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Overview

This publication is the seventh Fruit Summary in the series of “**Agricultural Chemical Usage**” reports issued by the Environmental, Economics, and Demographics Branch of the National Agricultural Statistics Service (NASS). This report contains statistics for on-farm use of agricultural chemicals and pest management practices from producers of targeted fruit crops. The agricultural chemical use estimates in this report focus on the acreage treated with fertilizers, herbicides, insecticides, fungicides, and other pesticides for selected fruit crops. Other publications in the series present statistics for on-farm agricultural chemical usage have focused on agricultural chemical use for field crops (May 2004) and nursery applications (September 2004).

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

This report includes chemical use information for 24 targeted fruit crops in 12 States. The States surveyed were: California, Florida, Georgia, Michigan, New Jersey, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Texas, and Washington. The targeted crops were: apples, apricots, avocados, blackberries, blueberries, sweet cherries, tart cherries, dates, figs, grapefruit, grapes, kiwifruit, lemons, nectarines, olives, oranges, peaches, pears, plums, prunes, raspberries, tangelos, tangerines, and temples. Chemical use information for fruits is collected in odd numbered years while vegetables are collected in even numbered years.

California’s fruit crop data are centered around their Restricted Use Pesticide requirements, which screens for the county agriculture commissioners ID and CAL-EPA site location numbers. Chemical usage data on grapes in California, by utilization - raisin, table, or wine may include some non-bearing acres due to the lack of consistent reporting. Pesticide data for all grapes in California include both bearing and non-bearing acres. Michigan was surveyed for chemical use on grapes with funding from outside sources.

Highlights

Apples: Nitrogen was applied to 71 percent of the 2003 apple acreage in the following Program States: California, Michigan, New York, North Carolina, Oregon, Pennsylvania, and Washington. Nitrogen application ranged from 49 percent of the acres treated in Pennsylvania to 93 percent in North Carolina. Phosphate and potash were applied to 28 and 36 percent of the acreage, respectively. North Carolina, with the second smallest apple acreage amongst the Program States, applied the highest percentage of fertilizer.

Herbicides were applied to 42 percent of the apple acreage, while 94 percent of the acreage received insecticide treatments. Glyphosate was the most commonly used herbicide, with 32 percent of the acres treated. Azinphos-methyl and petroleum distillate were the most commonly applied insecticides at 73 and 63 percent, respectively. Fungicide applications were made to 90 percent of the apple acreage. Myclobutanil continued to be the most commonly applied fungicide at 44 percent. Usage of other chemicals varied widely among the States surveyed. NNA and Dodecadien-1-ol applied to 34 and 25 percent of the acres, respectively, were the most commonly applied.

Apricots: California's apricot growers applied nitrogen to 74 percent of their acreage. They applied both phosphate and potash to 20 percent of the acreage. Herbicides were applied to 46 percent of the crop, while insecticides and fungicides were each applied to 78 percent of the acreage. Glyphosate was the most commonly used herbicide on 40 percent of the acres. Esfenvalerate, applied to 67 percent of the acreage, was the most widely used insecticide, followed by petroleum distillate at 32 percent. Copper hydroxide, cyprodinil, iprodione, and azoxystrobin were the most commonly used fungicides applied to 43, 36, 34, and 31 percent of the acreage, respectively.

Avocados: Nitrogen fertilizer was applied to 89 percent of California's avocado acreage, while phosphate and potash were applied to 39 and 69 percent of the acreage, respectively. Herbicides were used on 22 percent of avocados, with glyphosate most commonly used on 25 percent of the acreage. Insecticide application was used on nearly 50 percent of the crop acreage. Petroleum distillate and abamectin continue to be the most commonly used insecticides being applied on 37 and 27 percent of the acreage, respectively. Other chemicals were applied to 5 percent of California's avocados. Metaldehyde was the only active ingredient of the other chemicals with sufficient reports to publish.

Blackberries: Nitrogen, phosphate, and potash were all applied at the rate of 95 percent to Oregon's blackberry acreage. Herbicide, insecticide, and fungicide applications ranged from 83 to 89 percent. The herbicides diuron and simazine were applied to 46 and 38 percent of the acreage, respectively. Carbaryl was the most common insecticide used on 37 percent of the acreage. The leading fungicides were calcium polysulfide on 57 percent of the acres, captan on 46 percent, and cyprodinil and fludioxonil both on 36 percent.

Blueberries: Nitrogen fertilizers were applied to 93 percent of the blueberry acreage in the five States surveyed: Georgia, Michigan, New Jersey, North Carolina, and Oregon. Phosphate was applied to 76 percent and potash to 80 percent. North Carolina applied the highest percentage of fertilizer. Herbicides were applied to 60 percent of the acres. Insecticides and fungicides were used on 89 and 86 percent of the acreage, respectively. The most popular insecticide was azinphos-methyl, used on 52 percent of the acreage, followed closely by phosmet at 51 percent. For herbicides, diuron was the most commonly used at 25 percent. Captan, at 59 percent applied, was the most widely used fungicide, followed by copper hydroxide and fenbuconazole, which were applied to 54 and 45 percent, respectively.

Cherries, Sweet: The four Program States (California, Michigan, Oregon, and Washington) applied nitrogen to 79 percent of the planted acres. Phosphate was applied to 34 percent and potash to 37 percent. Herbicides were applied to 35 percent of sweet cherries. The leading herbicides used were glyphosate on 23 percent of the acreage, followed by paraquat on 16 percent. Insecticide and fungicide applications were made to 83 and 84 percent of the acreage, respectively. The insecticides most commonly used were azinphos-methyl and petroleum distillate at 56 and 48 percent, respectively. Sulfur, used as a fungicide, was applied to 35 percent of the acreage. Other chemicals were applied to 18 percent of the acreage, with gibberellic acid being the most widely used on 36 percent of the acres.

Cherries, Tart: Nitrogen was applied to 91 percent of the tart cherry acreage for the two Program States: Michigan and New York. Phosphate was applied to 33 percent and potash to 64 percent of the acreage. Insecticides and fungicides were applied to 90 and 93 percent of the acreage, respectively. Herbicides and other chemicals were applied to nearly the same percent of acreage, 40 and 41 percent, respectively. The most commonly used herbicide was glyphosate at 30 percent, while ethephon at 78 percent was the most widely applied other chemical. Azinphos-methyl, applied at 68 percent, was the most widely used insecticide, followed by phosmet at 65 percent. The leading fungicides used were chlorothalonil, sulfur, and tebuconazole applied to 83, 73, and 65 percent of the acreage.

Dates: California's date growers applied nitrogen to 62 percent of the acres. They also applied phosphate to 17 percent and potash to 7 percent. Insecticides were used on 12 percent of California's 5,300 acres, with malathion being the only insecticide active ingredient reported. There were insufficient reports to publish herbicide usage data.

Figs: California's fig growers applied nitrogen to 75 percent, phosphate to 5 percent, and potash to 9 percent of the acreage. Herbicides were used on 8 percent of the acres. Glyphosate and oxyfluorfen were the only two herbicides reported at 9 and 7 percent, respectively. There were insufficient reports to publish any other usage data.

Grapefruit: Nitrogen was applied to 85 percent of the grapefruit acreage in California, Florida, and Texas. Phosphate was applied to 69 percent, while potash, at 71 percent was applied at a slightly higher percentage. Insecticides were used on 83 percent of grapefruit acreage, followed by fungicides, herbicides, and other chemicals at 76, 64, and 7 percent, respectively. Petroleum distillate and copper hydroxide were the most commonly used insecticide and fungicide at 63 and 53 percent, respectively. The most widely used herbicide was glyphosate at 54 percent.

Grapes, All: Nitrogen was applied to 66 percent of the all grape acreage. Phosphate and potash were used on 18 and 42 percent of the acres, respectively. Michigan applied fertilizer to a higher percentage of acres than the other three Program States: California, New York, and Washington. Fungicides were applied to 68 percent of the acres, followed by herbicides, insecticides, or other chemicals. In the fungicide category, sulfur was the most commonly used material as it was applied to 62 percent of the acreage. Herbicide application was made to 47 percent of the acres overall, with glyphosate being the most commonly used on 41 percent of those acres. Percent of acres treated with insecticides was 42 percent. Imidacloprid was the leading insecticide used on 13 percent of the acres. Gibberellic acid, used mostly as an other chemical, was used to treat 10 percent of all grape acreage.

Grapes, Raisin: California's raisin grape growers applied nitrogen to 47 percent of their acreage. Phosphate and potash was used to treat 5 and 10 percent of the acres, respectively. Fungicides were applied to 61 percent of the raisin grapes, with sulfur, by far, the most commonly used at 58 percent. Herbicide applications were made on 42 percent of the acres, and glyphosate was the most widely used at 32 percent. Insecticides were used on 30 percent of the raisin grape acreage. Cryolite was the most frequently used insecticide, with 19 percent of the acres treated. Other chemicals were used to treat 19 percent of the acreage, with gibberellic acid being the most commonly used at 15 percent.

Grapes, Table: Nitrogen was applied to 91 percent of California's table grape acreage, followed by potash at 74 percent and phosphate at 43 percent. Fungicides were applied to 89 percent of California's table grape acreage. Insecticides were used on 56 percent of the acres. Herbicides were applied to 46 percent of the acreage, followed by other chemicals, which were used on 24 percent of the acreage. Sulfur, methomyl, glyphosate, and gibberellic acid were the most popular fungicide, insecticide, herbicide, and other chemical at 89, 28, 30, and 58 percent, respectively.

Grapes, Wine: California's wine grape growers treated 77 percent of their acreage with nitrogen, 59 percent with potash, and 21 percent with phosphate. Fungicides were used on 74 percent of the wine grape acreage. Sulfur was the most frequently used fungicide with, 73 percent of the acres treated. Herbicides, insecticides, and other chemicals were applied to 52, 45, and 8 percent, respectively. Glyphosate and petroleum distillate were most the commonly used herbicide and insecticide at 51 and 14 percent, respectively.

Kiwifruit: California's kiwifruit growers applied nitrogen to 80 percent of their acreage. They also applied phosphate to 39 percent and potash to 41 percent. Herbicides were applied to 8 percent of the kiwifruit acres. Glyphosate was the only reported active ingredient for herbicides and was used on 15 percent of the total acreage. Insecticides were used on 15 percent of the acres; however, due to insufficient reports, active ingredient data were not published.

Lemons: California growers treated 78 percent of the lemon acreage with nitrogen, while only 37 and 50 percent of their acreage was treated with phosphate and potash, respectively. Insecticides were used mostly on 61 percent of the acreage, followed by herbicides at 45 percent, fungicides at 27 percent, and other chemicals at 16 percent. Glyphosate, petroleum distillate, copper hydroxide, and metaldehyde were the most widely used herbicide, insecticide, fungicide, and other chemical at 59, 37, 9, and 19 percent, respectively.

Nectarines: In California, nitrogen was applied to 79 percent of the nectarine acreage, followed by potash at 48 percent and phosphate at 37 percent. Insecticides were applied to 78 percent of the acres; fungicide were applied at a slightly lower rate of 77 percent; 53 percent of the acres were treated with herbicides; and other chemicals were used on 17 percent of the acres. Petroleum distillate and phosmet were the most commonly used insecticides, based on percent of acres treated of 48 and 44 percent, respectively. Glyphosate and sulfur were the most widely used herbicide and fungicide at 62 and 34 percent, respectively. There were three active ingredients e-8-dodecenyl acetat, z-8-dodecanol, and z-8-dodecen acetate for other chemicals, all of which were applied at 24 percent.

Olives: California producers applied nitrogen fertilizer to 63 percent of the olive acreage. Phosphate and potash were applied to considerably smaller amounts at 10 and 12 percent, respectively. Herbicides were applied to 31 percent of California's olive acreage, with glyphosate at 27 percent the most commonly used. Insecticides were used on 41 percent of the acreage. Spinosad was the leading insecticide applied to the crop at 40 percent. Fungicides were applied to 24 percent of the California's olive acreage, with copper hydroxide being the most commonly used product on 17 percent of the acres.

Oranges excluding Temples: Florida and California growers applied nitrogen to 89 percent of the orange acreage. Potash was applied to 77 percent and phosphate to 60 percent. Insecticides were applied to 84 percent of the orange acreage, fungicides to 61 percent, and herbicides to 59 percent of the acreage. Petroleum distillate, glyphosate, and copper hydroxide were, by far, the most frequently used insecticide, herbicide, and fungicide at 76, 57, and 49 percent acres treated, respectively.

Peaches: Nitrogen was applied to 87 percent of the peach acreage in the Program States: California, Georgia, Michigan, New Jersey, Pennsylvania, South Carolina, and Texas. Phosphate was applied to 30 percent and potash to 50 percent of the acres. South Carolina applied nitrogen and potash to a higher percent of acres than any other Program State, while Texas applied phosphate at a higher percent of acres than the others. Insecticides were applied to 84 percent of the peach acreage, with Georgia treating their entire crop. Fungicide application was 80 percent, herbicide was 51 percent (with Georgia applying the smallest percentage), and other chemicals were only used on 9 percent of the acreage. Glyphosate, petroleum distillate, and sulfur were the most commonly applied herbicide, insecticide, and fungicide at 32, 43, and 52 percent, respectively. There were three active ingredients e-8-dodecenyl acetat, z-8-dodecanol, and z-8-dodecen acetate for other chemicals, all of which were applied at 16 percent.

Pears: Pear growers in the three Program States applied nitrogen to 83 percent of the acreage, while phosphate and potash were applied at a rate of 35 and 36 percent, respectively. Oregon applied more fertilizer than California and Washington on a percent acres treated basis. Herbicides, insecticides, fungicides, and other chemicals were applied to 32, 89, 85, and 20 percent of the acreage, respectively. California applied insecticides and fungicides to nearly 70 percent of their acreage each; this was lower than the other two Program States. The most commonly used herbicide, insecticide, fungicide, and other chemical were glyphosate at 30 percent, petroleum distillate at 80 percent, triflurazole at 48 percent, and NNA at 39 percent.

Plums: California's plum growers applied nitrogen to 78 percent of their acreage. They also applied phosphate to 54 percent and potash to 59 percent of the acres. Insecticides were used at a rate of 71 percent. Petroleum distillate was used as an insecticide on 42 percent of the plum acreage. Herbicides were applied to 56 percent of the plum acres. Glyphosate was the leading herbicide, used on 46 percent of the acreage. Fungicide usage was reported on 54 percent of the acreage, with propiconazole the most common at 26 percent of the acres. Other chemicals were applied to 10 percent of the acreage; there were three active ingredients reported as other chemicals, all of which were applied at 3 percent

Prunes: Nitrogen was applied to 73 percent of California's prune acreage, potash was applied to 38 percent, and phosphate was only applied to 8 percent of the acres. Insecticides were applied at a rate of 69 percent, followed by fungicides at 50 percent, herbicides at 41 percent, and other chemicals at 11 percent. Petroleum distillate, cyprodinil, and glyphosate were the most commonly used insecticide, fungicide, and herbicide at 45, 23, and 44 percent, respectively.

Raspberries: Oregon and Washington raspberry growers applied nitrogen to 94 percent of the acreage. Phosphate was applied at a slightly higher rate of 95 percent than nitrogen, while potash was used on 90 percent of the acres. Herbicides and insecticides were applied to 87 percent of the acreage each, while fungicides were applied at a rate of 93 percent. Paraquat and bifenthrin were the most commonly used herbicides and insecticides; both were applied at rate of 74 percent. A wide range of fungicides were used which included fludioxonil and cyprodinil on 81 percent, captan on 80 percent, and calcium polysulfide on 53 percent of the acreage.

Tangelos: Nitrogen and potash were applied to 89 percent of Florida's tangelo acres, while phosphate was only used on 60 percent of the acres. Insecticides were applied to 84 percent of the acres, followed by fungicides at 73 percent and herbicides at 62 percent. Petroleum distillate, copper hydroxide, and glyphosate were the most commonly used insecticide, fungicide, and herbicide at 81, 65, and 62 percent, respectively.

Tangerines: California and Florida tangerine growers applied nitrogen to 82 percent of the acreage. Phosphate was applied to 64 percent and potash to 74 percent of the acres. Insecticides were applied to 68 percent of the acres, followed by fungicides at 60 percent, herbicides at 46 percent, and other chemicals at 4 percent, respectively. Petroleum distillate, copper hydroxide, and glyphosate were the most commonly used insecticide, fungicide, and herbicide at 61, 50, and 45 percent, respectively.

Temples: Nearly all of Florida's temple acreage (99 percent) received nitrogen and potash applications, while phosphate was only used on 32 percent of the acreage. Insecticides and fungicides were applied to 96 and 95 percent of the acres, respectively. Herbicides were only used on 58 percent of the acres. Petroleum distillate and copper hydroxide were the most commonly used insecticide and fungicide on 95 and 94 percent of the acres, respectively. Glyphosate was the most widely used herbicide on 58 percent of the acreage.

Apples: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	27,000	70	1,616	12	164	16	263
MI	42,000	66	1,396	24	260	44	1,105
NY	41,000	66	1,321	33	566	71	1,857
NC	7,000	93	951	92	808	92	781
OR	6,500	81	253	50	56	53	49
PA	20,000	49	299	35	252	45	417
WA	162,000	74	6,114	26	729	24	810
Total	305,500	71	11,950	28	2,835	36	5,282

**Apples: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	27,000					
Nitrogen		70	1.2	68	85	1,616
Phosphate		12	2.1	23	50	164
Potash		16	1.0	60	62	263
Michigan	42,000					
Nitrogen		66	1.6	30	50	1,396
Phosphate		24	2.2	12	26	260
Potash		44	1.7	34	59	1,105
New York	41,000					
Nitrogen		66	1.3	36	49	1,321
Phosphate		33	1.3	31	42	566
Potash		71	1.1	55	64	1,857
North Carolina	7,000					
Nitrogen		93	1.2	116	146	951
Phosphate		92	1.0	115	125	808
Potash		92	1.0	117	121	781
Oregon	6,500					
Nitrogen		81	1.4	32	48	253
Phosphate		50	1.2	14	17	56
Potash		53	1.2	12	14	49
Pennsylvania	20,000					
Nitrogen		49	1.4	21	31	299
Phosphate		35	1.2	30	36	252
Potash		45	1.1	39	46	417
Washington	162,000					
Nitrogen		74	2.1	24	51	6,114
Phosphate		26	1.5	11	17	729
Potash		24	1.7	12	21	810
Total	305,500					
Nitrogen		71	1.8	30	55	11,950
Phosphate		28	1.5	21	33	2,835
Potash		36	1.4	33	48	5,282

**Apples: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States							
	ALL	CA	MI	NY	NC	OR	PA	WA
Herbicides								
2,4-D	P		P	P	*	*	P	P
2,4-D, Dimeth. salt	P		P	P	*	P	*	P
Acifluorfen	*			*				*
Atrazine	*							*
Dichlobenil	*						*	*
Difenzoquat	*			*				
Diuron	P	*	P	P	*	P	P	P
EPTC	*					*		
Ethofumesate	*			*				
Fenoxaprop	*			*				
Glufosinate-ammonium	P	*		*		*		*
Glyphosate	P	P	P	P	P	P	P	P
Glyphosate diam salt	*							*
Hexazinone	*			*				
MCPA	*			*				
Napropamide	*			*		*		*
Norflurazon	P	P	*	P		P	*	P
Oryzalin	P	*		*		P	*	P
Oxyfluorfen	P	P				P		P
Paraquat	P	P	P	P	*	*	P	P
Pendimethalin	P	*		*		*		P
Prometryn	*							*
Pronamide	*							*
Sethoxydim	*				*			
Simazine	P	P	P	P	*	*	P	P
Sulfosate	P	*	*	P		*		*
Terbacil	P		P	P	*	*	P	

See footnote(s) at end of table.

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**Apples: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States							
	ALL	CA	MI	NY	NC	OR	PA	WA
Insecticides								
Abamectin	P	P	P	*	*	P	P	P
Acetamiprid	P	*	P			P	*	P
Amitraz	*							*
Azadirachtin	P		*	*		*	*	*
Azinphos-methyl	P	P	P	P	P	P	P	P
Benzoic acid	P		P		P	P	P	P
Bifenazate	P	*	P	P		*	P	P
Bt (Bacillus thur.)	P	P	P	P	*	P	*	P
Carbaryl	P	P	P	P	P	P	P	P
Carbofuran	*						*	*
Chlorpyrifos	P	P	P	P	P	P	P	P
Clofentezine	P		P	P	*		*	P
Cyd-X Granulo. Virus	P					*		*
Cyfluthrin	*						*	*
Diazinon	P	P	*		*	*	P	P
Dicofol	P		*	*	*			*
Diflubenzuron	*							*
Dimethoate	P		P	P	P	P	*	*
Endosulfan	P	*	P	P	P	*	P	P
Esfenvalerate	P	P	P	P	P	*	P	*
Ethion	*							*
Ethyl parathion	P		*				*	*
Fenamiphos	*					*		
Fenbutatin-oxide	P	*	P	*	*			P
Fenpropathrin	P	P	P	P	P	*	P	*
Formetanate hydro.	P	*				*		P
Hexythiazox	P	*	P	P	P		*	*
Imidacloprid	P	P	P	P	P	P	P	P
Indoxacarb	P		P	P	P	*	P	*
Kaolin	P	P	*		*	P		P
Lambda-cyhalothrin	P		*	P			P	*
Lindane	*						*	*
Malathion	P			*	*	*		*
Methidathion	P	*	*				*	*
Methomyl	P	*	P	P	*		P	*
Methoxychlor	*			*				
Methyl parathion	P		*				*	*
Oxamyl	P	*	*		*		P	*
Oxythioquinox	*							*
Permethrin	P		P	*	P	*	P	*
Petroleum distillate	P	P	P	P	P	P	P	P
Petroleum oil	*					*	*	
Phosalone	*			*				
Phosmet	P	P	P	P	P	P	P	P
Phosphamidon	*							*
Piperonyl butoxide	*		*	*				*
Potassium salts	*							*
Pyrethrins	P	*	*	*				P
Pyridaben	P		P	P	*	*	P	P
Pyriproxyfen	P	*	*	*	*	*		P
Ryania	*							*
Spinosad	P	*	P	P		P	*	P
Tebufoenozide	P	*	*	P	P	*	*	*
Thiamethoxam	P	*	P	P	P	*	*	P
Trichlorfon	*			*			*	

See footnote(s) at end of table.

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**Apples: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States							
	ALL	CA	MI	NY	NC	OR	PA	WA
Fungicides								
Bacillus subtilus	P		*			*		P
Basic copper sulfate	P	*	P	P		*	P	P
Benomyl	P		*	*	P	*	P	
Calcium polysulfide	P	P	P		P	P		P
Captan	P		P	P	P	P	P	P
Carboxin	*			*				
Chlorothalonil	P	*	*	*	*	*		
Copper chloride hyd.	P		*		*	*		*
Copper hydroxide	P	P	P	P	P	P	P	P
Copper oxychloro. sul.	P		P	*			*	
Copper oxychloride	P	*	P	P			*	
Copper resinate	*		*	*				
Copper sulfate	P		P	*	*	P	*	*
Cyprodinil	P	*	P	P	P	P	P	*
Dicloran	*					*		
Dodine	P		P	*	P	P	*	
Fenarimol	P	P	P	P	P	P	P	P
Fenbuconazole	*					*		
Ferbam	P		*	*	*			
Flutolanil	*			*				
Fosetyl-al	P	*	*	*		*		P
Iprodione	*					*		
Kresoxim-methyl	P	P	P	P	P	P	P	P
Mancozeb	P	P	P	P	P	P	P	P
Maneb	P	*	P	*		*	P	*
Mefenoxam	P	*				*		P
Metalaxyl	*		*	*				
Metiram	P		P	P	P	*	*	
Myclobutanil	P	P	P	P	P	P	P	P
Oxytetracycline	P	*	P			*	*	P
Phosphorous acid	*			*			*	*
Potassium bicarbon.	P			*		*		P
Propiconazole	P		*	*				*
Pseudomonas fluores.	P	*				*		P
Pyraclostrobin	*							*
Streptomycin	P	P	P	P	P	P	P	P
Streptomycin sulfate	P	P	P					
Sulfur	P	P	P	P	P	P	P	P
Tebuconazole	*					*	*	
Thiophanate-methyl	P	*	P	P	P		P	*
Thiram	P	*	P	P	*	P	P	P
Triadimefon	P		P	*	*	P		P
Trifloxystrobin	P	P	P	P	P	P	P	P
Triflumizole	P	*		*		P	P	P
Vinclozolin	*							*
Zineb	*				*			
Ziram	P	*	P	P	P	*	P	P

See footnote(s) at end of table.

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**Apples: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States							
	ALL	CA	MI	NY	NC	OR	PA	WA
Other Chemicals								
Aluminum phosphide	*							*
Benzyladenine	P	P	P	*	*	P	P	P
Butenoic Acid Hydro.	P		P	P	*	*	P	P
Chlorophacinone	P	*		*				*
Chloropicrin	*	*						*
Cytokinins	P			*		*		P
DNOC	*							*
Decenol	*							*
Decenyl acetate	*							*
Dichloropropene	*	*						*
Dodecadien-1-ol	P	P	*			*		P
Dodecanol	P	*	*			P		P
E-8-Dodecenyl acetat	P	*	*					*
Ethephon	P	*	*	P	*	P	P	P
Gibberellic acid	P		P	P	*		*	P
Gibberellins A4A7	P	P	P	*	*	P	P	P
Harpin protein	*							*
Hydrogen peroxide	*				*			
Lactic acid	*						*	
Maleic hydrazide	*	*						
Methyl bromide	*	*						
Monocarbamide dihyd.	P			*		*		*
NAA	P	P	P	P	P	P	P	P
NAD	P	P	P			P		P
Prohexadione calcium	P	*	P	P	*	P	P	P
Strychnine	P	*			*	*		*
Tetradecanol	P	*	*			P		P
Tetradecen-1-OL (Z)	P		*					*
Tetradecen-1-yl (E)	*		*					
Z-8-Dodecanol	P	*	*					*
Z-8-Dodecen acetate	P	*	*					*
Zinc phosphide	P		*	P		*		P

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

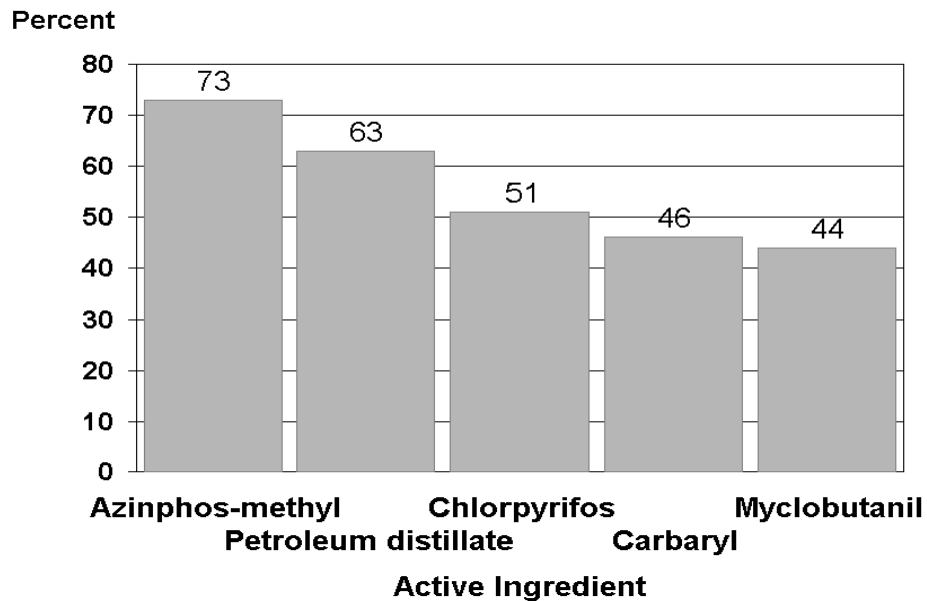
**Apples: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide ¹		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	27,000	35	15.9	73	596.2	71	98.1	7	8.3
MI	42,000	36	35.5	92	474.9	92	1,113.0	15	2.1
NY	41,000	61	85.4	97	669.5	97	1,082.1	19	3.4
NC	7,000	2	0.2	99	258.2	98	460.6	2	*
OR	6,500	55	21.8	92	255.9	89	55.8	44	1.7
PA	20,000	34	17.2	86	288.5	80	219.7	13	1.2
WA	162,000	42	210.2	99	6,760.3	92	1,832.9	23	117.9
Total	305,500	42	386.3	94	9,303.6	90	4,862.0	20	134.1

* Total applied is less than 50 pounds.

¹ Total Applied excludes Bt's (Bacillus thuringiensis) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Apples - Percent of Acres Treated
Top 5 Active Ingredients for 2003**



Surveyed States are CA, MI, NY, NC, OR, PA, and WA

**Apples: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	6	1.2	0.74	0.92	17.8
2,4-D, Dimeth. salt	5	1.1	0.82	0.91	13.9
Diuron	7	1.1	1.09	1.22	27.6
Glufosinate-ammonium	*	1.1	0.44	0.49	0.6
Glyphosate	32	1.6	1.06	1.74	172.1
Norflurazon	7	1.0	1.38	1.46	29.1
Oryzalin	*	1.1	1.80	2.00	2.4
Oxyfluorfen	4	1.1	0.50	0.55	7.1
Paraquat	13	1.3	0.64	0.85	33.9
Pendimethalin	*	1.4	1.60	2.35	2.2
Simazine	10	1.1	1.65	1.84	58.9
Sulfosate	1	1.2	1.86	2.25	10.0
Terbacil	4	1.0	0.26	0.26	3.3

See footnote(s) at end of table.

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**Apples: Agricultural Chemical Applications,
Program States, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Insecticides					
Abamectin	5	1.2	0.01	0.01	0.2
Acetamiprid	18	1.4	0.10	0.14	7.7
Azadirachtin	*	1.0	0.02	0.02	(²)
Azinphos-methyl	73	2.8	0.82	2.33	522.9
Benzoic acid	30	1.3	0.14	0.20	17.9
Bifenazate	5	1.1	0.36	0.42	6.2
Bt (Bacillus thur.) ³	13	1.8			
Carbaryl	46	1.4	1.25	1.76	245.4
Chlorpyrifos	51	1.1	1.59	1.84	286.5
Clofentezine	4	1.1	0.11	0.12	1.6
Cyd-X Granulo. Viru ³	3	1.4			
Diazinon	6	1.8	0.77	1.45	27.9
Dicofol	*	1.0	1.35	1.41	3.0
Dimethoate	2	1.6	0.77	1.27	7.3
Endosulfan	10	1.1	1.51	1.75	52.5
Esfenvalerate	11	1.5	0.04	0.06	1.9
Ethyl parathion	*	1.1	0.15	0.17	0.1
Fenbutatin-oxide	*	1.1	0.72	0.81	2.4
Fenpropathrin	12	1.9	0.21	0.40	14.6
Formetanate hydro.	12	1.0	0.53	0.56	20.7
Hexythiazox	4	1.0	0.15	0.15	1.6
Imidacloprid	38	1.5	0.05	0.08	9.2
Indoxacarb	3	1.6	0.07	0.11	1.0
Kaolin	8	1.5	28.61	42.93	1,053.1
Lambda-cyhalothrin	8	2.0	0.03	0.05	1.3
Malathion	*	1.7	0.30	0.52	0.8
Methidathion	*	1.0	0.84	0.90	0.9
Methomyl	7	1.4	0.62	0.90	19.9
Methyl parathion	*	1.1	0.08	0.08	0.1
Oxamyl	*	1.1	0.39	0.46	0.8
Permethrin	3	1.4	0.10	0.14	1.3
Petroleum distillate	63	1.7	19.33	34.52	6,648.6
Phosmet	28	2.3	1.56	3.67	319.3
Pyrethrins	1	1.6	0.04	0.07	0.2
Pyridaben	11	1.1	0.17	0.19	6.5
Pyriproxyfen	1	1.0	0.07	0.07	0.2
Spinosad	31	1.4	0.10	0.14	13.1
Tebufenozide	2	1.3	0.24	0.33	1.7
Thiamethoxam	6	1.1	0.06	0.07	1.3

See footnote(s) at end of table.

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**Apples: Agricultural Chemical Applications,
Program States, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Bacillus subtilus ³	*	1.0			
Basic copper sulfate	6	1.2	0.77	0.93	17.9
Benomyl	1	2.6	0.07	0.19	0.6
Calcium polysulfide	16	1.4	15.02	20.98	997.8
Captan	33	5.4	1.55	8.45	852.0
Chlorothalonil	1	2.3	0.53	1.25	4.6
Copper chloride hyd.	*	1.5	2.14	3.36	1.2
Copper hydroxide	13	1.2	1.95	2.42	94.2
Copper oxychloro. sul.	2	1.2	0.21	0.25	1.2
Copper oxychloride	11	1.1	1.06	1.24	42.3
Copper sulfate	2	1.4	1.04	1.49	7.1
Cyprodinil	4	1.4	0.15	0.22	2.9
Dodine	6	1.4	0.29	0.43	7.3
Fenarimol	22	1.6	0.06	0.10	7.0
Ferbam	*	1.0	0.60	0.60	0.8
Fosetyl-al	2	1.4	1.99	2.86	19.8
Kresoxim-methyl	13	1.8	0.12	0.23	8.8
Mancozeb	32	3.3	2.39	7.96	786.3
Maneb	*	3.1	2.51	7.98	20.0
Mefenoxam	*	1.6	0.80	1.35	1.5
Metiram	25	3.5	0.79	2.78	210.8
Myclobutanil	44	2.1	0.10	0.22	29.1
Oxytetracycline	6	1.2	0.15	0.20	3.6
Potassium bicarbon.	3	1.1	1.64	1.89	14.7
Propiconazole	1	1.4	0.07	0.09	0.3
Pseudomonas fluores.	3	1.4	0.15	0.22	2.2
Streptomycin	15	1.8	0.14	0.25	11.5
Streptomycin sulfate	1	3.2	0.06	0.21	0.7
Sulfur	28	2.2	6.69	14.79	1,282.5
Thiophanate-methyl	15	3.0	0.38	1.17	54.0
Thiram	7	2.2	2.06	4.54	98.0
Triadimefon	6	2.0	0.10	0.20	3.9
Trifloxystrobin	22	1.5	0.06	0.10	6.5
Triflumizole	26	1.4	0.19	0.28	21.8
Ziram	13	2.2	2.83	6.25	241.7

See footnote(s) at end of table.

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**Apples: Agricultural Chemical Applications,
Program States, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Other Chemicals					
Benzyladenine	18	1.1	0.03	0.03	1.8
Butenoic Acid Hydro.	7	1.0	0.08	0.09	2.0
Chlorophacinone	*	1.0	(⁴)	(⁴)	(²)
Cytokinins	2	1.2	(⁴)	(⁴)	(²)
Dodecadien-1-ol	25	1.1	0.04	0.04	3.4
Dodecanol	23	1.0	0.02	0.02	1.6
E-8-Dodecenyl acetat	*	1.1	0.01	0.02	(²)
Ethephon	18	1.8	0.42	0.77	42.3
Gibberellic acid	2	1.4	0.02	0.03	0.2
Gibberellins A4A7	18	1.1	0.02	0.03	1.4
Monocarbamide dihyd.	*	1.0	7.34	7.80	21.5
NAA	34	1.3	0.02	0.03	3.1
NAD	10	1.1	0.05	0.06	1.7
Prohexadione calcium	10	1.6	0.23	0.37	11.5
Strychnine	*	1.0	0.006	0.007	(²)
Tetradecanol	23	1.0	0.005	0.005	0.3
Tetradecen-1-OL (Z)	2	1.3	0.05	0.07	0.4
Z-8-Dodecanol	*	1.1	0.003	0.003	(²)
Z-8-Dodecen acetate	*	1.1	0.23	0.25	0.5
Zinc phosphide	4	1.0	0.09	0.09	1.1

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 7 program states were 305,500 acres.
States included are CA, MI, NY, NC, OR, PA, and WA.

² Total applied is less than 50 lbs.

³ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

⁴ Rate per acre is less than 0.0005 lbs.

