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Agricultural Chemical Usage 1999 Restricted Use Summary

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USDA



Update Alert

The herbicide trifluralin was erroneously listed in the corn, upland cotton, peanuts, fall potatoes, soybeans and sunflower tables (pages 3-7). Trifluralin is not restricted for use on those crops.

In addition, summary errors for the chemicals ethyl parathion and methyl parathion were discovered for sunflowers in Kansas. Previously published applications of the insecticide ethyl parathion on sunflowers in Kansas were in error and should have all been reported as applications of methyl parathion. The affected sunflower table has been revised (page 7).

1999 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 certified applicator's certification. This group of pesticides is not available for use by the general public because of the very high toxicities and /or environmental hazards associated with these active ingredients. 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, June 2000" published by the EPA.

The agricultural chemical use estimates in this report are based on data compiled from the Agricultural Resource Management Study, the Fruit Chemical Use Survey, and the 1999 Fall Area Survey. All targeted field crop and fruit and nut crop results refer to on-farm use of restricted use pesticides for the 1999 crop year. Data were collected late in the growing season or after the farm operator had indicated that planned applications were completed. "Cattle and Cattle Facilities" results on restricted use pesticides were obtained for the 1999 calendar year. 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). Targeted crops in the 1999 ARMS included corn, fall potatoes, peanuts, soybeans, sunflower and upland cotton. States surveyed account for 81 to 92 percent of the U.S. acreage for these crops.

The herbicide atrazine was again the most widely used restricted use herbicide used on corn, with 70 percent of the corn acres treated. Paraquat was used on 33 percent of the peanut acres. No other restricted use herbicide was used on more than 30 percent of the planted acreage of the surveyed field crops.

A wide range of restricted use insecticides was reported, particularly on upland cotton and potatoes, each with 19 different active ingredients which were applied. Aldicarb was the primary restricted use insecticide used on the upland cotton and peanut planted acres. Methamidophos and phorate were applied to 29 and 23 percent of the fall potato acreage, respectively.

The fungicide chlorothalonil was the most widely used restricted use pesticide applied to any surveyed field crop, with 72 percent of the fall potato acres reported as being treated. Chlorothalonil was also applied to 66 percent of the peanut acres.

Fruit and Nut Crops: Growers in 14 states were surveyed to obtain chemical use data on selected fruit and nut crops in 1999. The data on restricted use applications cover the period immediately following harvest of the 1998 crop through harvest of the 1999 crop.

A limited number of restricted use herbicides were applied to fruit and nut crops in 1999. Paraquat was applied to nearly every targeted crop, in percentages ranging from 8 percent of the blueberry acreage to 89 percent of the wine grape acreage.

Several restricted use insecticides were used extensively on fruit and nut crops in the surveyed states. Azinphos-methyl was applied to 79 percent of the tart cherry acreage and to 73 percent of the apple acreage. Abamectin was used on 89 percent of the lime acreage. Other restricted use insecticides applied to more than 40 percent of planted acres were azinphos-methyl on blueberries, sweet cherries and pears; chlorpyrifos on apples and limes; ethion on grapefruit and limes; esfenvalerate on hazelnuts, nectarines and peaches; permethrin on pistachios; bifenthrin and diazinon on raspberries; and abamectin on grapefruit, pears, tangelos, tangerines and temples.

Chlorothalonil was the most commonly used restricted use fungicide and was applied to 78 percent of the tart cherry acres.

Other restricted use pesticides applied included aluminum phosphide, methyl bromide, strychnine, triphenyltin hydroxide, and zinc phosphide.

Cattle and Cattle Facilities: The 1999 Fall Area Survey (FAS) collected information concerning chemicals applied to cattle and cattle facilities to control flies, lice, grubs, and other pests. Data are published separately for beef cattle and dairy cattle. All data refer to the on-farm use of chemical active ingredients contained in insecticides applied during the 1999 calendar year. Sample sizes were adequate to publish data only by region and at the U.S. level.

**Corn: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli- cations	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>
Herbicides:					
Acetochlor	27	1.0	1.70	1.72	31,824
Alachlor	4	1.0	1.87	1.87	4,573
Atrazine	70	1.1	1.02	1.15	54,780
Cyanazine	4	1.0	1.40	1.40	3,378
EPTC	*	1.0	3.40	3.40	1,470
Paraquat	*	1.0	0.59	0.59	369
Insecticides:					
Carbofuran	1	1.0	0.86	0.86	772
Chlorethoxyfos	1	1.0	0.10	0.10	89
Chlorpyrifos	5	1.0	1.08	1.08	3,921
Cyfluthrin	2	1.0	0.005	0.005	5
Lambda-cyhalothrin	3	1.2	0.02	0.03	52
Methyl parathion	1	1.0	0.51	0.54	388
Permethrin	3	1.1	0.08	0.10	180
Tefluthrin	7	1.0	0.10	0.10	510
Terbufos	5	1.0	1.09	1.11	3,588

* Area applied is less than 1 percent.

