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Agricultural Chemical Usage 1999 Fruit and Nut Summary

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USDA



Overview

This publication is the fifth Fruit Summary and second Fruit and Nut Summary in the series of **"Agricultural Chemical Usage"** reports issued by the National Agricultural Statistics Service (NASS). These reports contain statistics for the on-farm use of agricultural chemicals. Other chemical usage publications issued in the past year have focused on agricultural chemical use on vegetables (July 1999) and field crops (May 2000).

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

Information in this report 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.

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

This report includes farm use of pesticides for the 1999 crop year for selected fruit and nut crops in 14 major producing States (Arizona, Indiana, and Texas were added to the 1999 survey). This is the second report to feature fruits and nuts together, although chemical use on nut crops has not been published since June 1992.

This report also includes, for the first time, pesticide and fertilizer usage data on grapes in California by utilization - table, raisin or wine. In addition, usage data for non-bearing grapes in California is included in this publication.

Highlights

Almonds: Nitrogen was applied to 92 percent of the California almond acreage.

Phosphate and potash were applied to 24 and 28 percent of the acreage, respectively. Herbicides and insecticides were used on 86 and 85 percent of the acreage, respectively, while 82 percent of the acreage received fungicide applications. Glyphosate was the most commonly used herbicide, with 66 percent of the acres treated. Petroleum distillate, used on 58 percent of the acreage, was the most commonly used insecticide. The leading fungicide, Iprodione, was applied to 35 percent of the acreage.

Apples: Nitrogen was applied to 70 percent of the apple acreage in the 11

States surveyed. Arizona applied nitrogen to the least amount of acres, 2 percent; Michigan and North Carolina to the most, 85 percent. Phosphate and potash were used less among the major States, with applications made to 37 and 49 percent of the acreage, respectively. There were insufficient reports to publish phosphate and potash usage on Arizona's apple acreage.

Insecticide applications were made on 97 percent of the acreage in the 11 States surveyed. The most commonly used insecticides were azinphos-methyl and chlorpyrifos. Fungicides were applied to 99 percent of New York's and North Carolina's acreage but in lower percentages in the other States, ranging down to 80 percent of California's acreage. Myclobutanil was the fungicide used on the greatest amount of acres and was applied to 42 percent of the acreage. Herbicides were applied to 60 percent of the acreage overall and ranged from 12 percent of the acreage in South Carolina upwards to 65 percent and above in five States. There were insufficient reports to publish herbicide usage, fungicide usage and any active ingredient level usage on Arizona's apple acreage.

Apricots: California's growers applied nitrogen, phosphate, and potash to 81, 9 and 23 percent of the apricot acreage, respectively. Herbicides were applied to 36 percent, while insecticides and fungicides were each applied to 74 percent of the acreage. Petroleum distillate, applied to 64 percent of the acreage, was the most widely used insecticide. Two fungicides were applied to at least 28 percent of the acreage: ziram at 28 percent and iprodione at 43 percent. Glyphosate was the most commonly used herbicide, applied to 22 percent of the acres.

Avocados: Nitrogen fertilizers were used on 93 percent of the acreage, while phosphate and potash fertilizers were used on 50 and 45 percent of the acreage, respectively. Although Florida's growers treat much higher percentages of their acreage with chemicals, the 10-fold higher acreage of the crop in California causes overall percentages to more closely reflect California's usage patterns. Herbicides were applied to 58 percent of the acreage in the two States, with glyphosate being the most commonly used. Insecticide usage occurred on 42 percent of the acreage overall but varied from 90 percent of the acreage in Florida to 37 percent in California.

Blackberries: Nitrogen and phosphate were each applied to 98 percent of

Oregon's blackberry acreage and potash was applied to 91 percent. Growers applied the major classes of chemicals to the State's acreage in percents ranging from 65 percent upwards, excluding other chemicals. The herbicides diuron and simazine were applied to 61 and 41 percent of the acreage, respectively, while paraquat was applied to 38 percent. Carbaryl was the most common insecticide in use and was applied to 29 percent of the acreage. The fungicide calcium polysulfide was the most widely used of all chemicals being applied to 74 percent of the Oregon blackberry acres.

Blueberries: Nitrogen fertilizers were applied to 92 percent of the blueberry acreage in the five States surveyed. Phosphate was applied to 72 percent and potash to 84 percent. Herbicides were applied on 80 percent of the acres in the five States surveyed. Insecticides and fungicides were used on 86 and 88 percent of the acreage, respectively. The most popular insecticide was phosmet, used on 49 percent of the acreage, followed closely by azinphos-methyl at 44 percent. For herbicides, diuron was the most commonly used at 33 percent of the acres. Captan (65 percent of acres); benomyl (47 percent); and triforine (37 percent) were the three most commonly used fungicides.

Cherries, Sweet: Nitrogen was applied to 84 percent of the 1999 sweet cherry acreage in the four States surveyed. Phosphate was applied to 27 percent of the acreage and potash was used on 33 percent. Insecticide and fungicide applications were each made to 87 percent of the acreage in the four States surveyed followed by herbicides at 43 percent. California had the lowest percent coverage in each category. Petroleum distillate, as an insecticide, was applied to 49 percent of the acreage overall. In the fungicide class, sulfur was used on 52 percent of the acres. For herbicides, glyphosate was the most commonly applied and was used on 32 percent of the acres.

Cherries, Tart: For the four States surveyed, nitrogen was applied to 89 percent of the acreage, while phosphate and potash were used on 27 and 66 percent, respectively. Insecticides and fungicides were applied to virtually all of the acreage while herbicides were applied to 62 percent of the acreage. Azinphos-methyl was the insecticide applied to the most acres, at 79 percent of the crop. Chlorothalonil, at 78 percent, and sulfur, at 76 percent, were the most widely used fungicides. Glyphosate and paraquat were the two most common herbicides and were applied to 37 and 27 percent of the acres, respectively.

Dates: Nitrogen was applied to 65 percent of California's date acreage, and phosphate was applied to 57 percent of the acres. There were insufficient reports to publish potash usage. There were also insufficient reports to publish any pesticide usage or any active ingredient level usage on California's date acreage.

Figs: California fig growers applied nitrogen to 57 percent, phosphate to 17 percent, and potash to 34 percent of the acreage. Herbicides were applied to 55 percent of the total acreage, and oxyfluorfen was used the most. Usage data for insecticides, fungicides and other chemicals were not published due to insufficient reports.

Grapefruit: About 91 percent of the grapefruit acreage in the four States surveyed received nitrogen applications. Phosphate was applied to 47 percent, while potash was put on 71 percent of the acreage. Virtually all of the Texas grapefruit acreage received nitrogen, but only 30 percent of Arizona's acreage had nitrogen applied.

Herbicides were used on 91 percent of the acreage in the four States surveyed, followed closely by insecticides and fungicides, each at 85 percent. Herbicide usage ranged widely from 40 percent of the acreage in Arizona to 97 percent in Florida. Insecticides were used on 97 percent of the Texas acreage but only 27 percent of Arizona's acreage. Florida growers applied fungicides to a higher percentage of their grapefruit acreage, with 96 percent treated, compared to only 10 percent of Arizona's acreage. Glyphosate, petroleum distillate, and copper hydroxide were the most commonly used herbicide, insecticide, and fungicide, respectively.

Grapes, All: Nitrogen was applied to 89 percent of the acreage in the seven

States surveyed. New York and Pennsylvania applied it to the most acres, at 96 and 95 percent, respectively. In contrast, Indiana applied nitrogen more sparingly to only 33 percent of the acres. Phosphate was applied to 65 percent of the total acreage. However, this figure was highly skewed by California at 71 percent since they had 90 percent of the seven-state acreage. Potash applications were made on 71 percent of the acres. Oregon applications were the lowest, at 19 percent, while Michigan was the highest at 77 percent.

Fungicides were applied to slightly more acres than were herbicides and insecticides in the seven States surveyed. The percent of acres treated with fungicides was 81 percent; sulfur was, by far, the leading fungicide and was in use on 76 percent of the acres. In the insecticide category, imidacloprid was the most commonly used material; it was applied to 32 percent of the acreage. Herbicide applications were made to 75 percent of the acres overall with paraquat being the most commonly used at 54 percent of the acreage.

Grapes, Raisin: About three-fourths of California's bearing raisin grape acreage received nitrogen applications. Phosphate and potash were each applied to roughly one-third of the acreage. Fungicides were used on 77 percent of the raisin grape acreage. Sulfur was the most frequently used fungicide with 75 percent of the acres treated. Insecticides were applied to 74 percent of the acreage, with imidacloprid the most commonly used. Herbicides applications were made on 54 percent of the acres. Simazine was the most widely used herbicide at 32 percent.

Grapes, Table: Nitrogen was applied to 79 percent of California's bearing table grape acreage, followed by phosphate at 53 percent and potash at 42 percent. Fungicides and insecticides were applied to 92 and 83 percent of the acreage, respectively. Other chemicals, including growth regulators, were used on 86 percent of the acreage. Herbicides were applied to 76 percent of the acreage. Oxyfluorfen, imidacloprid, and sulfur were the most popular herbicide, insecticide, and fungicide, respectively.

Grapes, Wine: Nearly all of California's bearing wine grape acreage received nitrogen applications. Potash was applied to 93 percent of the acreage, closely followed by phosphate at 89 percent of the acres. All of the acreage was treated with fungicides, and 96 percent of the acres received herbicide and insecticide treatments. Other chemicals were used on 88 percent of the acres. All of the acreage was treated with sulfur, a fungicide. The herbicide, oxyfluorfen, was used on 92 percent of the acres, with paraquat also widely used, at 89 percent of the acres treated. Imidacloprid was again the most popular insecticide.

Grapes, Non-bearing: Nitrogen was applied to 94 percent of California's non-bearing grape acreage. There were insufficient reports to publish data for phosphate and potash applications. There were also insufficient reports to publish data for any of the pesticide classes or active ingredient level usage for California non-bearing acreage.

Hazelnuts: Nitrogen was applied to 88 percent of Oregon's hazelnut acreage. Phosphate and potash were applied much less heavily, at only 10 and 14 percent, respectively. Herbicides were applied to 91 percent of the acreage, insecticides to 85 percent, and fungicides to 39 percent. Glyphosate, esfenvalerate and chlorothalonil were the most commonly applied herbicide, insecticide, and fungicide, respectively.

Kiwifruit: About 87 percent of California's kiwifruit acreage received nitrogen

fertilizers. Phosphate and potash were applied in considerably smaller amounts, at 10 and 9 percent, respectively.

Kiwifruit growers applied herbicides to 26 percent of the total acreage, and the most common herbicide used was glyphosate.

Lemons: Nitrogen was applied to 84 percent of the lemon acreage in the two States surveyed. Virtually all of Arizona's acreage received nitrogen, while California growers treated 80 percent. Phosphate was applied to 27 percent and potash was applied to 19 percent of the two States' acreage.

Two-thirds of the two-States' acreage had herbicides applied, and approximately three-fourths of the acreage received insecticides. Fungicide applications were made on 37 percent of the acreage. This level was strongly influenced by California at 48 percent since they had nearly four times the acreage as did Arizona. Glyphosate, petroleum distillate and basic copper sulfate were the most widely used herbicide, insecticide, and fungicide, respectively.

Limes: All of Florida's lime acreage received nitrogen, phosphate and potash applications. Insecticides were applied to 95 percent of the lime acreage, while fungicides were used on 90 percent of the acres. Herbicides were applied to 42 percent of the lime acreage. Glyphosate, abamectin and copper hydroxide were the most widely applied pesticides.

Nectarines: In California, nitrogen was applied to 87 percent of the nectarine acreage, followed by potash at 46 percent and phosphate at 44 percent. Insecticides were applied to 93 percent of the acreage, while 91 percent received fungicides and 80 percent was treated with herbicides. Petroleum distillate and formetanate hydrochloride were the most commonly used insecticides. Glyphosate and propiconazole were the most widely used herbicide and fungicide, respectively.

Olives: California producers applied nitrogen fertilizer to 80 percent of the olive acreage, but minimal amounts of phosphate and potash were applied. Herbicides were applied to 70 percent of the acres, with glyphosate the most commonly used. Insecticides were used on 16 percent of the acreage. Petroleum distillate was the leading insecticide applied to the crop. Fungicides were applied to 43 percent of the olive acreage, with copper hydroxide the leader in usage.

Oranges: About 92 percent of the orange acreage in the four States surveyed was treated with nitrogen. Potash was applied to 77 percent of the acreage, followed by phosphate at 61 percent. Herbicides were applied to 89 percent of the acreage, insecticides to 84 percent, and fungicides to 66 percent of the acreage. Glyphosate, petroleum distillate and copper hydroxide were the most frequently used herbicide, insecticide and fungicide, respectively.

Peaches: Nitrogen was applied to 87 percent of the peach acreage in the ten States surveyed. One-third of the acreage received phosphate treatments, and half of the acreage received potash.

Insecticide and fungicide use were each reported on 88 percent of the peach acreage in the ten States surveyed. Georgia and New York each reported insecticide use on 99 percent of the crop. All other surveyed States ranged from 81 to 97 percent of the acres. Fungicide usage was lowest in Texas at 74

percent of the acres while the other States ranged from 86 percent in California to 99 percent in Georgia. Herbicide use was reported on 58 percent of the peach acreage. Washington and California each had the lowest percentage treated, reporting use on 43 percent of the crop.

Pears: About 78 percent of the pear acreage in the six States surveyed was treated with nitrogen. Phosphate was applied to 20 percent, and potash was applied to 30 percent. California applied nitrogen most frequently, at 89 percent. Michigan was the lowest at 55 percent.

Insecticides were applied to 91 percent of the acreage in the six States surveyed, while fungicides were applied to 86 percent of the acres. Oregon applied insecticides to 99 percent of their acres, followed closely by Pennsylvania at 97 percent and Washington at 96 percent. Fungicides were applied to almost all of the Oregon and Pennsylvania acreage but were reported used on only three-fourths of California's acreage. Herbicides were put on 48 percent of the acreage in the six States. Oregon growers used herbicides on 68 percent of their pear acreage while the percent treated in the other five States ranged from 51 percent downward. An average of 50 percent of the acreage was treated with other chemicals, ranging from 7 to 60 percent.

Pecans: Nitrogen was applied to 69 percent of the pecan acreage in the seven States surveyed. California had the highest percent applied, at 92 percent, compared to Texas at 46 percent. Phosphate was used on 47 percent of the acreage, and potash was applied to 45 percent.

Insecticides were applied to two-thirds of the acreage in the seven States surveyed, with Georgia leading at 80 percent. Fungicides were applied to 47 percent of the acreage. Georgia's 88 percent applied was strongly offset by North Carolina at 12 percent and Texas at 18 percent. Herbicides were used on 44 percent of the acreage. California's growers used herbicides most frequently, applying them to 85 percent of their acreage.

Pistachios: Nitrogen was applied to 87 percent of California's pistachio acreage. Phosphate was used on 23 percent of the acres, and potash was applied to 22 percent. Herbicides were used on 91 percent of the pistachio acreage, followed by insecticides at 76 percent and fungicides at 67 percent. Glyphosate, permethrin and sulfur were the most widely used herbicide, insecticide and fungicide, respectively.

Plums and Prunes: Nitrogen was applied to 88 percent of California's plum acreage and to 94 percent of the prune acreage. Potash usage was similar between plums and prunes, at 41 and 36 percent applied, respectively. However, 40 percent of the plum acreage received phosphate, while only 14 percent of the prune acreage had phosphates applied.

Insecticides were used on the highest percent of the acres of any chemical class on both crops. Petroleum distillate was used as an insecticide on 52 percent of the plum acreage and on 38 percent of the prune acreage. The herbicide glyphosate was applied to 29 percent of the plum acres and to 33 percent of the prune acres. Sulfur was the leading fungicide for the two fruits: 19 percent of the plum acreage was treated and 31 percent of the prune acres were treated.

Raspberries: Nearly all of the raspberry acreage in the two States surveyed was treated with nitrogen fertilizers, with Oregon at 98 percent and Washington at 97 percent. Phosphate was used on 94 percent of the combined acreage and potash on 88 percent.

The three major classes of chemicals were applied to the acres in Oregon and Washington in percentages of 83 percent and higher. Paraquat was the most commonly applied herbicide with 75 percent of the acres treated. Diazinon was the insecticide used in the largest amount and was applied to 60 percent of the acreage. Captan was the most widely used fungicide, at 89 percent, followed closely by cyprodinil and fludioxonil, each of which were used on 80 percent of the acreage.

Tangelos: Virtually all of Florida's tangelo acreage received fertilizer. Nitrogen and potash were applied to 99 percent of the crop. Phosphate was applied to 70 percent of the bearing acreage.

Herbicides and insecticides were also applied to nearly all of the tangelo acres, used on 96 and 98 percent of the acreage, respectively. Petroleum distillate was, by far, the most commonly used insecticide, with 95 percent of the bearing acreage treated. Glyphosate was the most popular herbicide and it was used on 94 percent of the acreage. Fungicides were applied to 87 percent of the crop acreage, with copper hydroxide the most widely used.

Tangerines: Nitrogen was applied to 88 percent of the tangerine acreage in the three States surveyed. Virtually all of the Arizona and Florida acreage received nitrogen, while only 57 percent of the California acreage was treated. Phosphate was used on 51 percent of the three-state acreage, with California again the lowest at 31 percent. Nearly all of the Florida tangerine acreage received potash, but only 7 percent of Arizona's acreage was treated.

Herbicides and insecticides were applied to most of Florida's bearing acreage, and fungicides were applied to 85 percent of the bearing acreage. California and Arizona growers applied herbicides to 57 and 50 percent of their acreage, respectively. Arizona producers treated 64 percent of the acreage with insecticides but only 12 percent with fungicides. Nearly half of California's acreage received insecticides, and 42 percent was sprayed with fungicides.

Temples: All of the Florida bearing temple acreage received nitrogen and potash applications. Phosphate was used on 80 percent of the bearing acreage. Herbicides were applied to nearly all of the bearing acreage in Florida. Insecticides and fungicides were put on 60 and 59 percent of the acres, respectively. Glyphosate, petroleum distillate and copper hydroxide were the most widely used pesticides, by class.

Walnuts: California growers applied nitrogen to 83 percent of the acreage. Phosphate was used on 13 percent and potash on 24 percent of the acreage. About two-thirds of the walnut acreage received insecticide treatments, with chlorpyrifos the most frequently used active ingredient. Herbicides were used on 58 percent of the acres, and fungicides were applied to 56 percent of the acres. Glyphosate and copper hydroxide were the most commonly applied herbicide and fungicide, respectively.

Almonds: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	580,000	92	71,701	24	11,772	28	20,657

Almonds: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	580,000					
Nitrogen		92	2.8	47	134	71,701
Phosphate		24	3.4	24	85	11,772
Potash		28	3.2	39	127	20,657

Almonds: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
		(continued)	
Herbicides:	:	Fungicides:	:
2,4-D	: P	Azoxystrobin	: P
EPTC	: *	Basic copper sulfate	: *
Fluazifop-P-butyl	: *	Benomyl	: P
Glyphosate	: P	Calcium polysulfide	: *
Napropamide	: *	Captan	: P
Norflurazon	: P	Copper hydroxide	: P
Oryzalin	: P	Copper oxide	: P
Oxyfluorfen	: P	Copper oxychlo. sul.	: *
Paraquat	: P	Copper sulfate	: *
Pendimethalin	: P	Cyprodinil	: P
Sethoxydim	: *	Fosetyl-al	: *
Simazine	: P	Iprodione	: P
Sulfosate	: *	Maneb	: P
Trifluralin	: *	Mefenoxam	: *
	:	Myclobutanil	: P
Insecticides:	:	Propiconazole	: P
Abamectin	: P	Sulfur	: P
Azadirachtin	: *	Thiophanate-methyl	: P
Azinphos-methyl	: P	Vinclozolin	: *
Bt (Bacillus thur.)	: P	Ziram	: P
Carbaryl	: *		:
Chlorpyrifos	: P	Other Chemicals:	:
Clofentezine	: P	Aluminum phosphide	: P
Diazinon	: P	Chloropicrin	: *
Esfenvalerate	: P	Decenol	: *
Fenbutatin-oxide	: P	Decenyl acetate	: *
Malathion	: *	Dichloropropene	: *
Methidathion	: P	Methyl bromide	: *
Permethrin	: P	Sodium tetrathiocarb	: *
Petroleum distillate	: P	Strychnine	: *
Phosmet	: P		:
Potassium salts	: *		:
Propargite	: P		:
Pyridaben	: *		:
Spinosad	: P		:

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

Almonds: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied 1/							
State:	Bearing	-----							
	Acreage	Herbicide	Insecticide 2/:	Fungicide	Other Chemical				
	Acres	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000				
		Lbs	Lbs	Lbs	Lbs				
CA	580,000	86 1,389.0	85 9,981.3	82 2,546.0	11 1,526.0				

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

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

Almonds: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	7	1.2	0.69	0.90	37.5
Glyphosate	66	2.4	0.69	1.68	640.0
Norflurazon	3	1.1	1.09	1.20	24.1
Oryzalin	26	1.1	1.51	1.74	258.0
Oxyfluorfen	50	1.4	0.48	0.70	203.4
Paraquat	29	1.1	0.49	0.57	97.0
Pendimethalin	6	1.1	1.52	1.72	56.3
Simazine	10	1.1	0.75	0.85	47.2
Insecticides:					
Abamectin	24	1.1	0.010	0.02	2.2
Azinphos-methyl	7	1.1	1.90	2.21	91.5
Bt (Bacillus thur.)2/	18	1.6			
Chlorpyrifos	17	1.1	1.67	1.86	180.8
Clofentezine	*	1.1	0.13	0.15	0.7
Diazinon	9	1.2	2.51	3.09	165.0
Esfenvalerate	14	1.5	0.05	0.08	6.2
Fenbutatin-oxide	15	1.1	0.67	0.74	62.8
Methidathion	7	1.2	1.17	1.46	57.9
Permethrin	15	1.3	0.18	0.24	20.6
Petroleum distillate	58	1.3	19.07	25.86	8,728.5
Phosmet	18	1.2	2.49	3.07	322.9
Propargite	22	1.3	1.88	2.49	321.5
Spinosad	5	1.1	0.09	0.10	3.0
Fungicides:					
Azoxystrobin	13	1.2	0.20	0.26	19.8
Benomyl	2	1.2	0.55	0.67	9.5
Captan	19	1.3	2.77	3.82	426.6
Copper hydroxide	30	1.4	2.25	3.19	564.6
Copper oxide	2	1.1	2.87	3.24	35.4
Cyprodinil	6	1.1	0.22	0.25	8.2
Iprodione	35	1.2	0.49	0.60	123.4
Maneb	13	1.4	2.48	3.51	265.5
Myclobutanil	1	1.2	0.15	0.18	1.2
Propiconazole	23	1.3	0.11	0.15	19.9
Sulfur	*	1.2	10.01	12.35	62.3
Thiophanate-methyl	11	1.1	0.70	0.82	53.4
Ziram	19	1.1	5.06	6.02	673.8
Other Chemicals:					
Aluminum phosphide	8	1.3	0.11	0.15	6.7

* Area applied is less than one percent.

1/ Total acres in 1999 for California were 580,000 acres.

Acreage includes both bearing and non-bearing acres.

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

Apples: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
AZ 1/	4,000	2	3				
CA	36,500	72	1,016	24	389	25	594
GA	1,300	83	124	25	21	79	39
MI	52,500	85	2,887	48	545	70	2,107
NJ	3,300	34	64	20	22	34	78
NY	55,000	74	2,167	13	389	82	4,430
NC	9,000	85	531	86	444	87	438
OR	8,700	65	464	41	107	41	51
PA	23,000	65	342	40	247	44	393
SC	2,400	68	32	65	24	67	33
WA	172,000	65	4,292	42	1,694	38	2,244
Total	367,700	70	11,922	37	3,882	49	10,408

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

Apples: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied Percent	Applications Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 Lbs
Arizona:	4,000					
Nitrogen		2	1.6	16	26	3
Phosphate 1/						
Potash 1/						
California:	36,500					
Nitrogen		72	1.2	32	38	1,016
Phosphate		24	1.4	32	45	389
Potash		25	1.3	47	65	594
Georgia:	1,300					
Nitrogen		83	2.1	54	114	124
Phosphate		25	1.8	34	65	21
Potash		79	1.2	30	38	39
Michigan:	52,500					
Nitrogen		85	2.9	22	65	2,887
Phosphate		48	3.3	6	22	545
Potash		70	2.8	20	58	2,107
New Jersey:	3,300					
Nitrogen		34	1.2	46	57	64
Phosphate		20	1.0	30	33	22
Potash		34	1.0	64	69	78
New York:	55,000					
Nitrogen		74	1.2	43	54	2,167
Phosphate		13	1.1	48	53	389
Potash		82	1.0	90	98	4,430

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Apples: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999 (continued)

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
North Carolina:	9,000					
Nitrogen		85	1.2	56	70	531
Phosphate		86	1.0	53	57	444
Potash		87	1.1	51	56	438
Oregon:	8,700					
Nitrogen		65	1.1	73	82	464
Phosphate		41	1.0	29	30	107
Potash		41	1.0	14	14	51
Pennsylvania:	23,000					
Nitrogen		65	1.5	15	23	342
Phosphate		40	1.5	17	27	247
Potash		44	1.5	25	39	393
South Carolina:	2,400					
Nitrogen		68	1.0	18	20	32
Phosphate		65	1.0	15	15	24
Potash		67	1.0	20	20	33
Washington:	172,000					
Nitrogen		65	2.0	19	38	4,292
Phosphate		42	1.3	17	23	1,694
Potash		38	1.5	22	34	2,244
Total:	367,700					
Nitrogen		70	1.8	25	47	11,922
Phosphate		37	1.7	17	28	3,882
Potash		49	1.6	35	57	10,408

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

Apples: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed						
	ALL	AZ	CA	GA	MI	NJ	NY
Herbicides:	:	:	:	:	:	:	:
2,4-D	P	:	:	*	P	*	P
2,4-D, Dimethylamine	*	:	:	:	*	:	:
Atrazine	*	:	:	:	:	:	:
Clopyralid	*	:	:	:	:	:	:
DCPA	*	:	:	:	:	:	:
Dichlobenil	*	:	:	:	:	:	:
Difenzoquat	*	:	:	:	:	:	:
Diuron	P	:	*	:	P	*	P
EPTC	*	:	:	:	:	:	:
Fluazifop-P-butyl	*	:	:	:	:	:	:
Glufosinate-ammonium	P	:	:	:	:	:	*
Glyphosate	P	*	P	P	P	*	P
Glyphosate, isopropy	*	:	:	:	:	*	:
Hexazinone	*	:	:	:	:	:	:
Metolachlor	*	:	:	:	:	:	:
Napropamide	*	:	*	:	:	:	:
Norflurazon	P	:	:	:	*	P	:
Oryzalin	P	:	*	:	P	:	*
Oxyfluorfen	P	:	P	:	:	:	*
Paraquat	P	:	P	P	P	*	P
Pendimethalin	P	:	:	:	:	:	P
Pronamide	*	:	:	:	:	:	:
Prosulfuron	*	:	:	:	:	:	:
Sethoxydim	*	:	:	*	:	:	:
Simazine	P	:	P	*	P	*	P
Sulfosate	*	:	:	:	:	:	*
Terbacil	P	:	:	:	P	:	*
Triclopyr	*	:	:	:	:	:	:
Insecticides:	:	:	:	:	:	:	:
Abamectin	P	:	P	:	P	:	P
Amitraz	*	:	:	:	:	:	:
Azadirachtin	*	:	*	:	:	:	:
Azinphos-methyl	P	*	P	*	P	P	P
Bt (Bacillus thur.)	P	*	P	:	P	P	P
Carbaryl	P	*	P	P	P	P	P
Carbofuran	*	:	:	*	:	:	:
Chlorpyrifos	P	*	P	P	P	P	P
Clofentezine	P	:	:	:	P	P	P
Cube Resin, Other	*	:	:	:	:	*	:
Cypermethrin	*	:	:	:	:	*	:
Diazinon	P	:	P	:	*	*	*
Dicofol	P	:	*	:	*	:	P
Dimethoate	P	:	*	*	P	:	P
Disulfoton	*	:	:	:	:	:	*
Endosulfan	P	:	*	*	P	P	P
Esfenvalerate	P	:	*	*	P	*	P
Ethion	*	:	:	:	:	*	:
Ethyl parathion	*	:	:	:	:	:	:
Fenamiphos	*	:	*	:	:	:	:
Fenbutatin-oxide	P	:	*	:	*	:	:
Formetanate hydro.	P	:	P	:	*	*	*

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Apples: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed						
	ALL	AZ	CA	GA	MI	NJ	NY
Insecticides: (cont.)							
Hexythiazox	P				P	*	*
Hydro. Ext. Neem oil	*						*
Imidacloprid	P		*	*	P	P	P
Kaolin	P						
Malathion	P			P	*	P	*
Methidathion	P		*		*		
Methiocarb	*						
Methomyl	P				P	*	P
Methoxychlor	P			*	*	P	
Methyl parathion	P		P	*	P	P	P
Oxamyl	P				P	P	P
Oxydemeton-methyl	*						
Oxythioquinox	*				*		*
Permethrin	P				P	*	P
Petroleum distillate	P	*	P	P	P	P	P
Phosmet	P		P	P	P	P	P
Phosphamidon	P						
Potassium salts	P		*				*
Propargite	*		*				
Pyrethrins	*					*	*
Pyridaben	P		*	*	P	P	P
Rotenone	*					*	*
Ryania	*						
Spinosad	P				P		P
Tebufenozide	P			*	P	*	
Fungicides:							
Basic Cupric Zinc Su.	P				*	*	
Basic copper sulfate	P		*		*	*	
Benomyl	P		*	P	P	P	P
Calcium polysulfide	P		P	*	*		
Captafol	*						
Captan	P		*	P	P	P	P
Chlorothalonil	P			*	*		*
Copper (metallic)	*				*		
Copper ammonium carb.	*						*
Copper chloride hydr.	*						
Copper hydroxide	P		*	*	P	*	P
Copper oxide	*		*				
Copper oxychlo. sul.	P				P	*	P
Copper resinate	P				*	*	
Copper sulfate	P				P		*
Cyprodinil	P		P		P	*	P
Dinocap	*					*	
Dodine	P			*	*	P	P
Fenarimol	P		P	*	P	P	P
Fenbuconazole	*				*		*
Ferbam	P			*	*	*	
Fosetyl-al	P		*		*		*
Glyodin	*						
Iprodione	*			*			
Kresoxim-methyl	P			*	P		
Mancozeb	P		P	P	P	P	P
Maneb	P		*		P	*	*
Mefenoxam	P					*	*

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Apples: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed						
	ALL	AZ	CA	GA	MI	NJ	NY
Fungicides: (cont.)	:	:	:	:	:	:	:
Metalaxyl	*	:	:	:	:	:	:
Metiram	P	:	:	P	P	P	P
Myclobutanil	P	:	P	*	P	P	P
Oxytetracycline	P	:	:	:	*	*	:
Potassium bicarbonate:	*	:	:	:	:	:	:
Propiconazole	*	:	:	:	:	:	:
Pseudomonas fluores.	P	:	*	:	:	:	:
Streptomycin	P	:	P	P	P	P	P
Sulfur	P	*	P	P	P	P	P
Thiophanate-methyl	P	:	*	*	P	P	P
Thiram	P	:	*	*	P	*	*
Triadimefon	P	:	:	*	P	*	P
Triflumizole	P	:	P	:	*	*	P
Triforine	P	:	:	:	*	*	:
Ziram	P	:	:	*	P	P	P
Other Chemicals:	:	:	:	:	:	:	:
6-benzyladenine	P	:	*	:	P	*	P
Aluminum phosphide	*	:	*	:	:	:	:
Butenoic Acid Hydro.	P	:	:	:	P	P	P
Chlorophacinone	P	:	:	:	:	:	:
Chloropicrin	*	:	:	:	:	:	:
Cholecalciferol	*	:	:	:	*	:	:
Cytokinins	P	:	*	:	P	*	P
Diphacinone	*	:	:	:	:	:	:
Dodecanol	P	*	:	:	*	:	*
E,E-8, 10-Dodecadien	P	*	:	:	*	:	*
Ethephon	P	:	*	:	*	*	P
Garlic oil	*	:	:	:	:	:	:
Gibberellic acid	P	:	P	:	P	P	P
Gibberellins A4A7	P	:	:	:	:	:	:
Gliocladium v. GL-21	*	:	:	:	:	:	*
Lactic Acid	*	:	:	:	:	:	:
Maleic hydrazide	*	:	*	:	:	:	:
Metaldehyde	*	:	:	:	:	:	:
Metam-sodium	*	:	:	:	:	:	:
Methyl bromide	*	:	*	:	:	:	:
Monocarbamide dihyd.	P	:	*	:	:	:	:
NAD	P	:	P	:	*	*	*
Naphthaleneacetic ac.	P	*	*	P	P	P	P
Pelargonic Acid	*	:	:	:	:	:	:
Strychnine	P	:	*	:	:	:	:
Tetradecanol	P	*	:	:	*	:	*
Tetradecen-1-OL (Z)	P	:	:	:	*	:	:
Zinc phosphide	P	:	*	:	P	:	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Apples: Active Ingredient Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	NC	OR	PA	SC	WA
Herbicides:					
2,4-D	P	P	P	*	P
2,4-D, Dimethylamine		*	*		
Atrazine			*		*
Clopyralid		*			
DCPA			*		
Dichlobenil	*		*		*
Difenzoquat					*
Diuron	*	P	P		P
EPTC					*
Fluazifop-P-butyl				*	
Glufosinate-ammonium			*		*
Glyphosate	P	P	P	P	P
Glyphosate, isopropy					*
Hexazinone					*
Metolachlor	*				
Napropamide					*
Norflurazon		*	P		P
Oryzalin		*			P
Oxyfluorfen		P			P
Paraquat	*	P	P	P	P
Pendimethalin		*			*
Pronamide		*			*
Prosulfuron		*			*
Simazine	P	P	P	*	P
Sulfosate			*		*
Terbacil		*	P		*
Triclopyr		*			
Insecticides:					
Abamectin		P	P		P
Amitraz			*		*
Azinphos-methyl	P	P	P	P	P
Bt(Bacillus thur.)		P	*		P
Carbaryl	P	P	P	*	P
Chlorpyrifos	P	P	P	*	P
Clofentezine	*		P	*	P
Cypermethrin			*		*
Diazinon	*	P	P		*
Dicofol	*	*	*	*	
Dimethoate	P	P	P	*	*
Endosulfan	P	P	P	P	P
Esfenvalerate	P	*	P	*	
Ethion					*
Ethyl parathion			*		
Fenbutatin-oxide		*	*		P

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Apples: Active Ingredient Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	NC	OR	PA	SC	WA
Insecticides: (cont.)					
Formetanate hydro.		P	P		P
Hexythiazox		*	P	*	*
Imidacloprid	P	P	P	*	P
Kaolin		*			P
Malathion	*	*	*	*	P
Methidathion			P		
Methiocarb			*		
Methomyl	*	P	P		*
Methoxychlor	*	*	*	*	P
Methyl parathion	P	*	P	P	P
Oxamyl		P	P		P
Oxydemeton-methyl					*
Oxythioquinox			*		*
Permethrin	P	*	P	P	
Petroleum distillate	P	P	P	*	P
Phosmet	P	P	P	P	P
Phosphamidon		*			*
Potassium salts		*			*
Pyridaben	P	*	P	*	P
Ryania					*
Spinosad		P	P		P
Tebufenozide	P		P		
Fungicides:					
Basic Cupric Zinc Su.		*			
Basic copper sulfate	P	*			*
Benomyl	P	P	P	P	*
Calcium polysulfide		P	*		P
Captafol					*
Captan	P	*	P	P	P
Chlorothalonil	*		*	*	
Copper (metallic)					*
Copper ammonium carb.		*			*
Copper chloride hydr.					*
Copper hydroxide	*	P	P	*	P
Copper oxychlo. sul.	*	P	P	P	*
Copper resinate	P				
Copper sulfate		*	*		*
Cyprodinil		P	P		*
Dinocap			*		
Dodine	P	P	P	*	P
Fenarimol	P	P	P	*	P
Fenbuconazole		*			
Ferbam		*	*		
Fosetyl-al	P	P			P
Glyodin		*			
Kresoxim-methyl	P	*		*	P
Mancozeb	P	P	P	P	P

