0.25	46
Methyl parathion	5	2.1	0.58	1.25	815
Oxamyl	11	1.8	0.25	0.47	722
Permethrin	*	1.0	0.04	0.05	1
Phorate	5	1.0	0.63	0.63	439
Profenofos	1	1.2	0.48	0.62	124
Tralomethrin	2	1.1	0.02	0.03	6
<b>Other Chemicals:</b>					
Dichloropropene	*	1.0	29.58	29.58	1,280
Paraquat	13	1.00	0.29	0.31	601

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 11 program states were 14.4 million acres. States included are AL, AZ, AR, CA, GA, LA, MS, MO, NC, TN, and TX.

**Rice: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	*	1.1	0.49	0.55	4
<b>Insecticides:</b>					
Carbofuran	2	1.0	0.43	0.46	21
Lambda-cyhalothrin	13	1.1	0.03	0.03	11
Methyl parathion	9	2.1	0.51	1.11	286

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 5 program states were 2.89 million acres. States included are AR, CA, LA, MS, and TX.

**Soybeans: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Alachlor	1	1.0	1.65	1.65	1,346
Imazaquin	4	1.0	0.09	0.09	221
Paraquat	*	1.0	0.36	0.36	82
<b>Insecticides:</b>					
Esfenvalerate	*	1.0	0.03	0.03	7
Lambda-cyhalothrin	*	1.0	0.02	0.02	4
Methyl parathion	*	1.1	0.48	0.56	168
Permethrin	*	1.0	0.08	0.08	3

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 18 program states were 71.0 million acres. States included are AR, IL, IN, IA, KS, KY, LA, MI, MN, MS, MO, NE, NC, ND, OH, SD, TN, and WI.

**Sugarbeets: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Aldicarb	7	1.0	1.84	1.87	198
Carbofuran	*	1.0	0.54	0.54	4
Esfenvalerate	5	1.9	0.02	0.05	3
Methomyl	2	1.1	0.46	0.52	17
Phorate	2	1.0	1.31	1.31	45
Terbufos	41	1.0	1.81	1.82	1,168
<b>Fungicides:</b>					
Triphenyltin hydr.	44	1.4	0.23	0.34	238
<b>Other Chemicals:</b>					
Dichloropropene	1	1.0	107.48	107.48	2,348

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 11 program states were 1.56 million acres. States included are CA, CO, ID, MI, MN, MT, NE, ND, OR, WA, and WY.

**Wheat, Other Spring: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Picloram	2	1.0	0.01	0.01	3

<sup>1</sup> Planted acres in 2000 for the 4 program states were 13.8 million acres. States included are MN, MT, ND, and SD.

**Wheat, Winter: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Diclofop-methyl	*	1.0	0.56	0.57	170
Picloram	*	1.0	0.02	0.02	3
<b>Insecticides:</b>					
Chlorpyrifos	3	1.0	0.40	0.40	505
Lambda-cyhalothrin	*	1.0	0.02	0.02	2

\* Area applied is less than one percent.

<sup>1</sup> Harvested acres in 2000 for the 16 program states were 38.1 million acres. States included are AR, CO, ID, IL, KS, KY, MO, MT, NE, NC, OH, OK, OR, SD, TX, and WA.

**Artichokes: Agricultural Chemical Applications,  
Restricted Use Pesticides  
California, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Pronamide	14	1.0	0.91	0.96	1.2
<b>Insecticides:</b>					
Diflubenzuron	27	1.6	0.13	0.20	0.5
Esfenvalerate	69	2.5	0.04	0.10	0.6
Permethrin	10	1.8	0.19	0.35	0.3

<sup>1</sup> Planted acres in 2000 for California were 9,500 acres.

**Asparagus: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	9	1.1	0.59	0.66	5.1
<b>Insecticides:</b>					
Disulfoton	51	1.4	0.96	1.43	59.4
Methomyl	4	1.5	0.76	1.16	3.4
Permethrin	12	3.0	0.09	0.27	2.5

<sup>1</sup> Planted acres in 2000 for the 4 program states were 81,900 acres. States included are CA, MI, NJ, and WA.

**Beans, Lima, Fresh: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Georgia, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Permethrin	*	1.3	0.14	0.19	**

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for Georgia were 3,500 acres.

**Beans, Lima, Processing: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Methomyl	24	1.3	0.48	0.63	

<sup>1</sup> Planted acres and total applied not published to avoid disclosure. States included are CA, NJ, WA, and WI.