¹ Planted acres in 1999 for the 15 states surveyed were 68.3 million acres. States included are CO, IL, IN, IA, KS, KY, MI, MN, MO, NE, NC, OH, SD, TX, and WI.

**Cotton, Upland: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli- cations	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>
Herbicides:					
Cyanazine	15	1.1	0.72	0.80	1,555
Insecticides:					
Aldicarb	29	1.0	0.59	0.63	2,440
Azinphos-methyl	3	2.0	0.24	0.49	211
Bifenthrin	2	1.0	0.06	0.06	15
Carbofuran	5	1.0	0.23	0.24	159
Chlorpyrifos	1	1.3	0.78	1.07	210
Cypermethrin	5	1.0	0.06	0.07	45
Deltamethrin	1	1.4	0.01	0.02	4
Dicrotophos	13	1.2	0.26	0.33	576
Disulfoton	4	1.0	0.67	0.69	342
Esfenvalerate	2	1.0	0.03	0.04	8
Fenpropathrin	*	1.0	0.18	0.18	3
Lambda-cyhalothrin	10	1.6	0.03	0.05	57
Methamidophos	*	1.1	0.52	0.61	16
Methomyl	*	1.1	0.22	0.24	22
Methyl parathion	8	2.2	0.60	1.33	1,466
Oxamyl	14	1.4	0.23	0.33	627
Permethrin	*	1.0	0.04	0.04	**
Phorate	4	1.0	0.73	0.73	393
Tralomethrin	3	1.3	0.02	0.03	9
Other Chemicals:					
Paraquat	20	1.1	0.26	0.30	777

* Area applied is less than 1 percent.

** Total applied is less than 1,000 lbs.

¹ Planted acres in 1999 for the 10 states surveyed were 13.3 million acres. States included are AL, AZ, AR, CA, GA, LA, MS, NC, TN, and TX.

**Peanuts: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

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>
Herbicides:					
Paraquat	33	1.0	0.14	0.14	56
Insecticides:					
Aldicarb	32	1.0	0.99	1.08	431
Chlorpyrifos	9	1.1	1.71	2.02	235
Disulfoton	2	1.0	0.93	0.93	21
Esfenvalerate	6	1.1	0.02	0.03	2
Lambda-cyhalothrin	1	1.2	0.02	0.02	**
Methomyl	5	1.0	0.25	0.27	15
Phorate	17	1.0	0.83	0.86	175
Fungicides:					
Chlorothalonil	66	3.4	0.88	3.06	2,483

** Total applied is less than 1,000 lbs.

¹ Planted acres in 1999 for the 4 states surveyed were 1.24 million acres. States included are AL, GA, NC, and TX.

**Potatoes, Fall: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
EPTC	26	1.0	3.48	3.69	1,077
Insecticides:					
Aldicarb	5	1.0	2.65	2.72	141
Azinphos-methyl	7	1.1	0.42	0.48	38
Carbofuran	10	1.2	1.44	1.85	204
Cyfluthrin	3	1.3	0.03	0.04	**
Diazinon	2	1.1	1.43	1.71	31
Disulfoton	1	1.1	1.31	1.49	19
Esfenvalerate	16	1.4	0.04	0.05	9
Ethoprop	8	1.0	3.83	3.88	331
Fonofos	1	1.3	1.68	2.35	30
Lambda-cyhalothrin	*	1.6	0.21	0.34	**
Methamidophos	29	1.7	0.91	1.61	520
Methomyl	*	1.5	0.33	0.51	**
Methyl parathion	1	1.7	0.57	0.97	12
Oxamyl	2	1.2	0.62	0.76	13
Permethrin	8	1.3	0.13	0.17	15
Phorate	23	1.0	2.74	2.75	691
Pyrethrins	*	1.6	0.04	0.06	**
Fungicides:					
Chlorothalonil	72	4.0	0.93	3.73	2,960
Triphenyltin hydrox.	8	2.1	0.14	0.29	58
Other Chemicals:					
Dichloropropene	5	1.0	171.99	173.45	10,425
Paraquat	1	1.0	0.32	0.32	5
Sulfuric acid	18	1.0	281.06	293.09	58,893

* Area applied is less than 1 percent.

** Total applied is less than 1,000 lbs.

¹ Planted acres in 1999 for the 11 states surveyed were 1.11 million acres. States included are CO, ID, IN, ME, MI, MN, ND, OR, PA, WA, and WI.