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Apples: Active Ingredient Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	NC	OR	PA	SC	WA
Fungicides: (cont.)					
Maneb		*	*	*	*
Mefenoxam					P
Metalaxyl		*	*		*
Metiram	P	P	P	P	*
Myclobutanil	P	P	P	*	P
Oxytetracycline		P			P
Potassium bicarbonate					*
Propiconazole					*
Pseudomonas fluores.		P			P
Streptomycin	P	P	P	P	P
Sulfur	P	P	P	*	P
Thiophanate-methyl	P		P	P	*
Thiram	P	P	P	*	P
Triadimefon	*	P	*		P
Triflumizole		P	P		P
Triforine		*			*
Ziram	P	P	P	P	P
Other Chemicals:					
6-benzyladenine		*	P		P
Aluminum phosphide		*			*
Butenoic Acid Hydro.	*	P	P	*	P
Chlorophacinone		*			P
Chloropicrin					*
Cytokinins		P	P		P
Diphacinone					*
Dodecanol		P			P
E,E-8, 10-Dodecadien		P			P
Ethephon	*	P	P	*	P
Garlic oil		*			
Gibberellic acid	*	P	P	*	P
Gibberellins A4A7					P
Gliocladium v. GL-21					
Lactic Acid					*
Metaldehyde					*
Metam-sodium					*
Methyl bromide					*
Monocarbamide dihyd.		P			P
NAD		P	*		P
Naphthaleneacetic ac.	P	P	P	P	P
Pelargonic Acid					*
Strychnine					*
Tetradecanol		P			P
Tetradecen-1-OL (Z)					P
Zinc phosphide		*			P

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Apples: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

Area Receiving and Total Applied 1/									

State:	Bearing	Herbicide		Insecticide 2/:		Fungicide		Other Chemical	

	Acres	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000
			Lbs		Lbs		Lbs		Lbs

AZ 3/:	4,000			96	102.8			57	0.3
CA :	36,500	35	16.5	86	936.0	80	322.2	14	38.9
GA :	1,300	91	0.5	96	41.5	95	33.9	11	**
MI :	52,500	74	64.7	98	816.6	98	1,561.0	41	1.8
NJ :	3,300	26	2.1	84	76.2	86	52.4	42	0.2
NY :	55,000	56	80.7	99	1,026.1	99	1,171.6	56	2.2
NC :	9,000	17	13.0	99	331.3	99	467.4	13	0.1
OR :	8,700	68	20.3	97	312.1	95	72.2	70	5.5
PA :	23,000	65	24.0	97	208.6	98	213.7	44	0.9
SC :	2,400	12	1.1	97	11.5	97	78.8	24	**
WA :	172,000	66	193.1	99	5,036.9	88	1,185.5	86	225.8

Total:	367,700	60	416.0	97	8,899.6	85	5,314.4	62	275.6

** Total applied is less than 50 lbs.

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

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

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

Apples: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000
Herbicides:					
2,4-D	14	1.1	0.74	0.84	42.8
Diuron	11	1.3	0.65	0.91	35.3
Glufosinate-ammonium	*	1.0	0.39	0.39	0.6
Glyphosate	36	1.4	0.77	1.10	144.8
Norflurazon	8	1.0	0.98	1.07	32.2
Oryzalin	3	1.0	1.35	1.41	17.7
Oxyfluorfen	3	1.0	0.78	0.80	9.8
Paraquat	22	1.4	0.43	0.63	51.3
Pendimethalin	*	1.1	1.17	1.28	2.3
Simazine	16	1.0	1.00	1.08	61.7
Terbacil	2	1.0	0.48	0.50	4.1
Insecticides:					
Abamectin	9	1.2	0.008	0.01	0.3
Azinphos-methyl	73	3.0	0.71	2.15	572.8
Bt (Bacillus thur.)2/	21	2.0			
Carbaryl	45	1.3	1.07	1.40	230.0
Chlorpyrifos	60	1.5	1.30	1.97	433.1
Clofentezine	9	1.1	0.11	0.13	4.4
Diazinon	4	1.4	0.72	1.02	13.6
Dicofol	*	1.2	1.42	1.75	2.7
Dimethoate	3	1.2	0.81	1.01	10.5
Endosulfan	15	1.3	0.88	1.19	66.6
Esfenvalerate	18	1.6	0.03	0.05	3.2
Fenbutatin-oxide	3	1.0	0.90	0.94	11.6
Formetanate hydro.	8	1.0	0.61	0.65	20.4
Hexythiazox	3	1.1	0.10	0.11	1.2
Imidacloprid	46	1.4	0.05	0.07	12.7
Kaolin	*	1.4	32.06	44.94	22.9
Malathion	6	1.1	0.91	1.05	22.8
Methidathion	*	1.5	0.93	1.42	2.7
Methomyl	10	1.5	0.45	0.70	25.8
Methoxychlor	6	1.3	0.79	1.07	21.8
Methyl parathion	12	2.4	0.55	1.34	60.8
Oxamyl	4	1.2	0.51	0.61	8.3
Permethrin	5	1.1	0.11	0.13	2.3
Petroleum distillate	59	1.6	19.34	32.13	6,976.5
Phosmet	28	2.3	1.36	3.25	330.7
Phosphamidon	*	1.2	0.49	0.63	0.7
Potassium salts	*	1.1	2.70	2.96	3.7
Pyridaben	18	1.0	0.16	0.17	11.5
Spinosad	28	1.6	0.09	0.14	14.7
Tebufenozide	5	2.0	0.13	0.27	5.1
Fungicides:					
Basic Cupric Zinc Su.	*	1.0	0.10	0.11	**
Basic copper sulfate	*	1.1	1.96	2.21	4.7
Benomyl	11	2.4	0.23	0.56	22.9
Calcium polysulfide	3	1.2	16.99	20.34	253.9
Captan	37	5.0	1.63	8.27	1,128.8
Chlorothalonil	*	1.8	0.78	1.46	5.1
Copper hydroxide	17	1.2	2.03	2.46	152.4
Copper oxychlo. sul.	7	1.3	1.87	2.48	65.3
Copper resinate	*	1.0	0.26	0.26	0.3

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Apples: Agricultural Chemical Applications,
States Surveyed, 1999 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000
Fungicides: (cont.)					
Copper sulfate	*	1.4	1.23	1.75	5.5
Cyprodinil	9	1.8	0.10	0.19	6.0
Dodine	3	1.4	0.96	1.40	14.5
Fenarimol	22	1.9	0.06	0.11	8.5
Ferbam	*	5.8	2.60	15.09	3.2
Fosetyl-al	8	1.1	1.50	1.67	49.6
Kresoxim-methyl	9	1.2	0.16	0.19	6.1
Mancozeb	34	3.2	2.04	6.72	830.5
Maneb	1	3.8	2.21	8.49	32.4
Mefenoxam	4	1.1	0.37	0.43	6.2
Metiram	17	3.4	2.61	9.06	573.9
Myclobutanil	42	2.3	0.10	0.23	35.0
Oxytetracycline	5	1.4	0.11	0.17	2.9
Pseudomonas fluores.	5	1.1	0.23	0.26	4.5
Streptomycin	19	1.5	0.15	0.22	15.4
Sulfur	35	2.4	5.23	12.67	1,653.3
Thiophanate-methyl	11	2.7	0.30	0.84	33.1
Thiram	4	1.6	2.85	4.66	72.4
Triadimefon	4	1.8	0.07	0.14	2.2
Triflumizole	17	1.4	0.21	0.30	19.5
Triforine	*	1.9	0.39	0.75	0.2
Ziram	13	2.2	2.50	5.72	268.8
Other Chemicals:					
6-benzyladenine	3	1.3	0.03	0.05	0.6
Butenoic Acid Hydro.	6	1.0	0.08	0.08	1.7
Chlorophacinone	1	1.0	0.13	0.13	0.5
Cytokinins	17	1.1	0.02	0.03	1.7
Dodecanol	6	1.0	0.03	0.03	0.7
E,E-8, 10-Dodecadien	6	1.1	0.05	0.06	1.3
Ethephon	10	1.1	0.56	0.64	24.3
Gibberellic acid	20	1.2	0.02	0.03	2.0
Gibberellins A4A7	1	1.3	0.03	0.05	0.2
Monocarbamide dihyd.	1	1.1	5.84	6.56	31.0
NAD	6	1.1	0.05	0.05	1.2
Naphthaleneacetic ac.:	34	1.2	0.04	0.04	5.4
Strychnine	*	1.0	0.02	0.02	0.1
Tetradecanol	6	1.0	0.007	0.007	0.2
Tetradecen-1-OL (Z)	*	1.1	0.04	0.05	**
Zinc phosphide	3	1.0	0.13	0.13	1.4

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for the 11 States surveyed were 367,700 acres.

States included are AZ, CA, GA, MI, NJ, NY, NC, OR, PA, SC and WA. Acreage in Arizona and California includes non-bearing acres.

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

Bearing acreage includes non-bearing acres in California.

Apples: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	31	1.2	0.74	0.91	10.3
Oxyfluorfen	4	1.1	0.59	0.65	0.9
Paraquat	2	1.3	0.81	1.05	0.8
Simazine	4	1.0	1.19	1.24	1.6
Insecticides:					
Abamectin	7	1.6	0.010	0.02	0.1
Azinphos-methyl	29	1.7	1.25	2.13	22.8
Bt (Bacillus thur.)2/	16	1.8			
Carbaryl	19	1.2	1.96	2.54	17.6
Chlorpyrifos	54	1.4	1.52	2.20	43.6
Diazinon	12	1.4	1.62	2.38	10.0
Formetanate hydro.	2	1.0	0.69	0.74	0.5
Methyl parathion	4	1.1	1.65	1.91	2.5
Petroleum distillate	54	1.3	29.53	39.29	778.0
Phosmet	38	1.4	2.51	3.65	51.2
Fungicides:					
Calcium polysulfide	7	1.6	17.12	27.87	74.5
Cyprodinil	8	1.7	0.12	0.20	0.6
Fenarimol	12	1.1	0.06	0.07	0.3
Mancozeb	51	1.3	2.50	3.37	62.2
Myclobutanil	28	1.7	0.10	0.18	1.8
Streptomycin	21	1.9	0.09	0.18	1.4
Sulfur	12	1.9	11.32	21.92	92.1
Triflumizole	19	1.1	0.21	0.25	1.7
Other Chemicals:					
Gibberellic acid	3	1.1	0.02	0.02	**
NAD	4	1.1	0.05	0.06	0.1

** Total applied is less than 50 lbs.

1/ Total acres in 1999 for California were 36,500 acres. Acreage includes both bearing and non-bearing acres.

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

Apples: Agricultural Chemical Applications,
Georgia, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	77	1.2	0.28	0.34	0.3
Paraquat	75	1.0	0.21	0.23	0.2
Insecticides:					
Carbaryl	6	1.1	0.66	0.73	0.1
Chlorpyrifos	94	1.3	0.80	1.04	1.3
Malathion	1	2.6	0.68	1.76	**
Petroleum distillate	91	1.0	26.07	26.07	31.0
Phosmet	80	5.1	1.13	5.76	6.0
Fungicides:					
Benomyl	84	2.5	0.28	0.73	0.8
Captan	95	4.3	1.94	8.44	10.5
Mancozeb	18	2.7	2.94	8.20	1.9
Metiram	81	4.6	2.86	13.43	14.1
Streptomycin	68	2.0	0.31	0.63	0.6
Sulfur	4	3.9	7.82	31.07	1.8
Other Chemicals:					
Naphthaleneacetic ac.:	11	1.2	0.21	0.26	**

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Georgia were 1,300 acres.

Apples: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
2,4-D	19	1.0	0.61	0.64	6.5
Diuron	21	2.1	0.33	0.72	8.0
Glyphosate	57	2.0	0.42	0.87	26.0
Oryzalin	2	1.0	2.06	2.15	2.7
Paraquat	28	1.4	0.46	0.66	9.6
Simazine	21	1.0	0.90	0.92	10.0
Terbacil	6	1.1	0.35	0.39	1.2
Insecticides:					
Abamectin	9	1.1	0.009	0.01	**
Azinphos-methyl	92	3.5	0.70	2.44	117.5
Bt (Bacillus thur.)2/	42	2.4			
Carbaryl	32	1.1	0.72	0.85	14.4
Chlorpyrifos	63	1.5	0.85	1.28	42.6
Clofentezine	21	1.3	0.10	0.14	1.5
Dimethoate	3	1.8	0.74	1.38	2.3
Endosulfan	10	1.5	0.77	1.19	6.3
Esfenvalerate	50	1.3	0.04	0.05	1.4
Hexythiazox	3	1.1	0.09	0.10	0.2
Imidacloprid	67	1.6	0.05	0.09	3.2
Methomyl	32	1.1	0.72	0.85	14.4
Methyl parathion	10	3.1	0.52	1.62	8.8
Oxamyl	3	1.0	0.84	0.85	1.4
Permethrin	19	1.1	0.12	0.13	1.3
Petroleum distillate	36	1.2	19.63	23.84	449.9
Phosmet	74	2.8	1.31	3.72	145.0
Pyridaben	32	1.0	0.16	0.16	2.7
Spinosad	22	1.6	0.09	0.14	1.7
Tebufozide	8	1.7	0.18	0.32	1.3
Fungicides:					
Benomyl	7	2.3	0.19	0.44	1.7
Captan	90	5.3	1.90	10.26	484.7
Copper hydroxide	23	1.5	1.11	1.74	21.4
Copper oxychlo. sul.	12	1.2	1.47	1.90	12.4
Copper sulfate	4	1.5	1.26	1.98	4.4
Cyprodinil	15	2.2	0.14	0.31	2.5
Fenarimol	30	2.6	0.05	0.15	2.4
Kresoxim-methyl	19	1.6	0.13	0.21	2.1
Mancozeb	49	4.4	1.97	8.86	227.2
Maneb	4	3.7	2.49	9.39	18.0
Metiram	39	3.5	2.79	9.80	203.1
Myclobutanil	57	3.1	0.10	0.32	9.4
Streptomycin	45	1.4	0.16	0.23	5.4
Sulfur	41	4.8	3.63	17.41	371.3
Thiophanate-methyl	3	1.3	0.56	0.77	1.0
Thiram	7	2.5	2.75	7.04	26.3
Triadimefon	19	1.9	0.06	0.12	1.2
Ziram	46	2.4	2.64	6.50	158.1
Other Chemicals:					
6-benzyladenine	5	1.0	0.03	0.03	0.1
Butenoic Acid Hydro.	*	1.0	0.06	0.06	**
Cytokinins	2	1.0	0.02	0.02	**
Gibberellic acid	8	1.2	0.008	0.01	**
Naphthaleneacetic ac.	20	1.1	0.06	0.07	0.7
Zinc phosphide	15	1.0	0.11	0.11	0.9

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Michigan were 52,500 acres.

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

Apples: Agricultural Chemical Applications,
New Jersey, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Norflurazon	19	1.5	0.67	1.01	0.6
Insecticides:					
Azinphos-methyl	66	4.5	0.39	1.76	3.8
Bt (Bacillus thur.)2/	5	1.0			
Carbaryl	29	1.5	0.57	0.86	0.8
Chlorpyrifos	66	2.2	0.40	0.89	1.9
Clofentezine	10	1.0	0.16	0.16	0.1
Endosulfan	8	2.0	0.84	1.68	0.4
Imidacloprid	35	1.5	0.05	0.07	0.1
Malathion	*	4.3	0.70	3.07	0.1
Methoxychlor	*	3.9	0.74	2.92	0.1
Methyl parathion	16	4.7	0.97	4.62	2.5
Oxamyl	21	2.0	0.44	0.89	0.6
Petroleum distillate	51	1.8	20.43	37.12	62.5
Phosmet	28	3.7	0.51	1.89	1.8
Pyridaben	33	1.1	0.13	0.15	0.2
Fungicides:					
Benomyl	52	4.4	0.35	1.54	2.7
Captan	77	7.8	1.02	7.93	20.3
Dodine	17	1.6	0.31	0.51	0.3
Fenarimol	20	3.8	0.04	0.16	0.1
Mancozeb	54	6.7	1.03	6.94	12.3
Metiram	19	3.2	1.39	4.46	2.8
Myclobutanil	48	4.5	0.05	0.24	0.4
Streptomycin	20	2.3	0.16	0.37	0.2
Sulfur	28	4.0	1.53	6.17	5.7
Thiophanate-methyl	19	3.1	0.05	0.15	0.1
Ziram	31	4.8	1.17	5.64	5.8
Other Chemicals:					
Butenoic Acid Hydro.	13	1.2	0.06	0.08	**
Gibberellic acid	7	1.9	0.02	0.03	**
Naphthaleneacetic ac.	22	3.6	0.07	0.26	0.2

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for New Jersey were 3,300 acres.

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

Apples: Agricultural Chemical Applications,
New York, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	20	1.1	1.04	1.14	12.9
Diuron	19	1.0	1.02	1.09	11.3
Glyphosate	37	1.2	0.96	1.21	24.7
Paraquat	24	1.0	0.56	0.59	7.8
Pendimethalin	2	1.0	1.51	1.56	1.7
Simazine	24	1.0	1.35	1.46	19.6
Insecticides:					
Abamectin	9	1.0	0.010	0.010	**
Azinphos-methyl	67	3.1	0.62	1.95	72.0
Bt (Bacillus thur.)2/	24	1.6			
Carbaryl	56	1.1	1.10	1.29	39.6
Chlorpyrifos	60	1.8	1.00	1.80	59.7
Clofentezine	17	1.0	0.13	0.13	1.2
Dicofol	2	1.1	1.54	1.69	1.8
Dimethoate	5	1.1	1.08	1.22	3.5
Endosulfan	29	1.3	0.87	1.20	19.2
Esfenvalerate	26	1.2	0.04	0.04	0.6
Imidacloprid	46	1.4	0.06	0.09	2.1
Methomyl	15	1.0	0.77	0.83	7.0
Methyl parathion	25	1.4	0.85	1.25	17.3
Oxamyl	12	1.1	0.54	0.61	4.1
Permethrin	8	1.4	0.09	0.12	0.5
Petroleum distillate	53	1.5	15.86	25.09	725.7
Phosmet	43	2.2	1.12	2.54	59.7
Pyridaben	22	1.1	0.17	0.19	2.4
Spinosad	20	1.6	0.08	0.13	1.5
Fungicides:					
Benomyl	33	2.7	0.22	0.60	10.7
Captan	95	4.4	1.64	7.27	381.5
Copper hydroxide	17	1.1	2.39	2.71	25.2
Copper oxychlo. sul.	28	1.2	2.14	2.72	41.8
Cyprodinil	7	1.0	0.14	0.14	0.5
Dodine	7	1.2	1.38	1.65	6.5
Fenarimol	20	2.6	0.06	0.16	1.8
Mancozeb	77	3.7	2.27	8.58	362.7
Metiram	16	3.0	2.62	7.86	71.0
Myclobutanil	57	2.5	0.10	0.25	8.0
Streptomycin	24	1.9	0.14	0.27	3.6
Sulfur	39	2.7	3.80	10.36	220.8
Thiophanate-methyl	38	1.9	0.31	0.62	13.1
Triadimefon	5	2.3	0.08	0.18	0.5
Triflumizole	7	2.0	0.24	0.49	2.0
Ziram	6	1.1	1.75	1.93	6.4
Other Chemicals:					
6-benzyladenine	2	1.2	0.03	0.04	**
Butenoic Acid Hydro.	*	1.0	0.10	0.10	**
Cytokinins	3	1.4	0.006	0.008	**
Ethephon	3	1.0	0.29	0.29	0.5
Gibberellic acid	7	1.6	0.008	0.010	**
Naphthaleneacetic ac.	50	1.2	0.04	0.05	1.4

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for New York were 55,000 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, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	10	1.8	1.49	2.72	2.4
Glyphosate	13	1.8	2.21	4.04	4.7
Simazine	12	2.5	1.75	4.53	4.9
Insecticides:					
Azinphos-methyl	54	2.9	0.59	1.73	8.4
Carbaryl	32	1.2	1.55	1.97	5.6
Chlorpyrifos	40	3.8	0.91	3.49	12.5
Dimethoate	21	1.1	0.74	0.85	1.6
Endosulfan	2	1.8	1.23	2.34	0.4
Esfenvalerate	57	2.0	0.06	0.12	0.6
Imidacloprid	12	1.1	0.05	0.05	0.1
Methyl parathion	16	2.8	0.99	2.81	4.1
Permethrin	26	1.0	0.10	0.10	0.2
Petroleum distillate	85	1.5	24.25	37.41	286.7
Phosmet	43	1.4	1.50	2.21	8.6
Pyridaben	28	1.0	0.16	0.16	0.4
Tebufozide	51	1.7	0.27	0.47	2.1
Fungicides:					
Basic copper sulfate	10	1.1	2.59	2.89	2.7
Benomyl	1	4.4	0.19	0.84	0.1
Captan	89	5.3	2.45	13.14	105.6
Copper resinate	6	1.0	0.44	0.44	0.2
Dodine	9	1.7	1.01	1.78	1.5
Fenarimol	21	3.9	0.06	0.25	0.5
Fosetyl-al	7	1.0	1.34	1.34	0.8
Kresoxim-methyl	27	1.4	0.13	0.19	0.5
Mancozeb	64	3.5	2.38	8.40	48.2
Metiram	36	10.2	4.46	45.68	147.6
Myclobutanil	52	3.8	0.10	0.37	1.7
Streptomycin	27	1.6	0.23	0.37	0.9
Sulfur	39	6.5	4.93	32.33	113.0
Thiophanate-methyl	64	5.4	0.36	2.00	11.5
Thiram	10	1.1	3.59	3.96	3.4
Ziram	35	3.1	2.65	8.37	26.0
Other Chemicals:					
Naphthaleneacetic ac.	11	1.1	0.02	0.03	**

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for North Carolina were 9,000 acres.

Apples: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	14	1.2	0.75	0.92	1.1
Diuron	23	1.0	0.67	0.71	1.4
Glyphosate	61	1.7	0.84	1.50	8.0
Oxyfluorfen	9	1.0	1.03	1.03	0.8
Paraquat	17	1.5	0.48	0.76	1.1
Simazine	36	1.0	1.06	1.08	3.3
Insecticides:					
Abamectin	6	1.0	0.01	0.01	**
Azinphos-methyl	86	2.7	0.89	2.48	18.5
Bt (Bacillus thur.)2/	41	1.8			
Carbaryl	66	1.3	0.86	1.15	6.6
Chlorpyrifos	81	1.1	1.84	2.05	14.5
Diazinon	4	1.4	0.65	0.94	0.3
Dimethoate	29	1.0	0.77	0.77	1.9
Endosulfan	8	1.0	1.24	1.26	0.9
Formetanate hydro.	3	1.0	0.99	0.99	0.3
Imidacloprid	63	1.7	0.06	0.11	0.6
Methomyl	3	1.0	0.69	0.74	0.2
Oxamyl	5	1.0	0.27	0.27	0.1
Petroleum distillate	85	1.5	23.33	35.11	259.4
Phosmet	16	1.5	2.24	3.44	4.7
Spinosad	46	1.7	0.10	0.19	0.8
Fungicides:					
Benomyl	7	1.1	0.45	0.51	0.3
Calcium polysulfide	9	1.1	10.32	12.08	9.2
Copper hydroxide	28	1.1	3.37	3.97	9.8
Copper oxychlo. sul.	4	1.2	4.70	5.63	1.8
Cyprodinil	14	1.0	0.23	0.24	0.3
Dodine	18	1.7	1.34	2.38	3.7
Fenarimol	44	1.1	0.07	0.08	0.3
Fosetyl-al	14	1.0	1.76	1.83	2.2
Mancozeb	20	1.7	3.49	6.08	10.6
Metiram	10	1.6	2.65	4.24	3.8
Myclobutanil	71	1.8	0.12	0.21	1.3
Oxytetracycline	16	1.1	0.23	0.26	0.4
Pseudomonas fluores.	22	1.9	0.28	0.56	1.1
Streptomycin	24	1.8	0.19	0.36	0.8
Sulfur	17	1.2	8.66	10.82	15.9
Thiram	7	1.4	3.16	4.43	2.9
Triadimefon	8	1.0	0.18	0.18	0.1
Triflumizole	31	1.5	0.26	0.40	1.1
Ziram	8	1.0	5.04	5.23	3.6
Other Chemicals:					
Butenoic Acid Hydro.	15	1.0	0.11	0.11	0.1
Cytokinins	26	1.2	0.03	0.04	0.1
Dodecanol	30	1.1	0.03	0.03	0.1
E,E-8, 10-Dodecadien	30	1.1	0.05	0.05	0.1
Ethephon	17	1.0	0.53	0.54	0.8
Gibberellic acid	28	1.7	0.02	0.04	0.1
Monocarbamide dihyd.	10	1.0	4.83	4.83	4.0
NAD	28	1.0	0.03	0.03	0.1
Naphthaleneacetic ac.	46	1.3	0.02	0.03	0.1
Tetradecanol	30	1.1	0.005	0.006	**

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Oregon were 8,700 acres.

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

Apples: Agricultural Chemical Applications,
Pennsylvania, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	29	1.5	0.45	0.69	4.7
Diuron	32	1.0	0.68	0.72	5.3
Glyphosate	8	1.3	0.67	0.89	1.7
Norflurazon	6	1.0	0.98	1.06	1.5
Paraquat	55	1.3	0.28	0.39	4.9
Simazine	28	1.0	0.69	0.74	4.7
Terbacil	6	1.0	0.42	0.43	0.6
Insecticides:					
Abamectin	24	1.8	0.005	0.008	**
Azinphos-methyl	89	6.5	0.13	0.86	17.5
Carbaryl	18	1.4	0.80	1.13	4.6
Chlorpyrifos	36	1.7	0.36	0.65	5.4
Clofentezine	10	1.5	0.03	0.05	0.1
Diazinon	34	1.4	0.22	0.31	2.5
Dimethoate	2	2.1	0.16	0.35	0.2
Endosulfan	7	1.8	0.43	0.79	1.2
Esfenvalerate	68	1.7	0.009	0.02	0.3
Formetanate hydro.	2	1.5	0.36	0.54	0.2
Hexythiazox	2	1.0	0.08	0.08	**
Imidacloprid	60	2.0	0.02	0.03	0.4
Methidathion	3	1.7	0.41	0.71	0.5
Methomyl	46	2.4	0.14	0.35	3.6
Methyl parathion	57	3.8	0.12	0.47	6.2
Oxamyl	2	2.0	0.46	0.93	0.4
Permethrin	2	1.0	0.09	0.09	**
Petroleum distillate	39	1.9	9.07	17.21	156.0
Phosmet	24	2.9	0.40	1.19	6.5
Pyridaben	26	1.3	0.07	0.09	0.5
Spinosad	30	3.0	0.02	0.07	0.5
Tebufenozide	41	2.3	0.06	0.15	1.4
Fungicides:					
Benomyl	21	3.7	0.13	0.48	2.4
Captan	83	6.0	0.57	3.45	65.8
Copper hydroxide	2	1.0	1.40	1.44	0.7
Copper oxychlo. sul.	16	1.6	1.14	1.86	6.7
Cyprodinil	57	2.0	0.06	0.12	1.6
Dodine	9	1.6	0.40	0.67	1.5
Fenarimol	20	3.4	0.02	0.08	0.4
Mancozeb	53	4.1	0.73	3.03	37.1
Metiram	33	6.0	0.91	5.56	41.9
Myclobutanil	63	3.8	0.05	0.19	2.8
Streptomycin	9	1.7	0.10	0.18	0.4
Sulfur	8	4.4	3.04	13.45	24.3
Thiram	9	2.5	0.56	1.45	3.1
Triflumizole	12	6.1	0.06	0.35	1.0
Ziram	17	4.0	0.90	3.66	14.5
Other Chemicals:					
6-benzyladenine	2	1.1	0.03	0.04	**
Butenoic Acid Hydro.	1	1.0	0.08	0.08	**
Cytokinins	4	1.4	0.010	0.02	**
Ethephon	8	1.5	0.24	0.37	0.7
Gibberellic acid	8	1.8	0.010	0.02	**
Naphthaleneacetic ac.:	33	1.1	0.03	0.03	0.2

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Pennsylvania were 23,000 acres.

Apples: Agricultural Chemical Applications,
South Carolina, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	9	2.2	0.90	2.06	0.4
Paraquat	6	1.0	0.65	0.65	0.1
Insecticides:					
Azinphos-methyl	89	1.1	0.68	0.79	1.7
Endosulfan	7	2.0	1.23	2.57	0.4
Methyl parathion	32	5.1	0.51	2.65	2.0
Permethrin	31	1.0	0.10	0.11	0.1
Phosmet	11	2.8	1.59	4.56	1.2
Fungicides:					
Benomyl	9	3.8	0.28	1.08	0.2
Captan	97	6.8	3.09	21.29	49.6
Copper oxychlo. sul.	5	1.5	1.33	2.09	0.3
Mancozeb	31	4.4	3.21	14.17	10.4
Metiram	65	2.1	3.76	7.92	12.4
Streptomycin	8	1.8	0.13	0.23	**
Thiophanate-methyl	29	6.3	0.44	2.78	2.0
Ziram	6	2.9	2.14	6.38	0.9
Other Chemicals:					
Naphthaleneacetic ac.:	24	1.0	0.01	0.01	**

** Total amount applied less than 50 lbs.

1/ Bearing acres in 1999 for South Carolina were 2,400 acres.

Apples: Agricultural Chemical Applications,
Washington, 1999 1/

Agricultural Chemical	Area Applied	Applcations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	12	1.0	0.71	0.73	14.8
Diuron	4	1.0	1.08	1.18	8.0
Glyphosate	35	1.1	0.97	1.14	68.0
Norflurazon	16	1.0	0.98	1.06	28.6
Oryzalin	6	1.0	1.04	1.07	10.3
Oxyfluorfen	6	1.0	0.78	0.80	8.0
Paraquat	22	1.6	0.43	0.70	26.4
Simazine	12	1.0	0.80	0.84	17.3
Insecticides:					
Abamectin	8	1.0	0.009	0.009	0.1
Azinphos-methyl	78	2.3	0.96	2.31	309.3
Bt (Bacillus thur.)2/	19	2.0			
Carbaryl	56	1.3	1.07	1.46	140.4
Chlorpyrifos	65	1.3	1.66	2.26	250.9
Clofentezine	6	1.0	0.14	0.14	1.5
Endosulfan	18	1.2	0.92	1.19	36.5
Fenbutatin-oxide	5	1.0	0.87	0.89	8.2
Formetanate hydro.	17	1.0	0.53	0.56	15.9
Imidacloprid	50	1.2	0.06	0.07	6.1
Kaolin	*	1.3	32.72	43.69	21.4
Malathion	12	1.1	0.92	1.04	22.3
Methoxychlor	12	1.3	0.79	1.06	21.0
Methyl parathion	5	1.1	1.64	1.92	17.1
Oxamyl	2	1.1	0.39	0.44	1.6
Petroleum distillate	69	1.8	19.09	34.73	4,119.9
Phosmet	7	2.0	1.79	3.74	46.0
Pyridaben	16	1.0	0.18	0.18	5.1
Spinosad	39	1.4	0.10	0.15	10.2
Fungicides:					
Calcium polysulfide	5	1.0	19.00	19.93	167.0
Captan	1	1.0	2.87	3.01	5.8
Copper hydroxide	15	1.1	1.73	2.01	51.3
Dodine	*	1.3	0.41	0.54	0.2
Fenarimol	21	1.2	0.06	0.07	2.7
Fosetyl-al	12	1.1	1.52	1.73	36.3
Kresoxim-methyl	11	1.0	0.18	0.19	3.5
Mancozeb	9	1.1	3.36	3.93	57.9
Mefenoxam	8	1.1	0.37	0.43	5.9
Myclobutanil	31	1.3	0.13	0.18	9.4
Oxytetracycline	6	1.7	0.10	0.17	1.8
Pseudomonas fluores.	9	1.0	0.22	0.22	3.4
Streptomycin	9	1.0	0.13	0.14	2.1
Sulfur	42	1.3	6.84	9.05	652.4
Thiram	4	1.0	4.58	4.69	31.4
Triadimefon	1	1.0	0.11	0.11	0.2
Triflumizole	27	1.1	0.25	0.28	12.9
Ziram	6	1.1	4.58	5.05	52.3

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Apples: Agricultural Chemical Applications,
Washington, 1999 1/ (continued)

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
6-benzyladenine	4	1.3	0.04	0.05	0.3
Butenoic Acid Hydro.	12	1.0	0.08	0.08	1.6
Chlorophacinone	3	1.0	0.13	0.13	0.7
Cytokinins	32	1.1	0.03	0.03	1.6
Dodecanol	10	1.0	0.03	0.03	0.5
E,E-8, 10-Dodecadien	11	1.0	0.05	0.06	1.0
Ethephon	19	1.1	0.60	0.68	22.0
Gibberellic acid	35	1.2	0.02	0.03	1.8
Gibberellins A4A7	3	1.3	0.03	0.05	0.3
Monocarbamide dihyd.	2	1.1	6.01	6.92	26.7
NAD	10	1.1	0.05	0.06	1.0
Naphthaleneacetic ac.	41	1.2	0.03	0.04	2.8
Tetradecanol	10	1.0	0.006	0.006	0.1
Tetradecen-1-OL (Z)	2	1.1	0.04	0.05	0.2
Zinc phosphide	*	1.0	0.17	0.17	0.3

* Area applied is less than one percent.

1/ Bearing acres in 1999 for Washington were 172,000 acres.

