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Agricultural Chemical Usage
1997 Fruits Summary

July 1998

Overview

This publication is the fourth Fruit Summary in the series of **"Agricultural Chemical Usage"** reports issued by the National Agricultural Statistics Service (NASS). These reports contain statistics for the on-farm use of agricultural chemicals. Other chemical usage publications issued in the past year have focused on agricultural chemical use on vegetables (July 1997) and field crops (May 1998).

This data series addresses the increased public interest in agricultural chemical use and provides the means for government agencies to respond effectively to food safety and water quality issues.

Information in this report are the results from a survey funded by the USDA Pesticide Data Program. The purpose of the Pesticide Data Program is to upgrade the reliability of pesticide use statistics and the quality of information on pesticide residues in food. Multiple agencies within the USDA administer this program.

NASS collects on-farm agricultural chemical use information to support the evaluation of food safety and water quality issues. The Economic Research Service (ERS) conducts research on the impact of alternative pesticide regulations, policies, and practices. The Agricultural Marketing Service (AMS) conducts a pesticide residue monitoring program.

This report includes farm use of pesticides for the 1997 crop year for selected fruit crops in eleven major producing States.

Highlights

Apples: Insecticide applications were made on 96 percent of the acreage in the 10 States surveyed. The most commonly used insecticides were azinphos-methyl and chlorpyrifos. Fungicides were applied to all of the acres in Michigan but in lower percentages in the other States, ranging down to 74 percent of California's acreage. Sulfur was the fungicide used in the largest amount and was applied to 35 percent of the acreage. Captan was the most frequently applied fungicide with an average of 5.4 applications made to 36 percent of the acreage. Herbicides were applied to 60 percent of the acreage overall and ranged from 23 percent of the acreage in North Carolina upwards to 70 percent and above in 4 States.

Apricots: California's growers applied insecticides, fungicides, and herbicides to 62, 52, and 30 percent, respectively, of the apricot acreage. The insecticide used in the largest amount was petroleum distillate, applied to 22 percent of the apricot acreage. Two fungicides were applied to at least 19 percent of the acreage: copper hydroxide at 19 percent and iprodione at 26 percent. Glyphosate was the most commonly used herbicide, applied to 19 percent of the acres.

Avocados: Although Florida's growers treat much higher percentages of their acreage with chemicals, the 10-fold higher acreage of the crop in California causes overall percentages to more closely reflect California's usage patterns. Herbicides were applied to 44 percent of the acreage in the two States, with glyphosate being the most commonly used. Insecticide usage occurred on 33 percent of the acreage overall but varied from 87 percent of the acreage in Florida to 28 percent in California. Fungicide use showed a similar pattern with 99 percent of Florida's acreage treated versus 3 percent in California. Copper hydroxide was the fungicide used extensively in Florida.

Blackberries: Oregon's growers applied the major classes of chemicals to the State's acreage in percents ranging from 79 percent upwards, excluding other chemicals. The herbicides diuron and simazine were each applied to 41 percent of the acreage, and paraquat was applied to 38 percent. Esfenvalerate was the most common insecticide in use and was applied to one-third of the acreage. The fungicide calcium polysulfide was the most widely used of all chemicals, being applied to 70 percent of the blackberry acres.

Blueberries: Two-thirds of the acres in the 5 States surveyed had herbicides applied. Insecticide and fungicide usage was on 83 and 88 percent of the acreage, respectively. Two insecticides were similar in their percent coverage: azinphos-methyl at 51 percent of the acreage and malathion at 55 percent. For herbicides, diuron was the most commonly used at 34 percent of the acres. Captan (67 percent of acres); benomyl (53 percent); and triforine (50 percent) were three commonly used fungicides. The remaining fungicides were used on 10 percent or less of the acreage.

Dates: Malathion was the most common insecticide applied to California's date acreage, at 4 percent of the total acreage. Sulfur, applied to 18 percent of the date acreage, was the most widely used fungicide. Herbicides were applied to 6 percent of the total acreage.

Figs: California fig growers applied herbicides to 48 percent of the total acreage and glyphosate was used the most. Insecticides and fungicides were each applied to 1 percent of the total acreage.

Grapefruit: Pesticides were used less frequently in California than in Florida. Herbicides were used on 58 percent of California's total grapefruit acreage compared with 96 percent of Florida's bearing acreage. Insecticides were used on 62 percent of the acreage in California and 95 percent of the acreage in Florida. California growers also applied fungicides to a lower percentage of the grapefruit acreage with only 32 percent treated compared to Florida's 76 percent of the bearing acreage. Glyphosate, petroleum distillate, and copper hydroxide were the most commonly used herbicide, insecticide, and fungicide, respectively.

Grapes: Fungicides were applied to more acres than were herbicides or insecticides in each of the six States surveyed except Washington. In the fungicide category, sulfur was the most commonly used material; it was used on 81 percent of the acreage. Herbicide applications were made to 75 percent of the acres overall with glyphosate being the most commonly used at 45 percent of the acreage. Percent of acres treated with insecticides was 60 percent; cryolite was the leading insecticide and was in use on 27 percent of the acres.

Kiwifruit: Kiwifruit growers applied herbicides to 41 percent of the total acreage, and the most common herbicide used was glyphosate. Insecticides were used on 20 percent of the acreage. Only 15 percent of the kiwifruit acreage had fungicide application.

Lemons: Pesticide data collected in California showed herbicides were used on 78 percent of the total lemon acreage, insecticides on 73 percent of the acreage, and fungicides applied to 66 percent of the acreage. The leading herbicide used was glyphosate. Petroleum distillate was the most widely used insecticide, and basic copper sulfate was the most commonly used fungicide. Gibberellic acid was another commonly used chemical, at 44 percent of the acreage.

Limes: Pesticides were applied to virtually all of the lime acres. Herbicides were applied to 98 percent of the acreage. Insecticides and fungicides were each used on all the acres. Glyphosate, petroleum distillate, ethion, and copper hydroxide were the most widely applied pesticides.

Nectarines: In California, herbicides were applied to 73 percent of the acreage. Insecticides and fungicides were applied to 82 and 79 percent of the acres, respectively.

Olives: California producers applied herbicides to 53 percent of the acres with glyphosate most commonly used. Insecticides were used on 16 percent of the acreage. Carbaryl was the leading insecticide applied to the crop. Fungicides were applied to 30 percent of the olive acreage.

Oranges: California growers treated a lower percentage of acreage with herbicides, insecticides and fungicides than Florida growers did. California treated 84, 79 and 57 percent of its total orange acreage while Florida treated 94, 92 and 68 percent, respectively. Glyphosate was the most commonly used herbicide. Petroleum distillate was the most frequently used insecticide while copper hydroxide was the most widely used fungicide.

Peaches: Insecticide use was reported on 82 percent of the peach acreage in the 9 States surveyed. California and North Carolina reported insecticide use on 73 and 77 percent of the crop, respectively. All other surveyed States ranged from 86 to 99 percent of the acres. Fungicide usage was lowest in California at 71 percent of the acres while the other States ranged from 79 percent of the acres to the entire Georgia and Pennsylvania crops. Herbicide use was reported on 54 percent of the peach acreage. North Carolina had the lowest percentage treated, reporting its use on 35 percent of the crop.

Pears: Insecticides were applied to 90 percent of the acreage of the 5 States surveyed, while fungicides were applied to 85 percent of the acres. Producers in all States but California applied insecticide to 97 percent-plus of their acres while California's growers sprayed 72 percent of their acreage. Fungicides were applied to almost all of the New York, Oregon, and Pennsylvania acreage but were reported used on only 72 percent of California's acreage. Herbicides were put on 57 percent of the acreage in the five States. Oregon and Washington growers used herbicides on two-thirds of their pear acreage while the percent treated in the other three States ranged from 44 percent downwards. An average of 52 percent of the acreage was treated with other chemicals, ranging from 6 to 66 percent.

Plums and Prunes: California's usage patterns of the major classes of chemicals were similar for the two crops. Insecticides were used on the highest percent of the acres. Petroleum distillate was used as an insecticide on 49 percent of the plum acreage and on 43 percent of the prune acreage. The herbicide glyphosate was applied to 44 percent of the plum acres and to 40 percent of the prune acres. Sulfur was the leading fungicide for the two fruits: 17 percent of the plum acreage was treated and 26 percent of the prune acres were treated.

Raspberries: The three major classes of chemicals were applied to the acres in Oregon and Washington in percentages of 90 percent and up. Paraquat was the most commonly applied herbicide with 73 percent of the acres treated. Protroleum distillate was the insecticide used in the largest amount and was applied to 11 percent of the acreage. Calcium polysulfide and captan showed similar application percentages at 69 and 74 percent, respectively.

Sweet Cherries: Insecticide applications were made to 84 percent of the acreage in the 4 States surveyed, followed by application percents of 80 percent for fungicides and 61 percent for herbicides. California had the lowest percent coverage in each category. Petroleum distillate as an insecticide was applied to 47 percent of the acreage overall. In the fungicide class, sulfur was used on 51 percent of the acres. For herbicides, glyphosate was the most commonly applied and was used on 37 percent of the acres.

Tangelos: Pesticides were applied to nearly all of the tangelo acres. Insecticides were most commonly used as 97 percent of Florida's bearing acreage was sprayed. Herbicides were also used frequently with 96 percent of the acreage treated. Fungicides were applied to 91 percent of the crop acreage.

Tangerines: Herbicides and insecticides were applied to nearly all of Florida's bearing acreage, and fungicides were applied to three-fourths of the bearing acreage. California growers applied herbicides to 31 percent of their total tangerine acreage and 23 percent had insecticides applied to it. Only 3 percent of California's acreage was treated with a fungicide.

Tart Cherries: In the four States surveyed, insecticides and fungicides were applied to virtually all of the acreage, and herbicides were applied to 78 percent of the acreage. Azinphos-methyl was the insecticide applied to the most acres at 72 percent of the crop. Chlorothalonil and sulfur were both widely used, with application percentages of 86 and 78 percent, respectively. Simazine and glyphosate were the two most common herbicides and were applied to 37 and 35 percent of the acres, respectively.

Temples: Pesticides were applied to nearly all of the bearing acreage in Florida. Insecticides and herbicides were put on 98 and 96 percent of the acres, respectively. Fungicides were applied on 94 percent of the crop. Glyphosate, petroleum distillate and copper hydroxide were the most widely used pesticides.

Apples: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide 2/:		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	40,500	64	72.8	77	1,173.2	74	202.8	23	2.8
GA 3/:	2,300	70	6.8	91	82.2	90	50.4	26	
MI	55,000	70	117.0	98	615.6	100	1,670.0	40	5.9
NJ 3/:	4,100	38	3.6	92	78.5	92	94.3	11	
NY	51,000	58	107.7	99	1,089.4	99	1,142.7	41	0.6
NC	9,500	23	8.0	98	251.8	98	387.2	17	0.6
OR	8,700	63	22.5	93	306.9	93	67.7	65	6.6
PA	22,000	70	74.6	99	285.9	99	407.1	36	0.6
SC 4/:	2,700	83	12.2	99	26.0	99	132.5		
WA	155,000	57	285.4	99	5,550.0	84	1,015.3	83	74.9
Total:	350,800	60	710.6	96	9,459.5	90	5,170.0	56	92.0

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Total other chemicals applied is less than 50 pounds.
4/ Insufficient reports to publish data for one or more of the pesticide classes.

Apples: Active Ingredients Applied and Publication Status
by States Surveyed, 1997

Active Ingredient	States Surveyed									
	ALL	CA	GA	MI	NJ	NY	NC	OR	PA	SC	WA
Herbicides:											
2,4-D	P	*	*	P	P	P	*	P	P	P	P
Alachlor	*										*
Atrazine	*										*
Bromacil	*										*
Dichlobenil	*							*			*
Difenzoquat	*										*
Diquat	*					*			*		*
Diuron	P	*	*	P	P	P	P	P	P	*	P
EPTC	*										

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Apples: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed									
	ALL	CA	GA	MI	NJ	NY	NC	OR	PA	SC	WA
Herbicides: (cont.)											
Fluazifop-P-butyl	*										
Glyphosate	P	P	P	P	P	P	P	P	P	P	P
Napropamide	*	*				*			*		*
Norflurazon	P	P		P	P	P		P	P		P
Oryzalin	P	P		P		P		*	*		P
Oxyfluorfen	P	P				*		P			P
Paraquat	P	P	P	P	P	P	P	P	P	P	P
Pendimethalin	*					*			*		*
Pronamide	*							*			*
Prosulfuron	*										*
Sethoxydim	*	*		*							
Simazine	P	P	P	P	P	P	P	P	P	P	P
Terbacil	P		*	P	P	P		*	P	*	*
Triclopyr	*		*					*	*		
Trifluralin	*	*									
Insecticides:											
Abamectin	P	P	*	P	P	P	P	P	P	*	P
Azadirachtin	*	*									
Azinphos-methyl	P	P	P	P	P	P	P	P	P	P	P
Bt (Bacillus thur.)	P	P		P		P		P			P
Carbaryl	P	P	P	P	P	P	P	P	P	P	P
Carbofuran	*									*	
Chlorpyrifos	P	P	P	P	P	P	P	P	P	P	P
Clofentezine	P	*		P	*	P		*	P	P	P
Cyfluthrin	*										*
Diazinon	P	P			P	*	*	P	P		P
Dicofol	P	P	*	P	*	P		*	*	*	
Diflubenzuron	*				*						
Dimethoate	P	*		P	*	P	*	*	P	P	P
Endosulfan	P	*	P	P	*	P	P	P	P	P	P
Esfenvalerate	P	*	*	P		P	P	P	P	*	*
Ethyl parathion	*				*						*
Fenamiphos	*	*		*							
Fenbutatin-oxide	P	P		P	*	*			*	*	P
Fenoxycarb	*							*			*
Fenvalerate	*								*		
Formetanate hydro.	P	P		P	P	*	*	P	P	*	P
Hexythiazox	P			P		P			P	*	*
Imidacloprid	P	P	*	P	P	P	P	P	P	*	P
Lambdacyhalothrin	*							*			
Lindane	*									*	
Malathion	P		*		P	*	*	P	*	*	P
Methidathion	P	P			*		*	*	P		*

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Apples: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed										
	ALL	CA	GA	MI	NJ	NY	NC	OR	PA	SC	WA
Insecticides: (cont.)											
Methomyl	P	*		P	P	P	*	P	P		*
Methoxychlor	P						*	P		*	P
Methyl parathion	P	P	*	P	P	P	P	P	P	*	P
Oxamyl	P	*		P	P	P	*	P	P	*	P
Oxythioquinox	*			*		*		*	*		*
Permethrin	P	*	*	P	*	P	P	*	P	*	
Petroleum distillate	P	P	P	P	P	P	P	P	P	P	P
Phosmet	P	P	P	P	P	P	P	P	P	P	P
Phosphamidon	P			*	*		*	*	*		P
Piperonyl butoxide	*				*						
Potassium salts	*					*					*
Propargite	*	*			*	*	*		*		*
Pyrethrins	*				*						
Rotenone	*				*						
Ryania	*										*
Tebufenozide	P			*		*		*	P		
Fungicides:											
Basic copper sulfate	*	*		*	*						
Benomyl	P	*	P	P	P	P	P	P	P	P	*
Calcium polysulfide	P	P	*	P	*	*	*	P	*		P
Captafol	*										*
Captan	P	*	P	P	P	P	P	P	P	P	*
Chlorothalonil	P			*	*	*			*	*	
Copper ammonium	*							*			
Copper hydroxide	P	P	*	P	*	P	P	P	P	*	P
Copper oxide	*	*									
Copper oxychlo. sul.	P	*		P	*	P	*	P	P	P	*
Copper oxychloride	*					*			*		
Copper resinate	P				P	*	*				
Copper sulfate	P		*	P		P	*	P	P		*
Dicloran	*	*					*				
Dinocap	*								*		
Dodine	P			P	P	P	P	P	P	P	P
Fenarimol	P	*	*	P	P	P	P	P	P	P	P
Fenbuconazole	*					*		*	*		
Ferbam	P		*	*	*	*	P		*		
Fosetyl-al	P	P		P		*		P		*	P
Glyodin	*				*						
Iprodione	*	*				*		*			*
Mancozeb	P	P	P	P	P	P	P	P	P	P	P
Maneb	P	*	*	P	*	*		*	*		*
Mefenoxam	*	*									
Metalaxyl	P			*	*	*					P
Metiram	P		P	P	P	P	P	*	P	P	P
Myclobutanil	P	P	*	P	P	P	P	P	P	*	P
Oxytetracycline	P			P	*			P	*	*	P
Propiconazole	*	*						*	*		*
Pseudomonas fluores.	P	P						*			P
Streptomycin	P	P	P	P	*	P	P	P	P	P	*
Sulfur	P	P	*	P	P	P	P	P	P	*	P

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Apples: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed									
	ALL	CA	GA	MI	NJ	NY	NC	OR	PA	SC	WA
Fungicides: (cont.)											
Thiophanate-methyl	P	*	P	P	P	P	P		P	P	
Thiram	P	*			*	*	*	P			P
Triadimefon	P		*	P	P	P	*	P	*	P	P
Triflumizole	P	P				*		P	*		P
Triforine	*				*			*		*	*
Vinclozolin	*			*		*			*		
Ziram	P	*	*	P	P	P	P	P	P	P	P
Other Chemicals:											
Allium sativum	*			*							*
Ammonium soap	*							*			*
Benzyladenine	P			P		*		*	P		P
Brodifacoum	*										*
Butenic Acid Hydro.	P			P	*			P	*	*	P
Chlorophacinone	*	*				*		*			*
Chloropicrin	*	*									
Cytokinins	P	*		P	*	P		P	P	*	P
DNOC	*			*				*			*
Diphacinone	*	*									*
Ethephon	P	*		P	*	P	*	P	P	*	P
Formaldehyde	*	*									
Gibberellic acid	P	*	*	P	P	P	P	P	P	*	P
Gossyplure	*										*
Lactic Acid	*										*
Methyl bromide	*	*									
Monocarbamide dihyd.	P							P			P
NAA	P	P	P	P	P	P	P	P	P	*	P
NAD	P	P		*	*			P	*		P
Neem Oil, Hydrophob.	*	*									
Pelargonic Acid	*										*
Strychnine	P	P									P
Zinc phosphide	P					*					P

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Apples: Agricultural Chemical Applications,
States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	14	1.8	0.80	1.40	66.9
Diuron	8	1.2	1.58	1.89	54.8
Glyphosate	35	1.5	1.09	1.64	199.1
Norflurazon	6	1.1	1.73	1.90	40.7
Oryzalin	7	1.2	2.04	2.47	63.7
Oxyfluorfen	4	1.1	1.22	1.29	18.0
Paraquat	26	1.5	0.74	1.14	105.8
Simazine	19	1.2	1.50	1.76	120.4
Terbacil	3	1.1	1.05	1.12	13.6
Insecticides:					
Abamectin	21	1.1	0.01	0.01	1.0
Azinphos-methyl	82	3.2	0.76	2.44	699.7
Bt (Bacillus thur.)2/	16	1.5			
Carbaryl	38	1.4	1.07	1.44	191.3
Chlorpyrifos	74	1.7	1.43	2.43	631.1
Clofentezine	13	1.1	0.16	0.18	8.3
Diazinon	4	1.6	1.16	1.83	23.8
Dicofol	3	1.2	1.99	2.48	26.3
Dimethoate	7	1.5	1.05	1.53	39.8
Endosulfan	20	1.3	1.43	1.85	127.9
Esfenvalerate	16	1.9	0.03	0.07	3.8
Fenbutatin-oxide	3	1.1	0.78	0.86	7.9
Formetanate hydro.	8	1.2	0.81	1.01	26.5
Hexythiazox	9	1.0	0.11	0.11	3.6
Imidacloprid	48	1.5	0.05	0.08	13.6
Malathion	12	1.2	1.05	1.24	51.8
Methidathion	2	1.2	0.69	0.85	5.9
Methomyl	18	1.9	0.62	1.15	72.9
Methoxychlor	12	1.2	1.00	1.17	49.6
Methyl parathion	30	2.2	1.22	2.69	279.6
Oxamyl	18	1.2	0.45	0.53	33.7
Permethrin	6	1.2	0.13	0.17	3.6
Petroleum distillate	65	1.4	22.18	30.36	6,928.8
Phosmet	19	2.1	1.44	3.09	203.3
Phosphamidon	1	1.4	0.60	0.87	3.5
Tebufenozide	2	1.7	0.20	0.34	2.0

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Apples: Agricultural Chemical Applications,
States Surveyed, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides:					
Benomyl	25	2.3	0.25	0.56	50.0
Calcium polysulfide	2	1.3	13.53	17.68	144.8
Captan	36	5.4	1.71	9.32	1,170.1
Chlorothalonil	1	2.8	2.11	5.89	10.4
Copper hydroxide	11	1.2	1.97	2.33	93.1
Copper oxychlo. sul.	6	1.2	2.34	2.83	62.6
Copper resinate	1	1.7	0.17	0.29	0.5
Copper sulfate	2	1.1	1.45	1.53	11.8
Dodine	4	1.8	0.88	1.55	23.7
Fenarimol	37	2.2	0.06	0.14	18.1
Ferbam	*	3.3	2.03	6.78	9.6
Fosetyl-al	7	1.2	2.21	2.76	67.9
Mancozeb	32	3.2	2.46	7.90	882.0
Maneb	2	3.5	2.19	7.60	66.1
Metalaxyl	1	1.1	1.54	1.63	7.4
Metiram	17	3.8	2.49	9.53	576.5
Myclobutanil	39	2.6	0.11	0.29	38.9
Oxytetracycline	5	1.1	0.15	0.16	2.7
Pseudomonas fluores.	8	1.0	0.22	0.23	6.7
Streptomycin	25	1.9	0.14	0.28	24.4
Sulfur	35	2.1	4.99	10.48	1,273.0
Thiophanate-methyl	14	2.9	0.34	1.00	47.6
Thiram	2	1.9	2.48	4.66	28.5
Triadimefon	6	2.0	0.10	0.19	3.8
Triflumizole	19	1.5	0.26	0.39	25.8
Ziram	18	3.0	2.75	8.24	507.6
Other Chemicals:					
Benzyladenine	2	1.1	0.03	0.03	0.3
Butenic Acid Hydro.	2	1.1	0.11	0.12	1.0
Cytokinins	18	1.1	0.03	0.03	2.0
Ethephon	14	1.1	0.57	0.64	31.3
Gibberellic acid	22	1.2	0.03	0.04	2.7
Monocarbamide dihyd.	1	1.1	9.57	10.18	41.1
NAA	30	1.3	0.03	0.04	4.3
NAD	8	1.2	0.05	0.06	1.6
Strychnine	2	1.6	0.01	0.02	0.1
Zinc phosphide	1	1.6	0.05	0.08	0.4

* Area applied is less than one percent.
1/ Bearing acres in 1997 for the 10 States surveyed were 350,800 acres. States included are CA, GA, MI, NJ, NY, NC, OR, PA, SC and WA. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Apples: Agricultural Chemical Applications, California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	24	1.8	0.82	1.45	14.0
Norflurazon	6	1.1	2.13	2.45	6.0
Oryzalin	16	1.2	1.47	1.72	10.9
Oxyfluorfen	12	1.1	0.75	0.83	4.1
Paraquat	34	2.1	0.53	1.12	15.3
Simazine	22	1.2	1.48	1.71	15.0
Insecticides:					
Abamectin	15	1.1	0.01	0.01	0.1
Azinphos-methyl	48	1.7	1.19	2.02	39.6
Bt (Bacillus thur.)2/	15	1.3			
Carbaryl	14	1.2	1.53	1.88	10.4
Chlorpyrifos	36	2.4	1.59	3.82	55.8
Diazinon	19	1.4	1.61	2.24	17.0
Dicofol	19	1.3	1.88	2.44	19.1
Fenbutatin-oxide	6	1.1	0.90	0.98	2.6
Formetanate hydro.	2	1.1	1.03	1.16	1.1
Imidacloprid	14	1.2	0.06	0.07	0.4
Methidathion	7	1.2	1.17	1.41	3.9
Methyl parathion	4	1.7	1.85	3.12	5.1
Petroleum distillate	56	1.5	27.93	42.55	957.3
Phosmet	34	1.7	2.12	3.57	49.8
Fungicides:					
Calcium polysulfide	3	2.2	14.72	32.01	42.8
Copper hydroxide	22	1.2	3.06	3.79	33.2
Fosetyl-al	3	1.5	1.80	2.62	3.3
Mancozeb	19	1.6	2.25	3.59	27.5
Myclobutanil	47	1.6	0.12	0.20	3.8
Pseudomonas fluores.	3	2.0	0.17	0.35	0.4
Streptomycin	46	2.1	0.12	0.24	4.6
Sulfur	23	1.3	4.61	6.16	56.7
Triflumizole	6	1.6	0.19	0.30	0.7
Other Chemicals:					
NAA	6	1.5	0.04	0.07	0.2
NAD	3	1.0	0.06	0.06	0.1
Strychnine	6	1.4	0.02	0.02	0.1

1/ Total acres in 1997 for California were 40,500 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Apples: Agricultural Chemical Applications, Georgia, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	64	1.0	1.71	1.76	2.6
Paraquat	53	1.1	1.14	1.26	1.5
Simazine	16	1.1	2.16	2.44	0.9
Insecticides:					
Azinphos-methyl	11	3.7	0.60	2.24	0.6
Carbaryl	19	1.1	1.13	1.28	0.6
Chlorpyrifos	89	1.8	1.37	2.51	5.2
Endosulfan	76	1.3	1.35	1.78	3.1
Petroleum distillate	77	1.2	24.53	30.56	54.1
Phosmet	80	6.8	1.39	9.48	17.4
Fungicides:					
Benomyl	20	4.0	0.23	0.90	0.4
Captan	82	6.6	2.12	13.92	26.3
Mancozeb	24	4.3	3.76	16.08	8.9
Metiram	67	1.7	2.11	3.50	5.4
Streptomycin	19	2.7	0.13	0.35	0.2
Thiophanate-methyl	50	1.6	0.52	0.81	0.9
Other Chemicals:					
NAA 2/	24	1.1	0.008	0.009	

1/ Bearing acres in 1997 for Georgia were 2,300 acres.
2/ Total applied is less than 50 pounds.