**Soybeans: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Alachlor	2	1.0	1.70	1.71	1,769
Atrazine	*	1.0	1.13	1.13	177
Imazaquin	5	1.0	0.08	0.09	288
Paraquat	1	1.0	0.37	0.37	270
Insecticides:					
Diflubenzuron	*	1.0	0.06	0.06	6
Esfenvalerate	*	1.0	0.03	0.03	**
Lambda-cyhalothrin	*	1.0	0.02	0.02	8
Methyl parathion	*	1.1	0.46	0.51	198
Permethrin	*	1.0	0.12	0.12	8

* Area applied is less than 1 percent.

** Total applied is less than 1,000 lbs.

¹ Planted acres in 1999 for the 17 states surveyed were 67.8 million acres. States included are IL, IN, IA, KS, KY, LA, MI, MN, MS, MO, NE, NC, OH, PA, SD, and TN.

**Sunflower, All: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Insecticides:					
Carbofuran	*	1.0	0.29	0.29	7
Cyfluthrin	*	1.0	0.04	0.04	**
Esfenvalerate	25	1.0	0.02	0.02	18
Ethyl parathion	1	1.0	0.28	0.28	8
Lambda-cyhalothrin	2	1.0	0.03	0.03	1
Methyl parathion	6	1.1	0.36	0.39	70

* Area applied is less than 1 percent.

** Total applied is less than 1,000 lbs.

¹ Planted acres in 1999 for the 3 states surveyed were 2.9 million acres. States included are KS, ND, and SD.

**Almonds: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli- cations	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>
Herbicides:					
Paraquat	29	1.1	0.49	0.57	97.0
Insecticides:					
Abamectin	24	1.1	0.01	0.02	2.2
Azinphos-methyl	7	1.1	1.90	2.21	91.5
Chlorpyrifos	17	1.1	1.67	1.86	180.8
Clofentezine	*	1.1	0.13	0.15	0.7
Diazinon	9	1.2	2.51	3.09	165.0
Esfenvalerate	14	1.5	0.05	0.08	6.2
Fenbutatin-oxide	15	1.1	0.67	0.74	62.8
Methidathion	7	1.2	1.17	1.46	57.9
Permethrin	15	1.3	0.18	0.24	20.6
Other Chemicals:					
Aluminum phosphide	8	1.3	0.11	0.15	6.7

* Area applied is less than 1 percent.

¹ Total acres in 1999 for California were 580,000 acres. Acreage includes both bearing and non-bearing acres.

**Apples: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

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>
Herbicides:					
Paraquat	22	1.4	0.43	0.63	51.3
Insecticides:					
Abamectin	9	1.2	0.008	0.01	0.3
Azinphos-methyl	73	3.0	0.71	2.15	572.8
Chlorpyrifos	60	1.5	1.30	1.97	433.1
Clofentezine	9	1.1	0.11	0.13	4.4
Diazinon	4	1.4	0.72	1.02	13.6
Esfenvalerate	18	1.6	0.03	0.05	3.2
Fenbutatin-oxide	3	1.0	0.90	0.94	11.6
Methidathion	*	1.5	0.93	1.42	2.7
Methomyl	10	1.5	0.45	0.70	25.8
Methyl parathion	12	2.4	0.55	1.34	60.8
Oxamyl	4	1.2	0.51	0.61	8.3
Permethrin	5	1.1	0.11	0.13	2.3
Phosphamidon	*	1.2	0.49	0.63	0.7
Fungicides:					
Chlorothalonil	*	1.8	0.78	1.46	5.1
Other Chemicals:					
Strychnine	*	1.0	0.02	0.02	0.1
Zinc phosphide	3	1.0	0.13	0.13	1.4

* Area applied is less than one percent.

¹ Bearing acres in 1999 for the 11 states surveyed were 367,700 acres. States included are AZ, CA, GA, MI, NJ, NY, NC, OR, PA, SC, and WA. Acreage in Arizona and California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

**Apricots: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

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>
Insecticides:					
Diazinon	15	1.4	1.53	2.20	6.7
Esfenvalerate	33	1.8	0.04	0.08	0.5
Fungicides:					
Chlorothalonil	12	1.4	2.51	3.66	8.7

¹ Total acres in 1999 for California were 20,500 acres. Acreage includes both bearing and non-bearing acres.

**Avocados: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

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>
Insecticides:					
Abamectin	19	1.0	0.02	0.02	0.3
Permethrin	4	1.9	0.15	0.29	0.8
Other Chemicals:					
Strychnine	2	2.5	0.007	0.02	**

** Total applied is less than 50 lbs.

¹ Bearing acres in 1999 for the 2 states surveyed were 66,000 acres. States included are CA and FL. Acreage in California includes non-bearing acres.