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

Apricots: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated	Nitrogen 1,000 Lbs	Phosphate 1,000 Lbs	Potash 1,000 Lbs
CA	20,500	81	1,607	9	119

Apricots: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied Percent	Applications Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 Lbs
California: Nitrogen	20,500	81	1.5	63	97	1,607
Phosphate		9	1.2	53	67	119
Potash		23	1.3	61	85	402

Apricots: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	CA	Active Ingredient	CA
		(continued)	
Herbicides:		Fungicides:	
2,4-D	*	Basic copper sulfate	*
Glyphosate	P	Benomyl	*
Norflurazon	*	Captan	*
Oryzalin	P	Chlorothalonil	P
Oxyfluorfen	P	Copper hydroxide	P
Paraquat	*	Copper oxide	P
Simazine	*	Copper oxychloro. sul.	*
Insecticides:		Cyprodinil	*
Bt (Bacillus thur.)	P	Fenbuconazole	P
Carbaryl	*	Iprodione	P
Diazinon	P	Myclobutanil	*
Dicofol	*	Propiconazole	P
Esfenvalerate	P	Thiophanate-methyl	*
Formetanate hydro.	*	Vinclozolin	*
Methodathion	*	Ziram	P
Petroleum distillate	P	Other Chemicals:	
Phosmet	P	Strychnine	*

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P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient

Apricots: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

Area Receiving and Total Applied 1/						
State:	Bearing	-----				
: Acreage	:	Herbicide	: Insecticide 2/:	Fungicide	: Other Chemical	

:	Acres	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000
:	:	Lbs	Lbs	Lbs	Lbs	Lbs
:	:	:	:	:	:	:
CA 3/:	20,500	36	11.4	74	491.4	74 113.6

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

Apricots: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	: Area Applied	: Appli- cations	: Rate per Application	: Rate per Crop Year	: Total Applied	

	Percent	Number	Pounds per Acre		1,000 lbs	

Herbicides:						
Glyphosate	22	1.3	0.50	0.68	3.0	
Oryzalin	9	1.0	2.57	2.79	5.0	
Oxyfluorfen	13	1.2	0.45	0.55	1.5	
Insecticides:						
Bt(Bacillus thur.)2/	15	2.3				
Diazinon	15	1.4	1.53	2.20	6.7	
Esfenvalerate	33	1.8	0.04	0.08	0.5	
Petroleum distillate	64	1.5	22.94	35.44	462.2	
Phosmet	18	1.3	2.06	2.74	10.1	
Fungicides:						
Chlorothalonil	12	1.4	2.51	3.66	8.7	
Copper hydroxide	22	1.4	3.21	4.58	20.3	
Copper oxide	6	1.3	4.22	5.64	6.9	
Fenbuconazole	13	1.3	0.09	0.13	0.3	
Iprodione	43	1.5	0.68	1.05	9.2	
Propiconazole	18	1.2	0.10	0.12	0.4	
Ziram	28	1.7	5.29	9.04	51.1	

- 1/ Total acres in 1999 for California were 20,500 acres. Acreage includes both bearing and non-bearing acres.
 2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Avocados: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	60,000	92	4,247	45	1,054	40	724
FL	6,000	99	968	98	292	99	1,036
Total	66,000	93	5,215	50	1,346	45	1,760

Avocados: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	60,000					
Nitrogen		92	2.7	27	77	4,247
Phosphate		45	3.2	12	39	1,054
Potash		40	2.5	12	30	724
Florida:	6,000					
Nitrogen		99	2.7	59	164	968
Phosphate		98	2.5	20	49	292
Potash		99	2.7	63	175	1,036
Total:	66,000					
Nitrogen		93	2.7	30	85	5,215
Phosphate		50	3.1	13	41	1,346
Potash		45	2.5	23	59	1,760

Avocados: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed		
	ALL	CA	FL
Herbicides:			
Bensulide	*		*
Glyphosate	P	P	P
Norflurazon	*	*	
Oryzalin	*	*	
Simazine	P	*	*
Insecticides:			
Abamectin	P	P	
Carbaryl	*		*
Chlorpyrifos	*	*	
Ethion	*		*
Malathion	P	*	*
Methomyl	*		*
Neem Oil, Hydrophobi	*		*
Permethrin	P		P
Petroleum distillate	P	P	
Phosmet	*		*
Sabadilla	P	P	
Fungicides:			
Basic Cupric Zinc Su.	*		*
Basic copper sulfate	*		*
Benomyl	*		*
Copper ammonium carb.	*		*
Copper hydroxide	P		P
Copper oxychlo. sul.	*		*
Copper sulfate	P		P
Fosetyl-al	*	*	
Mancozeb	*		*
Sulfur	P		P
Other Chemicals:			
Bromadiolone	*	*	
Diphacinone	*	*	
Metaldehyde	P	P	
Strychnine	P	P	

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Avocados: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State	Area Receiving and Total Applied 1/							
	Bearing Acreage	Herbicide	Insecticide	Fungicide	Other Chemical			
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs			
CA 2/	60,000	59	62.2	37	458.8	8	0.5	
FL	6,000	49	10.0	90	6.4	97	121.6	
Total 2/	66,000	58	72.2	42	465.2	7	0.5	

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

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

Avocados: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	56	2.6	0.48	1.29	47.6
Simazine	16	1.4	1.35	1.93	20.9
Insecticides:					
Abamectin	19	1.0	0.02	0.02	0.3
Malathion	5	1.2	1.62	1.99	6.1
Permethrin	4	1.9	0.15	0.29	0.8
Petroleum distillate	21	1.1	30.59	33.68	457.5
Sabadilla	11	1.2	0.03	0.03	0.2
Fungicides:					
Copper hydroxide	8	6.1	3.23	19.86	101.2
Copper sulfate	*	5.3	1.43	7.60	2.9
Sulfur	2	1.4	5.84	8.32	9.8
Other Chemicals:					
Metaldhyde	2	1.0	0.35	0.36	0.5
Strychnine	2	2.5	0.007	0.02	**

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

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

Avocados: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	57	2.5	0.44	1.11	37.6
Insecticides:					
Abamectin	21	1.0	0.02	0.02	0.3
Petroleum distillate	23	1.1	30.59	33.68	457.5
Sabadilla	12	1.2	0.03	0.03	0.2
Other Chemicals:					
Metaldehyde	3	1.0	0.35	0.36	0.6
Strychnine	2	2.5	0.007	0.02	**

** Total applied is less than 50 lbs.

1/ Total acres in 1999 for California were 60,000 acres. Acreage includes both bearing and non-bearing acres.

Avocados: Agricultural Chemical Applications,
Florida, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	49	4.2	0.80	3.39	10.0
Insecticides:					
Permethrin	46	1.9	0.15	0.29	0.8
Fungicides:					
Copper hydroxide	85	6.1	3.23	19.86	101.2
Copper sulfate	6	5.3	1.43	7.60	2.9
Sulfur	20	1.4	5.84	8.32	9.8

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

Blackberries: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated	Nitrogen 1,000 Lbs	Phosphate 1,000 Lbs	Potash 1,000 Lbs
OR	5,750	98	462	498	429

Blackberries: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied Percent	Applications Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 Lbs
Oregon:	5,750					
Nitrogen		98	1.1	69	82	462
Phosphate		98	1.1	78	89	498
Potash		91	1.1	72	82	429

Blackberries: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	OR	Active Ingredient	OR
Herbicides:		(continued)	
Dichlobenil	*	Fungicides:	
Diuron	P	Benomyl	P
Glyphosate	*	Calcium polysulfide	P
Napropamide	*	Captan	P
Norflurazon	*	Copper hydroxide	P
Oryzalin	*	Copper sulfate	P
Oxyfluorfen	P	Cyprodinil	P
Paraquat	P	Fludioxonil	P
Sethoxydim	*	Fosetyl-al	P
Simazine	P	Iprodione	P
Terbacil	*	Metalaxyl	*
Insecticides:		Sulfur	P
Azinphos-methyl	P		
Bt (Bacillus thur.)	P		
Carbaryl	P		
Diazinon	P		
Esfenvalerate	P		
Malathion	*		
Petroleum distillate	P		

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P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Blackberries: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Oregon, 1999

Area Receiving and Total Applied						
State:	Bearing Acreage	Herbicide	Insecticide 1/	Fungicide	Other Chemical	
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	
OR	5,750	88	12.2	65	5.0	90 103.7

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

Blackberries: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	61	1.1	1.35	1.50	5.3
Oxyfluorfen	21	1.8	0.24	0.43	0.5
Paraquat	38	1.6	0.39	0.62	1.4
Simazine	41	1.0	1.48	1.50	3.5
Insecticides:					
Azinphos-methyl	11	1.1	0.41	0.48	0.3
Bt (Bacillus thur.)2/	3	1.0			
Carbaryl	29	1.0	1.33	1.37	2.3
Diazinon	16	1.0	1.16	1.16	1.1
Esfenvalerate	25	1.0	0.05	0.05	0.1
Petroleum distillate	3	1.0	6.32	6.71	1.2
Fungicides:					
Benomyl	16	1.3	0.40	0.55	0.5
Calcium polysulfide	74	1.2	13.85	17.78	75.5
Captan	32	1.6	2.02	3.23	6.0
Copper hydroxide	30	1.3	1.73	2.26	3.9
Copper sulfate	12	1.0	1.91	1.91	1.3
Cyprodinil	24	1.3	0.25	0.33	0.5
Fludioxonil	24	1.3	0.16	0.22	0.3
Fosetyl-al	9	1.2	2.78	3.42	1.8
Iprodione	32	1.1	0.71	0.85	1.5
Sulfur	20	1.1	8.94	10.53	12.4

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

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

Blueberries: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acres	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
GA	4,400	92	265	90	198	90	202
MI	16,600	92	1,058	50	241	75	586
NJ	7,500	92	532	96	513	97	595
NC	3,200	94	286	94	484	94	226
OR	2,600	90	317	80	132	78	139
Total	34,300	92	2,458	72	1,568	84	1,748

Blueberries: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acres	Area Percent Applied	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 Lbs
Georgia:	4,400					
Nitrogen		92	2.2	30	65	265
Phosphate		90	2.1	23	50	198
Potash		90	2.0	25	51	202
Michigan:	16,600					
Nitrogen		92	1.7	40	69	1,058
Phosphate		50	1.6	17	29	241
Potash		75	1.6	28	47	586
New Jersey:	7,500					
Nitrogen		92	1.8	41	77	532
Phosphate		96	1.8	39	71	513
Potash		97	1.8	45	82	595
North Carolina:	3,200					
Nitrogen		94	3.6	26	95	286
Phosphate		94	3.1	51	161	484
Potash		94	2.6	28	75	226
Oregon:	2,600					
Nitrogen		90	2.7	50	135	317
Phosphate		80	1.7	36	64	132
Potash		78	2.0	33	69	139
Total:	34,300					
Nitrogen		92	2.0	37	78	2,458
Phosphate		72	1.9	32	64	1,568
Potash		84	1.9	32	61	1,748

Blueberries: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed					
	ALL	GA	MI	NJ	NC	OR
Herbicides:	:	:	:	:	:	:
2,4-D	*	:	*	:	:	*
Bromacil	*	:	*	:	:	:
Dichlobenil	*	:	*	:	:	*
Diuron	P	P	P	P	:	P
Fluazifop-P-butyl	*	*	:	:	*	:
Glufosinate-ammonium	P	P	:	:	:	:
Glyphosate	P	P	P	P	P	P
Hexazinone	P	:	*	:	*	:
Napropamide	P	:	*	P	*	*
Norflurazon	P	:	*	P	*	P
Oryzalin	P	P	*	P	*	P
Oxyfluorfen	*	:	:	:	:	*
Paraquat	P	*	P	*	P	P
Pronamide	*	:	:	:	:	*
Sethoxydim	P	*	:	*	*	*
Simazine	P	P	P	*	*	P
Terbacil	P	:	P	P	*	*
Triclopyr	*	:	:	:	:	*
Insecticides:	:	:	:	:	:	:
Abamectin	*	:	:	:	*	:
Azinphos-methyl	P	:	P	P	P	:
Bt (Bacillus thur.)	P	:	P	P	*	P
Carbaryl	P	*	P	P	*	*
Cryolite	*	:	:	:	:	*
Diazinon	P	:	*	P	*	P
Endosulfan	P	:	:	*	*	:
Esfenvalerate	P	:	:	*	P	*
Formetanate hydro.	*	:	*	:	:	:
Imidacloprid	P	:	:	P	:	:
Malathion	P	P	P	P	P	P
Methomyl	P	:	P	*	:	*
Petroleum distillate	P	:	:	*	*	*
Phosmet	P	*	P	P	:	*
Piperonyl butoxide	*	:	*	:	:	:
Pyrethrins	*	:	*	:	:	:
Tebufenozide	*	:	:	*	:	:
Fungicides:	:	:	:	:	:	:
Basic copper sulfate	*	:	:	*	:	:
Benomyl	P	P	P	P	P	P
Calcium polysulfide	P	:	:	P	:	P
Captan	P	P	P	P	P	P
Chlorothalonil	P	:	P	*	:	*
Copper hydroxide	P	:	:	:	*	*
Copper oxychlo. sul.	*	:	:	:	:	*
Copper sulfate	P	:	:	:	:	P
Fenbuconazole	P	P	P	:	P	P
Fosetyl-al	P	:	*	:	:	*

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Blueberries: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed					
	ALL	GA	MI	NJ	NC	OR
Fungicides: (cont.)						
Iprodione	P					P
Mancozeb	*				*	
Maneb	*			*		
Mefenoxam	P					P
Metalaxyl	*					*
Myclobutanil	*					*
Propiconazole	P	*		*		
Triforine	P	P	P	P	P	P
Ziram	P		P	P		P
Other Chemicals:						
Cyanamid	*	*				
Cytokinins	*	*				*
Gibberellic acid	P	*	*	*	*	*
Metaldehyde	*					*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Blueberries: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State: Bearing	Area Receiving and Total Applied								
	Acreage	Herbicide	Insecticide 1/	Fungicide	Other Chemical				
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs				
GA 2/:	4,400	76	7.0	30	3.2	73	17.8		
MI 2/:	16,600	78	16.0	99	75.9	91	108.9		
NJ 2/:	7,500	86	21.9	94	39.8	88	69.5		
NC 2/:	3,200	78	4.3	96	6.5	95	6.6		
OR 2/:	2,600	79	6.3	64	2.7	88	22.3		
Total:	34,300	80	55.5	86	128.1	88	225.1	6	0.8

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

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

Blueberries: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	33	1.0	0.86	0.89	9.9
Glufosinate-ammonium	2	1.4	0.02	0.03	**
Glyphosate	26	1.4	0.55	0.78	6.9
Hexazinone	8	1.1	0.91	1.02	2.7
Napropamide	2	1.0	2.41	2.41	1.9
Norflurazon	18	1.0	1.48	1.60	9.8
Oryzalin	8	1.1	2.32	2.69	7.8
Paraquat	8	1.4	0.31	0.44	1.2
Sethoxydim	*	1.0	0.25	0.25	**
Simazine	23	1.0	1.12	1.20	9.5
Terbacil	30	1.0	0.48	0.52	5.3
Insecticides:					
Azinphos-methyl	44	1.6	0.55	0.91	13.9
Bt (Bacillus thur.)2/	9	1.3			
Carbaryl	20	2.0	1.53	3.07	21.0
Diazinon	12	2.1	0.96	2.07	8.1
Endosulfan	*	1.0	0.67	0.67	0.2
Esfenvalerate	10	1.8	0.04	0.08	0.3
Imidacloprid	9	2.0	0.05	0.09	0.3
Malathion	43	2.4	1.18	2.83	41.7
Methomyl	32	1.5	0.65	1.01	11.1
Petroleum distillate	1	1.1	7.95	8.79	3.6
Phosmet	49	1.9	0.85	1.64	27.7
Fungicides:					
Benomyl	47	1.8	0.47	0.86	14.0
Calcium polysulfide	2	1.0	8.84	8.98	6.1
Captan	65	2.9	2.14	6.29	139.2
Chlorothalonil	11	1.1	2.42	2.71	10.5
Copper hydroxide	5	1.3	1.81	2.39	4.3
Copper sulfate	2	1.5	1.77	2.78	1.7
Fenbuconazole	15	1.6	0.09	0.16	0.8
Fosetyl-al	8	1.3	2.94	3.91	10.7
Iprodione	5	1.5	0.66	1.01	1.8
Mefenoxam	1	1.0	0.70	0.70	0.2
Propiconazole	3	1.0	0.17	0.19	0.2
Triforine	37	1.5	0.28	0.43	5.6
Ziram	21	1.7	2.32	4.09	29.3
Other Chemicals:					
Gibberellic acid	5	1.6	0.06	0.10	0.2

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

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

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

Blueberries: Agricultural Chemical Applications,
Georgia, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	8	1.0	0.95	0.95	0.3
Glufosinate-ammonium	13	1.4	0.02	0.03	**
Glyphosate	50	1.6	0.57	0.93	2.0
Oryzalin	14	1.7	1.91	3.28	2.0
Simazine	34	1.3	1.33	1.73	2.6
Insecticides:					
Malathion	21	1.8	1.19	2.16	2.0
Fungicides:					
Benomyl	65	2.3	0.49	1.15	3.3
Captan	53	2.5	2.24	5.76	13.5
Fenbuconazole	13	1.3	0.09	0.13	0.1
Triforine	39	2.0	0.25	0.51	0.9

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Georgia were 4,400 acres.

Blueberries: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	44	1.0	0.79	0.81	5.9
Glyphosate	30	1.2	0.36	0.44	2.2
Paraquat	4	1.3	0.12	0.16	0.1
Simazine	32	1.0	0.91	0.91	4.8
Terbacil	38	1.0	0.29	0.30	1.9
Insecticides:					
Azinphos-methyl	74	1.5	0.57	0.90	11.1
Bt (Bacillus thur.)2/	11	1.4			
Carbaryl	24	1.5	1.43	2.26	9.0
Malathion	58	2.1	1.53	3.32	32.1
Methomyl	43	1.3	0.51	0.67	4.7
Phosmet	67	1.9	0.88	1.67	18.6
Fungicides:					
Benomyl	52	1.3	0.47	0.65	5.6
Captan	67	2.3	2.14	5.10	56.7
Chlorothalonil	21	1.1	2.46	2.79	9.9
Fenbuconazole	14	1.3	0.10	0.13	0.3
Triforine	47	1.2	0.30	0.38	3.0
Ziram	32	1.9	2.31	4.51	23.6

1/ Bearing acres in 1999 for Michigan were 16,600 acres.

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

Blueberries: Agricultural Chemical Applications,
New Jersey, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	39	1.0	0.93	0.93	2.7
Glyphosate	8	1.2	1.70	2.03	1.2
Napropamide	6	1.0	3.26	3.26	1.5
Norflurazon	61	1.0	1.49	1.59	7.3
Oryzalin	25	1.0	2.56	2.56	4.7
Terbacil	51	1.1	0.72	0.85	3.2
Insecticides:					
Azinphos-methyl	32	2.0	0.50	1.04	2.5
Bt (Bacillus thur.)2/	8	1.3			
Carbaryl	34	2.7	1.66	4.56	11.5
Diazinon	37	2.6	0.99	2.62	7.2
Imidacloprid	42	2.0	0.05	0.09	0.3
Malathion	16	2.0	0.94	1.92	2.3
Phosmet	59	2.0	0.84	1.74	7.8
Fungicides:					
Benomyl	28	1.7	0.48	0.85	1.8
Calcium polysulfide	3	1.0	10.12	10.12	2.3
Captan	82	4.4	2.22	9.90	60.8
Triforine	14	1.6	0.27	0.45	0.5
Ziram	17	1.0	2.49	2.61	3.3

1/ Bearing acres in 1999 for New Jersey were 7,500 acres.

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

Blueberries: Agricultural Chemical Applications,
North Carolina, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	16	2.2	0.79	1.75	0.9
Paraquat	24	1.5	0.48	0.72	0.6
Insecticides:					
Azinphos-methyl	12	1.9	0.36	0.71	0.3
Esfenvalerate	57	2.2	0.04	0.10	0.2
Malathion	84	3.6	0.48	1.77	4.7
Fungicides:					
Benomyl	68	3.1	0.44	1.38	3.0
Captan	30	2.0	1.18	2.37	2.3
Fenbuconazole	45	2.3	0.09	0.21	0.3
Triforine	53	2.1	0.27	0.58	1.0

1/ Bearing acres in 1999 for North Carolina were 3,200 acres.

Blueberries: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	25	1.2	1.22	1.48	1.0
Glyphosate	23	1.7	0.58	1.01	0.6
Norflurazon	40	1.1	1.87	2.16	2.3
Oryzalin	7	1.1	2.64	2.89	0.5
Paraquat	34	1.4	0.25	0.36	0.3
Simazine	26	1.0	1.35	1.40	0.9
Insecticides:					
Bt (Bacillus thur.)2/	16	1.0			
Diazinon	28	1.0	0.80	0.80	0.6
Malathion	9	1.5	1.62	2.43	0.6
Fungicides:					
Benomyl	16	1.4	0.48	0.69	0.3
Calcium polysulfide	17	1.0	8.21	8.40	3.8
Captan	61	2.0	1.82	3.77	5.9
Copper sulfate	24	1.5	1.77	2.78	1.7
Fenbuconazole	32	1.7	0.09	0.15	0.1
Iprodione	68	1.5	0.66	1.01	1.8
Mefenoxam	17	1.0	0.70	0.70	0.3
Triforine	19	1.5	0.24	0.38	0.2
Ziram	26	1.6	2.23	3.56	2.4

1/ Bearing acres in 1999 for Oregon were 2,600 acres.

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

Cherries, Sweet: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acres	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	21,000	81	1,394	19	155	30	723
MI	8,100	90	517	34	84	68	458
OR	11,000	90	900	23	106	22	96
WA	18,000	82	1,099	34	202	28	141
Total	58,100	84	3,910	27	547	33	1,418

Cherries, Sweet: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acres	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 Lbs
California:	21,000					
Nitrogen		81	1.6	51	82	1,394
Phosphate		19	1.4	27	38	155
Potash		30	1.3	84	114	723
Michigan:	8,100					
Nitrogen		90	1.2	55	71	517
Phosphate		34	1.1	26	30	84
Potash		68	1.1	71	83	458
Oregon:	11,000					
Nitrogen		90	1.2	70	91	900
Phosphate		23	1.0	37	41	106
Potash		22	1.1	34	40	96
Washington:	18,000					
Nitrogen		82	1.8	41	75	1,099
Phosphate		34	1.7	19	33	202
Potash		28	1.5	18	28	141
Total:	58,100					
Nitrogen		84	1.5	51	80	3,910
Phosphate		27	1.4	24	35	547
Potash		33	1.3	55	74	1,418

Cherries, Sweet: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed				
	ALL	CA	MI	OR	WA
Herbicides:					
2,4-D	P	*	P	P	*
2,4-D, Dimethylamine	P			P	
Clethodim	*	*			
Dichlobenil	*			*	
Difenzoquat	*				*
Diuron	*		*	*	
Glufosinate-ammonium	*				*
Glyphosate	P	P	P	P	P
Glyphosate, isopropy	*				*
Napropamide	*	*			
Norflurazon	P	*	*	*	*
Oryzalin	P	P	P	P	P
Oxyfluorfen	P	P		*	*
Paraquat	P	P	P	P	P
Pendimethalin	*	*			
Pronamide	*			*	*
Simazine	P	*	P	P	*
Sulfosate	*	*			
Triclopyr	*			*	
Insecticides:					
Aldicarb	*				*
Azinphos-methyl	P		P	P	P
Bt (Bacillus thur.)	P	P	*	P	P
Carbaryl	P	P	P	P	P
Carbofuran	*			*	
Chlorpyrifos	P	*	*	P	P
Clofentezine	P	*			*
Diazinon	P	P	*	P	*
Dicofol	*	*			
Diiflubenzuron	*			*	
Dimethoate	P			P	P
Endosulfan	P	*	*	P	P
Esfenvalerate	P	*	P		*
Ethion	*				*
Fenamiphos	*	*			*
Fenbutatin-oxide	*	*			*
Lindane	*			*	
Malathion	P	*		P	*
Methidathion	P	P			*
Methoxychlor	*			*	*
Methyl parathion	P		*	*	*
Permethrin	P	*	P	*	
Petroleum distillate	P	P	P	P	P
Phosmet	P		P	P	
Piperonyl butoxide	*				*
Potassium salts	*				*
Propargite	P	P			*
Pyrethrins	*				*
Pyridaben	*				*
Rotenone	*				*
Soybean oil	*				*

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Cherries, Sweet: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	ALL	CA	MI	OR	WA
Fungicides:					
Ampelomyces quisquales:	*				*
Azoxystrobin	P			*	*
Basic Cupric Zinc Su.	*			*	
Basic copper sulfate	P	*	*	*	*
Benomyl	P		P	P	P
Calcium polysulfide	P	*	*	*	P
Captafol	*				*
Captan	P		P	*	*
Chlorothalonil	P		P	P	
Copper (metallic)	*				*
Copper ammonium carb.	*			*	*
Copper hydroxide	P	P	P	P	P
Copper oxychlo. sul.	P		*	P	*
Copper sulfate	P	*	*	P	P
Cresol	*	*			
Dimethylphenol	*	*			
Dodine	P		*	*	
Fenarimol	P	*	*	*	P
Fenbuconazole	P	*	P	P	*
Ferbam	P		P		
Fosetyl-al	P			*	*
Iprodione	P	P	P	P	P
Mancozeb	*		*		
Maneb	*				*
Mefenoxam	*	*			
Metiram	*		*		
Myclobutanil	P	P	P	P	P
Oxytetracycline	*				*
Propiconazole	P	*	*	P	P
Streptomycin	*		*		*
Sulfur	P	P	P	P	P
Tebuconazole	P	P	P	P	P
Thiophanate-methyl	*		*		
Triforine	*			*	
Vinclozolin	P	*	*	*	
Ziram	P		P	P	
Other Chemicals:					
Aluminum phosphide	*	*			
Butenoic Acid Hydro.	*				*
Chloropicrin	*	*			
Cyanamid	P	P			
Cytokinins	*	*			*
Diphacinone	*	*			*
Dodecanol	*			*	
E,E-8, 10-Dodecadien	*			*	
Ethephon	P		P	*	*
Garlic oil	*		*		
Gibberellic acid	P	*	*	P	P
Lactic Acid	*			*	*
Metaldehyde	*	*			
Metam-sodium	*				*
Methyl anthranilate	P		*	*	*
Methyl bromide	*	*			

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Cherries, Sweet: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	ALL	CA	MI	OR	WA
Other Chemicals:(cont.):					
NAD	*				*
Naphthaleneacetic ac.:	*			*	*
Strychnine	*	*			*
Tetradecanol	*			*	
Z-8-Dodecenyl 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, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State: Bearing	Area Receiving and Total Applied 1/							
	Acreage	Herbicide	Insecticide 2/:	Fungicide	Other Chemical			
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs			
CA	21,000	32 9.8	71 303.8	73 57.6	24 480.4			
MI	8,100	49 6.1	96 20.2	99 171.2	66 3.0			
OR	11,000	52 13.5	99 353.8	95 123.0	52 0.6			
WA	18,000	47 21.4	96 485.1	94 373.6	58 4.5			
Total:	58,100	43 50.8	87 1,162.9	87 725.4	46 488.5			

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

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

Cherries, Sweet: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	5	1.1	0.74	0.88	2.8
2,4-D, Dimethylamine	2	1.9	0.50	0.98	1.1
Glyphosate	32	1.5	0.88	1.35	24.9
Norflurazon	1	1.0	1.79	1.80	1.0
Oryzalin	9	1.3	1.39	1.83	9.4
Oxyfluorfen	8	1.2	0.49	0.60	3.0
Paraquat	12	1.3	0.49	0.66	4.4
Simazine	4	1.1	1.08	1.26	2.6
Insecticides:					
Azinphos-methyl	44	1.9	0.64	1.27	32.0
Bt (Bacillus thur.)2/	14	1.4			
Carbaryl	27	1.4	1.87	2.70	42.7
Chlorpyrifos	33	1.0	1.91	2.03	38.9
Clofentezine	3	1.0	0.14	0.15	0.3
Diazinon	9	1.1	1.40	1.64	8.9
Dimethoate	9	1.0	0.93	0.97	5.2
Endosulfan	5	1.1	1.53	1.72	4.7
Esfenvalerate	19	1.5	0.04	0.06	0.7
Malathion	24	3.1	1.20	3.76	51.6
Methidathion	1	1.0	1.36	1.42	1.1
Methyl parathion	*	1.3	0.56	0.76	0.4
Permethrin	6	1.4	0.11	0.17	0.6
Petroleum distillate	49	1.2	27.52	33.84	966.4
Phosmet	3	1.1	0.91	1.04	1.6
Propargite	5	1.2	1.50	1.84	5.2
Fungicides:					
Azoxystrobin	1	1.3	0.19	0.26	0.2
Basic copper sulfate	1	1.0	3.99	4.03	3.5
Benomyl	5	1.3	0.54	0.71	2.1
Calcium polysulfide	6	2.4	6.58	16.36	55.6
Captan	7	1.8	1.78	3.31	12.7
Chlorothalonil	8	1.5	2.08	3.25	14.7
Copper hydroxide	26	1.2	3.36	4.29	64.3
Copper oxychlo. sul.	4	1.3	4.21	5.57	14.1
Copper sulfate	3	1.3	4.11	5.36	9.3
Dodine	2	1.6	0.78	1.27	1.4
Fenarimol	11	1.3	0.07	0.10	0.6
Fenbuconazole	15	2.6	0.07	0.19	1.6
Ferbam	4	1.7	2.09	3.69	8.3
Fosetyl-al	2	1.7	2.47	4.34	5.2
Iprodione	15	1.5	0.73	1.10	9.6
Myclobutanil	35	1.8	0.12	0.21	4.3
Propiconazole	19	1.5	0.11	0.16	1.9
Sulfur	52	2.7	6.04	16.54	503.1
Tebuconazole	32	1.4	0.18	0.26	4.8
Vinclozolin	5	1.0	0.66	0.71	1.9
Ziram	2	1.7	2.75	4.82	5.9

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Cherries, Sweet: Agricultural Chemical Applications,
States Surveyed, 1999 1/ (continued)

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Cyanamid	*	1.0	15.16	15.63	8.8
Ethephon	11	1.0	0.39	0.42	2.5
Gibberellic acid	30	1.1	0.05	0.06	1.0
Methyl anthranilate	*	1.4	1.67	2.35	0.7
Zinc phosphide	1	2.6	0.07	0.19	0.1

* Area applied is less than one percent.

1/ Bearing acres in 1999 for the 4 States surveyed were 58,100 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. Acreage in California includes non-bearing acres.

Cherries, Sweet: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	19	1.2	0.67	0.81	3.3
Oryzalin	8	1.1	1.13	1.33	2.1
Oxyfluorfen	18	1.2	0.37	0.45	1.7
Paraquat	11	1.2	0.37	0.47	1.1
Insecticides:					
Bt (Bacillus thur.)2/	9	1.5			
Carbaryl	6	1.1	3.07	3.54	4.1
Diazinon	16	1.2	1.41	1.75	6.0
Methidathion	3	1.0	1.39	1.46	0.9
Petroleum distillate	42	1.3	24.39	32.17	283.5
Propargite	12	1.2	1.48	1.85	4.7
Fungicides:					
Copper hydroxide	22	1.2	3.63	4.39	20.7
Iprodione	31	1.5	0.72	1.11	7.2
Myclobutanil	17	1.2	0.10	0.13	0.5
Sulfur	9	1.2	4.59	5.63	11.2
Tebuconazole	32	1.1	0.18	0.22	1.4
Other Chemicals:					
Cyanamid	3	1.0	15.16	15.63	8.8

1/ Total acres in 1999 for California were 21,000 acres. Acreage includes both bearing and non-bearing 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, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	19	1.0	0.80	0.81	1.3
Glyphosate	34	1.1	0.74	0.81	2.2
Oryzalin	2	1.0	1.69	1.69	0.3
Paraquat	19	1.0	0.33	0.34	0.5
Simazine	15	1.0	1.47	1.48	1.8
Insecticides:					
Azinphos-methyl	86	3.1	0.52	1.67	11.6
Carbaryl	22	1.1	2.23	2.59	4.5
Esfenvalerate	32	1.6	0.04	0.06	0.2
Permethrin	35	1.5	0.12	0.18	0.5
Petroleum distillate	5	1.7	2.45	4.19	1.6
Phosmet	6	1.4	1.07	1.53	0.7
Fungicides:					
Benomyl	15	1.5	0.42	0.63	0.8
Captan	23	2.2	1.71	3.86	7.1
Chlorothalonil	48	1.6	2.07	3.43	13.3
Copper hydroxide	3	1.0	1.68	1.84	0.4
Fenbuconazole	72	3.1	0.07	0.23	1.3
Ferbam	28	1.7	2.09	3.69	8.3
Iprodione	8	1.4	0.91	1.34	0.9
Myclobutanil	20	1.6	0.11	0.19	0.3
Sulfur	80	4.5	4.40	20.12	129.7
Tebuconazole	51	2.7	0.16	0.42	1.7
Ziram	9	2.2	2.42	5.34	4.1
Other Chemicals:					
Ethephon	65	1.0	0.40	0.43	2.3

1/ Bearing acres in 1999 for Michigan were 8,100 acres.

Cherries, Sweet: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	11	1.4	0.63	0.93	1.1
2,4-D, Dimethylamine	10	1.9	0.50	0.98	1.1
Glyphosate	49	1.6	0.80	1.30	6.9
Oryzalin	13	1.2	1.76	2.11	3.0
Paraquat	3	1.0	0.42	0.43	0.1
Simazine	6	1.2	0.53	0.68	0.4
Insecticides:					
Azinphos-methyl	25	1.2	0.87	1.05	2.9
Bt (Bacillus thur.)2/	40	1.3			
Carbaryl	15	1.1	1.49	1.65	2.7
Chlorpyrifos	65	1.0	2.20	2.24	15.9
Diazinon	10	1.0	0.97	1.01	1.1
Dimethoate	24	1.0	0.81	0.81	2.1
Endosulfan	6	1.0	0.87	0.87	0.6
Malathion	66	4.1	1.16	4.79	35.1
Petroleum distillate	72	1.1	33.43	36.69	292.2
Phosmet	10	1.0	0.81	0.81	0.9
Fungicides:					
Benomyl	10	1.2	0.59	0.75	0.8
Chlorothalonil	6	1.0	2.17	2.17	1.4
Copper hydroxide	20	1.6	3.02	4.86	10.9
Copper oxychlo. sul.	19	1.0	4.79	4.81	10.0
Copper sulfate	3	1.2	4.08	5.16	1.7
Fenbuconazole	22	1.5	0.08	0.12	0.3
Iprodione	11	1.2	0.63	0.77	1.0
Myclobutanil	28	1.0	0.10	0.10	0.3
Propiconazole	29	1.3	0.11	0.15	0.5
Sulfur	62	1.4	9.03	12.63	86.2
Tebuconazole	34	1.0	0.20	0.21	0.8
Ziram	4	1.0	3.95	3.95	1.8
Other Chemicals:					
Gibberellic acid	47	1.0	0.04	0.04	0.2

1/ Bearing acres in 1999 for Oregon were 11,000 acres.

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

Cherries, Sweet: Agricultural Chemical Applications,
Washington, 1999 1/

Agricultural Chemical	Area Applied	Applcations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	35	1.9	1.05	1.99	12.5
Oryzalin	11	1.5	1.34	2.05	4.0
Paraquat	14	1.6	0.65	1.08	2.6
Insecticides:					
Azinphos-methyl	86	1.5	0.72	1.13	17.5
Bt (Bacillus thur.)2/	9	1.6			
Carbaryl	63	1.5	1.78	2.78	31.4
Chlorpyrifos	59	1.1	1.78	1.96	20.6
Dimethoate	15	1.0	1.04	1.12	3.1
Endosulfan	10	1.1	1.74	2.04	3.8
Petroleum distillate	63	1.2	27.61	34.16	389.1
Fungicides:					
Benomyl	3	1.0	0.81	0.81	0.4
Calcium polysulfide	13	1.2	15.00	18.15	43.0
Copper hydroxide	43	1.2	3.37	4.14	32.2
Copper sulfate	5	1.4	3.50	5.00	4.1
Fenarimol	27	1.2	0.08	0.10	0.5
Iprodione	2	1.5	1.00	1.57	0.6
Myclobutanil	69	2.1	0.12	0.27	3.3
Propiconazole	34	1.6	0.11	0.18	1.1
Sulfur	84	2.7	6.59	18.20	276.0
Tebuconazole	21	1.1	0.21	0.23	0.9
Other Chemicals:					
Gibberellic acid	54	1.2	0.05	0.06	0.6

1/ Bearing acres in 1999 for Washington were 18,000 acres.