**Apples: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	8	1.1	0.86	0.99	2.2
Norflurazon	2	1.1	0.66	0.78	0.5
Oxyfluorfen	18	1.0	0.52	0.56	2.7
Paraquat	12	1.4	0.55	0.81	2.5
Simazine	13	1.0	1.90	2.04	7.4
Insecticides					
Abamectin	22	1.1	0.01	0.01	0.1
Azinphos-methyl	53	1.5	1.09	1.67	24.1
Bt (Bacillus thur.) ²	6	1.1			
Carbaryl	17	1.3	1.88	2.60	12.2
Chlorpyrifos	12	1.2	1.62	2.08	6.8
Diazinon	23	1.2	1.54	1.95	12.3
Esfenvalerate	9	1.6	0.05	0.07	0.2
Fenpropathrin	12	1.3	0.36	0.49	1.6
Imidacloprid	4	1.1	0.04	0.05	(³)
Kaolin	4	1.8	25.52	47.12	50.9
Petroleum distillate	56	1.2	24.25	30.37	456.2
Phosmet	28	1.3	2.97	3.88	29.1
Fungicides					
Calcium polysulfide	7	1.5	13.87	21.12	41.1
Copper hydroxide	16	1.1	1.91	2.18	9.2
Fenarimol	4	1.3	0.08	0.10	0.1
Kresoxim-methyl	5	1.4	0.16	0.24	0.3
Mancozeb	13	2.0	2.30	4.72	16.9
Myclobutanil	17	1.7	0.10	0.17	0.8
Streptomycin	34	1.8	0.13	0.25	2.3
Streptomycin sulfate	2	3.7	0.32	1.21	0.6
Sulfur	5	2.3	5.82	13.64	19.5
Trifloxystrobin	31	1.3	0.06	0.09	0.7
Other Chemicals					
Benzyladenine	2	1.0	0.02	0.03	(³)
Dodecadien-1-ol	3	1.6	0.03	0.04	(³)
Gibberellins A4A7	2	1.0	0.02	0.03	(³)
NAA	4	1.2	0.04	0.05	0.1
NAD	4	1.3	0.06	0.08	0.1

¹ Total acres in 2003 for California were 27,000 acres. Acreage includes both bearing and nonbearing 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 lbs.

**Apples: Agricultural Chemical Applications,
Michigan, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	6	1.2	0.86	1.08	2.9
2,4-D, Dimeth. salt	10	1.0	0.76	0.76	3.0
Diuron	8	1.2	0.98	1.20	4.1
Glyphosate	32	1.2	0.81	1.02	13.6
Paraquat	8	1.3	0.54	0.71	2.5
Simazine	10	1.1	1.65	1.84	7.5
Terbacil	5	1.0	0.52	0.53	1.1
Insecticides					
Abamectin	9	1.1	0.01	0.01	0.1
Acetamiprid	9	1.0	0.07	0.08	0.3
Azinphos-methyl	86	4.3	0.68	2.91	105.3
Benzoic acid	34	1.6	0.17	0.29	4.1
Bifenazate	11	1.3	0.43	0.57	2.6
Bt (Bacillus thur.) ²	14	2.5			
Carbaryl	39	1.5	1.07	1.70	27.7
Chlorpyrifos	57	1.1	0.96	1.14	27.2
Clofentezine	14	1.1	0.12	0.14	0.8
Dimethoate	4	2.0	0.85	1.72	2.9
Endosulfan	7	1.2	1.11	1.38	4.2
Esfenvalerate	41	1.5	0.04	0.06	1.0
Fenbutatin-oxide	1	1.0	0.96	0.98	0.4
Fenpropathrin	17	1.5	0.27	0.41	2.9
Hexythiazox	3	1.1	0.12	0.14	0.2
Imidacloprid	38	1.5	0.05	0.07	1.2
Indoxacarb	3	1.0	0.06	0.06	0.1
Methomyl	19	1.3	0.81	1.12	8.9
Permethrin	9	1.1	0.15	0.16	0.6
Petroleum distillate	20	1.0	18.62	19.97	169.5
Phosmet	69	2.5	1.49	3.75	109.5
Pyridaben	26	1.1	0.14	0.17	1.9
Spinosad	15	1.5	0.10	0.16	1.0
Thiamethoxam	10	1.3	0.05	0.07	0.3

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**Apples: Agricultural Chemical Applications,
Michigan, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Basic copper sulfate	21	1.2	0.92	1.15	10.0
Calcium polysulfide	1	1.5	8.21	12.71	6.6
Captan	82	5.2	1.80	9.51	325.7
Copper hydroxide	8	1.2	1.41	1.78	6.2
Copper oxychlo. sul.	3	1.3	0.47	0.61	0.7
Copper oxychloride	18	1.1	2.26	2.62	19.8
Copper sulfate	6	1.6	0.73	1.17	2.7
Cyprodinil	12	1.5	0.12	0.19	1.0
Dodine	3	1.3	0.97	1.28	1.7
Fenarimol	13	3.0	0.05	0.16	0.8
Kresoxim-methyl	31	1.8	0.11	0.21	2.7
Mancozeb	67	4.0	2.54	10.32	292.1
Maneb	3	3.9	3.24	12.83	17.4
Metiram	19	3.0	2.72	8.41	67.1
Myclobutanil	43	2.8	0.11	0.30	5.5
Oxytetracycline	2	1.0	0.23	0.23	0.2
Streptomycin	32	1.8	0.13	0.23	3.1
Streptomycin sulfate	*	2.4	0.18	0.46	0.1
Sulfur	29	4.1	4.17	17.24	211.2
Thiophanate-methyl	8	2.3	0.45	1.09	3.5
Thiram	7	2.8	2.36	6.70	19.4
Triadimefon	18	2.7	0.06	0.16	1.2
Trifloxystrobin	26	1.7	0.06	0.10	1.1
Ziram	31	2.8	2.98	8.60	112.5
Other Chemicals					
Benzyladenine	7	1.0	0.03	0.04	0.1
Butenoic Acid Hydro.	2	1.0	0.08	0.08	0.1
Gibberellic acid	3	1.0	0.01	0.01	(³)
Gibberellins A4A7	7	1.0	0.007	0.007	(³)
NAA	25	1.2	0.02	0.02	0.2
NAD	2	1.0	0.08	0.08	0.1
Prohexadione calcium	12	1.6	0.15	0.24	1.3

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for Michigan were 42,000 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 lbs.

**Apples: Agricultural Chemical Applications,
New York, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	10	1.1	0.99	1.16	4.8
2,4-D, Dimeth. salt	7	1.2	1.25	1.59	4.8
Diuron	22	1.1	1.16	1.39	12.6
Glyphosate	38	1.2	1.14	1.38	21.5
Norflurazon	2	1.0	1.59	1.62	1.7
Paraquat	20	1.2	0.77	0.98	7.8
Simazine	26	1.1	1.50	1.69	18.0
Sulfosate	9	1.2	2.12	2.59	9.0
Terbacil	5	1.0	0.84	0.84	1.7
Insecticides					
Azinphos-methyl	64	2.6	0.59	1.57	41.5
Bifenazate	8	1.0	0.38	0.39	1.3
Bt (Bacillus thur.) ²	40	2.0			
Carbaryl	60	1.3	0.90	1.22	30.1
Chlorpyrifos	32	1.0	1.05	1.09	14.5
Clofentezine	2	1.0	0.18	0.18	0.2
Dimethoate	4	1.3	1.00	1.33	2.4
Endosulfan	27	1.2	1.27	1.55	16.8
Esfenvalerate	18	1.4	0.04	0.06	0.5
Fenpropathrin	49	2.1	0.19	0.40	8.0
Hexythiazox	6	1.0	0.09	0.09	0.2
Imidacloprid	33	1.4	0.05	0.07	1.0
Indoxacarb	7	1.3	0.10	0.14	0.4
Lambda-cyhalothrin	41	2.0	0.03	0.07	1.2
Methomyl	22	1.1	0.81	0.94	8.3
Petroleum distillate	51	1.3	16.28	22.51	467.6
Phosmet	42	3.2	1.24	4.01	68.8
Pyridaben	15	1.0	0.16	0.17	1.1
Spinosad	46	1.4	0.08	0.11	2.1
Tebufenozide	8	1.1	0.23	0.26	0.9
Thiamethoxam	23	1.0	0.06	0.06	0.6

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**Apples: Agricultural Chemical Applications,
New York, 2003 ¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Basic copper sulfate	10	1.0	0.91	0.93	3.7
Captan	93	5.5	1.77	9.85	376.2
Copper hydroxide	28	1.2	2.34	2.91	33.7
Copper oxychloride	10	1.0	3.25	3.30	13.0
Cyprodinil	3	1.0	0.19	0.19	0.2
Fenarimol	34	2.1	0.06	0.13	1.9
Kresoxim-methyl	26	1.9	0.13	0.26	2.8
Mancozeb	82	3.8	2.22	8.46	286.2
Metiram	29	2.7	2.42	6.68	79.3
Myclobutanil	45	1.9	0.11	0.21	3.9
Streptomycin	28	1.8	0.15	0.27	3.2
Sulfur	33	3.0	4.65	14.22	190.0
Thiophanate-methyl	60	2.4	0.39	0.96	23.7
Thiram	19	1.9	2.08	4.10	31.3
Trifloxystrobin	45	1.7	0.07	0.11	2.1
Ziram	12	1.3	2.73	3.79	18.3
Other Chemicals					
Butenoic Acid Hydro.	3	1.0	0.10	0.11	0.1
Ethephon	3	1.1	0.17	0.20	0.2
Gibberellic acid	3	2.3	0.03	0.07	0.1
NAA	44	1.4	0.01	0.02	0.4
Prohexadione calcium	8	2.2	0.19	0.42	1.3
Zinc phosphide	6	1.1	0.10	0.11	0.3

¹ Bearing acres in 2003 for New York were 41,000 acres.

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

**Apples: Agricultural Chemical Applications,
North Carolina, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	2	1.9	0.71	1.35	0.2
Insecticides					
Azinphos-methyl	77	4.0	1.61	6.44	34.8
Benzoic acid	26	1.3	0.18	0.23	0.4
Carbaryl	21	1.1	1.16	1.29	1.9
Chlorpyrifos	46	1.0	1.85	1.93	6.3
Dimethoate	5	2.5	0.91	2.28	0.9
Endosulfan	3	1.6	1.10	1.82	0.3
Esfenvalerate	24	2.4	0.05	0.11	0.2
Fenpropathrin	28	2.1	0.26	0.55	1.1
Hexythiazox	5	1.0	0.12	0.12	(²)
Imidacloprid	38	1.8	0.05	0.09	0.2
Indoxacarb	16	2.6	0.09	0.25	0.3
Permethrin	16	1.0	0.13	0.13	0.1
Petroleum distillate	62	1.0	44.32	45.17	195.9
Phosmet	54	2.5	1.46	3.78	14.4
Tebufenozide	12	2.5	0.27	0.71	0.6
Thiamethoxam	5	1.0	0.07	0.07	(²)
Fungicides					
Benomyl	*	3.1	0.13	0.40	(²)
Calcium polysulfide	3	1.9	1.44	2.77	0.6
Captan	78	5.1	2.70	13.84	75.3
Copper hydroxide	7	3.9	0.68	2.68	1.3
Cyprodinil	33	1.2	0.24	0.28	0.7
Dodine	21	1.1	1.36	1.53	2.2
Fenarimol	16	3.5	0.06	0.19	0.2
Kresoxim-methyl	41	2.2	0.15	0.33	0.9
Mancozeb	48	3.6	2.84	10.45	35.4
Metiram	49	5.2	2.10	10.94	37.7
Myclobutanil	47	3.4	0.12	0.41	1.3
Streptomycin	23	2.1	0.05	0.10	0.2
Sulfur	42	4.6	18.62	86.85	254.6
Thiophanate-methyl	73	4.1	0.76	3.12	15.9
Trifloxystrobin	32	1.9	0.06	0.11	0.2
Ziram	51	2.8	3.29	9.36	33.5
Other Chemicals					
NAA	4	1.6	0.002	0.004	(²)

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for North Carolina were 7,000 acres.

² Total applied is less than 50 lbs.

**Apples: Agricultural Chemical Applications,
Oregon, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D, Dimeth. salt	32	1.0	0.86	0.92	1.9
Diuron	38	1.0	1.00	1.00	2.5
Glyphosate	50	2.2	1.42	3.22	10.5
Norflurazon	35	1.0	1.59	1.60	3.7
Oryzalin	4	1.0	3.82	3.82	1.0
Oxyfluorfen	3	1.0	0.71	0.71	0.1
Insecticides					
Abamectin	4	1.0	0.01	0.02	(²)
Acetamiprid	33	1.0	0.14	0.15	0.3
Azinphos-methyl	56	1.9	0.84	1.64	5.9
Benzoic acid	17	1.0	0.23	0.25	0.3
Bt (Bacillus thur.) ³	2	1.3			
Carbaryl	57	1.3	0.88	1.21	4.5
Chlorpyrifos	73	1.0	1.87	1.97	9.3
Dimethoate	15	1.0	0.61	0.64	0.6
Imidacloprid	45	1.2	0.08	0.10	0.3
Kaolin	11	1.6	24.38	39.20	28.0
Petroleum distillate	85	1.8	19.18	36.03	198.3
Phosmet	26	1.8	2.27	4.25	7.2
Spinosad	56	1.0	0.10	0.11	0.4
Fungicides					
Calcium polysulfide	7	1.5	15.70	24.63	11.3
Captan	4	3.8	2.42	9.34	2.6
Copper hydroxide	16	1.1	4.70	5.33	5.6
Copper sulfate	1	1.3	0.84	1.15	0.1
Cyprodinil	16	1.2	0.21	0.25	0.3
Dodine	18	1.6	1.07	1.78	2.1
Fenarimol	12	2.0	0.07	0.14	0.1
Kresoxim-methyl	3	1.8	0.14	0.25	(²)
Mancozeb	24	1.8	3.19	5.91	9.1
Myclobutanil	57	1.7	0.11	0.20	0.7
Streptomycin	37	1.2	0.24	0.29	0.7
Sulfur	23	1.6	5.47	9.03	13.5
Thiram	6	1.0	3.44	3.46	1.3
Triadimefon	17	1.0	0.16	0.16	0.2
Trifloxystrobin	6	1.5	0.07	0.11	(²)
Triflumizole	30	1.1	0.26	0.30	0.6

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**Apples: Agricultural Chemical Applications,
Oregon, 2003 ¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Other Chemicals					
Benzyladenine	30	1.0	0.03	0.03	0.1
Dodecanol	43	1.0	0.03	0.03	0.1
Ethephon	18	1.0	0.37	0.38	0.5
Gibberellins A4A7	30	1.0	0.03	0.03	0.1
NAA	44	1.2	0.03	0.04	0.1
NAD	21	1.0	0.03	0.03	(²)
Prohexadione calcium	8	1.9	0.17	0.32	0.2
Tetradecanol	43	1.0	0.006	0.007	(²)

¹ Bearing acres in 2003 for Oregon were 6,500 acres.

² Total applied is less than 50 lbs.

³ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

**Apples: Agricultural Chemical Applications,
Pennsylvania, 2003¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	12	1.0	0.76	0.78	1.9
Diuron	15	1.0	1.19	1.23	3.6
Glyphosate	7	1.1	0.91	1.01	1.4
Paraquat	25	1.2	0.46	0.56	2.9
Simazine	14	1.0	1.40	1.53	4.3
Terbacil	4	1.0	0.59	0.61	0.4
Insecticides					
Abamectin	12	1.7	0.004	0.008	(²)
Azinphos-methyl	62	6.3	0.28	1.77	22.1
Benzoic acid	36	2.0	0.11	0.21	1.5
Bifenazate	8	1.4	0.17	0.25	0.4
Carbaryl	25	1.3	0.96	1.30	6.5
Chlorpyrifos	27	1.4	0.67	0.99	5.4
Diazinon	35	2.7	0.51	1.38	9.7
Endosulfan	7	1.5	0.83	1.30	1.8
Esfenvalerate	19	1.5	0.02	0.03	0.1
Fenpropathrin	17	1.8	0.13	0.23	0.8
Imidacloprid	42	2.4	0.03	0.07	0.6
Indoxacarb	10	1.9	0.04	0.09	0.2
Lambda-cyhalothrin	13	1.6	0.009	0.01	(²)
Methomyl	19	2.3	0.20	0.47	1.8
Oxamyl	4	1.2	0.40	0.51	0.4
Permethrin	12	2.1	0.08	0.17	0.4
Petroleum distillate	42	1.3	19.25	25.53	214.4
Phosmet	37	3.8	0.70	2.65	19.7
Pyridaben	7	1.1	0.10	0.12	0.2
Fungicides					
Basic copper sulfate	14	1.4	0.60	0.88	2.4
Benomyl	2	2.2	0.32	0.71	0.3
Captan	60	6.1	0.92	5.67	67.8
Copper hydroxide	10	1.0	2.49	2.61	5.5
Cyprodinil	15	1.5	0.14	0.21	0.6
Fenarimol	12	4.4	0.03	0.15	0.4
Kresoxim-methyl	13	3.2	0.08	0.27	0.7
Mancozeb	35	4.6	1.23	5.70	40.4
Maneb	*	4.8	1.22	5.96	0.9
Myclobutanil	46	4.6	0.05	0.25	2.3
Streptomycin	9	1.8	0.09	0.17	0.3
Sulfur	11	2.5	2.67	6.88	15.3
Thiophanate-methyl	53	4.3	0.21	0.94	10.0
Thiram	18	4.5	1.34	6.12	21.5
Trifloxystrobin	14	2.7	0.02	0.07	0.2
Triflumizole	12	3.9	0.09	0.37	0.8
Ziram	17	4.6	1.09	5.05	16.9

See footnote(s) at end of table.

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**Apples: Agricultural Chemical Applications,
Pennsylvania, 2003 ¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Other Chemicals					
Benzyladenine	8	1.3	0.03	0.05	0.1
Butenoic Acid Hydro.	3	1.0	0.08	0.09	0.1
Ethephon	12	1.4	0.19	0.27	0.7
Gibberellins A4A7	8	1.3	0.01	0.01	(²)
NAA	18	1.1	0.02	0.02	0.1
Prohexadione calcium	4	2.3	0.10	0.24	0.2

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for Pennsylvania were 20,000 acres.

² Total applied is less than 50 lbs.

**Apples: Agricultural Chemical Applications,
Washington, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	5	1.3	0.74	0.98	8.1
2,4-D, Dimeth. salt	2	1.1	0.79	0.89	3.2
Diuron	3	1.0	1.05	1.06	4.8
Glyphosate	39	1.8	1.07	1.94	122.8
Norflurazon	8	1.0	1.44	1.53	20.9
Oryzalin	*	1.2	1.80	2.16	1.2
Oxyfluorfen	2	1.1	1.14	1.30	4.3
Paraquat	12	1.3	0.67	0.89	17.2
Pendimethalin	*	2.3	1.29	3.05	0.7
Simazine	6	1.1	1.84	2.10	20.7
Insecticides					
Abamectin	1	1.0	0.01	0.01	(²)
Acetamiprid	25	1.4	0.12	0.17	7.1
Azinphos-methyl	78	2.2	1.01	2.29	289.2
Benzoic acid	29	1.1	0.21	0.25	11.6
Bifenazate	3	1.0	0.37	0.40	1.7
Bt (Bacillus thur.) ³	9	1.4			
Carbaryl	52	1.4	1.38	1.94	162.5
Chlorpyrifos	63	1.1	1.85	2.12	217.0
Clofentezine	2	1.0	0.12	0.13	0.4
Diazinon	2	1.2	1.59	1.98	5.1
Endosulfan	9	1.0	1.93	2.03	28.4
Fenbutatin-oxide	1	1.0	0.76	0.78	1.6
Formetanate hydro.	14	1.0	0.83	0.87	20.0
Imidacloprid	45	1.4	0.05	0.08	5.8
Kaolin	11	1.4	37.04	54.59	973.6
Petroleum distillate	80	2.0	18.90	38.02	4,946.7
Phosmet	12	1.2	2.90	3.50	70.7
Pyrethrins	1	1.6	0.06	0.09	0.2
Pyridaben	8	1.0	0.25	0.26	3.2
Pyriproxyfen	*	1.0	0.08	0.08	0.1
Spinosad	40	1.4	0.10	0.15	9.5
Thiamethoxam	2	1.2	0.07	0.09	0.3

See footnote(s) at end of table.

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**Apples: Agricultural Chemical Applications,
Washington, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Bacillus subtilus ³	*	1.0			
Basic copper sulfate	2	1.2	0.39	0.47	1.4
Calcium polysulfide	22	1.3	19.42	26.84	938.2
Captan	*	1.1	2.69	3.04	4.4
Copper hydroxide	10	1.2	1.71	2.06	32.8
Fenarimol	27	1.1	0.07	0.08	3.5
Fosetyl-al	3	1.3	2.34	3.14	17.5
Kresoxim-methyl	5	1.0	0.15	0.16	1.3
Mancozeb	13	1.3	3.70	5.07	106.0
Mefenoxam	*	1.6	1.51	2.50	1.5
Myclobutanil	48	1.6	0.11	0.19	14.5
Oxytetracycline	9	1.3	0.18	0.24	3.4
Potassium bicarbon.	3	1.1	2.40	2.76	14.4
Pseudomonas fluores.	4	1.4	0.24	0.36	2.1
Streptomycin	3	1.6	0.21	0.34	1.7
Sulfur	33	1.4	7.70	10.88	578.5
Thiram	4	1.0	3.28	3.43	23.9
Triadimefon	5	1.4	0.23	0.33	2.4
Trifloxystrobin	15	1.1	0.07	0.08	2.1
Triflumizole	37	1.3	0.24	0.33	19.5
Ziram	8	1.0	3.90	4.27	57.1
Other Chemicals					
Benzyladenine	29	1.1	0.03	0.03	1.5
Butenoic Acid Hydro.	11	1.0	0.09	0.10	1.7
Cytokinins	3	1.2	(⁴)	(⁴)	(²)
Dodecadien-1-ol	34	1.0	0.05	0.06	3.2
Dodecanol	31	1.0	0.03	0.03	1.5
Ethephon	30	1.9	0.44	0.83	40.8
Gibberellic acid	1	1.1	0.02	0.02	(²)
Gibberellins A4A7	28	1.1	0.02	0.03	1.3
NAA	41	1.3	0.03	0.03	2.3
NAD	13	1.1	0.06	0.07	1.5
Prohexadione calcium	13	1.5	0.28	0.41	8.4
Tetradecanol	31	1.0	0.006	0.006	0.3
Zinc phosphide	3	1.0	0.11	0.11	0.6

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for Washington were 162,000 acres.

² Total applied is less than 50 lbs.

³ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

⁴ Rate per acre is less than 0.0005 lbs.

Apricots: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	17,500	74	1,696	20	136	20	176

**Apricots: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	17,500					
Nitrogen		74	1.9	68	132	1,696
Phosphate		20	1.9	20	38	136
Potash		20	2.0	24	49	176

**Apricots: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	*
2,4-D, Dimeth. salt	*
Glyphosate	P
Norflurazon	P
Oryzalin	*
Oxyfluorfen	P
Paraquat	*
Pendimethalin	*
Insecticides	
Bt (Bacillus thur.)	P
Carbaryl	*
Clofentezine	*
Diazinon	*
Dicofol	*
Esfenvalerate	P
Methidathion	*
Neem oil	*
Neem oil, clar. hyd.	*
Petroleum distillate	P
Petroleum oil	*
Phosmet	*
Spinosad	*
Fungicides	
Azoxystrobin	P
Chlorothalonil	P
Copper hydroxide	P
Copper oxide	*
Cyprodinil	P
Fenbuconazole	*
Iprodione	P
Myclobutanil	P
Propiconazole	P
Ziram	P

See footnote(s) at end of table.

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**Apricots: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	CA
Other Chemicals	
Chlorophacinone	*
Decenol	*
Decenyl acetate	*
E-8-Dodecenyl acetat	*
GABA	*
L-Glutamic acid	*
Methyl bromide	*
Strychnine	*
Z-8-Dodecanol	*
Z-8-Dodecen acetate	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Apricots: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	17,500	46	16.6	78	235.9	78	66.4	4	8.4

¹ Total Applied excludes Bt's (Bacillus thuringiensis) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Apricots: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	40	1.4	0.78	1.10	7.6
Norflurazon	7	1.2	1.08	1.31	1.7
Oxyfluorfen	21	1.4	0.40	0.58	2.1
Insecticides					
Bt (Bacillus thur.) ²	4	1.8			
Esfenvalerate	67	2.3	0.05	0.11	1.3
Petroleum distillate	32	1.3	28.24	39.19	220.5
Fungicides					
Azoxystrobin	31	1.0	0.21	0.22	1.2
Chlorothalonil	10	1.3	2.72	3.74	6.4
Copper hydroxide	43	1.6	2.53	4.18	31.8
Cyprodinil	36	1.4	0.24	0.33	2.1
Iprodione	34	1.3	0.68	0.93	5.5
Myclobutanil	13	1.7	0.13	0.24	0.6
Propiconazole	19	1.3	0.13	0.18	0.6
Ziram	13	1.3	4.25	5.91	13.3

¹ Total acres in 2003 for California were 17,500 acres. Acreage includes both bearing and nonbearing acres.

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

Avocados: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	60,000	89	6,199	39	1,409	69	2,774

Avocados: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	60,000					
Nitrogen		89	3.7	31	116	6,199
Phosphate		39	2.8	22	61	1,409
Potash		69	2.2	30	67	2,774

**Avocados: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
EPTC	*
Glyphosate	P
Simazine	P
Sulfosate	*
Insecticides	
Abamectin	P
Malathion	*
Petroleum distillate	P
Sabadilla	*
Spinosad	P
Fungicides	
Fosetyl-al	*
Sulfur	*
Other Chemicals	
Aluminum phosphide	*
Carbon	*
Diphacinone	*
Metaldehyde	P
Sodium nitrate	*
Strychnine	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Avocados: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA ¹	60,000	22	36.7	49	672.5			5	0.6

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

**Avocados: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	25	2.6	0.71	1.88	27.7
Simazine	6	1.8	1.37	2.57	8.7
Insecticides					
Abamectin	27	1.1	0.02	0.02	0.3
Petroleum distillate	37	1.1	26.51	30.25	670.8
Spinosad	4	1.0	0.15	0.15	0.4
Other Chemicals					
Metaldehyde	1	1.0	0.41	0.43	0.4

¹ Total acres in 2003 for California were 60,000 acres. Acreage includes both bearing and nonbearing acres.

**Blackberries: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
OR	6,700	95	585	95	464	95	519

**Blackberries: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Oregon	6,700					
Nitrogen		95	1.3	69	92	585
Phosphate		95	1.2	61	73	464
Potash		95	1.2	68	82	519

**Blackberries: Active Ingredients and
Publication Status**

Active Ingredient	OR
Herbicides	
2,4-D	*
Carfentrazone-ethyl	P
Dichlobenil	*
Diuron	P
Fluazifop-P-butyl	*
Glyphosate	P
Napropamide	*
Norflurazon	*
Oryzalin	P
Oxyfluorfen	P
Paraquat	P
Pendimethalin	*
Pronamide	*
Sethoxydim	*
Simazine	P
Terbacil	P
Triclopyr	*
Insecticides	
Azinphos-methyl	P
Bifenthrin	P
Bt (Bacillus thur.)	P
Carbaryl	P
Chlorpyrifos	*
Cypermethrin	*
Diazinon	P
Diflubenzuron	*
Esfenvalerate	P
Fenamiphos	*
Hexythiazox	*
Malathion	P
Naled	*
Petroleum distillate	P
Potassium salts	*
Propargite	*
Tebufenozide	*

See footnote(s) at end of table.

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**Blackberries: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	OR
Fungicides	
Azoxystrobin	*
Basic copper sulfate	*
Benomyl	*
Calcium polysulfide	P
Captan	P
Copper amm. complex	*
Copper chloride hyd.	*
Copper hydroxide	P
Copper resinate	*
Copper sulfate	P
Cyprodinil	P
Dodine	*
Fenhexamid	P
Fludioxonil	P
Fosetyl-al	*
Iprodione	P
Mancozeb	*
Maneb	*
Myclobutanil	P
Phosphorous acid	*
Pyraclostrobin	P
Sulfur	P
Other Chemicals	
Ethephon	*
Harpin protein	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Blackberries: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
OR ²	6,700	83	11.3	84	11.8	89	104.4		

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

² Insufficient reports to publish data for one or more pesticide classes.

**Blackberries: Agricultural Chemical Applications,
Oregon, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Carfentrazone-ethyl	23	1.1	0.05	0.05	0.1
Diuron	46	1.0	1.28	1.32	4.0
Glyphosate	1	1.0	1.24	1.35	0.1
Oryzalin	4	1.0	1.43	1.43	0.4
Oxyfluorfen	14	1.0	0.31	0.33	0.3
Paraquat	24	1.4	0.26	0.37	0.6
Simazine	38	1.0	1.70	1.85	4.7
Terbacil	10	1.0	0.71	0.71	0.5
Insecticides					
Azinphos-methyl	13	1.0	0.56	0.58	0.5
Bifenthrin	19	1.2	0.09	0.11	0.1
Bt (Bacillus thur.) ²	6	1.8			
Carbaryl	37	1.1	1.55	1.76	4.4
Diazinon	11	1.2	1.44	1.75	1.3
Esfenvalerate	24	1.0	0.04	0.05	0.1
Malathion	4	1.0	2.47	2.47	0.6
Petroleum distillate	7	1.0	9.50	10.24	4.5
Fungicides					
Calcium polysulfide	57	1.4	13.20	19.21	73.3
Captan	46	1.3	1.95	2.68	8.3
Copper hydroxide	30	1.2	1.82	2.27	4.6
Copper sulfate	10	1.1	2.22	2.50	1.7
Cyprodinil	36	1.2	0.30	0.36	0.9
Fenhexamid	8	1.0	0.75	0.75	0.4
Fludioxonil	36	1.2	0.20	0.24	0.6
Iprodione	9	1.2	0.79	0.96	0.5
Myclobutanil	16	1.5	0.06	0.09	0.1
Pyraclostrobin	4	1.3	0.18	0.24	0.1
Sulfur	22	1.6	5.43	8.87	12.9

¹ Bearing acres in 2003 for Oregon were 6,700 acres.

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

Blueberries: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
GA	4,600	94	210	93	162	94	188
MI	15,400	90	954	55	308	64	427
NJ	7,500	96	486	96	420	95	464
NC	4,200	99	302	98	450	98	211
OR	3,000	95	376	81	151	79	177
Total	34,700	93	2,328	76	1,491	80	1,467

**Blueberries: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Georgia	4,600					
Nitrogen		94	2.2	22	49	210
Phosphate		93	2.2	17	38	162
Potash		94	2.2	20	44	188
Michigan	15,400					
Nitrogen		90	1.6	41	69	954
Phosphate		55	1.6	22	37	308
Potash		64	1.5	28	43	427
New Jersey	7,500					
Nitrogen		96	1.8	37	67	486
Phosphate		96	1.7	32	58	420
Potash		95	1.8	36	65	464
North Carolina	4,200					
Nitrogen		99	3.1	23	73	302
Phosphate		98	2.5	43	109	450
Potash		98	2.1	24	51	211
Oregon	3,000					
Nitrogen		95	2.5	52	132	376
Phosphate		81	2.1	29	62	151
Potash		79	1.9	38	75	177
Total	34,700					
Nitrogen		93	2.0	35	72	2,328
Phosphate		76	1.9	28	56	1,491
Potash		80	1.8	29	53	1,467

**Blueberries: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States					
	ALL	GA	MI	NJ	NC	OR
Herbicides						
2,4-D	P					P
2,4-D, Dimeth. salt	P	*				*
Atrazine	*					*
Dicamba	*					*
Dichlobenil	P	*		*		*
Diuron	P	*	P	P	*	P
Fluometuron	*			*		
Glyphosate	P	P	P	P	P	P
Hexazinone	P	*	*		P	
Isoxaben	*		*			*
Napropamide	P	*	*		*	*
Norflurazon	P		P	P		P
Oryzalin	P	P	*	*	*	P
Oxyfluorfen	*					*
Paraquat	P	*	P	*	P	P
Pronamide	*					*
Sethoxydim	P	P	*	*	*	*
Simazine	P	P	P	*	*	P
Sulfosate	*		*			
Terbacil	P	*	P	P		*
Triclopyr	P					P

See footnote(s) at end of table.

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**Blueberries: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States					
	ALL	GA	MI	NJ	NC	OR
Insecticides						
Azadirachtin	*		*			
Azinphos-methyl	P		P	*	*	
Bt (Bacillus thur.)	P		*		*	P
Carbaryl	P	*	P	P	*	*
Diazinon	P	P	*	P	*	P
Endosulfan	P		*		*	
Esfenvalerate	P		P	*	P	*
Fenamiphos	*					*
Imidacloprid	P		P	P		
Malathion	P	P	P	P	P	P
Methomyl	P		P	*		*
Methoxychlor	*	*		*		
Permethrin	*			*		
Petroleum distillate	P				*	*
Phosmet	P	*	P	P		*
Piperonyl butoxide	*		*			
Pyrethrins	*		*			
Rotenone	*		*			
Spinosad	P	*	*	*		
Tebufozide	P		*			*

See footnote(s) at end of table.

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**Blueberries: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States					
	ALL	GA	MI	NJ	NC	OR
Fungicides						
Azoxystrobin	P		P	P	*	*
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 amm. complex	*					*
Copper hydroxide	P					P
Copper sulfate	P					P
Cyprodinil	P		*	P		*
Fenbuconazole	P	P	P	P	P	P
Fenhexamid	P	*	*	*		P
Fludioxonil	P		*	P		*
Fosetyl-al	P		P	*		*
Iprodione	P	P				P
Mancozeb	*				*	
Mefenoxam	P	*				*
Phosphorous acid	*					*
Propiconazole	*			*		*
Pyraclostrobin	P		P		*	*
Sulfur	*		*	*		
Tebuconazole	*		*			
Thiophanate-methyl	P		P			
Triforine	P	P			*	*
Ziram	P	*	P	P	*	P
Other Chemicals						
Chlorophacinone	*	*				*
Cyanamid	*	*				
Cytokinins	*			*		
Ethephon	*	*				
Gibberellic acid	P	P	*		*	
Harpin protein	P		*	*		*
Hydrogen peroxide	*			*		*
Metaldehyde	*		*			*
Zinc phosphide	*					*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Blueberries: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

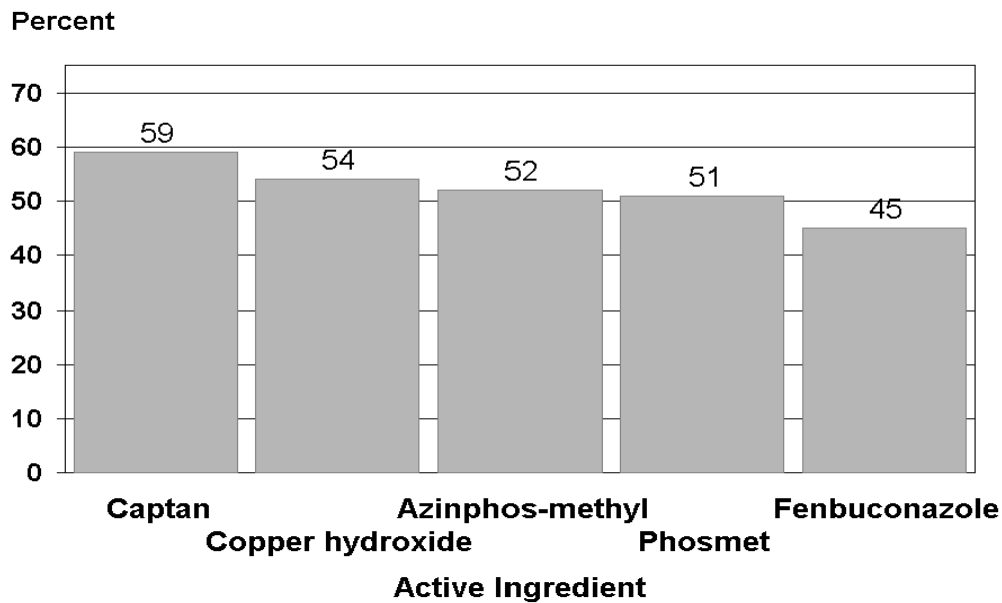
State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
GA	4,600	69	8.9	68	10.0	79	16.7	14	0.7
MI ²	15,400	56	19.2	97	75.2	87	116.4		
NJ ²	7,500	43	9.2	93	20.1	91	86.5		
NC ²	4,200	85	6.3	97	11.8	81	6.2		
OR	3,000	74	9.5	63	6.7	87	27.2	6	*
Total	34,700	60	53.1	89	124.2	86	253.0	4	1.2

* Total applied is less than 50 pounds.