**Blackberries: Agricultural Chemical Applications,
Restricted Use Pesticides
Oregon, 1999 ¹**

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>
Herbicides:					
Paraquat	38	1.6	0.39	0.62	1.4
Simazine	41	1.0	1.48	1.50	3.5
Insecticides:					
Azinphos-methyl	11	1.1	0.41	0.48	0.3
Diazinon	16	1.0	1.16	1.16	1.1
Esfenvalerate	25	1.0	0.05	0.05	0.1

¹ Bearing acres in 1999 for Oregon were 5,750 acres.

**Blueberries: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

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>
Herbicides:					
Paraquat	8	1.4	0.31	0.44	1.2
Simazine	23	1.0	1.12	1.20	9.5
Insecticides:					
Azinphos-methyl	44	1.6	0.55	0.91	13.9
Diazinon	12	2.1	0.96	2.07	8.1
Esfenvalerate	10	1.8	0.04	0.08	0.3
Methomyl	32	1.5	0.65	1.01	11.1
Fungicides:					
Chlorothalonil	11	1.1	2.42	2.71	10.5

¹ Bearing acres in 1999 for the 5 states surveyed were 34,300 acres. States included are GA, MI, NJ, NC, and OR.

**Cherries, Sweet: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

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>
Herbicides:					
Paraquat	12	1.3	0.49	0.66	4.4
Insecticides:					
Azinphos-methyl	44	1.9	0.64	1.27	32.0
Chlorpyrifos	33	1.0	1.91	2.03	38.9
Clofentezine	3	1.0	0.14	0.15	0.3
Diazinon	9	1.1	1.40	1.64	8.9
Esfenvalerate	19	1.5	0.04	0.06	0.7
Methidathion	1	1.0	1.36	1.42	1.1
Methyl parathion	*	1.3	0.56	0.76	0.4
Permethrin	6	1.4	0.11	0.17	0.6
Fungicides:					
Chlorothalonil	8	1.5	2.08	3.25	14.7
Other Chemicals:					
Zinc phosphide	1	2.6	0.07	0.19	0.1

* Area applied is less than 1 percent.

¹ Bearing acres in 1999 for the 4 states surveyed were 58,100 acres. States included are CA, MI, OR, and WA. Acreage in California includes non-bearing acres.

**Cherries, Tart: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	27	1.1	0.31	0.35	3.1
Insecticides:					
Azinphos-methyl	79	2.6	0.46	1.22	32.1
Chlorpyrifos	20	1.2	0.66	0.84	5.7
Diazinon	*	1.0	0.95	0.96	0.2
Esfenvalerate	21	1.5	0.03	0.05	0.3
Methyl parathion	6	2.4	0.48	1.19	2.5
Permethrin	8	1.6	0.12	0.20	0.6
Fungicides:					
Chlorothalonil	78	2.1	1.57	3.36	87.6

* Area applied is less than 1 percent.

¹ Bearing acres in 1999 for the 4 states surveyed were 33,200 acres. States included are MI, NY, OR, and PA.

**Figs: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	9	1.0	0.25	0.25	0.4

¹ Total acres in 1999 for California were 15,700 acres. Acreage includes both bearing and non-bearing acres.

**Grapefruit: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	2	1.6	0.33	0.54	1.3
Insecticides:					
Abamectin	60	1.0	0.01	0.01	1.1
Aldicarb	14	1.0	4.36	4.51	99.0
Chlorpyrifos	15	4.5	0.63	2.87	66.6
Diflubenzuron	8	1.0	0.30	0.31	3.8
Ethion	41	1.0	5.37	5.57	362.5
Fenbutatin-oxide	31	1.0	1.02	1.02	49.5
Oxamyl	*	1.0	1.02	1.06	0.7

* Area applied is less than 1 percent.

¹ Bearing acres in 1999 for the 4 states surveyed were 158,900 acres. States included are AZ, CA, FL, and TX. Acreage in California includes non-bearing acres.

**Grapes, All: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	54	1.7	0.45	0.77	419.1
Simazine	23	1.0	1.00	1.08	249.0
Trifluralin	1	1.0	1.46	1.47	16.2
Insecticides:					
Azinphos-methyl	*	1.5	0.55	0.84	2.7
Chlorpyrifos	4	1.0	0.90	0.98	37.4
Diazinon	2	1.5	0.98	1.48	23.2
Fenamiphos	3	1.8	1.42	2.59	72.3
Fenbutatin-oxide	2	1.1	0.89	1.03	17.1
Methomyl	4	1.2	0.73	0.95	39.7
Methyl parathion	2	1.7	0.73	1.30	23.4

* Area applied is less than 1 percent.