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

Cherries, Tart: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acres	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
MI	28,100	91	1,813	29	333	67	1,467
NY 1/	2,600	91	106			77	173
OR 1/	1,300	72	41				
PA	1,200	58	13	29	5	30	5
Total	33,200	89	1,973	27	356	66	1,660

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

Cherries, Tart: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acres	Area Percent Applied	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 Lbs
Michigan:	28,100					
Nitrogen		91	1.4	48	71	1,813
Phosphate		29	1.5	27	41	333
Potash		67	1.2	61	78	1,467
New York:	2,600					
Nitrogen		91	1.0	43	45	106
Phosphate 1/						
Potash		77	1.0	86	86	173
Oregon:	1,300					
Nitrogen		72	1.0	44	44	41
Phosphate 1/						
Potash 1/						
Pennsylvania:	1,200					
Nitrogen		58	1.0	19	19	13
Phosphate		29	1.0	14	14	5
Potash		30	1.0	13	13	5
Total:	33,200					
Nitrogen		89	1.4	47	67	1,973
Phosphate		27	1.4	26	39	356
Potash		66	1.2	61	76	1,660

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

Cherries, Tart: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed				
	ALL	MI	NY	OR	PA
Herbicides:					
2,4-D	P	P	P	*	*
Dichlobenil	*			*	
Diuron	P	*		*	*
Fluazifop-P-butyl	*			*	
Glyphosate	P	P	*	P	*
Imazaquin	*				*
Norflurazon	P	*			*
Oryzalin	*	*		*	*
Paraquat	P	P	*	*	P
Pendimethalin	*				*
Simazine	P	P	*	*	P
Triclopyr	*			*	
Insecticides:					
Azinphos-methyl	P	P	*	*	P
Bt (Bacillus thur.)	*		*		
Carbaryl	P	P	P	P	P
Carbofuran	*		*		
Chlorpyrifos	P	P		*	*
Diazinon	P			*	*
Dimethoate	P			P	
Endosulfan	P	*	*		*
Esfenvalerate	P	P	P	*	*
Ethion	*	*			
Ethyl parathion	*				*
Malathion	*		*	*	*
Methomyl	*				*
Methyl parathion	P	P	P		P
Permethrin	P	P	*		*
Petroleum distillate	P	*	*	*	*
Phosmet	P	P	P	*	*
Fungicides:					
Basic copper sulfate	*	*		*	
Benomyl	P	P	*	*	P
Calcium polysulfide	*	*		*	
Captan	P	P	P	P	P
Carboxin	*				*
Chlorothalonil	P	P	P	P	P
Copper hydroxide	P	P		P	
Copper oxychlo. sul.	P	*	*		*
Copper sulfate	P	*	*		
Cyprodinil	*				*
Dodine	P	P	*	*	*
Fenarimol	P	P	*		*
Fenbuconazole	P	P	P	*	*
Ferbam	P	*	*	*	P
Glyodin	*			*	
Iprodione	P	*	P	*	P

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Cherries, Tart: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	ALL	MI	NY	OR	PA
Fungicides: (cont.)					
Mancozeb	*		*		
Metiram	*	*			
Myclobutanil	P	P	*	*	P
Propiconazole	P	P	*	*	P
Sulfur	P	P	P	P	P
Tebuconazole	P	P		*	*
Thiophanate-methyl	*		*		*
Triforine	*	*		*	*
Vinclozolin	*			*	
Ziram	*	*			*
Other Chemicals:					
Ammonium soap	*	*			
Chlorophacinone	*				*
Cytokinins	*	*			
Ethephon	P	P	P		P
Gibberellic acid	P	P	*		*
Zinc phosphide	*	*			

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

Cherries, Tart: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State: Bearing	Area Receiving and Total Applied								
	Acres	Percent	Herbicide	Insecticide 1/	Fungicide	Other Chemical	Acres	Percent	
			1,000	1,000	1,000	1,000			
			Lbs	Lbs	Lbs	Lbs			
MI	28,100	62	20.2	99	75.8	99	509.5	75	4.4
NY	2,600	59	1.5	92	11.3	91	34.9	41	0.3
OR	1,300	62	0.9	98	2.3	99	19.8		
PA	1,200	75	1.0	91	2.4	91	10.8	83	0.3
Total:	33,200	62	23.6	98	91.8	98	575.0	70	5.0

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

Cherries, Tart: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	13	1.0	0.66	0.66	2.7
Diuron	*	1.0	0.69	0.69	0.2
Glyphosate	37	1.1	0.67	0.75	9.1
Norflurazon	1	1.0	1.16	1.16	0.4
Paraquat	27	1.1	0.31	0.35	3.1
Simazine	22	1.1	0.92	1.05	7.7
Insecticides:					
Azinphos-methyl	79	2.6	0.46	1.22	32.1
Carbaryl	12	1.2	1.69	2.10	8.4
Chlorpyrifos	20	1.2	0.66	0.84	5.7
Diazinon	*	1.0	0.95	0.96	0.2
Dimethoate	3	1.0	0.91	0.91	0.9
Endosulfan	*	1.0	1.16	1.22	0.2
Esfenvalerate	21	1.5	0.03	0.05	0.3
Methyl parathion	6	2.4	0.48	1.19	2.5
Permethrin	8	1.6	0.12	0.20	0.6
Petroleum distillate	1	1.3	21.50	28.94	9.9
Phosmet	67	1.4	0.92	1.37	30.6
Fungicides:					
Benomyl	5	2.0	0.37	0.75	1.1
Captan	29	2.9	1.37	4.04	38.7
Chlorothalonil	78	2.1	1.57	3.36	87.6
Copper hydroxide	4	1.6	1.33	2.18	2.7
Copper oxychlo. sul.	1	1.5	0.60	0.94	0.3
Copper sulfate	1	1.3	1.07	1.48	0.5
Dodine	17	2.1	0.54	1.16	6.7
Fenarimol	3	1.7	0.04	0.08	0.1
Fenbuconazole	55	2.4	0.08	0.19	3.4
Ferbam	2	1.1	2.19	2.49	1.4
Iprodione	2	1.0	0.62	0.65	0.4
Myclobutanil	46	1.9	0.08	0.15	2.3
Propiconazole	5	1.2	0.10	0.13	0.2
Sulfur	76	4.8	3.40	16.45	413.8
Tebuconazole	69	3.1	0.11	0.34	7.9
Other Chemicals:					
Ethephon	67	1.1	0.18	0.21	4.6
Gibberellic acid	29	1.3	0.010	0.02	0.2

* Area applied is less than one percent.

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

Cherries, Tart: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	13	1.0	0.65	0.65	2.3
Glyphosate	37	1.1	0.67	0.75	7.8
Paraquat	28	1.1	0.30	0.35	2.7
Simazine	23	1.1	0.93	1.05	6.8
Insecticides:					
Azinphos-methyl	84	2.5	0.48	1.21	28.6
Carbaryl	9	1.1	1.88	2.24	5.9
Chlorpyrifos	24	1.2	0.66	0.84	5.7
Esfenvalerate	23	1.5	0.03	0.05	0.3
Methyl parathion	4	2.7	0.57	1.56	1.6
Permethrin	8	1.7	0.12	0.21	0.5
Phosmet	69	1.4	0.89	1.29	24.8
Fungicides:					
Benomyl	5	2.1	0.36	0.75	1.1
Captan	22	2.2	1.39	3.08	19.4
Chlorothalonil	89	2.1	1.56	3.40	84.7
Copper hydroxide	3	1.6	1.28	2.13	1.7
Dodine	19	2.1	0.53	1.15	6.0
Fenarimol	4	1.7	0.04	0.08	0.1
Fenbuconazole	57	2.4	0.08	0.19	3.0
Myclobutanil	46	1.9	0.08	0.16	2.0
Propiconazole	5	1.2	0.10	0.12	0.2
Sulfur	81	5.0	3.27	16.50	376.4
Tebuconazole	80	3.1	0.11	0.35	7.8
Other Chemicals:					
Ethephon	72	1.1	0.17	0.20	4.0
Gibberellic acid	33	1.3	0.010	0.02	0.2

1/ Bearing acres in 1999 for Michigan were 28,100 acres.

Cherries, Tart: Agricultural Chemical Applications,
New York, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	8	1.0	1.20	1.20	0.2
Insecticides:					
Carbaryl	20	1.5	2.08	3.27	1.7
Esfenvalerate	12	1.9	0.05	0.10	**
Methyl parathion	22	1.1	0.89	1.03	0.6
Phosmet	60	1.9	1.47	2.82	4.4
Fungicides:					
Captan	84	4.3	1.54	6.78	14.9
Chlorothalonil	24	1.3	2.00	2.61	1.6
Fenbuconazole	37	2.8	0.09	0.25	0.2
Iprodione	22	1.0	0.60	0.64	0.4
Sulfur	43	2.6	4.93	13.16	14.9
Other Chemicals:					
Ethephon	39	1.1	0.24	0.27	0.3

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for New York were 2,600 acres.

Cherries, Tart: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	54	1.3	0.57	0.75	0.5
Insecticides:					
Carbaryl	21	1.1	1.22	1.40	0.4
Dimethoate	79	1.0	0.91	0.91	0.9
Fungicides:					
Captan	31	1.6	1.42	2.35	0.9
Chlorothalonil	34	1.0	2.48	2.48	1.1
Copper hydroxide	32	1.5	1.44	2.29	1.0
Sulfur	47	1.5	17.12	26.16	15.9

1/ Bearing acres in 1999 for Oregon were 1,300 acres.

Cherries, Tart: Agricultural Chemical Applications,
Pennsylvania, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Paraquat	71	1.0	0.36	0.37	0.3
Simazine	45	1.0	0.87	0.88	0.5
Insecticides:					
Azinphos-methyl	89	3.9	0.16	0.64	0.7
Carbaryl	46	1.2	0.56	0.70	0.4
Methyl parathion	39	3.4	0.16	0.58	0.3
Fungicides:					
Benomyl	2	1.4	0.45	0.64	**
Captan	57	5.9	0.85	5.06	3.5
Chlorothalonil	4	2.1	1.77	3.85	0.2
Ferbam	2	2.6	2.30	6.02	0.1
Iprodione	1	1.3	0.56	0.76	**
Myclobutanil	77	2.8	0.04	0.10	0.1
Propiconazole	3	1.8	0.09	0.17	**
Sulfur	50	4.7	2.30	10.95	6.6
Other Chemicals:					
Ethephon	83	1.0	0.29	0.29	0.3

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Pennsylvania were 1,200 acres.

Dates: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing	Percent of Acres Treated and Total Applied					
	Acreage	Nitrogen	Phosphate	Potash	-----		
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA 1/	5,300	65	136	57	281		

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

Dates: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing	Area	Appli-	Rate per	Rate per	Total	
	Acreage	Applied	cations	Application	Crop Year	Applied	
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs	
California:	5,300						
Nitrogen		65	3.5	11	39	136	
Phosphate		57	2.8	32	93	281	
Potash 1/							

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

Dates: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient		CA
Herbicides:		
Glyphosate		*
Insecticides:		
Hexythiazox		*
Malathion		*
Fungicides:		
Sulfur		*
Other Chemicals:		
Methyl bromide		*

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

Dates: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied 1/			
State:	Bearing	Herbicide	Insecticide	Fungicide	Other Chemical
	Acreage	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs
CA	2/ 5,300				

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

Figs: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen	Phosphate	Potash			
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	15,700	57	690	17	281	34	795

Figs: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied	
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs	
California:	15,700						
Nitrogen		57	2.7	27	77	690	
Phosphate		17	3.1	34	104	281	
Potash		34	2.0	72	148	795	

Figs: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	CA
Herbicides:	
Glyphosate	P
Oryzalin	P
Oxyfluorfen	P
Paraquat	P
Insecticides:	
Chlorpyrifos	*
Fungicides:	
Sulfur	*
Other Chemicals:	
Diphacinone	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Figs: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

State: Bearing	Area Receiving and Total Applied 1/				
	Acreage	Herbicide	Insecticide	Fungicide	Other Chemical
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs
CA 2/:	15,700	55	10.3		

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

Figs: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	36	1.5	0.53	0.80	4.5
Oryzalin	12	1.0	1.20	1.20	2.3
Oxyfluorfen	38	1.1	0.46	0.53	3.2
Paraquat	9	1.0	0.25	0.25	0.4

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

Grapefruit: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acres	Percent of Acres Treated and Total Applied					
		Nitrogen	Phosphate	Potash	Nitrogen	Phosphate	Potash
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
AZ 1/	4,700	30	196	12	30		
CA	17,600	63	1,264	33	162	14	140
FL	116,600	96	17,804	54	4,214	91	17,989
TX	20,000	99	2,325	26	164	22	139
Total	158,900	91	21,589	47	4,570	71	18,289

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

Grapefruit: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acres	Area Percent Applied	Appli- cations Number	Rate per Application	Rate per Crop Year	Total Applied 1,000 Lbs
Arizona:	4,700					
Nitrogen		30	3.3	42	140	196
Phosphate		12	1.2	43	53	30
Potash 1/						
California:	17,600					
Nitrogen		63	5.4	21	114	1,264
Phosphate		33	1.4	19	28	162
Potash		14	2.3	24	57	140
Florida:	116,600					
Nitrogen		96	2.8	56	160	17,804
Phosphate		54	2.3	29	68	4,214
Potash		91	2.6	65	170	17,989
Texas:	20,000					
Nitrogen		99	1.1	98	117	2,325
Phosphate		26	1.2	25	32	164
Potash		22	1.3	23	31	139
Total:	158,900					
Nitrogen		91	2.8	53	150	21,589
Phosphate		47	2.1	28	62	4,570
Potash		71	2.5	63	162	18,289

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

Grapefruit: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed				
	ALL	AZ	CA	FL	TX
Herbicides:					
2,4-D	P		*		*
Bromacil	P	P	*	*	P
Diuron	P	P	P	P	P
Glyphosate	P	P	P	P	P
MSMA	*				*
Norflurazon	P		*	P	*
Oryzalin	*	*		*	
Oxyfluorfen	*			*	
Paraquat	P			*	*
Pendimethalin	*				*
Sethoxydim	*			*	
Simazine	P	*	*	P	P
Sulfosate	P			*	*
Trifluralin	*				*
Insecticides:					
Abamectin	P		*	P	*
Aldicarb	P			P	P
Azinphos-methyl	*				*
Bt (Bacillus thur.)	*		*	*	*
Carbaryl	*			*	*
Chlorpyrifos	P	*	P	*	P
Cyfluthrin	*		*	*	
Dicofol	P		*	*	P
Diflubenzuron	P			P	
Dimethoate	P	*	*		
Ethion	P			*	*
Fenbutatin-oxide	P			P	P
Formetanate hydro.	P	P			
Malathion	*		*	*	*
Methidathion	*		*		*
Methomyl	*		*		
Neem Oil, Hydrophobi.	*			*	
Oxamyl	P				P
Oxydemeton-methyl	*			*	
Petroleum distillate	P		*	P	*
Pyridaben	P			P	P
Sabadilla	*		*		
Spinosad	*	*	*		
Sulfur	P	*	*	P	*
Fungicides:					
Basic Cupric Zinc Su.	*				*
Basic copper sulfate	P		*	P	*
Benomyl	P			P	P
Copper ammonium carb.	*			*	*
Copper hydroxide	P	*	*	P	P
Copper oxide	*				*
Copper oxychlo. sul.	*			*	
Copper sulfate	P			*	*
Fenbuconazole	P			*	*
Ferbam	P			P	
Fosetyl-al	P		*	P	*
Mancozeb	*				*
Mefenoxam	*	*			
Metalaxyl	*			*	*

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Grapefruit: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	ALL	AZ	CA	FL	TX
Other Chemicals:					
Cytokinins	*			*	*
Diphacinone	*		*		
Gibberellic acid	*			*	*
Metaldehyde	*		*		
Strychnine	*		*		
Zinc phosphide	*		*		

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

Grapefruit: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State: Bearing	Area Receiving and Total Applied 1/							
	Acreage	Herbicide	Insecticide 2/	Fungicide	Other Chemical			
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs			
AZ	4,700	40	2.5	27	2.5	10	0.8	
CA 3/	17,600	69	44.0	58	138.7	23	8.2	
FL 3/	116,600	97	660.8	89	6,806.7	96	716.3	
TX 3/	20,000	90	150.0	97	541.7	89	52.4	
Total:	158,900	91	857.3	85	7,489.6	85	777.7	3 2.1

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

Grapefruit: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	2	1.4	0.05	0.08	0.3
Bromacil	17	2.0	0.78	1.56	41.5
Diuron	36	1.7	1.50	2.68	153.7
Glyphosate	84	2.3	0.87	2.02	270.1
Norflurazon	17	1.9	1.40	2.73	71.7
Paraquat	2	1.6	0.33	0.54	1.3
Simazine	47	2.4	1.69	4.06	300.5
Sulfosate	5	2.8	0.78	2.25	17.2
Insecticides:					
Abamectin	60	1.0	0.01	0.01	1.1
Aldicarb	14	1.0	4.36	4.51	99.0
Chlorpyrifos	15	4.5	0.63	2.87	66.6
Dicofol	13	1.1	2.20	2.57	52.8
Diflubenzuron	8	1.0	0.30	0.31	3.8
Dimethoate	1	1.0	1.33	1.33	2.8
Ethion	41	1.0	5.37	5.57	362.5
Fenbutatin-oxide	31	1.0	1.02	1.02	49.5
Formetanate hydro.	*	1.0	1.12	1.12	0.5
Oxamyl	*	1.0	1.02	1.06	0.7
Petroleum distillate	74	1.4	34.55	50.05	5,900.2
Pyridaben	6	1.0	0.27	0.27	2.5
Sulfur	44	1.0	12.72	13.61	944.1
Fungicides:					
Basic copper sulfate	7	1.2	1.54	1.95	22.5
Benomyl	7	1.0	1.15	1.20	14.3
Copper hydroxide	37	2.1	2.24	4.83	284.1
Copper sulfate	4	1.0	1.25	1.32	9.0
Fenbuconazole	11	1.1	0.12	0.14	2.5
Ferbam	5	2.6	7.70	20.40	173.7
Fosetyl-al	3	1.1	1.59	1.89	8.0

* Area applied is less than one percent.

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

Grapefruit: Agricultural Chemical Applications,
Arizona, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	2	3.7	0.40	1.51	0.1
Diuron	3	3.3	0.58	1.96	0.3
Glyphosate	39	2.0	0.50	1.04	1.9
Insecticides:					
Formetanate hydro.	10	1.0	1.12	1.12	0.5

1/ Total acres in 1999 for Arizona were 4,700 acres. Acreage includes both bearing and non-bearing acres.

Grapefruit: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	20	2.1	1.71	3.74	13.4
Glyphosate	59	2.8	0.54	1.53	15.7
Insecticides:					
Chlorpyrifos	25	1.1	3.14	3.70	16.2

1/ Total acres in 1999 for California were 17,600 acres. Acreage includes both bearing and non-bearing acres.

Grapefruit: Agricultural Chemical Applications,
Florida, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	34	1.7	1.35	2.29	91.4
Glyphosate	90	2.2	0.99	2.26	236.6
Norflurazon	22	1.9	1.39	2.76	69.3
Simazine	48	2.5	1.56	4.02	225.2
Insecticides:					
Abamectin	78	1.0	0.01	0.01	1.0
Aldicarb	7	1.0	4.18	4.19	32.5
Diflubenzuron	10	1.0	0.30	0.31	3.8
Fenbutatin-oxide	38	1.0	0.99	0.99	44.4
Petroleum distillate	89	1.5	35.61	53.36	5,512.5
Pyridaben	8	1.0	0.26	0.26	2.3
Sulfur	58	1.0	11.70	12.49	842.3
Fungicides:					
Basic copper sulfate	7	1.2	1.65	2.09	16.4
Benomyl	9	1.0	1.23	1.26	13.2
Copper hydroxide	38	2.2	2.38	5.28	234.0
Ferbam	7	2.6	7.70	20.40	173.7
Fosetyl-al	2	1.3	2.39	3.21	6.3

1/ Bearing acres in 1999 for Florida were 116,600 acres.

Grapefruit: Agricultural Chemical Applications,
Texas, 1999 1/

Agricultural Chemical	:	Area Applied	:	Appli- cations	:	Rate per Application	:	Rate per Crop Year	:	Total Applied
	:	Percent	:	Number	:	Pounds per Acre	:	1,000 lbs	:	
Herbicides:	:		:		:		:		:	
Bromacil	:	63	:	1.9	:	0.85	:	1.67	:	21.2
Diuron	:	68	:	1.9	:	1.87	:	3.55	:	48.6
Glyphosate	:	84	:	2.3	:	0.41	:	0.95	:	15.9
Simazine	:	73	:	1.8	:	2.28	:	4.25	:	62.1
Insecticides:	:		:		:		:		:	
Aldicarb	:	71	:	1.0	:	4.46	:	4.69	:	66.5
Chlorpyrifos	:	85	:	5.7	:	0.48	:	2.77	:	47.0
Dicofol	:	86	:	1.1	:	2.30	:	2.73	:	47.1
Fenbutatin-oxide	:	19	:	1.0	:	1.25	:	1.33	:	5.1
Oxamyl	:	3	:	1.0	:	1.02	:	1.06	:	0.6
Pyridaben	:	3	:	1.0	:	0.40	:	0.40	:	0.2
Fungicides:	:		:		:		:		:	
Benomyl	:	7	:	1.1	:	0.65	:	0.75	:	1.1
Copper hydroxide	:	70	:	1.9	:	1.77	:	3.46	:	48.2

1/ Bearing acres in 1999 for Texas were 20,000 acres.

Grapes, All: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied										
State	Bearing Acreage	Nitrogen			Phosphate			Potash		
		Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs		
CA	910,000	90	179,702	71	162,990	74	148,518			
IN	450	33	7	25	5	33	12			
MI	11,700	84	1,068	21	160	77	1,175			
NY 1/	31,500	96	2,269			45	1,654			
OR	7,400	36	51	20	23	19	30			
PA	12,800	95	1,232	4	29	66	1,186			
WA	41,000	73	1,447	22	333	43	792			
Total	1,014,850	89	185,776	65	163,563	71	153,367			

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

Grapes, All: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	: Bearing : : Acreage :	Area : : Applied :	: Appli- : : cations :	: Rate per : : Application :	: Rate per : : Crop Year :	: Total : : Applied :
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	910,000					
Nitrogen		90	3.8	57	219	179,702
Phosphate		71	4.3	58	251	162,990
Potash		74	2.6	84	221	148,518
Indiana:	450					
Nitrogen		33	1.0	50	51	7
Phosphate		25	1.0	48	49	5
Potash		33	1.0	81	82	12
Michigan:	11,700					
Nitrogen		84	1.3	83	109	1,068
Phosphate		21	1.1	58	66	160
Potash		77	1.1	113	130	1,175
New York:	31,500					
Nitrogen		96	1.1	68	75	2,269
Phosphate 1/						
Potash		45	1.0	112	116	1,654
Oregon:	7,400					
Nitrogen		36	2.1	9	19	51
Phosphate		20	2.3	6	15	23
Potash		19	2.6	8	21	30
Pennsylvania:	12,800					
Nitrogen		95	1.4	69	102	1,232
Phosphate		4	1.1	50	56	29
Potash		66	1.0	133	140	1,186
Washington:	41,000					
Nitrogen		73	1.8	26	48	1,447
Phosphate		22	1.1	33	36	333
Potash		43	1.0	42	45	792
Total:	1,014,850					
Nitrogen		89	3.6	57	206	185,776
Phosphate		65	4.2	58	246	163,563
Potash		71	2.5	84	212	153,367

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

Grapes, All: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed							
	ALL	CA	IN	MI	NY	OR	PA	WA
Herbicides:								
2,4-D	P	P				*		*
Chloroxuron	*		*					
Clethodim	*	*						
Clopyralid	*							*
Dichlobenil	*						*	
Diuron	P	P		P	P	*	P	*
EPTC	*						*	
Fluazifop-P-butyl	*	*						
Glufosinate-ammonium	*				*	*		*
Glyphosate	P	P	P	P	P	P	P	P
Isoxaben	*	*						
Napropamide	P	*	*			*		*
Norflurazon	P	P	*		*		P	P
Oryzalin	P	P	*	P	P	P	*	P
Oxyfluorfen	P	P				*		*
Paraquat	P	P	P	P	P	P	P	P
Pendimethalin	P	P	*					*
Prodiamine	*	*						
Prosulfuron	*					*		
Sethoxydim	P	*			*			
Simazine	P	P	*	P	P	P	P	*
Sulfosate	P	*			P	*	*	*
Trifluralin	P	P						
Insecticides:								
Abamectin	*	*						
Azinphos-methyl	P		*	P	*		P	*
Bt (Bacillus thur.)	P	P						
Carbaryl	P	P	P	P	P	*	P	*
Carbofuran	*	*						
Chlorpyrifos	P	*		P	*			P
Cryolite	P	*					*	
Cyfluthrin	*	*						
Diazinon	P	P	*				*	
Dicofol	P	P			*	*	*	*
Dimethoate	P	P				*		*
Endosulfan	P		*	*			*	*
Ethyl parathion	*		*					
Fenamiphos	P	P						
Fenbutatin-oxide	P	P			*	*		*
Imidacloprid	P	P		P	*	*		P
Lindane	*						*	
Malathion	P	*						*
Methomyl	P	P		P	*		*	*
Methoxychlor	P							P
Methyl parathion	P			P	P		P	
Myrothecium verruca.	*	*						
Naled	*	*						
Neem Oil, Hydrophobi.	*	*						*

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Grapes, All: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed							
	ALL	CA	IN	MI	NY	OR	PA	WA
Insecticides: (cont.)								
Petroleum distillate	P	P	*		*	*	*	*
Phosmet	P	*	P	P	*		P	
Piperonyl butoxide	*	*					*	*
Potassium salts	P	*				*	*	*
Propargite	P	*						*
Pyrethrins	*	*					*	
Pyridaben	*	*			*			
Fungicides:								
Ampelomyces quisquales	*	*			*	*		
Azoxystrobin	P	P	P	P	P	P	*	*
Basic copper sulfate	*	*						
Benomyl	P	P	*	P	*	*	P	
Calcium polysulfide	P	P	*		*	P		*
Captan	P	*	P	P	P	*	P	
Copper ammonium carb.	*			*				
Copper hydroxide	P	P		*	P	P	*	
Copper oxide	*	*				*		
Copper oxychlo. sul.	P	P		*	*		P	
Copper resinate	*	*						
Copper sulfate	P	*			*	*		
Cyprodinil	P	P	*	*	*	P	P	*
Dicloran	P	P						
Dinocap	*						*	
Fenarimol	P	P	*	*	P	P	P	P
Fenhexamid	P	*				*		
Ferbam	P		*	P	*		*	
Iprodione	P	P	P	P	*	P	P	*
Kresoxim-methyl	P			*		*	P	*
Mancozeb	P	*	P	P	P	*	P	
Maneb	P	*	*	*	P		P	
Mefenoxam	*	*						
Metalaxyl	P		*	P	*		*	
Myclobutanil	P	P	P	P	P	P	P	P
Potassium bicarbonate	P	*				*		
Streptomycin	*						*	
Sulfur	P	P		P	P	P	P	P
Tebuconazole	P	P		P	*	P	P	*
Triadimefon	P		P	P	*	*	*	
Triflumizole	P	P				P		P
Ziram	P	*	*	P	P		P	

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Grapes, All: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed							
	ALL	CA	IN	MI	NY	OR	PA	WA
Other Chemicals:								
Ammonium soap	*	*						
Chloropicrin	*	*						
Cyanamid	*	*						
Dichloropropene	*	*						
Ethephon	P	P						
Gamma aminobutric ac.	*							*
Garlic oil	*	*						
Gibberellic acid	P	*		*				
Hydrogen peroxide	*					*		
L-Glutamic acid	*							*
Methyl bromide	*	*						
Paclobutrazol	*				*			
Sodium chlorate	*						*	
Sodium tetrathiocarb.	*	*						
Strychnine	*	*						
Tetradecen-1-OL (Z)	P	P						
Tetradecen-1-yl (E)	P	P						
Zinc phosphide	*	*						

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

Grapes, All: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State: Bearing	Area Receiving and Total Applied 1/							
	Acreage	Herbicide	Insecticide 2/:	Fungicide	Other Chemical			
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs			
CA	910,000	74 1,949.0	78 2,542.2	82 59,414.7	56 6,218.4			
IN	450	92 2.2	96 4.0	95 5.1				
MI 3/:	11,700	92 24.6	98 44.2	99 124.8				
NY 3/:	31,500	93 103.8	80 81.9	100 301.2				
OR 3/:	7,400	80 11.1	6 4.4	96 147.2				
PA 3/:	12,800	97 56.0	92 39.3	100 58.7				
WA 3/:	41,000	80 69.3	40 47.1	47 268.9				
Total:	1,014,850	75 2,216.0	76 2,763.1	81 60,320.6	56 6,218.6			

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

Grapes, All: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	1	1.1	0.41	0.49	4.4
Diuron	4	1.0	1.35	1.40	62.8
Glyphosate	45	1.1	0.82	0.94	429.3
Napropamide	2	1.0	1.60	1.65	28.6
Norflurazon	11	1.0	0.71	0.77	82.8
Oryzalin	33	1.0	1.67	1.71	572.1
Oxyfluorfen	52	1.2	0.48	0.62	326.6
Paraquat	54	1.7	0.45	0.77	419.1
Pendimethalin	1	1.0	0.85	0.86	11.9
Sethoxydim	3	1.0	0.17	0.18	4.8
Simazine	23	1.0	1.00	1.08	249.0
Sulfosate	1	1.0	0.95	1.04	6.6
Trifluralin	1	1.0	1.46	1.47	16.2
Insecticides:					
Azinphos-methyl	*	1.5	0.55	0.84	2.7
Bt (Bacillus thur.)2/	18	1.1			
Carbaryl	4	1.6	1.52	2.45	91.0
Chlorpyrifos	4	1.0	0.90	0.98	37.4
Cryolite	19	1.6	5.64	9.34	1,762.3
Diazinon	2	1.5	0.98	1.48	23.2
Dicofol	1	1.0	0.44	0.46	5.7
Dimethoate	1	1.1	1.28	1.45	11.0
Endosulfan	*	1.1	1.12	1.24	0.8
Fenamiphos	3	1.8	1.42	2.59	72.3
Fenbutatin-oxide	2	1.1	0.89	1.03	17.1
Imidacloprid	32	1.1	0.03	0.03	10.6
Malathion	*	1.1	0.77	0.86	0.7
Methomyl	4	1.2	0.73	0.95	39.7
Methoxychlor	*	1.0	1.39	1.39	1.4
Methyl parathion	2	1.7	0.73	1.30	23.4
Petroleum distillate	2	1.6	4.64	7.83	125.9
Phosmet	2	1.1	1.28	1.43	26.9
Potassium salts	*	1.0	9.49	9.77	21.5
Propargite	24	1.1	1.60	1.90	455.1
Fungicides:					
Azoxystrobin	10	1.7	0.20	0.34	33.4
Benomyl	3	1.3	0.53	0.70	18.4
Calcium polysulfide	12	1.0	16.84	18.02	2,129.1
Captan	2	2.0	1.50	3.02	58.1
Copper hydroxide	16	2.1	0.69	1.45	240.6
Copper oxychlo. sul.	4	1.8	2.86	5.19	217.6
Copper sulfate	*	1.4	1.15	1.69	2.1
Cyprodinil	2	1.3	0.43	0.58	13.9
Dicloran	1	1.1	1.58	1.83	10.9
Fenarimol	12	1.5	0.04	0.06	7.2
Fenhexamid	*	1.2	0.53	0.64	1.0
Ferbam	*	1.5	2.50	3.95	4.6
Iprodione	4	1.4	0.71	1.05	44.7
Kresoxim-methyl	1	1.3	0.11	0.15	0.9
Mancozeb	6	1.7	2.26	4.06	237.3

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Grapes, All: Agricultural Chemical Applications,
States Surveyed, 1999 1/ (continued)

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides: (cont.)					
Maneb	1	1.7	2.09	3.59	35.4
Metalaxyl	*	3.3	0.16	0.53	2.3
Myclobutanil	18	2.5	0.10	0.25	45.6
Potassium bicarbonate:	*	1.0	1.84	1.95	5.8
Sulfur	76	7.7	9.50	73.93	57,023.8
Tebuconazole	4	1.4	0.11	0.17	6.6
Triadimefon	*	1.2	0.10	0.13	0.4
Triflumizole	4	1.3	0.17	0.22	9.2
Ziram	5	1.4	2.38	3.55	164.3
Other Chemicals:					
Ethephon	4	1.9	0.25	0.48	20.8
Gibberellic acid	13	2.6	0.04	0.10	13.2
Tetradecen-1-OL (Z)	19	1.0	0.005	0.005	0.9
Tetradecen-1-yl (E)	19	1.0	0.03	0.03	6.1

* Area applied is less than one percent.

- 1/ Bearing acres in 1999 for the 7 States surveyed were 1.01 million acres. States included are CA, IN, MI, NY, OR, PA and WA. Acreage in California includes non-bearing acres.
- 2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Grapes, All: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
2,4-D	1	1.2	0.39	0.47	3.8
Diuron	2	1.0	0.71	0.72	10.9
Glyphosate	42	1.1	0.82	0.93	357.2
Norflurazon	10	1.0	0.59	0.64	60.0
Oryzalin	36	1.0	1.65	1.69	555.2
Oxyfluorfen	57	1.2	0.48	0.62	323.6
Paraquat	56	1.7	0.45	0.77	391.1
Pendimethalin	1	1.0	0.82	0.83	11.2
Simazine	21	1.0	0.89	0.97	183.9
Trifluralin	1	1.0	1.46	1.47	16.2
Insecticides:					
Bt (Bacillus thur.)2/	20	1.1			
Carbaryl	*	1.0	1.79	1.89	5.2
Diazinon	2	1.5	0.98	1.48	23.2
Dicofol	1	1.0	0.37	0.37	4.5
Dimethoate	*	1.1	1.44	1.68	10.2
Fenamiphos	3	1.8	1.42	2.59	72.3
Fenbutatin-oxide	1	1.1	0.91	1.09	14.0
Imidacloprid	34	1.1	0.03	0.03	10.2
Methomyl	4	1.3	0.75	0.97	37.8
Petroleum distillate	1	1.6	3.74	6.02	75.1
Fungicides:					
Azoxystrobin	8	1.8	0.20	0.36	25.5
Benomyl	3	1.3	0.55	0.72	17.7
Calcium polysulfide	13	1.0	17.52	18.27	2,107.1
Copper hydroxide	17	2.1	0.70	1.47	231.7
Copper oxychlo. sul.	4	1.8	2.94	5.49	215.4
Cyprodinil	2	1.4	0.44	0.61	11.8
Dicloran	*	1.1	1.58	1.83	10.9
Fenarimol	9	1.5	0.04	0.06	5.0
Iprodione	4	1.4	0.67	0.96	35.0
Myclobutanil	17	2.5	0.10	0.25	38.7
Sulfur	81	7.9	9.65	76.61	56,543.4
Tebuconazole	3	1.2	0.11	0.14	4.0
Triflumizole	3	1.4	0.17	0.24	5.9
Other Chemicals:					
Ethephon	5	1.9	0.25	0.48	20.8
Tetradecen-1-OL (Z)	21	1.0	0.005	0.005	0.9
Tetradecen-1-yl (E)	21	1.0	0.03	0.03	6.1

* Area applied is less than one percent.

- 1/ Total acres in 1999 for California were 910,000 acres. Acreage includes both bearing and non-bearing acres.
- 2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Grapes, All: Agricultural Chemical Applications,
Indiana, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
Glyphosate	81	1.8	1.41	2.54	0.9
Paraquat	81	2.4	1.03	2.52	0.9
Insecticides:					
Carbaryl	95	4.0	1.78	7.12	3.0
Phosmet	62	1.9	1.36	2.68	0.7
Fungicides:					
Azoxystrobin	28	2.1	0.25	0.53	0.1
Captan	90	4.0	1.15	4.61	1.9
Iprodione	59	1.0	0.91	0.99	0.3
Mancozeb	82	3.7	1.55	5.87	2.2
Myclobutanil	72	3.8	0.07	0.28	0.1
Triadimefon	10	2.5	0.09	0.23	**

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Indiana were 450 acres.

Grapes, All: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	50	1.2	1.00	1.21	7.0
Glyphosate	77	1.2	0.61	0.78	7.0
Oryzalin	4	1.0	1.32	1.32	0.6
Paraquat	80	1.5	0.38	0.60	5.6
Simazine	30	1.0	1.23	1.23	4.3
Insecticides:					
Azinphos-methyl	17	1.1	0.60	0.69	1.4
Carbaryl	60	2.3	1.44	3.35	23.3
Chlorpyrifos	22	1.0	1.00	1.00	2.5
Imidacloprid	32	1.3	0.03	0.04	0.1
Methomyl	15	1.2	0.50	0.61	1.1
Methyl parathion	71	2.3	0.67	1.56	13.0
Phosmet	13	1.2	1.12	1.45	2.2
Fungicides:					
Azoxystrobin	44	1.3	0.18	0.24	1.3
Benomyl	11	1.0	0.31	0.32	0.4
Captan	8	2.2	1.65	3.64	3.5
Ferbam	8	1.4	2.53	3.64	3.5
Iprodione	4	1.5	0.97	1.50	0.7
Mancozeb	90	2.3	2.25	5.21	54.9
Metalaxyl	9	1.5	0.21	0.32	0.3
Myclobutanil	48	2.7	0.09	0.26	1.4
Sulfur	7	1.6	3.79	6.37	5.5
Tebuconazole	37	3.1	0.11	0.36	1.5
Triadimefon	18	1.2	0.11	0.14	0.3
Ziram	71	2.4	2.43	5.91	49.3

1/ Bearing acres in 1999 for Michigan were 11,700 acres.

Grapes, All: Agricultural Chemical Applications,
New York, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	58	1.0	1.79	1.79	32.9
Glyphosate	62	1.1	0.79	0.89	17.4
Oryzalin	11	1.0	3.13	3.13	10.9
Paraquat	27	1.1	0.51	0.58	5.0
Simazine	57	1.0	1.62	1.68	29.8
Sulfosate	8	1.2	0.92	1.13	3.0
Insecticides:					
Carbaryl	58	1.3	1.49	2.01	36.6
Methyl parathion	20	1.4	0.75	1.05	6.6
Fungicides:					
Azoxystrobin	45	1.7	0.17	0.29	4.2
Captan	19	2.0	1.53	3.15	19.0
Copper hydroxide	19	1.6	0.42	0.69	4.1
Fenarimol	49	1.4	0.03	0.04	0.6
Mancozeb	71	2.1	2.53	5.41	120.5
Maneb	17	2.3	2.03	4.75	24.7
Myclobutanil	38	2.6	0.11	0.29	3.5
Sulfur	25	3.2	3.79	12.18	95.9
Ziram	19	1.0	2.54	2.77	16.5

1/ Bearing acres in 1999 for New York were 31,500 acres.