Apples: Agricultural Chemical Applications, Michigan, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	23	1.6	1.02	1.64	20.7
Diuron	12	1.1	1.69	1.92	12.6
Glyphosate	44	1.3	0.89	1.19	29.0
Norflurazon	1	1.3	1.97	2.48	1.5
Oryzalin	1	1.3	2.62	3.51	1.6
Paraquat	27	1.4	0.90	1.28	19.3
Simazine	32	1.3	1.22	1.53	27.0
Terbacil	10	1.1	0.85	0.96	5.3
Insecticides:					
Abamectin	19	1.2	0.01	0.01	0.1
Azinphos-methyl	83	3.3	0.68	2.24	102.5
Bt (Bacillus thur.)2/	4	1.9			
Carbaryl	34	1.2	0.92	1.15	21.4
Chlorpyrifos	81	2.2	1.10	2.38	105.7
Clofentezine	6	1.0	0.11	0.11	0.4
Dicofol	1	1.0	3.27	3.39	2.1
Dimethoate	17	1.4	1.03	1.49	14.2
Endosulfan	21	1.4	1.04	1.46	16.6
Esfenvalerate	35	2.0	0.05	0.09	1.8
Fenbutatin-oxide	1	1.0	0.48	0.49	0.3
Formetanate hydro.	1	1.4	0.79	1.15	0.6
Hexythiazox	25	1.0	0.13	0.13	1.7
Imidacloprid	42	1.6	0.06	0.09	2.1
Methomyl	52	1.7	0.84	1.39	39.4
Methyl parathion	15	2.0	0.70	1.39	11.3
Oxamyl	2	1.1	0.94	1.04	1.2
Permethrin	28	1.2	0.15	0.18	2.8
Petroleum distillate	22	1.4	12.90	17.87	220.6
Phosmet	47	2.0	1.37	2.68	69.8
Fungicides:					
Benomyl	28	1.9	0.24	0.46	7.0
Calcium polysulfide	3	1.1	2.82	3.03	5.1
Captan	71	5.8	2.18	12.56	490.6
Copper hydroxide	27	1.3	1.07	1.34	20.0
Copper oxychlo. sul.	18	1.3	2.21	2.80	28.5
Copper sulfate	5	1.1	1.79	1.98	5.0
Dodine	1	1.3	0.99	1.30	0.6
Fenarimol	34	3.2	0.06	0.19	3.5
Fosetyl-al	2	1.6	1.62	2.59	2.8
Mancozeb	46	3.7	3.01	11.23	282.2
Maneb	9	3.8	2.22	8.41	42.4

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Apples: Agricultural Chemical Applications, Michigan, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides: (cont.)					
Metiram	39	4.3	2.88	12.43	263.8
Myclobutanil	32	4.3	0.12	0.53	9.4
Oxytetracycline	1	2.1	0.24	0.50	0.3
Streptomycin	29	1.9	0.21	0.41	6.5
Sulfur	32	2.9	5.10	14.86	257.6
Thiophanate-methyl	7	2.7	0.30	0.80	3.0
Triadimefon	21	2.3	0.07	0.17	1.9
Ziram	39	3.7	2.87	10.72	232.3
Other Chemicals:					
Benzyladenine	11	1.1	0.03	0.03	0.2
Butenic Acid Hydro.3/	1	1.0	0.09	0.09	
Cytokinins 3/	2	1.0	0.02	0.02	
Ethephon	3	1.3	0.45	0.60	1.0
Gibberellic acid	15	1.2	0.007	0.009	0.1
NAA	27	1.4	0.02	0.03	0.4

1/ Bearing acres in 1997 for Michigan were 55,000 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.
3/ Total applied is less than 50 pounds.

Apples: Agricultural Chemical Applications,
New Jersey, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	9	1.1	0.95	1.05	0.4
Diuron	10	1.0	1.28	1.28	0.5
Glyphosate	7	1.4	0.60	0.84	0.2
Norflurazon	14	1.3	1.84	2.40	1.3
Paraquat	21	1.1	0.67	0.73	0.6
Simazine	8	1.0	1.13	1.13	0.4
Terbacil	6	1.0	0.90	0.90	0.2
Insecticides:					
Abamectin 2/	6	1.6	0.009	0.02	
Azinphos-methyl	55	6.6	0.51	3.39	7.6
Carbaryl	25	1.6	0.76	1.23	1.3
Chlorpyrifos	48	3.4	0.66	2.24	4.4
Diazinon	28	1.6	0.72	1.13	1.3
Formetanate hydro.	7	1.8	1.00	1.80	0.5
Imidacloprid 2/	10	1.6	0.05	0.08	
Malathion	16	1.9	1.54	2.93	1.9
Methomyl	18	2.1	0.32	0.66	0.5
Methyl parathion	13	2.1	0.74	1.58	0.9
Oxamyl	17	3.3	0.29	0.97	0.7
Petroleum distillate	46	2.1	13.82	29.65	56.0
Phosmet	37	2.2	0.85	1.89	2.9
Fungicides:					
Benomyl	66	1.8	0.35	0.64	1.7
Captan	88	7.9	1.28	10.06	36.5
Copper resinate	21	2.3	0.09	0.20	0.2
Dodine	21	2.1	0.64	1.34	1.2
Fenarimol	19	4.4	0.05	0.20	0.2
Mancozeb	33	7.8	1.56	12.09	16.2
Metiram	7	4.2	2.45	10.15	3.0
Myclobutanil	19	4.2	0.11	0.47	0.4
Sulfur	24	7.3	2.45	17.98	17.8
Thiophanate-methyl	5	4.9	0.46	2.25	0.5
Triadimefon 2/	4	2.1	0.12	0.24	
Ziram	29	6.4	1.66	10.62	12.5
Other Chemicals:					
Gibberellic acid 2/	2	4.6	0.01	0.06	
NAA 2/	10	2.0	0.03	0.05	

1/ Bearing acres in 1997 for New Jersey were 4,100 acres.
2/ Total applied is less than 50 pounds.

Apples: Agricultural Chemical Applications,
New York, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	18	1.6	0.50	0.79	7.3
Diuron	19	1.1	1.18	1.30	12.9
Glyphosate	36	1.3	1.06	1.38	25.7
Norflurazon	7	1.0	1.76	1.76	6.5
Oryzalin	8	1.0	2.92	2.93	11.5
Paraquat	15	1.3	0.61	0.80	6.2
Simazine	31	1.1	1.61	1.81	28.6
Terbacil	5	1.0	1.37	1.37	3.2
Insecticides:					
Abamectin	16	1.1	0.01	0.01	0.1
Azinphos-methyl	85	3.1	0.66	2.04	88.2
Bt (Bacillus thur.)2/	10	1.5			
Carbaryl	37	1.2	1.37	1.69	32.2
Chlorpyrifos	63	1.7	1.15	1.98	64.0
Clofentezine	16	1.1	0.14	0.16	1.3
Dicofol	3	1.0	2.36	2.43	4.3
Dimethoate	9	1.8	1.31	2.37	11.5
Endosulfan	33	1.6	1.19	1.85	31.6
Esfenvalerate	29	1.6	0.05	0.07	1.1
Hexythiazox	27	1.0	0.10	0.11	1.5
Imidacloprid	36	1.4	0.05	0.07	1.2
Methomyl	25	1.4	0.88	1.25	15.8
Methyl parathion	41	1.6	0.90	1.44	30.1
Oxamyl	16	1.2	0.63	0.77	6.4
Permethrin	6	1.1	0.12	0.13	0.4
Petroleum distillate	62	1.6	14.54	23.98	761.9
Phosmet	22	2.3	1.26	2.89	32.5
Fungicides:					
Benomyl	44	3.3	0.22	0.71	15.8
Captan	93	4.1	1.60	6.60	312.8
Copper hydroxide	14	1.1	2.65	3.05	21.8
Copper oxychlo. sul.	13	1.0	2.62	2.65	18.0
Copper sulfate	4	1.0	1.30	1.30	2.6
Dodine	3	1.6	0.77	1.23	2.0
Fenarimol	26	3.2	0.07	0.22	3.0
Mancozeb	80	3.6	2.18	7.87	321.6
Metiram	24	3.1	2.69	8.21	100.5
Myclobutanil	45	2.9	0.12	0.33	7.6
Streptomycin	18	1.6	0.16	0.26	2.4
Sulfur	34	3.4	4.56	15.71	271.3
Thiophanate-methyl	42	2.2	0.31	0.67	14.3
Triadimefon	7	1.9	0.14	0.26	0.9
Ziram	13	2.0	1.46	2.88	18.8

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Apples: Agricultural Chemical Applications,
New York, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Cytokinins 3/	3	1.1	0.01	0.01	
Ethephon	1	1.0	0.15	0.15	0.1
Gibberellic acid	12	1.2	0.01	0.01	0.1
NAA	32	1.2	0.01	0.02	0.3

1/ Bearing acres in 1997 for New York were 51,000 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.
3/ Total applied is less than 50 pounds.

Apples: Agricultural Chemical Applications,
North Carolina, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	15	1.0	2.19	2.19	3.0
Glyphosate	17	1.6	0.95	1.52	2.5
Paraquat	6	1.5	0.58	0.85	0.5
Simazine	8	1.3	1.98	2.57	2.0
Insecticides:					
Abamectin 2/	8	1.7	0.01	0.02	
Azinphos-methyl	66	2.8	0.63	1.75	11.0
Carbaryl	21	2.9	0.73	2.09	4.1
Chlorpyrifos	72	2.4	0.68	1.65	11.4
Endosulfan	16	1.5	1.06	1.59	2.4
Esfenvalerate	53	2.8	0.01	0.04	0.2
Imidacloprid	13	1.3	0.05	0.06	0.1
Methyl parathion	49	3.5	0.85	2.94	13.8
Permethrin	21	1.4	0.09	0.12	0.2
Petroleum distillate	74	1.4	19.45	27.25	192.7
Phosmet	59	1.8	1.47	2.65	14.9
Fungicides:					
Benomyl	50	5.6	0.16	0.88	4.2
Captan	71	7.0	1.92	13.47	90.6
Copper hydroxide	12	1.0	3.29	3.29	3.6
Dodine	22	2.8	0.87	2.45	5.2
Fenarimol	40	5.5	0.05	0.25	1.0
Ferbam	7	5.8	2.21	12.72	8.2
Mancozeb	43	4.9	2.73	13.25	54.4
Metiram	39	5.6	2.11	11.77	43.2
Myclobutanil	62	3.4	0.11	0.38	2.3
Streptomycin	7	2.4	0.18	0.43	0.3
Sulfur	44	4.8	3.66	17.57	74.1
Thiophanate-methyl	67	4.5	0.48	2.15	13.6
Ziram	75	4.0	3.02	11.92	84.4
Other Chemicals:					
Gibberellic acid	11	5.9	0.09	0.53	0.5
NAA 2/	6	1.0	0.02	0.02	

1/ Bearing acres in 1997 for North Carolina were 9,500 acres.
2/ Total applied is less than 50 pounds.

Apples: Agricultural Chemical Applications, Oregon, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	20	1.3	1.34	1.70	2.9
Diuron	13	1.0	1.55	1.55	1.8
Glyphosate	40	2.2	1.11	2.44	8.6
Norflurazon	13	1.0	1.77	1.77	1.9
Oxyfluorfen	11	1.1	1.05	1.11	1.1
Paraquat	25	1.4	0.93	1.33	2.9
Simazine	16	1.1	1.90	2.00	2.8
Insecticides:					
Abamectin 2/	22	1.1	0.009	0.01	
Azinphos-methyl	79	3.0	0.95	2.83	19.4
Bt (Bacillus thur.)3/	32	2.3			
Carbaryl	52	1.5	0.87	1.28	5.8
Chlorpyrifos	82	1.1	1.69	1.79	12.9
Diazinon	3	3.8	1.46	5.61	1.3
Endosulfan	17	1.3	1.99	2.66	4.0
Esfenvalerate 2/	2	1.6	0.02	0.03	
Formetanate hydro.	9	1.0	1.09	1.09	0.9
Imidacloprid	45	1.7	0.06	0.10	0.4
Malathion	6	1.9	0.94	1.79	1.0
Methomyl	34	1.2	0.59	0.73	2.2
Methoxychlor	6	1.7	0.72	1.26	0.7
Methyl parathion	45	2.0	1.39	2.78	11.0
Oxamyl	24	1.2	0.51	0.61	1.3
Petroleum distillate	82	1.2	28.97	33.66	241.6
Phosmet	11	2.2	1.98	4.28	3.9
Fungicides:					
Benomyl	6	1.2	0.47	0.57	0.3
Calcium polysulfide	7	1.3	13.76	17.25	10.9
Captan	3	2.2	1.99	4.34	1.2
Copper hydroxide	10	1.1	3.95	4.27	3.7
Copper oxychlo. sul.	2	1.3	5.46	6.88	1.0
Copper sulfate	1	1.0	3.03	3.03	0.4
Dodine	25	1.6	1.22	1.89	4.0
Fenarimol	46	1.2	0.07	0.08	0.3
Fosetyl-al	15	1.1	2.01	2.17	2.8
Mancozeb	30	2.1	3.03	6.35	16.6
Myclobutanil	77	2.1	0.12	0.26	1.7
Oxytetracycline	9	1.0	0.17	0.18	0.1
Streptomycin	5	2.1	0.10	0.22	0.1
Sulfur	15	1.1	8.54	9.80	13.1
Thiram	7	1.1	3.14	3.36	2.1
Triadimefon	3	1.1	0.21	0.23	0.1
Triflumizole	23	1.7	0.27	0.48	1.0
Ziram	12	1.1	4.77	5.34	5.7

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Apples: Agricultural Chemical Applications,
Oregon, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Butenic Acid Hydro.2/	3	1.0	0.11	0.11	
Cytokinins	34	1.2	0.03	0.03	0.1
Ethephon	13	1.3	0.60	0.76	0.8
Gibberellic acid	35	1.1	0.03	0.03	0.1
Monocarbamide dihyd.	7	1.0	9.04	9.04	5.4
NAA	38	1.4	0.03	0.04	0.1
NAD 2/	11	1.0	0.05	0.05	

1/ Bearing acres in 1997 for Oregon were 8,700 acres.
2/ Total applied is less than 50 pounds.
3/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Apples: Agricultural Chemical Applications, Pennsylvania, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	33	1.3	1.39	1.83	13.3
Diuron	25	1.6	2.01	3.12	17.1
Glyphosate	5	1.2	1.06	1.31	1.3
Norflurazon	5	1.4	2.03	2.91	3.1
Paraquat	64	1.6	0.70	1.12	15.7
Simazine	33	1.3	2.12	2.77	20.0
Terbacil	6	1.1	0.96	1.01	1.4
Insecticides:					
Abamectin	18	2.0	0.007	0.01	0.1
Azinphos-methyl	92	6.3	0.25	1.61	32.7
Carbaryl	8	1.9	0.87	1.66	3.0
Chlorpyrifos	33	1.6	0.70	1.16	8.5
Clofentezine	25	1.5	0.11	0.16	0.9
Diazinon	14	2.0	0.38	0.76	2.3
Dimethoate	3	2.3	0.40	0.94	0.6
Endosulfan	6	1.5	0.83	1.20	1.7
Esfenvalerate	71	1.8	0.02	0.04	0.6
Formetanate hydro.	14	1.8	0.27	0.47	1.4
Hexythiazox	9	1.1	0.07	0.07	0.1
Imidacloprid	68	2.1	0.05	0.09	1.4
Methidathion	18	1.3	0.36	0.45	1.7
Methomyl	72	2.8	0.28	0.80	12.7
Methyl parathion	54	4.1	0.32	1.34	15.9
Oxamyl	17	1.5	0.35	0.54	2.1
Permethrin	3	1.2	0.10	0.12	0.1
Petroleum distillate	37	2.1	11.02	23.44	189.5
Phosmet	17	3.1	0.75	2.29	8.5
Tebufenozide	26	1.7	0.20	0.34	2.0
Fungicides:					
Benomyl	28	3.6	0.21	0.77	4.8
Captan	94	6.8	1.05	7.14	147.4
Copper hydroxide	1	1.4	2.18	3.10	0.7
Copper oxychlo. sul.	13	1.1	2.04	2.29	6.7
Copper sulfate	6	1.1	1.61	1.74	2.4
Dodine	17	2.1	0.35	0.73	2.7
Fenarimol	38	5.5	0.04	0.21	1.8
Mancozeb	47	3.8	1.63	6.12	63.7
Metiram	39	6.4	1.79	11.42	97.1
Myclobutanil	57	3.9	0.08	0.30	3.8
Streptomycin	13	1.9	0.19	0.36	1.0
Sulfur	21	2.4	1.80	4.37	20.0
Thiophanate-methyl	54	2.7	0.30	0.81	9.7
Ziram	26	3.8	1.98	7.59	43.1

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Apples: Agricultural Chemical Applications, Pennsylvania, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Benzyladenine 2/	2	1.0	0.04	0.04	
Cytokinins 2/	9	1.2	0.02	0.02	
Ethephon	4	1.8	0.24	0.44	0.4
Gibberellic acid	13	1.7	0.010	0.02	0.1
NAA	24	1.5	0.02	0.03	0.1

1/ Bearing acres in 1997 for Pennsylvania were 22,000 acres.
2/ Total applied is less than 50 pounds.

Apples: Agricultural Chemical Applications, South Carolina, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	57	1.8	0.96	1.69	2.6
Glyphosate	41	1.5	1.73	2.61	2.9
Paraquat	29	1.9	0.36	0.67	0.5
Simazine	43	1.3	1.62	2.10	2.4
Insecticides:					
Azinphos-methyl	76	3.2	1.22	3.86	7.9
Carbaryl	52	1.0	1.05	1.10	1.5
Chlorpyrifos	45	2.8	0.89	2.52	3.1
Clofentezine	20	1.0	0.12	0.12	0.1
Dimethoate	8	1.9	0.95	1.80	0.4
Endosulfan	11	1.4	0.98	1.36	0.4
Petroleum distillate	12	1.1	22.45	24.71	8.3
Phosmet	32	1.8	2.02	3.70	3.2
Fungicides:					
Benomyl	63	4.8	0.22	1.07	1.8
Captan	98	9.8	2.08	20.35	53.7
Copper oxychlo. sul.	56	1.6	2.00	3.30	5.0
Dodine	6	1.4	0.93	1.30	0.2
Fenarimol	56	3.0	0.05	0.14	0.2
Mancozeb	20	3.2	2.08	6.70	3.6
Metiram	77	6.1	2.75	16.86	35.0
Streptomycin	53	1.3	0.13	0.18	0.3
Thiophanate-methyl	70	9.2	0.29	2.68	5.1
Triadimefon	55	2.0	0.06	0.12	0.2
Ziram	70	6.1	2.32	14.11	26.6

1/ Bearing acres in 1997 for South Carolina were 2,700 acres.
2/ Total applied is less than 50 pounds.

Apples: Agricultural Chemical Applications, Washington, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	9	2.3	0.57	1.34	19.5
Diuron	1	1.0	1.67	1.73	3.4
Glyphosate	38	1.6	1.21	1.88	112.3
Norflurazon	8	1.1	1.57	1.71	20.2
Oryzalin	10	1.3	2.07	2.65	39.3
Oxyfluorfen	4	1.0	1.55	1.61	9.1
Paraquat	24	1.5	0.81	1.18	43.2
Simazine	10	1.1	1.31	1.43	21.3
Insecticides:					
Abamectin	26	1.1	0.01	0.01	0.6
Azinphos-methyl	91	2.9	0.95	2.77	390.2
Bt (Bacillus thur.)2/	26	1.5			
Carbaryl	51	1.4	1.04	1.41	111.0
Chlorpyrifos	91	1.4	1.76	2.54	360.2
Clofentezine	18	1.0	0.19	0.20	5.6
Diazinon	1	1.0	1.82	1.82	1.6
Dimethoate	6	1.3	0.97	1.22	11.6
Endosulfan	22	1.1	1.81	1.99	67.3
Fenbutatin-oxide	3	1.1	0.84	0.91	4.1
Formetanate hydro.	12	1.2	0.86	1.03	18.6
Imidacloprid	65	1.4	0.06	0.08	7.9
Malathion	26	1.1	1.05	1.20	48.0
Methoxychlor	27	1.2	1.01	1.17	48.8
Methyl parathion	33	2.0	1.87	3.67	190.2
Oxamyl	30	1.1	0.42	0.46	21.7
Petroleum distillate	87	1.2	25.50	31.39	4,246.9
Phosmet	*	1.2	2.45	2.87	0.5
Phosphamidon	2	1.4	0.59	0.84	3.0
Fungicides:					
Calcium polysulfide	3	1.1	17.33	19.82	83.2
Copper hydroxide	4	1.0	1.33	1.40	9.1
Dodine	3	1.1	1.72	1.86	7.7
Fenarimol	50	1.3	0.07	0.10	7.6
Fosetyl-al	14	1.2	2.29	2.80	58.7
Mancozeb	12	1.4	3.46	4.74	87.4
Metalaxyl	2	1.1	0.95	1.02	3.6
Metiram	7	1.0	2.43	2.55	27.1
Myclobutanil	32	1.8	0.11	0.20	9.9
Oxytetracycline	10	1.0	0.14	0.15	2.3
Pseudomonas fluores.	18	1.0	0.23	0.23	6.3
Sulfur	43	1.4	6.06	8.44	560.8
Thiram	2	2.3	2.88	6.71	19.6
Triadimefon	2	1.1	0.22	0.24	0.6
Triflumizole	39	1.4	0.27	0.39	23.6
Ziram	10	1.3	3.91	4.91	75.0

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Apples: Agricultural Chemical Applications,
Washington, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Benzyladenine 3/	1	1.0	0.06	0.06	
Butenic Acid Hydro.	5	1.1	0.11	0.12	0.9
Cytokinins	35	1.1	0.03	0.03	1.8
Ethephon	27	1.1	0.58	0.65	27.3
Gibberellic acid	35	1.1	0.03	0.03	1.8
Monocarbamide dihyd.	2	1.1	9.65	10.38	35.7
NAA	40	1.2	0.04	0.05	3.1
NAD	16	1.2	0.05	0.06	1.5
Strychnine	2	1.8	0.01	0.02	0.1
Zinc phosphide	3	1.7	0.05	0.08	0.4

* Area applied is less than one percent.
1/ Bearing acres in 1997 for Washington were 155,000 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.
3/ Total applied is less than 50 pounds.

Apricots: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State	Bearing Acreage	Herbicide		Insecticide 2/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	20,300	30	9.0	62	172.6	52	41.8	1	7.0

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.

Apricots: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status
Herbicides:	
2,4-D	*
Glyphosate	P
Napropamide	*
Norflurazon	P
Oryzalin	P
Oxyfluorfen	P
Paraquat	*
Pendimethalin	*
Insecticides:	
Bt (Bacillus thur.)	P
Carbaryl	*
Clofentezine	*
Diazinon	P
Endosulfan	*
Esfenvalerate	P
Malathion	*
Methidathion	P
Oxythioquinox	*
Petroleum distillate	P
Phosmet	P
Propargite	*

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Active Ingredient (continued)	Status
Fungicides:	
Benomyl	*
Captan	*
Chlorothalonil	P
Copper hydroxide	P
Copper oxide	*
Copper oxychlo. sul.	*
Iprodione	P
Myclobutanil	P
Propiconazole	P
Thiophanate-methyl	*
Vinclozolin	*
Ziram	P
Other Chemicals:	
Cytokinins	*
Dichloropropene	*
Dodecen Acetate	*
Gibberellic acid	*
NAA	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Apricots: Agricultural Chemical Applications, California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	19	2.0	0.48	0.96	3.7
Norflurazon	6	1.1	0.95	1.01	1.2
Oryzalin	7	1.1	1.43	1.64	2.3
Oxyfluorfen	6	1.2	0.49	0.60	0.8
Insecticides:					
Bt (Bacillus thur.)2/	10	1.6			
Diazinon	18	1.2	1.71	2.06	7.5
Esfenvalerate	11	1.4	0.05	0.07	0.1
Methidathion	7	1.3	1.37	1.81	2.5
Petroleum distillate	22	1.4	21.65	29.90	136.5
Phosmet	28	1.4	2.73	3.91	22.4
Fungicides:					
Chlorothalonil	6	1.2	2.99	3.67	4.6
Copper hydroxide	19	1.2	3.45	4.21	16.3
Iprodione	26	1.4	0.77	1.12	6.0
Myclobutanil	13	1.3	0.13	0.17	0.5
Propiconazole	4	1.1	0.11	0.12	0.1
Ziram	8	1.3	3.62	4.80	8.1

1/ Total acres in 1997 for California were 20,300 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Avocados: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide 2/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	56,800	39	59.7	28	32.1	3	4.6	22	0.6
FL	5,700	97	9.1	87	52.2	99	91.2		
Total:	62,500	44	68.8	33	84.3	12	95.8	20	0.6

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.