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

² Insufficient reports to publish data for one or more pesticide classes.

**Blueberries - Percent of Acres Treated
Top 5 Active Ingredients for 2003**



**Blueberries: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	2	2.6	0.02	0.06	(²)
2,4-D, Dimeth. salt	2	2.2	0.14	0.32	0.2
Dichlobenil	*	1.0	1.28	1.28	0.1
Diuron	25	1.1	1.32	1.45	12.6
Glyphosate	20	1.5	0.80	1.22	8.3
Hexazinone	13	1.0	0.55	0.56	2.6
Napropamide	*	1.0	2.74	2.93	0.8
Norflurazon	17	1.0	1.36	1.38	8.3
Oryzalin	5	1.2	1.67	2.00	3.5
Paraquat	16	1.3	0.47	0.65	3.7
Sethoxydim	4	1.0	0.23	0.23	0.3
Simazine	15	1.1	1.49	1.73	8.8
Terbacil	20	1.0	0.53	0.53	3.8
Triclopyr	1	1.8	0.01	0.03	(²)
Insecticides					
Azinphos-methyl	52	1.6	0.39	0.66	12.0
Bt (Bacillus thur.) ³	8	2.1			
Carbaryl	19	1.7	1.37	2.44	16.1
Diazinon	17	1.6	0.67	1.07	6.4
Endosulfan	2	1.0	0.49	0.49	0.3
Esfenvalerate	16	1.7	0.03	0.06	0.3
Imidacloprid	11	1.3	0.05	0.06	0.3
Malathion	37	2.5	1.29	3.35	42.7
Methomyl	31	1.5	0.49	0.74	8.1
Petroleum distillate	7	1.2	2.18	2.70	6.9
Phosmet	51	2.2	0.76	1.72	30.3
Spinosad	1	1.1	0.06	0.07	(²)
Tebufenozide	14	1.0	0.13	0.13	0.7

See footnote(s) at end of table.

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**Blueberries: Agricultural Chemical Applications,
Program States, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Azoxystrobin	13	1.4	0.17	0.26	1.2
Benomyl	16	1.6	0.49	0.82	4.5
Calcium polysulfide	3	1.0	11.36	11.46	10.9
Captan	59	2.3	2.04	4.84	98.7
Chlorothalonil	23	1.4	1.85	2.68	21.1
Copper hydroxide	54	1.2	0.19	0.23	4.4
Copper sulfate	19	1.4	0.16	0.24	1.6
Cyprodinil	7	1.0	0.21	0.23	0.5
Fenbuconazole	45	1.9	0.09	0.17	2.7
Fenhexamid	2	1.1	0.55	0.64	0.5
Fludioxonil	7	1.0	0.14	0.15	0.3
Fosetyl-al	6	1.5	2.79	4.42	9.4
Iprodione	28	1.4	0.15	0.21	2.1
Mefenoxam	1	1.0	0.11	0.11	0.1
Pyraclostrobin	15	1.5	0.11	0.18	0.9
Thiophanate-methyl	42	1.7	0.30	0.54	7.9
Triforine	13	1.2	0.10	0.12	0.5
Ziram	35	2.4	2.82	7.01	84.9
Other Chemicals					
Gibberellic acid	6	1.6	0.04	0.06	0.1
Harpin protein	4	1.0	0.007	0.007	(²)

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 5 program states were 34,700 acres.
States included are GA, MI, NJ, NC, and OR.

² Total applied is less than 50 lbs.

³ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

**Blueberries: Agricultural Chemical Applications,
Georgia, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	45	1.5	0.93	1.47	3.0
Oryzalin	15	1.1	1.68	1.94	1.4
Sethoxydim	22	1.0	0.14	0.14	0.1
Simazine	20	1.3	1.04	1.40	1.3
Insecticides					
Diazinon	47	1.8	0.53	0.97	2.1
Malathion	52	2.9	1.11	3.25	7.7
Fungicides					
Benomyl	42	2.0	0.49	0.99	1.9
Captan	72	1.9	2.09	4.00	13.2
Fenbuconazole	57	2.1	0.09	0.20	0.5
Iprodione	13	1.0	0.45	0.45	0.3
Triforine	26	1.2	0.29	0.37	0.4
Other Chemicals					
Gibberellic acid	24	1.7	0.05	0.09	0.1

¹ Bearing acres in 2003 for Georgia were 4,600 acres.

**Blueberries: Agricultural Chemical Applications,
Michigan, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Diuron	32	1.0	1.39	1.42	6.9
Glyphosate	15	1.2	0.66	0.85	1.9
Norflurazon	7	1.0	1.17	1.23	1.3
Paraquat	9	1.0	0.25	0.25	0.3
Simazine	21	1.0	1.65	1.76	5.7
Terbacil	24	1.0	0.61	0.62	2.3
Insecticides					
Azinphos-methyl	78	1.6	0.51	0.82	9.8
Carbaryl	28	2.0	1.49	3.10	13.2
Esfenvalerate	9	1.1	0.05	0.05	0.1
Imidacloprid	4	1.2	0.09	0.11	0.1
Malathion	37	1.9	2.17	4.14	23.5
Methomyl	30	1.3	0.59	0.80	3.7
Phosmet	75	2.3	0.86	2.05	23.6
Fungicides					
Azoxystrobin	6	1.4	0.19	0.28	0.2
Benomyl	8	1.6	0.50	0.82	1.0
Captan	48	2.3	2.04	4.88	36.4
Chlorothalonil	33	1.5	2.55	3.85	19.6
Fenbuconazole	51	1.7	0.09	0.16	1.3
Fosetyl-al	9	1.5	3.86	5.99	8.0
Pyraclostrobin	16	1.5	0.17	0.27	0.6
Thiophanate-methyl	42	1.7	0.69	1.23	7.9
Ziram	38	2.5	2.76	6.95	40.5

¹ Bearing acres in 2003 for Michigan were 15,400 acres.

**Blueberries: Agricultural Chemical Applications,
New Jersey, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Diuron	26	1.0	0.85	0.88	1.7
Glyphosate	4	1.0	0.25	0.27	0.1
Norflurazon	33	1.0	2.11	2.11	5.3
Terbacil	31	1.0	0.57	0.57	1.3
Insecticides					
Carbaryl	24	1.2	1.07	1.33	2.4
Diazinon	31	1.5	0.79	1.18	2.7
Imidacloprid	27	1.3	0.07	0.09	0.2
Malathion	11	1.8	1.19	2.14	1.8
Phosmet	48	1.9	0.90	1.77	6.4
Fungicides					
Azoxystrobin	28	1.3	0.21	0.28	0.6
Benomyl	16	1.5	0.49	0.76	0.9
Calcium polysulfide	6	1.0	10.95	10.95	4.7
Captan	83	2.9	2.11	6.22	38.7
Cyprodinil	15	1.0	0.27	0.29	0.3
Fenbuconazole	8	1.0	0.09	0.10	0.1
Fludioxonil	15	1.0	0.18	0.19	0.2
Ziram	69	2.6	2.89	7.66	39.7

¹ Bearing acres in 2003 for New Jersey were 7,500 acres.

**Blueberries: Agricultural Chemical Applications,
North Carolina, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	36	1.6	0.81	1.34	2.0
Hexazinone	64	1.0	0.83	0.85	2.3
Paraquat	44	1.6	0.56	0.91	1.7
Insecticides					
Esfenvalerate	73	2.1	0.03	0.07	0.2
Malathion	80	3.8	0.71	2.75	9.2
Fungicides					
Benomyl	17	1.0	0.49	0.50	0.4
Captan	39	1.5	1.45	2.23	3.6
Fenbuconazole	80	2.4	0.09	0.22	0.7

¹ Bearing acres in 2003 for North Carolina were 4,200 acres.

**Blueberries: Agricultural Chemical Applications,
Oregon, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	2	2.6	0.28	0.74	(²)
Diuron	25	1.7	1.63	2.85	2.1
Glyphosate	20	2.0	0.99	2.05	1.3
Norflurazon	34	1.0	1.71	1.75	1.8
Oryzalin	21	1.3	1.47	2.00	1.3
Paraquat	36	1.7	0.43	0.76	0.8
Simazine	25	1.3	1.52	2.10	1.6
Triclopyr	1	1.8	0.16	0.30	(²)
Insecticides					
Bt (Bacillus thur.) ³	36	2.2			
Diazinon	43	1.3	0.64	0.89	1.2
Malathion	13	1.0	1.15	1.15	0.5
Fungicides					
Benomyl	13	1.5	0.49	0.78	0.3
Captan	63	2.0	1.77	3.61	6.8
Copper hydroxide	54	1.2	2.22	2.71	4.4
Copper sulfate	19	1.4	1.90	2.79	1.6
Fenbuconazole	35	1.3	0.09	0.12	0.1
Fenhexamid	14	1.1	0.71	0.79	0.3
Iprodione	52	1.5	0.75	1.17	1.8
Ziram	30	1.6	2.26	3.77	3.3

¹ Bearing acres in 2003 for Oregon were 3,000 acres.

² Total applied is less than 50 lbs.

³ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

**Cherries, Sweet: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	30,000	71	898	33	401	34	845
MI	8,100	87	546	32	111	59	391
OR	12,000	84	775	31	188	33	104
WA	26,000	84	1,288	39	224	37	184
Total	76,100	79	3,507	34	924	37	1,524

**Cherries, Sweet: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	30,000					
Nitrogen		71	1.3	32	42	898
Phosphate		33	1.1	35	41	401
Potash		34	1.2	66	83	845
Michigan	8,100					
Nitrogen		87	1.4	53	77	546
Phosphate		32	1.2	33	43	111
Potash		59	1.2	67	81	391
Oregon	12,000					
Nitrogen		84	1.8	42	77	775
Phosphate		31	1.4	36	51	188
Potash		33	1.3	20	27	104
Washington	26,000					
Nitrogen		84	2.9	20	59	1,288
Phosphate		39	2.5	9	22	224
Potash		37	2.7	7	19	184
Total	76,100					
Nitrogen		79	2.0	29	58	3,507
Phosphate		34	1.7	20	35	924
Potash		37	1.7	31	54	1,524

**Cherries, Sweet: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States				
	ALL	CA	MI	OR	WA
Herbicides					
2,4-D	P	P	P	P	P
2,4-D, Dimeth. salt	P		P	*	*
Acifluorfen	*	*			
Bentazon	*	*			
Dichlobenil	*			*	
Diuron	P		*	*	
Glufosinate-ammonium	*			*	
Glyphosate	P	P	P	P	P
Glyphosate diam salt	*				*
Lactofen	*	*			
Napropamide	*	*			*
Norflurazon	P	P	*	*	
Oryzalin	P	P	*	P	*
Oxyfluorfen	P	P		P	P
Paraquat	P	P	P	P	P
Pendimethalin	P	P		*	*
Sethoxydim	*	*			
Simazine	P	*	P	*	
Sulfosate	P	*	*	*	
Terbacil	*		*		
Triclopyr	*			*	

See footnote(s) at end of table.

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**Cherries, Sweet: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States				
	ALL	CA	MI	OR	WA
Insecticides					
Acetamiprid	*				*
Amitraz	*				*
Azadirachtin	*			*	*
Azinphos-methyl	P		P	P	P
Benzoic acid	P			*	*
Bt (Bacillus thur.)	P	P	*	P	*
Carbaryl	P	P	P	P	P
Carbofuran	*		*		
Chlorpyrifos	P	P	P	P	P
Clofentezine	P	P	*		*
Diazinon	P	P		P	P
Dicofol	*	*			
Dimethoate	P			P	P
Endosulfan	P		*	*	P
Esfenvalerate	P	P	*		*
Ethyl parathion	*				*
Fenamiphos	*	*			
Fenbutatin-oxide	P	*		*	*
Fenpropathrin	*		*		
Formetanate hydro.	*				*
Hexythiazox	*			*	
Imidacloprid	P		*	*	P
Kaolin	*	*			
Lambda-cyhalothrin	*		*		
Malathion	P			P	P
Methidathion	*	*	*	*	
Methoxychlor	*				*
Permethrin	P		P		
Petroleum distillate	P	P	*	*	P
Petroleum oil	P	*		P	
Phosmet	P			P	*
Piperonyl butoxide	*		*		
Potassium salts	*				*
Propargite	P	P			P
Pyrethrins	*		*	*	*
Pyridaben	*				*
Pyriproxyfen	*				*
Rotenone	*				*
Spinosad	P	*		*	P

See footnote(s) at end of table.

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**Cherries, Sweet: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States				
	ALL	CA	MI	OR	WA
Fungicides					
Azoxystrobin	P	*	*	P	P
Bacillus subtilus	*				*
Basic copper sulfate	P	*	*	P	P
Benomyl	P		*	P	*
Calcium polysulfide	P	P	*	*	P
Captan	P		P	*	*
Chlorothalonil	P		P	*	*
Copper amm. complex	*			*	
Copper chloride hyd.	*			*	*
Copper hydroxide	P	P	P	P	P
Copper oxide	*	*			
Copper oxychloro. sul.	P		*	*	*
Copper oxychloride	P		*	P	*
Copper resinate	*			*	*
Copper sulfate	P	P	*	*	P
Dicloran	*		*		
Dodine	P		*	*	
Fenarimol	P		*	*	P
Fenbuconazole	P	*	P	P	*
Fenhexamid	*	*			
Ferbam	P		P		
Fosetyl-al	P		*		*
Iprodione	P	P	P	P	
Mancozeb	*			*	*
Mefenoxam	*				*
Myclobutanil	P	P	P	P	P
Oxytetracycline	*		*		*
Potassium bicarbon.	P			*	*
Propiconazole	P	P	P	P	P
Pseudomonas fluores.	*				*
Pyraclostrobin	P	P		*	*
Streptomycin	*				*
Sulfur	P	P	P	P	P
Tebuconazole	P	P	P	P	P
Thiophanate-methyl	P	*	P	*	P
Trifloxystrobin	P		*	*	P
Triflumizole	P	*		*	P
Ziram	P	*	P	P	*

See footnote(s) at end of table.

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**Cherries, Sweet: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States				
	ALL	CA	MI	OR	WA
Other Chemicals					
Aluminum phosphide	*			*	*
Chlorophacinone	*	*			
Chloropicrin	P	P			
Cyanamid	P	P			
Cytokinins	P			P	P
Diphacinone	*	*			
Dodecadien-1-ol	*				*
E-8-Dodecenyl acetat	*		*		
Ethephon	P		P		P
GABA	*	*			
Gibberellic acid	P	P	*	*	P
Harpin protein	*				*
Iron phosphate	*	*			
L-Glutamic acid	*	*			
Lactic acid	*				*
Metaldehyde	*	*		*	
Methyl anthranilate	P		*	*	P
Methyl bromide	P	P			
NAA	*			*	*
Prohexadione calcium	*				*
Strychnine	P	*		*	*
Z-8-Dodecanol	*		*		
Z-8-Dodecen acetate	*		*		
Zinc phosphide	P			*	*

P Usage data are published for this active ingredient.

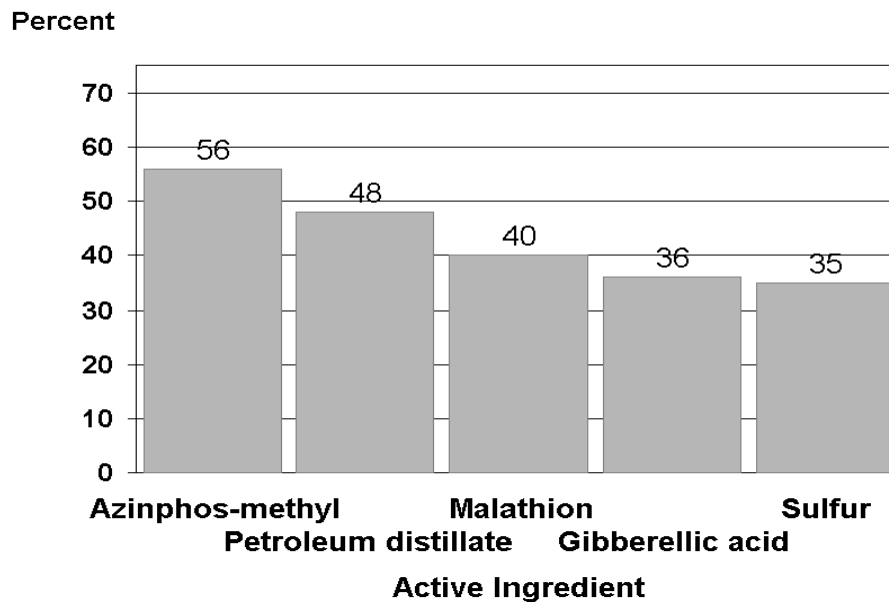
* Usage data are not published for this active ingredient.

**Cherries, Sweet: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide ¹		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	30,000	45	20.6	66	334.2	71	169.2	15	501.5
MI	8,100	33	2.9	82	19.1	91	186.0	20	2.5
OR	12,000	39	19.7	93	546.3	87	87.2	21	0.9
WA	26,000	23	18.3	98	841.8	96	473.1	23	3.3
Total	76,100	35	61.6	83	1,741.2	84	915.9	18	508.1

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Cherries, Sweet - Percent of Acres Treated
Top 5 Active Ingredients for 2003**



Surveyed States are CA, MI, OR, and WA

**Cherries, Sweet: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	4	1.4	0.78	1.12	3.0
2,4-D, Dimeth. salt	3	1.5	0.32	0.50	1.1
Diuron	1	1.1	0.22	0.24	0.2
Glyphosate	23	1.6	1.08	1.73	30.8
Norflurazon	1	1.1	0.83	0.96	0.8
Oryzalin	4	1.0	1.87	2.04	6.5
Oxyfluorfen	12	1.4	0.31	0.44	4.2
Paraquat	16	1.5	0.50	0.78	9.2
Pendimethalin	2	1.0	1.82	1.89	2.7
Simazine	3	1.0	0.69	0.71	1.6
Sulfosate	*	1.3	0.93	1.29	1.0
Insecticides					
Azinphos-methyl	56	1.9	0.40	0.77	33.1
Benzoic acid	3	1.0	0.12	0.13	0.3
Bt (Bacillus thur.) ²	7	1.0			
Carbaryl	31	1.7	1.85	3.15	73.3
Chlorpyrifos	30	1.1	1.91	2.21	50.4
Clofentezine	7	1.0	0.12	0.13	0.7
Diazinon	10	1.1	1.57	1.76	13.0
Dimethoate	22	1.0	0.45	0.49	8.1
Endosulfan	12	1.0	1.12	1.17	10.8
Esfenvalerate	21	1.9	0.04	0.08	1.3
Fenbutatin-oxide	2	1.1	0.60	0.69	0.9
Imidacloprid	3	1.1	0.04	0.05	0.1
Malathion	40	3.1	0.52	1.66	50.4
Permethrin	25	1.8	0.01	0.02	0.4
Petroleum distillate	48	1.6	24.61	39.37	1,450.6
Petroleum oil	6	2.2	2.31	5.09	21.8
Phosmet	2	1.1	0.60	0.71	0.8
Propargite	18	1.1	1.14	1.34	18.2
Spinosad	25	1.5	0.08	0.13	2.5

See footnote(s) at end of table.

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**Cherries, Sweet: Agricultural Chemical Applications,
Program States, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Azoxystrobin	3	1.5	0.23	0.35	0.9
Basic copper sulfate	4	1.3	3.92	5.24	15.7
Benomyl	2	1.1	0.40	0.45	0.7
Calcium polysulfide	7	1.0	26.86	28.67	158.2
Captan	5	1.4	0.87	1.28	4.7
Chlorothalonil	14	2.0	1.09	2.26	23.5
Copper hydroxide	29	1.3	3.94	5.22	116.4
Copper oxychlor. sul.	*	1.0	0.88	0.92	0.6
Copper oxychloride	4	1.1	2.11	2.45	6.6
Copper sulfate	4	1.3	4.11	5.36	16.9
Dodine	3	1.1	0.26	0.30	0.6
Fenarimol	11	1.4	0.05	0.07	0.6
Fenbuconazole	10	1.7	0.09	0.16	1.1
Ferbam	29	2.6	0.20	0.52	11.5
Fosetyl-al	*	1.2	1.18	1.48	1.1
Iprodione	26	1.2	0.44	0.56	11.2
Myclobutanil	29	1.5	0.13	0.20	4.4
Potassium bicarbon.	11	2.6	1.11	2.99	24.3
Propiconazole	17	1.3	0.12	0.16	2.1
Pyraclostrobin	15	1.4	0.11	0.16	1.8
Sulfur	35	2.5	6.95	17.97	476.6
Tebuconazole	32	1.5	0.17	0.26	6.3
Thiophanate-methyl	3	1.4	0.87	1.23	2.6
Trifloxystrobin	6	1.5	0.06	0.09	0.4
Triflumizole	29	1.6	0.30	0.49	10.6
Ziram	4	1.6	2.51	4.01	11.7
Other Chemicals					
Chloropicrin	6	1.1	27.56	30.22	139.2
Cyanamid	8	1.2	0.68	0.84	5.1
Cytokinins	9	2.3	(³)	(³)	(⁴)
Ethephon	16	1.0	0.21	0.22	2.6
Gibberellic acid	36	1.2	0.05	0.06	1.7
Methyl anthranilate	1	1.3	1.52	2.12	2.0
Methyl bromide	7	1.0	62.04	67.78	356.7
Strychnine	5	1.9	0.005	0.009	(⁴)
Zinc phosphide	*	1.1	0.03	0.04	(⁴)

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 4 program states were 76,100 acres.

States included are CA, MI, OR, and WA.

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

³ Rate per acre is less than 0.0005 lbs.

⁴ Total applied is less than 50 lbs.

**Cherries, Sweet: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	3	1.2	0.45	0.54	0.6
Glyphosate	22	1.2	0.61	0.79	5.2
Norflurazon	2	1.1	1.23	1.42	0.8
Oryzalin	6	1.0	1.58	1.72	3.2
Oxyfluorfen	24	1.4	0.28	0.41	3.0
Paraquat	28	1.5	0.41	0.63	5.4
Pendimethalin	3	1.0	1.59	1.70	1.3
Insecticides					
Bt (Bacillus thur.) ²	7	1.0			
Carbaryl	4	1.4	2.87	4.03	5.0
Chlorpyrifos	1	1.0	1.18	1.18	0.4
Clofentezine	13	1.0	0.14	0.15	0.6
Diazinon	7	1.2	1.65	2.10	4.7
Esfenvalerate	35	2.0	0.05	0.11	1.2
Petroleum distillate	33	1.4	21.92	30.68	300.5
Propargite	30	1.1	1.58	1.79	15.9
Fungicides					
Calcium polysulfide	8	1.0	31.97	34.34	80.7
Copper hydroxide	27	1.4	3.95	5.53	44.7
Copper sulfate	5	1.1	6.14	7.07	10.5
Iprodione	41	1.2	0.67	0.86	10.5
Myclobutanil	10	1.2	0.12	0.15	0.5
Propiconazole	1	1.5	0.11	0.17	0.1
Pyraclostrobin	12	1.3	0.12	0.16	0.6
Sulfur	8	1.1	6.27	7.06	16.2
Tebuconazole	34	1.2	0.16	0.20	2.0
Other Chemicals					
Chloropicrin	6	1.1	69.91	76.65	139.2
Cyanamid	8	1.2	1.72	2.12	5.1
Gibberellic acid	21	1.1	0.06	0.07	0.5
Methyl bromide	7	1.0	157.39	171.94	356.7

¹ Total acres in 2003 for California were 30,000 acres. Acreage includes both bearing and nonbearing acres.

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

**Cherries, Sweet: Agricultural Chemical Applications,
Michigan, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	2	1.1	0.71	0.85	0.1
2,4-D, Dimeth. salt	8	1.3	0.34	0.47	0.3
Glyphosate	27	1.1	0.59	0.66	1.4
Paraquat	7	1.0	0.40	0.43	0.3
Simazine	9	1.0	0.93	0.98	0.7
Insecticides					
Azinphos-methyl	68	2.9	0.44	1.30	7.2
Carbaryl	35	1.2	2.16	2.67	7.5
Chlorpyrifos	3	1.0	1.27	1.30	0.3
Permethrin	25	1.8	0.11	0.20	0.4
Fungicides					
Captan	17	1.6	1.59	2.62	3.7
Chlorothalonil	68	2.1	1.80	3.88	21.3
Copper hydroxide	13	1.0	2.45	2.47	2.5
Fenbuconazole	51	2.1	0.08	0.18	0.7
Ferbam	29	2.6	1.84	4.91	11.5
Iprodione	3	1.2	0.82	1.05	0.3
Myclobutanil	6	1.2	0.11	0.14	0.1
Propiconazole	15	1.5	0.11	0.17	0.2
Sulfur	72	4.2	5.28	22.52	131.5
Tebuconazole	55	2.6	0.14	0.38	1.7
Thiophanate-methyl	5	1.8	0.56	1.02	0.4
Ziram	30	1.7	2.38	4.11	9.9
Other Chemicals					
Ethephon	59	1.0	0.50	0.52	2.5

¹ Bearing acres in 2003 for Michigan were 8,100 acres.

**Cherries, Sweet: Agricultural Chemical Applications,
Oregon, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	5	1.5	0.75	1.14	0.7
Glyphosate	33	1.8	1.66	3.04	12.1
Oryzalin	7	1.1	2.41	2.71	2.2
Oxyfluorfen	8	1.1	0.96	1.10	1.1
Paraquat	2	1.3	0.88	1.16	0.3
Insecticides					
Azinphos-methyl	22	1.2	0.60	0.72	1.9
Bt (Bacillus thur.) ²	17	1.1			
Carbaryl	17	1.4	1.84	2.62	5.3
Chlorpyrifos	64	1.2	1.93	2.35	18.0
Diazinon	6	1.0	0.83	0.87	0.6
Dimethoate	18	1.2	0.89	1.10	2.4
Malathion	47	4.7	0.97	4.63	26.3
Petroleum oil	19	2.2	3.75	8.36	19.3
Phosmet	4	1.1	0.87	1.04	0.5
Fungicides					
Azoxystrobin	4	2.0	0.25	0.51	0.2
Basic copper sulfate	10	1.1	1.73	1.96	2.3
Benomyl	4	1.2	0.75	0.96	0.4
Copper hydroxide	26	1.3	3.94	5.28	16.4
Copper oxychloride	9	1.1	4.18	4.70	5.1
Fenbuconazole	24	1.2	0.10	0.13	0.4
Iprodione	6	1.0	0.60	0.60	0.4
Myclobutanil	27	1.4	0.13	0.18	0.6
Propiconazole	28	1.1	0.13	0.15	0.5
Sulfur	32	1.3	7.79	10.68	41.0
Tebuconazole	30	1.1	0.21	0.24	0.8
Ziram	3	1.0	3.95	3.95	1.6
Other Chemicals					
Cytokinins	6	2.0	(³)	(³)	(⁴)

¹ Bearing acres in 2003 for Oregon were 12,000 acres.

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

³ Rate per acre is less than 0.0005 lbs.

⁴ Total applied is less than 50 lbs.

**Cherries, Sweet: Agricultural Chemical Applications,
Washington, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	3	1.7	1.07	1.85	1.6
Glyphosate	19	2.0	1.17	2.42	12.0
Oxyfluorfen	*	1.0	0.75	0.75	0.2
Paraquat	9	1.7	0.80	1.38	3.3
Insecticides					
Azinphos-methyl	69	1.7	0.77	1.34	24.0
Carbaryl	68	1.8	1.72	3.16	55.5
Chlorpyrifos	57	1.1	1.89	2.13	31.7
Diazinon	14	1.0	1.98	2.05	7.7
Dimethoate	23	1.0	0.91	0.95	5.8
Endosulfan	19	1.0	1.92	2.01	9.9
Imidacloprid	4	1.2	0.06	0.08	0.1
Malathion	36	2.1	1.17	2.54	24.1
Petroleum distillate	73	1.6	22.30	35.60	676.9
Propargite	4	1.6	1.45	2.33	2.3
Spinosad	46	1.7	0.09	0.15	1.8
Fungicides					
Azoxystrobin	7	1.5	0.22	0.35	0.6
Basic copper sulfate	5	1.5	6.05	9.30	12.8
Calcium polysulfide	11	1.0	23.74	24.45	67.2
Copper hydroxide	39	1.2	4.01	5.18	52.8
Copper sulfate	5	1.5	2.83	4.30	5.8
Fenarimol	19	1.4	0.08	0.11	0.5
Myclobutanil	59	1.6	0.13	0.21	3.3
Propiconazole	32	1.4	0.12	0.16	1.3
Sulfur	57	2.4	7.92	19.48	287.8
Tebuconazole	24	1.3	0.21	0.28	1.7
Thiophanate-methyl	6	1.3	0.96	1.28	2.1
Trifloxystrobin	8	1.7	0.10	0.17	0.3
Triflumizole	57	1.6	0.32	0.53	7.8
Other Chemicals					
Cytokinins	11	2.4	(²)	(²)	(³)
Ethephon	2	1.0	0.30	0.30	0.1
Gibberellic acid	57	1.2	0.04	0.06	0.8
Methyl anthranilate	1	1.5	3.53	5.44	1.6

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for Washington were 26,000 acres.

² Rate per acre is less than 0.0005 lbs.

³ Total applied is less than 50 lbs.

**Cherries, Tart: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
MI	27,000	92	1,869	33	445	64	1,421
NY	2,000	83	55	36	16	75	71
Total	29,000	91	1,924	33	461	64	1,492

**Cherries, Tart: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Michigan	27,000					
Nitrogen		92	1.4	51	75	1,869
Phosphate		33	1.4	36	50	445
Potash		64	1.2	65	83	1,421
New York	2,000					
Nitrogen		83	1.0	33	33	55
Phosphate		36	1.0	22	22	16
Potash		75	1.0	46	47	71
Total	29,000					
Nitrogen		91	1.4	50	73	1,924
Phosphate		33	1.3	35	48	461
Potash		64	1.2	63	80	1,492

**Cherries, Tart: Active Ingredients
and Publication Status
By Program States, 2003**

Active Ingredient	Program States		
	ALL	MI	NY
Herbicides			
2,4-D	P	P	P
2,4-D, Dimeth. salt	P	P	
Diuron	*	P	*
Glyphosate	P	P	P
Norflurazon	P	*	*
Paraquat	P	P	P
Pendimethalin	*	*	
Simazine	P	P	P
Sulfosate	*	*	
Terbacil	P	P	
Insecticides			
Azinphos-methyl	P	P	P
Bt (Bacillus thur.)	P		P
Carbaryl	P	P	P
Chlorpyrifos	*	P	*
Clofentezine	*	*	
Endosulfan	P	*	*
Esfenvalerate	*	P	*
Ethyl parathion	*	*	
Fenbutatin-oxide	*	*	
Lambda-cyhalothrin	P	P	P
Methidathion	*	*	
Methyl parathion	*	*	
Oxamyl	*	*	
Permethrin	P	P	P
Petroleum distillate	P	*	*
Phosmet	P	P	P
Piperonyl butoxide	*	*	
Pyrethrins	*	*	
Pyridaben	*	*	
Spinosad	P		P
Sulprofos	*		*

See footnote(s) at end of table.

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**Cherries, Tart: Active Ingredients
and Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States		
	ALL	MI	NY
Fungicides			
Basic copper sulfate	P	P	
Benomyl	P	*	*
Calcium polysulfide	*	*	
Captan	P	P	P
Chlorothalonil	P	P	P
Copper hydroxide	*	P	*
Copper oxychlo. sul.	*	*	*
Copper oxychloride	P	P	
Copper sulfate	P	P	
Dodine	*	P	*
Fenarimol	P	*	*
Fenbuconazole	P	P	P
Ferbam	P	*	*
Iprodione	P	*	*
Mancozeb	*		*
Metiram	*		*
Myclobutanil	*	P	*
Propiconazole	*	P	*
Sulfur	P	P	P
Tebuconazole	*	P	*
Thiophanate-methyl	*	*	*
Triadimefon	*		*
Trifloxystrobin	*	*	
Triflumizole	*		*
Vinclozolin	*		*
Ziram	*	P	*
Other Chemicals			
Ammonium soap	*	*	
E-8-Dodecenyl acetat	*	*	
Ethephon	P	P	P
Gibberellic acid	*	P	*
Maleic hydrazide	*		*
Sodium hypochlorite	*		*
Z-8-Dodecanol	*	*	
Z-8-Dodecen acetate	*	*	
Zinc phosphide	*		*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Cherries, Tart: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
MI	27,000	38	18.1	90	104.0	93	714.8	42	5.3
NY	2,000	57	2.1	92	6.6	95	43.0	28	0.2
Total	29,000	40	20.2	90	110.6	93	758.1	41	5.5

¹ Total Applied excludes Bt's (Bacillus thuringiensis) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Cherries, Tart: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	4	1.1	0.86	0.97	1.0
2,4-D, Dimeth. salt	7	1.0	0.55	0.56	1.1
Glyphosate	30	1.1	0.74	0.81	7.1
Norflurazon	*	1.0	0.46	0.50	0.1
Paraquat	14	1.0	0.48	0.51	2.1
Simazine	17	1.0	1.49	1.54	7.5
Terbacil	*	1.0	0.23	0.23	0.1
Insecticides					
Azinphos-methyl	68	2.6	0.46	1.23	24.2
Bt (Bacillus thur.) ²	26	1.1			
Carbaryl	5	1.5	2.07	3.19	4.9
Endosulfan	*	1.4	1.33	1.96	0.2
Lambda-cyhalothrin	13	1.8	0.04	0.07	0.3
Permethrin	10	1.5	0.11	0.17	0.5
Petroleum distillate	5	1.1	25.84	29.21	43.1
Phosmet	65	2.0	0.92	1.84	34.5
Spinosad	11	1.0	0.005	0.005	(³)
Fungicides					
Basic copper sulfate	3	2.5	0.75	1.87	1.6
Benomyl	1	1.0	0.57	0.61	0.2
Captan	34	2.5	1.31	3.31	33.0
Chlorothalonil	83	2.9	1.88	5.58	135.0
Copper oxychloride	2	2.7	1.59	4.36	2.6
Copper sulfate	1	1.7	0.59	1.05	0.5
Fenarimol	3	2.4	0.04	0.09	0.1
Fenbuconazole	41	1.8	0.09	0.16	1.9
Ferbam	*	1.5	2.56	4.04	1.0
Iprodione	*	1.1	0.88	1.04	0.2
Sulfur	73	4.7	5.55	26.42	561.7
Other Chemicals					
Ethephon	78	1.1	0.20	0.23	5.3

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 2 program states were 29,000 acres.

States included are MI and NY.

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 lbs.

**Cherries, Tart: Agricultural Chemical Applications,
Michigan, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	3	1.1	0.70	0.83	0.6
2,4-D, Dimeth. salt	7	1.0	0.59	0.60	1.1
Diuron	3	1.1	0.92	1.08	0.8
Glyphosate	30	1.1	0.73	0.81	6.6
Paraquat	13	1.0	0.46	0.49	1.7
Simazine	17	1.0	1.46	1.52	6.9
Terbacil	*	1.0	0.25	0.25	0.1
Insecticides					
Azinphos-methyl	70	2.7	0.45	1.23	23.4
Carbaryl	5	1.5	1.99	3.02	3.7
Chlorpyrifos	12	1.1	0.64	0.74	2.4
Esfenvalerate	28	1.9	0.03	0.05	0.4
Lambda-cyhalothrin	10	1.3	0.03	0.04	0.1
Permethrin	9	1.6	0.10	0.17	0.4
Phosmet	67	1.9	0.90	1.79	32.3
Fungicides					
Basic copper sulfate	3	2.5	0.80	2.01	1.6
Captan	30	2.4	1.22	3.04	24.8
Chlorothalonil	83	3.0	1.86	5.58	125.0
Copper hydroxide	5	1.7	1.50	2.63	3.4
Copper oxychloride	2	2.7	1.71	4.68	2.6
Copper sulfate	1	1.7	0.63	1.13	0.5
Dodine	10	1.6	0.66	1.07	2.7
Fenbuconazole	37	1.8	0.08	0.15	1.5
Myclobutanil	21	1.7	0.08	0.14	0.8
Propiconazole	4	1.1	0.10	0.11	0.1
Sulfur	73	4.9	5.56	27.31	538.2
Tebuconazole	70	3.3	0.11	0.36	6.8
Ziram	5	1.9	2.15	4.16	5.8
Other Chemicals					
Ethephon	80	1.1	0.20	0.23	5.1
Gibberellic acid	33	1.3	0.01	0.02	0.2

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for Michigan were 27,000 acres.