**Beans, Snap, Fresh: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	1	1.0	0.81	0.88	0.7
<b>Insecticides:</b>					
Esfenvalerate	26	1.4	0.03	0.05	1.1
Methomyl	18	1.7	0.41	0.72	11.6
Permethrin	3	1.8	0.06	0.12	0.3
Rotenone	*	1.0	0.004	0.004	**
<b>Fungicides:</b>					
Benomyl	5	1.4	0.47	0.69	3.0

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 8 program states were 89,800 acres. States included are CA, FL, GA, MI, NJ, NY, NC, and TN.

**Beans, Snap, Processing: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Disulfoton	8	1.0	0.99	0.99	13.2
Esfenvalerate	11	1.1	0.03	0.04	0.6
Ethoprop	7	1.0	2.42	2.47	28.8
Methomyl	*	1.0	0.45	0.45	0.7
Methyl parathion	5	1.0	0.49	0.51	3.9
<b>Fungicides:</b>					
Benomyl	13	1.0	0.74	0.79	17.2

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 6 program states were 172,900 acres. States included are IL, MI, NY, OR, PA, and WI.

**Broccoli: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Cypermethrin	6	1.0	0.08	0.09	0.8
Disulfoton	5	1.0	1.02	1.05	7.2
Lambda-cyhalothrin	18	1.5	0.03	0.04	1.0
Methomyl	13	1.1	0.60	0.69	11.9
Oxydemeton-methyl	54	1.4	0.50	0.70	50.6
Permethrin	14	1.1	0.09	0.11	2.0
Pyrethrins	*	1.3	0.01	0.02	**
Tralomethrin	6	1.0	0.02	0.02	0.2

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 2 program states were 135,500 acres. States included are AZ and CA.

**Brussels Sprouts: Agricultural Chemical Applications,  
Restricted Use Pesticides  
California, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Permethrin	48	2.0	0.09	0.19	0.3

<sup>1</sup> Planted acres in 2000 for California were 2,900 acres.

**Cabbage, Fresh: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Azinphos-methyl	5	1.5	0.44	0.69	2.3
Cypermethrin	6	1.0	0.08	0.09	0.3
Disulfoton	3	1.1	1.42	1.66	3.4
Emamectin benzoate	6	1.9	0.007	0.01	**
Esfenvalerate	28	2.6	0.04	0.09	1.8
Lambda-cyhalothrin	34	2.1	0.03	0.05	1.3
Methamidophos	2	1.3	0.53	0.73	0.9
Methomyl	13	1.7	0.47	0.80	7.3
Oxydemeton-methyl	9	1.4	0.56	0.81	5.4
Permethrin	14	2.0	0.11	0.22	2.2
Rotenone	*	1.9	0.06	0.11	**

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 9 program states were 71,400 acres. States included are CA, FL, GA, MI, NJ, NY, NC, TX, and WI.

**Cabbage, Kraut: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Lambda-cyhalothrin	40	2.6	0.02	0.06	0.2
Permethrin	63	2.0	0.18	0.36	1.5

<sup>1</sup> Planted acres in 2000 for the 2 program states were 6,700 acres. States included are NY and WI.

**Carrots, Fresh: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Esfenvalerate	4	1.6	0.04	0.06	
Oxamyl	6	2.1	0.53	1.12	
<b>Other Chemicals:</b>					
Dichloropropene	8	1.1	91.34	102.32	

<sup>1</sup> Planted acres and total applied not published to avoid disclosure. States included are CA, FL, MI, TX, and WA.

**Carrots, Processing: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Esfenvalerate	44	3.8	0.03	0.12	0.9
<b>Other Chemicals:</b>					
Dichloropropene	17	1.0	117.81	117.84	383.7

<sup>1</sup> Planted acres in 2000 for the 5 program states were 18,660 acres. States included are CA, MI, TX, WA, and WI.

**Cauliflower: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Cypermethrin	6	1.0	0.08	0.09	0.2
Esfenvalerate	36	1.3	0.04	0.05	0.9
Lambda-cyhalothrin	19	1.3	0.02	0.03	0.2
Methomyl	18	1.4	0.53	0.78	6.6
Oxydemeton-methyl	41	1.3	0.49	0.63	12.4
Permethrin	22	1.2	0.09	0.11	1.0

<sup>1</sup> Planted acres in 2000 for the 3 program states were 47,300 acres. States included are AZ, CA, and NY.