Avocados: Active Ingredients Applied and Publication Status
by States Surveyed, 1997

Active Ingredient	States Surveyed			Active Ingredient	States Surveyed		
	ALL	CA	FL		ALL	CA	FL
Herbicides:				(continued)			
				Insecticides: (cont.)			
Diquat	*		*	Pyrethrins	*	*	
Diuron	*		*	Rotenone	*	*	
Glyphosate	P	P	P	Sabadilla	P	P	
Norflurazon	*	*					
Oxyfluorfen	*	*		Fungicides:			
Paraquat	*		*	Basic copper sulfate	*	*	*
Simazine	P	P		Benomyl	*	*	*
				Copper hydroxide	*	*	P
Insecticides:				Copper oxychlo. sul.	*		*
Bt (Bacillus thur.)	*		*	Copper sulfate	*		*
Carbaryl	*		*	Fosetyl-al	*	*	
Chlorpyrifos	*		*	Metalaxyl	*	*	
Cryolite	*		*	Sulfur	*	*	*
Ethion	*		*				
Malathion	P	*	*	Other Chemicals:			
Methomyl	*	*		Chlorophacinone	*	*	
Permethrin	P		P	Diphacinone	*	*	
Petroleum distillate	P	P	P	Metaldehyde	*	*	
Piperonyl butoxide	*	*		Strychnine	*	*	

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P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Avocados: Agricultural Chemical Applications,
States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	42	3.8	0.51	1.95	51.8
Simazine	7	1.2	1.76	2.14	8.8
Insecticides:					
Malathion	5	2.0	0.71	1.40	4.6
Permethrin	8	1.6	0.15	0.24	1.2
Petroleum distillate	7	1.1	16.70	18.38	77.2
Sabadilla	24	2.0	0.02	0.05	0.7

1/ Bearing acres in 1997 for the 2 States surveyed were 62,500 acres. States included are CA and FL. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Avocados: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	38	3.8	0.54	2.07	44.1
Simazine	7	1.2	1.76	2.14	8.8
Insecticides:					
Petroleum distillate	1	1.6	29.95	48.71	30.5
Sabadilla	27	2.0	0.02	0.05	0.7

1/ Total acres in 1997 for California were 56,800 acres. Acreage includes both bearing and non-bearing acres.

Avocados: Agricultural Chemical Applications,
Florida, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	92	3.6	0.40	1.46	7.7
Insecticides:					
Permethrin	85	1.6	0.15	0.24	1.2
Petroleum distillate	63	1.0	12.96	13.07	46.8
Fungicides:					
Copper hydroxide	90	3.6	3.89	14.14	72.3

1/ Bearing acres in 1997 for Florida were 5,700 acres.

Blackberries: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Oregon, 1997

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide 1/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
OR 2/	5,510	94	14.5	79	8.1	87	83.2		

1/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
2/ Insufficient reports to publish data for one or more of the pesticide classes.

Blackberries: Active Ingredient Publication Status
Oregon, 1997

Active Ingredient	Status
Herbicides:	
2,4-D	*
Atrazine	*
Dichlobenil	*
Diuron	P
Glyphosate	*
Napropamide	P
Norflurazon	P
Oryzalin	*
Oxyfluorfen	P
Paraquat	P
Sethoxydim	*
Simazine	P
Terbacil	*
Insecticides:	
Azinphos-methyl	P
Bt (Bacillus thur.)	P
Carbaryl	P
Diazinon	P
Esfenvalerate	P
Malathion	*
Petroleum distillate	P

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Active Ingredient	Status
(continued)	
Fungicides:	
Benomyl	P
Calcium polysulfide	P
Captan	P
Copper ammonium	*
Copper hydroxide	P
Copper oxide	*
Copper sulfate	P
Ferbam	*
Fosetyl-al	P
Iprodione	P
Metalaxyl	*
Oxytetracycline	*
Sulfur	P
Triforine	*
Vinclozolin	*
Ziram	*
Other Chemicals:	
Monocarbamide dihyd.	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Blackberries: Agricultural Chemical Applications,
Oregon, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	41	1.1	1.58	1.76	3.9
Napropamide	6	1.0	1.43	1.43	0.5
Norflurazon	12	1.0	1.25	1.27	0.8
Oxyfluorfen	16	1.7	0.64	1.08	1.0
Paraquat	38	1.4	0.36	0.52	1.1
Simazine	41	1.1	1.68	1.85	4.1
Insecticides:					
Azinphos-methyl	19	1.1	0.37	0.41	0.4
Bt (Bacillus thur.)2/	20	1.7			
Carbaryl	25	1.2	1.50	1.75	2.4
Diazinon	15	1.0	1.32	1.35	1.1
Esfenvalerate	33	1.1	0.05	0.05	0.1
Petroleum distillate	9	1.1	6.72	7.47	3.9
Fungicides:					
Benomyl	22	1.9	0.38	0.73	0.9
Calcium polysulfide	70	1.5	10.48	15.34	59.2
Captan	38	1.4	1.91	2.69	5.7
Copper hydroxide	34	1.2	1.57	1.89	3.5
Copper sulfate	13	1.1	1.83	2.07	1.5
Fosetyl-al	3	1.4	2.63	3.76	0.5
Iprodione	35	2.1	0.75	1.58	3.0
Sulfur	21	1.1	6.68	7.27	8.4

1/ Bearing acres in 1997 for Oregon were 5,510 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Blueberries: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Herbicide		Insecticide 1/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
GA	4,200	55	8.9	18	1.9	82	20.6	58	0.3
MI	17,000	75	28.4	98	86.1	89	108.5		
NJ	7,800	46	10.0	91	24.6	86	75.2		
NC 2/	3,000	73	3.5	96	9.9	92	6.6		
OR 2/	2,200	93	10.9	56	4.7	88	23.6		
Total	34,200	67	61.7	83	127.2	88	234.5	14	0.3

1/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
2/ Insufficient reports to publish data for one or more of the pesticide classes.

Blueberries: Active Ingredients Applied and Publication Status
by States Surveyed, 1997

Active Ingredient	States Surveyed					
	ALL	GA	MI	NJ	NC	OR
Herbicides:						
2,4-D	*		*	*		*
Dichlobenil	*			*		*
Diuron	P	P	P	P		P
Fluazifop-P-butyl	*				*	
Glyphosate	P	P	P	*	P	P
Hexazinone	P	*	P		P	*
Napropamide	P			*	*	P
Norflurazon	P		P	P		P
Oryzalin	P	P	*	*	*	P
Oxyfluorfen	*					*
Paraquat	P	*	P	*	P	P
Pronamide	*					*
Sethoxydim	P	*	*	*	*	*
Simazine	P	P	P	*	*	P
Terbacil	P		P	P	*	*
Triclopyr	*					*
Insecticides:						
Acephate	*				*	
Azinphos-methyl	P		P	P	P	
Bt (Bacillus thur.)	P		P	P		P
Carbaryl	P	*	P	P	*	*

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Blueberries: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed					
	ALL	GA	MI	NJ	NC	OR
Insecticides: (cont.)						
Carbofuran	*					*
Diazinon	P			P	*	*
Dimethoate	*		*			
Endosulfan	P			*	P	
Esfenvalerate	P			*	P	*
Ethoprop	*					*
Formetanate hydro.	*					*
Hexythiazox	*			*		
Malathion	P	*	P	P	P	*
Methomyl	P		P	P		
Petroleum distillate	P				P	P
Phosmet	P	P	P	P		
Piperonyl butoxide	*		*			
Potassium salts	*				*	
Pyrethrins	*		*			
Rotenone	*		*			
Fungicides:						
Basic copper sulfate	*			*		
Benomyl	P	P	P	P	P	P
Calcium polysulfide	P		*	P		*
Captan	P	P	P	P	P	P
Chlorothalonil	P		P	*		*
Copper ammonium	*				*	
Copper hydroxide	P	*			*	P
Copper oxychlo. sul.	*					*
Copper sulfate	P					P
Dodine	*	*				
Ferbam	*					*
Fosetyl-al	P		P			P
Iprodione	P					P
Mancozeb	*			*		
Mefenoxam	*					*
Metalaxyl	P					P
Propiconazole	*	*				
Streptomycin	*			*		
Sulfur	P		*	*		*
Triforine	P	P	P	P	P	P
Vinclozolin	*					*
Ziram	P		P			
Other Chemicals:						
Gibberellic acid	P	P			*	
Metaldehyde	*					*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Blueberries: Agricultural Chemical Applications, States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	34	1.1	1.33	1.40	16.1
Glyphosate	15	1.5	0.69	1.02	5.2
Hexazinone	9	1.2	0.79	0.93	2.9
Napropamide	2	1.0	2.24	2.31	1.6
Norflurazon	17	1.0	1.83	1.88	10.6
Oryzalin	4	1.1	1.60	1.70	2.2
Paraquat	9	1.3	0.49	0.63	1.9
Sethoxydim	2	1.2	0.31	0.38	0.3
Simazine	20	1.2	1.66	1.94	13.4
Terbacil	29	1.0	0.71	0.72	7.1
Insecticides:					
Azinphos-methyl	51	1.7	0.51	0.87	15.2
Bt (Bacillus thur.)2/	14	1.3			
Carbaryl	24	1.9	1.54	2.87	23.5
Diazinon	10	1.3	0.78	1.02	3.5
Endosulfan	2	1.7	0.62	1.08	0.7
Esfenvalerate	4	1.4	0.04	0.06	0.1
Malathion	55	2.3	1.18	2.67	50.5
Methomyl	33	1.6	0.56	0.88	10.0
Petroleum distillate	1	1.6	8.36	13.04	5.7
Phosmet	28	1.9	0.94	1.76	16.6
Fungicides:					
Benomyl	53	2.1	0.48	1.03	18.8
Calcium polysulfide	3	1.0	12.49	12.63	11.4
Captan	67	3.3	2.03	6.69	153.8
Chlorothalonil	10	1.4	2.39	3.40	12.1
Copper hydroxide	4	2.4	1.62	3.94	5.9
Copper sulfate	1	2.0	1.85	3.63	0.9
Fosetyl-al	8	1.2	3.22	3.91	10.7
Iprodione	3	1.7	0.74	1.29	1.3
Metalaxyl	2	1.1	2.22	2.41	1.9
Sulfur	1	1.7	5.30	9.12	2.6
Triforine	50	1.8	0.28	0.51	8.6
Ziram	3	1.4	2.18	2.99	2.6
Other Chemicals:					
Gibberellic acid	7	2.2	0.05	0.11	0.3

1/ Bearing acres in 1997 for the 5 States surveyed were 34,200 acres. States included are GA, MI, NJ, NC and OR.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products. Bearing acreage includes non-bearing acres in California.

Blueberries: Agricultural Chemical Applications, Georgia, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	6	1.1	1.35	1.47	0.4
Glyphosate	30	2.6	0.67	1.75	2.2
Oryzalin	14	1.0	1.49	1.55	0.9
Simazine	36	1.7	1.75	2.90	4.3
Insecticides:					
Phosmet	12	2.4	1.03	2.42	1.2
Fungicides:					
Benomyl	76	2.6	0.49	1.25	4.0
Captan	66	2.7	1.89	5.17	14.4
Triforine	72	2.2	0.29	0.65	2.0
Other Chemicals:					
Gibberellic acid	58	2.2	0.05	0.11	0.3

1/ Bearing acres in 1997 for Georgia were 4,200 acres.

Blueberries: Agricultural Chemical Applications, Michigan, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	50	1.0	1.34	1.34	11.5
Glyphosate	13	1.0	0.81	0.81	1.8
Hexazinone	5	1.0	0.29	0.29	0.2
Norflurazon	9	1.0	1.48	1.55	2.3
Paraquat	5	1.1	0.38	0.42	0.3
Simazine	25	1.0	1.65	1.72	7.4
Terbacil	39	1.0	0.68	0.69	4.5
Insecticides:					
Azinphos-methyl	77	1.6	0.51	0.81	10.5
Bt (Bacillus thur.)2/	22	1.4			
Carbaryl	39	2.0	1.60	3.14	20.9
Malathion	74	2.2	1.15	2.56	32.4
Methomyl	51	1.5	0.57	0.84	7.3
Phosmet	46	1.9	0.94	1.79	13.9
Fungicides:					
Benomyl	44	1.9	0.50	0.97	7.3
Captan	73	2.9	1.98	5.80	71.9
Chlorothalonil	19	1.5	2.40	3.51	11.5
Fosetyl-al	14	1.2	3.22	3.94	9.4
Triforine	57	1.7	0.28	0.48	4.7
Ziram	5	1.4	2.18	2.99	2.6

1/ Bearing acres in 1997 for Michigan were 17,000 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Blueberries: Agricultural Chemical Applications,
New Jersey, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	25	1.1	0.99	1.07	2.1
Norflurazon	36	1.0	1.74	1.75	4.8
Terbacil	39	1.1	0.73	0.77	2.3
Insecticides:					
Azinphos-methyl	45	2.1	0.56	1.16	4.1
Bt (Bacillus thur.)2/	9	1.1			
Carbaryl	12	1.6	1.03	1.64	1.6
Diazinon	33	1.4	0.79	1.10	2.9
Malathion	47	1.9	1.59	3.01	11.0
Methomyl	36	1.9	0.52	1.00	2.8
Phosmet	15	1.4	0.88	1.26	1.5
Fungicides:					
Benomyl	51	2.0	0.46	0.91	3.6
Calcium polysulfide	8	1.0	14.58	14.58	9.0
Captan	72	4.6	2.27	10.51	58.8
Triforine	9	1.2	0.26	0.31	0.2

1/ Bearing acres in 1997 for New Jersey were 7,800 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Blueberries: Agricultural Chemical Applications,
North Carolina, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	27	1.1	0.57	0.62	0.5
Hexazinone	57	1.0	1.02	1.04	1.8
Paraquat	30	1.3	0.69	0.90	0.8
Insecticides:					
Azinphos-methyl	28	1.9	0.37	0.71	0.6
Endosulfan	5	1.0	0.73	0.73	0.1
Esfenvalerate	33	1.6	0.04	0.06	0.1
Malathion	77	2.9	0.98	2.86	6.6
Petroleum distillate	6	2.0	6.45	13.01	2.3
Fungicides:					
Benomyl	90	2.6	0.45	1.15	3.1
Captan	24	2.6	1.16	3.03	2.1
Triforine	84	1.9	0.29	0.54	1.4

1/ Bearing acres in 1997 for North Carolina were 3,000 acres.

Blueberries: Agricultural Chemical Applications, Oregon, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	33	1.6	1.86	3.02	2.2
Glyphosate	34	1.4	0.64	0.91	0.7
Napropamide	17	1.1	2.56	2.70	1.0
Norflurazon	64	1.0	2.39	2.49	3.5
Oryzalin	14	1.2	1.83	2.19	0.7
Paraquat	43	1.5	0.38	0.56	0.5
Simazine	48	1.0	1.52	1.53	1.6
Insecticides:					
Bt (Bacillus thur.)2/	23	1.0			
Petroleum distillate	12	1.3	10.39	13.07	3.4
Fungicides:					
Benomyl	39	1.8	0.50	0.90	0.8
Captan	69	2.6	1.68	4.33	6.6
Copper hydroxide	67	2.4	1.66	3.98	5.9
Copper sulfate	12	2.0	1.85	3.63	0.9
Fosetyl-al	17	1.2	3.21	3.74	1.4
Iprodione	47	1.7	0.74	1.29	1.3
Metalaxyl	37	1.1	2.22	2.41	1.9
Triforine	46	1.6	0.24	0.39	0.4

1/ Bearing acres in 1997 for Oregon were 2,200 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Dates: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	5,000			4	0.6	18	133.8		

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Insufficient reports to publish data for one or more of the pesticide classes.

Dates: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status
Herbicides:	
Glyphosate	*
Insecticides:	
Malathion	P
Pyrethrins	*
Rotenone	*
Fungicides:	
Sulfur	P

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Dates: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Insecticides:					
Malathion	4	1.7	1.70	2.81	0.6
Fungicides:					
Sulfur	18	2.8	54.95	152.83	133.8

1/ Total acres in 1997 for California were 5,000 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Figs: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA 2/	17,700	48	7.3	1	1.9				

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Insufficient reports to publish data for one or more of the pesticide classes.

Figs: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status
Herbicides:	
Glyphosate	P
Oryzalin	P
Oxyfluorfen	P
Paraquat	*
Insecticides:	
Diazinon	*
Petroleum distillate	*
Fungicides:	
Sulfur	*
Other Chemicals	
Chlorophacinone	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Figs: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	40	1.6	0.45	0.70	5.0
Oryzalin	4	1.1	1.16	1.24	0.9
Oxyfluorfen	14	1.2	0.39	0.47	1.1

1/ Total acres in 1997 for California were 17,700 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Grapefruit: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide 2/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA 3/	19,800	58	23.0	62	217.4	32	13.7		
FL 3/	139,200	96	495.7	95	10,387.1	76	1,043.0		
Total	159,000	91	518.7	91	10,604.5	71	1,056.7	4	0.2

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Insufficient reports to publish data for one or more of the pesticide classes.

Grapefruit: Active Ingredients Applied and Publication Status by States Surveyed, 1997

Active Ingredient	States Surveyed		
	ALL	CA	FL
Herbicides:			
2,4-D	P	P	*
Bromacil	P	P	P
Diuron	P	P	P
Glyphosate	P	P	P
Norflurazon	*	*	P
Oryzalin	*	*	P
Paraquat	P	*	P
Sethoxydim	*		*
Simazine	P	P	P
Sulfosate	*		*
Triclopyr	*		*
Trifluralin	*		*
Vernolate	*		*
Insecticides:			
Abamectin	P	*	P
Aldicarb	P		P
Bt (Bacillus thur.)	*	*	
Carbaryl	P	*	*
Chlorpyrifos	P	P	P
Cyfluthrin	*	*	
Dicofol	P		P
Diflubenzuron	P		P
Dimethoate	*	*	
Ethion	P		P
Fenbutatin-oxide	P		P
Formetanate hydro.	*	*	
Malathion	*	*	
Methidathion	P	*	*
Methomyl	*	*	
Naled	*	*	
Oxythioquinox	*		*
Petroleum distillate	P	P	P
Ryania	*	*	
Sabadilla	P	P	
Sulfur	*	*	P

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Active Ingredient	States Surveyed		
	ALL	CA	FL
(continued)			
Fungicides:			
Basic copper sulfate	P	P	P
Benomyl	P		P
Copper ammonium	*		*
Copper hydroxide	P	P	P
Copper oxide	*	*	
Copper oxychlo. sul.	*		*
Copper oxychloride	*		*
Copper sulfate	*	*	P
Ferbam	P		P
Fosetyl-al	P	*	*
Maneb	*		*
Mefenoxam	*	*	*
Metalaxyl	P	*	*
Other Chemicals:			
Diphacinone	*	*	
Gibberellic acid	*	*	*
Metaldehyde	*	*	
Strychnine	*	*	
Zinc phosphide	*	*	

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Grapefruit: Agricultural Chemical Applications,
States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	5	1.9	0.04	0.09	0.7
Bromacil	29	1.4	0.76	1.07	49.3
Diuron	48	1.4	0.90	1.24	94.7
Glyphosate	86	2.2	0.75	1.66	226.6
Paraquat	3	1.4	0.38	0.52	2.2
Simazine	32	1.5	1.17	1.70	87.3
Insecticides:					
Abamectin	57	1.3	0.009	0.010	1.1
Aldicarb	7	1.0	3.70	3.70	41.3
Carbaryl	7	3.1	2.55	8.04	87.6
Chlorpyrifos	9	1.7	1.30	2.17	29.6
Dicofol	2	1.0	2.76	2.76	8.3
Diflubenzuron	4	2.7	0.35	0.95	6.4
Ethion	29	1.1	2.66	2.92	133.0
Fenbutatin-oxide	12	1.3	0.88	1.11	20.7
Methidathion	2	1.0	0.91	0.92	3.3
Petroleum distillate	83	2.2	31.01	69.64	9,168.9
Sabadilla	2	1.0	0.02	0.02	0.1
Fungicides:					
Basic copper sulfate	7	1.6	2.47	4.03	42.9
Benomyl	11	1.0	1.08	1.08	18.5
Copper hydroxide	54	3.1	2.93	8.96	776.3
Ferbam	1	1.3	8.47	11.33	26.9
Fosetyl-al	1	1.0	2.93	3.06	3.5
Metalaxyl	2	1.1	1.03	1.13	4.3

1/ Bearing acres in 1997 for the 2 States surveyed were 159,000 acres. States included are CA and FL. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Grapefruit: Agricultural Chemical Applications, California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	40	2.0	0.05	0.09	0.7
Bromacil	25	2.1	0.38	0.79	3.9
Diuron	22	2.3	0.41	0.93	4.1
Glyphosate	51	2.3	0.27	0.62	6.3
Simazine	22	1.3	1.27	1.64	7.2
Insecticides:					
Chlorpyrifos	37	1.8	0.88	1.57	11.5
Petroleum distillate	36	1.5	16.53	24.87	179.3
Sabadilla	14	1.0	0.02	0.02	0.1
Fungicides:					
Basic copper sulfate	4	1.0	1.10	1.12	0.9
Copper hydroxide	23	1.5	1.30	1.97	9.0

1/ Total acres in 1997 for California were 19,800 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Grapefruit: Agricultural Chemical Applications, Florida, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	30	1.3	0.83	1.10	45.4
Diuron	52	1.3	0.95	1.26	90.6
Glyphosate	91	2.2	0.79	1.74	220.3
Norflurazon	17	1.4	1.12	1.54	36.8
Oryzalin	4	1.4	1.48	2.02	11.5
Paraquat	3	1.4	0.38	0.52	2.2
Simazine	34	1.5	1.16	1.71	80.1
Insecticides:					
Abamectin	65	1.3	0.009	0.01	1.1
Aldicarb	8	1.0	3.70	3.70	41.3
Chlorpyrifos	5	1.5	1.88	2.88	18.1
Dicofol	2	1.0	2.76	2.76	8.3
Diflubenzuron	5	2.7	0.35	0.95	6.4
Ethion	33	1.1	2.66	2.92	133.0
Fenbutatin-oxide	13	1.3	0.88	1.11	20.7
Petroleum distillate	89	2.3	31.56	72.24	8,989.6
Sulfur	35	1.4	15.40	21.86	1,079.8
Fungicides:					
Basic copper sulfate	7	1.7	2.54	4.27	42.0
Benomyl	12	1.0	1.08	1.08	18.5
Copper hydroxide	59	3.1	2.98	9.35	767.3
Copper sulfate	6	1.8	1.19	2.12	18.5
Ferbam	2	1.3	8.47	11.33	26.9

1/ Bearing acres in 1997 for Florida were 139,200 acres.

Grapes: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide 2/:		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	795,700	73	997.1	58	3,346.2	87	38,564.7	24	2,647.6
MI 3/	12,100	87	45.4	96	33.9	97	107.1		
NY	31,500	93	124.5	82	68.1	99	450.5		
OR 3/	6,300	80	10.2	14	19.4	98	167.7		
PA	11,000	95	44.4	89	36.7	100	56.1		
WA 3/	37,000	87	84.8	70	48.4	49	529.5		
Total	893,600	75	1,306.4	60	3,552.7	87	39,875.6	22	2,647.6

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Insufficient reports to publish data for one or more of the pesticide classes.