**Cherries, Tart: Agricultural Chemical Applications,
New York, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	17	1.0	1.22	1.25	0.4
Glyphosate	27	1.0	0.87	0.88	0.5
Paraquat	32	1.0	0.60	0.62	0.4
Simazine	18	1.0	1.77	1.77	0.6
Insecticides					
Azinphos-methyl	38	1.5	0.66	1.05	0.8
Bt (Bacillus thur.) ²	26	1.1			
Carbaryl	14	1.6	2.41	3.92	1.1
Lambda-cyhalothrin	63	2.9	0.04	0.11	0.1
Permethrin	19	1.1	0.16	0.19	0.1
Phosmet	38	2.5	1.18	3.02	2.3
Spinosad	11	1.0	0.07	0.07	(³)
Fungicides					
Captan	90	2.6	1.71	4.58	8.2
Chlorothalonil	91	2.4	2.23	5.52	10.0
Fenbuconazole	89	1.8	0.10	0.18	0.3
Sulfur	77	2.8	5.33	15.17	23.5
Other Chemicals					
Ethephon	51	1.0	0.22	0.22	0.2

¹ Bearing acres in 2003 for New York were 2,000 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 lbs.

Dates: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	5,300	62	449	17	74	7	21

**Dates: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	5,300					
Nitrogen		62	2.2	62	136	449
Phosphate		17	1.6	49	81	74
Potash		7	1.0	56	56	21

**Dates: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides Glyphosate	*
Insecticides Hexythiazox Malathion	* *

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Dates: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA ¹	5,300			12	1.8				

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

**Figs: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	13,500	75	822	5	3	9	34

**Figs: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	13,500					
Nitrogen		75	1.1	68	81	822
Phosphate		5	2.0	3	5	3
Potash		9	2.4	11	28	34

**Figs: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
Glyphosate	P
Oryzalin	*
Oxyfluorfen	P
Paraquat	*
Other Chemicals	
Strychnine	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Figs: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA ¹	13,500	8	3.8						

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

**Figs: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	9	3.6	0.66	2.42	2.8
Oxyfluorfen	7	1.5	0.29	0.46	0.4

¹ Total acres in 2003 for California were 13,500 acres. Acreage includes both bearing and nonbearing acres.

Grapefruit: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	13,500	74	989	33	138	32	166
FL	95,500	85	10,420	79	3,691	82	11,606
TX	18,500	94	1,306	37	119	37	126
Total	127,500	85	12,715	69	3,948	71	11,898

Grapefruit: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	13,500					
Nitrogen		74	2.5	38	99	989
Phosphate		33	1.5	20	32	138
Potash		32	1.9	19	38	166
Florida	95,500					
Nitrogen		85	2.7	47	129	10,420
Phosphate		79	2.2	22	49	3,691
Potash		82	2.5	58	148	11,606
Texas	18,500					
Nitrogen		94	2.1	35	75	1,306
Phosphate		37	2.1	8	17	119
Potash		37	2.1	9	18	126
Total	127,500					
Nitrogen		85	2.6	45	117	12,715
Phosphate		69	2.2	20	46	3,948
Potash		71	2.5	54	134	11,898

**Grapefruit: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States			
	ALL	CA	FL	TX
Herbicides				
2,4-D	P	P	P	
Bromacil	P	*	P	*
Diuron	P	P	P	P
Glyphosate	P	P	P	P
MSMA	*			*
Norflurazon	P		P	P
Oryzalin	*	*		
Paraquat	*		P	*
Pendimethalin	*			*
Prometryn	*			*
Sethoxydim	*		*	
Simazine	P	P	P	P
Sulfosate	*		*	*
Thiazopyr	*		*	
Trifluralin	*			*

See footnote(s) at end of table.

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**Grapefruit: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States			
	ALL	CA	FL	TX
Insecticides				
Abamectin	P	*	P	*
Aldicarb	P		P	P
Azadirachtin	*			*
Carbaryl	P	*	*	
Chlorpyrifos	P	P	P	P
Cyfluthrin	*	*		
Dicofol	P		P	P
Diflubenzuron	*		P	*
Ethion	P		P	P
Ethyl parathion	*			*
Fenamiphos	*			*
Fenbutatin-oxide	P	*	P	*
Fenpropathrin	*		*	*
Imidacloprid	*		*	
Malathion	*	*		
Methidathion	*	*		*
Neem oil, clar. hyd.	*		*	
Oxamyl	P			P
Petroleum distillate	P	P	P	P
Petroleum oil	*		*	
Potassium salts	*		*	
Pyridaben	P		P	P
Pyriproxyfen	P	*	*	P
S-Methoprene	*		*	
Sabadilla	P	*		*
Spinosad	*	*	*	
Sulfur	P	*	P	*

See footnote(s) at end of table.

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**Grapefruit: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States			
	ALL	CA	FL	TX
Fungicides				
Azoxystrobin	P		P	
Basic copper sulfate	P	*	*	
Benomyl	P		P	
Chlorothalonil	*	*		
Copper chloride hyd.	P		P	
Copper hydroxide	P	*	P	*
Copper oxide	*	*		*
Copper sulfate	P	*	P	*
Fenbuconazole	P		P	P
Ferbam	P		P	
Fosetyl-al	*			*
Maneb	*			*
Mefenoxam	P	*	P	*
Metalaxyl	*	*		
Phosphorous acid	*		*	
Pyraclostrobin	P		P	P
Streptomycin	*			*
Trifloxystrobin	P		P	P
Other Chemicals				
Bromadiolone	*	*		
Diphacinone	*	*		
Gibberellic acid	*		*	
Harpin protein	*		*	
Metaldehyde	*	*		
Metam-sodium	*	*		
Strychnine	*	*		

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Grapefruit: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA ¹	13,500	39	11.7	51	27.1	20	3.2		
FL ¹	95,500	63	317.2	84	5,564.6	84	473.0		
TX	18,500	90	161.3	97	399.2	74	4.5		
Total	127,500	64	490.4	83	5,991.2	76	480.7	7	9.3

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

**Grapefruit: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	10	1.4	0.17	0.25	3.1
Bromacil	25	1.5	1.02	1.59	50.6
Diuron	31	2.1	1.15	2.42	95.6
Glyphosate	54	2.7	1.05	2.89	198.1
Norflurazon	16	1.3	0.98	1.30	26.6
Simazine	20	1.8	2.07	3.86	99.6
Insecticides					
Abamectin	45	1.0	0.01	0.01	0.7
Aldicarb	20	1.0	3.24	3.27	81.4
Carbaryl	5	1.2	3.57	4.51	26.3
Chlorpyrifos	15	1.3	2.34	3.06	60.1
Dicofol	7	1.0	2.34	2.46	21.2
Ethion	13	1.0	3.83	3.86	65.0
Fenbutatin-oxide	23	1.1	1.02	1.20	34.7
Oxamyl	1	1.2	0.10	0.12	0.2
Petroleum distillate	63	1.8	32.79	60.14	4,819.0
Pyridaben	29	1.0	0.28	0.30	11.3
Pyriproxyfen	1	1.4	0.08	0.12	0.2
Sabadilla	2	1.2	0.006	0.008	(²)
Sulfur	39	1.3	13.16	17.28	851.7
Fungicides					
Azoxystrobin	34	1.2	0.18	0.22	9.5
Basic copper sulfate	4	1.2	2.41	3.11	14.2
Benomyl	6	1.0	0.50	0.51	3.6
Copper chloride hyd.	6	1.3	3.43	4.63	37.3
Copper hydroxide	53	2.5	2.00	5.01	340.8
Copper sulfate	13	1.2	1.50	1.87	30.4
Fenbuconazole	41	1.1	0.12	0.14	7.0
Ferbam	1	2.1	5.99	13.01	23.9
Mefenoxam	12	1.6	0.24	0.40	6.3
Pyraclostrobin	18	1.4	0.15	0.23	5.3
Trifloxystrobin	4	1.0	0.08	0.08	0.4

¹ Bearing acres in 2003 for the 3 program states were 127,500 acres.
States included are CA, FL, and TX.

² Total applied is less than 50 lbs.

**Grapefruit: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	25	1.3	0.09	0.12	0.4
Diuron	5	1.0	2.29	2.48	1.8
Glyphosate	50	3.7	0.24	0.89	6.0
Simazine	6	1.7	2.41	4.12	3.3
Insecticides					
Chlorpyrifos	20	1.3	2.04	2.67	7.2
Petroleum distillate	4	1.1	20.85	23.47	13.7

¹ Total acres in 2003 for California were 13,500 acres. Acreage includes both bearing and nonbearing acres.

**Grapefruit: Agricultural Chemical Applications,
Florida, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	8	1.5	0.24	0.37	2.7
Bromacil	20	1.4	0.74	1.10	20.9
Diuron	26	1.6	0.87	1.46	36.6
Glyphosate	60	2.6	1.18	3.13	180.1
Norflurazon	17	1.3	0.95	1.31	20.7
Paraquat	2	1.1	0.45	0.53	1.1
Simazine	12	1.9	2.26	4.48	51.2
Insecticides					
Abamectin	46	1.0	0.01	0.01	0.5
Aldicarb	14	1.0	2.88	2.91	38.3
Chlorpyrifos	2	2.0	1.48	3.10	5.6
Dicofol	3	1.0	2.45	2.45	7.5
Diflubenzuron	12	1.0	0.12	0.12	1.4
Ethion	15	1.0	4.39	4.39	62.9
Fenbutatin-oxide	17	1.2	0.98	1.27	20.1
Petroleum distillate	75	1.9	33.10	62.96	4,538.1
Pyridaben	32	1.0	0.29	0.32	9.6
Sulfur	51	1.3	13.14	17.25	846.5
Fungicides					
Azoxystrobin	34	1.2	0.24	0.30	9.5
Benomyl	6	1.0	0.67	0.68	3.6
Copper chloride hyd.	6	1.3	4.58	6.18	37.3
Copper hydroxide	70	2.5	2.00	5.07	337.4
Copper sulfate	15	1.2	1.60	2.02	29.3
Fenbuconazole	35	1.1	0.14	0.16	5.4
Ferbam	1	2.1	8.00	17.36	23.9
Mefenoxam	15	1.7	0.26	0.45	6.3
Pyraclostrobin	21	1.5	0.17	0.26	5.3
Trifloxystrobin	3	1.0	0.09	0.09	0.2

¹ Bearing acres in 2003 for Florida were 95,500 acres.

**Grapefruit: Agricultural Chemical Applications,
Texas, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Diuron	74	2.9	1.41	4.16	57.1
Glyphosate	23	2.6	1.06	2.84	12.0
Norflurazon	13	1.0	2.37	2.37	5.9
Simazine	74	1.7	1.87	3.31	45.1
Insecticides					
Aldicarb	49	1.0	4.71	4.71	43.0
Chlorpyrifos	82	1.2	2.56	3.11	47.3
Dicofol	25	1.0	2.70	2.95	13.6
Ethion	4	1.1	2.51	2.87	2.0
Oxamyl	1	1.2	0.67	0.84	0.2
Petroleum distillate	40	1.2	29.38	35.95	267.2
Pyridaben	19	1.1	0.45	0.50	1.7
Pyriproxyfen	1	1.0	0.04	0.04	(²)
Fungicides					
Fenbuconazole	69	1.1	0.11	0.12	1.6
Pyraclostrobin	1	1.0	0.15	0.15	(²)
Trifloxystrobin	12	1.1	0.08	0.09	0.2

¹ Bearing acres in 2003 for Texas were 18,500 acres.

² Total applied is less than 50 lbs.

Grapes, All: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	882,000	66	23,089	18	7,904	43	44,807
MI	12,600	90	1,033	40	251	81	1,018
NY	31,000	88	1,816	10	132	29	1,088
WA	52,000	55	1,710	27	544	22	630
Total	977,600	66	27,648	18	8,831	42	47,543

Grapes, All: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	882,000					
Nitrogen		66	1.6	24	40	23,089
Phosphate		18	1.6	30	51	7,904
Potash		43	1.9	61	117	44,807
Michigan	12,600					
Nitrogen		90	1.0	83	91	1,033
Phosphate		40	1.0	45	49	251
Potash		81	1.0	94	100	1,018
New York	31,000					
Nitrogen		88	1.1	57	66	1,816
Phosphate		10	1.4	28	41	132
Potash		29	1.1	101	120	1,088
Washington	52,000					
Nitrogen		55	1.3	46	60	1,710
Phosphate		27	1.1	33	39	544
Potash		22	1.2	43	54	630
Total	977,600					
Nitrogen		66	1.6	26	43	27,648
Phosphate		18	1.6	31	50	8,831
Potash		42	1.8	61	115	47,543

**Grapes, All: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States				
	ALL	CA	MI	NY	WA
Herbicides					
2,4-D	P	P		*	*
2,4-D, Dimeth. salt	P	*	*		
2,4-DP, Dimeth. salt	*	*			
Acifluorfen	*	*			
Bentazon	*	*			
Dichlobenil	*	*			
Diuron	P	P	*	P	*
Ethofumesate	*			*	
Fluazifop-P-butyl	*	*		*	
Glufosinate-ammonium	P	P			
Glyphosate	P	P	P	P	P
Isoxaben	*	*	*		
Napropamide	*	P			*
Norflurazon	P	P	*	*	P
Oryzalin	P	P	P	P	P
Oxyfluorfen	P	P			P
Paraquat	P	P	P	P	P
Pendimethalin	P	P	*		*
Pronamide	*				*
Propanil	*			*	
Prosulfuron	*			*	
Sethoxydim	P	*			*
Simazine	P	P	P	P	P
Sulfosate	P	*		P	
Triclopyr	*	*			
Trifluralin	*	*		*	*

See footnote(s) at end of table.

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**Grapes, All: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States				
	ALL	CA	MI	NY	WA
Insecticides					
Abamectin	P	P	*		*
Acetamiprid	*	*			*
Azadirachtin	*	*			
Azinphos-methyl	P		P	*	*
Beauveria bassiana	*	*		*	
Bifenazate	P	P			P
Bt (Bacillus thur.)	*	P		*	
Buprofezin	*	P			*
Carbaryl	P	P	P	P	P
Carbofuran	*	*			
Chlorpyrifos	P	P	*		*
Cryolite	P	P			
Diazinon	P	P	*	*	*
Dicofol	P	P		*	*
Dimethoate	P	P			P
Endosulfan	*			*	*
Esfenvalerate	*		*		
Fenamiphos	*	P			*
Fenbutatin-oxide	*	*			*
Fenpropathrin	P	P	P	P	P
Fonofos	*			*	
Imidacloprid	P	P	*		*
Jojoba oil	*	*			
Kaolin	P	P		*	*
Malathion	P	*	*		
Methomyl	P	P	*	*	
Methoxychlor	*		*		
Myrothecium verruc.	*	*			
Naled	*	*			
Neem oil, clar. hyd.	*	*			
Petroleum distillate	P	P	*	*	P
Phosmet	P	*	P	*	*
Piperonyl butoxide	*		*		
Potassium salts	*				*
Propargite	P	P			P
Pyrethrins	*	P	*		
Pyridaben	P	P			
Spinosad	*				*
Tebufenozide	P	P			

See footnote(s) at end of table.

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**Grapes, All: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States				
	ALL	CA	MI	NY	WA
Fungicides					
AQ-10 Biofungicide	*	*			
Azoxystrobin	P	P	P	P	
Bacillus subtilis	P	P	*	*	*
Basic copper sulfate	P	P	*	*	
Benomyl	*	*			
Calcium polysulfide	P	P	*	*	P
Captan	P	*	*	P	
Copper hydroxide	P	P	*	P	*
Copper oxide	P	P			
Copper oxychlo. sul.	*	P		*	
Copper oxychloride	*	P	*		
Copper resinate	P	*		*	
Copper sulfate	*		*	*	
Cyprodinil	P	P	*	P	*
Dicloran	*	*			*
Dodine	*				*
Fenarimol	P	P	*	P	*
Fenhexamid	P	P	*	P	*
Ferbam	P		*	*	
Fosetyl-al	*		*	*	
Iprodione	P	*	*	*	*
Kresoxim-methyl	P	P	P	P	P
Mancozeb	P	P	P	P	
Maneb	P	*	*	P	
Mefenoxam	*		*		
Metalaxyl	P		P	P	
Myclobutanil	P	P	P	P	P
Phosphorous acid	P		*	*	
Potassium bicarbon.	P	P	*	*	*
Sulfur	P	P	P	P	P
Tebuconazole	P	P	P	P	P
Thiophanate-methyl	*	*	*		
Triadimefon	P		P	*	*
Trifloxystrobin	P	P	*	*	P
Triflumizole	P	P		*	*
Ziram	P	*	P	*	

See footnote(s) at end of table.

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**Grapes, All: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States				
	ALL	CA	MI	NY	WA
Other Chemicals					
Aluminum phosphide	*	*			
Chlorophacinone	*	*			
Cyanamid	*	*			
Cytokinins	*				*
Dichloropropene	*	*			
Diphacinone	*	*			
Ethephon	P	P			
Gibberellic acid	P	*	*		
Harpin protein	P	P			
Hydrogen peroxide	*			*	
Mepiquat chloride	*			*	
Methyl bromide	*	*			
Sodium hypochlorite	*	*			
Sodium tetrathiocarb	*	*			
Strychnine	P	P			
Tetradecen-1-OL (Z)	*	*			
Tetradecen-1-yl (E)	*	*			
Zinc phosphide	*				*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Grapes, All: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

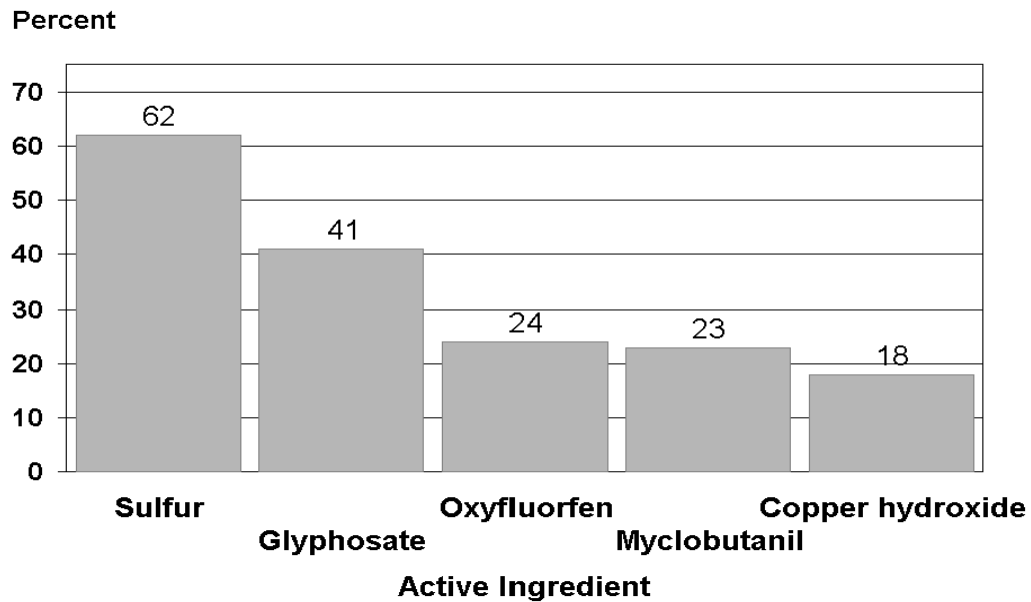
State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide ¹		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA ³	882,000	45	949.6	39	2,126.5	68	38,237.0	9	93.7
MI ²	12,600	41	9.0	90	31.4	91	149.9		
NY ²	31,000	77	100.0	82	96.3	96	376.2		
WA ²	52,000	60	82.9	48	109.4	50	117.2		
Total	977,600	47	141.6	42	2,363.9	68	38,880.4	8	94.5

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

² Insufficient reports to publish data for one or more pesticide classes.

³ Acreage in California includes non-bearing acres.

**Grapes, All - Percent of Acres Treated
Top 5 Active Ingredients for 2003**



Surveyed States are CA, MI, NY, and WA

**Grapes, All: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	*	1.0	0.25	0.27	1.7
2,4-D, Dimeth. salt	*	1.0	0.01	0.01	0.1
Diuron	4	1.1	1.09	1.20	42.2
Glufosinate-ammonium	*	1.0	0.48	0.48	3.4
Glyphosate	41	1.7	0.71	1.20	486.6
Norflurazon	2	1.2	1.94	2.32	38.0
Oryzalin	8	1.0	1.63	1.66	127.5
Oxyfluorfen	24	1.3	0.48	0.62	144.3
Paraquat	15	1.2	0.44	0.57	81.9
Pendimethalin	*	1.0	1.20	1.21	1.5
Sethoxydim	*	1.0	0.09	0.09	0.2
Simazine	15	1.1	1.19	1.34	195.0
Sulfosate	*	1.1	0.78	0.86	6.6
Insecticides					
Abamectin	5	1.0	0.01	0.01	0.5
Azinphos-methyl	8	1.9	0.06	0.12	10.1
Bifenazate	2	1.1	0.35	0.42	8.4
Carbaryl	3	1.3	1.55	2.04	51.5
Chlorpyrifos	4	1.1	1.74	2.01	69.5
Cryolite	8	1.3	4.80	6.69	543.2
Diazinon	1	1.0	0.93	0.98	12.9
Dicofol	*	1.0	1.04	1.07	0.6
Dimethoate	1	1.0	1.28	1.29	12.6
Fenpropathrin	4	1.2	0.17	0.22	9.6
Imidacloprid	13	1.0	0.09	0.10	13.4
Kaolin	*	1.1	17.57	20.25	10.8
Malathion	*	1.0	1.95	2.06	1.2
Methomyl	3	1.1	0.67	0.75	18.9
Petroleum distillate	9	1.4	12.15	17.54	1,462.0
Phosmet	*	1.8	1.11	2.05	10.4
Propargite	4	1.0	1.35	1.47	51.0
Pyridaben	3	1.1	0.38	0.42	11.2
Tebufozide	4	1.1	0.17	0.19	7.4

See footnote(s) at end of table.

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**Grapes, All: Agricultural Chemical Applications,
Program States, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Azoxystrobin	8	1.2	0.19	0.24	20.1
Bacillus subtilis ²	*	2.1			
Basic copper sulfate	4	1.8	1.20	2.22	83.6
Calcium polysulfide	4	1.1	16.64	19.51	803.5
Captan	2	1.3	1.60	2.16	34.7
Copper hydroxide	18	2.0	0.55	1.12	196.0
Copper oxide	5	1.2	0.82	1.02	48.6
Copper resinate	*	1.7	0.13	0.22	0.5
Cyprodinil	9	1.4	0.45	0.64	58.5
Fenarimol	10	1.3	0.03	0.04	4.3
Fenhexamid	2	1.1	0.49	0.57	10.8
Ferbam	*	1.8	0.09	0.16	1.5
Iprodione	*	1.0	0.83	0.84	2.0
Kresoxim-methyl	6	1.0	0.14	0.15	9.4
Mancozeb	5	2.4	2.11	5.23	276.7
Maneb	*	1.5	1.80	2.72	12.2
Metalaxyl	4	1.0	0.004	0.004	0.2
Myclobutanil	23	1.8	0.09	0.17	37.0
Phosphorous acid	2	1.2	0.05	0.06	1.4
Potassium bicarbon.	5	1.2	2.94	3.65	168.4
Sulfur	62	5.9	10.24	60.57	36,781.9
Tebuconazole	16	1.2	0.11	0.13	20.4
Triadimefon	2	1.3	0.009	0.01	0.2
Trifloxystrobin	15	1.2	0.07	0.09	12.6
Triflumizole	6	1.3	0.15	0.20	11.6
Ziram	2	2.1	2.55	5.60	88.6
Other Chemicals					
Ethephon	3	1.2	0.22	0.27	8.0
Gibberellic acid	10	1.7	0.03	0.05	4.5
Harpin protein	*	1.4	0.006	0.009	(³)
Strychnine	4	1.3	0.01	0.02	0.6

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 4 program states were 977,600 acres.

States included are CA, MI, NY, and WA.

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 lbs.

**Grapes, All: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	*	1.1	0.30	0.34	1.4
Diuron	2	1.1	0.63	0.73	15.0
Glufosinate-ammonium	*	1.0	0.53	0.53	3.4
Glyphosate	41	1.7	0.70	1.21	437.8
Napropamide	*	1.1	3.79	4.36	7.9
Norflurazon	*	1.0	1.18	1.23	9.7
Oryzalin	8	1.0	1.60	1.63	119.3
Oxyfluorfen	24	1.3	0.49	0.64	134.8
Paraquat	13	1.2	0.40	0.49	57.0
Pendimethalin	*	1.0	1.31	1.32	1.4
Simazine	15	1.1	1.06	1.20	156.5
Insecticides					
Abamectin	5	1.0	0.01	0.01	0.5
Bifenazate	2	1.2	0.37	0.45	6.0
Bt (Bacillus thur.) ²	4	1.1			
Buprofezin	*	1.0	0.50	0.52	3.3
Carbaryl	*	1.0	1.64	1.75	5.7
Chlorpyrifos	3	1.1	1.98	2.31	62.9
Cryolite	8	1.3	5.32	7.42	543.2
Diazinon	1	1.0	0.94	0.99	12.4
Dicofol	*	1.0	1.27	1.34	0.3
Dimethoate	*	1.0	1.47	1.48	11.9
Fenamiphos	2	1.1	1.81	2.05	28.4
Fenpropathrin	3	1.1	0.16	0.19	4.4
Imidacloprid	13	1.0	0.10	0.11	12.4
Kaolin	*	1.2	18.43	23.00	7.4
Methomyl	3	1.1	0.72	0.81	18.4
Petroleum distillate	8	1.3	12.81	17.86	1,316.3
Propargite	3	1.0	1.47	1.60	48.7
Pyrethrins	*	1.2	0.03	0.03	0.1
Pyridaben	3	1.1	0.42	0.47	11.2
Tebufozide	4	1.1	0.18	0.22	7.4

See footnote(s) at end of table.

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**Grapes, All: Agricultural Chemical Applications,
California, 2003 ¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Azoxystrobin	6	1.0	0.21	0.23	12.6
Bacillus subtilus ²	*	2.2			
Basic copper sulfate	4	1.8	1.31	2.42	80.5
Calcium polysulfide	4	1.1	18.22	20.40	797.8
Copper hydroxide	19	2.0	0.56	1.14	189.5
Copper oxide	5	1.2	0.91	1.13	48.6
Copper oxychlor. sul.	6	1.0	2.76	3.00	160.0
Copper oxychloride	*	1.0	2.83	2.87	15.0
Cyprodinil	10	1.4	0.46	0.64	57.0
Fenarimol	7	1.3	0.04	0.05	3.0
Fenhexamid	2	1.1	0.49	0.57	10.0
Kresoxim-methyl	6	1.0	0.15	0.16	8.4
Mancozeb	2	1.8	1.60	2.89	56.9
Myclobutanil	24	1.8	0.09	0.17	34.8
Potassium bicarbon.	5	1.2	2.97	3.62	163.1
Sulfur	66	6.0	10.42	62.96	36,515.7
Tebuconazole	15	1.1	0.10	0.12	16.6
Trifloxystrobin	15	1.2	0.07	0.09	11.4
Triflumizole	5	1.2	0.15	0.19	8.8
Other Chemicals					
Ethephon	3	1.2	0.25	0.30	8.0
Harpin protein	*	1.4	0.007	0.01	(³)
Strychnine	4	1.3	0.01	0.02	0.6

* Area applied is less than 0.5 percent.

¹ Total acres in 2003 for California were 882,000 acres. Acreage includes both bearing and nonbearing 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 lbs.

**Grapes, All: Agricultural Chemical Applications,
Michigan, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	35	1.1	0.54	0.61	2.7
Oryzalin	1	1.4	2.35	3.47	0.5
Paraquat	29	1.6	0.42	0.67	2.5
Simazine	6	1.0	1.08	1.14	0.9
Insecticides					
Azinphos-methyl	63	1.9	0.63	1.21	9.6
Carbaryl	38	1.5	1.41	2.22	10.7
Fenprothrin	43	1.8	0.16	0.29	1.6
Phosmet	26	2.4	1.07	2.58	8.3
Fungicides					
Azoxystrobin	15	1.3	0.19	0.27	0.5
Kresoxim-methyl	1	1.6	0.10	0.16	(²)
Mancozeb	81	3.2	2.06	6.63	67.8
Metalaxyl	3	1.1	0.06	0.07	(²)
Myclobutanil	32	1.8	0.08	0.15	0.6
Sulfur	6	2.3	3.76	8.79	6.5
Tebuconazole	63	2.3	0.11	0.24	1.9
Triadimefon	4	2.2	0.06	0.14	0.1
Ziram	76	2.8	2.42	6.83	65.8

¹ Bearing acres in 2003 for Michigan were 12,600 acres.

² Total applied is less than 50 lbs.

**Grapes, All: Agricultural Chemical Applications,
New York, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Diuron	40	1.0	1.90	1.96	24.2
Glyphosate	40	1.2	0.95	1.17	14.4
Oryzalin	2	1.0	2.72	2.82	2.0
Paraquat	29	1.3	0.56	0.75	6.8
Simazine	42	1.0	2.58	2.76	35.6
Sulfosate	9	1.0	1.32	1.39	3.7
Insecticides					
Carbaryl	49	1.3	1.60	2.16	32.4
Fenprothrin	40	1.3	0.18	0.24	3.0
Fungicides					
Azoxystrobin	70	1.7	0.19	0.33	7.0
Captan	12	2.2	1.70	3.83	14.3
Copper hydroxide	19	1.5	0.63	0.98	5.8
Cyprodinil	5	1.5	0.46	0.70	1.1
Fenarimol	52	1.4	0.03	0.04	0.7
Fenhexamid	3	1.4	0.44	0.64	0.7
Kresoxim-methyl	6	1.5	0.12	0.18	0.3
Mancozeb	69	2.7	2.57	7.13	152.1
Maneb	13	1.4	1.83	2.63	10.7
Metalaxyl	5	1.0	0.10	0.10	0.2
Myclobutanil	12	1.8	0.10	0.19	0.7
Sulfur	23	5.2	4.16	21.62	152.3
Tebuconazole	31	1.4	0.11	0.15	1.5

¹ Bearing acres in 2003 for New York were 31,000 acres.

**Grapes, All: Agricultural Chemical Applications,
Washington, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	48	1.6	0.79	1.28	31.7
Norflurazon	8	1.6	2.22	3.62	15.1
Oryzalin	5	1.0	2.14	2.28	5.7
Oxyfluorfen	20	1.3	0.70	0.94	9.5
Paraquat	27	1.8	0.62	1.12	15.6
Simazine	3	1.0	1.22	1.24	2.0
Insecticides					
Bifenazate	11	1.1	0.35	0.40	2.4
Carbaryl	6	1.0	0.91	0.91	2.6
Dimethoate	3	1.0	0.51	0.52	0.7
Fenpropathrin	5	1.0	0.18	0.19	0.5
Petroleum distillate	10	1.9	8.27	16.26	85.8
Propargite	5	1.0	0.80	0.84	2.3
Fungicides					
Calcium polysulfide	2	3.3	0.80	2.69	2.8
Kresoxim-methyl	14	1.0	0.08	0.08	0.6
Myclobutanil	14	1.4	0.09	0.13	0.9
Sulfur	35	2.0	2.90	5.96	107.4
Tebuconazole	6	1.1	0.12	0.13	0.4
Trifloxystrobin	31	1.0	0.05	0.06	0.9

¹ Bearing acres in 2003 for Washington were 52,000 acres.

**Grapes, Raisin: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	260,000	47	7,119	5	2,203	10	2,394

**Grapes, Raisin: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	260,000					
Nitrogen		47	1.9	29	58	7,119
Phosphate		5	2.4	75	180	2,203
Potash		10	2.4	39	94	2,394

**Grapes, Raisin: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	*
2,4-D, Dimeth. salt	*
Diuron	P
Glufosinate-ammonium	*
Glyphosate	P
Norflurazon	*
Oryzalin	*
Oxyfluorfen	P
Paraquat	P
Simazine	P
Insecticides	
Abamectin	*
Acetamiprid	*
Bifenazate	P
Bt (Bacillus thur.)	*
Chlorpyrifos	*
Cryolite	P
Diazinon	*
Fenamiphos	*
Fenbutatin-oxide	*
Fenpropathrin	*
Imidacloprid	P
Propargite	P
Tebufozide	P
Fungicides	
Azoxystrobin	*
Captan	*
Copper hydroxide	P
Copper oxide	*
Copper oxychlor. sul.	*
Fenarimol	P
Kresoxim-methyl	*
Mancozeb	*
Myclobutanil	P
Potassium bicarbon.	*
Sulfur	P
Tebuconazole	*
Trifloxystrobin	*
Triflumizole	P
Ziram	*
Other Chemicals	
Ethephon	*
Gibberellic acid	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Grapes, Raisin: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied ¹							
		Herbicide		Insecticide ²		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	260,000	42	127.7	30	432.4	61	7,746.7	19	4.4

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

² Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Grapes, Raisin: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Diuron	6	1.1	0.46	0.55	7.9
Glyphosate	32	1.3	0.44	0.61	51.0
Oxyfluorfen	13	1.0	0.09	0.09	3.0
Paraquat	9	1.1	0.30	0.33	7.6
Simazine	24	1.1	0.77	0.89	55.5
Insecticides					
Bifenazate	3	1.2	0.31	0.39	2.9
Cryolite	19	1.5	5.02	7.67	378.1
Imidacloprid	12	1.0	0.02	0.03	0.8
Propargite	8	1.0	1.42	1.53	31.5
Tebufenozide	5	1.2	0.15	0.18	2.3
Fungicides					
Copper hydroxide	7	6.0	0.49	2.94	56.6
Fenarimol	11	1.4	0.03	0.05	1.3
Myclobutanil	3	1.0	0.10	0.11	0.8
Sulfur	58	4.9	10.24	51.15	7,658.8
Triflumizole	6	1.4	0.14	0.20	3.4

¹ Total acres in 2003 for California were 260,000 acres. Acreage includes both bearing and nonbearing acres.

**Grapes, Table: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	93,000	91	4,008	43	1,915	74	5,018

**Grapes, Table: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	93,000					
Nitrogen		91	2.1	22	47	4,008
Phosphate		43	2.0	23	48	1,915
Potash		74	1.7	42	73	5,018

**Grapes, Table: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	*
Acifluorfen	*
Bentazon	*
Diuron	*
Glufosinate-ammonium	*
Glyphosate	P
Isoxaben	*
Napropamide	*
Norflurazon	*
Oryzalin	*
Oxyfluorfen	P
Paraquat	P
Pendimethalin	*
Sethoxydim	*
Simazine	P
Trifluralin	*
Insecticides	
Abamectin	*
Azadirachtin	*
Bifenazate	*
Bt (Bacillus thur.)	*
Carbaryl	*
Chlorpyrifos	P
Cryolite	P
Dicofol	*
Dimethoate	*
Fenamiphos	P
Fenpropathrin	*
Imidacloprid	P
Methomyl	P
Myrothecium verruc.	*
Pyrethrins	*
Pyridaben	*
Tebufenozide	*

See footnote(s) at end of table.