Grapes, All: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	77	1.2	0.71	0.90	5.2
Oryzalin	7	1.0	1.62	1.65	0.9
Paraquat	8	2.0	0.34	0.70	0.4
Simazine	27	1.0	1.47	1.47	2.9
Fungicides:					
Azoxystrobin	32	1.3	0.23	0.32	0.8
Calcium polysulfide	9	1.6	3.39	5.73	3.7
Copper hydroxide	12	4.1	0.84	3.47	3.1
Cyprodinil	35	1.1	0.38	0.42	1.1
Fenarimol	38	1.3	0.04	0.06	0.2
Iprodione	21	1.6	0.77	1.23	1.9
Myclobutanil	31	2.0	0.10	0.21	0.5
Sulfur	95	5.8	3.25	18.97	132.7
Tebuconazole	31	1.3	0.12	0.16	0.4
Triflumizole	17	1.4	0.16	0.24	0.3

1/ Bearing acres in 1999 for Oregon were 7,400 acres.

Grapes, All: Agricultural Chemical Applications,
Pennsylvania, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	41	1.0	1.96	1.98	10.4
Glyphosate	82	1.4	0.90	1.27	13.4
Norflurazon	18	1.0	1.18	1.18	2.7
Paraquat	63	1.1	0.70	0.77	6.2
Simazine	65	1.0	2.58	2.76	22.9
Insecticides:					
Azinphos-methyl	7	2.3	0.50	1.18	1.1
Carbaryl	67	1.6	1.57	2.64	22.6
Methyl parathion	27	1.1	1.00	1.12	3.8
Phosmet	20	1.5	1.13	1.75	4.5
Fungicides:					
Benomyl	*	2.6	0.47	1.26	**
Captan	5	2.3	0.55	1.27	0.8
Copper oxychlo. sul.	12	1.0	0.98	1.01	1.6
Cyprodinil	*	1.2	0.31	0.39	**
Fenarimol	63	1.7	0.03	0.05	0.4
Iprodione	*	1.5	0.47	0.72	0.1
Kresoxim-methyl	42	1.4	0.11	0.15	0.8
Mancozeb	58	1.5	2.33	3.59	26.5
Maneb	33	1.0	2.31	2.33	9.9
Myclobutanil	20	1.6	0.10	0.16	0.4
Sulfur	*	3.7	4.13	15.63	1.9
Tebuconazole	27	1.4	0.11	0.16	0.6
Ziram	32	1.3	2.88	3.81	15.4

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Pennsylvania were 12,800 acres.

Grapes, All: Agricultural Chemical Applications,
Washington, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	58	1.5	0.77	1.18	28.2
Norflurazon	24	1.0	1.56	1.57	15.1
Oryzalin	6	1.0	1.75	1.80	4.4
Paraquat	27	1.1	0.77	0.90	9.9
Insecticides:					
Chlorpyrifos	19	1.0	0.98	1.05	8.0
Imidacloprid	27	1.0	0.02	0.02	0.2
Methoxychlor	3	1.0	1.39	1.39	1.4
Fungicides:					
Fenarimol	35	1.7	0.04	0.06	0.9
Myclobutanil	12	2.0	0.10	0.21	1.0
Sulfur	43	4.3	3.22	14.00	244.4
Triflumizole	39	1.1	0.16	0.19	3.0

1/ Bearing acres in 1999 for Washington were 41,000 acres.

Grapes, Non-bearing: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA 1/	120,000	94	22,146				

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

Grapes, Non-bearing: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Area Applied	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	120,000					
Nitrogen		94	4.5	43	196	22,146
Phosphate 1/						
Potash 1/						

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

Grapes, Non-bearing: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	CA	Active Ingredient	CA
Herbicides:		(continued)	
Glyphosate	*	Fungicides:	
Oryzalin	*	Copper oxychlo. sul.	*
Oxyfluorfen	*	Fenarimol	*
Paraquat	*	Myclobutanil	*
Trifluralin	*	Sulfur	*
Insecticides:		Other Chemicals:	
Cryolite	*	Gibberellic acid	*
Imidacloprid	*		

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P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Grapes, Non-bearing: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

Area Receiving and Total Applied 1/							
State	Acreage	Herbicide	Insecticide	Fungicide	Other Chemical		
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs		
CA	120,000						

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

Grapes, Raisin: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Nitrogen	Phosphate	Potash			
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs			
CA	183,000	77	9,906	32	2,209	35	2,899

Grapes, Raisin: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	183,000					
Nitrogen		77	1.7	39	71	9,906
Phosphate		32	1.2	30	38	2,209
Potash		35	1.1	38	45	2,899

Grapes, Raisin: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
		(continued)	
Herbicides:	:	Fungicides:	:
2,4-D	: *	Benomyl	: *
Diuron	: P	Calcium polysulfide	: *
Fluazifop-P-butyl	: *	Captan	: *
Glyphosate	: P	Copper hydroxide	: P
Norflurazon	: P	Copper oxide	: *
Oryzalin	: P	Copper oxychlo. sul.	: *
Oxyfluorfen	: P	Copper resinate	: *
Paraquat	: P	Fenarimol	: P
Prodiamine	: *	Maneb	: *
Sethoxydim	: *	Myclobutanil	: P
Simazine	: P	Potassium bicarbonate	: *
Sulfosate	: *	Sulfur	: P
Trifluralin	: *	Tebuconazole	: P
	:	Triflumizole	: *
Insecticides:	:	Ziram	: *
Bt (Bacillus thur.)	: *		:
Cryolite	: *	Other Chemicals:	:
Diazinon	: *	Ethephon	: P
Dicofol	: *	Gibberellic acid	: *
Fenamiphos	: *	Sodium tetrathiocarb	: *
Fenbutatin-oxide	: P	Tetradecen-1-OL (Z)	: *
Imidacloprid	: P	Tetradecen-1-yl (E)	: *
Naled	: *		
Phosmet	: *		
Propargite	: *		

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

Grapes, Raisin: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied							
State:	Bearing	Herbicide		Insecticide 1/:		Fungicide		Other Chemical	
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs
CA	183,000	54	143.2	74	1,465.6	77	6,538.1	19	88.6

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

Grapes, Raisin: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Area Applied Percent	Applications Number	Rate per Application	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:						
Diuron	5	5	1.0	0.41	0.42	3.6
Glyphosate	27	27	1.1	0.55	0.63	31.6
Norflurazon	16	16	1.1	0.77	0.90	25.7
Oryzalin	5	5	1.0	1.16	1.22	11.8
Oxyfluorfen	8	8	1.1	0.21	0.23	3.5
Paraquat	19	19	1.1	0.30	0.34	12.0
Simazine	32	32	1.1	0.73	0.83	49.1
Insecticides:						
Fenbutatin-oxide	6	6	1.2	0.90	1.10	11.3
Imidacloprid	19	19	1.1	0.02	0.03	0.9
Fungicides:						
Copper hydroxide	28	28	2.3	0.71	1.69	86.6
Fenarimol	26	26	1.4	0.04	0.05	2.5
Myclobutanil	8	8	1.5	0.10	0.16	2.4
Sulfur	75	75	5.6	8.26	46.62	6,364.0
Tebuconazole	12	12	1.2	0.11	0.14	3.1
Ziram	13	13	1.2	2.19	2.80	64.3
Other Chemicals:						
Ethephon	6	6	1.2	0.25	0.31	3.5

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

Grapes, Table: Fertilizer Use by State, 1999
 Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
			Nitrogen		Phosphate		Potash
CA	109,000	79	6,037	53	1,425	42	2,351

Grapes, Table: Fertilizer Primary Nutrient Applications,
 States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	109,000					
Nitrogen		79	1.6	44	70	6,037
Phosphate		53	1.6	15	25	1,425
Potash		42	1.2	41	51	2,351

Grapes, Table: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
	:	(continued)	:
Herbicides:	:	Fungicides: (cont.)	:
2,4-D	: *	Benomyl	: P
Diuron	: P	Calcium polysulfide	: *
Glyphosate	: P	Captan	: *
Isoxaben	: *	Copper hydroxide	: P
Napropamide	: *	Copper oxychlo. sul.	: P
Norflurazon	: *	Cyprodinil	: P
Oryzalin	: P	Dicloran	: *
Oxyfluorfen	: P	Fenarimol	: P
Paraquat	: P	Iprodione	: *
Pendimethalin	: *	Mancozeb	: *
Simazine	: P	Maneb	: *
Trifluralin	: *	Mefenoxam	: *
	:	Myclobutanil	: P
Insecticides:	:	Potassium bicarbonate	: *
Bt (Bacillus thur.)	: P	Sulfur	: P
Carbaryl	: *	Tebuconazole	: *
Chlorpyrifos	: *	Triflumizole	: P
Cryolite	: *	Ziram	: *
Cyfluthrin	: *		:
Diazinon	: *	Other Chemicals:	:
Dicofol	: *	Ammonium soap	: *
Dimethoate	: P	Cyanamid	: *
Fenamiphos	: *	Ethephon	: P
Fenbutatin-oxide	: *	Garlic oil	: *
Imidacloprid	: P	Gibberellic acid	: *
Methomyl	: P	Sodium tetrathiocarb	: *
Myrothecium verrucar	: *	Strychnine	: *
Petroleum distillate	: *	Tetradecen-1-OL (Z)	: *
Phosmet	: *	Tetradecen-1-yl (E)	: *
Propargite	: *		:
Pyridaben	: *		:
	:		:
Fungicides:	:		:
Azoxystrobin	: P		:
Basic copper sulfate	: *		:

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

Grapes, Table: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied							
State:	Bearing Acreage	Herbicide	Insecticide 1/	Fungicide	Other Chemical				
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs				
CA	109,000	76	186.1	83	464.8	92	3,950.9	86	460.3

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

Grapes, Table: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	5	1.0	1.09	1.13	5.7
Glyphosate	40	1.7	0.59	1.02	44.8
Oryzalin	19	1.3	1.20	1.62	32.7
Oxyfluorfen	43	1.2	0.64	0.80	37.3
Paraquat	21	1.4	0.50	0.74	17.0
Simazine	37	1.1	0.90	1.06	42.3
Insecticides:					
Bt (Bacillus thur.)2/	44	1.1			
Dimethoate	5	1.1	1.61	1.85	10.7
Imidacloprid	44	1.5	0.03	0.05	2.2
Methomyl	24	1.4	0.68	1.00	26.0
Fungicides:					
Azoxystrobin	57	1.9	0.20	0.39	24.5
Benomyl	12	1.6	0.55	0.89	11.8
Copper hydroxide	66	2.1	0.77	1.62	116.9
Copper oxychlo. sul.	14	1.2	2.64	3.25	48.3
Cyprodinil	13	1.4	0.46	0.65	8.9
Fenarimol	9	1.4	0.04	0.05	0.5
Myclobutanil	79	3.0	0.10	0.29	25.4
Sulfur	91	7.9	4.47	35.73	3,531.1
Triflumizole	9	1.1	0.16	0.19	1.8
Other Chemicals:					
Ethephon	32	2.1	0.25	0.54	18.5

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

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

Grapes, Wine: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
			Nitrogen		Phosphate		Potash
CA	498,000	97	142,352	89	138,845	93	125,956

Grapes, Wine: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	498,000					
Nitrogen		97	4.6	63	294	142,352
Phosphate		89	4.9	64	313	138,845
Potash		93	2.8	94	272	125,956

Grapes, Wine: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
	:	(continued)	:
Herbicides:	:	Fungicides:	:
2,4-D	: *	Ampelomyces quisquales	: *
Clethodim	: *	Azoxystrobin	: P
Diuron	: P	Benomyl	: P
Glyphosate	: P	Calcium polysulfide	: P
Napropamide	: *	Copper hydroxide	: P
Norflurazon	: P	Copper oxide	: *
Oryzalin	: P	Copper oxychlo. sul.	: P
Oxyfluorfen	: P	Copper resinate	: *
Paraquat	: P	Copper sulfate	: *
Pendimethalin	: P	Cyprodinil	: P
Sethoxydim	: *	Dicloran	: *
Simazine	: P	Fenarimol	: P
Sulfosate	: *	Fenhexamid	: *
Trifluralin	: *	Iprodione	: P
Insecticides:	:	Mancozeb	: *
Abamectin	: *	Mefenoxam	: *
Bt (Bacillus thur.)	: P	Myclobutanil	: P
Carbaryl	: *	Potassium bicarbonate	: *
Carbofuran	: *	Sulfur	: P
Chlorpyrifos	: *	Tebuconazole	: P
Cryolite	: *	Triflumizole	: P
Diazinon	: *	Ziram	: *
Dicofol	: P	Other Chemicals:	:
Dimethoate	: *	Ammonium soap	: *
Fenamiphos	: *	Chloropicrin	: *
Fenbutatin-oxide	: P	Cyanamid	: *
Imidacloprid	: P	Dichloropropene	: *
Malathion	: *	Ethephon	: *
Methomyl	: *	Gibberellic acid	: *
Naled	: *	Methyl bromide	: *
Neem Oil, Hydrophobi.	: *	Sodium tetrathiocarb	: *
Petroleum distillate	: P	Strychnine	: *
Phosmet	: *	Tetradecen-1-OL (Z)	: *
Piperonyl butoxide	: *	Tetradecen-1-yl (E)	: *
Potassium salts	: *	Zinc phosphide	: *
Propargite	: *		
Pyrethrins	: *		

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P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Grapes, Wine: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied				
State:	Bearing Acreage	Herbicide	Insecticide 1/	Fungicide	Other Chemical	
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	
CA	498,000	96 1,604.3	96 525.5	100 48,819.5	88 5,736.2	

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

Grapes, Wine: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	*	1.0	1.20	1.25	1.9
Glyphosate	57	1.0	0.92	0.96	273.3
Norflurazon	11	1.0	0.54	0.56	30.5
Oryzalin	59	1.0	1.72	1.73	508.2
Oxyfluorfen	92	1.3	0.48	0.63	286.6
Paraquat	89	1.8	0.45	0.82	363.7
Pendimethalin	3	1.0	0.79	0.80	10.6
Simazine	19	1.0	1.00	1.02	95.6
Insecticides:					
Bt (Bacillus thur.)2/	28	1.1			
Dicofol	2	1.0	0.17	0.17	1.6
Fenbutatin-oxide	*	1.2	0.63	0.81	0.3
Imidacloprid	45	1.0	0.03	0.03	7.0
Petroleum distillate	2	1.6	3.25	5.35	63.6
Fungicides:					
Azoxystrobin	2	1.1	0.19	0.22	2.7
Benomyl	2	1.0	0.55	0.55	6.6
Calcium polysulfide	23	1.0	17.29	18.02	2,038.6
Copper hydroxide	8	1.7	0.52	0.91	35.3
Copper oxychlo. sul.	2	3.1	3.05	9.46	117.0
Cyprodinil	1	1.3	0.40	0.54	3.5
Fenarimol	3	1.7	0.04	0.07	1.1
Iprodione	3	1.0	0.56	0.57	7.4
Myclobutanil	9	2.1	0.10	0.21	9.7
Sulfur	100	8.5	10.99	93.94	46,558.6
Tebuconazole	1	1.2	0.11	0.13	0.8
Triflumizole	*	1.3	0.16	0.21	0.4

* Area applied is less than one percent.

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

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

Hazelnuts: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
		Nitrogen		Phosphate		Potash	
OR	28,800	88	3,435	10	81	14	131

Hazelnuts: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applcations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
Oregon:	28,800					
Nitrogen		88	1.2	112	136	3,435
Phosphate		10	1.3	22	29	81
Potash		14	1.3	24	32	131

Hazelnuts: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: OR	Active Ingredient	: OR
Herbicides:	:	(continued)	:
2,4-D	: P	Fungicides:	:
2,4-D, Dimethylamine	: P	Chlorothalonil	: P
Dicamba	: *	Copper ammonium carb.	: *
Diuron	: P	Copper hydroxide	: P
Glufosinate-ammonium	: *	Copper sulfate	: *
Glyphosate	: P	Fenarimol	: P
Oryzalin	: *		:
Oxyfluorfen	: *	Other Chemicals:	:
Paraquat	: P	Aluminum phosphide	: *
Simazine	: P		:
Triclopyr	: *		:
	:		:
Insecticides:	:		:
Azinphos-methyl	: *		:
Carbaryl	: *		:
Chlorpyrifos	: P		:
Diazinon	: *		:
Endosulfan	: *		:
Esfenvalerate	: P		:
Permethrin	: *		:
Petroleum distillate	: P		:

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

Hazelnuts: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Oregon, 1999

		Area Receiving and Total Applied					
State:	Bearing	Herbicide	Insecticide	Fungicide	Other Chemical		
	Acreage	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs		
OR 1/	28,800	91	51.6	85	38.6	39	47.6

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

Hazelnuts: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	52	2.8	0.28	0.79	11.8
2,4-D, Dimethylamine	6	1.2	0.17	0.20	0.3
Diuron	12	1.0	1.25	1.29	4.4
Glyphosate	60	1.3	0.52	0.69	12.1
Paraquat	50	2.3	0.24	0.58	8.3
Simazine	38	1.0	1.29	1.33	14.5
Insecticides:					
Chlorpyrifos	20	1.2	1.24	1.55	8.7
Esfenvalerate	77	1.2	0.06	0.08	1.8
Petroleum distillate	7	1.0	11.97	11.97	23.3
Fungicides:					
Chlorothalonil	27	2.0	1.73	3.52	27.1
Copper hydroxide	13	1.0	5.25	5.25	19.6
Fenarimol	9	1.3	0.06	0.08	0.2

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

Kiwifruit: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

		Percent of Acres Treated and Total Applied					
State	Bearing Acreage	Nitrogen	Phosphate	Potash			
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	5,600	87	347	10	20	9	28

Kiwifruit: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applcations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre	1,000 Lbs	
California:	5,600					
Nitrogen		87	1.3	52	71	347
Phosphate		10	1.5	23	36	20
Potash		9	1.7	31	55	28

Kiwifruit: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	CA
Herbicides:	
Glyphosate	P
Napropamide	*
Oryzalin	P
Oxyfluorfen	P
Paraquat	*
Insecticides:	
Cryolite	*
Diazinon	*
Methidathion	*
Petroleum distillate	*
Other Chemicals:	
Cyanamid	*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Kiwifruit: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

Area Receiving and Total Applied 1/							

State:	Bearing	Acres	Percent 1,000 Lbs	Herbicide	Insecticide	Fungicide	Other Chemical

		Acres	Percent 1,000 Lbs	Herbicide	Insecticide	Fungicide	Other Chemical

CA 2/:		5,600	26	2.6			

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

Kiwifruit: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Percent	Number of Applications	Rate per Application	Rate per Crop Year	Total Applied

		Percent	Number	Pounds per Acre		1,000 lbs

Herbicides:						
Glyphosate		23	1.4	0.92	1.36	1.7
Oryzalin		3	1.0	1.69	1.69	0.3
Oxyfluorfen		4	1.0	0.76	0.76	0.2

- 1/ Total acres in 1999 for California were 5,600 acres. Acreage includes both bearing and non-bearing acres.

Lemons: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Percent Acres	1,000 Lbs	Percent Nitrogen	1,000 Lbs	Percent Phosphate	1,000 Lbs
AZ	18,000	98	3,928	72	1,130	18	429
CA	52,000	80	3,398	11	176	19	282
Total	70,000	84	7,326	27	1,306	19	711

Lemons: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per		Total Applied
				Application	Crop Year	
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
Arizona:	18,000					
Nitrogen		98	6.4	35	223	3,928
Phosphate		72	1.9	44	87	1,130
Potash		18	3.6	35	129	429
California:	52,000					
Nitrogen		80	2.9	28	82	3,398
Phosphate		11	1.5	20	30	176
Potash		19	2.0	14	29	282
Total:	70,000					
Nitrogen		84	3.9	31	124	7,326
Phosphate		27	1.8	38	70	1,306
Potash		19	2.4	22	54	711

Lemons: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	:States Surveyed			Active Ingredient	:States Surveyed		
	: ALL	: AZ	: CA		: ALL	: AZ	: CA
Herbicides:	:	:		(continued)	:	:	
2,4-D	: P	:	P	Insecticides: (cont.)	:	:	
Bromacil	: P	: *	*	Piperonyl butoxide	: *	:	*
Diuron	: P	: P	P	Pyrethrins	: *	:	*
Glyphosate	: P	: P	P	Sabadilla	: *	:	*
Norflurazon	: *	:	*	Spinosad	: P	: *	*
Oryzalin	: *	:	*	Sulfur	: P	: P	P
Oxyfluorfen	: *	:	*	Tebufenozide	: *	: *	
Paraquat	: *	:	*		:	:	
Sethoxydim	: *	: *		Fungicides:	:	:	
Simazine	: P	: *	*	Basic copper sulfate	: P	:	P
Sulfosate	: *	:	*	Copper hydroxide	: P	: *	*
Trifluralin	: *	: *		Fosetyl-al	: P	:	P
	:	:		Mancozeb	: *	: *	
Insecticides:	:	:		Mefenoxam	: P	: *	*
Abamectin	: P	: *	*	Metalaxyl	: P	: *	*
Acephate	: *	:	*		:	:	
Carbaryl	: P	:	P	Other Chemicals:	:	:	
Chlorpyrifos	: P	: P	P	Aluminum phosphide	: *	:	*
Cyfluthrin	: P	: *	*	Brodifacoum	: *	:	*
Diazinon	: *	: *		Chlorophacinone	: *	:	*
Dicofol	: *	: *		Chloropicrin	: *	:	*
Dimethoate	: P	: *	*	Dichloropropene	: *	:	*
Fenamiphos	: P	:	P	Diphacinone	: *	:	*
Formetanate hydro.	: P	: *	*	Gibberellic acid	: P	:	P
Hydramethylnon	: *	:	*	Metaldehyde	: P	:	P
Malathion	: *	: *	*	Metam-sodium	: P	:	P
Methidathion	: *	:	*	Methyl bromide	: *	:	*
Methiocarb	: *	:	*	Sodium tetrathiocarb:	: *	:	*
Methomyl	: *	: *		Strychnine	: *	:	*
Petroleum distillate:	P	:	P	Zinc phosphide	: *	:	*

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

Lemons: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

		Area Receiving and Total Applied 1/								
State:	Bearing	-----								
: Acreage :		Herbicide	: Insecticide	:	Fungicide	:	Other Chemical			
: Acres		Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	
: :		Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	
: :										
AZ	:	18,000	49	13.4	81	46.7	4	1.2		
CA	:	52,000	73	101.8	75	3,919.6	48	103.3	62	283.3
: :										
Total:	:	70,000	67	115.2	76	3,966.3	37	104.5	46	283.3

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

Lemons: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	*	2.9	0.11	0.32	0.2
Bromacil	7	1.0	1.22	1.32	6.2
Diuron	9	1.0	1.56	1.67	10.3
Glyphosate	64	2.7	0.49	1.36	61.1
Simazine	18	1.2	1.57	2.02	26.0
Insecticides:					
Abamectin	24	1.0	0.01	0.01	0.2
Carbaryl	*	1.5	6.70	10.17	6.4
Chlorpyrifos	36	1.3	2.35	3.12	78.4
Cyfluthrin	8	1.0	0.09	0.09	0.5
Dimethoate	10	1.1	1.73	1.92	13.6
Fenamiphos	4	1.0	6.91	7.18	18.0
Formetanate hydro.	12	1.1	1.06	1.23	10.1
Petroleum distillate	44	1.7	68.31	118.89	3,693.9
Spinosad	12	1.0	0.10	0.10	0.8
Sulfur	5	1.3	32.96	43.03	137.2
Fungicides:					
Basic copper sulfate	24	1.0	4.00	4.25	71.1
Copper hydroxide	5	1.2	1.94	2.49	8.7
Fosetyl-al	9	1.1	3.32	3.65	22.5
Mefenoxam	*	1.0	0.53	0.53	0.3
Metalaxyl	1	1.0	2.15	2.33	1.9
Other Chemicals:					
Gibberellic acid	23	1.0	0.04	0.04	0.6
Metaldehyde	23	1.7	0.49	0.87	14.2
Metam-sodium	1	1.0	74.03	75.03	61.7

* Area applied is less than one percent.

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

Lemons: Agricultural Chemical Applications,
Arizona, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	*	1.6	0.99	1.61	0.1
Glyphosate	48	4.0	0.32	1.28	11.1
Insecticides:					
Chlorpyrifos	16	1.9	1.97	3.80	11.0
Sulfur	3	1.0	9.71	9.71	5.2

* Area applied is less than one percent.

1/ Total acres in 1999 for Arizona were 18,000 acres. Acreage includes both bearing and non-bearing acres.

Lemons: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	1	2.9	0.11	0.32	0.2
Diuron	12	1.0	1.57	1.67	10.2
Glyphosate	70	2.4	0.56	1.38	50.0
Insecticides:					
Carbaryl	1	1.5	6.70	10.17	6.4
Chlorpyrifos	43	1.2	2.42	3.03	67.4
Fenamiphos	5	1.0	6.91	7.18	18.0
Petroleum distillate	60	1.7	68.31	118.89	3,693.9
Sulfur	5	1.3	36.41	49.79	132.0
Fungicides:					
Basic copper sulfate	32	1.0	4.00	4.25	71.1
Fosetyl-al	12	1.1	3.32	3.65	22.5
Other Chemicals:					
Gibberellic acid	31	1.0	0.04	0.04	0.6
Metaldehyde	31	1.7	0.49	0.87	14.2
Metam-sodium	2	1.0	74.03	75.03	61.7

1/ Total acres in 1999 for California were 52,000 acres. Acreage includes both bearing and non-bearing acres.

Limes: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
			Nitrogen		Phosphate		Potash
FL 1/	2,700	100	812	100	146	100	817

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

Limes: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
Florida:	2,700					
Nitrogen		100	5.5	54	301	812
Phosphate		100	2.9	18	54	146
Potash		100	4.4	68	303	817

Limes: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: FL	Active Ingredient	: FL
		(continued)	
Herbicides:	:	Fungicides:	:
Bromacil	: *	Benomyl	: P
Diuron	: *	Copper ammonium carb.:	: *
Glyphosate	: P	Copper hydroxide	: P
Simazine	: *	Copper oxychlo. sul.:	: *
Insecticides:	:	Copper sulfate	: P
Abamectin	: P	Ferbam	: P
Azinphos-methyl	: *	Thiabendazole	: P
Carbaryl	: P		:
Chlorpyrifos	: P	Other Chemicals:	:
Dimethoate	: *	Gibberellic acid	: *
Ethion	: P		
Malathion	: P		
Methomyl	: *		
Neem Oil, Hydrophobi.:	: *		
Oxamyl	: P		
Permethrin	: *		
Petroleum distillate	: P		
Pyridaben	: P		
Sulfur	: P		

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

Limes: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Florida, 1999

		Area Receiving and Total Applied					
State: Bearing	: Acreage	: Herbicide	: Insecticide	: Fungicide	: Other Chemical		
:	: Acres	: Percent 1,000 Lbs	: Percent 1,000 Lbs	: Percent 1,000 Lbs	: Percent 1,000 Lbs		
FL 1/:	2,700	42	4.2	95	166.5	90	38.1

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

Limes: Agricultural Chemical Applications,
Florida, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
Glyphosate	42	5.0	0.75	3.73	4.2
Insecticides:					
Abamectin	89	1.1	0.009	0.01	**
Carbaryl	47	1.0	1.99	1.99	2.5
Chlorpyrifos	46	2.0	1.88	3.75	4.7
Ethion	56	2.3	2.75	6.49	9.9
Malathion	31	1.0	1.24	1.34	1.1
Oxamyl	31	1.0	1.00	1.00	0.8
Petroleum distillate	80	3.8	15.40	58.95	126.6
Pyridaben	46	1.0	0.29	0.29	0.4
Sulfur	32	2.9	7.88	23.26	20.4
Fungicides:					
Benomyl	46	1.0	1.00	1.00	1.3
Copper hydroxide	87	3.2	4.07	13.34	31.5
Copper sulfate	2	4.4	0.77	3.40	0.2
Ferbam	33	2.1	1.52	3.20	2.8
Thiabendazole	46	1.0	1.81	1.81	2.3

** Total applied is less than 50 lbs.

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

Nectarines: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	40,500	87	2,177	44	465	46	1,107

Nectarines: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	40,500					
Nitrogen		87	1.1	55	62	2,177
Phosphate		44	1.0	25	26	465
Potash		46	1.1	51	60	1,107

Nectarines: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
	:	(continued)	:
Herbicides:	:	Fungicides:	:
2,4-D	: *	Basic copper sulfate	: *
Fluazifop-P-butyl	: *	Benomyl	: *
Glyphosate	: P	Captan	: P
Norflurazon	: *	Copper hydroxide	: P
Oryzalin	: P	Copper oxide	: *
Oxyfluorfen	: P	Cyprodinil	: *
Paraquat	: P	Fenbuconazole	: P
Pendimethalin	: *	Iprodione	: P
Simazine	: P	Myclobutanil	: *
Trifluralin	: *	Propiconazole	: P
	:	Sulfur	: P
Insecticides:	:	Tebuconazole	: P
Bt (Bacillus thur.)	: P	Thiophanate-methyl	: *
Carbaryl	: P	Ziram	: P
Chlorpyrifos	: P		:
Clofentezine	: P	Other Chemicals:	:
Diazinon	: P	E-8-Dodecenyl Acetate	: *
Dicofol	: P	Farnesol	: *
Esfenvalerate	: P	Nerolidol	: *
Fenamiphos	: *	Strychnine	: *
Fenbutatin-oxide	: P	Tetradecen-1-OL (Z)	: *
Formetanate hydro.	: P	Tetradecen-1-yl (E)	: *
Hydro. Ext. Neem Oil	: *	Z-8-Dodecenol	: *
Methidathion	: P	Z-8-Dodecenyl Acetate	: P
Methomyl	: P		:
Methyl parathion	: P		:
Petroleum distillate	: P		:
Phosmet	: P		:
Piperonyl butoxide	: *		:
Propargite	: P		:
Pyrethrins	: *		:

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P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient

Nectarines: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied 1/								
State:	Bearing	-----								
: Acreage :		Herbicide	: Insecticide 2/:		Fungicide	: Other Chemical				
: Acres		Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000		
: :		Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs		
: :										
CA	:	40,500	80	76.0	93	1,736.2	91	351.4	8	**

** Amount applied less than 50 lbs.

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

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

Nectarines: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
Glyphosate	65	2.2	0.75	1.70	44.4
Oryzalin	6	1.2	1.06	1.34	3.4
Oxyfluorfen	39	1.1	0.18	0.21	3.4
Paraquat	20	1.2	0.45	0.55	4.5
Simazine	18	1.2	1.06	1.30	9.3
Insecticides:					
Bt (Bacillus thur.)2/	12	1.1			
Carbaryl	11	1.2	2.58	3.11	14.3
Chlorpyrifos	39	1.1	1.98	2.30	36.4
Clofentezine	10	1.0	0.10	0.10	0.4
Diazinon	22	1.2	1.84	2.34	20.5
Dicofol	11	1.0	1.33	1.45	6.2
Esfenvalerate	61	1.2	0.04	0.05	1.3
Fenbutatin-oxide	9	1.0	0.79	0.83	3.1
Formetanate hydro.	72	1.5	0.99	1.49	43.4
Methidathion	6	1.4	1.49	2.14	5.4
Methomyl	27	1.1	0.72	0.85	9.2
Methyl parathion	11	1.1	1.31	1.51	6.7
Petroleum distillate	76	1.4	35.44	49.55	1,517.0
Phosmet	52	1.2	2.00	2.53	53.2
Propargite	19	1.1	1.56	1.77	13.9
Fungicides:					
Captan	16	1.2	2.15	2.74	17.9
Copper hydroxide	56	1.4	3.78	5.37	121.7
Fenbuconazole	9	1.1	0.08	0.09	0.3
Iprodione	49	1.1	0.73	0.87	17.4
Propiconazole	63	1.2	0.11	0.13	3.3
Sulfur	50	1.2	5.09	6.11	124.3
Tebuconazole	12	1.0	0.18	0.19	0.9
Ziram	11	1.2	5.08	6.44	28.0
Other Chemicals:					
Z-8-Dodecenyl Acetate:	37	1.1	0.002	0.002	**

** Total applied is less than 50 lbs.

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

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

Olives: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	37,300	80	1,850	9	93	7	53

Olives: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
California:	37,300					
Nitrogen		80	1.4	42	62	1,850
Phosphate		9	1.8	16	29	93
Potash		7	2.1	10	20	53

Olives: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	CA	Active Ingredient	CA
Herbicides:		(continued)	
2,4-D	*	Fungicides:	
Diuron	P	Basic copper sulfate	P
Glyphosate	P	Copper hydroxide	P
Oryzalin	*	Copper oxide	*
Oxyfluorfen	P	Copper sulfate	*
Paraquat	P	Other Chemicals:	
Simazine	P	Maleic hydrazide	*
Insecticides:		Naphthaleneacetic ac.	*
Carbaryl	P		
Diazinon	*		
Methidathion	*		
Petroleum distillate	P		

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

Olives: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied 1/								
State:	Bearing	Acres	Percent 1,000 Lbs	Herbicide	Percent 1,000 Lbs	Insecticide	Percent 1,000 Lbs	Fungicide	Percent 1,000 Lbs	Other Chemical
CA	2/	37,300	70	76.9	16	203.5	43	112.0		

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

Olives: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	26	1.2	1.35	1.68	16.5
Glyphosate	53	2.0	0.60	1.22	24.3
Oxyfluorfen	8	1.0	0.60	0.63	1.9
Paraquat	11	1.3	0.66	0.89	3.6
Simazine	30	1.3	1.83	2.47	27.5
Insecticides:					
Carbaryl	6	1.1	4.92	5.59	13.4
Petroleum distillate	10	1.2	42.60	52.33	187.9
Fungicides:					
Basic copper sulfate	19	1.2	6.09	7.31	52.6
Copper hydroxide	21	1.4	4.39	6.18	48.8

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

Oranges, excluding Temples: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
AZ	10,900	98	2,323	54	409	9	106
CA	211,500	87	15,419	36	3,541	36	3,871
FL	612,600	94	123,600	71	31,885	94	122,008
TX	9,100	96	1,002	36	108	30	90
Total	844,100	92	142,344	61	35,943	77	126,075

Oranges, excluding Temples: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
Arizona:	10,900					
Nitrogen		98	4.4	49	218	2,323
Phosphate		54	1.8	37	69	409
Potash		9	3.3	33	112	106
California:	211,500					
Nitrogen		87	2.7	30	84	15,419
Phosphate		36	2.1	22	47	3,541
Potash		36	1.8	27	51	3,871
Florida:	612,600					
Nitrogen		94	4.6	46	215	123,600
Phosphate		71	3.1	23	73	31,885
Potash		94	4.3	49	213	122,008
Texas:	9,100					
Nitrogen		96	1.2	90	114	1,002
Phosphate		36	1.3	25	33	108
Potash		30	1.3	24	33	90
Total:	844,100					
Nitrogen		92	4.1	44	183	142,344
Phosphate		61	3.0	23	69	35,943
Potash		77	4.0	48	193	126,075

Oranges excluding Temples: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed				
	ALL	AZ	CA	FL	TX
Herbicides:					
2,4-D	P		*	*	
Bromacil	P	P	P	P	P
Diuron	P	P	P	P	P
Glyphosate	P	P	P	P	P
MSMA	P		*	*	*
Norflurazon	P		P	P	P
Oryzalin	*	*	*		
Oxyfluorfen	*		*		
Paraquat	P		P	P	
Pendimethalin	*		*		*
Pronamide	*			*	
Sethoxydim	P			P	
Simazine	P	*	*	P	P
Sulfosate	P			P	
Thiazopyr	*		*		
Trifluralin	*	*			*
Insecticides:					
Abamectin	P		*	P	*
Aldicarb	P			P	P
Azadirachtin	*			*	
Azinphos-methyl	*				*
Bt (Bacillus thur.)	P		P	*	
Carbaryl	P		*	P	*
Carbofuran	*			*	
Chlorpyrifos	P	*	P	*	P
Cyfluthrin	P	*	*		
Dicofol	P	*		*	P
Diiflubenzuron	P			P	
Dimethoate	P	P	P		
Endosulfan	*				*
Ethion	P			*	*
Fenamiphos	*		*		
Fenbutatin-oxide	P			P	P
Fluvalinate	*		*		
Formetanate hydro.	P	P	P		
Imidacloprid	*			*	
Malathion	P	*	*	*	*
Methidathion	P		*	*	*
Methomyl	*	*	*	*	
Naled	*		*		
Neem Oil, Hydrophobi.	P			P	
Oxamyl	*				*
Oxydemeton-methyl	*			*	
Petroleum distillate	P		P	P	P
Propargite	*			*	
Pyridaben	P		*	P	*
Pyriproxyfen	*		*		
Sabadilla	*		*		
Spinosad	P	P	P		
Sulfur	P	*	*	P	*
Tebufenozide	*	*			

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Oranges excluding Temples: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed				
	ALL	AZ	CA	FL	TX
Fungicides:					
Basic Cupric Zinc Su.	*			*	
Basic copper sulfate	P		P	P	
Benomyl	P		*	P	*
Chlorothalonil	*			*	
Copper (metallic)	*		*		
Copper ammonium carb.	P		*	*	*
Copper chloride hydro.	*			*	
Copper hydroxide	P	*	*	P	P
Copper oxide	*		*		*
Copper oxychlo. sul.	P			P	
Copper sulfate	P			*	*
Fenbuconazole	*				*
Ferbam	P			P	
Fosetyl-al	P		*	P	*
Mefenoxam	P	*	*	P	
Metalaxyl	*	*		*	
Other Chemicals:					
Aluminum phosphide	*		*		
Bromadiolone	*		*		
Chlorophacinone	*		*		
Cytokinins	*			*	*
Diphacinone	*		*		
Gibberellic acid	P		P	*	*
Maleic hydrazide	*		*		
Metaldehyde	*		*		
Metam-sodium	*		*		
Sodium tetrathiocarb	*		*		
Strychnine	*		*		
Zinc phosphide	*		*		

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Oranges excluding Temples: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

		Area Receiving and Total Applied 1/							
State:	Bearing	-----							
: Acreage :		Herbicide	: Insecticide 2/:		Fungicide	: Other Chemical			
: Acres		Percent 1,000	Percent 1,000		Percent 1,000	Percent 1,000			
: :		Lbs	Lbs		Lbs	Lbs			
: :									
AZ 3/:	10,900	63	24.4	90	24.9				
CA :	211,500	68	727.3	55	2,713.1	30	253.1	30	241.5
FL 3/:	612,600	97	3,161.5	94	2,368.1	79	1,636.8		
TX 3/:	9,100	86	55.8	92	158.4	77	16.6		
: :									
Total:	844,100	89	3,969.0	84	5,264.5	66	1,909.8	8	241.5

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

Oranges excluding Temples: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	7	1.2	0.05	0.06	3.6
Bromacil	21	1.6	0.71	1.14	198.0
Diuron	46	1.7	1.30	2.21	852.5
Glyphosate	74	2.7	0.88	2.37	1,481.0
MSMA	*	1.2	1.11	1.44	6.4
Norflurazon	16	1.5	1.56	2.42	336.6
Paraquat	10	1.9	0.34	0.67	56.2
Sethoxydim	4	1.6	0.15	0.24	7.1
Simazine	36	1.6	1.76	2.97	897.1
Sulfosate	11	1.2	1.04	1.34	124.3
Insecticides:					
Abamectin	27	1.3	0.007	0.009	2.0
Aldicarb	8	1.1	2.66	2.96	196.1
Bt (Bacillus thur.)2/	2	1.1			
Carbaryl	2	1.6	1.69	2.69	34.9
Chlorpyrifos	10	1.6	1.27	2.12	178.9
Cyfluthrin	5	1.1	0.10	0.12	4.7
Dicofol	2	1.1	1.57	1.74	32.3
Diflubenzuron	5	1.0	0.31	0.34	15.3
Dimethoate	2	1.1	1.88	2.22	32.8
Ethion	17	1.1	4.07	4.61	649.7
Fenbutatin-oxide	16	1.0	1.00	1.04	137.0
Formetanate hydro.	*	1.0	0.99	1.00	7.4
Malathion	*	1.1	0.75	0.86	0.7
Methidathion	*	1.0	2.61	2.75	9.4
Neem Oil, Hydrophobi.	*	1.0	5.29	5.61	24.7
Petroleum distillate	73	1.9	35.50	69.15	42,659.5
Pyridaben	2	1.0	0.30	0.32	6.5
Spinosad	4	1.3	0.09	0.12	4.2
Sulfur	14	1.0	10.42	10.73	1,250.0
Fungicides:					
Basic copper sulfate	7	1.3	1.72	2.26	136.5
Benomyl	4	1.1	0.69	0.76	26.5
Copper ammonium carb.	*	1.0	1.00	1.00	7.5
Copper hydroxide	32	1.3	2.17	3.03	817.4
Copper oxychlo. sul.	9	2.8	2.67	7.51	540.0
Copper sulfate	11	1.4	0.88	1.26	116.1
Ferbam	7	1.1	1.96	2.31	142.4
Fosetyl-al	2	1.2	2.96	3.54	69.6
Mefenoxam	2	1.2	0.35	0.44	6.0
Other Chemicals:					
Gibberellic acid	6	1.1	0.07	0.08	4.1

* Area applied is less than one percent.