Grapes: Active Ingredients Applied and Publication Status by States Surveyed, 1997

Active Ingredient	States Surveyed						
	ALL	CA	MI	NY	OR	PA	WA
Herbicides:							
2,4-D	*	*			*		*
Diquat	*	*		*			
Diuron	P	P	P	P	*	P	*
Fluazifop-P-butyl	*	*					
Glyphosate	P	P	P	P	P	P	P
Napropamide	P	P			*		*
Norflurazon	P	P	*	*		P	P
Oryzalin	P	P	P	*	P		P
Oxyfluorfen	P	P	*		*		P
Paraquat	P	P	P	P	*	P	*
Pendimethalin	*	*					
Pronamide	*					*	
Sethoxydim	P	P					*
Simazine	P	P	P	P	P	P	P
Triclopyr	*			*	*	*	*
Trifluralin	P	P					*
Insecticides:							
Azinphos-methyl	*	*	*	*		*	*
Bt (Bacillus thur.)	P	P					
Carbaryl	P	P	P	P	*	P	P
Carbofuran	P	P					
Chlorpyrifos	P	P	P	*		*	P
Cryolite	P	P					
Diazinon	P	P				*	*
Dicofol	P	P	*	*		*	*
Dimethoate	P	P			*		P
Endosulfan	*		*	*			*
Esfenvalerate	*		*			*	
Ethyl parathion	*	*		*			
Fenamiphos	P	P					
Fenbutatin-oxide	P	P	*	*			
Formetanate hydro.	*		*				
Imidacloprid	P	P	P				P
Malathion	*	*					*
Methomyl	P	P	P	*		*	*
Methoxychlor	*					*	*
Methyl parathion	P		P	P		P	
Naled	*	*					
Oxamyl	*						*
Petroleum distillate	P	P	*	*	*	P	P
Phosmet	*	*	*	*		*	
Piperonyl butoxide	*	*					*
Potassium salts	P	*			*		*
Propargite	P	P					*
Pyrethrins	*	*					*
Rotenone	*	*					
Soybean oil	*	*					

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Grapes: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed						
	ALL	CA	MI	NY	OR	PA	WA
Fungicides:							
Basic copper sulfate	*	*		*			
Benomyl	P	P	P	*	*	*	
Calcium polysulfide	P	P		*	P		*
Captan	P	P	P	P	*	P	
Chlorothalonil	*					*	
Copper hydroxide	P	P	P	*	P	*	
Copper oxide	P	P					
Copper oxychlo. sul.	P	P	*	*		P	
Copper oxychloride	*			*		*	
Copper resinate	*	*	*			*	
Copper sulfate	*	*		*	*	*	
Dicloran	P	P					
Dinocap	*		*		*	*	*
Dodine	*				*	*	
Fenarimol	P	P	*	P	P	P	*
Ferbam	P		P	P		P	
Iprodione	P	P	P	P	P	*	*
Mancozeb	P	P	P	P	P	P	
Maneb	P	*		P		P	
Mefenoxam	*	*					
Metalaxyl	P		P	P			
Metiram	*		*				
Myclobutanil	P	P	P	P	P	P	P
Propiconazole	P	P					
Streptomycin	*		*				
Sulfur	P	P	P	P	P	P	P
Thiram	*			*			
Triadimefon	P	*	P	P	P	P	*
Triflumizole	P	P			P	*	P
Vinclozolin	*			*			
Ziram	P	P	P	P		P	

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Grapes: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed					
	ALL	CA	MI	NY	OR	PA	WA
Other Chemicals:							
Butenic Acid Hydro.	*						*
Chlorophacinone	*	*					
Cyanamid	P	P					
Cytokinins	*	*					
Dichloropropene	*	*					
Diphacinone	*	*					
Ethephon	P	P					
Farnesol	*	*					
Gibberellic acid	P	P					
Maleic hydrazide	*	*					
Metaldehyde	*	*					
Metam-sodium	*	*					
Methyl bromide	*	*					
NAA	*	*		*			
Nerolidol	*	*					
Sodium tetrathiocarb	P	P					
Strychnine	P	P			*		
Zinc phosphide	*						*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Grapes: Agricultural Chemical Applications, States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	5	1.1	1.52	1.71	81.4
Glyphosate	45	1.3	0.70	0.94	382.7
Napropamide	2	1.1	1.34	1.48	23.7
Norflurazon	4	1.1	1.34	1.45	48.5
Oryzalin	11	1.1	1.93	2.19	221.6
Oxyfluorfen	17	1.2	0.49	0.59	89.5
Paraquat	16	1.4	0.51	0.73	105.3
Sethoxydim	2	1.3	0.20	0.26	5.0
Simazine	25	1.1	1.33	1.46	319.6
Trifluralin	1	1.1	1.64	1.81	20.0
Insecticides:					
Bt (Bacillus thur.)2/	11	1.9			
Carbaryl	5	1.5	1.49	2.16	88.0
Carbofuran	4	1.0	2.96	3.03	99.8
Chlorpyrifos	4	1.1	0.51	0.55	20.5
Cryolite	27	1.5	5.69	8.58	2,034.9
Diazinon	1	1.5	0.74	1.10	5.3
Dicofol	3	1.3	1.03	1.33	36.5
Dimethoate	2	1.1	1.21	1.37	21.0
Fenamiphos	3	1.1	1.51	1.60	37.4
Fenbutatin-oxide	1	1.1	0.89	0.95	12.2
Imidacloprid	20	1.3	0.03	0.04	7.1
Methomyl	7	1.2	0.64	0.77	45.4
Methyl parathion	1	1.5	0.70	1.09	13.6
Petroleum distillate	5	1.5	9.42	14.16	684.8
Potassium salts	1	1.5	4.95	7.42	37.3
Propargite	18	1.4	1.80	2.45	386.7
Fungicides:					
Benomyl	4	1.1	0.38	0.43	16.9
Calcium polysulfide	2	1.1	9.35	10.08	193.1
Captan	3	1.2	1.91	2.38	59.6
Copper hydroxide	27	1.5	0.69	1.05	248.5
Copper oxide	1	1.2	0.94	1.11	9.5
Copper oxychlo. sul.	4	1.6	2.34	3.70	137.7
Dicloran	2	1.2	1.68	2.09	30.8
Fenarimol	28	1.4	0.04	0.05	12.1
Ferbam	1	1.7	2.23	3.80	23.5
Iprodione	10	1.2	0.85	1.05	94.8
Mancozeb	11	1.9	2.04	3.85	383.5
Maneb	2	2.6	1.19	3.13	51.2

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Grapes: Agricultural Chemical Applications,
States Surveyed, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides: (cont.)					
Metalaxyl	1	1.5	0.19	0.28	1.3
Myclobutanil	42	1.7	0.10	0.17	65.1
Propiconazole	1	1.1	0.11	0.12	0.6
Sulfur	81	6.3	8.51	53.31	38,407.4
Triadimefon	1	1.8	0.12	0.22	2.4
Triflumizole	21	1.9	0.15	0.29	53.5
Ziram	2	1.3	2.53	3.40	69.9
Other Chemicals:					
Cyanamid	1	1.2	11.16	13.37	143.6
Ethephon	4	1.2	0.23	0.27	9.3
Gibberellic acid	10	2.3	0.05	0.12	10.6
Sodium tetrathiocarb	5	1.0	21.82	22.81	937.7
Strychnine	1	1.3	0.007	0.009	0.1

1/ Bearing acres in 1997 for the 6 States surveyed were 893,600 acres. States included are CA, MI, NY, OR, PA and WA. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Grapes: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	3	1.2	0.88	1.08	23.6
Glyphosate	44	1.3	0.66	0.88	306.3
Napropamide	2	1.1	1.32	1.46	22.9
Norflurazon	3	1.1	1.07	1.21	25.7
Oryzalin	11	1.2	1.83	2.11	192.0
Oxyfluorfen	18	1.2	0.48	0.58	85.6
Paraquat	14	1.4	0.44	0.64	71.7
Sethoxydim	2	1.3	0.20	0.26	4.9
Simazine	23	1.1	1.19	1.32	239.9
Trifluralin	1	1.1	1.64	1.82	19.6
Insecticides:					
Bt (Bacillus thur.)2/	12	1.9			
Carbaryl	1	1.3	1.69	2.22	9.0
Carbofuran	4	1.0	2.96	3.03	99.8
Chlorpyrifos	3	1.1	0.29	0.32	7.8
Cryolite	30	1.5	5.69	8.58	2,034.9

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Grapes: Agricultural Chemical Applications, California, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Insecticides: (cont.)					
Diazinon	1	1.5	0.74	1.14	5.0
Dicofol	3	1.4	1.05	1.42	31.5
Dimethoate	2	1.1	1.25	1.39	19.2
Fenamiphos	3	1.1	1.51	1.60	37.4
Fenbutatin-oxide	1	1.1	0.88	0.95	10.7
Imidacloprid	21	1.3	0.03	0.04	6.9
Methomyl	7	1.2	0.65	0.77	43.6
Petroleum distillate	5	1.5	9.70	14.55	624.6
Propargite	20	1.4	1.80	2.46	386.4
Fungicides:					
Benomyl	5	1.1	0.37	0.42	16.1
Calcium polysulfide	2	1.1	9.77	10.27	181.0
Captan	3	1.1	1.94	2.10	42.2
Copper hydroxide	28	1.5	0.69	1.05	236.5
Copper oxide	1	1.2	0.94	1.11	9.5
Copper oxychlo. sul.	4	1.6	2.39	3.83	135.7
Dicloran	2	1.2	1.68	2.09	30.8
Fenarimol	27	1.3	0.04	0.05	10.5
Iprodione	10	1.2	0.85	1.01	83.9
Mancozeb	7	1.4	1.63	2.32	126.9
Myclobutanil	43	1.6	0.10	0.17	57.0
Propiconazole	1	1.1	0.11	0.12	0.6
Sulfur	86	6.3	8.70	54.88	37,532.2
Triflumizole	21	1.7	0.15	0.26	43.8
Ziram	1	1.1	2.37	2.50	13.5
Other Chemicals:					
Cyanamid	1	1.2	11.16	13.37	143.6
Ethephon	4	1.2	0.23	0.27	9.3
Gibberellic acid	11	2.3	0.05	0.12	10.6
Sodium tetrathiocarb	5	1.0	21.82	22.81	937.7
Strychnine	2	1.3	0.007	0.009	0.1

1/ Total acres in 1997 for California were 795,700 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Grapes: Agricultural Chemical Applications,
Michigan, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	21	1.0	2.19	2.21	5.7
Glyphosate	76	1.2	1.12	1.40	12.9
Oryzalin	11	1.0	3.19	3.28	4.4
Paraquat	70	1.5	0.83	1.23	10.4
Simazine	43	1.0	2.13	2.17	11.3
Insecticides:					
Carbaryl	63	1.7	1.34	2.31	17.6
Chlorpyrifos	32	1.0	0.90	0.94	3.7
Imidacloprid 2/	12	1.0	0.01	0.01	
Methomyl	22	1.4	0.44	0.60	1.6
Methyl parathion	40	1.9	0.61	1.17	5.6
Fungicides:					
Benomyl	4	1.2	0.50	0.61	0.3
Captan	10	1.8	1.92	3.38	4.1
Copper hydroxide	13	1.5	0.51	0.77	1.3
Ferbam	13	2.2	2.25	5.06	7.8
Iprodione	7	2.1	0.83	1.72	1.4
Mancozeb	86	2.5	2.25	5.69	59.5
Metalaxyl	13	1.5	0.18	0.27	0.4
Myclobutanil	54	1.8	0.09	0.17	1.1
Sulfur	6	2.5	3.49	8.67	5.9
Triadimefon	67	1.8	0.12	0.21	1.7
Ziram	43	1.6	2.53	4.07	21.0

1/ Bearing acres in 1997 for Michigan were 12,100 acres.
2/ Total applied is less than 50 pounds.

Grapes: Agricultural Chemical Applications,
New York, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	55	1.0	2.34	2.42	41.8
Glyphosate	50	1.1	1.14	1.26	20.0
Paraquat	36	1.4	0.74	1.07	12.0
Simazine	50	1.0	2.39	2.49	39.0
Insecticides:					
Carbaryl	63	1.3	1.52	2.03	40.1
Methyl parathion	18	1.4	0.75	1.04	6.0
Fungicides:					
Captan	11	1.8	1.78	3.29	11.1
Fenarimol	51	1.7	0.03	0.05	0.7
Ferbam	14	1.3	2.29	3.08	13.1
Iprodione	7	1.7	0.95	1.58	3.5
Mancozeb	85	2.7	2.38	6.33	169.2
Maneb	7	1.4	2.81	3.84	7.9
Metalaxyl	10	1.4	0.20	0.28	0.9
Myclobutanil	68	2.3	0.10	0.22	4.7
Sulfur	43	3.9	3.86	14.92	204.2
Triadimefon	3	1.4	0.12	0.17	0.2
Ziram	21	1.3	2.42	3.17	21.4

1/ Bearing acres in 1997 for New York were 31,500 acres.

Grapes: Agricultural Chemical Applications,
Oregon, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	75	1.3	1.05	1.34	6.3
Oryzalin	6	1.1	2.23	2.47	0.9
Simazine	17	1.2	1.70	1.96	2.1
Fungicides:					
Calcium polysulfide	11	1.5	4.10	6.01	4.2
Copper hydroxide	29	2.8	0.58	1.63	3.0
Fenarimol	25	2.6	0.03	0.09	0.1
Iprodione	68	1.8	0.71	1.31	5.6
Mancozeb	8	1.9	1.45	2.76	1.3
Myclobutanil	57	2.0	0.10	0.20	0.7
Sulfur	98	6.1	3.98	24.41	150.3
Triadimefon	5	1.9	0.11	0.21	0.1
Triflumizole	40	2.0	0.13	0.27	0.7

1/ Bearing acres in 1997 for Oregon were 6,300 acres.

Grapes: Agricultural Chemical Applications, Pennsylvania, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	52	1.0	1.69	1.75	10.1
Glyphosate	47	1.2	0.90	1.05	5.5
Norflurazon	12	1.0	2.26	2.26	3.0
Paraquat	56	1.3	0.71	0.93	5.7
Simazine	66	1.0	2.52	2.55	18.4
Insecticides:					
Carbaryl	69	1.6	1.54	2.52	19.1
Methyl parathion	17	1.1	0.96	1.02	1.9
Petroleum distillate	21	1.3	3.68	4.90	11.2
Fungicides:					
Captan	2	2.7	2.24	5.97	1.1
Copper oxychlo. sul.	10	1.1	0.93	1.06	1.2
Fenarimol	58	1.6	0.03	0.05	0.3
Ferbam	3	3.6	1.90	6.91	2.6
Mancozeb	67	1.5	2.34	3.59	26.6
Maneb	11	1.0	2.68	2.77	3.4
Myclobutanil	44	1.5	0.11	0.16	0.8
Sulfur	2	3.8	3.67	14.12	3.4
Triadimefon	15	2.2	0.12	0.25	0.4
Ziram	30	1.5	2.91	4.30	14.0

1/ Bearing acres in 1997 for Pennsylvania were 11,000 acres.

Grapes: Agricultural Chemical Applications,
Washington, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	66	1.7	0.79	1.30	31.7
Norflurazon	23	1.0	1.55	1.56	13.2
Oryzalin	19	1.0	2.62	2.64	18.6
Oxyfluorfen	15	1.0	0.66	0.68	3.8
Simazine	23	1.0	1.03	1.04	9.0
Insecticides:					
Carbaryl	4	1.0	1.31	1.34	2.2
Chlorpyrifos	20	1.1	1.02	1.11	8.4
Dimethoate	4	1.4	0.85	1.20	1.8
Imidacloprid	24	1.0	0.02	0.02	0.2
Petroleum distillate	3	1.0	19.55	19.60	19.8
Fungicides:					
Myclobutanil	8	2.5	0.11	0.27	0.8
Sulfur	43	6.6	4.92	32.29	511.4
Triflumizole	40	3.6	0.17	0.60	8.9

1/ Bearing acres in 1997 for Washington were 37,000 acres.

Kiwifruit: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State:	Bearing Acreage	Herbicide		Insecticide 2/:		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA 3/:	6,150	41	5.0	20	41.2	15	1.2		

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Insufficient reports to publish data for one or more of the pesticide classes.

Kiwifruit: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status	Active Ingredient	Status
Herbicides:		(continued)	
2,4-D	*	Fungicides:	
Glyphosate	P	Dicloran	*
Napropamide	*	Propiconazole	*
Oryzalin	P	Vinclozolin	*
Oxyfluorfen	P		
Paraquat	*	Other Chemicals	
		Cyanamid:	*
Insecticides:			
Bt (Bacillus thur.)	*		
Cryolite	*		
Fenamiphos	*		
Methidathion	*		
Petroleum distillate	P		
Phosmet	*		

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P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Kiwifruit: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	38	2.2	0.74	1.65	3.8
Oryzalin	7	1.1	2.34	2.60	1.1
Oxyfluorfen	3	1.0	0.92	0.92	0.1
Insecticides:					
Petroleum distillate	14	1.5	26.92	40.42	0.4

1/ Total acres in 1997 for California were 6,150 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Lemons: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State	Bearing Acreage	Herbicide		Insecticide		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	49,000	78	142.5	73	6,813.2	66	147.0	56	178.9

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres. products.

Lemons: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status
Herbicides:	
2,4-D	*
Bromacil	P
Diuron	P
Glyphosate	P
Norflurazon	*
Simazine	P
Insecticides:	
Abamectin	P
Carbaryl	P
Chlorpyrifos	P
Cryolite	*
Dimethoate	*
Fenamiphos	P
Fenbutatin-oxide	*
Formetanate hydro.	*
Methidathion	*
Petroleum distillate	P
Pyrethrins	*
Rotenone	*
Sabadilla	P
Sulfur	P

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Active Ingredient	Status
(continued)	
Fungicides:	
Basic copper sulfate	P
Copper hydroxide	P
Copper sulfate	*
Fosetyl-al	P
Metalaxyl	P
Other Chemicals:	
Chlorophacinone	*
Chloropicrin	*
Dichloropropene	*
Diphacinone	*
Gibberellic acid	P
Metaldehyde	P
Metam-sodium	*
Methyl bromide	*
Strychnine	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Lemons: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	35	1.0	1.47	1.53	25.9
Diuron	38	1.0	1.56	1.64	30.2
Glyphosate	74	3.0	0.68	2.06	74.2
Simazine	6	1.1	1.97	2.21	6.8
Insecticides:					
Abamectin	50	1.5	0.01	0.02	0.4
Carbaryl	1	1.0	9.76	9.77	3.6
Chlorpyrifos	43	1.1	3.09	3.46	72.4
Fenamiphos	3	1.3	6.63	8.60	13.9
Petroleum distillate	67	2.7	74.93	205.04	6,705.0
Sabadilla	38	1.0	0.03	0.03	0.5
Sulfur	1	1.2	25.00	28.92	12.3
Fungicides:					
Basic copper sulfate	49	1.1	4.32	4.72	112.7
Copper hydroxide	8	1.4	2.02	2.75	11.0
Fosetyl-al	5	1.1	3.73	4.10	10.6
Metalaxyl	13	1.3	1.43	1.87	11.8
Other Chemicals:					
Gibberellic acid	44	1.2	0.04	0.04	0.9
Metaldehyde	26	2.0	0.84	1.71	21.4

1/ Total acres in 1997 for California were 49,000 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Limes: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Florida, 1997

State	Bearing Acreage	Herbicide		Insecticide		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
FL	2,100	98	8.7	100	84.4	100	18.7		

Limes: Active Ingredient Publication Status
Florida, 1997

Active Ingredient	Status
Herbicides:	
Bromacil	*
Diuron	*
Glyphosate	P
Norflurazon	*
Simazine	*
Insecticides:	
Abamectin	P
Carbaryl	*
Chlorpyrifos	*
Dicofol	*
Ethion	P
Formetanate hydro.	*
Imidacloprid	*
Methidathion	*
Permethrin	*
Petroleum distillate	P
Sulfur	*
Fungicides:	
Benomyl	*
Copper hydroxide	P
Copper oxychlo. sul.	*
Ferbam	*
Mancozeb	*

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P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Limes: Agricultural Chemical Applications,
Florida, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	98	6.2	0.65	4.06	8.4
Insecticides:					
Abamectin 2/	95	1.2	0.003	0.004	
Ethion	98	1.5	2.12	3.11	6.4
Petroleum distillate	100	1.5	20.14	30.92	64.7
Fungicides:					
Copper hydroxide	98	1.5	5.50	8.26	17.0

1/ Bearing acres in 1997 for Florida were 2,100 acres.
2/ Total applied is less than 50 pounds.

Nectarines: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State	Bearing Acreage	Herbicide		Insecticide 2/		Fungicide		Other Chemical	
		Area Receiving and Total Applied 1/							
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA 3/:	38,000	73	75.5	82	1,153.9	79	273.9		

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Insufficient reports to publish data for one or more of the pesticide classes.

Nectarines: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status
Herbicides:	
2,4-D	*
Diuron	*
Fluazifop-P-butyl	*
Glyphosate	P
Napropamide	*
Norflurazon	P
Oryzalin	P
Oxyfluorfen	P
Paraquat	P
Pendimethalin	*
Simazine	P
Trifluralin	*
Insecticides:	
Azinphos-methyl	*
Bt (Bacillus thur.)	P
Carbaryl	P
Chlorpyrifos	P
Clofentezine	P
Diazinon	P
Dicofol	P
Esfenvalerate	P
Fenamiphos	*
Fenbutatin-oxide	P
Formetanate hydro.	P
Methidathion	P
Methomyl	P
Methyl parathion	P
Petroleum distillate	P
Phosmet	P
Potassium salts	*
Propargite	P

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Active Ingredient	Status
(continued)	
Fungicides:	
Basic copper sulfate	*
Benomyl	P
Captan	P
Chlorothalonil	P
Copper hydroxide	P
Copper oxide	*
Copper sulfate	*
Fosetyl-al	*
Iprodione	P
Myclobutanil	P
Propiconazole	P
Sulfur	P
Thiophanate-methyl	*
Triforine	*
Ziram	P
Other Chemicals:	
Dichloropropene	*
Dodecen Acetate	*
Farnesol	*
Gibberellic acid	*
Methyl bromide	*
NAA	*
Nerolidol	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Nectarines: Agricultural Chemical Applications, California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	52	2.1	0.56	1.16	22.9
Norflurazon	5	1.2	0.85	1.04	1.9
Oryzalin	23	1.2	2.11	2.49	21.9
Oxyfluorfen	25	1.3	0.58	0.78	7.4
Paraquat	32	1.7	0.55	0.93	11.2
Simazine	31	1.2	0.65	0.81	9.6
Insecticides:					
Bt (Bacillus thur.)2/	39	1.2			
Carbaryl	4	1.4	2.66	3.66	5.0
Chlorpyrifos	11	1.2	1.26	1.53	6.4
Clofentezine	15	1.1	0.13	0.14	0.8
Diazinon	20	1.4	1.91	2.60	19.7
Dicofol	18	1.1	0.98	1.06	7.3
Esfenvalerate	20	1.3	0.04	0.05	0.4
Fenbutatin-oxide	15	1.2	0.61	0.73	4.2
Formetanate hydro.	59	1.8	1.06	1.91	43.1
Methidathion	28	1.1	1.93	2.10	22.1
Methomyl	37	1.4	0.80	1.12	15.7
Methyl parathion	34	1.3	1.44	1.83	23.7
Petroleum distillate	53	1.4	33.83	46.11	934.2
Phosmet	25	1.2	1.93	2.29	21.4
Propargite	41	1.6	2.02	3.16	48.8
Fungicides:					
Benomyl	3	1.2	0.69	0.81	0.8
Captan	10	1.1	3.59	4.08	14.8
Chlorothalonil	13	1.5	2.90	4.44	22.0
Copper hydroxide	45	1.5	4.38	6.42	109.1
Iprodione	25	1.3	0.69	0.87	8.2
Myclobutanil	19	1.6	0.13	0.20	1.4
Propiconazole	14	1.2	0.11	0.13	0.7
Sulfur	24	1.3	5.12	6.66	60.6
Ziram	14	1.5	4.71	6.97	37.9

1/ Total acres in 1997 for California were 38,000 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Olives: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide 2/:		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA 3/:	37,400	53	66.2	16	162.1	30	95.0		

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Insufficient reports to publish data for one or more of the pesticide classes.

Olives: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status	Active Ingredient	Status
Herbicides:		(continued)	
Diuron	P	Fungicides:	
Glyphosate	P	Basic copper sulfate	P
Napropamide	*	Copper hydroxide	P
Oryzalin	*	Copper oxide	*
Oxyfluorfen	P	Copper sulfate	*
Paraquat	P	Sulfur	*
Simazine	P		
		Other Chemicals:	
Insecticides:		Diphacinone	*
Bt (Bacillus thur.)	*	NAA	*
Carbaryl	P		
Diazinon	*		
Fenpropathrin	*		
Methidathion	P		
Petroleum distillate	P		

--continued

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Olives: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	22	1.3	1.28	1.67	13.5
Glyphosate	44	2.5	0.46	1.13	18.5
Oxyfluorfen	18	1.2	0.45	0.52	3.4
Paraquat	11	1.9	0.47	0.88	3.7
Simazine	33	1.2	1.66	2.04	25.2
Insecticides:					
Carbaryl	11	1.3	6.41	8.07	32.4
Methidathion	2	1.2	2.38	2.80	2.5
Petroleum distillate	5	1.4	54.76	74.02	127.1
Fungicides:					
Basic copper sulfate	9	1.6	6.82	10.72	35.7
Copper hydroxide	11	1.3	4.63	5.82	24.5

1/ Total acres in 1997 for California were 37,400 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Oranges: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Herbicide		Insecticide 2/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	208,000	81	1,032.8	79	4,421.5	57	376.1	52	793.9
FL	624,900	94	2,366.5	92	42,939.6	68	1,712.5	2	27.5
Total	832,900	91	3,399.3	88	47,361.1	65	2,088.6	14	821.4

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.