¹ Bearing acres in 1999 for the 7 states surveyed were 1.01 million acres. States included are CA, IN, MI, NY, OR, PA, and WA. Acreage in California includes non-bearing acres.

**Grapes, Raisin: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	19	1.1	0.30	0.34	12.0
Simazine	32	1.1	0.73	0.83	49.1
Insecticides:					
Fenbutatin-oxide	6	1.2	0.90	1.10	11.3

¹ Raisin grape bearing acres in 1999 for California were 183,000 acres.

**Grapes, Table: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	21	1.4	0.50	0.74	17.0
Simazine	37	1.1	0.90	1.06	42.3
Insecticides:					
Methomyl	24	1.4	0.68	1.00	26.0

¹ Table grapes bearing acres in 1999 for California were 109,000 acres.

**Grapes, Wine: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	89	1.8	0.45	0.82	363.7
Simazine	19	1.0	1.00	1.02	95.6
Insecticides:					
Fenbutatin-oxide	*	1.2	0.63	0.81	0.3

* Area applied is less than 1 percent.

¹ Wine grape bearing acres in 1999 for California were 498,000 acres.

**Hazelnuts: Agricultural Chemical Applications,
Restricted Use Pesticides
Oregon, 1999 ¹**

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>
Herbicides:					
Paraquat	50	2.3	0.24	0.58	8.3
Insecticides:					
Chlorpyrifos	20	1.2	1.24	1.55	8.7
Esfenvalerate	77	1.2	0.06	0.08	1.8
Fungicides:					
Chlorothalonil	27	2.0	1.73	3.52	27.1

¹ Bearing acres in 1999 for Oregon were 28,800 acres.

**Lemons: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

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>
Insecticides:					
Abamectin	24	1.0	0.01	0.01	0.2
Chlorpyrifos	36	1.3	2.35	3.12	78.4
Cyfluthrin	8	1.0	0.09	0.09	0.5
Fenamiphos	4	1.0	6.91	7.18	18.0

¹ Total acres in 1999 for the 2 states surveyed were 70,000 acres. States included are AZ, and CA. Acreage in California includes non-bearing acres.

**Limes: Agricultural Chemical Applications,
Restricted Use Pesticides
Florida, 1999 ¹**

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>
Insecticides:					
Abamectin	89	1.1	0.009	0.01	**
Chlorpyrifos	46	2.0	1.88	3.75	4.7
Ethion	56	2.3	2.75	6.49	9.9
Oxamyl	31	1.0	1.00	1.00	0.8

** Total applied is less than 50 lbs.

¹ Bearing acres in 1999 for Florida were 2,700 acres.

**Nectarines: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	20	1.2	0.45	0.55	4.5
Insecticides:					
Chlorpyrifos	39	1.1	1.98	2.30	36.4
Clofentezine	10	1.0	0.10	0.10	0.4
Diazinon	22	1.2	1.84	2.34	20.5
Esfenvalerate	61	1.2	0.04	0.05	1.3
Fenbutatin-oxide	9	1.0	0.79	0.83	3.1
Methidathion	6	1.4	1.49	2.14	5.4
Methomyl	27	1.1	0.72	0.85	9.2
Methyl parathion	11	1.1	1.31	1.51	6.7

¹ Total acres in 1999 for California were 40,500 acres. Acreage includes both bearing and non-bearing acres.

**Olives: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	11	1.3	0.66	0.89	3.6

¹ Total acres in 1999 for California were 37,300 acres. Acreage includes both bearing and non-bearing acres.

**Oranges excluding Temples: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	10	1.9	0.34	0.67	56.2
Insecticides:					
Abamectin	27	1.3	0.007	0.009	2.0
Aldicarb	8	1.1	2.66	2.96	196.1
Chlorpyrifos	10	1.6	1.27	2.12	178.9
Cyfluthrin	5	1.1	0.10	0.12	4.7
Diflubenzuron	5	1.0	0.31	0.34	15.3
Ethion	17	1.1	4.07	4.61	649.7
Fenbutatin-oxide	16	1.0	1.00	1.04	137.0
Methidathion	*	1.0	2.61	2.75	9.4

* Area applied is less than 1 percent.

¹ Bearing acres in 1999 for the 4 states surveyed were 844,100 acres. States included are AZ, CA, FL, and TX. Acreage in Arizona and California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.