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

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

Oranges excluding Temples: Agricultural Chemical Applications,
Arizona, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	2	3.7	0.40	1.49	0.3
Diuron	5	2.3	0.72	1.71	0.9
Glyphosate	61	3.8	0.75	2.88	19.2
Insecticides:					
Dimethoate	44	1.0	1.39	1.45	6.9
Formetanate hydro.	42	1.0	1.23	1.23	5.6
Spinosad	19	1.0	0.10	0.10	0.2

1/ Total acres in 1999 for Arizona were 10,900 acres. Acreage includes both bearing and non-bearing acres.

Oranges excluding Temples: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	7	1.2	1.08	1.33	18.4
Diuron	25	1.4	1.58	2.36	122.6
Glyphosate	48	5.7	0.71	4.07	417.0
Norflurazon	2	1.1	2.60	2.90	12.0
Paraquat	3	1.6	0.41	0.69	3.7
Insecticides:					
Bt(Bacillus thur.)2/	3	1.2			
Chlorpyrifos	21	1.2	2.00	2.55	111.3
Dimethoate	5	1.2	2.08	2.59	25.9
Formetanate hydro.	1	1.0	0.61	0.63	1.8
Petroleum distillate	21	1.4	38.42	57.21	2,527.0
Spinosad	16	1.3	0.09	0.12	4.0
Fungicides:					
Basic copper sulfate	10	1.3	3.18	4.22	85.8
Other Chemicals:					
Gibberellic acid	23	1.1	0.07	0.08	4.1

1/ Total acres in 1999 for California were 211,500 acres. Acreage includes both bearing and non-bearing acres.

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

Oranges excluding Temples: Agricultural Chemical Applications,
Florida, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	25	1.6	0.68	1.11	171.9
Diuron	54	1.7	1.25	2.17	710.7
Glyphosate	83	2.0	0.98	2.04	1,038.6
Norflurazon	22	1.5	1.54	2.41	324.0
Paraquat	13	2.0	0.34	0.67	52.5
Sethoxydim	5	1.6	0.15	0.24	7.1
Simazine	40	1.7	1.71	2.94	728.7
Sulfosate	15	1.2	1.04	1.34	124.3
Insecticides:					
Abamectin	36	1.3	0.007	0.009	2.0
Aldicarb	10	1.1	2.53	2.83	172.7
Carbaryl	2	1.6	1.41	2.31	27.5
Diflubenzuron	7	1.0	0.31	0.34	15.3
Fenbutatin-oxide	21	1.0	1.00	1.03	134.2
Neem Oil, Hydrophobi	*	1.0	5.29	5.61	24.7
Petroleum distillate	93	1.9	35.41	70.50	40,038.2
Pyridaben	3	1.0	0.30	0.32	5.5
Sulfur	19	1.0	10.31	10.61	1,223.3
Fungicides:					
Basic copper sulfate	7	1.3	0.97	1.26	50.7
Benomyl	6	1.1	0.69	0.77	26.0
Copper hydroxide	38	1.4	2.15	3.02	702.0
Copper oxychlo. sul.	12	2.8	2.67	7.51	540.0
Ferbam	10	1.1	1.96	2.31	142.4
Fosetyl-al	2	1.1	3.18	3.60	46.0
Mefenoxam	2	1.2	0.32	0.40	4.7

* Area applied is less than one percent.

1/ Bearing acres in 1999 for Florida were 612,600 acres.

Oranges excluding Temples: Agricultural Chemical Applications,
Texas, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	49	1.9	0.86	1.66	7.4
Diuron	57	1.8	1.91	3.50	18.3
Glyphosate	74	2.2	0.41	0.92	6.2
Norflurazon	3	1.2	1.83	2.36	0.6
Simazine	66	1.7	2.22	3.85	23.2
Insecticides:					
Aldicarb	57	1.0	4.42	4.51	23.4
Chlorpyrifos	72	5.2	0.53	2.82	18.5
Dicofol	77	1.2	1.97	2.45	17.1
Fenbutatin-oxide	22	1.0	1.30	1.38	2.8
Petroleum distillate	53	1.0	18.14	19.52	94.3
Fungicides:					
Copper hydroxide	54	1.9	1.60	3.05	14.9

1/ Bearing acres in 1999 for Texas were 9,100 acres.

Peaches: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	74,800	90	5,632	26	498	32	1,712
GA	18,000	99	1,895	66	624	72	1,303
MI	4,600	73	227	22	19	56	162
NJ	8,000	58	495	19	67	91	454
NY	1,600	89	88	10	7	67	80
NC	1,550	97	106	42	26	92	106
PA	5,500	81	166	34	81	38	120
SC	16,500	87	918	29	170	80	1,512
TX	8,000	74	522	59	373	59	359
WA	2,500	74	170	37	33	39	39
Total	141,050	87	10,219	33	1,898	50	5,847

Peaches: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	74,800					
Nitrogen		90	1.4	56	84	5,632
Phosphate		26	1.0	24	26	498
Potash		32	1.1	62	72	1,712
Georgia:	18,000					
Nitrogen		99	2.1	50	106	1,895
Phosphate		66	1.4	36	52	624
Potash		72	1.5	66	100	1,303
Michigan:	4,600					
Nitrogen		73	1.9	35	67	227
Phosphate		22	2.5	7	19	19
Potash		56	1.6	38	62	162
New Jersey:	8,000					
Nitrogen		58	1.1	96	108	495
Phosphate		19	1.3	33	45	67
Potash		91	1.4	42	62	454
New York:	1,600					
Nitrogen		89	1.2	47	61	88
Phosphate		10	1.0	40	40	7
Potash		67	1.0	75	75	80

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Peaches: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999 (continued)

Primary Nutrient	Bearing Acreage	Area Applied	Applcations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
North Carolina:	1,550					
Nitrogen		97	1.3	52	71	106
Phosphate		42	1.3	29	39	26
Potash		92	1.1	62	74	106
Pennsylvania:	5,500					
Nitrogen		81	1.1	33	37	166
Phosphate		34	1.1	39	44	81
Potash		38	1.1	52	57	120
South Carolina:	16,500					
Nitrogen		87	1.3	47	64	918
Phosphate		29	1.0	34	36	170
Potash		80	1.3	88	115	1,512
Texas:	8,000					
Nitrogen		74	1.4	62	88	522
Phosphate		59	1.4	56	80	373
Potash		59	1.4	52	77	359
Washington:	2,500					
Nitrogen		74	1.7	53	91	170
Phosphate		37	1.0	33	35	33
Potash		39	1.0	38	40	39
Total:	141,050					
Nitrogen		87	1.5	54	83	10,219
Phosphate		33	1.2	32	40	1,898
Potash		50	1.3	63	84	5,847

Peaches: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed					
	ALL	CA	GA	MI	NJ	NY
Herbicides:						
2,4-D	P	P	*	P	*	P
2,4-D, Dimethylamine	*			*		
Clethodim	*		*			
DCPA	*					
Diuron	P		P	P	P	*
Fluazifop-P-butyl	P	*	*			
Glufosinate-ammonium	*					
Glyphosate	P	P	P	P	P	P
Hexazinone	*			*		
Imazaquin	*					
MSMA	*					
Napropamide	*				*	
Norflurazon	P	P		*	P	*
Oryzalin	P	P	*	*		
Oxyfluorfen	P	P				
Paraquat	P	P	P	P	P	P
Pendimethalin	P	P			*	
Phytophthora palmivo.	*					*
Sethoxydim	*		*			
Simazine	P	P	P	P	P	P
Sulfosate	*	*				
Terbacil	P		*	P	P	*
Trifluralin	*	*				
Insecticides:						
Abamectin	*					*
Acephate	*		*	*		
Azinphos-methyl	P	*	*	P	P	P
Bt (Bacillus thur.)	P	P		*	*	
Carbaryl	P	P	P	P	P	P
Carbofuran	*		*	*	*	
Chlorpyrifos	P	P	P	*	P	*
Clofentezine	P	P		*	P	*
Cube Resin, Other	*				*	
Diazinon	P	P	*	*		
Dicofol	P	P				
Dimethoate	*					
Disulfoton	*					
Endosulfan	P		*	P	P	P
Esfenvalerate	P	P	P	P	*	P
Ethyl parathion	*					
Fenamiphos	*					
Fenbutatin-oxide	P	P		*		
Formetanate hydro.	P	P			P	
Imidacloprid	*					*
Lindane	P					
Malathion	P		P	*	*	*
Methidathion	P	P				
Methomyl	P		*	*	P	P
Methoxychlor	P		*	*	*	
Methyl parathion	P	P	P	P	P	P

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Peaches: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed					
	ALL	CA	GA	MI	NJ	NY
Insecticides: (cont.)						
Permethrin	P	P	P	P	*	P
Petroleum distillate	P	P	P	P	P	P
Phosmet	P	P	P	P	P	P
Potassium salts	*	:				
Propargite	*	:	*			
Pyrethrins	*	:			*	
Pyridaben	*	:				
Rotenone	*	:			*	
Ryania	*	:	*			
Spinosad	*	:	*			
Fungicides:						
Azoxystrobin	P	:	*			
Basic copper sulfate	P	:	P		*	*
Benomyl	P	:	*	*	P	P
Calcium polysulfide	P	:	*	P		*
Captan	P	:	P	P	P	P
Chlorothalonil	P	:		P	P	P
Copper ammonium carb.	P	:			*	
Copper chloride hydro.	*	:				*
Copper hydroxide	P	:	P	*	P	*
Copper oxide	P	:	P			
Copper oxychlo. sul.	P	:			P	*
Copper resinate	P	:				P
Copper sulfate	P	:	*	*	P	*
Cyprodinil	P	:	P			*
Dodine	P	:		*	P	
Fenarimol	P	:				*
Fenbuconazole	P	:	P	P	P	P
Ferbam	P	:		*	P	*
Iprodione	P	:	P	*	*	*
Mancozeb	P	:				*
Maneb	*	:				
Mefenoxam	*	:	*			*
Metalaxyl	*	:				
Metiram	*	:		*	*	
Myclobutanil	P	:	P	*	P	P
Oxytetracycline	P	:		*	P	P
Propiconazole	P	:	P	P	P	P
Streptomycin	P	:				*
Sulfur	P	:	P	P	P	P
Tebuconazole	P	:	P		P	*
Thiophanate-methyl	P	:	*	*	*	*
Thiram	*	:				
Triadimefon	*	:		*		
Triforine	P	:	*			*
Vinclozolin	P	:	*	*		*
Ziram	P	:	P	*	*	P

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Peaches: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed					
	ALL	CA	GA	MI	NJ	NY
Other Chemicals:	:	:	:	:	:	:
6-benzyladenine	*	:	:	*	:	:
Ammonium soap	*	:	*	:	:	:
Butenoic Acid Hydro.	*	:	:	:	*	:
Chlorophacinone	*	:	:	:	:	:
Chloropicrin	*	*	:	:	:	:
Cyanamid	*	:	*	:	:	:
Cytokinins	*	:	:	:	:	:
Decenol	*	:	*	:	:	:
Decenyl acetate	*	:	*	:	:	:
Dichloropropene	*	:	*	:	:	:
Diphacinone	*	:	*	:	:	:
Dodecanol	P	:	:	P	:	*
E,E-8, 10-Dodecadien	P	:	:	P	:	*
E-8-Dodecenyl Acetate:	*	:	*	:	:	:
Ethephon	*	:	:	:	*	:
Gibberellic acid	*	:	:	*	:	:
Methyl bromide	P	:	P	:	:	:
Monocarbamide dihyd.	*	:	:	:	:	:
Pelargonic Acid	*	:	:	*	:	:
Sodium tetrathiocarb	*	:	*	:	:	:
Strychnine	*	:	*	:	:	:
Tetradecanol	P	:	:	P	:	*
Tetradecen-1-OL (Z)	*	:	*	*	:	:
Tetradecen-1-yl (E)	*	:	*	:	:	:
Z-8-Dodecenol	*	:	*	:	:	:
Z-8-Dodecenyl Acetate:	P	:	P	:	P	:
Zinc phosphide	P	:	:	*	:	:

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Peaches: Active Ingredient Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	NC	PA	SC	TX	WA
Herbicides:					
2,4-D	*	P	P	*	*
DCPA		*			
Diuron	*	P	*	*	*
Fluazifop-P-butyl			*		
Glufosinate-ammonium				*	
Glyphosate	P	P	P	P	P
Imazaquin		*			
MSMA				*	
Napropamide	*				
Norflurazon		P	*	*	*
Oryzalin	*	*		*	*
Oxyfluorfen					*
Paraquat	P	P	P	P	P
Pendimethalin		*	*	*	
Simazine	P	P	P	P	*
Sulfosate			*		
Terbacil		P	*	*	
Insecticides:					
Acephate				*	
Azinphos-methyl	P	P	P	P	P
Bt (Bacillus thur.)	*	*			*
Carbaryl	P	P	P	P	P
Carbofuran		*			
Chlorpyrifos	P	P	P	P	P
Clofentezine		P	*		*
Diazinon	*			*	*
Dimethoate	*				
Disulfoton			*		
Endosulfan	P	P	*	*	P
Esfenvalerate	P	P	P	*	P
Ethyl parathion	*				
Fenamiphos		*	*		
Fenbutatin-oxide					*
Formetanate hydro.		*			P
Imidacloprid		*			
Lindane	*			*	
Malathion	*		*	P	P
Methidathion					*
Methomyl	*	P		*	*
Methoxychlor	*		*	*	*
Methyl parathion	P	P	P	P	
Permethrin	P	P	P	*	
Petroleum distillate	P	P	*	*	P
Phosmet	P	P	P	*	*
Spinosad					*
Potassium salts					*
Pyrethrins		*			
Pyridaben			*		
Rotenone		*			

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Peaches: Active Ingredient Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	NC	PA	SC	TX	WA
Fungicides:					
Azoxystrobin	*		P		
Basic copper sulfate		*	*		*
Benomyl	P	P	P	P	
Calcium polysulfide	*				P
Captan	P	P	P	P	P
Chlorothalonil	P	P	P	P	P
Copper ammonium carb.			*		*
Copper chloride hydro.		*			*
Copper hydroxide	*	P	P	P	P
Copper oxychlor. sul.		*	P		
Copper resinate			*		
Copper sulfate	*	*	*	*	*
Cyprodinil		P			
Dodine		*			
Fenarimol		*			
Fenbuconazole	P	P	P	P	*
Ferbam	P	P			
Iprodione	P	P			*
Mancozeb	*	*			
Maneb				*	
Metalaxyl					*
Metiram		*			
Myclobutanil	*	P			P
Oxytetracycline		P	*		
Propiconazole	P	P	P	P	P
Streptomycin	*	*	*		
Sulfur	P	P	P	P	P
Tebuconazole	*	P	*	*	*
Thiophanate-methyl	*	P	P	*	
Thiram		*			
Triforine	*	*	*	*	
Vinclozolin	*	*			
Ziram	*	P	P	*	
Other Chemicals:					
Chlorophacinone					*
Cytokinins					*
Diphacinone					*
Dodecanol					*
E,E-8, 10-Dodecadien					*
Ethephon			*		
Gibberellic acid			*		*
Monocarbamide dihyd.		*			
Strychnine					*
Tetradecanol					*
Tetradecen-1-OL (Z)					*
Z-8-Dodecenyl Acetate					P
Zinc phosphide					*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Peaches: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

		Area Receiving and Total Applied 1/							

State:	Bearing	Herbicide		Insecticide 2/:		Fungicide		Other Chemical	

	Acres	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000
			Lbs		Lbs		Lbs		Lbs

CA	: 74,800	43	80.6	85	1,964.4	86	920.4	25	357.5
GA 3/:	18,000	93	38.2	99	79.7	99	770.3		
MI	: 4,600	48	2.6	90	9.3	86	53.2	25	0.1
NJ 3/:	8,000	76	16.5	91	155.6	98	379.8		
NY 3/:	1,600	56	1.3	99	7.9	97	33.2		
NC	: 1,550	58	0.5	93	6.8	94	38.3		
PA 3/:	5,500	64	5.4	94	24.3	94	96.5		
SC 3/:	16,500	83	145.8	81	222.3	85	1,069.5		
TX	: 8,000	59	11.9	83	24.0	74	44.5		
WA	: 2,500	43	2.2	97	80.6	93	51.7	23	**

Total:	141,050	58	305.0	88	2,574.9	88	3,457.4	19	361.3

** Total applied is less than 50 lbs.

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

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

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

Peaches: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	12	1.3	0.81	1.10	19.1
Diuron	13	1.1	0.89	1.05	19.2
Fluazifop-P-butyl	10	1.2	0.13	0.16	2.2
Glyphosate	38	2.3	0.68	1.59	86.1
Norflurazon	8	1.3	1.17	1.62	17.5
Oryzalin	3	1.0	1.45	1.58	6.6
Oxyfluorfen	11	1.1	0.27	0.30	4.6
Paraquat	37	1.2	0.46	0.57	30.2
Pendimethalin	6	1.0	2.31	2.40	20.2
Simazine	27	1.9	1.26	2.39	90.0
Terbacil	2	1.0	0.49	0.50	1.6
Insecticides:					
Azinphos-methyl	14	4.0	0.64	2.62	50.9
Bt (Bacillus thur.)2/	6	1.9			
Carbaryl	19	2.3	1.17	2.74	73.7
Chlorpyrifos	21	1.2	1.32	1.64	47.7
Clofentezine	8	1.2	0.10	0.12	1.2
Diazinon	10	1.2	1.78	2.27	32.5
Dicofol	1	1.0	1.41	1.50	2.8
Endosulfan	6	5.8	1.24	7.25	57.2
Esfenvalerate	46	1.7	0.04	0.07	4.3
Fenbutatin-oxide	13	1.1	0.67	0.76	14.0
Formetanate hydro.	2	1.2	0.77	0.95	2.9
Lindane	*	2.3	0.19	0.44	**
Malathion	2	1.8	1.62	2.91	8.8
Methidathion	5	1.1	1.40	1.58	12.1
Methomyl	6	2.2	0.80	1.80	16.6
Methoxychlor	*	2.0	1.28	2.59	0.2
Methyl parathion	38	3.0	0.63	1.90	101.9
Permethrin	25	2.9	0.16	0.47	16.8
Petroleum distillate	37	1.2	30.45	39.21	2,030.0
Phosmet	26	2.2	1.15	2.56	95.3
Fungicides:					
Azoxystrobin	2	1.9	0.10	0.19	0.6
Basic copper sulfate	9	1.3	7.01	9.11	111.4
Benomyl	9	3.4	0.45	1.56	19.7
Calcium polysulfide	*	1.1	11.28	13.27	13.6
Captan	28	3.8	1.58	6.10	242.0
Chlorothalonil	9	2.2	1.48	3.32	40.2
Copper ammonium carb.	3	8.9	0.35	3.15	12.8
Copper hydroxide	26	2.4	2.11	5.09	184.8
Copper oxide	4	1.1	4.85	5.41	29.2
Copper oxychlo. sul.	5	2.7	1.18	3.18	23.2
Copper resinate	4	8.5	0.04	0.32	1.9
Copper sulfate	2	1.3	2.99	3.92	9.7
Cyprodinil	2	1.7	0.16	0.28	0.8
Dodine	*	4.9	0.23	1.12	0.2
Fenarimol	*	2.8	0.010	0.04	**
Fenbuconazole	19	2.5	0.09	0.22	5.8
Ferbam	2	1.1	2.27	2.57	5.8
Iprodione	21	1.3	0.62	0.82	24.0

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Peaches: Agricultural Chemical Applications,
States Surveyed, 1999 1/ (continued)

Agricultural Chemical	Area Applied	Applcations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides: (cont.)					
Mancozeb	*	3.2	0.84	2.68	0.1
Myclobutanil	8	1.6	0.11	0.18	2.0
Oxytetracycline	8	4.3	0.14	0.61	6.9
Propiconazole	44	2.6	0.10	0.27	16.7
Streptomycin	*	6.5	0.07	0.44	0.1
Sulfur	53	4.3	7.96	34.59	2,567.3
Tebuconazole	9	1.8	0.13	0.24	3.1
Thiophanate-methyl	2	1.6	0.41	0.65	1.9
Triforine	*	2.6	0.41	1.12	0.5
Vinclozolin	*	1.2	0.61	0.79	0.6
Ziram	15	1.5	3.93	5.91	129.1
Other Chemicals:					
Dodecanol	*	1.0	0.010	0.010	**
E,E-8, 10-Dodecadien	*	1.0	0.02	0.02	**
Methyl bromide	*	1.1	245.62	292.11	272.0
Tetradecanol	*	1.0	0.002	0.002	**
Z-8-Dodecenyl Acetate	12	1.2	0.006	0.008	0.1
Zinc phosphide	*	1.0	0.11	0.11	0.1

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for the 10 States surveyed were 141,050 acres.

States included are CA, GA, MI, NJ, NY, NC, PA, SC, TX and WA. Acreage in California includes non-bearing acres.

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

Peaches: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	3	1.6	0.44	0.73	1.6
Glyphosate	33	2.2	0.73	1.66	41.5
Norflurazon	6	1.2	1.43	1.83	7.9
Oryzalin	4	1.1	1.56	1.74	5.5
Oxyfluorfen	20	1.1	0.26	0.30	4.4
Paraquat	17	1.1	0.39	0.46	5.7
Pendimethalin	3	1.1	1.11	1.27	2.8
Simazine	11	1.1	0.93	1.07	8.6
Insecticides:					
Bt (Bacillus thur.)2/	7	1.4			
Carbaryl	7	1.0	3.58	3.91	20.6
Chlorpyrifos	17	1.1	1.80	2.09	26.7
Clofentezine	8	1.1	0.08	0.10	0.6
Diazinon	19	1.2	1.80	2.28	32.3
Dicofol	2	1.0	1.41	1.50	2.8
Esfenvalerate	45	1.3	0.04	0.06	2.1
Fenbutatin-oxide	24	1.1	0.66	0.76	13.8
Formetanate hydro.	2	1.2	0.61	0.78	1.1
Methidathion	10	1.1	1.40	1.58	12.1
Methyl parathion	18	1.2	1.30	1.62	22.0
Permethrin	18	1.4	0.23	0.32	4.2
Petroleum distillate	56	1.2	33.78	42.02	1,774.6
Phosmet	22	1.2	2.35	2.96	49.3
Fungicides:					
Basic copper sulfate	15	1.2	7.64	9.49	107.8
Captan	13	1.3	2.77	3.67	36.0
Copper hydroxide	35	1.3	3.67	4.95	129.7
Copper oxide	7	1.1	4.85	5.41	29.2
Cyprodinil	4	1.7	0.16	0.27	0.8
Fenbuconazole	13	1.4	0.08	0.12	1.1
Iprodione	39	1.3	0.63	0.82	23.8
Myclobutanil	8	1.1	0.11	0.13	0.8
Propiconazole	38	1.4	0.11	0.16	4.4
Sulfur	35	2.0	8.92	18.09	476.1
Tebuconazole	13	1.5	0.16	0.26	2.5
Ziram	20	1.4	4.50	6.53	99.3
Other Chemicals:					
Methyl bromide	1	1.1	245.62	292.11	272.0
Z-8-Dodecenyl Acetate:	21	1.2	0.007	0.008	0.1

1/ Total acres in 1999 for California were 74,800 acres. Acreage includes both bearing and non-bearing acres.

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

Peaches: Agricultural Chemical Applications,
Georgia, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
Diuron	29	1.1	0.93	1.04	5.4
Glyphosate	59	2.1	0.57	1.22	12.9
Paraquat	91	1.2	0.38	0.46	7.5
Simazine	61	1.0	1.07	1.07	11.7
Insecticides:					
Carbaryl	35	1.0	1.68	1.69	10.8
Chlorpyrifos	21	1.0	0.71	0.71	2.7
Esfenvalerate	74	1.4	0.02	0.03	0.4
Malathion	*	3.2	1.49	4.77	0.1
Methyl parathion	97	4.6	0.53	2.47	43.4
Permethrin	46	1.5	0.11	0.18	1.5
Petroleum distillate	3	1.0	9.28	9.56	5.1
Phosmet	53	1.7	0.90	1.60	15.3
Fungicides:					
Calcium polysulfide	*	2.1	4.33	9.25	0.2
Captan	7	1.3	2.68	3.64	4.6
Chlorothalonil	2	1.6	1.47	2.40	0.9
Fenbuconazole	11	1.1	0.10	0.11	0.2
Propiconazole	87	4.9	0.10	0.50	7.9
Sulfur	98	5.3	7.99	42.43	750.4

* Area applied is less than one percent.

1/ Bearing acres in 1999 for Georgia were 18,000 acres.

Peaches: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	14	1.0	0.48	0.52	0.3
Diuron	6	1.1	0.76	0.86	0.2
Glyphosate	18	1.1	0.57	0.65	0.5
Paraquat	23	1.2	0.36	0.45	0.5
Simazine	14	1.0	1.04	1.04	0.7
Terbacil	10	1.0	0.40	0.40	0.2
Insecticides:					
Azinphos-methyl	34	1.8	0.62	1.16	1.8
Carbaryl	11	1.8	1.92	3.51	1.7
Endosulfan	7	1.3	1.26	1.69	0.5
Esfenvalerate	59	2.3	0.04	0.08	0.2
Methyl parathion	14	2.4	0.88	2.19	1.4
Permethrin	24	2.1	0.12	0.26	0.3
Petroleum distillate	4	1.1	7.87	8.68	1.8
Phosmet	12	1.6	1.14	1.91	1.1
Fungicides:					
Benomyl	4	1.5	0.33	0.52	0.1
Captan	25	2.7	1.49	4.11	4.7
Chlorothalonil	5	1.4	2.25	3.36	0.8
Copper hydroxide	16	1.0	1.37	1.45	1.1
Copper oxychlo. sul.	18	1.0	2.40	2.59	2.1
Copper sulfate	7	1.1	1.26	1.50	0.5
Dodine	4	5.0	0.21	1.06	0.2
Fenbuconazole	47	3.0	0.08	0.24	0.5
Ferbam	10	1.4	2.82	4.17	1.8
Myclobutanil	17	1.6	0.10	0.16	0.1
Oxytetracycline	7	2.5	0.09	0.23	0.1
Propiconazole	37	1.9	0.10	0.19	0.3
Sulfur	41	4.1	5.13	21.33	39.9
Tebuconazole	22	2.4	0.13	0.31	0.3
Other Chemicals:					
Dodecanol	8	1.0	0.01	0.01	**
E,E-8, 10-Dodecadien	8	1.0	0.02	0.02	**
Tetradecanol	8	1.0	0.002	0.002	**
Z-8-Dodecenyl Acetate	15	1.0	***	***	**

** Total applied is less than 50 lbs.

*** Amount applied is less than 0.0005 lbs.

1/ Bearing acres in 1999 for Michigan were 4,600 acres.

Peaches: Agricultural Chemical Applications,
New Jersey, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	62	1.0	0.55	0.55	2.7
Glyphosate	39	1.0	0.26	0.26	0.8
Norflurazon	60	1.6	0.86	1.38	6.6
Paraquat	63	1.0	0.61	0.63	3.2
Simazine	45	1.0	0.46	0.46	1.6
Terbacil	13	1.0	0.62	0.62	0.6
Insecticides:					
Azinphos-methyl	70	6.9	0.66	4.63	25.9
Carbaryl	43	1.9	0.65	1.29	4.4
Chlorpyrifos	7	1.0	1.82	1.86	1.0
Clofentezine	47	1.0	0.14	0.14	0.5
Endosulfan	8	1.4	0.84	1.17	0.7
Formetanate hydro.	1	1.0	0.74	0.81	0.1
Methomyl	65	2.6	1.06	2.85	14.8
Methyl parathion	38	2.2	0.46	1.03	3.1
Petroleum distillate	43	1.1	24.86	28.74	99.7
Phosmet	31	2.2	0.83	1.87	4.7
Fungicides:					
Benomyl	34	3.1	0.45	1.42	3.9
Captan	86	6.4	0.95	6.17	42.5
Chlorothalonil	10	2.2	1.57	3.50	2.9
Copper resinate	62	8.7	0.02	0.19	0.9
Fenbuconazole	45	2.0	0.09	0.19	0.7
Myclobutanil	41	2.1	0.11	0.24	0.8
Oxytetracycline	39	2.3	0.17	0.39	1.2
Propiconazole	75	2.5	0.11	0.28	1.7
Sulfur	82	8.9	5.23	46.96	308.8
Ziram	50	1.1	1.68	1.86	7.4

1/ Bearing acres in 1999 for New Jersey were 8,000 acres.

Peaches: Agricultural Chemical Applications,
New York, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	12	1.0	1.03	1.10	0.2
Glyphosate	25	1.1	0.96	1.14	0.5
Paraquat	31	1.7	0.30	0.52	0.3
Simazine	7	1.0	0.93	0.93	0.1
Insecticides:					
Azinphos-methyl	59	2.3	0.68	1.62	1.5
Carbaryl	21	2.1	1.15	2.50	0.8
Endosulfan	11	1.4	1.16	1.63	0.3
Esfenvalerate	41	2.6	0.07	0.18	0.1
Methomyl	19	1.5	1.00	1.54	0.5
Methyl parathion	32	1.9	0.79	1.54	0.8
Permethrin	13	1.2	0.16	0.19	0.4
Petroleum distillate	10	1.0	18.25	18.25	3.0
Phosmet	12	2.6	1.41	3.72	0.7
Fungicides:					
Benomyl	16	2.1	0.44	0.95	0.2
Captan	77	4.1	1.60	6.69	8.3
Chlorothalonil	29	2.5	2.04	5.13	2.4
Copper hydroxide	17	1.1	1.22	1.34	0.4
Copper oxychlo. sul.	26	1.1	3.51	3.89	1.6
Fenbuconazole	48	2.0	0.09	0.18	0.1
Ferbam	9	1.4	1.88	2.73	0.4
Iprodione	6	2.0	0.73	1.50	0.1
Propiconazole	30	1.5	0.11	0.18	0.1
Sulfur	60	3.6	5.23	19.17	18.4

1/ Bearing acres in 1999 for New York were 1,600 acres.

Peaches: Agricultural Chemical Applications,
North Carolina, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	5	1.7	1.01	1.80	0.1
Paraquat	55	1.5	0.24	0.38	0.3
Simazine	48	1.0	0.16	0.16	0.1
Insecticides:					
Azinphos-methyl	29	3.2	0.85	2.74	1.2
Carbaryl	17	1.9	1.41	2.80	0.7
Chlorpyrifos	12	1.2	1.07	1.32	0.2
Endosulfan	4	2.3	1.43	3.40	0.2
Esfenvalerate	56	2.3	0.05	0.12	0.1
Methyl parathion	65	2.5	0.48	1.20	1.2
Permethrin	5	3.2	0.12	0.38	**
Petroleum distillate	6	1.0	28.38	30.73	2.8
Phosmet	4	2.0	1.25	2.51	0.2
Fungicides:					
Benomyl	2	1.4	0.51	0.73	**
Captan	37	4.1	1.60	6.58	3.8
Chlorothalonil	17	2.2	2.25	5.05	1.3
Fenbuconazole	25	2.2	0.09	0.21	0.1
Ferbam	10	1.0	1.10	1.16	0.2
Iprodione	3	3.3	0.28	0.94	**
Propiconazole	17	3.2	0.09	0.28	0.1
Sulfur	58	3.4	10.29	35.78	32.3

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for North Carolina were 1,550 acres.