Oranges: Active Ingredients Applied and Publication Status
By States Surveyed, 1997

Active Ingredient	States Surveyed		
	ALL	CA	FL
Herbicides:			
2,4-D	*	P	*
Bromacil	P	P	P
Diuron	P	P	P
Glyphosate	P	P	P
MSMA	*	*	
Norflurazon	P	P	P
Oryzalin	*	*	P
Oxyfluorfen	P	P	
Paraquat	*	*	P
Sethoxydim	*		*
Simazine	P	P	P
Sulfosate	P		P
Triclopyr	*		*
Trifluralin	*	*	
Insecticides:			
Abamectin	P	P	P
Acephate	*	*	
Aldicarb	P		P
Azadirachtin	*	*	
Bt (Bacillus thur.)	P	P	*
Carbaryl	P	P	P
Chlorpyrifos	P	P	P
Cryolite	*	*	
Cyfluthrin	P	P	
Dicofol	*	*	P
Diflubenzuron	P		P
Dimethoate	P	P	
Ethion	P		P
Ethyl parathion	*	*	
Fenamiphos	P	P	
Fenbutatin-oxide	*	*	P
Fenoxycarb	*		*
Fenpropathrin	*	*	
Fluvalinate	*	*	
Formetanate hydro.	*	P	*
Imidacloprid	*	*	
Malathion	P	P	*
Methidathion	P	P	
Methomyl	*	*	
Naled	*	*	
Oxythioquinox	*	*	*

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Active Ingredient	States Surveyed		
	ALL	CA	FL
(continued)			
Insecticides: (cont.)			
Petroleum distillate	P	P	P
Potassium salts	*		*
Propargite	*	*	*
Pyrethrins	*	*	
Rotenone	*	*	
Sabadilla	P	P	
Sulfur	P	P	P
Fungicides:			
Basic copper sulfate	P	P	P
Benomyl	P		P
Copper ammonium	*		*
Copper hydroxide	P	P	P
Copper oxide	*	*	
Copper oxychlo. sul.	*	*	*
Copper oxychloride	*		*
Copper sulfate	P	P	P
Ferbam	P		P
Fosetyl-al	P	P	P
Iprodione	*		*
Mefenoxam	P	*	*
Metalaxyl	P	P	P
Oxytetracycline	*		*
Propiconazole	*	*	
Other Chemicals:			
Chlorophacinone	*	*	
Chloropicrin	*	*	
Diphacinone	*	*	
Gibberellic acid	P	P	P
Metaldehyde	P	P	
Metam-sodium	*	*	
Methyl bromide	*	*	
NAA	*	*	
Neem Oil, Hydrophob.	*		*
Strychnine	*	*	
Zinc phosphide	*	*	

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Oranges: Agricultural Chemical Applications,
States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	39	1.5	0.86	1.26	403.9
Diuron	60	1.7	1.05	1.76	876.3
Glyphosate	73	3.1	0.63	1.94	1,185.7
Norflurazon	19	1.8	1.03	1.84	291.6
Oxyfluorfen	1	1.0	0.90	0.94	10.4
Simazine	28	1.4	1.66	2.25	528.6
Sulfosate	3	2.7	0.76	2.08	43.6
Insecticides:					
Abamectin	28	1.4	0.008	0.01	2.5
Aldicarb	5	1.0	3.23	3.23	133.0
Bt (Bacillus thur.)2/	4	1.2			
Carbaryl	3	1.2	5.26	6.54	169.1
Chlorpyrifos	20	1.9	3.51	6.56	1,065.9
Cyfluthrin	13	1.7	0.10	0.17	17.8
Diflubenzuron	2	1.2	0.37	0.45	7.8
Dimethoate	2	1.1	1.57	1.79	23.7
Ethion	11	1.2	2.44	3.00	275.5
Fenamiphos	5	1.0	1.40	1.41	59.1
Malathion	1	1.3	1.24	1.61	9.9
Methidathion	1	1.3	3.26	4.31	47.0
Petroleum distillate	72	2.5	29.52	73.25	43,854.7
Sabadilla	3	1.9	0.02	0.04	1.1
Sulfur	8	1.3	13.16	17.23	1,178.6
Fungicides:					
Basic copper sulfate	18	1.6	2.32	3.80	554.2
Benomyl	2	1.1	0.75	0.79	12.7
Copper hydroxide	34	1.9	1.94	3.75	1,053.7
Copper sulfate	5	1.1	1.73	1.93	78.6
Ferbam	1	1.1	6.88	7.49	34.8
Fosetyl-al	2	1.6	2.72	4.23	72.8
Mefenoxam	2	1.0	0.26	0.26	4.8
Metalaxyl	6	1.1	1.21	1.31	63.4
Other Chemicals:					
Gibberellic acid	10	1.1	0.07	0.08	6.6
Metaldehyde	1	1.3	0.74	0.96	8.2

1/ Bearing acres in 1997 for the 2 States surveyed were 832,900 acres. States included are CA and FL. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Oranges: Agricultural Chemical Applications, California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	49	1.1	0.05	0.06	5.9
Bromacil	20	1.5	1.40	2.13	89.4
Diuron	56	1.4	1.96	2.72	316.2
Glyphosate	73	5.4	0.48	2.59	393.8
Norflurazon	1	1.1	2.30	2.46	2.6
Oxyfluorfen	5	1.0	0.90	0.94	10.4
Simazine	40	1.1	2.18	2.49	208.3
Insecticides:					
Abamectin	8	1.2	0.008	0.01	0.2
Bt (Bacillus thur.)2/	16	1.1			
Carbaryl	5	1.2	10.46	12.18	137.8
Chlorpyrifos	62	1.8	4.45	7.89	1,023.9
Cyfluthrin	51	1.7	0.10	0.17	17.8
Dimethoate	6	1.1	1.57	1.79	23.7
Fenamiphos	20	1.0	1.40	1.41	59.1
Formetanate hydro.	5	1.3	1.02	1.35	14.4
Malathion	3	1.1	1.23	1.41	8.4
Methidathion	5	1.3	3.26	4.31	47.0
Petroleum distillate	24	1.3	43.95	57.50	2,855.0
Sabadilla	12	1.9	0.02	0.04	1.1
Sulfur	*	1.2	11.45	13.26	8.2
Fungicides:					
Basic copper sulfate	23	1.1	2.47	2.69	128.6
Copper hydroxide	11	1.9	2.39	4.51	100.7
Copper sulfate	5	1.2	3.15	3.67	39.3
Fosetyl-al	1	1.5	3.07	4.59	0.1
Metalaxyl	19	1.0	1.41	1.42	55.9
Other Chemicals:					
Gibberellic acid	37	1.1	0.07	0.08	6.1
Metaldehyde	4	1.3	0.74	0.96	8.2

* Area applied is less than one percent.

1/ Total acres in 1997 for California were 208,000 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Oranges: Agricultural Chemical Applications, Florida, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	45	1.5	0.77	1.13	314.6
Diuron	61	1.8	0.83	1.47	560.1
Glyphosate	73	2.3	0.74	1.73	791.9
Norflurazon	25	1.8	1.03	1.84	289.0
Oryzalin	2	1.6	1.12	1.83	19.5
Paraquat	6	2.2	0.28	0.62	23.6
Simazine	24	1.5	1.43	2.11	320.3
Sulfosate	3	2.7	0.76	2.08	43.6
Insecticides:					
Abamectin	35	1.4	0.008	0.01	2.3
Aldicarb	7	1.0	3.23	3.23	133.0
Carbaryl	2	1.3	1.65	2.16	31.4
Chlorpyrifos	5	2.2	0.57	1.28	41.9
Dicofol	1	1.0	1.92	1.92	14.0
Diflubenzuron	3	1.2	0.37	0.45	7.8
Ethion	15	1.2	2.44	3.00	275.5
Fenbutatin-oxide	7	1.1	0.91	1.04	45.0
Petroleum distillate	88	2.6	28.86	74.67	40,999.7
Sulfur	11	1.3	13.17	17.26	1,170.4
Fungicides:					
Basic copper sulfate	16	1.9	2.27	4.34	425.6
Benomyl	3	1.1	0.75	0.79	12.7
Copper hydroxide	41	1.9	1.90	3.68	953.0
Copper sulfate	5	1.1	1.19	1.31	39.3
Ferbam	1	1.1	6.88	7.49	34.8
Fosetyl-al	2	1.6	2.67	4.18	63.7
Metalaxyl	1	1.4	0.57	0.82	7.5
Other Chemicals:					
Gibberellic acid	1	1.9	0.06	0.12	0.5

1/ Bearing acres in 1997 for Florida were 624,900 acres.

Peaches: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide 2/:		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	71,100	52	78.1	73	1,627.2	71	1,055.7	10	427.6
GA	20,000	44	17.0	86	87.7	100	623.4		
MI 3/	5,500	77	10.6	98	24.3	99	207.6		
NJ 3/	10,800	56	17.2	99	88.6	99	1,090.2		
NY	1,600	43	2.1	91	5.5	92	41.1	5	0.9
NC	1,600	35	0.7	77	5.1	79	45.4		
PA 3/	6,800	68	14.8	99	36.6	100	222.0		
SC	16,000	57	16.4	94	67.9	98	1,037.7		
WA 4/	2,500	81	3.3	96	71.7	92	53.4	7	
Total	135,900	54	160.2	82	2,014.6	84	4,376.5	6	428.5

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Insufficient reports to publish data for one or more of the pesticide classes.
4/ Total other chemicals applied is less than 50 pounds.

Peaches: Active Ingredients Applied and Publication Status
by States Surveyed, 1997

Active Ingredient	States Surveyed								
	ALL	CA	GA	MI	NJ	NY	NC	PA	SC	WA
Herbicides:										
2,4-D	P	P		P	P	*		P	P	*
Alachlor	*									*
Atrazine	*									*
Dichlobenil	*									*
Diuron	P	*	P	P	P	*	*	P	P	*
EPTC	*								*	
Fluazifop-P-butyl	P	*					*			
Glyphosate	P	P	*	P	P	P	*	P	P	P
MSMA	*	*								
Napropamide	*	*			*	*	*			
Norflurazon	P	P		P	P	*		P	*	
Oryzalin	P	P	*	P	*			*		*
Oxyfluorfen	P	P					*			
Paraquat	P	P	P	P	P	P	P	P	P	P
Pendimethalin	*	*						*		
Simazine	P	P	P	P	P	P	P	P	P	*
Sulfosate	*			*						
Terbacil	P		*	P	P	*	*	P		*
Trifluralin	*	*								

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Peaches: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed								
	ALL	CA	GA	MI	NJ	NY	NC	PA	SC	WA
Insecticides:										
Abamectin	*					*				
Azinphos-methyl	P	*	*	P	P	P	P	P	P	P
Bt (Bacillus thur.)	P	P		*	*					*
Carbaryl	P	P	P	P	P	P	P	P	P	P
Carbofuran	*				*					
Carbophenothion	*									*
Chlorpyrifos	P	P	*	P	P	P	*	P	P	P
Clofentezine	P	P		P	P	P		P		*
Cyhexatin	*							*		
Diazinon	P	P			*		*	*		*
Dicofol	P	P						*		
Dimethoate	*							*		
Endosulfan	P		*	P	P	*	P	P	*	P
Esfenvalerate	P	P	*	P	P	P	P	P	P	P
Ethyl parathion	*		*						*	
Fenamiphos	*	*		*	*		*	*		
Fenbutatin-oxide	P	P			*	*		*	*	*
Formetanate hydro.	P	P		*	P			P		P
Imidacloprid	*						*	*		
Lindane	*								*	
Malathion	*				*	*	*	*	*	*
Methidathion	P	P						*		*
Methomyl	P	P	*	P	P	*	*	P		*
Methoxychlor	*				*				*	
Methyl parathion	P	P	P	P	P	P	P	P	P	*
Permethrin	P	P	*	P	*	P	P	P	P	
Petroleum distillate	P	P	P	*	P	P	P	P	*	P
Phosmet	P	P	P	P	P	P	*	P	P	*
Potassium salts	*	*								
Propargite	P	P			*					*
Pyrethrins	*								*	
Rotenone	*								*	
Fungicides:										
Basic copper sulfate	P	P		*						
Benomyl	P	P	*	P	P	P	*	P	P	*
Calcium polysulfide	P	*	*	*	*	*			*	*
Captan	P	P	P	P	P	P	P	P	P	P
Chlorothalonil	P	P	*	P	P	p	P	P	P	P
Copper ammonium	*									*
Copper hydroxide	P	P		P	*	*	*	P	*	P
Copper oxide	P	P								
Copper oxychlo. sul.	P	*		P	*	P		*	*	
Copper resinate	P				P	*		*		
Copper sulfate	P	P	*	P	*		*		*	P
Dichlone	*							*		
Dicloran	*	*			*					

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Peaches: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed									
	ALL	CA	GA	MI	NJ	NY	NC	PA	SC	WA
Fungicides: (cont.)										
Dinocap	*				*					
Dodine	P			P	*		*	*		
Fenarimol	*			*	*			*		*
Fenbuconazole	P		P	P	P	P	P	P	P	*
Ferbam	P		*	P	*	P	*	P	*	
Glyodin	*				*					
Iprodione	P	P	*	P	P	P	P	P	*	*
Mancozeb	P			*		*	*			
Metalaxyl	*	*			*					*
Metiram	*		*	*	*		*	*		
Myclobutanil	P	P		P	P	*	*	*	*	P
Oxytetracycline	P			P	P		*	P	P	
Propiconazole	P	P	P	P	P	P	P	P	P	*
Streptomycin	*						*			
Sulfur	P	P	P	P	P	P	P	P	P	P
Thiophanate-methyl	P	*		*	P	*		P	*	*
Triadimefon	*				*					
Triflumizole	*									*
Triforine	P	P		*	P	*	*	*	*	*
Vinclozolin	P	*			*	*		P		*
Ziram	P	P		*	P	*	*	P	P	*
Other Chemicals:										
Chlorophacinone	*							*		*
Chloropicrin	*	*								
Dodecen Acetate	*	*								
Ethephon	*					*				
Farnesol	*	*								
Gibberellic acid	P	*								P
Metam-sodium	*	*								
Methyl bromide	P	P								
Monocarbamide dihyd.	*				*	*				
NAA	P	P		*						*
Neem Oil, Hydrophob.	*	*								
Nerolidol	*	*								
Strychnine	*	*								*
Zinc phosphide	*									*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Peaches: Agricultural Chemical Applications, States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	10	1.1	1.00	1.06	13.9
Diuron	6	1.1	1.40	1.54	11.8
Fluazifop-P-butyl	1	1.1	0.26	0.29	0.2
Glyphosate	23	1.7	0.62	1.04	31.7
Norflurazon	4	1.1	1.39	1.59	9.5
Oryzalin	6	1.1	2.41	2.70	21.4
Oxyfluorfen	8	1.2	0.69	0.83	9.6
Paraquat	24	1.4	0.57	0.82	26.6
Simazine	15	1.1	1.18	1.30	26.6
Terbacil	3	1.0	0.67	0.67	2.9
Insecticides:					
Azinphos-methyl	17	6.1	0.43	2.66	61.3
Bt (Bacillus thur.)2/	12	1.7			
Carbaryl	8	1.8	1.45	2.66	28.3
Chlorpyrifos	10	1.2	1.27	1.53	20.7
Clofentezine	5	1.3	0.13	0.17	1.2
Diazinon	9	1.5	2.08	3.06	37.4
Dicofol	4	1.2	0.91	1.06	6.3
Endosulfan	6	2.0	0.93	1.87	15.8
Esfenvalerate	36	1.8	0.04	0.07	3.3
Fenbutatin-oxide	13	1.5	0.66	1.02	17.5
Formetanate hydro.	2	1.2	0.61	0.75	2.0
Methidathion	11	1.1	1.84	2.09	29.9
Methomyl	8	2.4	0.46	1.10	12.5
Methyl parathion	37	2.8	0.66	1.85	92.1
Permethrin	20	2.3	0.17	0.40	10.7
Petroleum distillate	29	1.3	30.66	40.48	1,581.9
Phosmet	17	2.2	1.55	3.42	78.8
Propargite	3	1.2	1.84	2.25	8.0
Fungicides:					
Basic copper sulfate	4	1.3	7.55	10.14	58.1
Benomyl	6	1.8	0.44	0.78	6.6
Calcium polysulfide	1	1.4	6.54	8.95	13.4
Captan	26	4.4	1.60	7.05	247.8
Chlorothalonil	13	2.7	1.57	4.25	75.0
Copper hydroxide	20	1.3	3.94	5.14	137.7
Copper oxide	3	1.3	4.76	6.00	22.8
Copper oxychlo. sul.	3	1.4	2.56	3.48	12.5
Copper resinate	7	12.5	0.03	0.40	3.5
Copper sulfate	3	1.8	6.33	11.07	46.1
Dodine	2	3.6	0.25	0.89	2.1
Fenbuconazole	17	2.1	0.08	0.18	4.0
Ferbam	1	1.1	2.29	2.43	2.8
Iprodione	12	1.5	0.67	0.98	15.9
Mancozeb	1	1.1	1.22	1.34	1.2
Myclobutanil	7	1.8	0.10	0.18	1.7

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Peaches: Agricultural Chemical Applications, States Surveyed, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides: (cont.)					
Oxytetracycline	8	4.0	0.16	0.65	7.0
Propiconazole	35	1.9	0.10	0.19	8.9
Sulfur	59	4.9	9.15	44.74	3,600.6
Thiophanate-methyl	2	3.1	0.35	1.09	3.4
Triforine	5	1.4	0.51	0.72	5.2
Vinclozolin	1	1.4	0.67	0.93	1.6
Ziram	11	1.3	4.64	6.18	96.0
Other Chemicals:					
Gibberellic acid	1	3.1	0.08	0.24	0.2
Methyl bromide	1	1.0	424.35	424.35	423.0
NAA	3	2.7	0.04	0.10	0.4

* Area applied is less than one percent.

1/ Bearing acres in 1997 for the 9 States surveyed were 135,900 acres. States included are CA, GA, MI, NJ, NY, NC, PA, SC and WA. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Peaches: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	2	1.0	0.75	0.76	0.9
Glyphosate	29	1.7	0.60	1.04	21.2
Norflurazon	4	1.2	1.08	1.25	3.8
Oryzalin	11	1.1	2.43	2.71	20.8
Oxyfluorfen	16	1.2	0.69	0.83	9.6
Paraquat	18	1.7	0.49	0.84	10.9
Simazine	14	1.1	0.81	0.92	9.1
Insecticides:					
Bt (Bacillus thur.)2/	22	1.7			
Carbaryl	2	1.1	3.76	4.25	7.3
Chlorpyrifos	7	1.2	1.19	1.41	7.5
Clofentezine	8	1.2	0.13	0.16	0.9
Diazinon	16	1.4	2.10	2.92	33.9
Dicofol	8	1.2	0.91	1.06	6.3
Esfenvalerate	29	1.5	0.05	0.07	1.5
Fenbutatin-oxide	22	1.4	0.59	0.83	13.0
Formetanate hydro.	3	1.2	0.64	0.76	1.7
Methidathion	20	1.1	1.84	2.09	29.9
Methomyl	1	1.2	0.84	1.00	0.9
Methyl parathion	17	1.4	1.46	2.04	25.1
Permethrin	17	1.7	0.24	0.40	4.8
Petroleum distillate	48	1.3	31.61	42.60	1,448.1
Phosmet	16	1.4	2.29	3.10	35.1
Propargite	5	1.2	1.85	2.26	7.9
Fungicides:					
Basic copper sulfate	8	1.3	7.59	10.24	57.8
Benomyl	3	1.2	0.72	0.83	1.5
Captan	4	1.3	3.51	4.71	14.3
Chlorothalonil	4	1.9	2.94	5.66	14.2
Copper hydroxide	33	1.3	4.11	5.31	123.8
Copper oxide	5	1.3	4.76	6.00	22.8
Copper sulfate	4	1.5	9.10	13.61	41.8
Iprodione	20	1.4	0.66	0.96	13.5
Myclobutanil	6	1.3	0.13	0.17	0.7
Propiconazole	15	1.2	0.11	0.14	1.5
Sulfur	35	2.3	12.14	27.42	673.4
Triforine	9	1.4	0.55	0.75	4.9
Ziram	15	1.4	5.40	7.56	78.6
Other Chemicals:					
Methyl bromide	1	1.0	424.35	424.35	423.0
NAA	5	2.8	0.04	0.10	0.4

1/ Total acres in 1997 for California were 71,100 acres.
Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Peaches: Agricultural Chemical Applications,
Georgia, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	18	1.2	1.51	1.79	6.3
Paraquat	37	1.1	0.43	0.48	3.6
Simazine	5	1.0	1.92	1.92	1.8
Insecticides:					
Carbaryl	1	3.6	1.68	6.03	0.6
Methyl parathion	81	2.7	0.56	1.51	24.6
Petroleum distillate	10	1.0	20.13	20.81	41.6
Phosmet	10	5.2	1.37	7.16	14.4
Fungicides:					
Captan	29	1.3	2.32	2.99	17.6
Fenbuconazole	11	1.2	0.09	0.11	0.2
Propiconazole	76	1.6	0.11	0.17	2.6
Sulfur	84	3.8	9.31	35.70	600.9

1/ Bearing acres in 1997 for Georgia were 20,000 acres.

Peaches: Agricultural Chemical Applications, Michigan, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	15	1.4	1.27	1.77	1.4
Diuron	10	1.0	1.59	1.59	0.9
Glyphosate	13	1.1	0.80	0.85	0.6
Norflurazon	7	1.0	1.46	1.46	0.6
Oryzalin	3	1.3	1.98	2.66	0.4
Paraquat	51	1.4	0.87	1.24	3.5
Simazine	25	1.2	1.62	1.93	2.7
Terbacil	15	1.0	0.50	0.50	0.4
Insecticides:					
Azinphos-methyl	69	2.0	0.50	1.00	3.8
Carbaryl	15	1.3	1.88	2.51	2.1
Chlorpyrifos	12	1.1	2.36	2.67	1.8
Clofentezine 2/	6	1.0	0.12	0.12	
Endosulfan	51	2.1	1.04	2.21	6.2
Esfenvalerate	70	2.5	0.03	0.08	0.3
Methomyl	39	1.3	0.42	0.53	1.1
Methyl parathion	49	1.8	0.66	1.19	3.2
Permethrin	61	1.8	0.13	0.24	0.8
Phosmet	24	1.6	1.34	2.17	2.9
Fungicides:					
Benomyl	12	1.8	0.47	0.83	0.5
Captan	38	4.0	1.97	7.82	16.5
Chlorothalonil	19	1.4	2.32	3.14	3.3
Copper hydroxide	9	1.4	1.02	1.38	0.7
Copper oxychlo. sul.	24	1.7	1.98	3.47	4.6
Copper sulfate	5	1.0	1.59	1.59	0.4
Dodine	40	3.8	0.24	0.92	2.0
Fenbuconazole	59	2.5	0.09	0.22	0.7
Ferbam	5	1.1	3.26	3.63	1.0
Iprodione	7	1.6	0.68	1.09	0.4
Myclobutanil	10	1.2	0.08	0.10	0.1
Oxytetracycline	34	1.8	0.16	0.29	0.5
Propiconazole	55	2.0	0.11	0.21	0.6
Sulfur	88	5.3	6.74	35.73	173.5

1/ Bearing acres in 1997 for Michigan were 5,500 acres.
2/ Total applied is less than 50 pounds.

Peaches: Agricultural Chemical Applications,
New Jersey, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	34	1.1	1.00	1.06	3.9
Diuron	17	1.0	0.95	0.95	1.8
Glyphosate	7	1.1	1.34	1.45	1.0
Norflurazon	20	1.1	1.59	1.69	3.6
Paraquat	17	1.0	0.55	0.55	1.0
Simazine	35	1.0	1.11	1.11	4.2
Terbacil	24	1.0	0.61	0.61	1.6
Insecticides:					
Azinphos-methyl	96	9.7	0.44	4.28	44.4
Carbaryl	23	2.5	1.01	2.49	6.2
Chlorpyrifos	10	1.1	1.40	1.48	1.5
Clofentezine	3	1.8	0.13	0.24	0.1
Endosulfan	7	1.7	0.58	1.01	0.8
Esfenvalerate	21	1.3	0.02	0.03	0.1
Formetanate hydro.	2	1.7	0.36	0.60	0.1
Methomyl	42	2.3	0.74	1.71	7.7
Methyl parathion	2	3.2	0.27	0.84	0.2
Petroleum distillate	8	1.1	22.29	23.61	19.6
Phosmet	6	2.7	0.99	2.65	1.7
Fungicides:					
Benomyl	9	3.1	0.38	1.17	1.2
Captan	84	7.4	1.33	9.81	88.4
Chlorothalonil	51	4.3	1.29	5.61	30.6
Copper resinate	80	12.8	0.03	0.39	3.3
Fenbuconazole	23	2.2	0.07	0.15	0.4
Iprodione	2	3.1	0.68	2.07	0.5
Myclobutanil	29	2.9	0.08	0.25	0.8
Oxytetracycline	41	4.5	0.18	0.82	3.6
Propiconazole	82	3.2	0.09	0.27	2.4
Sulfur	91	11.0	8.73	95.85	944.3
Thiophanate-methyl	4	3.0	0.43	1.29	0.5
Triforine	2	1.4	0.24	0.33	0.1
Ziram	29	1.0	2.88	2.92	9.0

1/ Bearing acres in 1997 for New Jersey were 10,800 acres.

Peaches: Agricultural Chemical Applications,
New York, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	11	1.2	1.35	1.59	0.3
Paraquat	20	1.9	0.91	1.71	0.6
Simazine	14	1.0	3.33	3.33	0.7
Insecticides:					
Azinphos-methyl	77	2.6	0.55	1.43	1.8
Carbaryl	17	1.8	1.31	2.34	0.6
Chlorpyrifos	10	1.0	1.24	1.24	0.2
Clofentezine	24	1.3	0.22	0.28	0.1
Esfenvalerate 2/	39	1.5	0.04	0.06	
Methyl parathion	18	1.4	1.08	1.56	0.4
Permethrin	18	1.7	0.13	0.21	0.1
Petroleum distillate	9	1.3	9.13	11.59	1.6
Phosmet	4	2.4	1.05	2.55	0.2
Fungicides:					
Benomyl	20	1.9	0.36	0.69	0.2
Captan	69	3.5	1.95	6.84	7.6
Chlorothalonil	48	2.1	1.53	3.16	2.4
Copper oxychlo. sul.	25	1.0	3.38	3.42	1.4
Fenbuconazole	48	2.4	0.09	0.21	0.2
Ferbam	14	1.0	1.77	1.79	0.4
Iprodione	12	1.2	0.67	0.78	0.1
Propiconazole	23	1.4	0.11	0.15	0.1
Sulfur	56	3.4	8.72	29.43	26.3

1/ Bearing acres in 1997 for New York were 1,600 acres.
2/ Total applied is less than 50 pounds.

Peaches: Agricultural Chemical Applications,
North Carolina, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Paraquat	28	1.0	0.50	0.52	0.2
Simazine	7	1.4	2.37	3.30	0.4
Insecticides:					
Azinphos-methyl	27	3.5	0.55	1.93	0.8
Carbaryl	4	1.2	1.45	1.76	0.1
Endosulfan	7	1.2	1.10	1.31	0.2
Esfenvalerate	42	2.2	0.06	0.12	0.1
Methyl parathion	60	3.1	0.47	1.44	1.4
Permethrin 2/	8	2.5	0.11	0.28	
Petroleum distillate	7	1.5	12.60	18.86	2.0
Fungicides:					
Captan	34	2.5	1.47	3.69	2.0
Chlorothalonil	19	1.4	1.97	2.83	0.8
Fenbuconazole	40	2.0	0.09	0.18	0.1
Iprodione	6	1.9	0.71	1.36	0.1
Propiconazole	19	3.9	0.10	0.40	0.1
Sulfur	58	4.6	9.63	44.76	41.5

1/ Bearing acres in 1997 for North Carolina were 1,600 acres.
2/ Total applied is less than 50 pounds.