**Celery: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Azinphos-methyl	3	1.2	0.50	0.62	0.5
Methomyl	42	1.9	0.70	1.34	14.4
Oxamyl	71	1.8	0.64	1.20	21.6
Permethrin	82	2.2	0.15	0.34	7.0
Pyrethrins	4	1.0	0.006	0.007	**
Rotenone	4	1.0	0.005	0.006	**

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 2 program states were 25,500 acres. States included are CA and MI.

**Collards: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Cypermethrin	9	1.6	0.09	0.15	0.2
Esfenvalerate	15	1.6	0.03	0.05	**
Methomyl	7	1.6	0.29	0.49	0.5
Permethrin	6	3.1	0.08	0.24	0.2

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 5 program states were 14,100 acres. States included are AL, CA, GA, NC, and SC.

**Corn, Sweet, Fresh: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Alachlor	9	1.1	1.57	1.79	33.8
Atrazine	61	1.0	1.11	1.20	149.3
Butylate	4	1.0	3.86	3.87	31.8
Cyanazine	5	1.0	1.33	1.40	13.2
Paraquat	*	1.0	0.58	0.62	0.9
<b>Insecticides:</b>					
Carbofuran	3	1.0	0.94	0.94	6.6
Cyfluthrin	12	5.3	0.03	0.17	4.3
Esfenvalerate	24	3.5	0.03	0.11	5.2
Lambda-cyhalothrin	53	3.3	0.02	0.08	8.7
Methomyl	41	6.0	0.33	1.98	163.5
Methyl parathion	10	2.0	0.50	1.00	20.7
Oxydemeton-methyl	1	1.0	0.48	0.50	1.4
Permethrin	15	2.3	0.13	0.31	9.3
Phorate	14	1.0	1.27	1.27	37.6
Tefluthrin	3	1.0	0.15	0.15	1.0
Terbufos	9	1.0	1.14	1.18	20.6

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 12 program states were 204,100 acres. States included are CA, FL, GA, IL, KS, MI, NJ, NY, NC, OH, PA, and WI.

**Corn, Sweet, Processing: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Alachlor	19	1.0	2.08	2.17	173.9
Atrazine	63	1.0	0.71	0.75	198.8
Cyanazine	9	1.0	0.96	0.98	35.9
Paraquat	*	1.0	0.43	0.46	1.5
<b>Insecticides:</b>					
Carbofuran	1	1.0	0.93	0.93	4.1
Cyfluthrin	3	1.6	0.04	0.06	0.7
Esfenvalerate	*	1.0	0.02	0.02	**
Ethoprop	2	1.0	1.60	1.61	10.3
Lambda-cyhalothrin	26	2.2	0.02	0.05	6.0
Methyl parathion	2	1.2	0.48	0.59	5.5
Permethrin	15	1.9	0.15	0.30	19.6
Tefluthrin	2	1.0	0.11	0.11	0.7
Terbufos	2	1.0	1.06	1.07	6.8

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 7 program states were 419,800 acres. States included are IL, MN, NY, PA, OR, WA, and WI.

**Cucumbers, Fresh: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	7	1.0	0.60	0.63	2.0
<b>Insecticides:</b>					
Azinphos-methyl	5	1.0	0.39	0.39	1.1
Carbofuran	*	1.1	0.83	0.93	0.1
Esfenvalerate	26	1.7	0.04	0.07	0.7
Methomyl	5	3.1	0.89	2.75	7.6
Oxamyl	12	1.3	0.60	0.83	4.8
Permethrin	5	2.2	0.12	0.26	0.6
Pyrethrins	3	1.0	0.005	0.005	**
Rotenone	3	1.0	0.005	0.005	**
<b>Other Chemicals:</b>					
Chloropicrin	7	1.0	65.63	65.63	229.9
Dichloropropene	16	1.4	47.78	69.70	557.9
Methyl bromide	7	1.0	135.59	135.59	463.6

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 7 program states were 49,400 acres. States included are CA, FL, GA, MI, NJ, NY, and NC.

**Cucumbers, Pickles: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Carbofuran	3	1.0	1.02	1.06	
Esfenvalerate	8	3.3	0.01	0.05	
Methomyl	13	2.4	0.42	1.00	
Permethrin	2	2.0	0.09	0.19	

<sup>1</sup> Planted acres and total applied not published to avoid disclosure. States included are CA, FL, MI, NC, OH, SC, TX, and WI.