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**Grapes, Table: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	CA
Fungicides	
Azoxystrobin	P
Basic copper sulfate	*
Calcium polysulfide	*
Captan	*
Copper hydroxide	P
Copper oxide	P
Copper oxychlo. sul.	P
Copper oxychloride	*
Cyprodinil	P
Dicloran	*
Fenarimol	*
Fenhexamid	*
Iprodione	*
Kresoxim-methyl	*
Mancozeb	*
Myclobutanil	P
Potassium bicarbon.	*
Sulfur	P
Tebuconazole	P
Thiophanate-methyl	*
Trifloxystrobin	P
Triflumizole	*
Ziram	*
Other Chemicals	
Cyanamid	*
Ethephon	P
Gibberellic acid	P
Harpin protein	*
Strychnine	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Grapes, Table: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied ¹							
		Herbicide		Insecticide ²		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	93,000	46	109.3	56	245.2	89	2,565.5	24	72.5

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

² Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Grapes, Table: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	30	1.1	1.21	1.39	38.7
Oxyfluorfen	14	1.2	0.62	0.75	9.7
Paraquat	22	1.1	0.73	0.87	18.2
Simazine	23	1.2	0.76	0.93	19.6
Insecticides					
Chlorpyrifos	16	1.2	2.00	2.42	36.0
Cryolite	24	1.1	6.17	7.19	157.8
Fenamiphos	1	1.7	1.89	3.26	4.2
Imidacloprid	27	1.0	0.23	0.24	6.0
Methomyl	28	1.1	0.73	0.82	21.1
Fungicides					
Azoxystrobin	2	1.1	0.21	0.25	0.5
Copper hydroxide	41	2.2	0.62	1.37	52.6
Copper oxide	10	1.1	0.91	1.03	9.2
Copper oxychlo. sul.	5	2.1	2.30	4.96	22.2
Cyprodinil	21	1.1	0.43	0.49	9.4
Myclobutanil	46	3.0	0.10	0.30	13.0
Sulfur	89	5.0	5.04	25.47	2,099.4
Tebuconazole	20	1.5	0.10	0.16	2.9
Trifloxystrobin	30	1.4	0.05	0.08	2.2
Other Chemicals					
Ethephon	18	1.3	0.25	0.34	5.6
Gibberellic acid	58	2.2	0.03	0.07	4.0

¹ Total acres in 2003 for California were 93,000 acres. Acreage includes both bearing and nonbearing acres.

**Grapes, Wine: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	529,000	77	13,457	21	4,365	59	40,113

**Grapes, Wine: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	529,000					
Nitrogen		77	1.4	22	33	13,457
Phosphate		21	1.4	26	38	4,365
Potash		59	1.9	66	128	40,113

**Grapes, Wine: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	*
2,4-DP, Dimeth. salt	*
Acifluorfen	*
Bentazon	*
Dichlobenil	*
Diuron	P
Fluazifop-P-butyl	*
Glufosinate-ammonium	P
Glyphosate	P
Napropamide	*
Norflurazon	P
Oryzalin	P
Oxyfluorfen	P
Paraquat	P
Pendimethalin	P
Sethoxydim	*
Simazine	P
Sulfosate	*
Triclopyr	*
Trifluralin	*

See footnote(s) at end of table.

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**Grapes, Wine: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	CA
Insecticides	
Abamectin	P
Acetamiprid	*
Beauveria bassiana	*
Bifenazate	P
Bt (Bacillus thur.)	P
Buprofezin	P
Carbaryl	P
Carbofuran	*
Chlorpyrifos	P
Cryolite	P
Diazinon	*
Dicofol	P
Dimethoate	P
Fenamiphos	P
Fenbutatin-oxide	*
Fenpropathrin	P
Imidacloprid	P
Jojoba oil	*
Kaolin	P
Malathion	*
Methomyl	*
Naled	*
Neem oil, clar. hyd.	*
Petroleum distillate	P
Phosmet	*
Propargite	P
Pyrethrins	*
Pyridaben	P
Tebufenozide	P

See footnote(s) at end of table.

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**Grapes, Wine: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	CA
Fungicides	
AQ-10 Biofungicide	*
Azoxystrobin	P
Bacillus subtilis	P
Basic copper sulfate	P
Benomyl	*
Calcium polysulfide	P
Copper hydroxide	P
Copper oxide	P
Copper oxychloro. sul.	P
Copper oxychloride	*
Copper resinate	*
Cyprodinil	P
Dicloran	*
Fenarimol	P
Fenhexamid	P
Iprodione	*
Kresoxim-methyl	P
Mancozeb	P
Maneb	*
Myclobutanil	P
Potassium bicarbon.	P
Sulfur	P
Tebuconazole	P
Trifloxystrobin	P
Triflumizole	P
Ziram	*
Other Chemicals	
Aluminum phosphide	*
Chlorophacinone	*
Cyanamid	*
Dichloropropene	*
Diphacinone	*
Ethephon	*
Gibberellic acid	P
Harpin protein	*
Methyl bromide	*
Sodium hypochlorite	*
Sodium tetrathiocarb	*
Strychnine	P
Tetradecen-1-OL (Z)	*
Tetradecen-1-yl (E)	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Grapes, Wine: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied ¹							
		Herbicide		Insecticide ²		Fungicide ²		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	529,000	52	765.2	45	1,570.7	74	29,905.8	8	28.7

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

² Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Grapes, Wine: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Diuron	1	1.0	1.19	1.26	6.7
Glufosinate-ammonium	*	1.0	0.58	0.59	3.0
Glyphosate	51	1.8	0.73	1.37	370.9
Norflurazon	1	1.0	1.28	1.33	8.5
Oryzalin	14	1.0	1.53	1.57	112.9
Oxyfluorfen	33	1.3	0.54	0.73	128.5
Paraquat	15	1.2	0.35	0.44	35.8
Pendimethalin	*	1.0	1.34	1.34	1.4
Simazine	11	1.0	1.52	1.63	91.1
Insecticides					
Abamectin	6	1.0	0.01	0.01	0.3
Bifenazate	*	1.0	0.45	0.47	1.8
Bt (Bacillus thur.) ²	6	1.1			
Buprofezin	1	1.0	0.50	0.52	3.4
Carbaryl	*	1.0	1.67	1.79	5.6
Chlorpyrifos	3	1.0	1.99	2.04	28.9
Cryolite	2	1.1	5.58	6.53	56.1
Dicofol	*	1.0	1.07	1.13	0.1
Dimethoate	*	1.0	0.29	0.29	0.4
Fenamiphos	2	1.1	1.94	2.13	23.3
Fenpropathrin	4	1.1	0.18	0.19	3.6
Imidacloprid	12	1.1	0.09	0.10	6.7
Kaolin	*	1.2	18.43	23.00	7.7
Petroleum distillate	14	1.3	12.81	17.86	1,367.7
Propargite	2	1.1	1.56	1.73	19.9
Pyridaben	5	1.0	0.43	0.44	10.6
Tebufenozide	3	1.0	0.21	0.22	3.9

See footnote(s) at end of table.

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**Grapes, Wine: Agricultural Chemical Applications,
California, 2003 ¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Azoxystrobin	10	1.0	0.21	0.23	12.5
Bacillus subtilus ²	1	2.2			
Basic copper sulfate	5	1.7	0.02	0.03	0.8
Calcium polysulfide	7	1.0	17.23	18.58	689.6
Copper hydroxide	23	1.3	0.57	0.79	95.1
Copper oxide	7	1.2	0.90	1.16	40.2
Copper oxychlo. sul.	9	1.0	2.85	2.86	141.1
Cyprodinil	14	1.4	0.46	0.68	50.9
Fenarimol	7	1.2	0.04	0.05	1.8
Fenhexamid	3	1.0	0.49	0.51	8.1
Kresoxim-methyl	10	1.0	0.15	0.16	8.2
Mancozeb	1	1.7	1.41	2.48	14.4
Myclobutanil	32	1.6	0.09	0.14	23.8
Potassium bicarbon.	8	1.1	3.05	3.63	159.8
Sulfur	73	6.6	11.26	74.59	28,616.3
Tebuconazole	23	1.1	0.10	0.12	14.3
Trifloxystrobin	20	1.1	0.08	0.09	9.7
Triflumizole	6	1.1	0.16	0.19	5.9
Other Chemicals					
Gibberellic acid	*	1.1	0.02	0.02	0.1
Strychnine	6	1.3	0.01	0.02	0.7

* Area applied is less than 0.5 percent.

¹ Total acres in 2003 for California were 529,000 acres. Acreage includes both bearing and nonbearing acres.

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

Kiwifruit: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	4,800	80	498	39	316	41	341

**Kiwifruit: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	4,800					
Nitrogen		80	2.7	47	130	498
Phosphate		39	3.1	54	168	316
Potash		41	2.9	59	173	341

**Kiwifruit: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
Glyphosate	P
Oryzalin	*
Oxyfluorfen	*
Paraquat	*
Insecticides	
Bt (Bacillus thur.)	*
Cryolite	*
Fenamiphos	*
Methidathion	*
Petroleum distillate	*
Fungicides	
Vinclozolin	*
Other Chemicals	
Cyanamid	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Kiwifruit: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA ²	4,800	8	1.3	15	19.6				

¹ Total Applied excludes Bt's (Bacillus thuringiensis) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

² Insufficient reports to publish data for one or more pesticide classes.

**Kiwifruit: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	15	1.3	0.90	1.20	0.9

¹ Total acres in 2003 for California were 4,800 acres. Acreage includes both bearing and nonbearing acres.

Lemons: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	51,500	78	6,112	37	959	50	1,567

**Lemons: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	51,500					
Nitrogen		78	4.2	35	152	6,112
Phosphate		37	1.7	29	51	959
Potash		50	2.1	28	60	1,567

**Lemons: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	P
Bromacil	P
Diuron	P
Glyphosate	P
Glyphosate diam salt	*
Norflurazon	*
Oxyfluorfen	*
Paraquat	*
Pendimethalin	*
Simazine	P
Sulfosate	*
Insecticides	
Abamectin	P
Acephate	*
Acetamiprid	*
Carbaryl	*
Chlorpyrifos	P
Cyfluthrin	*
Dimethoate	*
Fenpropathrin	*
Imidacloprid	*
Malathion	*
Methidathion	*
Petroleum distillate	P
Piperonyl butoxide	P
Pyrethrins	P
Pyridaben	*
Pyriproxyfen	P
Sabadilla	*
Spinosad	P
Sulfur	P
Fungicides	
Basic copper sulfate	P
Chlorothalonil	*
Copper (metallic)	*
Copper hydroxide	P
Copper sulfate	P
Fosetyl-al	P
Mefenoxam	*

See footnote(s) at end of table.

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**Lemons: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	CA
Other Chemicals	
Aluminum phosphide	*
Bromadiolone	*
Dichloropropene	*
Diphacinone	*
Gibberellic acid	P
Harpin protein	*
Iron phosphate	*
Metaldehyde	P
Metam-sodium	*
Sodium tetrathiocarb	*
Strychnine	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Lemons: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	51,500	45	69.6	61	1,926.2	27	42.2	16	38.4

**Lemons: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	2	1.0	0.04	0.04	(²)
Bromacil	4	1.2	1.09	1.37	2.8
Diuron	7	1.2	1.58	1.90	6.4
Glyphosate	59	2.3	0.69	1.65	50.2
Simazine	5	1.1	1.63	1.93	4.5
Insecticides					
Abamectin	11	1.2	0.01	0.01	0.1
Chlorpyrifos	23	1.2	3.47	4.34	50.9
Petroleum distillate	37	1.4	61.44	91.21	1,738.1
Piperonyl butoxide	3	1.7	0.26	0.44	0.8
Pyrethrins	3	1.7	0.03	0.04	0.1
Pyriproxyfen	5	1.0	0.10	0.11	0.3
Spinosad	6	1.0	0.12	0.13	0.4
Sulfur	6	1.0	40.27	41.39	128.7
Fungicides					
Basic copper sulfate	4	1.0	4.01	4.15	9.2
Copper hydroxide	9	1.5	1.95	2.96	13.9
Copper sulfate	4	1.1	3.85	4.37	9.1
Fosetyl-al	5	1.0	3.52	3.63	9.8
Other Chemicals					
Gibberellic acid	13	1.1	0.04	0.05	0.3
Metaldehyde	19	3.3	0.48	1.58	15.7

¹ Total acres in 2003 for California were 51,500 acres. Acreage includes both bearing and nonbearing acres.

² Total applied is less than 50 lbs.

**Nectarines: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	41,500	79	2,827	37	365	48	1,357

**Nectarines: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	41,500					
Nitrogen		79	1.8	46	86	2,827
Phosphate		37	1.8	13	24	365
Potash		48	1.8	37	68	1,357

**Nectarines: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	P
2,4-D, Dimeth. salt	*
Glyphosate	P
Glyphosate diam salt	*
Isoxaben	*
Napropamide	*
Norflurazon	P
Oryzalin	*
Oxyfluorfen	P
Paraquat	P
Pendimethalin	*
Simazine	P
Sulfosate	*
Insecticides	
Azinphos-methyl	*
Bifenazate	P
Bt (Bacillus thur.)	P
Carbaryl	*
Chlorpyrifos	P
Clofentezine	P
Diazinon	*
Dicofol	*
Endosulfan	*
Esfenvalerate	P
Fenamiphos	*
Fenbutatin-oxide	*
Formetanate hydro.	P
Hexythiazox	*
Methidathion	*
Methomyl	P
Neem oil, clar. hyd.	*
Petroleum distillate	P
Phosmet	P
Propargite	P
Pyridaben	*
Pyriproxyfen	*
Spinosad	P

See footnote(s) at end of table.

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**Nectarines: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	CA
Fungicides	
Basic copper sulfate	*
Benomyl	*
Captan	*
Chlorothalonil	*
Copper hydroxide	P
Copper oxide	P
Copper oxychloride	*
Copper sulfate	*
Cyprodinil	P
Fenbuconazole	P
Iprodione	P
Myclobutanil	*
Propiconazole	P
Sulfur	P
Tebuconazole	P
Ziram	P
Other Chemicals	
Chlorophacinone	*
Chloropicrin	*
Decenol	*
Decenyl acetate	*
Dichloropropene	*
E-8-Dodecenyl acetat	P
GABA	*
L-Glutamic acid	*
Methyl bromide	*
Strychnine	*
Z-8-Dodecanol	P
Z-8-Dodecen acetate	P

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Nectarines: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	41,500	53	69.0	78	1,126.8	77	224.5	17	85.9

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Nectarines: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	11	1.0	1.18	1.28	5.8
Glyphosate	62	2.1	0.76	1.61	41.3
Norflurazon	10	1.0	1.52	1.64	7.0
Oxyfluorfen	24	1.2	0.23	0.29	2.9
Paraquat	6	1.9	0.44	0.87	2.3
Simazine	19	1.1	0.75	0.89	6.9
Insecticides					
Bifenazate	6	1.0	0.38	0.41	1.1
Bt (Bacillus thur.) ²	18	1.1			
Chlorpyrifos	31	1.0	1.85	1.98	25.1
Clofentezine	6	1.4	0.13	0.19	0.5
Esfenvalerate	41	1.1	0.04	0.04	0.8
Formetanate hydro.	35	1.0	1.08	1.11	15.9
Methomyl	9	1.1	0.63	0.72	2.7
Petroleum distillate	48	1.4	34.79	50.64	1,017.8
Phosmet	44	1.2	1.84	2.21	40.3
Propargite	14	1.0	1.23	1.32	7.5
Spinosad	25	2.0	0.07	0.14	1.4
Fungicides					
Copper hydroxide	15	1.1	4.06	4.82	30.0
Copper oxide	31	1.1	4.07	4.57	57.9
Cyprodinil	2	1.3	0.24	0.31	0.2
Fenbuconazole	8	2.8	0.03	0.10	0.3
Iprodione	30	1.1	0.63	0.73	9.2
Propiconazole	28	1.5	0.10	0.15	1.7
Sulfur	34	1.6	4.43	7.20	100.9
Tebuconazole	25	1.3	0.12	0.17	1.8
Ziram	5	1.0	5.05	5.49	12.1
Other Chemicals					
E-8-Dodecenyl acetat	24	1.1	0.005	0.005	0.1
Z-8-Dodecanol	24	1.1	0.001	0.001	(³)
Z-8-Dodecen acetate	24	1.1	0.08	0.09	0.9

¹ Total acres in 2003 for California were 41,500 acres. Acreage includes both bearing and nonbearing 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 lbs.

Olives: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	37,500	63	1,726	10	304	12	177

**Olives: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	37,500					
Nitrogen		63	1.4	51	74	1,726
Phosphate		10	1.6	48	80	304
Potash		12	1.4	28	41	177

**Olives: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	*
Acifluorfen	*
Bentazon	*
Clethodim	*
Diuron	P
Glyphosate	P
Napropamide	*
Oryzalin	*
Oxyfluorfen	P
Paraquat	P
Sethoxydim	*
Simazine	P
Insecticides	
Carbaryl	P
Lambda-cyhalothrin	*
Methidathion	*
Petroleum distillate	P
Spinosad	P
Fungicides	
Basic copper sulfate	P
Copper hydroxide	P
Copper oxide	*
Copper sulfate	*
Other Chemicals	
Ammonium bicarbonate	*
Diphacinone	*
NAA	*
Spiroketal	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Olives: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	37,500	31	35.7	41	40.5	24	62.1	7	(¹)

¹ Total applied is less than 50 pounds.

**Olives: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Diuron	16	1.2	1.05	1.27	7.4
Glyphosate	27	2.2	0.61	1.37	13.7
Oxyfluorfen	11	1.2	0.31	0.38	1.6
Paraquat	5	1.2	0.53	0.68	1.4
Simazine	15	1.3	1.51	2.03	11.1
Insecticides					
Carbaryl	2	1.1	5.77	6.51	5.8
Petroleum distillate	2	1.0	44.98	47.55	33.8
Spinosad	40	3.2	(²)	(²)	(³)
Fungicides					
Basic copper sulfate	5	1.3	9.68	12.61	25.0
Copper hydroxide	17	1.2	4.29	5.16	33.7

¹ Total acres in 2003 for California were 37,500 acres. Acreage includes both bearing and nonbearing acres.

² Rate per acre is less than 0.0005 lbs.

³ Total applied is less than 50 lbs.

Oranges excluding Temples: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	201,500	73	12,545	24	1,634	29	2,355
FL	587,600	95	101,422	72	13,660	93	110,673
Total	789,100	89	113,967	60	15,294	77	113,028

Oranges excluding Temples: Fertilizer
Primary Nutrient Applications,
Program States and Total, 2003

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	201,500					
Nitrogen		73	1.8	45	85	12,545
Phosphate		24	1.5	21	34	1,634
Potash		29	1.3	29	40	2,355
Florida	587,600					
Nitrogen		95	3.4	54	182	101,422
Phosphate		72	2.8	11	32	13,660
Potash		93	3.0	66	202	110,673
Total	789,100					
Nitrogen		89	3.0	52	162	113,967
Phosphate		60	2.7	12	32	15,294
Potash		77	2.9	64	186	113,028

**Oranges excluding Temples: Active Ingredients
and Publication Status
By Program States, 2003**

Active Ingredient	Program States		
	ALL	CA	FL
Herbicides			
2,4-D	P	P	P
Bromacil	P	P	P
Diuron	P	P	P
Glyphosate	P	P	P
Glyphosate diam salt	*	*	
MSMA	*	*	
Norflurazon	P	P	P
Oryzalin	P	*	*
Oxyfluorfen	P	P	
Paraquat	P	P	P
Pendimethalin	*	*	*
Sethoxydim	*		*
Simazine	P	P	P
Sulfosate	P	*	*
Thiazopyr	*		*
Trifluralin	*	*	*

See footnote(s) at end of table.

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**Oranges excluding Temples: Active Ingredients
and Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States		
	ALL	CA	FL
Insecticides			
Abamectin	P	P	P
Acephate	*	*	
Acetamiprid	*	P	*
Aldicarb	P		P
Azinphos-methyl	*		*
Bt (Bacillus thur.)	P	P	
Buprofezin	*	*	
Carbaryl	P	P	P
Chlorpyrifos	P	P	P
Cryolite	*	*	
Cyfluthrin	P	P	
Dicofol	P	P	P
Diflubenzuron	P		P
Dimethoate	P	P	
Ethion	P		P
Fenamiphos	*	*	*
Fenbutatin-oxide	*	*	P
Fenpropathrin	*	P	*
Formetanate hydro.	P	P	
Imidacloprid	P	P	P
Kaolin	*	*	
Malathion	P	P	
Methidathion	P	P	
Methiocarb	*	*	
Methomyl	*	*	
Mevinphos	*		*
Naled	*	*	
Neem oil	*	*	
Neem oil, clar. hyd.	*		*
Oxamyl	*		*
Petroleum distillate	P	P	P
Petroleum oil	P	*	*
Potassium salts	*		*
Pyrethrins	*	*	
Pyridaben	P	P	P
Pyriproxyfen	*	P	*
Ryania	*	*	
S-Methoprene	P		P
Sabadilla	*	*	
Spinosad	*	P	*
Sulfur	*	*	P

See footnote(s) at end of table.

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**Oranges excluding Temples: Active Ingredients
and Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States		
	ALL	CA	FL
Fungicides			
Azoxystrobin	P		P
Basic copper sulfate	P	P	P
Benomyl	*		*
Chlorothalonil	*	*	
Copper amm. complex	*	*	*
Copper chloride hyd.	*	*	P
Copper hydroxide	P	P	P
Copper oxide	*	*	*
Copper sulfate	P	P	P
Fenbuconazole	P		P
Ferbam	P		P
Fosetyl-al	*	*	
Mefenoxam	*	*	P
Phosphorous acid	P		P
Pyraclostrobin	P		P
Thiophanate-methyl	P		P
Trifloxystrobin	P		P
Other Chemicals			
Ammonium soap	*	*	
Dichloropropene	*	*	
Diphacinone	P	P	
Gibberellic acid	*	P	*
Harpin protein	*	*	*
Iron phosphate	*	*	
Metaldehyde	P	P	
Metam-sodium	*	*	
NAA	*	*	
Strychnine	*	*	
Sulfaquinoxaline	*	*	
Warfarin	*	*	

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Oranges excluding Temples: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	201,500	52	535.6	68	2,857.3	38	269.8	16	20.8
FL ²	587,600	62	410.2	90	40,178.7	69	1,346.4		
Total	789,100	59	945.9	84	43,035.7	61	1,616.2	8	20.8

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

² Insufficient reports to publish data for one or more pesticide classes.

**Oranges excluding Temples: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	20	1.8	0.16	0.30	47.4
Bromacil	12	1.9	0.75	1.42	137.2
Diuron	31	1.8	1.29	2.33	563.5
Glyphosate	57	2.8	0.95	2.70	1,218.2
Norflurazon	10	2.0	1.41	2.94	234.3
Oryzalin	*	1.1	1.70	1.91	2.7
Oxyfluorfen	1	1.0	0.12	0.12	1.2
Paraquat	5	1.2	0.35	0.42	17.2
Simazine	24	1.8	2.04	3.68	694.6
Sulfosate	*	1.5	1.50	2.29	7.6
Insecticides					
Abamectin	12	1.3	0.008	0.01	1.0
Aldicarb	7	1.0	2.17	2.25	118.9
Bt (Bacillus thur.) ²	7	1.1			
Carbaryl	3	1.6	2.14	3.48	77.7
Chlorpyrifos	7	1.3	1.56	2.17	117.3
Cyfluthrin	14	1.1	0.02	0.02	2.7
Dicofol	*	1.1	2.50	2.74	20.3
Diiflubenzuron	2	1.0	0.14	0.15	2.0
Dimethoate	9	1.1	0.43	0.51	34.1
Ethion	2	1.0	1.75	1.77	25.6
Formetanate hydro.	4	1.2	0.29	0.36	12.8
Imidacloprid	4	1.3	0.25	0.34	9.4
Malathion	2	1.4	0.11	0.15	1.8
Methidathion	2	1.1	0.80	0.96	14.8
Petroleum distillate	76	2.0	33.92	69.17	41,347.9
Petroleum oil	*	1.0	4.00	4.08	21.3
Pyridaben	4	1.1	0.30	0.35	10.7
S-Methoprene	23	1.0	0.004	0.004	0.7
Fungicides					
Azoxystrobin	2	1.0	0.14	0.15	2.2
Basic copper sulfate	4	1.3	3.47	4.68	141.7
Copper hydroxide	49	1.7	1.89	3.26	1,250.4
Copper sulfate	4	1.4	1.66	2.48	80.8
Fenbuconazole	*	1.0	0.09	0.09	0.1
Ferbam	*	1.3	4.96	6.49	17.9
Phosphorous acid	*	2.3	0.91	2.14	12.6
Pyraclostrobin	9	1.2	0.11	0.15	10.5
Thiophanate-methyl	*	1.0	0.81	0.81	2.7
Trifloxystrobin	2	1.0	0.05	0.05	0.9
Other Chemicals					
Diphacinone	3	4.7	(³)	(³)	(⁴)
Metaldehyde	6	2.0	0.11	0.22	11.0

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 2 program states were 789,100 acres.

States included are CA and FL.

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

³ Rate per acre is less than 0.0005 lbs.

⁴ Total applied is less than 50 lbs.

**Oranges excluding Temples: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	31	1.2	0.08	0.09	6.0
Bromacil	5	1.1	1.16	1.34	14.3
Diuron	26	1.2	2.12	2.55	135.5
Glyphosate	48	2.5	0.72	1.84	177.2
Norflurazon	3	1.2	2.52	3.14	17.5
Oxyfluorfen	1	1.0	0.47	0.49	1.2
Paraquat	1	1.0	0.50	0.52	1.5
Simazine	27	1.2	2.52	3.07	165.2
Insecticides					
Abamectin	3	1.0	0.009	0.009	0.1
Acetamiprid	2	1.0	0.14	0.15	0.5
Bt (Bacillus thur.) ²	7	1.1			
Carbaryl	4	1.0	5.45	5.83	44.6
Chlorpyrifos	21	1.1	1.81	2.07	88.5
Cyfluthrin	14	1.1	0.08	0.09	2.7
Dicofol	2	1.1	2.43	2.77	13.5
Dimethoate	9	1.1	1.69	1.98	34.1
Fenpropathrin	7	1.1	0.32	0.36	5.0
Formetanate hydro.	4	1.2	1.12	1.42	12.8
Imidacloprid	5	1.0	0.41	0.44	4.7
Malathion	2	1.4	0.41	0.59	1.8
Methidathion	2	1.1	3.15	3.74	14.8
Petroleum distillate	38	1.3	23.88	31.65	2,438.5
Pyridaben	2	1.0	0.35	0.37	1.7
Pyriproxyfen	12	1.1	0.10	0.12	2.8
Spinosad	23	1.1	0.10	0.12	5.3
Fungicides					
Basic copper sulfate	9	1.1	4.19	4.60	87.6
Copper hydroxide	23	1.2	2.34	2.88	135.7
Copper sulfate	5	1.2	3.70	4.43	42.1
Other Chemicals					
Diphacinone	3	4.7	(³)	(³)	(⁴)
Gibberellic acid	18	1.1	0.08	0.09	3.2
Metaldehyde	6	2.0	0.43	0.87	11.0

¹ Total acres in 2003 for California were 201,500 acres. Acreage includes both bearing and nonbearing acres.

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

³ Rate per acre is less than 0.0005 lbs.

⁴ Total applied is less than 50 lbs.

**Oranges excluding Temples: Agricultural Chemical Applications,
Florida, 2003¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	16	2.3	0.19	0.44	41.4
Bromacil	15	2.0	0.72	1.43	122.9
Diuron	32	1.9	1.15	2.27	428.1
Glyphosate	60	2.9	1.01	2.94	1,041.0
Norflurazon	13	2.1	1.36	2.92	216.7
Paraquat	6	1.2	0.34	0.42	15.7
Simazine	23	2.0	1.92	3.92	529.4
Insecticides					
Abamectin	15	1.3	0.007	0.01	0.9
Aldicarb	7	1.0	2.92	3.02	118.9
Carbaryl	3	1.9	1.18	2.26	33.1
Chlorpyrifos	2	2.3	1.08	2.49	28.8
Dicofol	*	1.0	2.62	2.67	6.8
Diflubenzuron	2	1.0	0.19	0.20	2.0
Ethion	2	1.0	2.36	2.38	25.6
Fenbutatin-oxide	3	1.7	0.91	1.58	31.2
Imidacloprid	3	1.4	0.18	0.27	4.7
Petroleum distillate	89	2.1	34.90	74.82	38,909.5
Pyridaben	4	1.1	0.29	0.35	9.1
S-Methoprene	23	1.0	0.005	0.005	0.7
Sulfur	16	1.0	10.17	10.68	975.3
Fungicides					
Azoxystrobin	2	1.0	0.19	0.20	2.2
Basic copper sulfate	2	1.7	2.70	4.77	54.1
Copper chloride hyd.	1	1.7	4.00	7.07	42.8
Copper hydroxide	57	1.7	1.85	3.31	1,114.7
Copper sulfate	4	1.6	1.04	1.67	38.7
Fenbuconazole	*	1.0	0.12	0.12	0.1
Ferbam	*	1.3	6.66	8.72	17.9
Mefenoxam	5	1.5	0.94	1.41	39.1
Phosphorous acid	*	2.3	1.23	2.87	12.6
Pyraclostrobin	9	1.2	0.15	0.20	10.5
Thiophanate-methyl	*	1.0	1.09	1.09	2.7
Trifloxystrobin	2	1.0	0.07	0.07	0.9

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for Florida were 587,600 acres.

Peaches: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	78,500	86	8,196	29	704	34	1,386
GA	13,500	93	830	13	60	93	850
MI	5,000	85	282	21	28	68	241
NJ	8,000	94	354	16	69	32	156
PA	3,800	74	101	40	47	49	86
SC	15,000	99	1,078	41	253	94	2,032
TX	6,500	72	262	63	151	62	159
Total	130,300	87	11,103	30	1,312	50	4,910

**Peaches: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	78,500					
Nitrogen		86	1.6	75	122	8,196
Phosphate		29	1.3	23	31	704
Potash		34	1.3	38	52	1,386
Georgia	13,500					
Nitrogen		93	1.5	44	66	830
Phosphate		13	1.0	31	33	60
Potash		93	1.0	67	68	850
Michigan	5,000					
Nitrogen		85	1.7	38	66	282
Phosphate		21	1.6	17	27	28
Potash		68	1.2	57	71	241
New Jersey	8,000					
Nitrogen		94	1.4	33	47	354
Phosphate		16	1.3	42	55	69
Potash		32	1.1	52	61	156
Pennsylvania	3,800					
Nitrogen		74	1.1	31	36	101
Phosphate		40	1.1	27	31	47
Potash		49	1.2	37	46	86
South Carolina	15,000					
Nitrogen		99	1.5	48	73	1,078
Phosphate		41	1.0	41	42	253
Potash		94	1.3	104	145	2,032
Texas	6,500					
Nitrogen		72	1.1	48	56	262
Phosphate		63	1.1	33	37	151
Potash		62	1.1	36	40	159
Total	130,300					
Nitrogen		87	1.5	62	97	11,103
Phosphate		30	1.2	27	34	1,312
Potash		50	1.2	59	75	4,910

**Peaches: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States							
	ALL	CA	GA	MI	NJ	PA	SC	TX
Herbicides								
2,4-D	P	P	*	P	P	P	*	*
2,4-D, Dimeth. salt	P	*		*	*	P	P	
Dichlobenil	*					*		
Diuron	P	*	P	P	P	P	P	*
Fluazifop-P-butyl	P	*	*				*	
Glyphosate	P	P	P	P	P	P	P	P
Glyphosate diam salt	*	*						
Isoxaben	*	*						
Lactofen	P	P						
Napropamide	*	*						
Norflurazon	P	P			P	P	*	*
Oryzalin	P	P						
Oxyfluorfen	*	P				*		
Paraquat	P	P	P	P	P	P	P	P
Pendimethalin	*	P					*	
S-Metolachlor	*				*	*		
Sethoxydim	*						*	
Simazine	P	P	*	P	P	P	P	*
Sulfosate	P	*		*			*	
Terbacil	P		*	P	P	P	*	*
Trifluralin	*	*						*

See footnote(s) at end of table.

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**Peaches: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States							
	ALL	CA	GA	MI	NJ	PA	SC	TX
Insecticides								
Abamectin	*			*				
Amitraz	*					*		
Azinphos-methyl	P	*	*	P	P	P	P	P
Benzoic acid	P			*	*	*		
Bifenazate	P	P		*		*		
Bt (Bacillus thur.)	*	P		*				
Carbaryl	P	P	P	P	P	P	P	P
Carbofuran	*				*		*	
Chlorpyrifos	P	P	P	P	P	P	P	P
Clofentezine	P	P		*	*	P		
Cyfluthrin	*					*		
Cypermethrin	*						*	
Diazinon	P	P			*	P		*
Dicofol	*	P				*		
Endosulfan	P		P	P	P	P	*	*
Esfenvalerate	P	P	*	P	P	P	P	*
Ethyl parathion	P		*	*		*		
Fenamiphos	*	*						
Fenbutatin-oxide	P	P				*		*
Formetanate hydro.	*	*				*		
Hexythiazox	*	P			*			
Imidacloprid	P			P	P	P		
Indoxacarb	*			*		*		
Lambda-cyhalothrin	P			P		*	*	
Lindane	*					*		
Malathion	P		P		*	*	*	P
Methidathion	*	*						
Methomyl	P	*	*	P	P	P	*	
Methoxychlor	*		*		*			
Methyl parathion	P		*	*		*		
Neem oil, clar. hyd.	*	*						
Oxamyl	*					*		
Permethrin	P	P	*	P	*	P	P	*
Petroleum distillate	P	P	P	P	P	P	P	P
Phosmet	P	P	P	P	P	P	P	P
Piperonyl butoxide	*		*					
Propargite	P	P						
Pyrethrins	*		*					
Pyridaben	P	*		*	*	*	*	
Pyriproxyfen	*	*		*			*	
Spinosad	P	P		*	*	*	*	

See footnote(s) at end of table.

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**Peaches: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States							
	ALL	CA	GA	MI	NJ	PA	SC	TX
Fungicides								
Azoxystrobin	P	*	*		*		P	
Basic copper sulfate	P	P		P	*	P	*	
Benomyl	P	*	*	*	*	*	*	*
Calcium polysulfide	P	*	*	*		*		
Captan	P	*	P	P	P	P	P	*
Chlorothalonil	P	*	P	*	P	P	P	P
Copper amm. complex	P		*		*		*	
Copper chloride hyd.	P			*		*		
Copper hydroxide	P	P	*	P	*	P	P	P
Copper oxide	P	P						
Copper oxychlor. sul.	*			*			*	
Copper oxychloride	P	*		P	*	P	*	
Copper resinate	P		*		P	*	*	
Copper sulfate	P	P	*	P	*	*	*	
Cyprodinil	P	P		*	P	P	*	
Dicloran	*				*		*	
Dodine	P			P	*		*	
Fenarimol	*			*		*		
Fenbuconazole	P	P	P	P	P	P	P	P
Fenhexamid	*					*		
Ferbam	P		*	P	*	P	*	
Iprodione	P	P		P	*	*		
Mancozeb	*			*		*		
Mefenoxam	*				*		*	
Metiram	*			*		*		
Myclobutanil	P	P		P	P	P		
Oxytetracycline	P		*	P	P	P	P	*
Propiconazole	P	P	P	P	P	P	P	P
Pyraclostrobin	*					*		
Streptomycin	*					*		
Sulfur	P	P	P	P	P	P	P	P
Tebuconazole	P	P		P	*	P	*	
Thiophanate-methyl	P		*	P	P	P	P	*
Thiram	P		*		*	P		
Trifloxystrobin	*	*		*				
Triflumizole	*					*		
Triforine	*		*				*	
Vinclozolin	*					*		
Ziram	P	P	*	P	P	P	P	*

See footnote(s) at end of table.