Peaches: Agricultural Chemical Applications,
Pennsylvania, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	19	1.0	0.60	0.61	0.6
Diuron	16	1.0	0.86	0.93	0.8
Glyphosate	2	1.2	1.19	1.42	0.2
Norflurazon	13	1.0	1.25	1.27	0.9
Paraquat	54	1.2	0.40	0.49	1.5
Simazine	15	1.0	1.11	1.19	1.0
Terbacil	6	1.2	0.52	0.62	0.2
Insecticides:					
Azinphos-methyl	80	4.7	0.55	2.62	11.5
Carbaryl	38	2.4	0.39	0.97	2.0
Chlorpyrifos	11	1.1	0.95	1.08	0.7
Clofentezine	10	1.7	0.04	0.07	**
Endosulfan	14	2.4	0.47	1.14	0.9
Esfenvalerate	73	2.0	0.010	0.03	0.1
Methomyl	35	2.2	0.15	0.35	0.7
Methyl parathion	39	2.8	0.14	0.41	0.9
Permethrin	3	1.4	0.10	0.15	**
Petroleum distillate	8	1.2	8.60	11.12	4.8
Phosmet	37	2.9	0.43	1.26	2.6
Fungicides:					
Benomyl	33	2.2	0.10	0.22	0.4
Captan	85	3.9	0.79	3.15	14.7
Chlorothalonil	58	3.9	0.86	3.37	10.8
Copper hydroxide	4	1.0	1.11	1.12	0.2
Cyprodinil	5	1.2	0.24	0.29	0.1
Fenbuconazole	32	3.1	0.05	0.16	0.3
Ferbam	3	1.0	2.05	2.19	0.4
Iprodione	6	1.6	0.17	0.29	0.1
Myclobutanil	9	2.4	0.07	0.16	0.1
Oxytetracycline	8	5.0	0.17	0.87	0.4
Propiconazole	29	2.8	0.05	0.16	0.3
Sulfur	87	6.2	2.25	13.98	67.1
Tebuconazole	12	6.9	0.03	0.20	0.1
Thiophanate-methyl	13	2.2	0.26	0.58	0.4
Ziram	7	1.0	1.65	1.66	0.6

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Pennsylvania were 5,500 acres.

Peaches: Agricultural Chemical Applications,
South Carolina, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	64	1.4	0.94	1.32	14.0
Glyphosate	62	3.5	0.68	2.38	24.3
Paraquat	64	1.4	0.63	0.89	9.5
Simazine	70	3.8	1.48	5.65	65.0
Insecticides:					
Azinphos-methyl	15	2.6	0.69	1.80	4.4
Carbaryl	28	5.7	0.83	4.75	22.1
Chlorpyrifos	58	1.4	0.98	1.47	14.1
Esfenvalerate	32	4.9	0.04	0.20	1.1
Methyl parathion	72	3.2	0.65	2.11	25.2
Permethrin	59	6.5	0.16	1.03	10.1
Phosmet	33	5.7	0.68	3.94	21.2
Fungicides:					
Azoxystrobin	19	1.9	0.10	0.19	0.6
Benomyl	35	4.7	0.50	2.39	13.8
Captan	71	5.1	2.03	10.40	121.8
Chlorothalonil	16	1.1	1.85	2.19	5.8
Copper hydroxide	27	10.0	0.89	8.97	39.6
Copper oxychlo. sul.	34	3.2	1.05	3.38	18.7
Fenbuconazole	30	5.6	0.09	0.52	2.6
Propiconazole	37	2.8	0.10	0.28	1.7
Sulfur	66	5.8	13.18	76.78	830.1
Thiophanate-methyl	8	1.1	0.63	0.73	1.0
Ziram	10	2.6	3.94	10.54	17.9

1/ Bearing acres in 1999 for South Carolina were 16,500 acres.

Peaches: Agricultural Chemical Applications,
Texas, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	35	1.6	0.90	1.47	4.2
Paraquat	34	1.1	0.46	0.51	1.4
Simazine	15	1.2	0.78	0.97	1.2
Insecticides:					
Azinphos-methyl	34	1.6	0.57	0.91	2.5
Carbaryl	42	2.7	0.97	2.68	8.9
Chlorpyrifos	6	1.2	0.76	0.96	0.5
Malathion	31	1.8	1.45	2.74	6.9
Methyl parathion	41	1.7	0.66	1.19	3.9
Fungicides:					
Benomyl	14	1.5	0.48	0.72	0.8
Captan	28	1.8	1.27	2.39	5.3
Chlorothalonil	48	1.7	2.17	3.75	14.5
Copper hydroxide	29	1.3	2.06	2.86	6.5
Fenbuconazole	6	1.8	0.05	0.10	**
Propiconazole	21	1.7	0.08	0.15	0.3
Sulfur	33	2.0	2.91	5.89	15.4

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Texas were 8,000 acres.

Peaches: Agricultural Chemical Applications,
Washington, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	35	1.3	0.86	1.12	1.0
Paraquat	8	1.4	0.97	1.43	0.3
Insecticides:					
Azinphos-methyl	51	1.8	0.87	1.60	2.0
Carbaryl	27	1.5	1.58	2.45	1.7
Chlorpyrifos	30	1.1	1.61	1.78	1.3
Endosulfan	61	1.2	1.83	2.25	3.4
Esfenvalerate	43	1.0	0.06	0.06	0.1
Formetanate hydro.	58	1.2	0.95	1.16	1.7
Malathion	16	1.0	3.46	3.74	1.5
Petroleum distillate	79	1.4	23.43	34.28	68.1
Fungicides:					
Calcium polysulfide	17	1.0	27.93	27.93	12.1
Captan	6	1.0	2.29	2.32	0.3
Chlorothalonil	8	1.0	3.60	3.73	0.7
Copper hydroxide	62	1.2	3.12	3.89	6.0
Myclobutanil	50	1.9	0.12	0.24	0.3
Propiconazole	15	1.6	0.11	0.18	0.1
Sulfur	67	2.2	7.61	17.14	28.8
Other Chemicals:					
Z-8-Dodecenyl Acetate:	9	1.2	***	***	**

** Total applied is less than 50 lbs.

*** Amount applied is less than 0.0005 lbs.

1/ Bearing acres in 1999 for Washington were 2,500 acres.

Pears: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Percent	Nitrogen	Phosphate	Potash	Percent	Total
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	20,300	89	2,009	12	82	35	1,226
MI	850	55	25	10	2	27	23
NY	2,000	61	52	11	6	63	112
OR	17,800	73	1,084	34	416	49	595
PA	1,000	69	10	21	3	23	8
WA	24,400	75	1,439	17	95	10	94
Total	66,350	78	4,619	20	604	30	2,058

Pears: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applcations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	20,300					
Nitrogen		89	2.2	50	112	2,009
Phosphate		12	3.1	11	34	82
Potash		35	1.7	100	173	1,226
Michigan:	850					
Nitrogen		55	1.5	36	54	25
Phosphate		10	1.0	18	18	2
Potash		27	1.0	99	99	23
New York:	2,000					
Nitrogen		61	1.1	38	42	52
Phosphate		11	1.1	21	24	6
Potash		63	1.0	85	89	112
Oregon:	17,800					
Nitrogen		73	2.2	37	83	1,084
Phosphate		34	1.8	36	68	416
Potash		49	1.8	36	68	595
Pennsylvania:	1,000					
Nitrogen		69	1.0	13	14	10
Phosphate		21	1.2	12	15	3
Potash		23	1.2	27	33	8
Washington:	24,400					
Nitrogen		75	1.5	50	78	1,439
Phosphate		17	1.8	12	22	95
Potash		10	1.3	28	37	94
Total:	66,350					
Nitrogen		78	1.9	46	89	4,619
Phosphate		20	2.0	22	45	604
Potash		30	1.6	61	102	2,058

Pears: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed						
	ALL	CA	MI	NY	OR	PA	WA
Herbicides:							
2,4-D	P	P	*	P	P	*	P
2,4-D, Dimethylamine	*	:			*		
2,4-DB	*	:					*
Bromoxynil	*	:					*
Difenzoquat	*	:					*
Diuron	P	P	*	*	P	P	P
Glufosinate-ammonium	*	:					*
Glyphosate	P	P	*	P	P	*	P
Glyphosate, isopropy	*	:					*
Norflurazon	P	*	*		*	P	P
Oryzalin	P	*	*		*		*
Oxyfluorfen	P	P			P		*
Paraquat	P	*	P	*	P	P	P
Pendimethalin	*	:					*
Pronamide	*	*			*		
Prosulfuron	*	:					*
Simazine	P	P	P	P	P	P	P
Terbacil	P	:	*		*	*	
Trifluralin	*	:			*		
Insecticides:							
Abamectin	P	P	P	P	P	P	P
Amitraz	P	:		P	P	P	P
Azadirachtin	*	:		*	*		*
Azinphos-methyl	P	P	P	P	P	P	P
Bt (Bacillus thur.)	P	P	*	P	P		P
Carbaryl	P	*	*	*	*	*	P
Carbofuran	*	:				*	
Chlorpyrifos	P	*	*	P	P	P	P
Clofentezine	P	P		*		*	*
Diazinon	P	P	*		*	*	P
Dicofol	P	*		*	*	*	
Diqlubenzuron	P	:			*		P
Dimethoate	P	*		*		*	*
Endosulfan	P	:	*	*	P	P	P
Esfenvalerate	P	P	P	P	P	P	P
Ethion	*	:			*		
Ethyl parathion	*	:					*
Fenbutatin-oxide	P	:		*	P		P
Fenoxycarb	*	:					*
Formetanate hydro.	P	:	*		*	*	P
Hexythiazox	P	:	*	*	P	*	P
Imidacloprid	P	:	P	P	P	P	P
Kaolin	P	:					P
Malathion	*	:		*			
Methidathion	P	*			P		*
Methomyl	P	:	*	P	*	*	
Methyl parathion	P	P	*	*	*	*	P
Oxamyl	P	:		*	P	*	
Oxythioquinox	P	:			*	*	P
Permethrin	P	:	P	*	*	P	*

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Pears: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	ALL	States Surveyed					
		CA	MI	NY	OR	PA	WA
Insecticides: (cont.)							
Petroleum distillate	P	P	P	P	P	P	P
Phosmet	P	P	P	P	P	P	P
Potassium salts	*				*		*
Propargite	*					*	
Pyrethrins	*			*	*		
Pyridaben	P	*	P	P	P	*	P
Pyriproxyfen	P				P		P
Rotenone	*			*	*		
Ryania	*	*					
Tebufozide	*				*		
Fungicides:							
Basic Cupric Zinc Su.	*			*	*		
Basic copper sulfate	P				*	*	*
Benomyl	P	P	P	P	P	P	
Calcium polysulfide	P	P	*		P	*	P
Captan	P		P	P	*	*	
Chlorothalonil	*			*		*	
Copper ammonium carb.	*					*	*
Copper hydroxide	P	P	*	P	P	*	P
Copper oxychlor. sul.	P	P	P	P	P	*	*
Copper sulfate	P		*	*	P		P
Cyprodinil	P	P	*		*	*	
Dodine	P				*		*
Fenarimol	P	*	P	P	*	P	P
Fenbuconazole	*		*	*	*		
Ferbam	P		P	*		*	
Fosetyl-al	P	*			*		*
Glyodin	*				*		
Kresoxim-methyl	P		*		*		*
Mancozeb	P	P	P	P	P	P	P
Maneb	*			*	*		
Metalaxyl	*						*
Metiram	P		P	*		*	
Myclobutanil	P		*	*	*	*	*
Oxytetracycline	P	*			P	*	P
Propiconazole	*	*				*	
Pseudomonas fluores.	P	P			P		P
Streptomycin	P	P	*	P	P	P	*
Sulfur	P	P	P	*	P	*	P
Tebuconazole	*		*				
Thiophanate-methyl	*			*		*	
Thiram	*					*	
Triadimefon	P				P		P
Triflumizole	P	P	*	*	P	*	P
Vinclozolin	*			*			
Ziram	P	P	P	P	P	P	P
Other Chemicals:							
Aluminum phosphide	*				*		
Butenoic Acid Hydro.	*				*		
Chlorophacinone	P						P
Cytokinins	*						*

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Pears: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed						
	ALL	CA	MI	NY	OR	PA	WA
Other Chemicals:(cont.):							
Diphacinone	*	*					*
Dodecanol	P	*		*	*		P
E,E-8, 10-Dodecadien	P	*		*	*		P
Ethephon	*						*
Gibberellic acid	P				*	*	*
NAD	P		*		*	*	*
Naphthaleneacetic ac.:	P	P	*	P	P	*	P
Paecilomyces fumosor	*						*
Strychnine	*						*
Tetradecanol	P	*		*	*		P
Tetradecen-1-OL (Z)	*						*
Z-8-Dodecenyl Acetate:	*				*		*
Zinc phosphide	*						*

P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Pears: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State: Bearing	Area Receiving and Total Applied								
	Acreage	Herbicide	Insecticide 2/:	Fungicide	Other Chemical				
	Acres	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs	Percent 1,000 Lbs				
CA 1/:	20,300	44	21.6	77	1,032.2	76	340.5	42	0.8
MI :	850	51	0.3	92	11.7	90	14.1	15	**
NY :	2,000	43	1.9	79	42.4	78	13.9	10	**
OR :	17,800	68	26.3	99	1,237.3	99	577.2	60	0.6
PA :	1,000	24	0.5	97	31.5	95	11.4	7	**
WA :	24,400	39	30.5	96	1,485.3	84	381.7	55	0.8
Total:	66,350	48	81.1	91	3,840.4	86	1,338.8	50	2.2

** Amount Applied is less than 50 lbs.

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

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

Pears: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	8	1.3	0.60	0.81	4.3
Diuron	10	1.2	1.16	1.40	9.2
Glyphosate	41	1.5	0.77	1.22	32.7
Norflurazon	3	1.0	1.98	2.01	3.5
Oryzalin	1	1.0	1.72	1.77	1.4
Oxyfluorfen	5	1.2	0.40	0.52	1.8
Paraquat	11	1.3	0.51	0.72	5.1
Simazine	17	1.4	1.02	1.47	16.8
Terbacil	*	1.0	0.63	0.63	0.1
Insecticides:					
Abamectin	61	1.3	0.02	0.02	0.8
Amitraz	18	1.2	1.34	1.63	19.0
Azinphos-methyl	54	1.9	0.98	1.89	67.5
Bt (Bacillus thur.)2/	6	1.8			
Carbaryl	3	1.1	1.31	1.51	2.7
Chlorpyrifos	39	1.1	1.79	1.98	51.4
Clofentezine	5	1.2	0.11	0.13	0.4
Diazinon	7	1.2	1.67	2.03	8.9
Dicofol	*	1.0	1.88	1.90	0.9
Diflubenzuron	7	1.0	0.64	0.65	3.0
Dimethoate	*	1.2	0.71	0.88	0.4
Endosulfan	38	1.1	2.02	2.22	56.1
Esfenvalerate	24	1.2	0.06	0.08	1.1
Fenbutatin-oxide	6	1.1	0.62	0.72	2.7
Formetanate hydro.	5	1.0	0.82	0.86	3.1
Hexythiazox	15	1.1	0.12	0.14	1.4
Imidacloprid	19	1.4	0.19	0.27	3.3
Kaolin	2	2.2	43.41	99.61	132.0
Methidathion	*	1.0	1.59	1.59	0.9
Methomyl	*	1.0	0.65	0.68	0.2
Methyl parathion	17	1.3	1.60	2.22	24.4
Oxamyl	1	1.0	1.47	1.58	1.2
Oxythioquinox	1	1.1	0.78	0.86	0.6
Permethrin	*	1.7	0.12	0.21	0.1
Petroleum distillate	83	3.2	18.49	60.74	3,342.8
Phosmet	36	1.7	2.62	4.58	107.9
Pyridaben	19	1.0	0.29	0.31	3.9
Pyriproxyfen	15	1.0	0.10	0.11	1.1
Fungicides:					
Basic copper sulfate	*	1.0	4.36	4.50	2.8
Benomyl	15	2.3	0.43	1.01	10.3
Calcium polysulfide	24	1.3	13.41	18.33	293.7
Captan	*	2.4	1.81	4.44	1.7
Copper hydroxide	18	1.8	1.80	3.23	37.9
Copper oxychlo. sul.	22	2.6	1.62	4.31	62.6
Copper sulfate	2	1.4	1.12	1.56	2.1
Cyprodinil	6	1.5	0.14	0.22	0.9
Dodine	20	1.7	1.39	2.43	31.6
Fenarimol	5	1.2	0.07	0.09	0.3

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Pears: Agricultural Chemical Applications,
States Surveyed, 1999 1/(continued)

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides: (cont.)					
Ferbam	*	2.0	2.11	4.31	2.3
Fosetyl-al	2	2.2	1.54	3.47	5.2
Kresoxim-methyl	1	1.0	0.16	0.17	0.1
Mancozeb	55	2.0	3.32	6.91	253.2
Metiram	*	2.0	3.34	6.79	0.4
Myclobutanil	*	1.2	0.12	0.14	0.1
Oxytetracycline	41	2.9	0.15	0.44	11.9
Pseudomonas fluores.	11	2.7	0.13	0.36	2.6
Streptomycin	30	2.3	0.13	0.30	6.0
Sulfur	44	1.6	9.29	15.32	448.1
Triadimefon	5	1.0	0.21	0.21	0.7
Triflumizole	35	1.4	0.27	0.37	8.6
Ziram	39	1.4	4.21	5.91	151.9
Other Chemicals:					
Chlorophacinone	*	1.0	0.13	0.13	0.1
Dodecanol	5	1.0	0.03	0.03	0.1
E,E-8, 10-Dodecadien	5	1.1	0.05	0.05	0.2
Gibberellic acid	*	1.6	0.06	0.10	**
NAD	*	1.0	0.04	0.04	**
Naphthaleneacetic ac.:	44	1.2	0.05	0.06	1.9
Tetradecanol	5	1.0	0.005	0.006	**

* Area applied is less than one percent.

** Total applied is less than 50 lbs.

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

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

Pears: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	14	1.2	0.41	0.53	1.5
Diuron	16	1.3	0.96	1.29	4.2
Glyphosate	39	2.0	0.36	0.75	5.9
Oxyfluorfen	12	1.4	0.30	0.43	1.0
Simazine	22	1.3	1.17	1.62	7.2
Insecticides:					
Abamectin	47	1.4	0.010	0.02	0.2
Azinphos-methyl	34	2.0	1.09	2.26	15.8
Bt (Bacillus thur.)2/	5	1.2			
Clofentezine	16	1.2	0.11	0.13	0.4
Diazinon	11	1.3	1.39	1.93	4.2
Esfenvalerate	31	1.2	0.04	0.05	0.3
Methyl parathion	44	1.4	1.68	2.46	21.9
Petroleum distillate	69	2.8	23.91	68.43	961.7
Phosmet	24	1.6	3.25	5.38	26.0
Fungicides:					
Benomyl	36	2.6	0.43	1.11	8.2
Calcium polysulfide	31	1.5	8.62	13.04	81.7
Copper hydroxide	14	2.7	0.72	2.01	5.8
Copper oxychlo. sul.	25	4.5	0.40	1.81	9.1
Cyprodinil	19	1.6	0.13	0.22	0.8
Mancozeb	46	3.1	2.84	8.88	82.1
Pseudomonas fluores.	24	3.5	0.11	0.40	1.9
Streptomycin	41	3.1	0.09	0.30	2.5
Sulfur	31	2.0	8.80	17.82	113.7
Triflumizole	6	1.1	0.37	0.41	0.5
Ziram	17	1.6	4.49	7.38	25.8
Other Chemicals:					
Naphthaleneacetic ac.	41	1.3	0.07	0.09	0.7

1/ Total acres in 1999 for California were 20,300 acres. Acreage includes both bearing and non-bearing acres.

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

Pears: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Paraquat	13	1.0	0.45	0.45	**
Simazine	12	1.0	1.16	1.16	0.1
Insecticides:					
Abamectin	78	1.0	0.02	0.02	**
Azinphos-methyl	46	2.1	0.63	1.35	0.5
Esfenvalerate	56	1.7	0.05	0.09	**
Imidacloprid	9	1.0	0.07	0.07	**
Permethrin	22	1.0	0.12	0.13	**
Petroleum distillate	73	1.5	9.98	15.89	9.9
Phosmet	67	1.6	1.43	2.35	1.3
Pyridaben	12	1.0	0.17	0.18	**
Fungicides:					
Benomyl	15	2.2	0.24	0.53	0.1
Captan	8	4.7	2.19	10.51	0.7
Copper oxychlo. sul.	9	1.9	1.84	3.64	0.3
Fenarimol	24	2.7	0.04	0.11	**
Ferbam	58	2.0	2.20	4.49	2.2
Mancozeb	49	2.2	3.04	6.70	2.8
Metiram	6	2.3	3.49	8.03	0.4
Sulfur	39	2.1	4.68	9.82	3.2
Ziram	42	3.3	3.01	10.00	3.6

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Michigan were 850 acres.

Pears: Agricultural Chemical Applications,
New York, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	1.1	0.87	0.96	0.1
Glyphosate	39	1.3	1.01	1.35	1.0
Simazine	18	1.0	1.50	1.50	0.5
Insecticides:					
Abamectin	50	1.4	0.02	0.02	**
Amitraz	5	1.5	0.75	1.14	0.1
Azinphos-methyl	64	2.3	0.68	1.59	2.0
Bt (Bacillus thur.)2/	10	1.7			
Chlorpyrifos	13	1.9	1.17	2.28	0.6
Esfenvalerate	37	1.8	0.05	0.09	0.1
Imidacloprid	22	1.9	0.11	0.22	0.1
Methomyl	9	1.0	0.98	0.98	0.2
Petroleum distillate	62	2.0	14.63	30.54	38.2
Phosmet	16	1.7	1.23	2.17	0.7
Pyridaben	6	1.1	0.32	0.36	**
Fungicides:					
Benomyl	12	2.4	0.24	0.58	0.1
Captan	11	1.8	1.71	3.15	0.7
Copper hydroxide	10	1.0	1.96	1.96	0.4
Copper oxychlo. sul.	32	1.3	2.15	2.92	1.9
Fenarimol	8	1.6	0.06	0.11	**
Mancozeb	71	2.3	1.93	4.45	6.3
Streptomycin	41	1.6	0.32	0.51	0.4
Ziram	30	2.1	2.44	5.21	3.1
Other Chemicals:					
Naphthaleneacetic ac.	10	2.0	0.02	0.03	**

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 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.

Pears: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	5	1.0	0.91	0.91	0.8
Diuron	10	1.1	1.47	1.64	3.0
Glyphosate	58	1.4	0.72	1.04	10.7
Oxyfluorfen	4	1.0	0.49	0.49	0.3
Paraquat	15	1.2	0.53	0.65	1.7
Simazine	29	1.6	0.85	1.37	7.2
Insecticides:					
Abamectin	49	1.0	0.02	0.02	0.2
Amitraz	53	1.1	1.47	1.71	16.1
Azinphos-methyl	54	1.6	0.97	1.62	15.5
Bt (Bacillus thur.)2/	2	1.3			
Chlorpyrifos	59	1.0	2.02	2.06	21.7
Endosulfan	51	1.0	2.10	2.20	20.0
Esfenvalerate	28	1.1	0.08	0.09	0.4
Fenbutatin-oxide	9	1.0	0.84	0.84	1.4
Hexythiazox	39	1.0	0.13	0.14	1.0
Imidacloprid	22	1.0	0.27	0.29	1.1
Methidathion	2	1.0	1.31	1.31	0.5
Oxamyl	4	1.0	1.52	1.60	1.2
Petroleum distillate	89	3.4	20.33	69.17	1,093.1
Phosmet	66	1.7	2.86	4.95	57.8
Pyridaben	42	1.0	0.32	0.34	2.5
Pyriproxyfen	23	1.0	0.11	0.12	0.5
Fungicides:					
Benomyl	9	1.1	0.52	0.59	0.9
Calcium polysulfide	45	1.3	14.86	19.36	154.4
Copper hydroxide	20	1.5	3.72	5.61	19.5
Copper oxychlo. sul.	28	1.1	4.72	5.36	26.3
Copper sulfate	3	1.3	1.63	2.15	1.2
Mancozeb	84	1.9	3.58	6.87	102.4
Oxytetracycline	53	1.6	0.22	0.36	3.4
Pseudomonas fluores.	11	1.2	0.24	0.30	0.6
Streptomycin	52	1.7	0.15	0.27	2.5
Sulfur	55	1.4	11.58	16.19	157.3
Triadimefon	17	1.0	0.21	0.21	0.6
Triflumizole	77	1.6	0.27	0.43	5.8
Ziram	70	1.1	5.07	5.70	71.1
Other Chemicals:					
Naphthaleneacetic ac.:	58	1.0	0.06	0.06	0.6

1/ Bearing acres in 1999 for Oregon were 17,800 acres.

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

Pears: Agricultural Chemical Applications,
Pennsylvania, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	7	1.0	1.25	1.25	0.1
Norflurazon	6	1.0	1.78	1.78	0.1
Paraquat	17	1.4	0.49	0.69	0.1
Simazine	10	1.2	1.53	1.91	0.2
Insecticides:					
Abamectin	84	1.1	0.010	0.02	**
Amitraz	73	2.1	0.48	1.02	0.7
Azinphos-methyl	86	2.4	0.32	0.79	0.7
Chlorpyrifos	61	1.0	0.23	0.23	0.1
Endosulfan	9	2.3	1.20	2.75	0.2
Esfenvalerate	85	1.2	0.04	0.05	**
Imidacloprid	74	1.0	0.10	0.10	0.1
Permethrin	2	1.4	0.19	0.27	**
Petroleum distillate	91	1.7	17.59	30.82	28.0
Phosmet	69	4.6	0.46	2.17	1.5
Fungicides:					
Benomyl	81	2.6	0.44	1.18	1.0
Fenarimol	3	3.7	0.06	0.23	**
Mancozeb	76	3.9	1.04	4.13	3.1
Streptomycin	82	1.1	0.35	0.39	0.3
Ziram	86	2.9	1.73	5.11	4.4

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Pennsylvania were 1,000 acres.

Pears: Agricultural Chemical Applications,
Washington, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	1.7	0.74	1.29	1.9
Diuron	5	1.0	1.40	1.43	1.7
Glyphosate	31	1.3	1.52	1.97	14.9
Norflurazon	5	1.0	1.88	1.92	2.5
Paraquat	11	1.7	0.57	1.00	2.6
Simazine	5	1.0	1.26	1.27	1.5
Insecticides:					
Abamectin	79	1.4	0.02	0.03	0.6
Amitraz	6	1.0	1.40	1.51	2.1
Azinphos-methyl	68	1.9	1.01	1.99	33.0
Bt (Bacillus thur.)2/	9	2.1			
Carbaryl	5	1.2	1.36	1.63	2.1
Chlorpyrifos	59	1.1	1.72	1.98	28.3
Diazinon	9	1.0	2.06	2.14	4.7
Diflubenzuron	18	1.0	0.63	0.64	2.9
Endosulfan	65	1.1	2.00	2.24	35.7
Esfenvalerate	9	1.3	0.08	0.11	0.2
Fenbutatin-oxide	9	1.2	0.49	0.62	1.3
Formetanate hydro.	11	1.0	0.70	0.72	1.9
Hexythiazox	12	1.1	0.11	0.13	0.4
Imidacloprid	30	1.6	0.17	0.28	2.0
Kaolin	5	2.2	43.41	99.61	132.0
Methyl parathion	4	1.0	1.43	1.44	1.4
Oxythioquinox	2	1.1	0.88	1.02	0.5
Petroleum distillate	92	3.6	14.85	54.10	1,211.9
Phosmet	22	1.5	2.51	3.77	20.6
Pyridaben	20	1.1	0.24	0.27	1.3
Pyriproxyfen	24	1.0	0.09	0.10	0.6
Fungicides:					
Calcium polysulfide	7	1.1	29.10	32.76	57.2
Copper hydroxide	20	1.4	1.61	2.41	11.8
Copper sulfate	3	1.3	0.76	0.99	0.7
Fenarimol	3	1.0	0.07	0.07	0.1
Mancozeb	41	1.1	4.84	5.69	56.5
Oxytetracycline	43	2.9	0.13	0.38	3.9
Pseudomonas fluores.	3	1.4	0.13	0.19	0.1
Sulfur	52	1.6	8.34	13.60	172.6
Triadimefon	2	1.0	0.23	0.23	0.1
Triflumizole	33	1.1	0.25	0.28	2.3
Ziram	32	1.4	3.89	5.55	43.9
Other Chemicals:					
Chlorophacinone	2	1.0	0.13	0.13	0.1
Dodecanol	10	1.0	0.03	0.03	0.1
E,E-8, 10-Dodecadien	11	1.1	0.04	0.05	0.1
Naphthaleneacetic ac.	43	1.2	0.04	0.05	0.5
Tetradecanol	10	1.0	0.005	0.005	**

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Washington were 24,400 acres.

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

Pecans: Fertilizer Use by State, 1999
Percent of Acres Treated

State	1/ Bearing Acreage	Percent of Acres Treated		
	Acres	Nitrogen Percent	Phosphate Percent	Potash Percent
AZ 2/		89	10	
CA		92	22	59
FL		65	46	58
GA		90	79	83
NC		65	53	62
SC		69	59	68
TX		46	23	14
Total		69	47	45

- 1/ Bearing acres in 1999 for the 7 States surveyed are not available due to the fluctuation in the number of Native and Seedling trees harvested. States included are AZ, CA, FL, GA, NC, SC and TX.
- 2/ Insufficient reports to publish data for one or more of the fertilizer classes.

Pecans: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	1/ Bearing Acreage	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year
Arizona:					
Nitrogen		89	4.6	19	91
Phosphate		10	2.5	28	71
Potash 2/					
California:					
Nitrogen		92	2.8	48	134
Phosphate		22	1.6	29	47
Potash		59	1.9	62	123
Florida:					
Nitrogen		65	1.5	48	73
Phosphate		46	1.2	28	36
Potash		58	1.3	44	62
Georgia:					
Nitrogen		90	1.9	66	128
Phosphate		79	1.2	46	57
Potash		83	1.2	63	78
North Carolina:					
Nitrogen		65	1.2	49	63
Phosphate		53	1.3	32	42
Potash		62	1.2	49	62
South Carolina:					
Nitrogen		69	1.2	54	66
Phosphate		59	1.0	50	51
Potash		68	1.0	72	74
Texas:					
Nitrogen		46	1.9	67	132
Phosphate		23	1.7	33	60
Potash		14	2.0	25	52
Total:					
Nitrogen		69	2.1	59	125
Phosphate		47	1.3	41	57
Potash		45	1.3	54	75

- 1/ Bearing acres in 1999 for the 7 States surveyed are not available due to the fluctuation in the number of Native and Seedling trees harvested. States included are AZ, CA, FL, GA, NC, SC and TX.
- 2/ Insufficient reports to publish data for one or more of the fertilizer classes.

Pecans: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed								
	ALL	AZ	CA	FL	GA	NC	SC	TX	
Herbicides:									
2,4-D	P			*	*			*	
Atrazine	*				*				
Dicamba	*							*	
Diuron	P	*	*		P				
Fluazifop-P-butyl	*				*				
Glyphosate	P	P	P	P	P	P	P	P	
Glyphosate, isopropy	*	*							
MSMA	*							*	
Norflurazon	*		*						
Oryzalin	P	*	*		*	*		*	
Oxyfluorfen	P	*	P			*			
Paraquat	P	*	*		P	*		*	
Picloram	*							*	
Simazine	P		*		*	*	*	*	
Trifluralin	*	*						*	
Insecticides:									
Aldicarb	*				*	*	*		
Amitraz	*				*				
Azinphos-methyl	*							*	
Bt (Bacillus thur.)	P			*		*		P	
Carbaryl	P			*	*	P	P	P	
Chlorpyrifos	P		*	P	P	*	*	P	
Cyfluthrin	*						*		
Cypermethrin	P				P				
Diazinon	P		*	*		*	*	*	
Dicofol	P				*			*	
Dimethoate	P	*	*	*	P			*	
Disulfoton	*			*					
Endosulfan	P		*	*	P		*	*	
Esfenvalerate	P		*		*	*		*	
Ethion	*				*				
Fenvalerate	*							*	
Imidacloprid	P				P				
Lindane	P			*	P	*		*	
Malathion	P	P			*	P		*	
Methomyl	*			*	*				
Methoxychlor	*					*			
Methyl parathion	*				*				
Permethrin	*				*				
Petroleum distillate	*			*		*		*	
Phosmet	P			*	P			*	
Propargite	*			*			*		
Tebufenozide	P				*			*	
Zeta-cypermethrin	P				*			*	

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Pecans: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed							
	ALL	AZ	CA	FL	GA	NC	SC	TX
Fungicides:								
Azoxystrobin	*			*			*	
Basic Cupric Zinc Su.	*							*
Benomyl	P			*	*			P
Calcium polysulfide	*					*		
Captan	*					*		
Chlorothalonil	*				*			
Copper hydroxide	*			*	*			*
Copper resinate	*				*		*	
Copper sulfate	*			*				
Dodine	P			*			*	
Fenbuconazole	P			P	P	*		*
Propiconazole	P			P	P	*	*	P
Sulfur	P	*		*	P			*
Thiophanate-methyl	*			*				*
Triphenyltin hydroxi.	P			P	P	*	*	P
Other Chemicals:								
Pelargonic Acid	*							*
Strychnine	*		*					
Zinc phosphide	*						*	*

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

Pecans: Pesticide, Total Acreage,
Percent of Area Receiving Applications
States Surveyed and Total, 1999

State:	Bearing Acreage	Herbicide	Insecticide	Fungicide	Other Chemical
1/	2/	Percent	Percent	Percent	Percent
AZ	2/	63	63		
CA	2/	85	39		
FL		31	26	44	
GA		77	80	88	
NC		32	26	12	
SC	2/	23	34	22	
TX	2/	11	57	18	
Total:		44	66	47	4

- Bearing acres in 1999 for the 7 States surveyed are not available due to the fluctuation in the number of Native and Seedling trees harvested. States included are AZ, CA, FL, GA, NC, SC and TX.
- Insufficient reports to publish data for one or more of the pesticide classes.

Pecans: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year
	Percent	Number	Pounds per Acre	
Herbicides:				
2,4-D	4	1.2	0.70	0.87
Diuron	9	1.2	1.11	1.41
Glyphosate	40	2.7	0.63	1.72
Oryzalin	1	1.0	1.71	1.78
Oxyfluorfen	3	5.9	1.15	6.86
Paraquat	17	1.8	0.38	0.69
Simazine	3	1.4	1.05	1.56
Insecticides:				
Bt (Bacillus thur.)2/	3	1.4		
Carbaryl	13	1.9	1.71	3.34
Chlorpyrifos	38	2.0	0.90	1.86
Cypermethrin	8	1.9	0.08	0.16
Diazinon	*	1.4	6.16	8.78
Dicofol	13	1.9	0.58	1.10
Dimethoate	21	2.2	0.29	0.66
Endosulfan	2	1.7	0.74	1.29
Esfenvalerate	3	1.2	0.03	0.04
Imidacloprid	14	2.2	0.04	0.09
Lindane	11	1.2	0.39	0.47
Malathion	5	1.9	0.94	1.84
Phosmet	5	1.0	1.03	1.03
Tebufenozide	7	1.0	0.15	0.16
Zeta-cypermethrin	10	1.5	0.05	0.07
Fungicides:				
Benomyl	2	1.4	0.24	0.35
Dodine	*	3.8	0.86	3.26
Fenbuconazole	12	3.6	0.07	0.26
Propiconazole	34	4.8	0.11	0.54
Sulfur	12	1.3	6.27	8.14
Triphenyltin hydroxi.	37	5.7	0.25	1.45

* Area applied is less than one percent.

- 1/ Acreage in 1999 for the 7 States surveyed is not available due to the fluctuation in the number of Native and Seedling trees harvested. States included are AZ, CA, FL, GA, NC, SC and TX.
- 2/ Rates are not available because amounts of active ingredient are not comparable between products.