**Eggplant: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	20	1.8	0.56	1.01	0.5
<b>Insecticides:</b>					
Esfenvalerate	14	2.1	0.04	0.08	**
Methomyl	12	2.3	0.66	1.53	0.4
Oxamyl	5	2.6	0.63	1.69	0.2
Permethrin	6	3.5	0.18	0.63	0.1
Rotenone	*	1.5	0.10	0.16	**

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 2 program states were 2,600 acres. States included are FL and NJ.

**Greens, Mustard: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Cypermethrin	8	2.2	0.09	0.20	0.1
Esfenvalerate	11	2.2	0.03	0.06	**
Methomyl	4	2.0	0.33	0.70	0.2
Permethrin	4	2.1	0.12	0.26	**

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 7 program states were 8,950 acres. States included are AR, CA, GA, IL, NC, SC, and TX.

**Greens, Turnip: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Cypermethrin	4	3.0	0.10	0.30	0.1
Esfenvalerate	8	2.7	0.02	0.05	**
Methomyl	5	1.6	0.34	0.55	0.3
Permethrin	11	1.6	0.10	0.16	0.2

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 7 program states were 11,750 acres. States included are AL, AR, GA, NC, SC, TN, and TX.

**Kale: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Cypermethrin	13	2.8	0.10	0.27	0.2
Esfenvalerate	7	1.8	0.03	0.05	**

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 4 program states were 3,880 acres. States included are CA, GA, OH, and SC.

**Lettuce, Head: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	1	1.0	0.76	0.79	1.5
Pronamide	35	1.0	0.69	0.73	49.5
<b>Insecticides:</b>					
Cypermethrin	24	1.1	0.08	0.09	4.3
Esfenvalerate	5	1.3	0.04	0.05	0.5
Lambda-cyhalothrin	46	1.6	0.03	0.04	3.9
Methomyl	52	1.7	0.65	1.12	115.2
Oxydemeton-methyl	25	1.3	0.49	0.64	31.1
Permethrin	62	1.4	0.14	0.21	25.1
Pyrethrins	*	1.0	0.007	0.007	**
Rotenone	*	1.0	0.008	0.008	**
Tralomethrin	15	1.4	0.02	0.03	1.0

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 3 program states were 196,700 acres. States included are AZ, CA, and NJ.

**Lettuce, Other: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	1	1.0	0.55	0.56	0.6
Pronamide	61	1.0	0.93	0.98	57.2
<b>Insecticides:</b>					
Cypermethrin	6	1.6	0.09	0.14	0.8
Esfenvalerate	*	1.0	0.04	0.04	**
Lambda-cyhalothrin	39	1.3	0.02	0.03	1.3
Methomyl	60	1.9	0.66	1.27	72.9
Oxydemeton-methyl	5	1.2	0.49	0.64	2.8
Permethrin	66	2.1	0.14	0.31	19.8
Pyrethrins	5	1.0	0.005	0.005	**
Rotenone	2	1.0	0.006	0.007	**
Tralomethrin	22	1.4	0.02	0.03	0.7
<b>Other Chemicals:</b>					
Chloropicrin	*	1.0	121.74	122.44	44.4
Methyl bromide	*	1.0	247.63	249.05	90.4

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres not published to avoid disclosure. States included are AZ, CA, and FL.

**Melons, Cantaloupe: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	2	1.0	0.35	0.35	0.5
<b>Insecticides:</b>					
Carbofuran	1	1.2	0.98	1.25	1.3
Esfenvalerate	6	1.4	0.04	0.06	0.4
Methomyl	17	1.5	0.51	0.77	11.7
Oxamyl	3	1.8	0.56	1.02	2.8
Permethrin	6	1.4	0.16	0.24	1.3
<b>Other Chemicals:</b>					
Chloropicrin	*	1.0	60.72	60.72	37.0
Dichloropropene	2	1.2	49.27	61.88	134.0
Methyl bromide	2	1.0	168.15	168.15	333.9

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 5 program states were 92,500 acres. States included are AZ, CA, GA, MI, and TX.

**Melons, Honeydew: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Esfenvalerate	13	1.1	0.02	0.02	0.1

<sup>1</sup> Planted acres in 2000 for the 3 program states were 28,600 acres. States included are AZ, CA, and TX.