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**Peaches: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States							
	ALL	CA	GA	MI	NJ	PA	SC	TX
Other Chemicals								
Ammonium soap	*		*					
Butenoic Acid Hydro.	*			*				
Chloropicrin	*	*					*	
Decenol	P	*		*				
Decenyl acetate	P	*		*				
Dichloropropene	*	*					*	
E-8-Dodecenyl acetat	P	P		P				
Ethephon	P			*		*	*	
Gibberellic acid	*						*	
Hydrogen peroxide	*			*				
LPE	*	*						
Metam-sodium	*	*						
Methyl bromide	*	*						
Monocarbamide dihyd.	*				*			
Octadecadien (E,Z)	*			*				
Octadecadien (Z,Z)	*			*				
Strychnine	*	*						
Z-8-Dodecanol	P	P		P				
Z-8-Dodecen acetate	P	P		P				

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

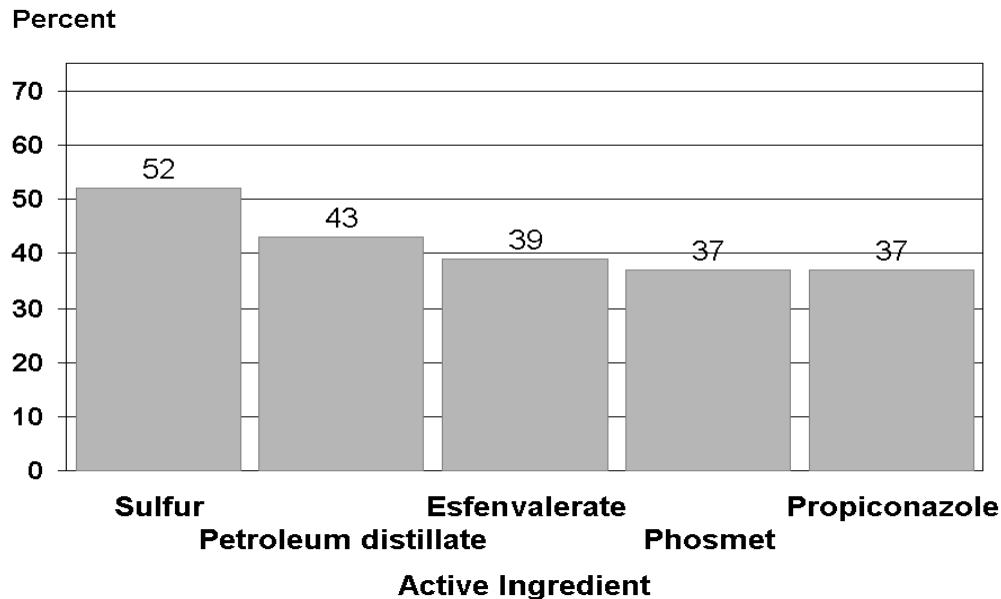
**Peaches: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	78,500	53	78.3	80	1,562.1	75	1,403.8	11	109.1
GA ²	13,500	24	9.5	100	199.7	99	528.1		
MI	5,000	44	5.8	90	17.9	94	103.2	6	0.5
NJ ²	8,000	60	11.7	88	100.8	90	281.5		
PA ²	3,800	32	2.9	86	23.4	85	70.7		
SC ²	15,000	79	80.9	99	324.6	99	916.7		
TX	6,500	33	5.9	50	21.2	39	15.7		
Total	130,300	51	194.7	84	2,249.9	80	3,319.8	9	325.4

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

² Insufficient reports to publish data for one or more pesticide classes.

**Peaches - Percent of Acres Treated
Top 5 Active Ingredients for 2003**



Surveyed States are CA, GA, MI, NJ, PA, SC, and TX

**Peaches: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	5	1.0	0.91	0.98	6.4
2,4-D, Dimeth. salt	6	1.6	0.31	0.51	4.3
Diuron	11	1.0	1.06	1.12	16.8
Fluazifop-P-butyl	2	2.9	0.04	0.12	0.3
Glyphosate	32	1.8	0.64	1.18	50.0
Lactofen	13	1.8	0.09	0.18	3.0
Norflurazon	4	1.0	1.13	1.23	6.3
Oryzalin	5	1.1	0.65	0.74	5.1
Paraquat	20	2.1	0.64	1.40	37.0
Simazine	18	1.2	1.41	1.76	41.7
Sulfosate	5	1.0	1.02	1.10	7.4
Terbacil	16	1.0	0.26	0.26	5.6
Insecticides					
Azinphos-methyl	14	3.9	0.55	2.18	38.6
Benzoic acid	1	1.6	0.03	0.05	0.1
Bifenazate	7	1.0	0.25	0.27	2.5
Carbaryl	19	1.6	1.46	2.42	60.6
Chlorpyrifos	21	1.2	1.26	1.61	44.0
Clofentezine	4	1.1	0.09	0.10	0.5
Diazinon	14	1.3	1.14	1.56	28.0
Endosulfan	8	3.3	0.50	1.64	16.3
Esfenvalerate	39	1.9	0.05	0.10	5.2
Ethyl parathion	*	1.2	0.12	0.15	0.1
Fenbutatin-oxide	11	1.0	0.42	0.45	6.5
Imidacloprid	23	1.6	0.003	0.004	0.1
Lambda-cyhalothrin	8	2.6	0.006	0.01	0.1
Malathion	1	2.3	0.14	0.32	0.5
Methomyl	4	3.3	0.79	2.68	12.9
Methyl parathion	*	1.2	0.06	0.07	(²)
Permethrin	7	2.3	0.17	0.41	3.8
Petroleum distillate	43	1.2	26.00	32.45	1,797.8
Phosmet	37	3.4	1.37	4.72	225.1
Propargite	*	1.1	0.75	0.85	0.8
Pyridaben	1	1.1	0.27	0.32	0.6
Spinosad	3	1.0	0.08	0.08	0.4

See footnote(s) at end of table.

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**Peaches: Agricultural Chemical Applications,
Program States, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Azoxystrobin	7	1.3	0.14	0.20	1.9
Basic copper sulfate	11	1.1	7.86	9.36	137.6
Benomyl	1	1.2	0.79	0.95	1.5
Calcium polysulfide	1	1.3	0.79	1.03	1.9
Captan	22	4.5	2.08	9.47	275.2
Chlorothalonil	18	1.7	1.93	3.36	77.3
Copper amm. complex	12	1.8	0.11	0.21	3.4
Copper chloride hyd.	4	1.5	0.15	0.23	1.1
Copper hydroxide	18	1.6	2.56	4.12	99.2
Copper oxide	11	1.0	2.78	2.88	39.7
Copper oxychloride	1	1.6	3.26	5.27	8.6
Copper resinate	8	6.9	0.008	0.05	0.6
Copper sulfate	3	1.3	5.85	8.08	30.2
Cyprodinil	17	1.1	0.19	0.21	4.7
Dodine	7	2.3	0.08	0.18	1.6
Fenbuconazole	16	2.5	0.09	0.23	4.8
Ferbam	1	1.0	0.72	0.72	1.1
Iprodione	15	1.2	0.46	0.55	11.0
Myclobutanil	7	2.5	0.05	0.12	1.1
Oxytetracycline	22	3.2	0.06	0.19	5.6
Propiconazole	37	1.7	0.11	0.19	9.3
Sulfur	52	3.7	9.60	36.36	2,464.0
Tebuconazole	15	1.5	0.11	0.18	3.4
Thiophanate-methyl	14	1.9	0.22	0.42	7.7
Thiram	3	4.2	0.23	0.96	3.6
Ziram	16	1.2	4.73	5.68	121.9
Other Chemicals					
Decenol	*	1.0	0.002	0.002	(³)
Decenyl acetate	*	1.0	0.01	0.01	(³)
E-8-Dodecenyl acetat	16	1.6	0.002	0.004	0.1
Ethephon	*	1.0	0.05	0.05	(³)
Z-8-Dodecanol	16	1.6	(²)	(²)	(³)
Z-8-Dodecen acetate	16	1.6	0.04	0.06	1.3

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 7 program states were 130,300 acres.
States included are CA, GA, MI, NJ, PA, SC, and TX.

² Rate per acre is less than 0.0005 lbs.

³ Total applied is less than 50 lbs.

**Peaches: Agricultural Chemical Applications,
California, 2003¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	4	1.1	0.93	1.04	3.5
Glyphosate	37	1.7	0.69	1.22	35.6
Lactofen	13	1.8	0.16	0.29	3.0
Norflurazon	4	1.0	1.24	1.35	4.6
Oryzalin	5	1.1	1.07	1.23	5.1
Oxyfluorfen	19	1.1	0.43	0.50	7.5
Paraquat	9	1.2	0.55	0.68	5.0
Pendimethalin	1	1.0	2.00	2.12	2.0
Simazine	13	1.1	0.71	0.84	8.4
Insecticides					
Bifenazate	8	1.0	0.37	0.40	2.4
Bt (Bacillus thur.) ²	7	1.2			
Carbaryl	3	1.1	3.41	3.78	8.2
Chlorpyrifos	16	1.1	1.95	2.27	29.3
Clofentezine	4	1.1	0.12	0.14	0.4
Diazinon	14	1.1	1.82	2.11	23.9
Dicofol	2	1.0	1.06	1.09	2.1
Esfenvalerate	38	1.6	0.04	0.07	2.2
Fenbutatin-oxide	12	1.0	0.61	0.66	6.4
Hexythiazox	4	1.0	0.14	0.14	0.5
Permethrin	4	1.5	0.27	0.41	1.4
Petroleum distillate	50	1.1	31.19	36.96	1,436.7
Phosmet	18	1.2	2.50	3.06	42.3
Propargite	*	1.1	1.24	1.41	0.8
Spinosad	4	1.0	0.09	0.10	0.4
Fungicides					
Basic copper sulfate	15	1.1	10.09	12.01	136.7
Copper hydroxide	20	1.5	3.61	5.51	85.8
Copper oxide	11	1.0	4.62	4.78	39.7
Copper sulfate	3	1.1	9.83	11.73	28.6
Cyprodinil	21	1.1	0.23	0.26	4.3
Fenbuconazole	4	1.0	0.08	0.09	0.3
Iprodione	18	1.1	0.65	0.77	10.8
Myclobutanil	4	1.1	0.11	0.13	0.4
Propiconazole	30	1.3	0.11	0.15	3.6
Sulfur	39	2.2	13.89	31.49	965.7
Tebuconazole	13	1.2	0.15	0.18	1.9
Ziram	22	1.1	5.44	6.35	107.4
Other Chemicals					
E-8-Dodecenyl acetat	16	1.6	0.002	0.004	(⁴)
Z-8-Dodecanol	16	1.6	(³)	(³)	(⁴)
Z-8-Dodecen acetate	16	1.6	0.04	0.06	0.8

* Area applied is less than 0.5 percent.

¹ Total acres in 2003 for California were 78,500 acres. Acreage includes both bearing and nonbearing acres.

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

³ Rate per acre is less than 0.0005 lbs.

⁴ Total applied is less than 50 lbs.

**Peaches: Agricultural Chemical Applications,
Georgia, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Diuron	13	1.2	1.20	1.46	2.6
Glyphosate	19	1.2	0.69	0.89	2.3
Paraquat	22	1.3	0.49	0.68	2.0
Insecticides					
Carbaryl	77	1.0	1.13	1.22	12.6
Chlorpyrifos	24	1.0	0.46	0.46	1.5
Endosulfan	4	2.8	0.58	1.66	0.9
Malathion	*	3.7	1.15	4.26	(²)
Petroleum distillate	50	1.1	14.02	16.17	109.3
Phosmet	90	4.5	1.34	6.13	74.9
Fungicides					
Captan	42	1.4	2.85	3.99	22.4
Chlorothalonil	80	1.6	2.11	3.44	37.1
Fenbuconazole	4	2.9	0.09	0.28	0.1
Propiconazole	86	1.6	0.11	0.19	2.2
Sulfur	90	4.5	8.30	37.95	462.8

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for Georgia were 13,500 acres.

² Total applied is less than 50 lbs.

**Peaches: Agricultural Chemical Applications,
Michigan, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	3	1.0	0.48	0.48	0.1
Diuron	18	1.0	1.26	1.37	1.2
Glyphosate	20	1.0	0.78	0.84	0.9
Paraquat	26	1.1	0.54	0.64	0.8
Simazine	5	1.2	1.01	1.25	0.3
Terbacil	17	1.0	1.12	1.13	0.9
Insecticides					
Azinphos-methyl	39	2.6	0.66	1.75	3.4
Carbaryl	26	1.5	1.88	2.93	3.8
Chlorpyrifos	12	1.0	1.56	1.65	1.0
Endosulfan	19	1.9	1.28	2.47	2.4
Esfenvalerate	55	2.6	0.04	0.10	0.3
Imidacloprid	3	1.0	0.09	0.09	(²)
Lambda-cyhalothrin	15	1.9	0.03	0.07	(²)
Methomyl	15	1.1	0.50	0.56	0.4
Permethrin	31	2.5	0.13	0.34	0.5
Petroleum distillate	2	1.0	7.77	7.77	0.8
Phosmet	30	2.3	1.44	3.44	5.2
Fungicides					
Basic copper sulfate	6	1.0	1.43	1.53	0.5
Captan	39	2.7	1.96	5.42	10.6
Copper hydroxide	11	1.1	1.79	2.05	1.1
Copper oxychloride	5	1.0	2.78	2.78	0.6
Copper sulfate	5	1.3	1.19	1.62	0.4
Dodine	22	3.1	0.33	1.02	1.1
Fenbuconazole	72	3.0	0.09	0.28	1.0
Ferbam	3	1.0	1.92	1.92	0.2
Iprodione	4	1.2	0.64	0.79	0.2
Myclobutanil	20	1.5	0.09	0.14	0.1
Oxytetracycline	21	1.9	0.14	0.27	0.3
Propiconazole	28	1.9	0.10	0.20	0.3
Sulfur	69	4.7	4.91	23.15	79.9
Tebuconazole	28	2.4	0.16	0.39	0.5
Thiophanate-methyl	4	1.6	0.70	1.18	0.2
Ziram	5	1.0	3.67	3.67	0.9
Other Chemicals					
E-8-Dodecenyl acetat	13	1.2	0.04	0.05	(²)
Z-8-Dodecanol	13	1.2	0.006	0.007	(²)
Z-8-Dodecen acetate	13	1.2	0.70	0.85	0.5

¹ Bearing acres in 2003 for Michigan were 5,000 acres.

² Total applied is less than 50 lbs.

**Peaches: Agricultural Chemical Applications,
New Jersey, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	30	1.0	0.84	0.85	2.0
Diuron	49	1.0	0.89	0.89	3.5
Glyphosate	4	1.0	1.42	1.42	0.5
Norflurazon	3	1.1	2.45	2.91	0.6
Paraquat	42	1.0	0.53	0.54	1.8
Simazine	10	1.1	1.00	1.09	0.9
Terbacil	41	1.0	0.60	0.60	1.9
Insecticides					
Azinphos-methyl	57	6.3	0.40	2.50	11.4
Carbaryl	17	3.2	0.80	2.58	3.6
Chlorpyrifos	13	4.2	1.06	4.56	4.9
Endosulfan	31	4.4	1.13	5.04	12.7
Esfenvalerate	13	4.2	0.03	0.11	0.1
Imidacloprid	23	1.9	0.009	0.02	(²)
Methomyl	37	4.8	0.74	3.58	10.5
Petroleum distillate	30	1.0	16.88	17.86	43.4
Phosmet	48	3.1	0.93	2.91	11.1
Fungicides					
Captan	64	7.0	1.89	13.33	68.7
Chlorothalonil	16	2.9	2.12	6.17	7.8
Copper resinate	40	8.0	0.02	0.17	0.5
Cyprodinil	17	1.0	0.20	0.21	0.3
Fenbuconazole	51	3.9	0.08	0.31	1.3
Myclobutanil	26	5.6	0.04	0.23	0.5
Oxytetracycline	25	5.4	0.20	1.07	2.1
Propiconazole	57	2.7	0.09	0.23	1.1
Sulfur	69	6.1	5.70	35.19	195.0
Thiophanate-methyl	8	2.9	0.40	1.18	0.8
Ziram	7	1.1	3.34	3.82	2.2

¹ Bearing acres in 2003 for New Jersey were 8,000 acres.

² Total applied is less than 50 lbs.

**Peaches: Agricultural Chemical Applications,
Pennsylvania, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	9	1.1	0.61	0.67	0.2
2,4-D, Dimeth. salt	3	1.0	0.90	0.90	0.1
Diuron	18	1.0	1.22	1.33	0.9
Glyphosate	3	1.1	0.61	0.68	0.1
Norflurazon	4	1.0	1.24	1.24	0.2
Paraquat	27	1.2	0.48	0.59	0.6
Simazine	12	1.1	1.34	1.59	0.7
Terbacil	4	1.1	0.49	0.56	0.1
Insecticides					
Azinphos-methyl	57	3.2	0.39	1.29	2.8
Carbaryl	32	1.6	0.73	1.23	1.5
Chlorpyrifos	13	1.1	1.28	1.45	0.7
Clofentezine	6	1.2	0.12	0.14	(²)
Diazinon	21	2.9	0.47	1.40	1.1
Endosulfan	6	1.3	0.82	1.13	0.2
Esfenvalerate	45	1.8	0.02	0.04	0.1
Imidacloprid	47	1.5	0.03	0.04	0.1
Methomyl	25	2.0	0.34	0.70	0.7
Permethrin	9	2.6	0.08	0.20	0.1
Petroleum distillate	10	1.0	20.27	21.06	8.4
Phosmet	73	3.6	0.77	2.77	7.7
Fungicides					
Basic copper sulfate	5	1.0	0.70	0.71	0.1
Captan	71	5.2	1.35	7.10	19.1
Chlorothalonil	61	2.6	0.98	2.57	6.0
Copper hydroxide	8	1.1	2.61	2.86	0.9
Copper oxychloride	5	1.0	2.45	2.50	0.5
Cyprodinil	5	1.6	0.10	0.17	(²)
Fenbuconazole	43	2.2	0.08	0.19	0.3
Ferbam	5	1.0	2.93	2.93	0.6
Myclobutanil	26	2.8	0.04	0.12	0.1
Oxytetracycline	12	2.9	0.12	0.37	0.2
Propiconazole	31	1.9	0.12	0.23	0.3
Sulfur	58	4.6	3.60	16.58	36.6
Tebuconazole	16	2.5	0.07	0.18	0.1
Thiophanate-methyl	27	2.2	0.35	0.78	0.8
Thiram	17	4.1	1.28	5.35	3.4
Ziram	7	1.5	3.53	5.35	1.4

¹ Bearing acres in 2003 for Pennsylvania were 3,800 acres.

² Total applied is less than 50 lbs.

**Peaches: Agricultural Chemical Applications,
South Carolina, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D, Dimeth. salt	26	1.9	0.41	0.81	3.2
Diuron	51	1.0	0.95	0.96	7.3
Glyphosate	47	2.3	0.48	1.13	7.9
Paraquat	69	3.6	0.71	2.58	26.5
Simazine	71	1.3	1.96	2.67	28.3
Insecticides					
Azinphos-methyl	48	4.0	0.59	2.38	17.1
Carbaryl	47	2.4	1.70	4.11	29.0
Chlorpyrifos	50	1.2	0.54	0.68	5.0
Esfenvalerate	40	3.8	0.09	0.36	2.2
Permethrin	21	3.3	0.16	0.52	1.6
Petroleum distillate	36	1.9	17.70	34.32	186.1
Phosmet	85	5.0	1.28	6.48	82.2
Fungicides					
Azoxystrobin	28	1.3	0.15	0.20	0.8
Captan	84	5.6	2.06	11.59	145.6
Chlorothalonil	27	1.4	2.13	3.10	12.4
Copper hydroxide	45	1.9	0.84	1.61	10.8
Fenbuconazole	45	2.4	0.09	0.22	1.5
Oxytetracycline	49	3.1	0.12	0.38	2.8
Propiconazole	39	2.5	0.11	0.29	1.7
Sulfur	91	5.4	9.71	52.78	721.0
Thiophanate-methyl	34	1.7	0.61	1.10	5.7
Ziram	18	1.3	2.07	2.80	7.7

¹ Bearing acres in 2003 for South Carolina were 15,000 acres.

**Peaches: Agricultural Chemical Applications,
Texas, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Glyphosate	22	2.8	0.71	2.00	2.9
Paraquat	10	1.5	0.30	0.48	0.3
Insecticides					
Azinphos-methyl	27	2.6	0.46	1.20	2.1
Carbaryl	25	1.9	0.65	1.24	2.0
Chlorpyrifos	24	1.3	0.81	1.07	1.7
Malathion	7	2.3	0.35	0.83	0.4
Petroleum distillate	18	1.1	10.17	11.44	13.1
Phosmet	17	1.9	0.77	1.54	1.7
Fungicides					
Chlorothalonil	31	1.9	1.72	3.34	6.8
Copper hydroxide	9	1.0	0.84	0.92	0.6
Fenbuconazole	23	2.2	0.08	0.18	0.3
Propiconazole	10	2.7	0.12	0.34	0.2
Sulfur	6	2.5	2.85	7.27	3.1

¹ Bearing acres in 2003 for Texas were 6,500 acres.

Pears: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	19,000	76	754	18	152	18	227
OR	17,600	94	1,152	66	473	71	481
WA	24,800	80	1,467	27	111	24	128
Total	61,400	83	3,373	35	736	36	836

Pears: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	19,000					
Nitrogen		76	1.9	27	52	754
Phosphate		18	1.8	25	45	152
Potash		18	1.5	43	67	227
Oregon	17,600					
Nitrogen		94	2.5	27	70	1,152
Phosphate		66	2.3	17	41	473
Potash		71	2.1	18	38	481
Washington	24,800					
Nitrogen		80	1.8	39	74	1,467
Phosphate		27	1.6	10	17	111
Potash		24	1.5	13	21	128
Total	61,400					
Nitrogen		83	2.1	31	66	3,373
Phosphate		35	2.0	17	34	736
Potash		36	1.9	20	38	836

**Pears: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States			
	ALL	CA	OR	WA
Herbicides				
2,4-D	P	P	P	P
2,4-D, Dimeth. salt	P		P	
Diuron	P	P	*	*
Fluazifop-P-butyl	*	*		
Glyphosate	P	P	P	P
Glyphosate diam salt	*			*
Napropamide	*	*		
Norflurazon	P	*	*	P
Oryzalin	P	*	*	*
Oxyfluorfen	P	P	*	*
Paraquat	P	P	P	P
Pronamide	*			*
Simazine	P	P	P	P
Sulfosate	P	*	*	

See footnote(s) at end of table.

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**Pears: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States			
	ALL	CA	OR	WA
Insecticides				
Abamectin	P	P	P	P
Acephate	*		*	
Acetamiprid	P	P	P	P
Amitraz	P		*	*
Azadirachtin	P		*	*
Azinphos-methyl	P	P	P	P
Benzoic acid	P	P	P	P
Bifenazate	P	P	P	P
Bt (Bacillus thur.)	P	*	*	P
Carbaryl	P		P	P
Chlorpyrifos	P	P	P	P
Clofentezine	P	P	*	*
Cyd-X Granulo. Virus	*		*	*
Diazinon	P	P	*	*
Dicofol	*		*	*
Diflubenzuron	P		*	*
Dimethoate	*		*	
Endosulfan	P		P	P
Esfenvalerate	P	P	P	P
Ethyl parathion	*			*
Fenbutatin-oxide	P		*	*
Fenpropathrin	P	P	*	*
Formetanate hydro.	P	*	*	P
Hexythiazox	P	*	*	
Imidacloprid	P		P	P
Indoxacarb	*		*	
Kaolin	P	*	*	P
Lambda-cyhalothrin	*			*
Malathion	*		*	*
Methidathion	*			*
Methyl parathion	*		*	*
Oxamyl	*		*	
Permethrin	P	*	*	
Petroleum distillate	P	P	P	P
Petroleum oil	P		P	
Phosmet	P	P	P	P
Piperonyl butoxide	*			*
Potassium salts	*			*
Propargite	*			*
Pyrethrins	*		*	
Pyridaben	P		P	P
Pyriproxyfen	P	*	P	*
Rotenone	*		*	
Soybean oil	*		*	
Spinosad	P	*	*	P
Tebufozide	P	P	*	*
Thiamethoxam	P	P	P	P

See footnote(s) at end of table.

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**Pears: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States			
	ALL	CA	OR	WA
Fungicides				
Bacillus subtilus	P	*	*	*
Basic copper sulfate	P	*	*	P
Calcium polysulfide	P	P	P	P
Captan	*		*	
Copper (metallic)	*	*		
Copper chloride hyd.	*			*
Copper hydroxide	P	P	P	P
Copper oxychlor. sul.	P	*	*	*
Copper oxychloride	P	*	*	*
Copper sulfate	P	*	*	P
Cyprodinil	*	P	*	
Dodine	P	P	P	P
Fenarimol	P	*	*	P
Fosetyl-al	P	*		*
Iprodione	*	*		
Kresoxim-methyl	P	*	*	P
Mancozeb	P	P	P	P
Maneb	*		*	*
Myclobutanil	P		*	*
Oxytetracycline	P	P	P	P
Phosphorous acid	*		*	
Potassium bicarbon.	*			*
Propiconazole	*			*
Pseudomonas fluores.	P	P	*	*
Streptomycin	P	P	P	P
Streptomycin sulfate	P	P		
Sulfur	P	P	P	P
Thiophanate-methyl	*		*	
Triadimefon	P		P	P
Trifloxystrobin	P	P	*	*
Triflumizole	P		P	P
Ziram	P	P	P	P

See footnote(s) at end of table.

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**Pears: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States			
	ALL	CA	OR	WA
Other Chemicals				
Aluminum phosphide	*		*	
Benzyladenine	*			*
Butenoic Acid Hydro.	*		*	*
Chlorophacinone	*	*		
Chloropicrin	*	*		
Cytokinins	P		*	*
Decenol	*	*		
Decenyl acetate	*	*		
Dodecadien-1-ol	P	P	P	P
Dodecanol	P	P	*	*
E-8-Dodecenyl acetat	*	*		
Ethephon	*			*
Gibberellic acid	*		*	*
Gibberellins A4A7	*			*
Harpin protein	*			*
Lactic acid	*			*
Methyl bromide	*	*		
Monocarbamide dihyd.	*		*	
NAA	P	P	P	P
NAD	P		*	*
Strychnine	*	*		*
Sulfaquinoxaline	*	*		
Tetradecanol	P	P	*	*
Warfarin	*	*		
Z-8-Dodecanol	*	*		
Z-8-Dodecen acetate	*	*		
Zinc phosphide	P		*	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Pears: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide ¹		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	19,000	33	18.4	70	1,126.6	69	197.5	18	43.3
OR	17,600	31	32.7	99	1,339.0	99	641.9	24	27.0
WA	24,800	33	31.2	96	2,382.2	87	297.6	21	0.9
Total	61,400	32	82.5	89	4,847.7	85	1,136.9	20	71.1

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Pears: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	7	1.6	0.79	1.29	5.5
2,4-D, Dimeth. salt	3	1.4	0.28	0.41	0.9
Diuron	5	1.1	1.64	1.82	5.2
Glyphosate	30	1.8	1.12	2.06	37.6
Norflurazon	3	1.4	1.56	2.24	4.1
Oryzalin	5	1.0	3.93	3.93	11.0
Oxyfluorfen	7	1.1	0.74	0.86	3.8
Paraquat	5	1.2	0.61	0.78	2.3
Simazine	8	1.3	1.50	2.07	9.9
Sulfosate	3	1.0	1.24	1.24	2.0
Insecticides					
Abamectin	59	1.2	0.02	0.02	0.8
Acetamiprid	38	1.4	0.14	0.19	4.5
Amitraz	*	1.0	0.99	0.99	0.5
Azadirachtin	5	2.1	0.02	0.03	0.1
Azinphos-methyl	50	1.8	1.06	1.96	60.2
Benzoic acid	19	1.2	0.24	0.30	3.5
Bifenazate	16	1.1	0.45	0.51	5.0
Bt (Bacillus thur.) ²	3	1.5			
Carbaryl	2	1.4	1.40	1.97	2.3
Chlorpyrifos	24	1.0	1.88	2.02	29.9
Clofentezine	3	1.0	0.12	0.12	0.2
Diazinon	4	1.1	1.93	2.13	5.8
Diflubenzuron	*	1.4	0.18	0.27	0.1
Endosulfan	40	1.1	1.43	1.64	40.5
Esfenvalerate	26	1.0	0.07	0.08	1.2
Fenbutatin-oxide	6	1.0	0.58	0.62	2.3
Fenpropathrin	7	1.0	0.36	0.38	1.6
Formetanate hydro.	5	1.0	0.50	0.51	1.5
Hexythiazox	7	1.0	0.10	0.10	0.4
Imidacloprid	7	1.2	0.11	0.14	0.6
Kaolin	24	2.3	39.60	92.03	1,362.9
Permethrin	4	1.2	0.11	0.14	0.3
Petroleum distillate	80	3.3	19.48	66.14	3,264.0
Petroleum oil	2	1.8	0.96	1.75	2.0
Phosmet	20	1.2	3.06	3.84	46.7
Pyridaben	19	1.2	0.16	0.20	2.4
Pyriproxyfen	35	1.2	0.08	0.10	2.2
Spinosad	8	1.2	0.10	0.12	0.6
Tebufenozide	7	1.4	0.29	0.41	1.7
Thiamethoxam	36	1.2	0.07	0.09	2.0

See footnote(s) at end of table.

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**Pears: Agricultural Chemical Applications,
Program States, 2003¹ (continued)**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Fungicides					
Bacillus subtilus ²	*	1.1			
Basic copper sulfate	2	1.1	1.95	2.18	2.5
Calcium polysulfide	15	1.4	26.38	37.68	337.0
Copper hydroxide	25	1.3	2.48	3.36	50.6
Copper oxychlo. sul.	6	1.0	1.52	1.60	6.2
Copper oxychloride	2	1.0	2.29	2.29	2.1
Copper sulfate	4	1.0	1.13	1.22	3.2
Dodine	13	1.7	1.23	2.17	17.5
Fenarimol	2	1.2	0.07	0.09	0.1
Fosetyl-al	2	1.2	2.16	2.78	2.6
Kresoxim-methyl	2	1.2	0.15	0.19	0.3
Mancozeb	46	2.0	3.44	7.17	201.8
Myclobutanil	2	2.2	0.07	0.16	0.2
Oxytetracycline	32	2.4	0.15	0.37	7.2
Pseudomonas fluores.	9	2.8	0.11	0.32	1.7
Streptomycin	24	1.8	0.11	0.20	2.9
Streptomycin sulfate	17	3.7	0.04	0.15	1.6
Sulfur	37	1.4	10.77	15.69	360.5
Triadimefon	7	1.0	0.15	0.16	0.7
Trifloxystrobin	14	1.7	0.06	0.11	0.9
Triflumizole	48	1.6	0.17	0.28	8.3
Ziram	33	1.1	5.14	6.05	122.0
Other Chemicals					
Cytokinins	9	1.3	(³)	(³)	(⁴)
Dodecadien-1-ol	17	1.2	0.05	0.06	0.6
Dodecanol	9	1.0	0.03	0.03	0.2
NAA	39	1.1	0.06	0.07	1.6
NAD	*	1.0	0.02	0.02	(⁴)
Tetradecanol	9	1.0	0.005	0.006	(⁴)
Zinc phosphide	*	1.4	0.07	0.10	(⁴)

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 3 program states were 61,400 acres.

States included are CA, OR, and WA.

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

³ Rate per acre is less than 0.0005 lbs.

⁴ Total applied is less than 50 lbs.

**Pears: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	10	2.3	0.62	1.44	2.8
Diuron	5	1.1	1.08	1.29	1.3
Glyphosate	34	1.8	0.74	1.35	8.6
Oxyfluorfen	15	1.2	0.47	0.56	1.6
Paraquat	6	1.2	0.42	0.51	0.6
Simazine	7	1.1	1.34	1.57	2.1
Insecticides					
Abamectin	32	1.3	0.01	0.02	0.1
Acetamiprid	8	1.2	0.15	0.19	0.3
Azinphos-methyl	31	1.5	1.46	2.28	13.5
Benzoic acid	7	1.2	0.24	0.30	0.4
Bifenazate	9	1.4	0.41	0.58	1.0
Chlorpyrifos	12	1.2	1.34	1.61	3.6
Clofentezine	3	1.0	0.11	0.11	0.1
Diazinon	14	1.1	1.93	2.15	5.5
Esfenvalerate	16	1.1	0.07	0.08	0.2
Fenpropathrin	15	1.0	0.38	0.40	1.2
Petroleum distillate	65	2.5	34.46	86.40	1,071.0
Phosmet	10	1.2	3.92	4.85	9.6
Tebufenozide	21	1.4	0.30	0.43	1.7
Thiamethoxam	10	1.3	0.07	0.10	0.2
Fungicides					
Calcium polysulfide	9	1.1	25.15	29.26	49.5
Copper hydroxide	12	1.2	1.32	1.69	3.8
Cyprodinil	3	1.9	0.21	0.42	0.2
Dodine	30	1.8	1.33	2.39	13.9
Mancozeb	40	2.0	2.47	4.97	37.4
Oxytetracycline	59	3.0	0.14	0.41	4.6
Pseudomonas fluores.	24	3.1	0.10	0.33	1.5
Streptomycin	34	2.6	0.08	0.20	1.3
Streptomycin sulfate	17	3.7	0.13	0.49	1.6
Sulfur	19	1.3	10.67	14.72	53.3
Trifloxystrobin	29	2.0	0.06	0.12	0.7
Ziram	12	1.5	5.58	8.85	19.6
Other Chemicals					
Dodecadien-1-ol	16	1.4	0.06	0.08	0.3
Dodecanol	5	1.0	0.005	0.006	(²)
NAA	39	1.1	0.08	0.09	0.6
Tetradecanol	5	1.0	0.001	0.001	(²)

¹ Total acres in 2003 for California were 19,000 acres. Acreage includes both bearing and nonbearing acres.

² Total applied is less than 50 lbs.

**Pears: Agricultural Chemical Applications,
Oregon, 2003¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	6	1.0	1.06	1.15	1.2
2,4-D, Dimeth. salt	3	1.4	0.97	1.43	0.9
Glyphosate	27	1.8	1.21	2.23	10.4
Paraquat	3	1.4	0.66	0.93	0.5
Simazine	6	1.0	2.39	2.39	2.7
Insecticides					
Abamectin	74	1.1	0.02	0.02	0.3
Acetamiprid	59	1.2	0.14	0.18	1.8
Azinphos-methyl	61	1.7	0.98	1.68	18.0
Benzoic acid	34	1.2	0.24	0.29	1.7
Bifenazate	28	1.0	0.48	0.50	2.5
Carbaryl	1	1.8	0.59	1.06	0.3
Chlorpyrifos	12	1.0	2.07	2.19	4.8
Endosulfan	41	1.2	2.12	2.60	18.6
Esfenvalerate	53	1.0	0.08	0.08	0.7
Imidacloprid	6	1.0	0.21	0.23	0.2
Petroleum distillate	99	3.2	17.97	58.91	1,021.3
Petroleum oil	2	1.8	3.35	6.12	2.0
Phosmet	33	1.1	2.82	3.17	18.3
Pyridaben	11	1.0	0.31	0.32	0.6
Pyriproxyfen	59	1.2	0.06	0.07	0.8
Thiamethoxam	34	1.0	0.08	0.09	0.5
Fungicides					
Calcium polysulfide	28	1.6	25.43	42.20	208.1
Copper hydroxide	41	1.3	3.41	4.56	32.9
Dodine	7	1.9	1.06	2.06	2.4
Mancozeb	95	2.3	3.59	8.37	139.8
Oxytetracycline	14	1.0	0.18	0.20	0.5
Streptomycin	39	1.1	0.15	0.17	1.1
Sulfur	57	1.5	12.00	18.94	188.7
Triadimefon	10	1.0	0.24	0.25	0.4
Triflumizole	58	1.8	0.25	0.46	4.8
Ziram	57	1.1	5.29	6.01	60.6
Other Chemicals					
Dodecadien-1-ol	20	1.2	0.04	0.05	0.2
NAA	35	1.1	0.05	0.06	0.4

¹ Bearing acres in 2003 for Oregon were 17,600 acres.