Peaches: Agricultural Chemical Applications, Pennsylvania, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	16	1.1	1.35	1.54	1.6
Diuron	14	1.1	1.85	2.08	1.9
Glyphosate	3	1.0	0.62	0.64	0.1
Norflurazon	6	1.6	2.21	3.49	1.4
Paraquat	61	1.5	0.80	1.20	5.0
Simazine	25	1.2	1.88	2.29	3.9
Terbacil	3	1.0	1.21	1.21	0.2
Insecticides:					
Azinphos-methyl	75	4.8	0.31	1.47	7.5
Carbaryl	50	1.8	1.01	1.84	6.3
Chlorpyrifos	7	1.0	1.75	1.77	0.9
Clofentezine 2/	5	1.5	0.09	0.13	
Endosulfan	37	2.3	0.69	1.57	3.9
Esfenvalerate	76	1.9	0.02	0.04	0.2
Formetanate hydro.	2	1.2	0.38	0.47	0.1
Methomyl	53	3.5	0.20	0.70	2.5
Methyl parathion	48	4.8	0.30	1.45	4.7
Permethrin 2/	2	1.5	0.16	0.24	
Petroleum distillate	4	1.2	15.87	18.68	5.6
Phosmet	37	2.3	0.84	1.93	4.8
Fungicides:					
Benomyl	18	2.7	0.33	0.88	1.1
Captan	79	6.5	1.14	7.35	39.7
Chlorothalonil	49	3.1	1.12	3.47	11.7
Copper hydroxide	2	1.0	1.59	1.59	0.2
Fenbuconazole	61	2.2	0.08	0.18	0.7
Ferbam	3	1.0	2.88	2.90	0.5
Iprodione	8	1.9	0.40	0.74	0.4
Oxytetracycline	7	4.8	0.20	0.96	0.4
Propiconazole	40	3.0	0.08	0.23	0.6
Sulfur	92	6.2	4.25	26.23	163.4
Thiophanate-methyl	22	4.0	0.18	0.75	1.1
Vinclozolin	5	1.4	0.34	0.46	0.1
Ziram	3	1.0	3.32	3.32	0.7

1/ Bearing acres in 1997 for Pennsylvania were 6,800 acres.
2/ Total applied is less than 50 pounds.

Peaches: Agricultural Chemical Applications,
South Carolina, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	38	1.0	0.95	0.95	5.8
Diuron	3	1.0	0.99	0.99	0.5
Glyphosate	8	1.4	0.97	1.33	1.6
Paraquat	13	1.3	0.48	0.64	1.3
Simazine	15	1.0	1.55	1.61	3.8
Insecticides:					
Azinphos-methyl	5	1.8	0.87	1.54	1.3
Carbaryl	7	1.8	1.39	2.47	2.6
Chlorpyrifos	16	1.5	1.08	1.66	4.4
Esfenvalerate	7	1.9	0.05	0.09	0.1
Methyl parathion	86	3.8	0.61	2.35	32.2
Permethrin	62	3.0	0.12	0.36	3.6
Phosmet	32	3.0	1.31	3.87	19.5
Fungicides:					
Benomyl	17	1.4	0.45	0.63	1.7
Captan	50	3.5	2.18	7.70	61.2
Chlorothalonil	22	1.3	2.03	2.66	9.4
Fenbuconazole	54	2.2	0.09	0.20	1.7
Oxytetracycline	25	4.6	0.13	0.58	2.3
Propiconazole	38	1.6	0.09	0.15	0.9
Sulfur	91	6.2	10.52	65.20	944.4
Ziram	10	1.4	2.98	4.25	6.9

1/ Bearing acres in 1997 for South Carolina were 16,000 acres.

Peaches: Agricultural Chemical Applications,
Washington, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	51	1.3	1.15	1.52	1.9
Paraquat	12	1.5	1.22	1.78	0.5
Insecticides:					
Azinphos-methyl	39	1.5	0.87	1.32	1.3
Carbaryl	28	1.9	1.90	3.54	2.5
Chlorpyrifos	31	1.2	1.58	1.87	1.5
Endosulfan	48	1.6	1.60	2.52	3.0
Esfenvalerate 2/	35	1.4	0.03	0.05	
Formetanate hydro.	5	1.1	1.00	1.11	0.1
Petroleum distillate	60	1.3	30.96	39.25	59.1
Fungicides:					
Captan	4	1.6	2.98	4.68	0.4
Chlorothalonil	18	1.3	3.45	4.56	2.0
Copper hydroxide	58	1.5	4.59	6.94	10.1
Copper sulfate	7	1.1	2.29	2.51	0.4
Myclobutanil	42	1.2	0.11	0.14	0.1
Sulfur	74	2.2	7.94	17.81	33.0
Other Chemicals:					
Gibberellic acid 2/	3	1.0	0.03	0.03	

1/ Bearing acres in 1997 for Washington were 2,500 acres.
2/ Total applied is less than 50 pounds.

Pears: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Herbicide		Insecticide 2/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	23,200	44	33.1	72	2,414.6	72	452.4	51	1.4
NY 3/	2,000	19	0.9	97	57.9	97	22.0		
OR	17,300	66	47.5	99	915.3	99	545.7	43	0.6
PA 3/	1,000	21	0.6	97	37.2	97	13.3		
WA	24,400	67	50.2	99	1,230.9	87	301.9	68	1.2
Total	67,900	57	132.3	90	4,655.9	85	1,335.3	52	3.2

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Insufficient reports to publish data for one or more of the pesticide classes.

Pears: Active Ingredients Applied and Publication Status by States Surveyed, 1997

Active Ingredient	States Surveyed					
	ALL	CA	NY	OR	PA	WA
Herbicides:						
2,4-D	P	P		P	P	P
Clethodim	*			*		
Dichlobenil	*			*		
Diuron	P	P	*	P	P	P
Glyphosate	P	P	P	P	*	P
Halosulfuron	*	*				
Napropamide	*			*		
Norflurazon	P	*	*	*	*	P
Oryzalin	P	*	*	P	*	P
Oxyfluorfen	P	P		P		*
Paraquat	P	P	P	P	P	P
Pendimethalin	*	*				*
Pronamide	*			*		
Prosulfuron	*					*
Sethoxydim	*	*				
Simazine	P	P	P	P	P	P
Terbacil	*				*	
Trifluralin	*	*				
Insecticides:						
Abamectin	P	P	P	P	P	P
Amitraz	P	*	P	P	P	*
Azadirachtin	*					*
Azinphos-methyl	P	P	P	P	P	P
Bt (Bacillus thur.)	P		*	*		P
Carbaryl	P	*	*	*	*	P
Chlorpyrifos	P	*	P	P	P	P
Clofentezine	P	P	*	P	*	*
Cyfluthrin	*					*
Diazinon	P	*		P	*	P
Dicofol	P	*	*	*	*	*
Dimethoate	P	*	*		*	*
Endosulfan	P	*	*	P	P	P
Esfenvalerate	P	P	P	P	P	P
Ethion	*					*
Ethyl parathion	*					*
Fenbutatin-oxide	P	P	*	P		P
Fenoxycarb	P			P		P
Fenvalerate	*			*	*	*
Formetanate hydro.	P			*	*	P
Hexythiazox	P			P	*	*
Imidacloprid	P	P	P	P	P	P
Malathion	*					*
Methidathion	P	*		P	*	P
Methomyl	P		P		P	
Methoxychlor	*					*
Methyl parathion	P	P	P	*	P	P
Oxamyl	*			*	*	
Oxythioquinox	P	*	*	*	*	P

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Pears: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed					
	ALL	CA	NY	OR	PA	WA
Insecticides: (cont.)						
Permethrin	P	*	P	P	*	*
Petroleum distillate	P	P	P	P	P	P
Phosmet	P	P	P	P	P	P
Phosphamidon	*					*
Potassium salts	*				*	*
Pyriproxyfen	*			*		
Ryania	*					*
Soybean oil	*			*		
Tebufenozide	*			*		
Fungicides:						
Basic copper sulfate	P					P
Benomyl	P	P	P	P	P	*
Calcium polysulfide	P	P		P	*	P
Captafol	*			*		
Captan	*		*	*	*	
Chlorothalonil	*		*		*	
Copper ammonium	P				*	*
Copper hydroxide	P	P	P	P	*	P
Copper oxychlo. sul.	P	P	P	P	P	*
Copper oxychloride	*				*	
Copper resinate	*		*			
Copper sulfate	P		*	P	*	P
Dinocap	*					*
Dodine	P			P		P
Fenarimol	P	P	P	P	*	P
Fenbuconazole	*		*		*	
Ferbam	*		*		*	
Fosetyl-al	P	P		P		P
Mancozeb	P	P	P	P	P	P
Maneb	P			*	*	*
Metalaxyl	*					*
Metiram	*		*			
Myclobutanil	P		*	*	*	P
Oxytetracycline	P	P		P	*	P
Propiconazole	*	*				*
Pseudomonas fluores.	P	P		P		P
Streptomycin	P	P	P	P	P	P
Sulfur	P	P	*	P	*	P
Thiophanate-methyl	*				*	
Thiram	*			*		*
Triadimefon	P			P	*	*
Triflumizole	P	P		P		P
Triforine	*			*		
Ziram	P	P	P	P	P	P

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Pears: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed					
	ALL	CA	NY	OR	PA	WA
Other Chemicals:						
Brodifacoum	*					*
Butenic Acid Hydro.	*			*		*
Chlorophacinone	P					P
Cytokinins	*					*
Diphacinone	*					*
Ethephon	*					*
Gibberellic acid	*					*
NAA	P	P	*	P	*	P
NAD	*				*	*
Neem Oil, Hydrophob.	*			*		
Strychnine	*					*
Zinc phosphide	P					P

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Pears: Agricultural Chemical Applications,
States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	13	1.8	1.11	2.01	17.3
Diuron	7	1.7	1.37	2.28	11.2
Glyphosate	45	1.7	1.07	1.87	57.3
Norflurazon	4	1.0	1.86	1.92	4.8
Oryzalin	2	1.0	3.97	3.99	5.5
Oxyfluorfen	4	1.2	0.90	1.06	2.7
Paraquat	12	1.8	0.70	1.26	10.3
Simazine	12	1.1	2.03	2.21	18.4
Insecticides:					
Abamectin	65	1.5	0.02	0.03	1.1
Amitraz	4	1.5	0.94	1.41	3.9
Azinphos-methyl	77	2.6	1.01	2.64	138.6
Bt (Bacillus thur.)2/	1	1.7			
Carbaryl	3	1.3	1.66	2.10	4.8
Chlorpyrifos	34	1.1	1.80	1.96	44.7
Clofentezine	12	1.4	0.11	0.14	1.1
Diazinon	5	1.3	1.38	1.75	5.5
Dicofol	1	1.5	0.92	1.34	1.3
Dimethoate	2	2.7	0.99	2.64	2.9
Endosulfan	20	1.2	1.82	2.26	30.7
Esfenvalerate	28	1.6	0.06	0.09	1.7
Fenbutatin-oxide	3	1.4	0.76	1.03	2.0
Fenoxycarb	31	1.1	0.13	0.14	2.9
Formetanate hydro.	1	1.4	0.94	1.28	1.2
Hexythiazox	4	1.0	0.16	0.16	0.4
Imidacloprid	10	1.4	0.14	0.20	1.3
Methidathion	3	1.1	1.92	2.03	3.5
Methomyl	1	1.2	0.76	0.89	0.7
Methyl parathion	16	2.0	1.29	2.53	27.6
Oxythioquinox	4	1.0	0.95	0.98	2.6
Permethrin	2	1.4	0.26	0.37	0.5
Petroleum distillate	84	3.4	22.28	75.79	4,328.9
Phosmet	16	1.7	2.36	3.92	43.0

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Pears: Agricultural Chemical Applications, States Surveyed, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides:					
Basic copper sulfate	2	1.5	1.97	2.95	3.1
Benomyl	15	2.3	0.42	0.99	9.8
Calcium polysulfide	12	1.5	22.32	33.32	282.4
Copper ammonium	1	2.5	0.27	0.69	0.4
Copper hydroxide	24	1.2	2.79	3.47	56.3
Copper oxychlo. sul.	20	1.4	2.99	4.19	55.5
Copper sulfate	2	1.0	1.30	1.37	2.2
Dodine	16	2.0	1.53	3.08	33.1
Fenarimol	7	1.4	0.07	0.11	0.5
Fosetyl-al	8	2.0	2.03	4.05	22.9
Mancozeb	44	2.6	2.86	7.44	224.5
Maneb	1	1.8	4.96	8.69	5.7
Myclobutanil	1	1.7	0.12	0.21	0.1
Oxytetracycline	38	5.4	0.12	0.66	17.1
Pseudomonas fluores.	17	2.4	0.14	0.34	3.8
Streptomycin	34	3.9	0.17	0.67	15.4
Sulfur	42	1.5	10.08	14.71	415.2
Triadimefon	4	1.2	0.18	0.22	0.7
Triflumizole	22	1.6	0.27	0.42	6.3
Ziram	36	1.5	4.75	7.34	177.2
Other Chemicals:					
Chlorophacinone	3	1.2	0.04	0.05	0.1
NAA	46	1.4	0.06	0.09	2.8
Zinc phosphide	2	1.0	0.12	0.12	0.1

1/ Bearing acres in 1997 for the 5 States surveyed were 67,900 acres. States included are CA, NY, OR, PA and WA. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Pears: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	12	2.1	0.72	1.50	4.2
Diuron	4	4.3	0.96	4.17	3.9
Glyphosate	40	2.4	0.55	1.35	12.5
Oxyfluorfen	4	1.3	0.87	1.14	1.2
Paraquat	6	2.3	0.45	1.06	1.4
Simazine	12	1.2	1.56	1.90	5.3
Insecticides:					
Abamectin	41	2.3	0.02	0.04	0.4
Azinphos-methyl	60	3.6	1.09	3.93	54.3
Clofentezine	25	1.5	0.10	0.15	0.8
Esfenvalerate	40	2.0	0.06	0.12	1.1
Fenbutatin-oxide	4	1.7	0.62	1.06	0.9
Imidacloprid	5	2.5	0.11	0.28	0.4
Methyl parathion	36	2.0	1.37	2.80	23.7
Petroleum distillate	63	5.6	28.29	159.19	2,311.8
Phosmet	14	1.9	2.32	4.31	14.2
Fungicides:					
Benomyl	30	2.3	0.46	1.07	7.4
Calcium polysulfide	16	1.4	19.58	28.23	107.3
Copper hydroxide	7	2.4	0.58	1.39	2.4
Copper oxychlo. sul.	9	2.8	0.73	2.03	4.2
Fenarimol	13	1.5	0.08	0.12	0.4
Fosetyl-al	7	2.9	1.53	4.40	7.0
Mancozeb	43	4.2	2.29	9.67	96.9
Oxytetracycline	43	9.7	0.11	1.09	10.9
Pseudomonas fluores.	30	3.1	0.12	0.37	2.5
Streptomycin	49	6.5	0.15	0.94	10.6
Sulfur	37	1.9	9.51	17.83	152.1
Triflumizole	5	2.1	0.36	0.77	0.9
Ziram	17	2.3	5.44	12.27	49.8
Other Chemicals:					
NAA	46	1.7	0.07	0.13	1.4

1/ Total acres in 1997 for California were 23,200 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Pears: Agricultural Chemical Applications,
New York, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	10	1.1	0.73	0.83	0.2
Paraquat 2/	2	1.1	0.90	0.96	
Simazine	11	1.1	2.16	2.28	0.5
Insecticides:					
Abamectin 2/	77	1.0	0.02	0.02	
Amitraz	13	1.4	0.87	1.25	0.3
Azinphos-methyl	87	2.9	0.68	1.97	3.4
Chlorpyrifos	36	1.0	0.81	0.81	0.6
Esfenvalerate	37	1.4	0.06	0.09	0.1
Imidacloprid	39	1.1	0.08	0.09	0.1
Methomyl	40	1.0	0.82	0.85	0.7
Methyl parathion	42	1.1	0.94	1.08	0.9
Permethrin	17	1.4	0.13	0.18	0.1
Petroleum distillate	80	1.7	18.73	32.18	51.5
Phosmet	3	1.5	1.25	1.91	0.1
Fungicides:					
Benomyl	45	3.1	0.35	1.07	1.0
Copper hydroxide	18	1.2	2.68	3.30	1.2
Copper oxychlo. sul.	19	1.2	3.19	3.83	1.4
Fenarimol 2/	13	1.2	0.06	0.08	
Mancozeb	76	2.1	2.00	4.27	6.5
Streptomycin	20	1.4	0.18	0.25	0.1
Ziram	54	3.0	2.83	8.58	9.2

1/ Bearing acres in 1997 for New York were 2,000 acres.
2/ Total applied is less than 50 pounds.

Pears: Agricultural Chemical Applications,
Oregon, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	25	1.5	1.83	2.75	11.7
Diuron	19	1.0	1.75	1.82	6.0
Glyphosate	43	1.3	1.37	1.81	13.5
Oryzalin	3	1.0	2.44	2.44	1.2
Oxyfluorfen	7	1.1	0.91	0.99	1.2
Paraquat	17	1.5	0.76	1.17	3.5
Simazine	19	1.0	2.42	2.49	8.3
Insecticides:					
Abamectin	75	1.0	0.01	0.01	0.2
Amitraz	7	1.0	1.10	1.12	1.4
Azinphos-methyl	86	2.1	1.02	2.10	31.4
Chlorpyrifos	41	1.0	1.91	1.92	13.6
Clofentezine	11	1.0	0.13	0.13	0.3
Diazinon	9	1.0	1.04	1.09	1.7
Endosulfan	4	1.0	2.27	2.36	1.6
Esfenvalerate	24	1.0	0.02	0.02	0.1
Fenbutatin-oxide	3	1.0	0.89	0.89	0.4
Fenoxycarb	54	1.0	0.12	0.13	1.2
Hexythiazox	14	1.0	0.16	0.16	0.4
Imidacloprid	9	1.1	0.17	0.18	0.3
Methidathion	3	1.0	1.76	1.76	0.8
Permethrin	4	1.5	0.31	0.48	0.3
Petroleum distillate	98	2.8	17.81	49.86	841.2
Phosmet	27	1.4	2.47	3.40	15.7
Fungicides:					
Benomyl	8	1.0	0.70	0.72	1.0
Calcium polysulfide	24	1.6	24.92	39.65	166.8
Copper hydroxide	41	1.0	4.58	4.72	33.8
Copper oxychlo. sul.	26	1.1	4.69	5.19	23.7
Copper sulfate	3	1.0	2.34	2.35	1.3
Dodine	51	2.2	1.60	3.48	30.9
Fenarimol	5	1.3	0.08	0.10	0.1
Fosetyl-al	6	1.5	2.08	3.14	3.4
Mancozeb	66	1.9	3.73	7.01	79.8
Oxytetracycline	17	1.4	0.16	0.22	0.6
Pseudomonas fluores.	18	1.4	0.21	0.30	1.0
Streptomycin	55	1.6	0.26	0.40	3.8
Sulfur	50	1.3	12.01	15.49	134.4
Triadimefon	16	1.2	0.18	0.22	0.6
Triflumizole	46	1.6	0.25	0.41	3.2
Ziram	51	1.3	5.05	6.33	56.3
Other Chemicals:					
NAA	43	1.1	0.06	0.07	0.5

1/ Bearing acres in 1997 for Oregon were 17,300 acres.

Pears: Agricultural Chemical Applications,
Pennsylvania, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	1.2	1.67	2.01	0.1
Diuron	6	1.2	1.63	2.02	0.1
Paraquat	20	1.5	0.74	1.12	0.2
Simazine	6	1.0	3.31	3.31	0.2
Insecticides:					
Abamectin 2/	81	1.1	0.02	0.02	
Amitraz	72	2.7	0.68	1.86	1.3
Azinphos-methyl	82	2.9	0.27	0.79	0.6
Chlorpyrifos	11	1.0	0.83	0.83	0.1
Endosulfan	81	1.3	1.06	1.34	1.1
Esfenvalerate	85	2.0	0.06	0.12	0.1
Imidacloprid	62	1.0	0.08	0.09	0.1
Methomyl	4	3.9	0.43	1.70	0.1
Methyl parathion	60	3.3	0.40	1.34	0.8
Petroleum distillate	91	1.8	19.59	34.60	31.3
Phosmet	81	2.0	1.01	1.98	1.6
Fungicides:					
Benomyl	74	3.8	0.16	0.60	0.4
Copper oxychlo. sul.	59	1.9	1.08	2.02	1.2
Mancozeb	87	4.3	1.72	7.46	6.5
Streptomycin	86	1.4	0.50	0.70	0.6
Ziram	41	4.1	2.42	9.81	4.0

1/ Bearing acres in 1997 for Pennsylvania were 1,000 acres.
2/ Total applied is less than 50 pounds.

Pears: Agricultural Chemical Applications,
Washington, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	2.2	0.38	0.84	1.3
Diuron	2	1.0	1.79	1.88	1.0
Glyphosate	57	1.5	1.50	2.26	31.2
Norflurazon	8	1.0	2.04	2.06	4.0
Oryzalin	1	1.0	1.99	2.01	0.7
Paraquat	15	1.8	0.76	1.41	5.2
Simazine	8	1.0	2.10	2.14	4.0
Insecticides:					
Abamectin	80	1.5	0.02	0.03	0.5
Azinphos-methyl	87	2.3	1.01	2.30	48.8
Bt (Bacillus thur.)2/	3	1.7			
Carbaryl	7	1.3	1.64	2.11	3.5
Chlorpyrifos	57	1.1	1.85	2.06	28.7
Diazinon	6	1.1	1.99	2.19	3.0
Endosulfan	49	1.3	1.86	2.33	27.9
Esfenvalerate	18	1.1	0.08	0.09	0.4
Fenbutatin-oxide	2	1.1	1.01	1.16	0.6
Fenoxycarb	48	1.1	0.13	0.14	1.7
Formetanate hydro.	4	1.4	0.96	1.33	1.2
Imidacloprid	10	1.3	0.18	0.23	0.5
Methidathion	3	1.0	1.03	1.03	0.8
Methyl parathion	4	1.2	1.82	2.15	2.1
Oxythioquinox	10	1.0	0.95	0.97	2.3
Petroleum distillate	95	2.6	17.92	47.09	1,093.2
Phosmet	9	1.8	2.81	5.15	11.5
Fungicides:					
Basic copper sulfate	4	1.5	1.97	2.95	3.1
Calcium polysulfide	2	1.0	17.74	17.74	8.1
Copper hydroxide	28	1.2	2.28	2.71	18.8
Copper sulfate	4	1.1	0.78	0.84	0.8
Dodine	8	1.3	0.95	1.20	2.2
Fenarimol 3/	3	1.0	0.06	0.06	
Fosetyl-al	12	1.7	2.46	4.18	12.5
Mancozeb	26	1.2	4.45	5.46	34.8
Myclobutanil	3	1.5	0.13	0.19	0.1
Oxytetracycline	54	3.1	0.13	0.42	5.5
Pseudomonas fluores.	5	1.1	0.22	0.24	0.3
Streptomycin	4	1.5	0.22	0.34	0.3
Sulfur	45	1.3	9.22	11.69	128.0
Triflumizole	24	1.4	0.27	0.37	2.1
Ziram	40	1.2	4.78	5.97	57.9
Other Chemicals:					
Chlorophacinone	8	1.2	0.04	0.05	0.1
NAA	53	1.3	0.06	0.07	0.9
Zinc phosphide	5	1.0	0.12	0.12	0.1

1/ Bearing acres in 1997 for Washington were 24,400 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.
3/ Total applied is less than 50 pounds.

Plums: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State	Bearing Acreage	Herbicide		Insecticide 2/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	44,000	74	64.3	85	1,141.8	69	360.3	8	0.3

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.

Plums: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status	Active Ingredient	Status
Herbicides:		(continued)	
2,4-D	*	Fungicides:	
Glyphosate	P	Basic copper sulfate	*
Norflurazon	P	Benomyl	*
Oryzalin	P	Captan	P
Oxyfluorfen	P	Chlorothalonil	P
Paraquat	P	Copper hydroxide	P
Simazine	*	Copper oxide	*
		Copper oxychlo. sul.	*
Insecticides:		Dicloran	*
Azinphos-methyl	*	Iprodione	P
Bt (Bacillus thur.)	P	Myclobutanil	P
Carbaryl	P	Propiconazole	P
Chlorpyrifos	P	Sulfur	P
Diazinon	P	Thiophanate-methyl	*
Dicofol	P	Ziram	*
Endosulfan	*		
Esfenvalerate	P	Other Chemicals:	
Fenbutatin-oxide	P	Farnesol	*
Formetanate hydro.	*	Gibberellic acid	*
Methidathion	P	Nerolidol	*
Methomyl	*	Strychnine	*
Methyl parathion	P		
Petroleum distillate	P		
Phosmet	P		
Potassium salts	*		
Propargite	P		

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P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Plums: Agricultural Chemical Applications,
California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	44	1.8	0.62	1.15	22.5
Norflurazon	6	1.3	0.77	0.98	2.4
Oryzalin	19	1.1	2.15	2.47	20.2
Oxyfluorfen	26	1.2	0.24	0.28	3.2
Paraquat	39	1.2	0.74	0.90	15.6
Insecticides:					
Bt (Bacillus thur.)2/	28	1.5			
Carbaryl	2	1.2	3.98	4.69	4.5
Chlorpyrifos	15	1.1	1.81	2.01	13.5
Diazinon	19	1.3	1.98	2.56	21.7
Dicofol	9	1.1	1.09	1.20	4.5
Esfenvalerate	20	1.1	0.04	0.04	0.4
Fenbutatin-oxide	4	1.3	0.72	0.94	1.6
Methidathion	20	1.1	2.13	2.39	21.2
Methyl parathion	44	1.1	1.45	1.62	31.1
Petroleum distillate	49	1.2	37.65	45.25	979.4
Phosmet	18	1.1	2.24	2.42	19.6
Propargite	41	1.0	2.20	2.22	40.3
Fungicides:					
Captan	3	1.4	3.13	4.29	4.9
Chlorothalonil	5	1.3	2.87	3.69	8.3
Copper hydroxide	13	1.3	4.10	5.25	29.0
Iprodione	11	1.2	0.70	0.83	3.9
Myclobutanil	15	1.3	0.14	0.18	1.1
Propiconazole	15	1.2	0.10	0.12	0.8
Sulfur	17	1.8	23.41	41.54	307.4

1/ Total acres in 1997 for California were 44,000 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Prunes: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1997

State	Bearing Acreage	Herbicide		Insecticide 2/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	100,500	48	90.2	71	1,220.0	58	476.2	4	1,407.0

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.