**Melons, Watermelon: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	4	1.0	0.67	0.68	3.6
<b>Insecticides:</b>					
Carbofuran	5	1.0	0.60	0.60	4.5
Esfenvalerate	9	1.5	0.03	0.04	0.6
Methomyl	6	1.9	0.39	0.77	7.2
Oxamyl	2	1.6	0.38	0.63	1.6
Permethrin	5	1.9	0.13	0.26	1.8
<b>Other Chemicals:</b>					
Chloropicrin	4	1.0	50.28	51.66	289.4
Dichloropropene	*	1.0	56.09	56.09	70.4
Methyl bromide	4	1.0	126.59	133.62	828.1

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 8 program states were 150,500 acres. States included are AL, AZ, CA, FL, GA, NC, SC, and TX.

**Okra: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Methomyl	4	3.7	0.24	0.89	0.1
Permethrin	1	3.2	0.09	0.28	**

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 1998 for the 4 program states were 3,200 acres. States included are AL, FL, GA, and TX.

**Onions, Dry: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	2	1.1	0.40	0.47	1.2
<b>Insecticides:</b>					
Cypermethrin	18	1.8	0.08	0.14	3.7
Lambda-cyhalothrin	44	2.5	0.03	0.07	4.6
Methomyl	19	1.8	0.61	1.14	31.5
Methyl parathion	6	2.4	0.50	1.20	9.5
Oxamyl	8	1.0	0.55	0.57	6.9
Permethrin	19	2.0	0.13	0.26	7.3
<b>Other Chemicals:</b>					
Chloropicrin	3	1.0	31.62	32.17	138.7
Dichloropropene	5	1.0	164.21	164.21	1,255.4

<sup>1</sup> Planted acres in 2000 for the 9 program states were 143,200 acres. States included are AZ, CA, GA, MI, NY, OR, TX, WA, and WI.

**Peas, Green, Processing: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Esfenvalerate	14	1.6	0.03	0.05	1.9
Pyrethrins	6	1.0	0.02	0.02	0.2

<sup>1</sup> Planted acres in 2000 for the 5 program states were 249,600 acres. States included are MN, NY, OR, WA, and WI.

**Peppers, Bell: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	10	1.4	0.45	0.65	3.9
<b>Insecticides:</b>					
Cyfluthrin	11	2.1	0.05	0.10	0.7
Esfenvalerate	23	2.1	0.03	0.07	1.0
Lambda-cyhalothrin	*	2.1	0.02	0.05	**
Methomyl	28	4.3	0.45	1.98	35.0
Oxamyl	10	2.2	0.81	1.81	10.8
Permethrin	16	2.1	0.11	0.23	2.4
<b>Other Chemicals:</b>					
Chloropicrin	30	1.0	64.95	65.89	1,229.8
Dichloropropene	*	1.2	77.32	95.25	18.9
Methyl bromide	32	1.0	137.17	139.29	2,778.6

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 6 program states were 62,300 acres. States included are CA, FL, MI, NJ, NC, and TX.

**Pumpkins: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	*	1.3	0.56	0.73	0.1
<b>Insecticides:</b>					
Azinphos-methyl	*	1.7	0.51	0.87	0.3
Carbofuran	5	1.0	0.71	0.71	1.3
Esfenvalerate	11	2.1	0.03	0.07	0.2
Lambda-cyhalothrin	2	2.1	0.03	0.06	**
Methomyl	9	1.6	0.50	0.82	2.9
Oxydemeton-methyl	2	1.2	0.47	0.59	0.4
Permethrin	17	1.6	0.13	0.22	1.4
Rotenone	*	2.2	0.02	0.04	**

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 6 program states were 38,700 acres. States included are CA, IL, MI, NY, OH, and PA.

**Radishes: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Esfenvalerate	22	1.5	0.03	0.05	0.1

<sup>1</sup> Planted acres in 2000 for the 4 program states were 14,600 acres. States included are CA, FL, MI, and OH.

**Spinach, Fresh: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Methomyl	6	1.2	0.51	0.64	0.8
Permethrin	73	1.7	0.15	0.26	4.2

<sup>1</sup> Planted acres in 2000 for the 3 program states were 21,900 acres. States included are CA, NJ, and TX.

**Spinach, Processing: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Texas, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Insecticides:</b>					
Permethrin	39	1.3	0.17	0.23	0.5

<sup>1</sup> Planted acres in 2000 for Texas were 5,500 acres.