**Peaches: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	37	1.2	0.46	0.57	30.2
Insecticides:					
Azinphos-methyl	14	4.0	0.64	2.62	50.9
Chlorpyrifos	21	1.2	1.32	1.64	47.7
Clofentezine	8	1.2	0.10	0.12	1.2
Diazinon	10	1.2	1.78	2.27	32.5
Esfenvalerate	46	1.7	0.04	0.07	4.3
Fenbutatin-oxide	13	1.1	0.67	0.76	14.0
Lindane	*	2.3	0.19	0.44	**
Methidathion	5	1.1	1.40	1.58	12.1
Methomyl	6	2.2	0.80	1.80	16.6
Methyl parathion	38	3.0	0.63	1.90	101.9
Permethrin	25	2.9	0.16	0.47	16.8
Fungicides:					
Chlorothalonil	9	2.2	1.48	3.32	40.2
Other Chemicals:					
Methyl bromide	*	1.1	245.62	292.11	272.0
Zinc phosphide	*	1.0	0.11	0.11	0.1

* Area applied is less than 1 percent.

** Total applied is less than 50 lbs.

¹ Bearing acres in 1999 for the 10 states surveyed were 141,050 acres. States included are CA, GA, MI, NJ, NY, NC, PA, SC, TX, and WA. Acreage in California includes non-bearing acres.

**Pears: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	11	1.3	0.51	0.72	5.1
Insecticides:					
Abamectin	61	1.3	0.02	0.02	0.8
Amitraz	18	1.2	1.34	1.63	19.0
Azinphos-methyl	54	1.9	0.98	1.89	67.5
Chlorpyrifos	39	1.1	1.79	1.98	51.4
Clofentezine	5	1.2	0.11	0.13	0.4
Diazinon	7	1.2	1.67	2.03	8.9
Diflubenzuron	7	1.0	0.64	0.65	3.0
Esfenvalerate	24	1.2	0.06	0.08	1.1
Fenbutatin-oxide	6	1.1	0.62	0.72	2.7
Methidathion	*	1.0	1.59	1.59	0.9
Methomyl	*	1.0	0.65	0.68	0.2
Methyl parathion	17	1.3	1.60	2.22	24.4
Oxamyl	1	1.0	1.47	1.58	1.2
Permethrin	*	1.7	0.12	0.21	0.1

* Area applied is less than 1 percent.

¹ Bearing acres in 1999 for the 6 states surveyed were 66,350 acres. States included are CA, MI, NY, OR, PA, and WA. Acreage in California includes non-bearing acres.

**Pecans: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>
Herbicides:				
Paraquat	17	1.8	0.38	0.69
Insecticides:				
Chlorpyrifos	38	2.0	0.90	1.86
Cypermethrin	8	1.9	0.08	0.16
Diazinon	*	1.4	6.16	8.78
Esfenvalerate	3	1.2	0.03	0.04
Lindane	11	1.2	0.39	0.47
Fungicides:				
Triphenyltin hydroxi.	37	5.7	0.25	1.45

* Area applied is less than 1 percent.

¹ Acreage in 1999 for the 7 states surveyed is not available due to the fluctuation in the number of Native and Seedling trees harvested. States included are AZ, CA, FL, GA, NC, SC, and TX.

**Pistachios: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

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>
Herbicides: Paraquat	43	1.1	0.50	0.56	21.5
Insecticides: Permethrin	47	1.2	0.23	0.29	12.3

¹ Total acres in 1999 for California were 91,000 acres. Acreage includes both bearing and non-bearing acres.

**Plums: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

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>
Herbicides: Paraquat	11	1.5	0.66	1.02	5.1
Insecticides: Chlorpyrifos	19	1.3	2.00	2.75	23.6
Diazinon	8	1.1	1.94	2.22	7.6
Esfenvalerate	21	1.3	0.05	0.06	0.6
Methidathion	10	2.0	1.96	4.08	17.5
Methyl parathion	5	1.1	1.50	1.69	3.4

¹ Total acres in 1999 for California were 44,500 acres. Acreage includes both bearing and non-bearing acres.

**Prunes: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	9	1.2	0.33	0.40	3.7
Insecticides:					
Chlorpyrifos	2	1.5	1.94	2.99	6.1
Diazinon	14	1.0	1.48	1.62	22.9
Esfenvalerate	29	1.2	0.05	0.06	1.7
Fenbutatin-oxide	5	1.1	0.59	0.67	3.4
Methidathion	3	1.2	1.14	1.37	3.4
Fungicides:					
Chlorothalonil	4	1.2	3.03	3.66	14.1
Other Chemicals:					
Methyl bromide	4	1.1	174.66	198.50	724.2

¹ Total acres in 1999 for California were 98,000 acres. Acreage in California includes non-bearing acres.

**Raspberries: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	75	1.2	0.28	0.35	3.6
Simazine	49	1.0	0.88	0.88	5.9
Insecticides:					
Bifenthrin	55	1.0	0.10	0.10	0.7
Diazinon	60	1.6	1.02	1.67	13.6
Esfenvalerate	15	1.0	0.04	0.04	0.1

¹ Bearing acres in 1999 for the 2 states surveyed were 13,600 acres. States included are OR and WA.