Prunes: Active Ingredient Publication Status
California, 1997

Active Ingredient	Status	Active Ingredient	Status
		(continued)	
Herbicides			
2,4-D	P	Insecticides (cont.)	
Fluazifop-P-butyl	*	Petroleum distillate	P
Glyphosate	P	Phosmet	*
Molinate	*	Propargite	*
Napropamide	*		
Norflurazon	P	Fungicides	
Oryzalin	P	Basic copper sulfate	*
Oxyfluorfen	P	Benomyl	*
Paraquat	P	Captan	P
Pendimethalin	*	Chlorothalonil	P
Sethoxydim	*	Copper hydroxide	P
Trifluralin	*	Copper oxide	*
		Copper sulfate	*
Insecticides		Iprodione	P
Azadirachtin	*	Metalaxyl	*
Azinphos-methyl	*	Myclobutanil	P
Bt (Bacillus thur.)	P	Propiconazole	P
Chlorpyrifos	P	Sulfur	P
Diazinon	P	Thiophanate-methyl	*
Dicofol	*	Triforine	*
Dimethoate	*		
Esfenvalerate	P	Other Chemicals	
Fenbutatin-oxide	P	Chlorophacinone	*
Formetanate hydro.	*	Chloropicrin	P
Malathion	*	Methyl bromide	P
Methidathion	P	Strychnine	*
Methyl parathion	*		

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P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Prunes: Agricultural Chemical Applications, California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	8	1.1	0.47	0.52	4.1
Glyphosate	40	2.0	0.53	1.06	42.0
Norflurazon	5	1.2	1.11	1.33	7.0
Oryzalin	7	1.2	1.53	1.79	13.4
Oxyfluorfen	11	1.1	0.43	0.49	5.2
Paraquat	9	1.5	0.40	0.61	5.6
Insecticides:					
Bt (Bacillus thur.)2/	10	1.5			
Chlorpyrifos	3	1.1	1.58	1.72	4.8
Diazinon	25	1.3	1.51	1.96	49.1
Esfenvalerate	20	1.3	0.05	0.06	1.2
Fenbutatin-oxide	16	1.2	0.55	0.67	11.0
Methidathion	8	1.3	1.53	1.93	14.7
Petroleum distillate	43	1.2	20.97	26.18	1,125.8
Fungicides:					
Captan	19	1.2	2.29	2.85	53.5
Chlorothalonil	4	1.1	3.13	3.44	15.1
Copper hydroxide	5	1.1	3.13	3.59	19.5
Iprodione	18	1.3	0.58	0.77	14.0
Myclobutanil	1	1.1	0.09	0.10	0.1
Propiconazole	13	1.2	0.10	0.12	1.6
Sulfur	26	1.4	9.26	13.39	355.2
Other Chemicals:					
Chloropicrin	1	1.5	7.37	10.76	11.9
Methyl bromide	3	1.0	500.43	500.43	1,395.1

1/ Total acres in 1997 for California were 100,500 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Raspberries: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide 1/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
OR	4,700	79	8.7	78	22.1	92	54.9	11	62.3
WA 2/	8,500	96	17.8	96	24.3	98	134.2		
Total	13,200	90	26.5	90	46.4	95	189.1	5	85.2

1/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
2/ Insufficient reports to publish data for one or more of the pesticide classes.

Raspberries: Active Ingredients Applied and Publication Status by States Surveyed, 1997

Active Ingredient	States Surveyed			Active Ingredient	States Surveyed		
	ALL	OR	WA		ALL	OR	WA
Herbicides:							
Dichlobenil	P	*	*	Fungicides:			
Diuron	P	P	P	Benomyl	P	P	P
Fluazifop-P-butyl	*		*	Calcium polysulfide	P	P	P
Glyphosate	*	*	*	Captan	P	P	P
Napropamide	P	*	*	Copper hydroxide	P	*	*
Norflurazon	P	P	P	Copper sulfate	P	*	*
Oryzalin	P	P	P	Ferbam	P	P	P
Oxyfluorfen	P	P	P	Fosetyl-al	P	P	
Paraquat	P	P	P	Iprodione	P	P	P
Pronamide	P	*	*	Mefenoxam	*	*	*
Sethoxydim	P	P	P	Metalaxyl	P	P	P
Simazine	P	P	P	Sulfur	P	*	*
Terbacil	*	*		Vinclozolin	P	P	P
Insecticides:				Other Chemicals:			
Azinphos-methyl	P	*	*	Metaldehyde	*		*
Bifenthrin	P	P	P	Monocarbamide dihyd.	P	*	*
Bt (Bacillus thur.)	P	P	P				
Carbofuran	*		*				
Diazinon	P	P	P				
Esfenvalerate	P	*	P				
Fenamiphos	P	*	*				
Fenbutatin-oxide	P	*	*				
Malathion	P	P	P				
Petroleum distillate	P	*	*				

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P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Raspberries: Agricultural Chemical Applications, States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Dichlobenil	4	1.0	1.30	1.30	0.6
Diuron	26	1.0	1.11	1.11	3.9
Napropamide	9	1.1	1.72	1.90	2.3
Norflurazon	5	1.0	1.34	1.34	0.9
Oryzalin	42	1.0	1.26	1.28	7.2
Oxyfluorfen	54	1.0	0.10	0.10	0.7
Paraquat	73	1.1	0.36	0.41	3.9
Pronamide	3	1.0	2.12	2.12	0.8
Sethoxydim	5	1.0	0.21	0.21	0.1
Simazine	48	1.1	0.85	0.91	5.7
Insecticides:					
Azinphos-methyl	5	1.0	0.48	0.48	0.3
Bifenthrin	60	1.0	0.10	0.10	0.8
Bt (Bacillus thur.)2/	43	1.9			
Diazinon	55	1.3	1.18	1.58	11.6
Esfenvalerate	24	1.0	0.06	0.06	0.2
Fenamiphos	11	1.0	2.84	2.91	4.2
Fenbutatin-oxide	29	1.0	0.99	0.99	3.8
Malathion	38	1.0	1.30	1.36	6.8
Petroleum distillate	11	1.0	12.02	12.08	18.3
Fungicides:					
Benomyl	55	1.7	0.47	0.79	5.8
Calcium polysulfide	69	1.0	9.94	10.40	94.6
Captan	74	4.3	1.21	5.25	51.0
Copper hydroxide	11	1.5	0.88	1.36	2.0
Copper sulfate	8	1.4	2.24	3.16	3.2
Ferbam	47	1.2	1.24	1.54	9.6
Fosetyl-al	3	1.0	3.72	3.72	1.3
Iprodione	55	1.3	0.62	0.82	5.9
Metalaxyl	56	1.2	0.72	0.84	6.2
Sulfur	1	1.2	9.76	11.68	2.0
Vinclozolin	46	2.3	0.55	1.25	7.6
Other Chemicals:					
Monocarbamide dihyd.	5	1.1	120.23	128.41	85.2

1/ Bearing acres in 1997 for the 2 States surveyed were 13,200 acres. States included are OR and WA.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Raspberries: Agricultural Chemical Applications, Oregon, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	19	1.0	1.51	1.51	1.4
Norflurazon	8	1.0	1.43	1.43	0.5
Oryzalin	7	1.0	2.06	2.10	0.7
Oxyfluorfen	18	1.0	0.08	0.08	0.1
Paraquat	51	1.1	0.49	0.53	1.3
Sethoxydim	6	1.0	0.24	0.24	0.1
Simazine	33	1.0	1.58	1.65	2.6
Insecticides:					
Bifenthrin	22	1.0	0.09	0.09	0.1
Bt (Bacillus thur.)2/	22	1.0			
Diazinon	17	1.0	1.62	1.62	1.3
Malathion	28	1.1	1.87	2.10	2.8
Fungicides:					
Benomyl	17	1.6	0.34	0.54	0.4
Calcium polysulfide	67	1.1	11.27	12.56	39.5
Captan	36	1.4	1.89	2.66	4.5
Ferbam	22	1.0	1.32	1.32	1.4
Fosetyl-al	7	1.0	3.72	3.72	1.3
Iprodione	26	1.5	0.69	1.02	1.2
Metalaxyl	68	1.1	1.03	1.17	3.8
Vinclozolin	25	1.1	0.69	0.73	0.8

1/ Bearing acres in 1997 for Oregon were 4,700 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Raspberries: Agricultural Chemical Applications, Washington, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	31	1.0	0.97	0.97	2.5
Norflurazon	4	1.0	1.25	1.25	0.4
Oryzalin	62	1.0	1.21	1.23	6.4
Oxyfluorfen	74	1.0	0.10	0.11	0.7
Paraquat	85	1.1	0.32	0.36	2.6
Sethoxydim	5	1.0	0.19	0.19	0.1
Simazine	56	1.1	0.62	0.67	3.2
Insecticides:					
Bifenthrin	81	1.0	0.10	0.10	0.7
Bt (Bacillus thur.)2/	46	2.1			
Diazinon	77	1.4	1.14	1.58	10.3
Esfenvalerate	36	1.0	0.06	0.06	0.2
Malathion	44	1.0	1.07	1.09	4.1
Fungicides:					
Benomyl	76	1.7	0.49	0.83	5.3
Calcium polysulfide	70	1.0	9.16	9.26	55.1
Captan	94	5.0	1.17	5.80	46.4
Ferbam	61	1.3	1.23	1.59	8.3
Iprodione	71	1.3	0.60	0.77	4.7
Metalaxyl	49	1.2	0.49	0.58	2.4
Vinclozolin	58	2.6	0.54	1.37	6.7

1/ Bearing acres in 1997 for Washington were 8,500 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Sweet Cherries: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Herbicide		Insecticide 2/		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	15,700	48	15.2	58	344.0	51	68.8	24	668.3
MI	7,000	84	9.6	97	17.1	98	281.6	76	3.0
OR	10,300	69	22.6	96	354.3	88	106.1	50	0.6
WA	15,000	57	26.1	97	393.0	96	177.2	49	0.5
Total	48,000	61	73.5	84	1,108.4	80	633.7	45	672.4

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.

Sweet Cherries: Active Ingredients Applied and Publication Status
by States Surveyed, 1997

Active Ingredient	States Surveyed				
	ALL	CA	MI	OR	WA
Herbicides:					
2,4-D	P	P	P	P	P
Diuron	*		*	*	*
Glyphosate	P	P	P	P	P
MSMA	*	*			
Napropamide	P	P	*		*
Norflurazon	P	P	*	*	*
Oryzalin	P	P	*	P	P
Oxyfluorfen	P	P		P	P
Paraquat	P	P	P	*	P
Pendimethalin	*	*			
Pronamide	*				*
Sethoxydim	*	*			
Simazine	P	*	P	P	*
Terbacil	*		*		
Trifluralin	*	*			

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Sweet Cherries: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed				
	ALL	CA	MI	OR	WA
Insecticides:					
Aldicarb	*				*
Azinphos-methyl	P	*	P	*	P
Bt (Bacillus thur.)	P	*		P	*
Carbaryl	P	P	P	P	P
Carbofuran	*			*	
Chlorpyrifos	P	*	*	P	P
Clofentezine	P	P			*
Diazinon	P	P	*	*	P
Dicofol	*			*	
Dimethoate	P			P	P
Endosulfan	P		*	*	P
Esfenvalerate	P	P	P	*	*
Ethion	*		*		
Fenamiphos	*	*			
Fenbutatin-oxide	P	P			*
Malathion	P			P	P
Methidathion	*	*			*
Methoxychlor	P			*	*
Methyl parathion	P		P	P	*
Oxamyl	*		*		
Permethrin	P		P		
Petroleum distillate	P	*	*	P	P
Phosmet	P	*	*	P	
Piperonyl butoxide	*				*
Potassium salts	*				*
Propargite	P	P			
Pyrethrins	*			*	*
Rotenone	*			*	*
Fungicides:					
Basic copper sulfate	P	*	*	*	*
Benomyl	P	*	P	P	*
Calcium polysulfide	P	*	*	P	P
Captafol	*				*
Captan	P	*	P	P	*
Chlorothalonil	P	*	P	P	*
Copper ammonium	P				P
Copper hydroxide	P	P	P	P	P
Copper oxide	*	*			
Copper oxychlo. sul.	P		*	P	*
Copper sulfate	P	*	*	P	P
Dodine	P		P	*	*
Fenarimol	P	*	*	*	P
Fenbuconazole	P		P	P	*
Ferbam	P		P		
Fosetyl-al	*	*		*	*
Iprodione	P	P	P	P	P
Maneb	*		*		*
Metalaxyl	*				*
Myclobutanil	P	P	P	P	P

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Sweet Cherries: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed				
	ALL	CA	MI	OR	WA
Fungicides: (cont.)					
Oxytetracycline	*				*
Propiconazole	P		P	P	P
Pseudomonas fluores.	*			*	
Sulfur	P	P	P	P	P
Thiophanate-methyl	*	*	*		
Thiram	*				*
Triflumizole	*				*
Triforine	*		*	*	
Triphenyltin hydrox.	*				*
Vinclozolin	P	*	*	P	
Ziram	P		P	P	*
Other Chemicals:					
Chlorophacinone	*				*
Chloropicrin	*	*			
Cyanamid	*	*			
Cytokinins	*				*
Ethephon	P		P	P	
Gibberellic acid	P	P	*	P	P
Methyl bromide	*	*			
NAA	P	*			P
Neem Oil, Hydrophob.	*		*		
Strychnine	P	*			*
Zinc phosphide	P				P

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Sweet Cherries: Agricultural Chemical Applications,
States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	11	1.5	0.88	1.31	7.1
Glyphosate	37	1.8	1.10	2.00	35.5
Napropamide	1	1.2	1.89	2.32	1.5
Norflurazon	2	1.0	1.51	1.57	1.3
Oryzalin	13	1.1	1.91	2.04	12.7
Oxyfluorfen	12	1.1	0.54	0.62	3.5
Paraquat	18	1.5	0.55	0.82	7.0
Simazine	5	1.0	1.60	1.62	3.5
Insecticides:					
Azinphos-methyl	42	1.9	0.70	1.30	26.0
Bt (Bacillus thur.)2/	11	1.5			
Carbaryl	25	1.6	1.87	2.94	35.9
Chlorpyrifos	34	1.1	1.84	1.93	31.5
Clofentezine	5	1.1	0.12	0.14	0.3
Diazinon	11	1.5	1.39	2.06	11.2
Dimethoate	6	1.1	1.04	1.12	3.3
Endosulfan	4	1.3	1.72	2.26	4.7
Esfenvalerate	18	2.0	0.04	0.08	0.7
Fenbutatin-oxide	2	1.1	0.81	0.91	1.1
Malathion	30	3.2	1.13	3.63	52.2
Methoxychlor	1	2.0	1.08	2.18	0.5
Methyl parathion	3	1.7	0.48	0.84	1.2
Permethrin	6	1.6	0.10	0.17	0.5
Petroleum distillate	47	1.3	31.99	40.84	922.5
Phosmet	2	1.0	1.36	1.36	1.5
Propargite	10	1.3	1.51	1.92	8.9
Fungicides:					
Basic copper sulfate	1	1.1	4.29	4.86	1.6
Benomyl	10	1.3	0.48	0.65	3.2
Calcium polysulfide	2	1.1	22.10	23.89	26.7
Captan	10	1.8	1.67	3.01	14.8
Chlorothalonil	11	1.3	2.52	3.37	18.1
Copper ammonium	2	1.0	0.69	0.69	0.8
Copper hydroxide	20	1.3	3.44	4.46	42.9
Copper oxychlo. sul.	3	1.1	4.57	4.89	6.1
Copper sulfate	3	1.2	4.41	5.19	8.0
Dodine	1	2.1	0.46	0.94	0.6
Fenarimol	11	1.5	0.07	0.11	0.6
Fenbuconazole	12	2.7	0.09	0.24	1.4
Ferbam	8	2.4	2.28	5.39	20.1
Iprodione	18	1.3	0.74	0.93	8.0
Myclobutanil	42	1.6	0.12	0.19	3.9
Propiconazole	13	1.7	0.11	0.19	1.2
Sulfur	51	2.4	7.62	18.64	459.9
Vinclozolin	3	1.2	0.55	0.68	0.8
Ziram	4	1.7	3.22	5.51	11.7

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Sweet Cherries: Agricultural Chemical Applications,
States Surveyed, 1997 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Ethephon	12	1.1	0.49	0.56	3.1
Gibberellic acid	28	1.1	0.06	0.07	0.9
NAA 3/	2	1.1	0.05	0.05	
Strychnine 3/	2	1.2	0.03	0.04	
Zinc phosphide	2	1.0	0.15	0.15	0.1

1/ Bearing acres in 1997 for the 4 States surveyed were 48,000 acres. States included are CA, MI, OR and WA. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.
3/ Total applied is less than 50 pounds.

Sweet Cherries: Agricultural Chemical Applications, California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	4	1.4	0.63	0.91	0.6
Glyphosate	18	1.9	0.49	0.94	2.7
Napropamide	3	1.0	2.12	2.20	1.2
Norflurazon	3	1.0	1.17	1.22	0.5
Oryzalin	14	1.2	1.52	1.82	3.9
Oxyfluorfen	22	1.2	0.45	0.56	1.9
Paraquat	28	1.6	0.44	0.70	3.1
Insecticides:					
Carbaryl	8	1.5	2.50	3.65	4.8
Clofentezine	14	1.1	0.12	0.14	0.3
Diazinon	21	1.6	1.51	2.46	8.3
Esfenvalerate	32	2.3	0.05	0.11	0.6
Fenbutatin-oxide	7	1.1	0.79	0.91	1.0
Propargite	29	1.3	1.51	1.92	8.9
Fungicides:					
Copper hydroxide	31	1.3	3.72	4.93	23.7
Iprodione	28	1.2	0.69	0.86	3.7
Myclobutanil	19	1.5	0.12	0.18	0.5
Sulfur	10	1.5	5.70	8.52	13.7
Other Chemicals:					
Gibberellic acid	12	1.2	0.08	0.09	0.2

1/ Total acres in 1997 for California were 15,700 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Sweet Cherries: Agricultural Chemical Applications, Michigan, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	22	1.5	0.61	0.93	1.5
Glyphosate	37	1.1	1.15	1.24	3.2
Paraquat	29	1.4	0.51	0.71	1.4
Simazine	25	1.0	1.81	1.83	3.1
Insecticides:					
Azinphos-methyl	79	2.4	0.54	1.31	7.3
Carbaryl	29	1.9	1.99	3.67	7.5
Esfenvalerate	48	1.5	0.03	0.04	0.1
Methyl parathion	16	1.7	0.50	0.84	0.9
Permethrin	41	1.6	0.10	0.17	0.5
Fungicides:					
Benomyl	35	1.5	0.44	0.64	1.6
Captan	43	2.1	1.70	3.61	10.8
Chlorothalonil	64	1.3	2.44	3.22	14.5
Copper hydroxide	3	1.2	1.27	1.47	0.3
Dodine	4	2.6	0.59	1.54	0.4
Fenbuconazole	73	2.9	0.09	0.26	1.3
Ferbam	53	2.4	2.28	5.39	20.1
Iprodione	16	1.2	0.74	0.90	1.0
Myclobutanil	6	2.4	0.10	0.24	0.1
Propiconazole	7	1.9	0.12	0.23	0.1
Sulfur	86	4.8	7.60	36.81	221.4
Ziram	23	1.8	3.02	5.40	8.7
Other Chemicals:					
Ethephon	75	1.1	0.50	0.56	2.9

1/ Bearing acres in 1997 for Michigan were 7,000 acres.

Sweet Cherries: Agricultural Chemical Applications, Oregon, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	27	1.3	1.04	1.36	3.7
Glyphosate	59	1.9	1.10	2.07	12.6
Oryzalin	23	1.0	1.94	1.94	4.6
Oxyfluorfen	19	1.0	0.67	0.67	1.3
Simazine	2	1.0	0.77	0.77	0.1
Insecticides:					
Bt (Bacillus thur.)2/	40	1.5			
Carbaryl	13	1.7	1.31	2.27	2.9
Chlorpyrifos	65	1.0	1.94	2.02	13.4
Dimethoate	15	1.2	1.03	1.19	1.9
Malathion	57	4.4	1.14	5.00	29.3
Methyl parathion	3	2.0	0.42	0.85	0.3
Petroleum distillate	72	1.2	33.33	41.03	302.7
Phosmet	7	1.0	1.18	1.19	0.8
Fungicides:					
Benomyl	18	1.2	0.49	0.58	1.1
Calcium polysulfide	1	1.5	7.64	11.38	1.6
Captan	17	1.3	1.67	2.20	3.9
Chlorothalonil	3	1.3	3.74	4.76	1.5
Copper hydroxide	18	1.4	3.25	4.71	8.7
Copper oxychlo. sul.	7	1.0	4.70	4.82	3.3
Copper sulfate	2	1.5	4.00	6.04	1.1
Fenbuconazole	8	1.5	0.09	0.14	0.1
Iprodione	20	1.3	0.74	0.93	1.9
Myclobutanil	51	1.3	0.12	0.15	0.8
Propiconazole	10	1.1	0.11	0.13	0.1
Sulfur	68	1.2	9.35	11.12	78.1
Vinclozolin	5	1.2	0.70	0.81	0.5
Ziram	5	1.5	3.99	5.88	2.9
Other Chemicals:					
Ethephon	4	1.2	0.39	0.45	0.2
Gibberellic acid	46	1.0	0.08	0.08	0.4

1/ Bearing acres in 1997 for Oregon were 10,300 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Sweet Cherries: Agricultural Chemical Applications, Washington, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	3	2.5	1.11	2.80	1.4
Glyphosate	42	2.0	1.36	2.72	17.0
Oryzalin	11	1.0	2.50	2.51	4.1
Oxyfluorfen	2	1.0	0.93	0.93	0.3
Paraquat	13	1.4	0.87	1.23	2.4
Insecticides:					
Azinphos-methyl	84	1.7	0.81	1.40	17.6
Carbaryl	50	1.5	1.83	2.73	20.6
Chlorpyrifos	59	1.1	1.83	1.94	17.2
Diazinon	6	1.1	1.37	1.46	1.3
Dimethoate	9	1.0	1.04	1.04	1.4
Endosulfan	13	1.3	1.85	2.48	4.7
Malathion	57	2.4	1.12	2.69	22.9
Petroleum distillate	59	1.0	33.02	34.38	304.7
Fungicides:					
Calcium polysulfide	3	1.0	14.92	14.92	6.6
Copper ammonium	8	1.0	0.69	0.69	0.8
Copper hydroxide	18	1.1	3.22	3.70	10.1
Copper sulfate	4	1.1	2.58	2.77	1.7
Fenarimol	31	1.6	0.08	0.12	0.6
Iprodione	8	1.4	0.88	1.20	1.4
Myclobutanil	78	1.7	0.12	0.21	2.5
Propiconazole	33	1.7	0.11	0.19	1.0
Sulfur	67	2.0	7.16	14.62	146.7
Other Chemicals:					
Gibberellic acid	45	1.1	0.05	0.05	0.4
NAA 2/	2	1.2	0.05	0.06	
Zinc phosphide	5	1.0	0.15	0.15	0.1

1/ Bearing acres in 1997 for Washington were 15,000 acres.
2/ Total applied is less than 50 pounds.

Tangelos: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Florida, 1997

State	Bearing Acreage	Herbicide		Insecticide		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
FL	13,300	96	66.7	97	1,149.8	91	158.3	27	0.8

Tangelos: Active Ingredient Publication Status
Florida, 1997

Active Ingredient	Status
Herbicides:	
2,4-D	*
Bromacil	P
Diuron	P
Glyphosate	P
Norflurazon	P
Oryzalin	*
Paraquat	P
Simazine	P
Sulfosate	*
Insecticides:	
Abamectin	P
Aldicarb	*
Carbaryl	*
Chlorpyrifos	P
Dicofol	*
Diflubenzuron	P
Ethion	P
Fenbutatin-oxide	P
Fenoxycarb	*
Methidathion	*
Oxythioquinox	*
Petroleum distillate	P
Sulfur	P

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Active Ingredient (continued)	Status
Fungicides:	
Basic copper sulfate	P
Benomyl	P
Copper ammonium	*
Copper hydroxide	P
Copper oxychlo. sul.	*
Ferbam	*
Fosetyl-al	*
Iprodione	P
Mefenoxam	*
Other Chemicals:	
Gibberellic acid	P
Neem Oil, Hydrophob.	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Tangelos: Agricultural Chemical Applications,
Florida, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	22	1.8	1.36	2.47	7.1
Diuron	61	1.5	1.25	1.90	15.4
Glyphosate	95	2.7	0.84	2.22	27.9
Norflurazon	19	1.5	1.66	2.54	6.4
Paraquat	5	1.9	0.35	0.66	0.4
Simazine	48	1.2	1.13	1.34	8.6
Insecticides:					
Abamectin	79	2.4	0.009	0.02	0.2
Chlorpyrifos	6	1.5	0.76	1.18	1.0
Diflubenzuron	9	1.2	0.32	0.37	0.5
Ethion	16	1.2	2.70	3.12	6.8
Fenbutatin-oxide	6	1.1	1.20	1.30	1.0
Petroleum distillate	94	2.4	36.47	88.72	1,112.7
Sulfur	9	1.3	16.33	20.60	23.9
Fungicides:					
Basic copper sulfate	4	1.1	4.13	4.51	2.4
Benomyl	9	1.3	0.90	1.19	1.4
Copper hydroxide	87	3.6	2.73	9.84	113.7
Iprodione	27	2.2	1.03	2.29	8.1
Other Chemicals:					
Gibberellic acid	26	1.0	0.10	0.11	0.4

1/ Bearing acres in 1997 for Florida were 13,300 acres.

Tangerines: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Area Receiving and Total Applied 1/							
		Herbicide		Insecticide 2/:		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA 3/	10,200	31	6.4	23	21.2	3	1.3		
FL	28,500	97	113.5	98	2,125.5	75	240.0	4	2.4
Total:	38,700	80	119.9	79	2,146.7	56	241.3	3	2.4

1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
3/ Insufficient reports to publish data for one or more of the pesticide classes.