**Squash: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	1	1.0	0.75	0.77	0.5
<b>Insecticides:</b>					
Azinphos-methyl	*	1.1	0.45	0.52	0.2
Carbofuran	2	1.0	0.87	0.92	1.0
Esfenvalerate	15	2.2	0.04	0.09	0.6
Methomyl	13	2.1	0.41	0.87	6.4
Oxamyl	3	1.7	0.66	1.16	1.9
Oxydemeton-methyl	1	1.1	0.47	0.55	0.4
Permethrin	5	1.9	0.11	0.22	0.5
Rotenone	*	3.9	0.05	0.19	**
<b>Other Chemicals:</b>					
Chloropicrin	3	1.0	60.26	60.26	106.1
Methyl bromide	3	1.0	143.81	143.81	267.2

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 12 program states were 57,100 acres. States included are CA, FL, GA, MI, NJ, NY, NC, OH, OR, SC, TN, and TX.

**Strawberries: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	19	1.3	0.82	1.10	9.5
Simazine	6	1.0	0.83	0.85	2.3
<b>Insecticides:</b>					
Azinphos-methyl	5	1.6	0.45	0.74	1.7
Diazinon	5	1.8	0.66	1.25	3.1
Methomyl	24	3.6	0.73	2.63	29.9
Oxydemeton-methyl	*	1.2	0.49	0.63	0.2
Pyrethrins	1	1.0	0.006	0.006	**
Rotenone	1	1.0	0.005	0.005	**
<b>Fungicides:</b>					
Chlorothalonil	*	9.0	0.39	3.50	0.9
<b>Other Chemicals:</b>					
Chloropicrin	51	1.1	99.15	110.63	2,649.1
Methyl bromide	52	1.1	187.02	204.83	5,028.8

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 10 program states were 47,400 acres. States included are CA, FL, MI, NJ, NY, NC, OR, PA, WA, and WI.

**Tomatoes, Fresh: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
Paraquat	17	1.2	0.57	0.69	14.1
<b>Insecticides:</b>					
Azinphos-methyl	6	2.2	0.50	1.12	8.2
Cyfluthrin	12	3.3	0.03	0.12	1.6
Esfenvalerate	36	3.1	0.04	0.12	4.9
Lambda-cyhalothrin	15	2.7	0.02	0.06	1.1
Methomyl	37	2.1	0.54	1.16	52.2
Methyl parathion	*	4.0	0.23	0.91	0.1
Oxamyl	7	2.9	0.55	1.61	12.9
Permethrin	25	3.1	0.10	0.32	9.2
Pyrethrins	2	2.7	0.005	0.01	**
Rotenone	2	3.0	0.007	0.02	**
<b>Other Chemicals:</b>					
Chloropicrin	44	1.1	69.67	76.42	4,075.5
Dichloropropene	*	1.0	202.76	203.37	185.8
Methyl bromide	45	1.1	145.02	160.00	8,691.6

\* Area applied is less than one percent.

\*\* Total applied is less than 50 pounds.

<sup>1</sup> Planted acres in 2000 for the 14 program states were 120,570 acres. States included are AL, CA, FL, GA, KS, MI, NJ, NY, NC, OH, PA, SC, TN, and TX.

**Tomatoes, Processing: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Program States, 2000 <sup>1</sup>**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
<b>Herbicides:</b>					
EPTC	4	1.0	2.15	2.23	24.1
Paraquat	4	1.3	0.59	0.79	8.4
<b>Insecticides:</b>					
Cyfluthrin	2	1.7	0.04	0.07	0.3
Esfenvalerate	10	1.3	0.05	0.06	1.7
Lambda-cyhalothrin	19	1.2	0.03	0.03	1.9
Methamidophos	2	1.0	0.93	0.97	5.9
Methomyl	14	1.3	0.57	0.74	30.2
Permethrin	5	1.1	0.13	0.15	2.2
<b>Other Chemicals:</b>					
Dichloropropene	*	1.5	56.56	85.32	119.8

\* Area applied is less than one percent.

<sup>1</sup> Planted acres in 2000 for the 3 program states were 293,500 acres. States included are CA, MI, and PA.

**All Sheep: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Total Amount Applied, 2000 <sup>1</sup>**

Agricultural Chemical	Total of Program States
	<i>Pounds</i>
<b>Insecticides:</b>	
Coumaphos	630
Cyfluthrin	1
Dioxathion	54
Fenthion	265
Fenvalerate	5,444
Lambda-cyhalothrin	8
Lindane	*
Permethrin	1,749
Pyrethrins	6
Toxaphene	*

\* Insufficient number of reports to publish data.