**Tangelos: Agricultural Chemical Applications,
Restricted Use Pesticides
Florida, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	28	1.9	0.28	0.54	1.8
Insecticides:					
Abamectin	59	1.1	0.009	0.01	0.1
Chlorpyrifos	5	1.2	1.01	1.25	0.7
Diflubenzuron	14	1.1	0.29	0.32	0.5
Ethion	35	1.0	5.39	5.50	22.3
Fenbutatin-oxide	25	1.0	0.98	1.00	3.0

¹ Bearing acres in 1999 for Florida were 11,700 acres.

**Tangerines: Agricultural Chemical Applications,
Restricted Use Pesticides
States Surveyed, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	3	1.5	0.29	0.46	0.6
Insecticides:					
Abamectin	43	1.0	0.009	0.009	0.2
Chlorpyrifos	9	1.4	1.45	2.14	8.7
Cyfluthrin	2	1.0	0.10	0.10	0.1
Diflubenzuron	9	1.4	0.18	0.27	1.0
Ethion	24	1.0	5.20	5.26	56.4
Fenbutatin-oxide	21	1.0	0.99	1.00	9.3

¹ Bearing acres in 1999 for the 3 states surveyed were 44,700 acres. States included are AZ, CA, and FL. Acreage in Arizona and California includes non-bearing acres.

**Temples: Agricultural Chemical Applications,
Restricted Use Pesticides
Florida, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	41	2.0	0.28	0.55	1.4
Insecticides:					
Abamectin	49	1.0	0.009	0.009	**
Diflubenzuron	10	1.1	0.28	0.33	0.2
Ethion	30	1.0	5.32	5.51	9.9
Fenbutatin-oxide	19	1.0	1.00	1.00	1.2

** Total applied is less than 50 lbs.

¹ Bearing acres in 1999 for Florida were 6,000 acres.

**Walnuts: Agricultural Chemical Applications,
Restricted Use Pesticides
California, 1999 ¹**

Agricultural Chemical	Area Applied	Appli-cations	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>
Herbicides:					
Paraquat	11	1.4	0.31	0.43	10.6
Insecticides:					
Azinphos-methyl	4	1.1	1.74	2.05	15.9
Chlorpyrifos	30	1.3	1.72	2.31	150.4
Clofentezine	1	1.0	0.09	0.09	0.2
Diazinon	1	1.0	1.24	1.34	3.7
Esfenvalerate	17	1.4	0.04	0.06	2.1
Fenbutatin-oxide	3	1.1	0.78	0.86	5.7
Methidathion	2	1.0	2.28	2.46	12.1
Methyl parathion	10	1.5	1.81	2.72	56.4
Permethrin	12	1.3	0.17	0.23	6.1
Other Chemicals:					
Methyl bromide	3	1.0	187.90	191.24	1,175.5

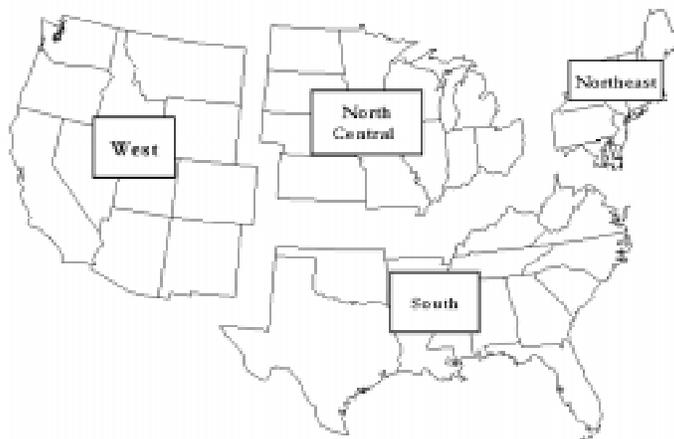
¹ Total acres in 1999 for California were 216,000 acres. Acreage includes both bearing and non-bearing acres.

**All Cattle: Agricultural Chemical Applications,
Restricted Use Pesticides
Total Applied, 1999**

Agricultural Chemical	Region				
	North-east	North Central	South	West	United States
	<i>1,000 lbs</i>				
Insecticides:					
Amitraz	*		*		*
Bendiocarb		*	*	*	0.2
Chlorpyrifos		2.8	*	*	6.5
Coumaphos	0.8	20.6	26.3	10.4	58.1
Cyfluthrin	14.9	78.9	1.0	0.2	95.0
Cypermethrin		0.4	*	*	0.5
Diazinon	*	17.3	19.5	*	47.2
Diflubenzuron	*	*	*		4.1
Dioxathion		*	*		0.4
Ethion		4.8	3.7	0.4	8.8
Fenthion	*	14.2	*	6.2	26.1
Fenvalerate		0.5	0.5	0.1	1.1
Flucythrinate		*	*	*	0.4
Lambda-cyhalothrin		1.5	*	*	5.3
Lindane		*	11.3	*	11.3
Methomyl		*	*		*
Permethrin	10.1	67.6	36.3	8.6	122.6
Pyrethrins	2.3	20.1	*	*	22.9
Toxaphene		*	*		1.7

* Chemical reported but not published to avoid disclosure.