**Pears: Agricultural Chemical Applications,
Washington, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	5	1.0	1.17	1.17	1.5
Glyphosate	29	1.8	1.40	2.57	18.5
Norflurazon	6	1.5	1.57	2.41	3.5
Paraquat	5	1.2	0.75	0.96	1.2
Simazine	9	1.6	1.30	2.18	5.1
Insecticides					
Abamectin	69	1.2	0.02	0.03	0.5
Acetamiprid	47	1.5	0.13	0.21	2.4
Azinphos-methyl	57	2.0	0.99	2.04	28.7
Benzoic acid	18	1.2	0.24	0.30	1.3
Bifenazate	13	1.1	0.43	0.48	1.6
Bt (Bacillus thur.) ²	6	1.5			
Carbaryl	2	1.2	3.05	3.71	2.0
Chlorpyrifos	42	1.0	1.96	2.07	21.6
Endosulfan	40	1.1	2.02	2.22	22.0
Esfenvalerate	15	1.0	0.07	0.08	0.3
Formetanate hydro.	11	1.0	0.50	0.51	1.4
Imidacloprid	7	1.3	0.13	0.18	0.3
Kaolin	42	2.2	46.60	106.81	1,102.6
Petroleum distillate	79	4.0	14.70	59.74	1,171.7
Phosmet	18	1.4	2.97	4.27	18.8
Pyridaben	25	1.3	0.22	0.28	1.8
Spinosad	14	1.1	0.09	0.11	0.4
Thiamethoxam	56	1.2	0.07	0.09	1.2
Fungicides					
Basic copper sulfate	4	1.0	1.00	1.00	0.9
Calcium polysulfide	9	1.1	30.50	34.37	79.4
Copper hydroxide	23	1.4	1.76	2.49	14.0
Copper sulfate	7	1.1	1.47	1.63	2.7
Dodine	4	1.3	0.83	1.15	1.2
Fenarimol	3	1.3	0.07	0.10	0.1
Kresoxim-methyl	2	1.0	0.17	0.17	0.1
Mancozeb	16	1.1	5.60	6.35	24.6
Oxytetracycline	23	1.8	0.20	0.36	2.1
Streptomycin	5	1.3	0.26	0.36	0.4
Sulfur	38	1.3	9.30	12.63	118.5
Triadimefon	5	1.1	0.20	0.22	0.3
Triflumizole	40	1.4	0.25	0.36	3.6
Ziram	32	1.1	4.78	5.32	41.8
Other Chemicals					
Dodecadien-1-ol	16	1.0	0.05	0.05	0.2
NAA	43	1.1	0.05	0.05	0.6

¹ Bearing acres in 2003 for Washington were 24,800 acres.

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

Plums: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	40,000	78	3,261	54	757	59	1,031

**Plums: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	40,000					
Nitrogen		78	1.6	65	104	3,261
Phosphate		54	1.4	25	35	757
Potash		59	1.4	30	43	1,031

**Plums: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	P
2,4-D, Dimeth. salt	*
Glyphosate	P
Glyphosate diam salt	*
Napropamide	*
Norflurazon	P
Oryzalin	P
Oxyfluorfen	P
Paraquat	P
Pendimethalin	*
Simazine	*
Sulfosate	*
Insecticides	
Azinphos-methyl	*
Bifenazate	P
Bt (Bacillus thur.)	P
Carbaryl	P
Chlorpyrifos	P
Diazinon	*
Dicofol	*
Esfenvalerate	P
Fenbutatin-oxide	P
Formetanate hydro.	*
Hexythiazox	*
Methidathion	*
Neem oil	*
Petroleum distillate	P
Phosmet	P
Pyridaben	*
Pyriproxyfen	P
Spinosad	P

See footnote(s) at end of table.

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**Plums: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	CA
Fungicides	
Azoxystrobin	*
Basic copper sulfate	*
Captan	*
Chlorothalonil	*
Copper hydroxide	P
Copper oxide	P
Copper sulfate	*
Cyprodinil	*
Iprodione	P
Myclobutanil	P
Propiconazole	P
Sulfur	P
Ziram	*
Other Chemicals	
Chlorophacinone	*
Dichloropropene	*
E-8-Dodecenyl acetat	P
GABA	*
Gibberellic acid	*
L-Glutamic acid	*
Methyl bromide	*
Sodium tetrathiocarb	*
Strychnine	*
Z-8-Dodecanol	P
Z-8-Dodecen acetate	P

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Plums: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	40,000	56	54.9	71	828.0	54	72.1	10	102.7

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Plums: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	9	1.1	1.20	1.31	4.9
Glyphosate	46	1.5	0.84	1.33	24.6
Norflurazon	11	1.1	0.98	1.15	5.0
Oryzalin	4	1.0	2.39	2.53	3.8
Oxyfluorfen	26	1.3	0.38	0.51	5.3
Paraquat	14	1.2	0.69	0.85	4.7
Insecticides					
Bifenazate	7	1.2	0.48	0.59	1.6
Bt (Bacillus thur.) ²	14	1.0			
Carbaryl	6	1.0	3.97	4.09	9.2
Chlorpyrifos	13	1.0	1.87	1.99	10.3
Esfenvalerate	27	1.1	0.04	0.04	0.4
Fenbutatin-oxide	1	1.2	0.80	0.97	0.5
Petroleum distillate	42	1.0	41.21	44.99	753.7
Phosmet	28	1.2	2.91	3.48	38.9
Pyriproxyfen	4	1.1	0.13	0.15	0.3
Spinosad	5	1.1	0.09	0.10	0.2
Fungicides					
Copper hydroxide	14	1.0	4.44	4.60	25.3
Copper oxide	2	1.1	3.77	4.43	3.2
Iprodione	4	1.2	0.59	0.73	1.3
Myclobutanil	12	1.0	0.10	0.10	0.5
Propiconazole	26	1.2	0.11	0.14	1.4
Sulfur	9	1.2	7.09	9.01	33.0
Other Chemicals					
E-8-Dodecenyl acetat	3	1.0	0.004	0.004	(³)
Z-8-Dodecanol	3	1.0	0.001	0.001	(³)
Z-8-Dodecen acetate	3	1.0	0.06	0.06	0.1

¹ Total acres in 2003 for California were 40,000 acres. Acreage includes both bearing and nonbearing 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 lbs.

Prunes: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	80,000	73	7,657	8	279	38	4,432

**Prunes: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	80,000					
Nitrogen		73	3.2	40	130	7,657
Phosphate		8	2.4	18	45	279
Potash		38	3.1	46	145	4,432

**Prunes: Active Ingredients and
Publication Status**

Active Ingredient	CA
Herbicides	
2,4-D	P
2,4-D, Dimeth. salt	*
Fluazifop-P-butyl	*
Glyphosate	P
Glyphosate diam salt	*
Norflurazon	*
Oryzalin	P
Oxyfluorfen	P
Paraquat	P
Pendimethalin	P
Sethoxydim	*
Insecticides	
Azinphos-methyl	*
Bifenazate	*
Bt (Bacillus thur.)	*
Chlorpyrifos	P
Diazinon	P
Dicofol	*
Esfenvalerate	P
Fenbutatin-oxide	P
Fenpropathrin	*
Methidathion	*
Petroleum distillate	P
Pyridaben	*
Spinosad	*
Fungicides	
Azoxystrobin	*
Basic copper sulfate	*
Captan	P
Chlorothalonil	*
Copper hydroxide	P
Cyprodinil	P
Iprodione	*
Maneb	*
Myclobutanil	*
Propiconazole	P
Sulfur	P
Tebuconazole	*
Other Chemicals	
Chloropicrin	*
Dichloropropene	*
Methyl bromide	*
Strychnine	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Prunes: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	80,000	41	66.4	69	887.3	50	322.4	11	199.7

¹ Total Applied excludes Bt's (Bacillus thuringiensis) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

**Prunes: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	9	1.0	0.64	0.67	4.9
Glyphosate	44	1.5	0.72	1.14	40.0
Oryzalin	6	1.0	1.29	1.35	6.8
Oxyfluorfen	22	1.1	0.32	0.37	6.4
Paraquat	6	1.2	0.45	0.54	2.8
Pendimethalin	2	1.0	1.99	2.03	2.9
Insecticides					
Chlorpyrifos	5	1.1	1.72	2.02	8.7
Diazinon	17	1.1	1.70	1.99	26.4
Esfenvalerate	31	1.2	0.04	0.05	1.1
Fenbutatin-oxide	5	1.3	0.71	0.93	3.4
Petroleum distillate	45	1.1	21.25	23.58	846.0
Fungicides					
Captan	20	1.1	2.86	3.14	49.9
Copper hydroxide	6	1.1	1.91	2.17	10.9
Cyprodinil	23	1.2	0.22	0.27	4.9
Propiconazole	7	1.0	0.11	0.12	0.7
Sulfur	20	1.1	12.86	15.15	242.5

¹ Total acres in 2003 for California were 80,000 acres. Acreage includes both bearing and nonbearing acres.

Raspberries: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
OR	2,300	96	173	96	136	94	140
WA	9,200	94	705	94	843	89	775
Total	11,500	94	878	95	979	90	915

**Raspberries: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Oregon	2,300					
Nitrogen		96	1.7	45	78	173
Phosphate		96	1.3	47	61	136
Potash		94	1.2	52	65	140
Washington	9,200					
Nitrogen		94	3.8	21	81	705
Phosphate		94	3.0	32	97	843
Potash		89	3.2	29	94	775
Total	11,500					
Nitrogen		94	3.4	24	81	878
Phosphate		95	2.6	34	90	979
Potash		90	2.8	31	88	915

**Raspberries: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States		
	ALL	OR	WA
Herbicides			
2,4-D	*	*	
Carfentrazone-ethyl	P	P	P
Dichlobenil	P	*	*
Diuron	P	P	P
Fluazifop-P-butyl	*	*	
Glyphosate	*	*	
Norflurazon	P	*	*
Oryzalin	P	P	P
Oxyfluorfen	*	*	P
Paraquat	P	P	P
Pronamide	*	*	
Sethoxydim	P	*	*
Simazine	P	P	P
Terbacil	*	*	
Triclopyr	*	*	
Insecticides			
Azadirachtin	*		*
Azinphos-methyl	*	*	*
Bifenthrin	P	P	P
Bt (Bacillus thur.)	P	P	P
Diazinon	P	P	P
Esfenvalerate	*	*	
Fenamiphos	P	*	*
Fenbutatin-oxide	P	*	*
Hexythiazox	*	*	*
Malathion	P	P	P
Petroleum distillate	P	*	*
Pyrethrins	*		*
Rotenone	*		*
Tebufenozide	*	*	

See footnote(s) at end of table.

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**Raspberries: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States		
	ALL	OR	WA
Fungicides			
Azoxystrobin	*	*	
Basic copper sulfate	*	*	
Benomyl	*	*	*
Calcium polysulfide	P	P	P
Captan	P	P	P
Copper amm. complex	*	*	
Copper hydroxide	P	P	P
Copper sulfate	P	*	*
Cyprodinil	P	P	P
Fenhexamid	P	P	P
Fludioxonil	P	P	P
Fosetyl-al	*	*	
Iprodione	P	*	*
Mefenoxam	P	P	P
Myclobutanil	P	P	P
Pyraclostrobin	*	*	*
Sulfur	*	*	*
Ziram	*	*	
Other Chemicals			
Metaldehyde	*		*
Monocarbamide dihyd.	*		*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Raspberries: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide ¹		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
OR	2,300	64	3.2	55	3.2	81	14.6		
WA ²	9,200	93	14.8	95	19.1	96	106.2		
Total ²	11,500	87	17.9	87	22.3	93	120.8		

¹ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

² Insufficient reports to publish data for one or more pesticide classes.

**Raspberries: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Carfentrazone-ethyl	47	1.1	0.02	0.02	0.1
Dichlobenil	5	1.0	1.77	1.77	1.0
Diuron	33	1.0	0.75	0.77	3.0
Norflurazon	7	1.0	0.91	0.95	0.8
Oryzalin	12	1.0	1.20	1.23	1.7
Paraquat	74	2.1	0.37	0.78	6.7
Sethoxydim	4	1.1	0.31	0.35	0.1
Simazine	43	1.0	0.70	0.72	3.5
Insecticides					
Bifenthrin	74	1.3	0.09	0.13	1.1
Bt (Bacillus thur.) ²	36	1.7			
Diazinon	52	1.4	1.02	1.43	8.5
Fenamiphos	8	1.0	2.98	2.98	2.8
Fenbutatin-oxide	7	1.0	0.94	0.94	0.7
Malathion	42	1.0	1.17	1.19	5.8
Petroleum distillate	3	1.0	9.74	9.74	3.2
Fungicides					
Calcium polysulfide	53	1.0	7.47	7.97	48.2
Captan	80	3.4	1.37	4.79	43.8
Copper hydroxide	34	1.0	0.85	0.92	3.6
Copper sulfate	24	1.0	1.94	1.94	5.5
Cyprodinil	81	1.9	0.29	0.58	5.4
Fenhexamid	55	1.5	0.66	1.03	6.5
Fludioxonil	81	1.9	0.20	0.39	3.6
Iprodione	2	1.2	0.98	1.22	0.3
Mefenoxam	23	1.0	0.54	0.57	1.5
Myclobutanil	24	1.6	0.04	0.06	0.2

¹ Bearing acres in 2003 for the 2 program states were 11,500 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, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Carfentrazone-ethyl	6	1.0	0.03	0.03	(³)
Diuron	11	1.0	0.77	0.77	0.2
Oryzalin	9	1.0	1.18	1.18	0.3
Paraquat	39	1.2	0.51	0.66	0.6
Simazine	38	1.0	1.34	1.35	1.2
Insecticides					
Bifenthrin	18	1.2	0.07	0.09	(³)
Bt (Bacillus thur.) ²	20	1.1			
Diazinon	14	1.7	1.04	1.85	0.6
Malathion	6	1.0	2.15	2.15	0.3
Fungicides					
Calcium polysulfide	39	1.3	7.39	9.60	8.6
Captan	55	1.2	1.46	1.80	2.3
Copper hydroxide	12	1.0	0.90	0.90	0.3
Cyprodinil	37	1.2	0.32	0.40	0.3
Fenhexamid	15	1.7	0.63	1.11	0.4
Fludioxonil	37	1.2	0.21	0.27	0.2
Mefenoxam	9	1.0	1.46	1.46	0.3
Myclobutanil	11	1.0	0.04	0.04	(³)

¹ Bearing acres in 2003 for Oregon were 2,300 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 lbs.

**Raspberries: Agricultural Chemical Applications,
Washington, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Carfentrazone-ethyl	58	1.1	0.02	0.02	0.1
Diuron	39	1.0	0.75	0.77	2.8
Oryzalin	13	1.0	1.21	1.23	1.5
Oxyfluorfen	65	1.1	0.09	0.11	0.6
Paraquat	83	2.2	0.36	0.80	6.1
Simazine	44	1.0	0.57	0.59	2.4
Insecticides					
Bifenthrin	88	1.3	0.10	0.13	1.1
Bt (Bacillus thur.) ²	40	1.7			
Diazinon	61	1.3	1.02	1.41	7.9
Malathion	51	1.0	1.14	1.16	5.5
Fungicides					
Calcium polysulfide	56	1.0	7.48	7.68	39.6
Captan	86	3.8	1.37	5.27	41.6
Copper hydroxide	39	1.0	0.85	0.92	3.3
Cyprodinil	92	2.0	0.29	0.60	5.1
Fenhexamid	65	1.5	0.66	1.02	6.1
Fludioxonil	92	2.0	0.19	0.40	3.4
Mefenoxam	26	1.0	0.46	0.50	1.2
Myclobutanil	27	1.6	0.03	0.06	0.1

¹ Bearing acres in 2003 for Washington were 9,200 acres.

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

Tangelos: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
FL	9,100	89	1,144	60	178	89	1,184

**Tangelos: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Florida	9,100					
Nitrogen		89	2.7	51	142	1,144
Phosphate		60	2.5	13	32	178
Potash		89	2.7	54	147	1,184

**Tangelos: Active Ingredients and
Publication Status**

Active Ingredient	FL
Herbicides	
2,4-D	P
Bromacil	P
Diuron	P
Glyphosate	P
Norflurazon	P
Paraquat	*
Simazine	P
Thiazopyr	*
Insecticides	
Abamectin	P
Aldicarb	*
Azinphos-methyl	*
Carbaryl	*
Chlorpyrifos	P
Dicofol	*
Diflubenzuron	P
Ethion	P
Fenbutatin-oxide	P
Imidacloprid	*
Methyl parathion	*
Neem oil, clar. hyd.	*
Petroleum distillate	P
Petroleum oil	*
Pyridaben	P
Pyriproxyfen	*
S-Methoprene	*
Sulfur	P
Fungicides	
Azoxystrobin	P
Basic copper sulfate	*
Copper chloride hyd.	*
Copper hydroxide	P
Copper sulfate	P
Fenbuconazole	*
Ferbam	*
Mefenoxam	*
Pyraclostrobin	P
Thiophanate-methyl	*
Trifloxystrobin	P
Other Chemicals	
Gibberellic acid	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Tangelos: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
FL ¹	9,100	62	26.5	84	584.6	73	28.0		

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

**Tangelos: Agricultural Chemical Applications,
Florida, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	16	1.9	0.21	0.42	0.6
Bromacil	8	1.9	1.35	2.65	1.9
Diuron	21	1.6	1.53	2.59	4.9
Glyphosate	62	2.5	0.97	2.46	13.9
Norflurazon	9	1.9	1.30	2.57	2.1
Simazine	12	1.3	1.92	2.53	2.8
Insecticides					
Abamectin	34	1.0	0.01	0.01	(²)
Chlorpyrifos	9	1.1	1.38	1.53	1.2
Diflubenzuron	5	1.0	0.11	0.11	0.1
Ethion	11	1.0	3.25	3.29	3.4
Fenbutatin-oxide	9	1.7	1.00	1.73	1.5
Petroleum distillate	81	2.0	35.74	73.80	541.4
Pyridaben	21	1.0	0.29	0.30	0.6
Sulfur	14	1.3	16.87	22.03	27.5
Fungicides					
Azoxystrobin	12	1.4	0.21	0.31	0.4
Copper hydroxide	65	1.7	2.11	3.71	22.0
Copper sulfate	5	1.4	1.35	1.92	0.9
Pyraclostrobin	12	1.1	0.17	0.20	0.2
Trifloxystrobin	3	1.0	0.08	0.08	(²)

¹ Bearing acres in 2003 for Florida were 9,100 acres.

² Total applied is less than 50 lbs.

**Tangerines: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied**

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA	12,200	63	463	28	114	42	173
FL	21,700	93	3,393	83	627	92	3,380
Total	33,900	82	3,856	64	741	74	3,553

**Tangerines: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
California	12,200					
Nitrogen		63	2.1	28	60	463
Phosphate		28	1.1	27	33	114
Potash		42	1.4	23	33	173
Florida	21,700					
Nitrogen		93	3.4	49	169	3,393
Phosphate		83	2.9	12	35	627
Potash		92	3.2	52	169	3,380
Total	33,900					
Nitrogen		82	3.0	45	139	3,856
Phosphate		64	2.6	13	34	741
Potash		74	2.9	49	142	3,553

**Tangerines: Active Ingredients and
Publication Status
By Program States, 2003**

Active Ingredient	Program States		
	ALL	CA	FL
Herbicides			
2,4-D	P		P
Bromacil	P	P	P
Diuron	P	P	P
Glyphosate	P	P	P
Norflurazon	*	*	P
Oryzalin	*	*	
Oxyfluorfen	*	*	
Paraquat	*	*	P
Pendimethalin	*	*	
Simazine	*	*	P
Sulfosate	*		*
Thiazopyr	*		*
Trifluralin	*		*

See footnote(s) at end of table.

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**Tangerines: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States		
	ALL	CA	FL
Insecticides			
Abamectin	*	*	P
Acetamiprid	*		*
Aldicarb	*		*
Carbaryl	*	*	*
Chlorpyrifos	*	*	P
Cyfluthrin	P	P	
Diazinon	*		*
Dicofol	*	*	P
Diflubenzuron	P		P
Dimethoate	*	*	
Ethion	P		P
Fenbutatin-oxide	P		P
Fenpropathrin	*	*	*
Formetanate hydro.	*	*	
Imidacloprid	*	*	P
Kaolin	*	*	*
Malathion	*	*	
Methidathion	*	*	
Naled	*	*	
Neem oil, clar. hyd.	*		*
Petroleum distillate	P	P	P
Petroleum oil	*		*
Potassium salts	*		*
Pyridaben	*	*	P
Pyriproxyfen	P	*	*
S-Methoprene	*		*
Sabadilla	*	*	
Spinosad	*	P	*
Sulfur	P	P	P

See footnote(s) at end of table.

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**Tangerines: Active Ingredients and
Publication Status
By Program States, 2003 (continued)**

Active Ingredient	Program States		
	ALL	CA	FL
Fungicides			
Azoxystrobin	*	*	P
Basic copper sulfate	P	*	*
Benomyl	*		*
Copper chloride hyd.	*		*
Copper hydroxide	P	P	P
Copper oxide	*	*	
Copper sulfate	*	*	P
Fenbuconazole	P		P
Ferbam	P		P
Fosetyl-al	*		*
Mefenoxam	*		*
Phosphorous acid	*		*
Pyraclostrobin	P		P
Thiophanate-methyl	*		*
Thiram	*		*
Trifloxystrobin	P		P
Other Chemicals			
Diphacinone	*	*	
Gibberellic acid	P	*	*
Harpin protein	*		*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Tangerines: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CA ¹	12,200	21	7.1	18	51.3	11	2.4		
FL ¹	21,700	60	66.7	95	1,658.0	87	90.0		
Total	33,900	46	74.1	68	1,709.2	60	92.4	4	(²)

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

² Total applied is less than 50 lbs.

**Tangerines: Agricultural Chemical Applications,
Program States, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	9	2.3	0.12	0.30	0.9
Bromacil	8	1.5	0.82	1.26	3.4
Diuron	20	1.5	1.45	2.28	15.4
Glyphosate	45	2.4	0.94	2.29	34.8
Insecticides					
Cyfluthrin	5	1.0	0.03	0.03	0.1
Diflubenzuron	6	1.1	0.14	0.16	0.3
Ethion	7	1.0	1.76	1.77	4.2
Fenbutatin-oxide	35	1.0	0.59	0.63	7.4
Petroleum distillate	61	2.4	29.35	72.11	1,492.3
Pyriproxyfen	1	1.0	0.09	0.09	(²)
Sulfur	28	1.1	12.49	14.66	138.9
Fungicides					
Basic copper sulfate	2	1.9	2.79	5.40	4.5
Copper hydroxide	50	2.3	1.71	3.95	66.3
Fenbuconazole	2	1.0	0.07	0.07	0.1
Ferbam	4	1.2	2.32	2.79	3.7
Pyraclostrobin	37	1.7	0.12	0.21	2.7
Trifloxystrobin	7	1.0	0.04	0.04	0.1
Other Chemicals					
Gibberellic acid	*	1.1	0.01	0.02	(²)

* Area applied is less than 0.5 percent.

¹ Bearing acres in 2003 for the 2 Program States were 33,900 acres.

States included are CA and FL.

² Total applied is less than 50 lbs.

**Tangerines: Agricultural Chemical Applications,
California, 2003 ¹**

Active Ingredient	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
Bromacil	3	1.0	1.04	1.04	0.4
Diuron	7	1.3	1.85	2.45	2.1
Glyphosate	19	1.8	0.64	1.17	2.7
Insecticides					
Cyfluthrin	5	1.0	0.08	0.08	0.1
Petroleum distillate	7	1.1	13.83	16.06	13.2
Spinosad	9	1.2	0.07	0.09	0.1
Sulfur	5	1.3	39.54	51.54	28.8
Fungicides					
Copper hydroxide	3	1.0	1.65	1.65	0.6

¹ Total acres in 2003 for California were 12,200 acres. Acreage includes both bearing and nonbearing acres.

**Tangerines: Agricultural Chemical Applications,
Florida, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	9	2.3	0.20	0.47	0.9
Bromacil	11	1.6	0.80	1.30	3.0
Diuron	27	1.6	1.40	2.26	13.2
Glyphosate	59	2.5	0.98	2.49	32.0
Norflurazon	13	1.5	1.40	2.21	6.1
Paraquat	10	1.3	0.36	0.49	1.1
Simazine	16	1.4	1.97	2.85	10.1
Insecticides					
Abamectin	60	1.1	0.01	0.01	0.2
Chlorpyrifos	15	1.0	1.81	1.84	6.0
Dicofol	2	1.4	2.35	3.38	1.5
Disflubenzuron	6	1.1	0.22	0.26	0.3
Ethion	7	1.0	2.75	2.77	4.2
Fenbutatin-oxide	35	1.0	0.93	0.98	7.4
Imidacloprid	10	1.5	0.11	0.17	0.4
Petroleum distillate	92	2.5	29.64	74.43	1,479.1
Pyridaben	56	1.3	0.31	0.40	4.8
Sulfur	41	1.1	10.59	12.34	110.1
Fungicides					
Azoxystrobin	34	1.4	0.21	0.31	2.2
Copper hydroxide	76	2.3	1.71	4.00	65.7
Copper sulfate	11	1.1	1.93	2.20	5.4
Fenbuconazole	2	1.0	0.11	0.11	0.1
Ferbam	4	1.2	3.62	4.36	3.7
Pyraclostrobin	37	1.7	0.19	0.33	2.7
Trifloxystrobin	7	1.0	0.07	0.07	0.1

¹ Bearing acres in 2003 for Florida were 21,700 acres.

Temples: Fertilizer Use by State, 2003
Percent of Acres Treated and Total Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
FL	4,200	99	509	32	27	99	585

**Temples: Fertilizer Primary Nutrient Applications,
Program States and Total, 2003**

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Florida	4,200					
Nitrogen		99	2.4	49	123	509
Phosphate		32	2.4	8	20	27
Potash		99	2.3	60	141	585

**Temples: Active Ingredients and
Publication Status**

Active Ingredient	FL
Herbicides	
2,4-D	P
Bromacil	*
Diuron	P
Glyphosate	P
Norflurazon	P
Paraquat	P
Simazine	P
Thiazopyr	*
Insecticides	
Abamectin	P
Aldicarb	*
Carbaryl	*
Chlorpyrifos	*
Dicofol	*
Diflubenzuron	*
Ethion	P
Fenbutatin-oxide	P
Imidacloprid	*
Petroleum distillate	P
Pyridaben	P
S-Methoprene	*
Sulfur	P
Fungicides	
Azoxystrobin	P
Basic copper sulfate	*
Copper chloride hyd.	*
Copper hydroxide	P
Copper sulfate	*
Fenbuconazole	*
Ferbam	*
Mefenoxam	*
Pyraclostrobin	*
Trifloxystrobin	*
Other Chemicals	
Harpin protein	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

**Temples: Pesticide, Bearing Acreage,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2003**

State	Bearing Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemicals	
	<i>Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
FL ¹	4,200	58	10.8	96	296.2	95	14.6		

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

**Temples: Agricultural Chemical Applications,
Florida, 2003 ¹**

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D	32	2.9	0.20	0.59	0.8
Diuron	10	2.5	1.11	2.82	1.2
Glyphosate	58	3.0	0.95	2.90	7.0
Norflurazon	4	1.4	1.06	1.55	0.3
Paraquat	9	1.0	0.37	0.38	0.1
Simazine	8	2.0	1.71	3.56	1.2
Insecticides					
Abamectin	16	1.4	0.01	0.01	(²)
Ethion	4	1.0	2.07	2.07	0.3
Fenbutatin-oxide	3	1.0	1.04	1.07	0.1
Petroleum distillate	95	2.0	33.94	70.57	282.1
Pyridaben	8	1.0	0.30	0.30	0.1
Sulfur	13	1.0	21.26	23.18	13.0
Fungicides					
Azoxystrobin	8	1.4	0.20	0.30	0.1
Copper hydroxide	94	1.3	2.60	3.47	13.7

¹ Bearing acres in 2003 for Florida were 4,200 acres.

² Total applied is less than 50 lbs.

Pest Management Practices - Highlights

NASS continues to publish data on pest management practices that growers use on fruit acres in an effort to enhance and improve the statistics that are available to control pests. The Pest Management Practices 2003 Summary is based on data compiled from respondents participating in the Fruit Chemical Use Survey (FCUS). Modifications to this particular section of the questionnaire have been made since 2001 to more accurately capture current pest management practices. For example, the manner in which the questions pertaining to scouting were asked has changed. Scouting is now classified as scouting by either general observation or scouting deliberately. Some questions remained unchanged, so year to year comparisons are still valid.

Producers were first asked how many total acres of fruit crops they grew in 2003, followed by questions regarding the use of specific pest management practices, in a yes/no format. Pests were defined as weeds, insects, and diseases. If the respondent used a specific practice on any fruit crop, it was assumed that the practice was used on all acres of fruit crops. For example, if a producer had 500 acres of various fruit crops, and used field mapping of previous weed problems to assist in making weed management decisions, it was assumed that all 500 acres were mapped.

For this report, each question has been categorized into one of three pest management categories: prevention, monitoring, and suppression. The data published in two tables: percent of acres receiving the specific pest management practice, and percent of farms using the specific pest management practice. These percentages are published at the Program States and State levels. For all the crops in this survey, the percentages refer only to farms and fruit acres.

Highlights: Chopping, mowing/etc. field edges was the most commonly reported prevention practice, used on 77% of fruit acres and 45% of fruit farms. For monitoring practices, general observation was the most commonly used scouting process as it was used on 83% of fruit acres and 41% of the fruit farms; scouting was usually done by the operator, partner, or family member. Alternating pesticides was the most commonly reported suppression practice, used on 72% of fruit acres and on 28% of fruit farms.

**Pest Management Practices,
Percent of Acres Receiving Practice,
All Fruit Crops, 2003**

Practice	States						
	CA	FL	GA	MI	NJ	NY	NC
	<i>Pct of Acres</i>	<i>Pct of Acres</i>	<i>Pct of Acres</i>	<i>Pct of Acres</i>	<i>Pct of Acres</i>	<i>Pct of Acres</i>	<i>Pct of Acres</i>
Prevention Practices:							
Remove or plow down crop residue	41	15	68	54	48	53	79
Clean implements after fieldwork	63	96	90	55	66	58	82
Field cultivated for weed control	77	62	43	34	59	32	29
Field edges/etc. chopped, mowed/etc.	69	89	97	83	69	82	97
Water management practices	56	64	3	10	36	6	26
Monitoring Practices:							
Scouting by general observation	88	70	89	87	87	79	75
Deliberate scouting activities	11	27	10	11	12	18	24
Field was not scouted	1	4	1	2	1	3	1
Established scouting process/insect trap used	81	66	72	77	76	62	13
Scouting due to pest advisory warning	37	29	35	41	33	40	68
Scouting due to pest development model	43	44	15	47	51	36	28
Scouted for weeds	93	95	94	88	74	82	39
Scouting for weeds was done by:							
Operator, partner, or family member	41	47	54	70	58	74	98
An employee	24	45	45	4	3	7	1
Farm supply or chemical dealer	14	3		14	2	3	
Indep. crop consultant or comm. scout	21	5	*	11	37	16	1
Scouted for insects and mites	96	94	99	98	78	96	90
Scouting for insects/mites was done by:							
Operator, partner, or family member	29	44	61	49	57	52	99
An employee	17	43	38	4	*	7	
Farm supply or chemical dealer	27	6		19	2	11	
Indep. crop consultant or comm. scout	27	8	1	28	41	30	1
Scouted for diseases	95	94	98	97	78	96	91
Scouting for diseases was done by:							
Operator, partner, or family member	30	47	62	52	55	53	99
An employee	17	43	38	4		7	
Farm supply or chemical dealer	27	3		19	2	11	
Indep. crop consultant or comm. scout	27	8	*	25	42	30	1
Records kept to track pests	68	65	8	66	61	68	44
Field mapping of weed problem	25	40	23	12	46	18	14
Soil/plant tissue analysis to detect pests	55	60	64	34	54	25	14
Weather monitoring	76	84	91	95	86	90	90
Biological pest controls	47	16	65	54	35	26	4
Suppression Practices:							
Biological pesticides	38	25	2	25	26	32	11
Beneficial organisms	24	26	*	14	17	6	*
Scouting used to make decisions	67	45	42	70	60	74	39
Maintain ground cover or physical barriers	43	32	38	63	35	52	77
Alternate pesticides with different MOA	69	68	77	90	87	82	66

* Less than one percent.

**Pest Management Practices,
Percent of Acres Receiving Practice,
All Fruit Crops, 2003**

Practice	States					Program States 2003 Pct of Acres
	OR	PA	SC	TX	WA	
<i>Pct of Acres</i>						
Prevention Practices:						
Remove or plow down crop residue	31	30	83	33	41	36
Clean implements after fieldwork	54	54	80	45	65	70
Field cultivated for weed control	54	31	59	81	50	66
Field edges/etc. chopped, mowed/etc.	77	87	94	91	84	77
Water management practices	46	3	28	53	57	53
Monitoring Practices:						
Scouting by general observation	81	81	63	79	85	83
Deliberate scouting activities	18	15	36	18	13	16
Field was not scouted	2	5	1	2	1	2
Established scouting process/insect trap used	65	70	12	55	84	75
Scouting due to pest advisory warning	38	45	40	6	31	35
Scouting due to pest development model	43	62	17	11	63	44
Scouted for weeds	77	74	99	96	89	92
Scouting for weeds was done by:						
Operator, partner, or family member	52	75	67	87	39	46
An employee	25	2	32	6	21	27
Farm supply or chemical dealer	13	21		4	29	12
Indep. crop consultant or comm. scout	10	1	2	3	11	15
Scouted for insects and mites	97	82	99	97	97	95
Scouting for insects/mites was done by:						
Operator, partner, or family member	41	70	67	84	32	36
An employee	18	5	32	6	16	22
Farm supply or chemical dealer	25	22		5	35	21
Indep. crop consultant or comm. scout	16	2	2	5	17	21
Scouted for diseases	95	81	99	97	97	95
Scouting for diseases was done by:						
Operator, partner, or family member	42	70	67	85	34	38
An employee	17	5	32	6	16	22
Farm supply or chemical dealer	25	23		5	34	20
Indep. crop consultant or comm. scout	16	2	2	4	16	20
Records kept to track pests	54	64	59	67	78	67
Field mapping of weed problem	21	7	10	18	22	27
Soil/plant tissue analysis to detect pests	37	37	5	57	55	53
Weather monitoring	89	97	96	51	89	81
Biological pest controls	56	51	4	3	70	41
Suppression Practices:						
Biological pesticides	35	52	4	7	56	35
Beneficial organisms	10	3	*	23	23	22
Scouting used to make decisions	57	81	22	25	73	61
Maintain ground cover or physical barriers	52	29	90	9	62	43
Alternate pesticides with different MOA	79	95	92	76	84	72

* Less than one percent.

**Pest Management Practices,
Percent of Farms Utilizing Practice,
All Fruit Crops, 2003**

Practice	States						
	CA	FL	GA	MI	NJ	NY	NC
	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>
Prevention Practices:							
Remove or plow down crop residue	20	7	51	42	45	47	59
Clean implements after fieldwork	35	49	47	46	58	51	58
Field cultivated for weed control	39	36	26	27	56	26	14
Field edges/etc. chopped, mowed/etc.	36	47	77	73	62	82	81
Water management practices	26	17	3	6	22	2	8
Monitoring Practices:							
Scouting by general observation	41	26	49	66	60	72	69
Deliberate scouting activities	24	28	27	19	22	20	21
Field was not scouted	35	45	25	15	18	8	10
Established scouting process/insect trap used	32	16	10	44	42	40	11
Scouting due to pest advisory warning	14	5	4	22	19	28	35
Scouting due to pest development model	12	8	7	21	25	23	13
Scouted for weeds	56	51	60	70	66	69	52
Scouting for weeds was done by:							
Operator, partner, or family member	66	65	96	79	63	80	97
An employee	8	22	3	2	3	7	1
Farm supply or chemical dealer	11	5		12	1	5	
Indep. crop consultant or comm. scout	16	8	1	7	32	7	2
Scouted for insects and mites	54	53	73	83	74	87	79
Scouting for insects/mites was done by:							
Operator, partner, or family member	50	65	95	68	62	68	99
An employee	6	20	3	1	1	6	
Farm supply or chemical dealer	20	6		15	1	14	
Indep. crop consultant or comm. scout	23	9	2	15	35	12	1
Scouted for diseases	52	52	69	81	76	87	78
Scouting for diseases was done by:							
Operator, partner, or family member	51	66	96	68	64	69	99
An employee	7	20	3	2		6	
Farm supply or chemical dealer	19	5		16	1	14	
Indep. crop consultant or comm. scout	23	8	1	15	35	12	1
Records kept to track pests	22	11	10	38	38	49	31
Field mapping of weed problem	6	2	2	6	27	8	9
Soil/plant tissue analysis to detect pests	19	17	3	16	32	15	7
Weather monitoring	29	38	39	75	67	82	65
Biological pest controls	15	1	5	28	18	11	9
Suppression Practices:							
Biological pesticides	10	4	1	11	20	13	10
Beneficial organisms	10	4	1	5	7	3	1
Scouting used to make decisions	25	12	6	43	47	53	18
Maintain ground cover or physical barriers	20	7	29	49	36	45	60
Alternate pesticides with different MOA	22	21	13	65	55	66	42

* Less than one percent.