<sup>1</sup> States included are AR, CA, CO, ID, IL, IN, IA, KS, MN, MT, NV, NM, OH, OR, PA, SD, TX, UT, VA, WA, WI, and WY.

**All Sheep: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Rate per Head per Application, 2000 <sup>1</sup>**

Agricultural Chemical	Total of Program States
	<i>Grams</i>
<b>Insecticides:</b>	
Coumaphos	4.0
Cyfluthrin	0.04
Dioxathion	2.4
Fenthion	0.9
Fenvalerate	2.3
Lambda-cyhalothrin	0.4
Lindane	*
Permethrin	0.7
Pyrethrins	0.6
Toxaphene	*

\* Insufficient number of reports to publish data.

<sup>1</sup> States included are AR, CA, CO, ID, IL, IN, IA, KS, MN, MT, NV, NM, OH, OR, PA, SD, TX, UT, VA, WA, WI, and WY.

**All Sheep: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Rate per Head per Year, 2000 <sup>1</sup>**

Agricultural Chemical	Total of Program States
	<i>Grams</i>
<b>Insecticides:</b>	
Coumaphos	5.8
Cyfluthrin	0.05
Dioxathion	2.4
Fenthion	0.9
Fenvalerate	2.5
Lambda-cyhalothrin	0.6
Lindane	*
Permethrin	0.8
Pyrethrins	0.9
Toxaphene	*

\* Insufficient number of reports to publish data.

<sup>1</sup> States included are AR, CA, CO, ID, IL, IN, IA, KS, MN, MT, NV, NM, OH, OR, PA, SD, TX, UT, VA, WA, WI, and WY.

**All Sheep Facilities: Agricultural Chemical Applications,  
Restricted Use Pesticides  
Total Amount Applied, 2000 <sup>1</sup>**

Agricultural Chemical	Total of Program States
	<i>Pounds</i>
<b>Insecticides:</b>	
Coal Tar Creosote	*
Coumaphos	5
Cyfluthrin	7
Cypermethrin	*
Disulfoton	*
Fenvalerate	13
Lambda-cyhalothrin	*
Methomyl	3
Permethrin	248
Pyrethrins	10

\* Insufficient number of reports to publish data.

<sup>1</sup> States included are AR, CA, CO, ID, IL, IN, IA, KS, MN, MT, NV, NM, OH, OR, PA, SD, TX, UT, VA, WA, WI, and WY.

**Estimation Procedures:** The chemical applications data, reported by product name or trade name, are reviewed within state and across states for reasonableness and consistency. This review 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.

Estimates of the total amount of active ingredient applied for field crops are based on the acreage estimates published in the annual NASS report "**Crop Production - 2000 Summary**" [Cr Pr 2-1(01)] for corn, rice, soybeans, sugarbeets, other spring wheat, durum and winter wheat. The estimates of cotton acreage were revised and published in the monthly NASS report "**Crop Production**" [Cr Pr 2-2 (5-01)] released on May 10, 2001. Estimates of the total amount of active ingredient applied for vegetables are based on the acreage estimates published in the annual NASS report "**Vegetables - 2000 Summary**" [Vg 1-2(01)] released on January 29, 2001. The estimates for total amount applied will not be revised even if there are subsequent revisions to acreage for a given crop. Estimates of the total amount of active ingredient applied to sheep and sheep facilities are based on expanded values of summarized data.

Detailed data within a table may not multiply across or add down due to independent rounding of the published values.

## 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. A single method of conversion has been chosen for active ingredients having more than one way of being converted. For example in this report, copper compounds are expressed in their metallic copper equivalent, and others such as 2,4-D and glyphosate are expressed in their acid equivalent.

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

**Application Rates:** The application rates refer to the average number of pounds of a pesticide active ingredient applied to an acre of land. Rate per acre is the average number of pounds applied in one application. Rate per crop year is the average number of pounds applied counting multiple applications. Number of applications is the average number of times a treated acre receives a specific agricultural chemical.

**Area applied:** The area that represents the percentage of crop acres receiving one or more applications of a specific agricultural chemical. This report does not contain acre treatments. However, acre treatments can be calculated by multiplying the acres planted by the percent of area applied and the average number of applications.