Tangerines: Active Ingredients Applied and Publication Status by States Surveyed, 1997

Active Ingredient	States Surveyed		
	ALL	CA	FL
Herbicides:			
2,4-D	*	*	
Bromacil	*	*	P
Diuron	P	P	P
Glyphosate	P	P	P
Norflurazon	*	*	P
Oryzalin	*		*
Paraquat	P		P
Simazine	*	*	P
Sulfosate	*		*
Trifluralin	*	*	
Insecticides:			
Abamectin	*	*	P
Aldicarb	*		*
Bt (Bacillus thur.)	*	*	
Carbaryl	P	*	*
Chlorpyrifos	P	*	*
Cyfluthrin	*	*	
Dicofol	*		*
Diflubenzuron	P		P
Dimethoate	*	*	
Ethion	P		P
Fenamiphos	*	*	
Fenbutatin-oxide	P		P
Formetanate hydro.	P	*	*
Imidacloprid	*		*
Methidathion	*	*	*
Methomyl	*	*	
Naled	*	*	
Oxythioquinox	*		*
Petroleum distillate	P		P
Sabadilla	*	*	
Sulfur	P	*	P

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Tangerines: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed		
	ALL	CA	FL
Fungicides			
Basic copper sulfate	P		P
Benomyl	P		P
Calcium polysulfide	*		*
Copper hydroxide	*	*	P
Copper oxychlo. sul.	*		*
Copper sulfate	P	*	*
Ferbam	P		P
Fosetyl-al	*	*	*
Iprodione	P		P
Mefenoxam	*		*
Metalaxyl	*		*
Other Chemicals			
Chlorophacinone	*	*	
Gibberellic acid	P		P
Neem Oil, Hydrophob.	*		*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Tangerines: Agricultural Chemical Applications, States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	47	1.5	1.07	1.59	28.7
Glyphosate	73	2.2	0.74	1.61	45.8
Paraquat	4	1.8	0.34	0.61	0.9
Insecticides:					
Carbaryl	2	1.0	2.81	2.81	2.2
Chlorpyrifos	6	1.4	0.80	1.14	2.7
Diflubenzuron	3	1.2	0.31	0.36	0.4
Ethion	8	1.1	2.14	2.35	7.5
Fenbutatin-oxide	11	1.6	0.96	1.50	6.4
Formetanate hydro.	7	1.1	1.19	1.27	3.3
Petroleum distillate	71	2.3	32.39	74.78	2,047.7
Sulfur	6	1.5	21.90	33.10	70.5
Fungicides:					
Basic copper sulfate	2	1.7	1.85	3.14	2.2
Benomyl	27	1.0	0.89	0.89	9.3
Copper sulfate	2	2.8	1.03	2.92	2.2
Ferbam	9	1.0	10.66	10.66	38.1
Iprodione	9	1.1	0.95	1.06	3.6
Other Chemicals:					
Gibberellic acid	1	1.8	0.06	0.11	0.1

1/ Bearing acres in 1997 for the 2 States surveyed were 38,700 acres. States included are CA and FL. Acreage in California includes non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Tangerines: Agricultural Chemical Applications, California, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	10	1.0	1.70	1.70	1.8
Glyphosate	23	3.7	0.44	1.60	3.7

1/ Total acres in 1997 for California were 10,200 acres. Acreage includes both bearing and non-bearing acres. Applications of some active ingredients may refer only to non-bearing acres.

Tangerines: Agricultural Chemical Applications, Florida, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	21	1.9	0.82	1.55	9.1
Diuron	60	1.5	1.05	1.58	26.9
Glyphosate	92	2.0	0.79	1.61	42.1
Norflurazon	37	1.3	1.21	1.55	16.1
Paraquat	5	1.8	0.34	0.61	0.9
Simazine	40	1.2	1.21	1.47	16.8
Insecticides:					
Abamectin	71	1.9	0.009	0.02	0.3
Diflubenzuron	4	1.2	0.31	0.36	0.4
Ethion	11	1.1	2.14	2.35	7.5
Fenbutatin-oxide	15	1.6	0.96	1.50	6.4
Petroleum distillate	96	2.3	32.39	74.78	2,047.7
Sulfur	6	1.6	19.02	30.34	54.7
Fungicides:					
Basic copper sulfate	2	1.7	1.85	3.14	2.2
Benomyl	37	1.0	0.89	0.89	9.3
Copper hydroxide	68	3.3	2.71	8.98	173.4
Ferbam	13	1.0	10.66	10.66	38.1
Iprodione	12	1.1	0.95	1.06	3.6
Other Chemicals:					
Gibberellic acid	2	1.8	0.06	0.11	0.1

1/ Bearing acres in 1997 for Florida were 28,500 acres.

Tart Cherries: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1997

State	Bearing Acreage	Herbicide		Insecticide		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
MI	26,800	83	41.7	98	142.5	99	781.5	83	5.2
NY	2,600	23	1.5	96	9.2	96	61.7	38	0.3
OR 1/	1,500	60	0.9	96	2.7	95	14.8		
PA	1,500	90	4.5	99	2.8	99	14.3	59	0.3
Total	32,400	78	48.6	98	157.2	99	872.3	75	5.8

1/ Total other chemicals applied is less than 50 pounds.
2/ Insufficient reports to publish data for one or more of the pesticide classes.

Tart Cherries: Active Ingredients Applied and Publication Status
by States Surveyed, 1997

Active Ingredient	States Surveyed			
	ALL	MI	NY	OR	PA
Herbicides:					
2,4-D	P	P		*	P
Atrazine	*				*
Dichlobenil	*			*	
Diuron	*	*	*		*
Glyphosate	P	P	*	P	*
Norflurazon	P	P	*		*
Oryzalin	P	*	*	*	
Oxyfluorfen	*			*	
Paraquat	P	P	*	*	P
Pendimethalin	*				*
Simazine	P	P	*	*	P
Terbacil	*				*
Triclopyr	*			*	
Insecticides:					
Azinphos-methyl	P	P	P		P
Carbaryl	P	P	P	*	*
Chlorpyrifos	P	P			*
Diazinon	P			P	P
Dimethoate	P			P	
Endosulfan	*	*	*		*
Esfenvalerate	P	P		*	*
Ethion	*		*		
Fenbutatin-oxide	*	*			
Malathion	*			*	*

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Tart Cherries: Active Ingredients Applied and Publication Status by States Surveyed, 1997 (continued)

Active Ingredient	States Surveyed				
	ALL	MI	NY	OR	PA
Fungicides:					
Methomyl	*				*
Methyl parathion	P	P	P		P
Oxamyl	*	*			
Permethrin	P	P	*		
Petroleum distillate	P	P		*	*
Phosmet	P	P	P	P	P
Basic copper sulfate	*	*			
Benomyl	P	P	*	P	*
Calcium polysulfide	*	*		*	
Captan	P	P	P	P	P
Chlorothalonil	P	P	P	P	P
Copper hydroxide	P	P		P	*
Copper oxychlo. sul.	P	P			*
Copper sulfate	*			*	*
Dichlone	*				*
Dodine	P	P	P	*	*
Fenarimol	*	*	*		*
Fenbuconazole	P	P	P	P	P
Ferbam	P	*	*		*
Iprodione	P	P	P	P	P
Mancozeb	*	*			
Myclobutanil	P	P	*	*	P
Oxytetracycline	*				*
Propiconazole	P	P	*	*	*
Sulfur	P	P	P	P	P
Thiophanate-methyl	P	*	*		P
Triforine	*	*	*	*	
Vinclozolin	*			*	*
Ziram	P	P		*	*
Other Chemicals:					
Chlorophacinone	*				*
Ethephon	P	P	P	*	P
Gibberellic acid	P	P	*	*	*
Zinc phosphide	*	*			

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Tart Cherries: Agricultural Chemical Applications, States Surveyed, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	19	1.1	0.86	0.94	5.7
Glyphosate	35	1.1	1.01	1.08	12.1
Norflurazon	4	1.0	1.56	1.56	2.2
Oryzalin	1	1.1	1.81	2.00	0.8
Paraquat	30	1.1	0.66	0.70	6.8
Simazine	37	1.0	1.62	1.64	19.7
Insecticides:					
Azinphos-methyl	72	2.6	0.55	1.46	34.0
Carbaryl	17	1.4	1.89	2.58	14.0
Chlorpyrifos	16	1.0	0.88	0.91	4.6
Diazinon	3	1.3	0.92	1.16	0.9
Dimethoate	3	1.1	0.83	0.90	0.9
Esfenvalerate	36	1.6	0.03	0.05	0.6
Methyl parathion	22	2.3	0.61	1.38	9.8
Permethrin	14	1.3	0.12	0.16	0.7
Petroleum distillate	9	1.0	22.82	23.30	69.1
Phosmet	43	1.7	0.91	1.53	21.3
Fungicides:					
Benomyl	4	1.3	0.43	0.55	0.7
Captan	30	2.8	1.74	4.94	47.5
Chlorothalonil	86	2.0	1.88	3.73	103.4
Copper hydroxide	5	2.7	1.68	4.50	7.8
Copper oxychlo. sul.	7	2.6	1.94	5.07	11.0
Dodine	32	2.5	0.81	2.00	20.6
Fenbuconazole	58	2.7	0.08	0.22	4.0
Ferbam	9	1.5	1.06	1.61	4.8
Iprodione	6	1.2	0.81	0.95	1.7
Myclobutanil	30	1.9	0.15	0.28	2.8
Propiconazole	9	1.1	0.11	0.13	0.4
Sulfur	78	4.3	6.09	26.23	659.9
Thiophanate-methyl	2	2.2	0.22	0.49	0.3
Ziram	3	2.1	2.19	4.51	3.9
Other Chemicals:					
Ethephon	66	1.1	0.20	0.23	4.9
Gibberellic acid	28	1.3	0.09	0.12	1.0

1/ Bearing acres in 1997 for the 4 States surveyed were 32,400 acres. States included are MI, NY, OR and PA.

Tart Cherries: Agricultural Chemical Applications, Michigan, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	21	1.1	0.83	0.91	5.1
Glyphosate	38	1.1	1.04	1.11	11.4
Norflurazon	4	1.0	1.48	1.48	1.7
Paraquat	29	1.1	0.61	0.66	5.2
Simazine	40	1.0	1.52	1.53	16.5
Insecticides:					
Azinphos-methyl	74	2.5	0.55	1.41	27.7
Carbaryl	15	1.3	2.10	2.76	11.4
Chlorpyrifos	19	1.0	0.88	0.91	4.6
Esfenvalerate	43	1.6	0.03	0.05	0.6
Methyl parathion	20	2.4	0.65	1.57	8.5
Permethrin	17	1.3	0.12	0.16	0.7
Petroleum distillate	11	1.0	23.28	23.74	68.8
Phosmet	48	1.7	0.91	1.52	19.4
Fungicides:					
Benomyl	2	1.1	0.39	0.43	0.2
Captan	20	2.7	1.76	4.71	25.3
Chlorothalonil	92	2.0	1.92	3.86	95.7
Copper hydroxide	5	2.9	1.53	4.42	6.4
Copper oxychlo. sul.	8	2.7	1.94	5.30	10.7
Dodine	38	2.5	0.81	2.01	20.3
Fenbuconazole	56	3.0	0.08	0.24	3.6
Iprodione	4	1.0	0.79	0.80	0.8
Myclobutanil	32	2.0	0.11	0.21	1.8
Propiconazole	6	1.0	0.13	0.13	0.2
Sulfur	79	4.6	6.20	28.50	604.5
Ziram	3	2.0	2.19	4.50	3.8
Other Chemicals:					
Ethephon	74	1.1	0.19	0.22	4.3
Gibberellic acid	31	1.3	0.08	0.11	0.9

1/ Bearing acres in 1997 for Michigan were 26,800 acres.

Tart Cherries: Agricultural Chemical Applications, New York, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Insecticides:					
Azinphos-methyl	89	3.5	0.68	2.35	5.4
Carbaryl	25	1.4	1.76	2.52	1.7
Methyl parathion	31	1.3	0.90	1.21	1.0
Phosmet	18	1.7	1.06	1.83	0.9
Fungicides:					
Captan	96	3.3	2.10	6.89	17.2
Chlorothalonil	71	1.9	1.39	2.58	4.8
Dodine	4	2.5	0.88	2.21	0.2
Fenbuconazole	86	1.5	0.09	0.13	0.3
Iprodione	6	1.7	0.88	1.46	0.2
Sulfur	85	3.0	5.71	17.28	38.1
Other Chemicals:					
Ethephon	36	1.2	0.26	0.32	0.3

1/ Bearing acres in 1997 for New York were 2,600 acres.

Tart Cherries: Agricultural Chemical Applications, Oregon, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	46	1.0	0.57	0.57	0.4
Insecticides:					
Diazinon	48	1.3	0.91	1.18	0.9
Dimethoate	69	1.1	0.83	0.90	0.9
Phosmet	7	1.5	1.60	2.35	0.2
Fungicides:					
Benomyl	55	1.4	0.45	0.62	0.5
Captan	65	1.4	1.37	1.86	1.8
Chlorothalonil	30	1.2	2.89	3.53	1.6
Copper hydroxide	20	1.6	3.12	4.87	1.4
Fenbuconazole	51	1.5	0.08	0.12	0.1
Iprodione	36	1.3	0.89	1.12	0.6
Sulfur	62	1.7	5.41	9.03	8.4

1/ Bearing acres in 1997 for Oregon were 1,500 acres.

Tart Cherries: Agricultural Chemical Applications, Pennsylvania, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	25	1.0	1.49	1.49	0.6
Paraquat	84	1.0	0.88	0.88	1.1
Simazine	66	1.0	2.53	2.53	2.5
Insecticides:					
Azinphos-methyl	84	2.6	0.26	0.68	0.9
Diazinon	6	1.1	0.96	1.04	0.1
Methyl parathion	57	2.3	0.16	0.36	0.3
Phosmet	36	2.2	0.69	1.50	0.8
Fungicides:					
Captan	52	4.5	0.91	4.12	3.2
Chlorothalonil	43	2.0	1.03	2.08	1.3
Fenbuconazole	47	1.5	0.08	0.13	0.1
Iprodione	8	1.5	0.45	0.67	0.1
Myclobutanil	57	1.4	0.21	0.30	0.3
Sulfur	54	3.2	3.41	10.83	8.8
Thiophanate-methyl	22	1.9	0.18	0.34	0.1
Other Chemicals:					
Ethephon	30	1.9	0.24	0.46	0.2

1/ Bearing acres in 1997 for Pennsylvania were 1,500 acres.

Temples: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Florida, 1997

State	Bearing Acreage	Herbicide		Insecticide		Fungicide		Other Chemical	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
FL 1/	6,700	96	24.0	98	512.2	94	67.1		

1/ Insufficient reports to publish data for one or more of the pesticide classes.

Temples: Active Ingredient Publication Status
Florida, 1997

Active Ingredient	Status
Herbicides:	
Bromacil	P
Diuron	P
Glyphosate	P
Norflurazon	P
Oryzalin	*
Paraquat	*
Simazine	P
Sulfosate	*
Insecticides:	
Abamectin	P
Aldicarb	*
Carbaryl	*
Chlorpyrifos	*
Dicofol	*
Diflubenzuron	P
Ethion	P
Fenbutatin-oxide	P
Methidathion	*
Oxythioquinox	*
Petroleum distillate	P
Sulfur	P

--continued

Active Ingredient	Status
(continued)	
Fungicides:	
Basic copper sulfate	*
Benomyl	P
Copper hydroxide	P
Copper sulfate	*
Ferbam	P
Fosetyl-al	*
Iprodione	*
Other Chemicals:	
Gibberellic acid	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Temples: Agricultural Chemical Applications,
Florida, 1997 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	11	2.0	1.28	2.52	1.8
Diuron	50	1.3	1.09	1.42	4.8
Glyphosate	88	2.1	0.85	1.83	10.8
Norflurazon	12	1.4	1.18	1.61	1.3
Simazine	46	1.2	1.19	1.45	4.5
Insecticides:					
Abamectin	58	2.7	0.009	0.02	0.1
Diflubenzuron	9	1.0	0.32	0.32	0.2
Ethion	10	1.1	2.65	3.00	2.1
Fenbutatin-oxide	8	1.0	0.98	0.98	0.5
Petroleum distillate	98	2.2	33.58	73.26	480.5
Sulfur	17	1.3	12.38	15.86	17.9
Fungicides:					
Benomyl	38	1.1	1.06	1.20	3.1
Copper hydroxide	58	3.3	2.73	9.10	35.4
Ferbam	34	1.0	11.23	11.23	25.6

1/ Bearing acres in 1997 for Florida were 6,700 acres.

Survey Procedures: Samples were drawn from the NASS List Sampling Frame. This extensive sampling frame covers all types of farms and accounts for about 82% of all land in farms in the U.S. Farms that were more likely to be producers of multiple crops of interest were more likely to be in the sample.

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 are based on the acreage estimates published in the annual NASS reports "**Citrus Fruits - 1997 Summary**" [Fr Nt 7] released on September 23, 1997 and "**Noncitrus Fruits and Nuts - 1997 Summary**" [Fr Nt 1-3(98)] released on July 7, 1998. The estimates for total amount applied will not be revised even if there are subsequent revisions to acreage for a given crop.

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

Reliability: The probability nature of the survey provides expansion of data so that the estimates are statistically representative of chemical use on the targeted crops in the surveyed States. The reliability of these survey results are affected by sampling variability and non-sampling errors. The sampling variability, expressed as a percentage of the estimate, is referred to as the coefficient of variation (cv).

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

Variability for estimates of acres treated will be higher than the variability for estimates of application rates. This is because application rates have a narrower range of responses, are recommended by the manufacturer of the product, and are generally followed.

Sampling variability of the estimates differed considerably by chemical and crop. In general, the more often the chemical was applied, the smaller the sampling variability. For example, estimates of use of a commonly used product, such as Sulfur, will exhibit less variability than a more rarely used product. For more commonly used chemicals, cv's will range from 1-30 percent at the U.S. level and 5-80 percent at the State level. Some rarer items will have cv's above 100 percent. These items have insufficient data for publication and these instances are noted.

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 fertilizers and pesticides.

Application Rates: The application rates refer to the average number of pounds of a fertilizer primary nutrient or 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.

Bearing acres: The area of fruit, berry, and vine crops that have reached a commercially productive bearing age. This age varies by crop, by area, and by producer.

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.

Fertilizer: The term fertilizer refers to applications of the primary nutrients, nitrogen, phosphate, and potash.

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.

The four classes of pesticides presented in this report and the pests targeted are: herbicides - weeds, insecticides - insects, fungicides - fungi, and other chemicals - other forms of life. Miticides and nematicides are included as insecticides while soil fumigants, growth regulators, defoliants, and desiccants are included as other chemicals. This report excludes pesticides used for seed treatments, for spot treatments, and for postharvest applications to the commodity.

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

Trade Name, 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 and NASS does not mean to imply the use of any specific trade name.

Class	Common Name	Trade Name
H	2,4-D	several
I	abamectin	Agri-Mek
I	acephate	Orthene
I	alachlor	Lasso
I	aldicarb	Temik
O	allium sativum	Allium Sativum
H	ametryn	Evik
I	amitraz	Mitac
O	ammonium soap	Hinder
H	atrazine	AAtrex
I	azadirachtin	Align, Neemix, Margosan-o
I	azinphos-methyl	Guthion
F	basic copper sulfate	Top Cop, Tri-Basic
F	benomyl	Benlate
O	benzyladenine	Accel
I	bifenthrin	Capture, Brigade
O	brodifacoum	several
H	bromacil	Hyvar
I	Bt (Bacillus thuringiensis)	several
O	butenic acid hydro.	Retain
F	calcium polysulfide	several
F	captafol	Difolatan
F	captan	Captan
I,O	carbaryl	Sevin, Savit
I	carbofuran	Furadan
I	carbophenothion	Trithion
O	chlorophacinone	Rozol
O	chloropicrin	several
F	chlorothalonil	Bravo
I	chlorpyrifos	Lorsban
H	clethodim	Select
I	clofentezine	Apollo
F	copper ammonium	Copper-Count-N
F	copper hydroxide	several
F	copper oxide	Nordox
F	copper oxychloride sulfate	C-O-C-S
F	copper oxychloride	Microsperse
F	copper resinate	Tenn-Cop
F	copper sulfate	Copper sulfate
I	cryolite	Kryocide
O	cyanamid	Dormex
I	cyfluthrin	Baythroid
I	cyhexatin	Pictran
O	cytokinins	Triggrr, Promalin

--continued

Class	Common Name	Trade Name
F	DCNA	Botran
I	diazinon	several
H	dichlobenil	Casoron, Norosac
F	dichlone	Phygon
O	dichloropropene	Telone
F	dicloran	Botran
I	dicofol	Kelthane
H	difenzoquat	Avenge
I	diflubenzuron	Dimilin
I	dimethoate	several
F	dinocap	Karathane
O	diphacinone	Ramik
H	diquat	Diquat
H	diuron	Karmex, Direx
O	DNOC	Elgetol
O	dodecen acetate	Checkmate
F	dodine	Cyprex, Syllit
I	endosulfan	Thiodan
H	EPTC	Eptam
I	esfenvalerate	Asana
O	ethephon	Ethrel
I	ethion	Ethion
I	ethoprop	Mocap
I	ethyl parathion	several
O	farnesol	Stirrup
I	fenamiphos	Nemacur
F	fenarimol	Rubigan
F	fenbuconazole	RH-7592
I	fenbutatin-oxide	Vendex
I	fenoxycarb	Comply
I	fenpropathrin	Danitol
I	fenvalerate	several
F	ferbam	Carbamate
H	fluazifop-P-butyl	Fusilade
I	fluvalinate	Spur, Mavrik
F	folpet	Folpet
O	formaldehyde	Formadehyde
I	formetanate hydrochloride	Carzol
F	fosetyl-al	Aliette
O	gibberellic acid	ProGibb, ProVide, GibGro, Promalin
H	glufosinate-ammonium	Ignite
F	glyodin	Glyodin
H	glyphosate	Roundup, Rattler
O	gossyplure	No Mate, Stirrup
H	halosulfuron	Battalion
H	hexazinone	Velpar
I	hexythiazox	Savey
I	imidacloprid	Admire
F	iprodione	Rovral
O	lactic acid	Propel
I	lambdacyhalothin	Karate
I	lindane	Lindane

--continued

Class :	Common Name	:	Trade Name
I	malathion		several
O	mateic hydrazide		Royal MH-30, Super Sprout Stop
F	mancozeb		several
F	maneb		several
H	MCPA		several
F	mefenoxam		Ridomil Gold
F	metalaxyl		Ridomil
O	metaldehyde		Metaldehyde
O	metam-sodium		Vapam
I	methidathion		Supracide
I	methiocarb		Mesurol
I	methomyl		Lannate
I	methoxychlor		several
O	methyl bromide		several
I	methyl parathion		several
F	metiram		Polyram
I	mevinphos		Phosdrin
H	molinate		Ordram
O	monocarbamide dihyd.		Equik
H	MSMA		several
F	myclobutanil		Rally, Nova
O	NAA		several
O	NAD		Amid-Thin
I	naled		Dibrom
H	napropamide		Devrinol
O	Neem Oil, Hydrophob.		Trilogy
O	nerolidol		Stirrup M
H	norflurazon		Solicam
H	oryzalin		Surflan
I	oxamyl		Vydate
I	oxydemeton-methyl		Metasystox-R
H	oxyfluorfen		Goal
F	oxytetracycline		Mycoshield
I	oxythioquinox		Morestan
H	paraquat		Gramoxone
O	Pelargonic acid		Thinnex Blossom Thinner
H	Pendimethalin		Prowl
I	permethrin		Ambush, Pounce
I	petroleum distillate		several
I	phosalone		Zolone
I	phosmet		Imidan
I	phosphamidon		Phosphamidon
H	Phytophthora palmivora		DeVine
I	piperonyl butoxide		Butacide, Incite
I	potassium salts		Safer Insecticidal Soap
H	pronamide		Kerb
I	propargite		Comite, Omite
F	propiconazole		Banner, Orbit
H	Prosulfuron		Peak
F	Pseudomonas fluores.		Frostban
I	pyrethrins		Pyrethrins
I	Pyriproxyfen		Knack

--continued

Class	Common Name	Trade Name
I	rotenone	Rotenone
I	ryania	Ryan
I	sabadilla	Sabadilla
H	sethoxydim	Poast
H	simazine	Princep
O	sodium tetrathiocarb	Enzone
I	soybean oil	Golden Natur'l Spray Oil
F	streptomycin	Agri-Strep
O	strychnine	several
H,O	sulfcarbamide	Wilthin, Enquik
H	sulfosate	Touchdown
I,F	sulfur	several
I	tebufenozide	Confirm
H	terbacil	Sinbar
F	thiophanate-methyl	Topsin
F,O	thiram	Thiram
F	triadimefon	Bayleton
I	trichlorfon	Dylox, Proxol
H	triclopyr	Triclopyr
F	triflumizole	Procure
H	trifluralin	Treflan
F	triforine	Funginex
F	triphenyltin hydroxide	several
H	vernolade	Vernam
F	vinclozolin	Ronilan
O	zinc phosphide	several
F	ziram	Ziram

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Report Features

Released July 21, 1998 by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, U.S. Department of Agriculture. For information on "Agricultural Chemical Usage" call (202) 720-2127, office hours 7:30 a.m. to 4:00 p.m. ET.

The next "Agricultural Chemical Usage" report will be released December 18, 1998. This report will cover agricultural chemical use of restricted use pesticides for the 1997 crop year for field crops and fruits in major States.

The next "Agricultural Chemical Usage" report for field crops will be released in May 1999. This report will cover agricultural chemical use for the 1998 crop year for major States.

The next "Agricultural Chemical Usage" report for vegetable crops will be released in July 1999. This report will cover agricultural chemical use for the 1998 crop year for major States.

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