**Pest Management Practices,
Percent of Farms Utilizing Practice,
All Fruit Crops, 2003**

Practice	States					Program States 2003
	OR	PA	SC	TX	WA	
	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>	<i>Pct of Farms</i>
Prevention Practices:						
Remove or plow down crop residue	27	46	50	30	24	21
Clean implements after fieldwork	32	45	58	32	40	39
Field cultivated for weed control	40	20	49	42	30	36
Field edges/etc. chopped, mowed/etc.	58	72	85	60	50	45
Water management practices	21	2	5	9	27	22
Monitoring Practices:						
Scouting by general observation	45	60	47	39	42	41
Deliberate scouting activities	28	33	47	26	21	25
Field was not scouted	27	7	6	36	37	34
Established scouting process/insect trap used	21	29	12	15	35	29
Scouting due to pest advisory warning	14	34	13	4	16	14
Scouting due to pest development model	16	25	10	3	28	14
Scouted for weeds	58	77	91	58	53	56
Scouting for weeds was done by:						
Operator, partner, or family member	84	85	94	85	64	69
An employee	5	3	4	7	6	9
Farm supply or chemical dealer	7	10		4	23	11
Indep. crop consultant or comm. scout	4	1	3	5	8	12
Scouted for insects and mites						
Scouting for insects/mites was done by:	64	90	88	62	60	58
Operator, partner, or family member	70	84	93	82	54	58
An employee	6	3	4	6	7	8
Farm supply or chemical dealer	17	11		6	30	17
Indep. crop consultant or comm. scout	7	2	3	5	9	16
Scouted for diseases	65	89	89	61	58	57
Scouting for diseases was done by:						
Operator, partner, or family member	72	83	94	82	56	59
An employee	5	4	4	6	7	8
Farm supply or chemical dealer	16	11		6	29	17
Indep. crop consultant or comm. scout	7	2	3	6	8	16
Records kept to track pests	24	31	26	16	32	23
Field mapping of weed problem	4	1	7	2	10	6
Soil/plant tissue analysis to detect pests	13	17	7	10	19	18
Weather monitoring	55	80	74	32	47	38
Biological pest controls	18	13	5	7	32	15
Suppression Practices:						
Biological pesticides	10	16	5	3	20	10
Beneficial organisms	5	3	1	5	8	8
Scouting used to make decisions	24	56	21	10	36	26
Maintain ground cover or physical barriers	35	37	65	23	35	23
Alternate pesticides with different MOA	31	65	57	21	38	28

* Less than one percent.

Survey Procedures

Large screening 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. The sample design for the Fruit Chemical Use Survey (FCUS) uses a Multi-variate Probability Proportional to Size (MPPS) design. The probability of being selected for the sample was based on the percentage of acreage for a given crop that a grower had on a States list frame. The maximum of these probabilities were selected to draw our sample. The general idea is to assure that the total acreage of all targeted fruit crops that a grower has on the list frame was included when determining a grower's probability of selection.

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 report "**Citrus Fruits - 2003 Summary**" [Fr Nt 3-1(03)] released on September 18, 2003 and "**Noncitrus Fruits and Nuts - 2003 Summary**" [Fr Nt 1-3 (04)] released on January 23, 2004. 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 is affected by non-sampling errors and sampling variability. 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 Carbaryl, 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 5-65 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: Refers to the mechanism of action in pesticides 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.

Allelopathic: The release of chemical compounds from a plant that will inhibit the growth of another plant, such as weeds.

Agricultural chemicals: Refers to the active ingredients in fertilizers and pesticides.

Application Rates: Refer to the average number of pounds of a fertilizer primary nutrient or pesticide active ingredient is applied to an acre of land. Rate per application is the average number of pounds applied per acre in one application. Rate per crop year is the average number of pounds applied per acre counting multiple applications. Number of applications is the average number of times a treated acre received a specific primary nutrient or active ingredient.

Area applied: Represents the percentage of crop acres receiving one or more applications of a specific primary nutrient or active ingredient. 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.

Beneficial Insects: Insects collected and introduced into locations because of their value in biologic control as prey on harmful insects and parasites.

Chemigation: Application of an agricultural chemical by injecting it into irrigation water.

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

Crop year: Refers to the period immediately following harvest of the previous crop through harvest of the current crop.

Cultivars: A horticulturally or agriculturally derived variety of a plant, as distinguished from a natural variety.

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

Fertilizer: Refers to applications of the primary nutrients; nitrogen, phosphate, and potash.

Fungi: A lower form of parasitic plant life which often reduces crop production and/or lowers the grade quality of its host.

Terms and Definitions (continued)

Monitoring: Includes proper identification of pests through systematic sampling or counting or other forms of scouting. Also, weather monitoring to predict levels of pest populations or to determine the most effective time to make pesticide applications, and soil testing where appropriate.

The following pest management practices questions were categorized as monitoring practices:

In 2003, how was this field primarily scouted for insects, weeds, diseases and/or beneficial organisms? (By conducting general observations while performing routine tasks? By deliberately going to the field specifically for scouting activities? This field was not scouted?)

Was an established scouting process used (systematic sampling, recording counts, etc.) or were insect traps used in this field?

Was scouting for pests done in this field due to a pest advisory warning?

Was scouting for pests done in this field due to a pest development model?

Was this field scouted for weeds? (If so, Who did the majority of the scouting? Operator, partner or family member, OR An employee, OR Farm supply or chemical dealer, OR Independent crop consultant or commercial scout?)

Was this field scouted for insects and mites? (If so, Who did the majority of the scouting? Operator, partner or family member, OR An employee, OR Farm supply or chemical dealer, OR Independent crop consultant or commercial scout?)

Was this field scouted for diseases? (If so, Who did the majority of the scouting? Operator, partner or family member, OR An employee, OR Farm supply or chemical dealer, OR Independent crop consultant or commercial scout?)

Were written or electronic records kept for this field to track the activity or numbers of weeds, insects or diseases?

Was field mapping data used for making weed management decisions on this field?

Were the services of a diagnostic laboratory used for pest identification or soil or plant tissue pest analysis for this field?

Was weather data used to assist in determining either the need or when to make pesticide applications?

Were floral lures, attractants, repellants, pheromone traps or other biological pest controls used on this field?

Nematodes: Microscopic, worm-shaped parasitic animals. Damage to many crops can be severe.

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.

Terms and Definitions (continued)

Pheromone: A chemical substance produced by an insect which serves as a stimulus to other individuals of the same species for one or more behavioral responses.

Prevention: Is the practice of keeping a pest population from infesting a crop or field. It includes such tactics as using pest-free seeds or transplants, alternative tillage approaches such as no-till or strip-till systems, choosing cultivars with genetic resistance to insects or disease, irrigation scheduling to avoid situations conducive to disease development, cleaning tillage and harvesting equipment between fields or operations, using field sanitation procedures, and eliminating alternate hosts or sites for insect pests and disease organisms.

The following pest management questions were categorized as prevention practices:

Were field edges, lanes, ditches, roadways or fence lines chopped, mowed, plowed, or burned to manage pests for this field?

Were crop residues plowed down or removed in this field to manage pests?

Were equipment and implements cleaned after completing field work in this field to reduce the spread of pests?

Were water management practices such as irrigation scheduling, controlled drainage, or treatment of retention water used on this field to manage pests?

Was this field cultivated for weed control during the growing season?

Suppression: Tactics include cultural practices such as narrow row spacings or optimized in-row plant populations, using cover crops or mulches, or using crops with allelopathic potential in the rotation. Physical suppression tactics may include cultivation or mowing for weed control, baited or pheromone traps for certain insects, and temperature management or exclusion devices for insect and disease management. Biological pesticides and controls, including mating disruption for insects, can be considered as alternatives to conventional pesticides. Determining pest thresholds and alternating pesticide active ingredients to avoid resistance buildup are suppression methods which minimize pesticide use.

The following questions were categorized as suppression practices:

Was scouting data compared to published information on infestation thresholds to determine when to take measures to manage pests in this field?

Were any biological pesticides such as Bt (*Bacillus thuringiensis*), insect growth regulators (Courier, Intrepid, etc.) neem or other natural/biological based products sprayed or applied to manage pests in this field?

Were any beneficial organisms (insects, nematodes, fungi) applied or released in this field to manage pests?

Were ground covers, mulches, or other physical barriers maintained for this field to manage pest problems?

Were pesticides with different mechanisms of action rotated or tank mixed for the primary purpose of keeping pests from becoming resistant to pesticides?

Terms and Definitions (continued)

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.

Active Ingredients Applied and Publication Status by Program States: These tables are provided to show all active ingredients reported in the Program States. The Publication Status is determined by confidentiality rules. In order to publish data for an active ingredient, there must be a minimum of five reports for the specific active ingredient at the summary level (by crop, by State or all Program States). If there are five or more reports, then the active ingredient data are published and designated as a "P" in the table. In cases where there are not enough reports to publish usage data for a given active ingredient, an "*" appears in the table. This means the active ingredient was reported, but there were not a sufficient number of reports. However, there are certain instances where the "Program States" data were suppressed so that a major active ingredient could then be published at an individual State level.

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 the 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 fruit crops and NASS does not mean to imply the use of the specific trade name.

Class	Common Name	Trade Name
O	1, 7-dioxaspiro-(5,5) -undecane	Olive Fly Attract and Kill
H	2,4-D	Amine 4, Citrus Fix (EC), Crossbow, Dacamine 4D, Dri-Clean, Envy, Formula 40, Hi-Dep, Hivol 44, Landmaster II, Landmaster BW, Savage, Weedar 64A, Weedar Emulsamine E-3, Weedone 638, Weedone LV4, Weedmaster, Weed Rhap Low Volatile
H	2,4-D, Dimethylamine salt	Saber Herbicide, Weedar 64, Weedaxe Herbicide
H	2- (2,4-DP), Dimethylamine salt	2,4-D Amine 4CA
I	Abamectin	Agri-Mek, Clinch Ant Bait, Zephyr
I	Acephate	Address 75 WSP, Orthene 75 S, Orthene TT&O WSP
I	Acetamiprid	Assial 70 WP
H	Aciflourfen, sodium salt	Conclude Xtra B&G, Manifest B&G, Tackle (2L)
I	Aldicarb	Temik 15G
O	Aluminum phosphide	Fumitoxin Tablets (55 %), Phostoxin
I	Amitraz	Mitac EC, Mitac WP, Ovasyn (1.5L)
O	Ammonium bicarbonate	Olive Fly Attract and Kill
O	Ammonium soap	Hinder
F	Ampelomyces quisquales isolate	AQ 10 Biofungicide
H	Atrazine	Simazat 4L
I	Azadirachtin	AZA-Direct, Azatin XL, Azatin- EC Biological Insecticide, Bollwhip 4.5, Ecozin, Margosan-O Botanical Insecticide, Neemix, Neemix 4.5
I	Azinphos-methyl	Azinphos-M, Guthion
F	Azoxystrobin	Quadris (aka Abound)
F	Bacillus subtilus	Serenade Biofungicide (WP)
I	Bacillus thuringiensis	Agree, Bactospeine, Biobit, Britz BT 15-25 Sulfur Dust, Bt- Sulfur 15-50 Dust, Condor, Crymax, Deliver, Dipel, Javelin, MVP, Xen
F	Basic copper sulfates	Basic Copper Sulfate, C-O-C-S, Cop-O-Zinc. Copper Dragon Bug & Blight Dust, CSC Copper Sulfur Dust, Nu-Cop, Nutra-Spray, Nutra -Spray Copper Bordeaux, Top Cop with Sulfur, Tri-Basic Copper, Tri-Basic Copper
I	Beauveria bassiana	Mycotrol, Naturalis T&O
F	Benomyl	Benlate, Benomyl WP
H	Bentazon	Manifest, Conclude Xtra B& G
O	Benzenesulfonamide	Raze Rat & Mouse Bait
I	Benzoic acid	Intrepid
O	Benzyladenine	Accel, Perlan, Promalin, Typy
I	Bifenazate	Acramite
I	Bifenthrin	Brigade, Capture
H	Bromacil	Hyvar X, Krovar

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Trade Names, Common Names, and Classes (continued)

Class	Common Name	Trade Name
O	Bromadiolone	Maki Paraffinized Pellet Rat Bait
I	Buprofezin	Applaud, Courier
O	Butenoic acid hydrochloride	Retain
F	Calcium polysulfide	Lime Sulfur Solution, Orthorix Spray, Sulforix
F	Captan	Agway Fruit, Captan
I	Carbaryl	Agway Fruit Tree Spray, Carbaryl, Copper Dragon Bug & Blight Dust, Meta Carbrayl 2-4 Snail Pellets, Sevin
I	Carbofuran	Furadan 15G, Furadan 4F
O	Carbon	Gas Cartridge Rodenticide, The Giant Destroyer
F	Carboxin	Vitavax-200
H	Carfentrasone-ethyl	AIM, Aim EC, Aim EW / Avalanche, Aim
O	Chlorophacinone	Rozol (Pellets), Rozol (Liquid), Double
O	Chloropicrin	Chloropicrin 100, Methyl Bromide, Telone
F	Chlorothalonil	Bravo, Daconil, Echo, Ensign, Ridomil, Terranil
I	Chlorpyrifos	Chlorpyrifos, Lorsban, Nufos
I	Clarified hydrophobic neem oil	Triact, Trilogy
H	Clethodim	Conclude, Prism
I	Clofentezine	Apollo
F	Copper (metallic)	Bordeaux, C-O-C-S 3 Dust
F	Copper ammonium complex	Copper-Count-N
F	Copper chloride hydroxide	Agra-cop, Microspense
F	Copper hydroxide	Blue Shield, Champ, Champion, Coppicide, Kocide, Kop-Hydroxide, Mankocide, Nu-Cop, ProCop, Ridomil
F	Copper oxide	Nordox
F	Copper oxychloride	C-O-C-S, CSC Copper Sulfur Dust
F	Copper oxychloride sulfate	C-O-C-S, Oxycop
F	Copper resinate	Camelot, Copper Fungicide, Tenn-Cop
F	Copper sulfate	Basicop, Copper Sulfate
I	Cryolite	Cryolite, Kryocide
O	Cyanamid	Dormex
I	Cydia Pomonella Granulovirus	Carpovirusine, CYD -X
I	Cyfluthrin	Baythroid, Renounce
I	Cypermethrin	Ammo
F	Cyprodinil	Switch, Vanguard
O	Cytokinins	Cytokin Bioregulator Concentrate, Foliar Trigger, Stimplex, Symspray
O	DNOC	Elgetol (Thinner)
O	Decenol	Checkmate
O	Decenyl acetate	Checkmate
I	Diazinon	Diazinon, D- 264 EC500, D-z-n Diazinon, Knox out, Spectracide
H	Dicamba	Weedmaster
H	Dichlobenil	Casoron
O	Dichloropropene	Telone
F	Dicloran	Botran
I	Dicofol	Dicofol, Kelthane

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Trade Names, Common Names, and Classes (continued)

Class	Common Name	Trade Name
H	Difenzoquat	Average
I	Diflubenzuron	Dimilin, Micromite
I	Dimethoate	Cygon, Digon, Dimethoate
O	Diphacinone	Diphacinine, Ramik
N	Diuron	Direx, Diurin, Karmax, Krovar, Surefire Herbicide
O	Dodecanol	Isomate
F	Dodine	Dodine, Syllit
O	E, E-8, 10-Dodecadien-1o1	Checkmate, Disrupt, Isomate, Lastcall, Nomate, Puffer CM (Paramount) / (Suterra)
O	E-8-Dodecenyl acetate	Checkmate, Concep OFM Spr2m Pheromone Sprayable, Isomate
H	EPTC	Eptam
I	Endosulfan	Endocide, Endosulfan, Phaser, Thiodan, Thiodan Hi-Yield Insect Spray, Thiosulfan
I	Esfenvalerate	Asana
O	Ethephon	Ethephon, Ethrel Plant Regulator
I	Ethion	Ethion 4 Miscible
H	Ethofumesate	Norton SC Flowable Herbicide
I	Ethyl parathion	Parathion, Parathion-Methyl Parathion, Phoskil 25 Spray (WP)
I	Fenamiphos	Nemacur
F	Fenarimol	Rubigan
F	Fenbuconazole	Enable, Indar
I	Fenbutatin-oxide	Vendex
F	Fenhexamid	Decree, Elevate
H	Fenoxaprop-ehtyl	Puma
I	Fenpropathrin	Danitol
F	Ferbam	Carbamate, Ferbam, Ferbam Granuflo
H	Fluazifop-p-butyl	Fusilade
F	Fludioxnil	Switch
H	Fluometuron	Cotoran
F	Flutolanil	Moncut
I	Fonofos	Dyfonate II 10-G
I	Formetanate Hydrochloride	Carzol SP
F	Fosetyl-al	Aliette
O	Gamma aminobutyric acid	Auxigro
O	Gibberellic acid	Falgro, Gibbex, GibGro, Pro-Gibb, Provide Plant Growth Regulator, Ryzup
O	Gibberellins A4A7	Accel, Fascination Plant Growth Regulator, Perlan, Promalin Plant Growth Regulator, TypRus, Typy
H	Glufosinate-ammonium	Ignite, Rely
H	Glyphosate iso. salt	Accord, Clear-out, Cornerstone, Engame, Fire Power, Glyfos X-tra, Glyphomax, Glyphosate Oringinal, Gly Star Plus, Honcho, Jury, Landmaster, Mirage, Protocol, Rattler, Roundup
H	Glypho.N-(phosphono meth)	Touchdown IQ

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Trade Names, Common Names, and Classes (continued)

Class	Common Name	Trade Name
O	Harpin protein	Mesaenger
H	Hexazinone	Velpar
I	Hexthiazox	Savey
O	Hydrogen peroxide (dioxide)	Oxidate
I	Imidacloprid	Admire, Merit, Provado
I	Indoxacarb	Avaunt
F	Iprodione	Iprodione, Rovral
O	Iron phosphate	Sluggo
H	Isoxaben	Gallery
I	Jjoba Oil	Detur
I	Kaolin	Surround
F	Kresoxim-methyl	Sovran
O	L-Glutamic acid	Auxigro
O	Lactic acid	Propel Plant Growth Regulator
H	Lactofen	Phoenix Herbicide
I	Lambda-cyhalothrin	Olive, Warrior
I	Lindane	Lindane
O	Lysophosphatidylethanolamine	LPE Growth Regulator
H	MCPA	Weedar
H	MSMA	MSMA
I	Malathion	Agway Fruit Tree Spray, Atrapa, Cythion, Fyfanon, Malathion, Ortho Home Orchard Spray
O	Maleic hydrazide	Fair Plus, Royal
F	Mancozeb	Dithane, Mancozeb, Manex II, Mankocide, Penncozeb, Ridomil Gold MZ
F	Maneb	Amazin, Blite Out, Dithane, Maneb, Manex
F	Mefenoxam	Flourish Ultra, Ridomil, Subdue
O	Mepiquat	Ponnax Growth Regulator
F	Metalaxyl	Ridomil
O	Metaldehyde	Deadline, Metaldehyde, Slug and Snail Bait Pellets
O	Metan-sodium	Sectagon, Vapam
I	Methidathion	Supracide
I	Methiocarb	Mesurool
I	Methomyl	Lannate
I	Methoxychlor	Agway Fruit Tree Spray, Malathion Methoxychlor Spray, Ortho Home Orchard Spray
O	Methyl anthranilate	Bird Shield, Rejex-it
O	Methyl bromide	Methyl Bromide
I	Methyl parathion	Methyl Parathion, Parathion-Methyl Parathion
F	Methiram	Blite Out, Polyram
I	Mevinphos	Phosdrin
O	Monocarbamide dihyd.	Engame, Enquik, Wilthin
F	Myclobutanil	Nova, Rally, RH-144228
I	Myrothecium verrucaria	Ditera Biological Nematicide
O	NAD	Amid-Thin W
I	Naled	Dibrom 8 Emulsive / Miscible
O	Naphth. acetic acid. pot. salt	Fruit-fix, SNAAP
H	Napropamide	Devrinol
O	Napthaleneacetic acid	Fruit-Fix, Fruitone, Kling Tite, Liqui-Stix, NAA, Stop Drop, Tre-Hold Sprout Inhibitor

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Trade Names, Common Names, and Classes (continued)

Class	Common Name	Trade Name
I	Neem oil	NeemGard
H	Norflurazon	Predict, Solicam
O	Octadecadien (E,Z)	Isomate-P Pheromone
O	Octadecadien (Z,Z)	Isomate
H	Oryzalin	Oryza, Oryzalin, Surflan
I	Oxamyl	Vydate
H	Oxyfluorfen	Fire Power, Goal
F	Oxytetracycline	Mycoshield
I	Oxythioquinox	Morestan
H	Paraquat	Cyclone, Gramoxone Super, Starfire, Surefire
H	Pendimethalin	Pendimax, Prowl
I	Permethrin	Ambush, Eight Insect Control, LastCall, Permethrin, Perm-Up or Waylay, Pounce
I	Petroleumdistillate	Clean Crop Citrus Soluble Oil, Damoil, Dormant Emulsion Oil, FC (Petroleum Oil), Gavicide, JMS Stylet-Oil, Oil, Saf-T-Side, Sunspray, Superior Oil / Spray, Volck Supreme Spray
I	Petroleum oil	Biocover, Damoil Dormant Oil Spray, Mite-e-Oil
I	Phosalone	Zolone
I	Phosmet	Imidan
I	Phosphamidon	Phosphamidon 8 Spray
F	Phosphorous acid	Fosphite Fungicide, Phophyt, Phostrol
I	Piperonyl butoxide	Evergreen, Incite, PBO-8, Pyrenone, Pyronyl, Pyrocide Emulsifiable
F	Potassium Bicarbonate	Armcarb, Kaligreen
I	Potassium salts	M-Pede, Insecticidal Soap
O	Prohexadione calcium	Apogee Plant Growth Regulator
H	Prometryn	Caparol, Cotton-Pro
H	Pronamide	Kerb
H	Propanil	Propanil 3E
I	Propargite	Comite, Omite
F	Propiconazole	Orbit, PropiMax, Tilt
H	Prosulfuron	Peak
F	Pseudomonas fluorescense	Blight Ban, Frostban
F	Pyraclostrobin	Cabrio, Headline
I	Pyrethrine	Evergreen, Pyrellin, Pyrenone, Pyrocide, Pyronyl
I	Pyridaben	Nexter, Pyramite, Sanmite
I	Pyriproxyfen	Esteem, Knack
I	Rotenone	Pyrellin E.C.
I	Ryania	Ryan
I	I-Methoprene	Extinguish
H	I-Metolachlor	Dual Magnum
I	Sabadilla	Veratran
H	Sethoxydim	Manifest, Poast, Torpedo Herbicide, Vantage
H	Simazine	Calibar, Princep, Simazine, Sim-Trol, Simazat
O	Sodium hypochlorite	Bleach, Liquichlor
O	Sodium nitrate	Gas Cartridge Rodenticide, The Giant Destroyer
O	Sodium tetrathiocarb	Enzone
I	Soybean oil	Golden Citrus Natur'l Spray Oil

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Trade Names, Common Names, and Classes (continued)

Class	Common Name	Trade Name
I	Spinosad	NAF -550 Fruit Fly Bait, GF-120 Naturalyte Fruit Fly Bait, SpinTor, Success, Tracer
F	Streptomycin	Agri-Mycin, Agri-Strep, Streptomycin
F	Streptomycin sulfate	Streptomycin sulfate
O	Strychnine	Cooke Gopher, Gopher Getter, Strychnine
H	Sulfosate	Touchdown
F	Sulfur	Alfa, Ben-Sul, Bravo, Britz BT, Botran, Bt-sulfur, C-O-C-S, CSC, Giant Destroyer, Golden-Dew, Kocide, Kolodust, Kolospray, Kumulus, Microfine, Microperse, Microthiol, RH-144228, Sulfur, Super Six, Super-Sul, Sul-Preme, Thiolux
I	Sulprofos	Bolstar
F	Tebuconazole	Elite
I	Tebufenozide	Confirm, RH-5992
H	Terbacil	Sinbar
O	Tetradecanol	Isomate-C Pheromone / Special / TT
O	Tetradecen-1-OL (Z)	3M Pheromone-Mating Disruption, Checkmate, Isomate, Nomate OLR Spiral
O	Tetradecen-1-yl (E)	Checkmate, Nomate
I	Thiamethoxam	Actara, Centric
H	Thiazopyr	Mandate
F	Thiophanate-methyl	3336 G, T-Methyl, Topsin
F	Thiram	Thiram, Vitavax
F	Triadimefon	Bayleton
I	Trichlorfon	Dylox
H	Triclopyr	Crossbow, Remedy
F	Trifloxystrobin	Flint, Gem
F	Triflumizole	Procure
H	Trifluralin	Treflan, Trifluralin, Trilin
F	Triforine	Funginex
F	Vinclozolin	Ronilan
O	Warfarin	Raze Rat & Mouse Bait
O	Z-8-Dodecanol	Checkmate, Consep, Isomate
O	Z-8-Dodecenyl acetate	Checkmate, Consep, Isomate
O	Zinc phosphide	Zinc phosphide
F	Zineb	Zineb
F	Ziram	Ziram

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FERTILIZER APPLICATIONS

Enumerator Note --

*If column 4 of the table in Section B is YES for any crop, continue with item 1.
If column 4 of the table in Section B is NO for all crops, go to Section D, page 7.*

1. I need to record complete information on all commercial fertilizers applied to the target fruits you grew during the 2003 crop year. Include all applications regardless of how they were applied. (*Irrigation water, foliar applications, etc.*) [Record amount and analysis of fertilizers applied or pounds of **actual plant nutrients** applied. Complete the table below (and any necessary supplemental fertilizer tables).]

T-TYPE	TABLE
2	001
OFFICE USE LINES IN TABLE	
LINE 99	299

LINE	1	2	3	4	5	6	7	8	9
	CROP	CROP CODE	NITROGEN	PHOSPHATE <small>P₂O₅</small>	POTASH <small>K₂O</small>	How much was applied per application? <small>[Leave this column blank if actual nutrients were reported.]</small>	UNIT CODES <small>1 POUNDS 12 GALLONS 13 QUARTS 15 OUNCES, LIQUID 28 OUNCES, DRY 19 ACTUAL NUTRIENTS</small>	How many acres was this applied to? <small>[Include bearing acres only.]</small>	How many times was it applied?
			N	P ₂ O ₅	K ₂ O			ACRES	NUMBER
01		201	202	203	204	205	206	207	208
02		201	202	203	204	205	206	207	208
03		201	202	203	204	205	206	207	208
04		201	202	203	204	205	206	207	208
05		201	202	203	204	205	206	207	208
06		201	202	203	204	205	206	207	208
07		201	202	203	204	205	206	207	208
08		201	202	203	204	205	206	207	208
09		201	202	203	204	205	206	207	208
10		201	202	203	204	205	206	207	208
11		201	202	203	204	205	206	207	208
12		201	202	203	204	205	206	207	208
13		201	202	203	204	205	206	207	208
14		201	202	203	204	205	206	207	208
15		201	202	203	204	205	206	207	208
16		201	202	203	204	205	206	207	208

D

PESTICIDE APPLICATIONS

D

Now I have some questions about pesticide and chemical applications to your **bearing fruit acreage** before harvest. Please consider all applications made to trees, vineyards or bushes which occurred **after last season's harvest**.

1. Since last year's (2002) harvest, did you use **herbicides** on any of your bearing fruit acreage? YES NO
2. Since last year's (2002) harvest, did you use **insecticides, nematocides or miticides** on any of your bearing fruit acreage? YES NO
3. Since last year's (2002) harvest, did you use any **fungicides** on any of your bearing fruit acreage? YES NO
4. Since last year's (2002) harvest, did you use any other chemicals such as chemical thinners, growth regulators, microbial agents, pheromones, rodenticides, soil fumigants, etc. on any of your bearing fruit acreage? YES NO
5. **[ENUMERATOR ACTION: If ALL items 1 - 4 = NO, go to Section E, page 12; else continue.]**

D**PESTICIDE APPLICATIONS****D**

6. Now I need to get complete information on all of the chemicals applied, including applications made by you and/or by custom applicators during the 2003 crop year to each of the target fruit crops you grew. **Let's start with the first application to your [crop] since the 2002 crop year harvest.**

[Complete the tables for all chemical applications to the target fruit crops.

Include bearing acres only. Use supplemental tables if necessary.

Exclude applications made to fruits after harvest, and foliar applications of nutrients.]

[ENUMERATOR NOTE: *If respondent is not able to report columns 6 or 7, ask respondent to report: Amount of product mixed with 100 gallons of water, number of gallons per tank and number of tanks used.]*

OFFICE USE LINES IN TABLE	T-TYPE	3	TABLE	001	LINE 99	399
------------------------------	--------	---	-------	-----	---------	-----

L I N E	1 C R O P	2 C R O P C O D E	3	4	5
			What products were applied to the [crop]? <small>[Enter product code.]</small>	Was this product bought in liquid or dry form? <small>[Enter L or D.]</small>	[Enter line number of first product in the tank mix.]
01		301	302		304
02		301	302		304
03		301	302		304
04		301	302		304
05		301	302		304
06		301	302		304
07		301	302		304
08		301	302		304
09		301	302		304
10		301	302		304
11		301	302		304
12		301	302		304
13		301	302		304
14		301	302		304
15		301	302		304

NOTES:

For pesticides not listed on card, specify

Line #

Pesticide Type
(Herb., Insect., Fung., etc.)

Tradename & Formulation

Form Purchased
(Liquid or Dry)

EPA Number

D

PESTICIDE APPLICATIONS

D

CODES FOR COLUMN 8

1 POUNDS	30 GRAMS
12 GALLONS	40 KILOGRAMS
13 QUARTS	41 LITERS
14 PINTS	46 SPIRALS
15 OUNCES, LIQUID	47 PACKETS
28 OUNCES, DRY	50 OTHER (Specify _____)

CLASS	ABBREV.	CODE SERIES
INSECTICIDES	I	1000's
HERBICIDES	H	4000's
FUNGICIDES	F	7000's
OTHER	M, MG, MS	9000's

LINE	6 OR 7		8	9	10	11
	How much was applied per acre per application?	What was the total amount applied per application?	[Enter unit code from above.] CODE	What percent of the rows were covered? 100 All Rows 50 Every Other Row -- Other [Enter percent covered.]	How many acres were treated with this product? [Include only bearing acres.] BEARING ACRES	How many times was it applied? NUMBER
01	305	306	307	308	309	311
02	305	306	307	308	309	311
03	305	306	307	308	309	311
04	305	306	307	308	309	311
05	305	306	307	308	309	311
06	305	306	307	308	309	311
07	305	306	307	308	309	311
08	305	306	307	308	309	311
09	305	306	307	308	309	311
10	305	306	307	308	309	311
11	305	306	307	308	309	311
12	305	306	307	308	309	311
13	305	306	307	308	309	311
14	305	306	307	308	309	311
15	305	306	307	308	309	311

For pesticides not listed on card, specify

Line #

Pesticide Type
(Herb., Insect., Fung., etc.)

Tradename & Formulation

Form Purchased
(Liquid or Dry)

EPA Number

Now I have some questions about pest management practices you may have used on any of the **total fruit acres** on this operation (including bearing and non-bearing acreage of both target and non-target fruit crops).

T-TYPE	TABLE	LINE
0	000	00

By pests, we mean insects, weeds, and diseases.

1. [Enumerator Action: Were PESTICIDE APPLICATIONS reported in Section D?]

- YES - [Continue.] NO - [Go to item 5.]

2. Was weather data used to assist in determining either the need or when to make pesticide applications? YES = 1 CODE
600

3. Were any biological pesticides such as Bt (*Bacillus thuringiensis*), insect growth regulators (*Courier, Intrepid, etc.*) neem or other natural/biological based products sprayed or applied to manage pests? YES = 1 601

4. Were pesticides with different mechanisms of action rotated or tank mixed for the primary purpose of keeping pests from becoming resistant to pesticides? YES = 1 602

5. In 2003, how were your fruit acres primarily scouted for insects, weeds, diseases and/or beneficial organisms-- CODE
608

1 By deliberately going to the fruit acres specifically for scouting activities? (Enter code 1 and go to item 6.)
2 By conducting general observations while performing routine tasks? (Enter code 2 and go to item 8.)
3 The fruit acres were not scouted? (Enter code 3 and go to item 11.)

6. Was an established scouting process used (systematic sampling, recording counts, etc.) or were insect traps used on any fruit acres? YES = 1 CODE
609

7. Was scouting for pests done on these fruit acres due to-- CODE

a. a pest advisory warning?	YES = 1	610
b. a pest development model?	YES = 1	611

1	2	
	[If column 1 = YES, ask-] Who did the majority of the scouting for [column 1]- 1 Operator, partner or family member 2 An employee 3 Farm supply or chemical dealer 4 Independent crop consultant or commercial scout	
8. Were your fruit acres scouted for--	YES = 1	CODE
a. weeds?	612	614
b. insects and mites?	615	617
c. diseases?	618	620

- CODE**
9. Were written or electronic records kept to track the activity or numbers of weeds, insects or diseases? YES = 1
10. Was scouting data compared to published information on infestation thresholds to determine when to take measures to manage pests? YES = 1
11. Was field mapping data used for making weed management decisions? ... YES = 1
12. Were the services of a diagnostic laboratory used for pest identification or soil or plant tissue pest analysis? YES = 1
13. Were crop residues (including drops, rotting fruit and/or debris) removed to manage pests? YES = 1
14. Were ground covers, mulches, or other physical barriers maintained to manage pest problems? YES = 1
15. Were any beneficial organisms (insects, nematodes, fungi) applied or released to manage pests? YES = 1
16. Were floral lures, attractants, repellants, pheromone traps or other biological pest controls used on any fruit acres? YES = 1
17. Were any fruit acres cultivated for weed control during the growing season? YES = 1
18. Were field edges, lanes, ditches, roadways or fence lines chopped, mowed, plowed, or burned to manage pests on any fruit acres? YES = 1
19. Were equipment and implements cleaned after completing field work to reduce the spread of pests? YES = 1
20. Were any fruit acres irrigated for the 2003 crop? YES = 1
- [If item 20 = YES, ask-]
- a. Were water management practices (excluding chemigation) such as irrigation scheduling, controlled drainage, or treatment of retention water used to manage pests? YES = 1

PEST MANAGEMENT PRACTICES

21. [Show Pest Management Information Sources Code List from Respondent Booklet.]

Which outside sources of information on pest management practices and products were used for the 2003 fruit crop?

(Starting with the most influential in determining the pest management practices used on this operation, choose up to 3 sources, and enter code(s).)

PEST MANAGEMENT INFORMATION SOURCES CODE LIST

1	County, Cooperative University Extension Advisor, Publications or Demonstrations	
2	Farm Supply or Chemical Dealer	
3	Commercial Scouting Service	
4	Independent Crop Consultant or Pest Control Advisor/Custom Applicator	[Enter up to 3 source codes.] FIRST 646
5	Other Growers or Producers	
6	Producer Associations, Newsletters or Trade	SECOND 647
7	Electronic Information Services (DTN, Internet, World Wide Web, etc.)	
8	Employee Pest Advisor	THIRD 648
9	Other - (Specify: _____)	
10	None - Operator used no outside information source	

22. Other than pesticide applicator training, have you (*the operator*) attended any training session on pest identification and management since October 1, 2002? **YES = 1**

COMPLETION CODE for FERTILIZER TABLE			COMPLETION CODE for PESTICIDE TABLE			COMPLETION CODE for PEST MANAGEMENT EDIT		
1	Incomplete/Refusal	200	1	Incomplete/Refusal	300	1	Incomplete/Refusal	500
3	Valid Zero		3	Valid Zero		3	Valid Zero	

Report Features

Released August 5, 2004 by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, U.S. Department of Agriculture. For information on "Agricultural Chemical Usage" call (202) 720-6146, office hours 7:30 a.m. to 4:00 p.m. ET.

The next "Agricultural Chemical Usage" report will be released September 15, 2004. This report will cover agricultural chemical use of nursery and floriculture for the 2003 crop year.

The next "Agricultural Chemical Usage" report for fruit crops will be released in July 2006. This report will cover agricultural chemical use for the 2005 crop year for major states.

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

Doug Farmer, Environmental Statistician (202) 720-7492

Sarah Hoffman, Head, Environmental and Demographics Section (202) 720-0684

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

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