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

**Crop year:** A crop year refers to the period immediately following harvest for the previous crop through harvest of the current crop.

**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.

### Trade Name, Common Name, and Pesticide Class

The following is a list of the common name, associated class and trade name of active ingredients in this publication. The classes are Herbicides (H), Insecticides (I), Fungicides (F), and Other chemicals (O). This list is provided as an aid in reviewing pesticide data. Pre-mixes are not cataloged. The list is not complete for all pesticides used on field crops, vegetable crops or sheep, and NASS does not mean to imply the use of any specific trade name.

Class:	Common Name	:	Trade Name
I	abamectin		Ari-Mek, Zephyr, Avid
H	acetamide		Axiom
H	acetochlor		Harness, Topnotch
H	alachlor		Lasso
I	aldicarb		Temik
O	aluminum phosphide		Fumitoxin
I	amitraz		Ovasyn
H	atrazine		AAtrex
I	azinphos-methyl		Guthion
I	bendiocarb		Ficam
I	bifenthrin		Capture
F	benomyl		Benlate
H	butylate		Genate, Sutan
I	carbofuran		Furadan
I	chlorethoxyfos		Fortress
O	chloropicrin		several
F	chlorothalonil		Bravo
I	chlorpyrifos		Lorsban, Dursban
I	clofentezine		Apollo
I	coal tar creosote		Creosote
I	coumaphos		Co-Ral
H	cyanazine		Bladex
I	cyfluthrin		Baythroid
I	cypermethrin		Ammo, Cymbush
I	deltamethrin		Decis
I	diazinon		several
O	dichloropropene		Telone
H	diclofop-methyl		Hoelon
I	dicrotophos		Bidrin
I	diflubenzuron		Dimilin
I	dioxathion		Del-Tox
I	disulfoton		Di-Syston
I	emamectin benzoate		Denim, Proclaim
H	EPTC		Eptam, Eradicane, Genep

-- continued

Class:	Common Name	:	Trade Name
I	esfenvalerate		Asana
I	ethion		Ethion
I	ethoprop		Mocap
I	ethyl parathion		several
I	fenamiphos		Nemacur
I	fenbutatin-oxide		Vendex
I	fenpropathrin		Danitol
I	fenthion		Lysoff, Tiguvon
I	fenvalerate		Ectrin, Pydrin
I	fipronil		Regent
I	flucythrinate		Guardian Tags
I	fonofos		Dyfonate
H	imazaquin		Scepter
I	lambda-cyhalothrin		Karate, Warrior
I	lindane		Isotox, Lindane
O	metam-sodium		Vapam
I	methamidophos		Monitor
I	methidathion		Supracide
I	methomyl		Lannate
O	methyl bromide		several
I	methyl parathion		several
I	oxamyl		Vydate
I	oxydemeton-methyl		Metasystox-RH,
H,O	paraquat		Gramoxone, Cyclone, Starfire
I	permethrin		Ambush, Pounce
I	phorate		Thimet
I	phosphamidon		Phosphamidon
H	picloram		Tordon
I	profenofos		Curacron
H	pronamide		Kerb
I	pyrethrins		several
I	rotenone		Rotenone
H	simazine		Princep
O	strychine		several
O	sulfuric acid		Sulfuric acid
I	sulprofos		Bolstar
I	tefluthrin		Force
I	terbufos		Counter
I	toxaphene		Stock Tox
I	tralomethrin		Scout
H	trifluralin		Treflan, Trilin, Trific
F	triphenyltin hydroxide		several
O	zinc phosphide		several

## Report Features

**Released October 3, 2001, by the National Agricultural Statistics Service (NASS),  
Agricultural Statistics Board, U.S. Department of Agriculture. For information on  
"Agricultural Chemical Usage" call (202) 720-6146, office hours 7:30 a.m. to 4:00 p.m. ET.**

The next "Agricultural Chemical Usage" report will be released March 13, 2002. This report will cover agricultural chemical use for postharvest applications on peanuts and rice in off farm storage facilities.

The next "Agricultural Chemical Usage" report for restricted use pesticides will be released on October 2, 2002. This report will cover the use of restricted agricultural chemicals for 2001 on field crops, vegetables and livestock for major states.

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

Mark Aitken, Environmental Statistician (202) 720-9525

Norman Bennett, Head, Environmental and Demographic Section (202) 720-0684

Linda Hutton, Chief, Environmental, Economics and  
Demographics Branch (202) 720-6146

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