**Cattle Chemical Use
Regions**



Regions:

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

Alaska and Hawaii were not included in the survey.

**Beef Cattle: Agricultural Chemical Applications,
Restricted Use Pesticides
Total Applied, 1999**

Agricultural Chemical	Region				
	North- east	North Central	South	West	United States
	<i>1,000 lbs</i>				
Insecticides:					
Amitraz			*		*
Bendiocarb		*	*	*	*
Chlorpyrifos		*	*	*	6.1
Coumaphos	0.2	19.2	25.2	10.1	54.8
Cyfluthrin	*	1.8	0.8	*	2.8
Cypermethrin		0.4	*	*	*
Diazinon		*	*	*	37.8
Diflubenzuron	*	*	*		*
Dioxathion		*	*	*	0.4
Ethion		*	*	0.4	*
Fenthion	*	*	*	6.2	25.7
Fenvalerate		*	*	0.1	1.0
Flucythrinate		*	*	*	*
Lambda-cyhalothrin		*	*	*	4.1
Lindane		*	11.3	*	11.3
Methomyl		*	*		*
Permethrin	4.5	33.2	25.1	8.0	70.7
Pyrethrins	*	6.9	*	*	7.4
Toxaphene		*	*		*

* Chemical reported but not published to avoid disclosure.

**Dairy Cattle: Agricultural Chemical Applications,
Restricted Use Pesticides
Total Applied, 1999**

Agricultural Chemical	Region				
	North-east	North Central	South	West	United States
	<i>1,000 lbs</i>				
Insecticides:					
Amitraz	*				*
Bendiocarb		*			*
Chlorpyrifos		*	*		0.4
Coumaphos	0.6	1.4	1.0	0.2	3.3
Cyfluthrin	*	77.1	0.2	*	92.2
Cypermethrin			*		*
Diazinon	*	*	*	*	9.4
Diflubenzuron	*				*
Ethion		*	*		*
Fenthion		*	*		0.4
Fenvalerate		*	*		0.2
Flucythrinate		*			*
Lambda-cyhalothrin		*	*		1.2
Methomyl			*		*
Permethrin	5.7	34.3	11.2	0.7	51.9
Pyrethrins	*	13.2	*		15.5
Toxaphene		*			*

* Chemical reported but not published to avoid disclosure.

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 - 1999 Summary**" [Cr Pr 2-1(99)] released on January 12, 2000 for corn, fall potatoes, peanuts, soybeans and sunflower. The estimates of cotton acreage were revised and published in the monthly NASS report "**Crop Production**" [Cr Pr 2-2 (5-99)] released on May 12, 2000. Estimates of the total amount of active ingredient applied for fruit and nuts are based on the acreage estimates published in the annual NASS reports "**Citrus Fruits - 1999 Summary**" [Fr Nt 3-1(99)] released on September 23, 1999 and "**Noncitrus Fruits and Nuts - 1999 Summary**" [Fr Nt 1-3(00)] released on July 7, 2000. 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 cattle and cattle 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.

Common Name, Trade 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, fruit and nut crops or cattle, 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
H	butylate		Genate, Sutan
I	carbofuran		Furadan
I	chlorethoxyfos		Fortress
O	chloropicrin		several
F	chlorothalonil		Bravo
I	chlorpyrifos		Lorsban, Dursban
I	clofentezine		Apollo
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
H	EPTC		Eptam, Eradicane, Genep
I	esfenvalerate		Asana
I	ethion		Ethion
I	ethoprop		Mocap

Class:	Common Name	:	Trade Name
I	ethyl parathion		several
I	fenamiphos		Nemacur
I	fenbutatin-oxide		Vendex
I	fenpropathrin		Danitol
I	fenthion		Lysoff, Tiguvon
I	fenvalerate		Ectrin, Pydrin
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,
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		strychnine
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		Zinc phosphide, Roban

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Report Features

Released October 4, 2000, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, U.S. Department of Agriculture. For information on "Agricultural Chemical Usage" program or this report for "Restricted Use Pesticides" 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 14, 2001. 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 3, 2001. This report will cover the use of restricted agricultural chemicals for 2000 on field crops, vegetables and livestock for major states.

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