Pecans: Agricultural Chemical Applications,
Arizona, 1999

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year
	Percent	Number	Pounds per Acre	
Herbicides:				
Glyphosate	59	3.5	0.89	3.14
Insecticides:				
Malathion	58	2.1	0.56	1.22

Pecans: Agricultural Chemical Applications,
California, 1999

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year
	Percent	Number	Pounds per Acre	
Herbicides:				
Glyphosate	73	2.7	0.47	1.29
Oxyfluorfen	45	1.0	0.35	0.38

Pecans: Agricultural Chemical Applications,
Florida, 1999

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year
	Percent	Number	Pounds per Acre	
Herbicides:				
Glyphosate	31	2.2	0.46	1.02
Insecticides:				
Chlorpyrifos	7	2.4	0.99	2.43
Fungicides:				
Fenbuconazole	14	3.8	0.05	0.20
Propiconazole	17	2.8	0.14	0.41
Triphenyltin hydroxi.	31	4.6	0.25	1.18

Pecans: Agricultural Chemical Applications,
Georgia, 1999

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year
	Percent	Number	Pounds per Acre	
Herbicides:				
Diuron	21	1.2	1.12	1.42
Glyphosate	73	2.5	0.60	1.52
Paraquat	32	1.4	0.32	0.46
Insecticides:				
Chlorpyrifos	52	2.5	0.94	2.42
Cypermethrin	18	1.9	0.08	0.16
Dimethoate	48	2.2	0.29	0.65
Endosulfan	5	1.8	0.75	1.36
Imidacloprid	33	2.2	0.04	0.09
Lindane	24	1.2	0.39	0.47
Phosmet	8	1.0	1.25	1.26
Fungicides:				
Fenbuconazole	23	4.0	0.07	0.28
Propiconazole	69	5.2	0.11	0.60
Sulfur	20	1.4	2.87	4.04
Triphenyltin hydroxi.	83	5.8	0.25	1.48

Pecans: Agricultural Chemical Applications,
North Carolina, 1999

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year
	Percent	Number	Pounds per Acre	
Herbicides:				
Glyphosate	32	1.7	0.93	1.63
Insecticides:				
Carbaryl	23	2.0	1.12	2.31
Malathion	7	2.0	1.43	2.95

Pecans: Agricultural Chemical Applications,
South Carolina, 1999

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year
	Percent	Number	Pounds per Acre	
Herbicides:				
Glyphosate	18	1.6	0.93	1.52
Insecticides:				
Carbaryl	15	2.7	2.53	7.05

Pecans: Agricultural Chemical Applications,
Texas, 1999

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year
	Percent	Number	Pounds per Acre	
Herbicides:				
Glyphosate	9	3.9	0.61	2.42
Insecticides:				
Bt (Bacillus thur.)1/	5	1.4		
Carbaryl	14	1.0	1.15	1.25
Chlorpyrifos	33	1.3	0.79	1.06
Fungicides:				
Benomyl	4	1.5	0.21	0.33
Propiconazole	8	1.6	0.09	0.15
Triphenyltin hydroxi.	2	1.3	0.24	0.32

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

Pistachios: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
		Nitrogen		Phosphate		Potash	
CA	91,000	87	9,224	23	757	22	347

Pistachios: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	91,000					
Nitrogen		87	3.9	30	117	9,224
Phosphate		23	1.6	22	36	757
Potash		22	1.4	12	17	347

Pistachios: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
	:	(continued)	:
Herbicides:	:	Fungicides:	:
2,4-D	: *	Azoxystrobin	: P
Glyphosate	: P	Basic copper sulfate	: *
Isoxaben	: *	Benomyl	: P
Oryzalin	: P	Calcium polysulfide	: *
Oxyfluorfen	: P	Copper hydroxide	: *
Paraquat	: P	Copper sulfate	: *
Pendimethalin	: P	Sulfur	: P
	:	Tebuconazole	: P
Insecticides:	:		:
Azinphos-methyl	: *	Other Chemicals:	:
Bt(Bacillus thur.)	: *	Aluminum phosphide	: *
Carbaryl	: P	Chlorophacinone	: *
Permethrin	: P	Diphacinone	: *
Petroleum distillate	: P	Strychnine	: *
Phosmet	: P		:
Propargite	: *		:

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

Pistachios: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied 1/							
State:	Bearing	: Acreage	: Herbicide	: Insecticide 2/:	: Fungicide	: Other Chemical			
	: Acres	: Percent	: 1,000	: Percent	: 1,000	: Percent	: 1,000	: Percent	: 1,000
	:	:	: Lbs	: Lbs	: Lbs	: Lbs	: Lbs	: Lbs	: Lbs
CA	: 91,000	: 91	: 198.7	: 76	: 354.4	: 67	: 540.8	: 3	: **

- ** Amount applied is less than 50 lbs.
1/ Acreage in California includes non-bearing acres. Total applied may include applications of some active ingredients made only to non-bearing acres.
2/ Total Applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.

Pistachios: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
Glyphosate	61	1.5	0.73	1.13	62.6
Oryzalin	39	1.2	1.68	2.04	72.0
Oxyfluorfen	48	1.1	0.53	0.63	27.3
Paraquat	43	1.1	0.50	0.56	21.5
Pendimethalin	7	1.0	1.55	1.63	11.1
Insecticides:					
Carbaryl	23	1.0	2.67	2.84	59.6
Permethrin	47	1.2	0.23	0.29	12.3
Petroleum distillate	5	1.1	35.98	40.47	189.0
Phosmet	34	1.0	2.65	2.80	85.5
Fungicides:					
Azoxystrobin	28	1.5	0.22	0.34	8.8
Benomyl	26	1.2	0.92	1.19	28.7
Sulfur	39	1.3	9.88	13.65	485.3
Tebuconazole	11	1.4	0.23	0.32	3.1

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

Plums: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
		Nitrogen		Phosphate		Potash	
CA	44,500	88	2,349	40	556	41	738

Plums: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	44,500					
Nitrogen		88	1.2	47	60	2,349
Phosphate		40	1.1	28	31	556
Potash		41	1.2	32	41	738

Plums: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
	:	(continued)	:
Herbicides:	:	Fungicides:	:
2,4-D	: *	Basic copper sulfate	: *
Fluazifop-P-butyl	: *	Captan	: *
Glyphosate	: P	Copper hydroxide	: P
Norflurazon	: P	Copper oxide	: *
Oryzalin	: P	Cyprodinil	: *
Oxyfluorfen	: P	Iprodione	: P
Paraquat	: P	Myclobutanil	: *
Sulfosate	: *	Propiconazole	: P
	:	Sulfur	: P
Insecticides:	:	Thiophanate-methyl	: *
Bt (Bacillus thur.)	: P	Ziram	: *
Carbaryl	: P		:
Chlorpyrifos	: P	Other Chemicals:	:
Diazinon	: P	Farnesol	: *
Dicofol	: *	Nerolidol	: *
Esfenvalerate	: P	Tetradecen-1-OL (Z)	: *
Fenbutatin-oxide	: *	Tetradecen-1-yl (E)	: *
Hydro. Ext. Neem Oil	: *	Z-8-Dodecenyl Acetate	: *
Methidathion	: P		:
Methyl parathion	: P		:
Petroleum distillate	: P		:
Phosmet	: P		:
Propargite	: *		:
Pyriproxyfen	: *		:

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

Plums: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

Area Receiving and Total Applied 1/							
State: Bearing	Acres	Percent 1,000	Herbicide	Insecticide 2/:	Fungicide	Other Chemical	
Acres	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	
Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	
CA 3/:	44,500	60	44.9	79	1,313.2	45	123.8

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

Plums: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	29	1.6	0.87	1.45	18.7
Norflurazon	8	1.0	0.87	0.94	3.3
Oryzalin	7	1.1	2.73	3.13	10.0
Oxyfluorfen	22	1.1	0.47	0.56	5.4
Paraquat	11	1.5	0.66	1.02	5.1
Insecticides:					
Bt (Bacillus thur.)2/:	16	1.2			
Carbaryl	19	1.1	4.08	4.64	38.9
Chlorpyrifos	19	1.3	2.00	2.75	23.6
Diazinon	8	1.1	1.94	2.22	7.6
Esfenvalerate	21	1.3	0.05	0.06	0.6
Methidathion	10	2.0	1.96	4.08	17.5
Methyl parathion	5	1.1	1.50	1.69	3.4
Petroleum distillate	52	1.5	33.77	50.51	1,179.3
Phosmet	16	1.7	2.91	5.15	36.2
Fungicides:					
Copper hydroxide	8	1.1	3.56	4.11	15.3
Iprodione	12	1.1	0.68	0.78	4.1
Propiconazole	16	1.2	0.11	0.14	1.0
Sulfur	19	1.3	5.99	8.04	69.3

- 1/ Total acres in 1999 for California were 44,500 acres. Acreage includes both bearing and non-bearing acres.
- 2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Prunes: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Prunes: Fertilizer Use by State, 1999							
Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
			Nitrogen		Phosphate		Potash
CA	98,000	94	8,423	14	365	36	3,412

Prunes: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
California:	98,000					
Nitrogen		94	1.6	56	91	8,423
Phosphate		14	1.3	19	26	365
Potash		36	1.3	70	97	3,412

Prunes: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
	:	(continued)	:
Herbicides:	:	Fungicides:	:
2,4-D	: P	Basic copper sulfate	: *
Fluazifop-P-butyl	: *	Benomyl	: *
Glyphosate	: P	Calcium polysulfide	: *
Norflurazon	: P	Captan	: P
Oryzalin	: P	Chlorothalonil	: P
Oxyfluorfen	: P	Copper hydroxide	: *
Paraquat	: P	Copper resinate	: *
Pendimethalin	: *	Cyprodinil	: P
Sethoxydim	: *	Fenarimol	: *
Simazine	: *	Iprodione	: P
Sulfosate	: *	Myclobutanil	: *
	:	Potassium bicarbonate	: *
Insecticides:	:	Propiconazole	: P
Azinphos-methyl	: *	Sulfur	: P
Bt (Bacillus thur.)	: P		:
Carbaryl	: *	Other Chemicals:	:
Chlorpyrifos	: P	Chloropicrin	: *
Diazinon	: P	Methyl bromide	: P
Dicofol	: P	Strychnine	: *
Esfenvalerate	: P		:
Fenbutatin-oxide	: P		:
Formetanate hydrochl.	: *		:
Methidathion	: P		:
Petroleum distillate	: P		:
Propargite	: *		:

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

Prunes: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied 1/								
State:	Bearing	Acreage	Herbicide	Insecticide 2/	Fungicide	Other Chemical				
		Acres	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Lbs	Lbs	Lbs	
CA	:	98,000	41	61.3	62	958.2	57	542.7	5	724.3

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

Prunes: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	7	1.2	0.39	0.47	3.3
Glyphosate	33	1.8	0.51	0.93	30.1
Norflurazon	5	1.1	0.91	1.03	5.0
Oryzalin	6	1.1	1.46	1.61	9.4
Oxyfluorfen	13	1.2	0.50	0.64	8.1
Paraquat	9	1.2	0.33	0.40	3.7
Insecticides:					
Bt (Bacillus thur.)2/	6	1.1			
Chlorpyrifos	2	1.5	1.94	2.99	6.1
Diazinon	14	1.0	1.48	1.62	22.9
Dicofol	4	1.0	1.08	1.18	5.0
Esfenvalerate	29	1.2	0.05	0.06	1.7
Fenbutatin-oxide	5	1.1	0.59	0.67	3.4
Methidathion	3	1.2	1.14	1.37	3.4
Petroleum distillate	38	1.2	20.36	24.42	913.3
Fungicides:					
Captan	22	1.3	2.89	3.78	80.3
Chlorothalonil	4	1.2	3.03	3.66	14.1
Cyprodinil	9	1.2	0.23	0.28	2.6
Iprodione	11	1.2	0.64	0.79	8.5
Propiconazole	19	1.2	0.11	0.13	2.4
Sulfur	31	1.3	10.22	14.07	426.3
Other Chemicals:					
Methyl bromide	4	1.1	174.66	198.50	724.2

- 1/ Total acres in 1999 for California were 98,000 acres. Acreage includes both bearing and non-bearing acres.
- 2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Raspberries: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Percent Acres	1,000 Lbs	Percent Nitrogen	1,000 Lbs	Percent Phosphate	1,000 Lbs
OR	4,100	98	208	92	425	92	347
WA	9,500	97	970	95	1,273	86	825
Total	13,600	97	1,178	94	1,698	88	1,172

Raspberries: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
Oregon:	4,100					
Nitrogen		98	1.3	38	52	208
Phosphate		92	1.5	72	112	425
Potash		92	1.5	60	92	347
Washington:	9,500					
Nitrogen		97	2.4	42	105	970
Phosphate		95	2.3	61	141	1,273
Potash		86	2.3	44	101	825
Total:	13,600					
Nitrogen		97	2.1	42	89	1,178
Phosphate		94	2.0	63	133	1,698
Potash		88	2.0	47	98	1,172

Raspberries: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

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

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

Raspberries: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

		Area Receiving and Total Applied							
State: Bearing		-----							
: Acreage		Herbicide	Insecticide 1/:	Fungicide	Other Chemical				
: Acres		Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000				
: :		Lbs	Lbs	Lbs	Lbs				
: :									
OR 2/:	4,100	85	6.4	75	9.8	95	53.6		
WA 2/:	9,500	93	11.7	87	19.2	96	135.6		
: :									
Total:	13,600	91	18.1	83	29.0	96	189.2	14	344.9

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

Raspberries: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	32	1.0	0.70	0.75	3.3
Napropamide	2	1.2	1.23	1.47	0.4
Norflurazon	4	1.0	1.04	1.04	0.6
Oryzalin	18	1.0	1.10	1.10	2.8
Oxyfluorfen	58	1.0	0.10	0.10	0.8
Paraquat	75	1.2	0.28	0.35	3.6
Sethoxydim	6	1.0	0.14	0.14	0.1
Simazine	49	1.0	0.88	0.88	5.9
Insecticides:					
Bt (Bacillus thur.)2/	42	2.2			
Bifenthrin	55	1.0	0.10	0.10	0.7
Diazinon	60	1.6	1.02	1.67	13.6
Esfenvalerate	15	1.0	0.04	0.04	0.1
Malathion	39	1.0	1.47	1.53	8.2
Fungicides:					
Benomyl	35	1.0	0.48	0.52	2.5
Calcium polysulfide	70	1.0	9.52	9.52	90.9
Captan	89	3.3	1.43	4.85	59.0
Copper hydroxide	3	1.0	0.91	0.91	0.4
Copper sulfate	38	1.0	2.09	2.09	10.7
Cyprodinil	80	2.3	0.32	0.74	8.0
Ferbam	7	1.0	1.22	1.29	1.3
Fludioxonil	80	2.3	0.21	0.49	5.4
Iprodione	18	1.6	0.54	0.90	2.2
Mefenoxam	34	1.0	0.37	0.38	1.8
Metalaxyl	7	1.2	0.57	0.73	0.7
Propiconazole	8	1.0	0.14	0.14	0.2
Vinclozolin	26	1.0	0.66	0.66	2.3
Other Chemicals:					
Monocarbamide dihyd.	14	1.7	102.26	179.53	344.9

- 1/ Bearing acres in 1999 for the 2 States surveyed were 13,600 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, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	28	1.2	0.87	1.10	1.3
Napropamide	8	1.2	1.23	1.47	0.5
Oryzalin	2	1.0	1.61	1.61	0.1
Oxyfluorfen	9	1.0	0.14	0.14	0.1
Paraquat	58	1.7	0.23	0.39	0.9
Simazine	53	1.0	1.44	1.44	3.1
Insecticides:					
Bt (Bacillus thur.)2/	16	1.6			
Bifenthrin	11	1.0	0.09	0.09	**
Diazinon	38	1.0	1.06	1.06	1.7
Malathion	52	1.0	2.06	2.26	4.8
Fungicides:					
Benomyl	9	1.1	0.37	0.44	0.2
Calcium polysulfide	82	1.0	10.78	10.78	36.2
Captan	80	1.2	1.98	2.48	8.2
Cyprodinil	54	1.1	0.29	0.32	0.7
Fludioxonil	54	1.1	0.19	0.21	0.5
Mefenoxam	65	1.0	0.34	0.36	1.0

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Oregon were 4,100 acres.

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

Raspberries: Agricultural Chemical Applications,
Washington, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Diuron	34	1.0	0.62	0.62	2.0
Norflurazon	6	1.0	1.04	1.04	0.6
Oryzalin	25	1.0	1.08	1.08	2.6
Oxyfluorfen	79	1.0	0.10	0.10	0.8
Paraquat	82	1.1	0.31	0.34	2.7
Simazine	48	1.0	0.61	0.61	2.8
Insecticides:					
Bt (Bacillus thur.)2/	54	2.3			
Bifenthrin	74	1.0	0.10	0.10	0.7
Diazinon	69	1.8	1.01	1.81	11.9
Malathion	34	1.0	1.04	1.04	3.4
Fungicides:					
Benomyl	46	1.0	0.49	0.53	2.3
Calcium polysulfide	65	1.0	8.84	8.84	54.7
Captan	93	4.1	1.37	5.72	50.8
Copper sulfate	54	1.0	2.09	2.09	10.7
Cyprodinil	91	2.6	0.32	0.84	7.3
Fludioxonil	91	2.6	0.22	0.56	4.9
Mefenoxam	21	1.0	0.40	0.40	0.8

1/ Bearing acres in 1999 for Washington were 9,500 acres.

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

Tangelos: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
FL	11,700	99	1,898	70	216	99	2,015

Tangelos: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
Florida:	11,700					
Nitrogen		99	2.9	56	165	1,898
Phosphate		70	2.6	10	27	216
Potash		99	2.9	60	175	2,015

Tangelos: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: FL	Active Ingredient	: FL
		(continued)	
Herbicides:	:	Fungicides:	:
Bromacil	: P	Basic copper sulfate	: P
Diuron	: P	Benomyl	: P
Glyphosate	: P	Copper ammonium carb	: *
Norflurazon	: P	Copper chloride hydr	: *
Oryzalin	: *	Copper hydroxide	: P
Paraquat	: P	Copper oxychlo. sul.	: P
Pendimethalin	: *	Copper sulfate	: P
Sethoxydim	: *	Ferbam	: *
Simazine	: P	Maneb	: *
Sulfosate	: *	Metalaxyl	: *
Thiazopyr	: *		
	:		
Insecticides:	:		
Abamectin	: P		
Aldicarb	: *		
Azadirachtin	: *		
Carbaryl	: *		
Carbofuran	: *		
Chlorpyrifos	: P		
Dicofol	: P		
Diiflubenzuron	: P		
Ethion	: P		
Fenbutatin-oxide	: P		
Neem Oil, Hydrophobi	: *		
Petroleum distillate	: P		
Pyridaben	: P		
Sulfur	: *		

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

Tangelos: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Florida, 1999

State:	Bearing	Area Receiving and Total Applied				
:	Acreage	Herbicide	Insecticide	Fungicide	Other Chemical	
:	Acres	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	
:		Lbs	Lbs	Lbs	Lbs	
FL	11,700	96	69.4	98	769.1	87 41.8

Tangelos: Agricultural Chemical Applications,
Florida, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
Bromacil	2	1.5	0.97	1.49	0.3
Diuron	53	2.2	1.58	3.53	21.7
Glyphosate	94	2.0	0.87	1.80	19.9
Norflurazon	47	1.4	1.26	1.77	9.7
Paraquat	28	1.9	0.28	0.54	1.8
Simazine	35	2.3	1.50	3.45	14.1
Insecticides:					
Abamectin	59	1.1	0.009	0.01	0.1
Chlorpyrifos	5	1.2	1.01	1.25	0.7
Dicofol	2	1.2	1.66	1.99	0.5
Diflubenzuron	14	1.1	0.29	0.32	0.5
Ethion	35	1.0	5.39	5.50	22.3
Fenbutatin-oxide	25	1.0	0.98	1.00	3.0
Petroleum distillate	95	1.5	39.83	63.32	704.3
Pyridaben	5	1.0	0.33	0.33	0.2
Fungicides:					
Basic copper sulfate	6	1.5	2.06	3.20	2.2
Benomyl	3	1.5	0.39	0.59	0.2
Copper hydroxide	56	1.3	2.25	3.11	20.4
Copper oxychlo. sul.	25	1.9	2.81	5.58	16.1
Copper sulfate	2	1.6	1.05	1.69	0.4

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

Tangerines: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
AZ	6,300	97	1,323	67	311	7	18
CA	11,100	57	357	31	28	33	43
FL	27,300	99	4,798	55	428	98	4,883
Total	44,700	88	6,478	51	767	69	4,944

Tangerines: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
Arizona:	6,300					
Nitrogen		97	4.8	45	216	1,323
Phosphate		67	1.8	39	73	311
Potash		7	1.0	42	43	18
California:	11,100					
Nitrogen		57	3.2	17	57	357
Phosphate		31	1.9	4	8	28
Potash		33	1.9	6	12	43
Florida:	27,300					
Nitrogen		99	4.3	41	178	4,798
Phosphate		55	3.1	9	28	428
Potash		98	3.8	47	183	4,883
Total:	44,700					
Nitrogen		88	4.2	39	165	6,478
Phosphate		51	2.7	12	34	767
Potash		69	3.6	44	161	4,944

Tangerines: Active Ingredients Applied and Publication Status
by States Surveyed, 1999

Active Ingredient	States Surveyed			
	ALL	AZ	CA	FL
Herbicides:				
2,4-D	*		*	
Bromacil	P	*	*	P
Diuron	P	*	*	P
Glyphosate	P	P	P	P
Norflurazon	P		P	P
Oryzalin	*	*	*	*
Oxyfluorfen	*			*
Paraquat	P			P
Pendimethalin	*			*
Sethoxydim	*			*
Simazine	P	*	*	P
Sulfosate	*			*
Thiazopyr	*			*
Insecticides:				
Abamectin	P		*	*
Aldicarb	*			*
Azadirachtin	*			*
Bt (Bacillus thur.)	*		*	*
Carbaryl	*		*	*
Carbofuran	*			*
Chlorpyrifos	P		P	P
Cyfluthrin	P	*	*	
Dicofol	P	*		*
Diiflubenzuron	P			P
Dimethoate	P	*	*	
Ethion	P			P
Fenamiphos	*		*	
Fenbutatin-oxide	P			P
Formetanate hydro.	P	*	*	
Malathion	*		*	*
Methidathion	*		*	
Neem Oil, Hydrophobi.	*			*
Oxydemeton-methyl	*			*
Petroleum distillate	P		*	*
Pyridaben	P			P
Pyriproxyfen	*		*	
Sabadilla	*		*	
Spinosad	P	P	P	
Sulfur	P	*	P	*
Tebufenozide	*	*	*	

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Tangerines: Active Ingredients Applied and Publication Status
by States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed			
	ALL	AZ	CA	FL
Fungicides:				
Basic copper sulfate	P		P	P
Benomyl	P			P
Copper hydroxide	P	*	*	P
Copper oxide	*			*
Copper oxychlo. sul.	P			P
Copper sulfate	*			*
Ferbam	P			P
Fosetyl-al	*		*	*
Mefenoxam	*	*		
Metalaxyl	*	*		
Other Chemicals:				
Gibberellic acid	P		*	*
Metaldehyde	*		*	
Strychnine	*		*	

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

Tangerines: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State:	Bearing	Area Receiving and Total Applied 1/								
		Acreage	Herbicide		Insecticide 2/:		Fungicide		Other Chemical	
		Acres	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000
			Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs
AZ	:	6,300	50	5.3	64	7.7	12	0.9		
CA	3/:	11,100	57	14.4	45	109.5	42	9.6		
FL	3/:	27,300	95	128.1	97	1,663.0	85	137.1		
Total:		44,700	79	147.8	80	1,780.2	64	147.6	3	**

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

Tangerines: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
Bromacil	11	1.4	0.80	1.14	5.7
Diuron	30	1.5	1.14	1.78	23.6
Glyphosate	77	2.5	0.72	1.79	61.7
Norflurazon	9	1.5	1.13	1.81	7.2
Paraquat	3	1.5	0.29	0.46	0.6
Simazine	30	2.3	1.44	3.40	46.3
Insecticides:					
Abamectin	43	1.0	0.009	0.009	0.2
Chlorpyrifos	9	1.4	1.45	2.14	8.7
Cyfluthrin	2	1.0	0.10	0.10	0.1
Dicofol	5	1.1	0.90	1.00	2.2
Diiflubenzuron	9	1.4	0.18	0.27	1.0
Dimethoate	5	1.0	1.33	1.37	2.8
Ethion	24	1.0	5.20	5.26	56.4
Fenbutatin-oxide	21	1.0	0.99	1.00	9.3
Formetanate hydro.	6	1.1	1.19	1.31	3.7
Petroleum distillate	53	1.9	31.77	63.17	1,501.0
Pyridaben	14	1.1	0.40	0.44	2.7
Spinosad	6	1.2	0.09	0.11	0.3
Sulfur	25	1.1	14.85	16.31	185.6
Fungicides:					
Basic copper sulfate	15	1.8	1.46	2.72	17.7
Benomyl	8	1.0	0.90	0.94	3.3
Copper hydroxide	28	2.4	1.98	4.75	58.4
Copper oxychlo. sul.	20	1.9	2.99	5.87	53.0
Ferbam	9	1.0	3.35	3.42	14.3
Other Chemicals:					
Gibberellic acid	2	1.0	0.04	0.04	**

** Total applied is less than 50 lbs.

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

Tangerines: Agricultural Chemical Applications,
Arizona, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	49	2.8	0.58	1.67	5.2
Insecticides:					
Spinosad	8	1.0	0.09	0.09	**

** Total applied is less than 50 lbs.

1/ Bearing acres in 1999 for Arizona were 6,300 acres.

Tangerines: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	52	2.9	0.36	1.07	6.2
Norflurazon	1	1.0	1.99	1.99	0.2
Insecticides:					
Chlorpyrifos	13	1.0	3.90	3.90	5.4
Spinosad	20	1.2	0.09	0.12	0.3
Sulfur	20	1.4	29.16	42.81	97.2
Fungicides:					
Basic copper sulfate	38	1.9	1.06	2.08	8.7

1/ Total acres in 1999 for California were 11,100 acres. Acreage includes both bearing and non-bearing acres.

Tangerines: Agricultural Chemical Applications,
Florida, 1999 1/

Agricultural Chemical	Area Applied Percent	Appli- cations Number	Rate per Application Pounds per Acre	Rate per Crop Year	Total Applied 1,000 lbs
Herbicides:					
Bromacil	16	1.4	0.76	1.11	4.8
Diuron	39	1.6	1.16	1.85	19.8
Glyphosate	93	2.3	0.84	1.97	50.3
Norflurazon	14	1.6	1.11	1.80	6.9
Paraquat	5	1.5	0.29	0.46	0.6
Simazine	43	2.5	1.46	3.68	43.2
Insecticides:					
Chlorpyrifos	10	1.7	0.72	1.24	3.3
Diflubenzuron	14	1.4	0.18	0.27	1.0
Ethion	39	1.0	5.20	5.26	56.4
Fenbutatin-oxide	34	1.0	0.99	1.00	9.3
Pyridaben	22	1.1	0.40	0.44	2.7
Fungicides:					
Basic copper sulfate	9	1.6	2.31	3.85	9.0
Benomyl	13	1.0	0.90	0.94	3.3
Copper hydroxide	42	2.4	1.98	4.92	56.8
Copper oxychlo. sul.	33	1.9	2.99	5.87	53.0
Ferbam	15	1.0	3.35	3.42	14.3

1/ Bearing acres in 1999 for Florida were 27,300 acres.

Temples: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

Percent of Acres Treated and Total Applied							
State	Bearing Acreage	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
			Nitrogen		Phosphate		Potash
FL	6,000	100	883	80	94	100	950

Temples: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	Percent	Number	Pounds per Acre		1,000 Lbs
Florida:	6,000					
Nitrogen		100	2.7	53	147	883
Phosphate		80	2.2	9	20	94
Potash		100	2.6	60	158	950

Temples: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: FL	Active Ingredient	: FL
	:	(continued)	:
Herbicides:	:		:
Bromacil	: P	Insecticides: (cont.)	:
Diuron	: P	Ethion	: P
Glyphosate	: P	Fenbutatin-oxide	: P
Norflurazon	: P	Petroleum distillate	: P
Oryzalin	: *	Pyridaben	: P
Paraquat	: P	Sulfur	: *
Pendimethalin	: *		:
Sethoxydim	: *	Fungicides:	:
Simazine	: P	Basic Cupric Zinc Su.	: *
Sulfosate	: *	Basic copper sulfate	: *
	:	Benomyl	: P
Insecticides:	:	Copper ammonium carb	: *
Abamectin	: P	Copper hydroxide	: P
Aldicarb	: *	Copper oxychlo. sul.	: *
Azadirachtin	: *	Copper sulfate	: *
Carbaryl	: *	Ferbam	: P
Chlorpyrifos	: *	Metalaxyl	: *
Dicofol	: *		:
Diflubenzuron	: P	Other Chemicals:	:
Dimethoate	: *	Gibberellic acid	: *

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P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Temples: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
Florida, 1999

		Area Receiving and Total Applied						
State:	Bearing	Herbicide		Insecticide		Fungicide		Other Chemical
:	Acreage	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	
:		Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	
FL 1/:	6,000	94	37.9	60	217.1	59	17.7	

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

Temples: Agricultural Chemical Applications,
Florida, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromacil	9	1.6	0.51	0.85	0.5
Diuron	64	2.4	1.53	3.75	14.4
Glyphosate	83	1.7	0.93	1.61	8.1
Norflurazon	53	1.2	1.46	1.85	5.9
Paraquat	41	2.0	0.28	0.55	1.4
Simazine	26	2.4	1.55	3.86	5.9
Insecticides:					
Abamectin	49	1.0	0.009	0.010	**
Diflubenzuron	10	1.1	0.28	0.33	0.2
Ethion	30	1.0	5.32	5.51	9.9
Fenbutatin-oxide	19	1.0	1.00	1.00	1.2
Petroleum distillate	54	1.5	37.46	56.16	181.3
Pyridaben	12	1.0	0.31	0.31	0.2
Fungicides:					
Benomyl	4	1.0	0.90	0.90	0.2
Copper hydroxide	37	2.1	1.67	3.64	8.0
Ferbam	9	1.1	4.29	4.73	2.5

** Total applied is less than 50 lbs.

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

Walnuts: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Bearing Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen	Phosphate	Potash			
	Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CA	216,000	83	19,449	13	1,224	24	6,243

Walnuts: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Bearing Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied	
	Acres	Percent	Number	Pounds per Acre	1,000 Lbs		
California:	216,000						
Nitrogen		83	1.8	60	109	19,449	
Phosphate		13	1.4	29	43	1,224	
Potash		24	1.5	77	120	6,243	

Walnuts: Active Ingredient Publication Status
by States Surveyed, 1999

Active Ingredient	: CA	Active Ingredient	: CA
	:	(continued)	:
Herbicides:	:	Insecticides: (cont.)	:
2,4-D	: P	Phosphamidon	: *
Clethodim	: *	Propargite	: P
Diuron	: P	Tebufenozide	: P
Fluazifop-P-butyl	: *		:
Glyphosate	: P	Fungicides:	:
Isoxaben	: *	Basic copper sulfate	: *
Norflurazon	: P	Captan	: *
Oryzalin	: P	Copper ammonium carb.	: *
Oxyfluorfen	: P	Copper hydroxide	: P
Paraquat	: P	Copper oxide	: P
Pendimethalin	: P	Copper sulfate	: *
Simazine	: P	Cyprodinil	: *
Sulfosate	: *	Fenarimol	: *
	:	Fenbuconazole	: *
Insecticides:	:	Iprodione	: *
Abamectin	: *	Mancozeb	: *
Azinphos-methyl	: P	Maneb	: P
Bt(Bacillus thur.)	: *	Mefenoxam	: *
Carbaryl	: *	Myclobutanil	: *
Chlorpyrifos	: P	Propiconazole	: *
Clofentezine	: P	Streptomycin	: *
Diazinon	: P	Sulfur	: *
Dicofol	: P	Vinclozolin	: *
Diflubenzuron	: *		:
Esfenvalerate	: P	Other Chemicals:	:
Fenbutatin-oxide	: P	Aluminum phosphide	: *
Malathion	: *	Chloropicrin	: *
Methidathion	: P	Dichloropropene	: *
Methyl parathion	: P	Diphacinone	: *
Naled	: P	Ethephon	: P
Oxydemeton-methyl	: *	Maleic hydrazide	: *
Permethrin	: P	Methyl bromide	: P
Petroleum distillate	: P	Strychnine	: *
Phosmet	: P		:

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P Usage data are published for this active ingredient.

* Usage data are not published for this active ingredient.

Walnuts: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
California, 1999

		Area Receiving and Total Applied 1/							
State: Bearing		-----							
: Acreage :		Herbicide	: Insecticide 2/:		Fungicide	: Other Chemical			
: Acres		Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	Percent 1,000	
: :		Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	
: :									
CA	: 216,000	58	278.4	68	800.8	56	968.0	12	1,485.1

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

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

Walnuts: Agricultural Chemical Applications,
California, 1999 1/

Agricultural Chemical	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	2.1	0.89	1.94	26.1
Diuron	9	1.1	1.37	1.64	30.1
Glyphosate	47	2.4	0.52	1.27	129.4
Norflurazon	2	1.0	0.88	0.96	5.0
Oryzalin	2	1.6	1.50	2.49	12.5
Oxyfluorfen	21	1.3	0.31	0.43	19.7
Paraquat	11	1.4	0.31	0.43	10.6
Pendimethalin	5	1.2	0.37	0.46	4.8
Simazine	13	1.2	1.15	1.39	38.6
Insecticides:					
Azinphos-methyl	4	1.1	1.74	2.05	15.9
Chlorpyrifos	30	1.3	1.72	2.31	150.4
Clofentezine	1	1.0	0.09	0.09	0.2
Diazinon	1	1.0	1.24	1.34	3.7
Dicofol	4	1.1	1.53	1.70	12.9
Esfenvalerate	17	1.4	0.04	0.06	2.1
Fenbutatin-oxide	3	1.1	0.78	0.86	5.7
Methidathion	2	1.0	2.28	2.46	12.1
Methyl parathion	10	1.5	1.81	2.72	56.4
Naled	3	1.1	0.74	0.81	5.3
Permethrin	12	1.3	0.17	0.23	6.1
Petroleum distillate	8	2.4	8.22	20.04	326.4
Phosmet	13	1.2	3.75	4.64	127.7
Propargite	14	1.3	1.66	2.15	66.7
Tebufenozide	5	1.4	0.27	0.39	4.5
Fungicides:					
Copper hydroxide	45	2.0	3.13	6.50	630.0
Copper oxide	4	1.4	4.70	6.82	55.9
Maneb	37	1.9	1.58	3.04	245.6
Other Chemicals:					
Ethephon	7	1.4	0.90	1.32	19.1
Methyl bromide	3	1.0	187.90	191.24	1,175.5

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

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

Estimation Procedures: The chemical application's 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.

Bearing and non-bearing acreage estimates are primarily based on periodic orchard surveys. In non-survey years, acreage is based on trends, county extension service data, end of year production surveys and other indications. Bearing and non-bearing acres of pecans are not available due to the nature of harvesting Native and Seedling trees. The survey percentages are based on the respondents' consideration of area from which nuts were collected.

Estimates of the total amount of active ingredient applied are based on the acreage estimates published in the annual NASS reports "**Citrus Fruits - 1999 Summary**" [Fr Nt 3-1(99)] released on September 23, 1999 and "**Noncitrus Fruits and Nuts - 1999 Summary**" [Fr Nt 1-3(00)] released on July 7, 2000. The estimates for total amount applied will not be revised even if there are subsequent revisions to acreage for a given crop.

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

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

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

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

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

Terms and Definitions

Active ingredient: The active ingredient is the specific chemical which kills or controls the target pests. Usage data are reported by pesticide product and are converted to an amount of active ingredient. A single method of conversion has been chosen for active ingredients having more than one way of being converted. For example in this report, copper compounds are expressed in their metallic copper equivalent, and others such as 2,4-D and glyphosate are expressed in their acid equivalent.

Agricultural chemicals: The phrase "agricultural chemicals" refers to the active ingredients in fertilizers and pesticides.

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

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

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

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

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

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

Pesticides: As defined by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), pesticides include any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

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

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

Trade Name, Common Name, and Pesticide Class

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

Class :	Common Name	:	Trade Name
H	2,4-D		several
H	2,4-D, Dimethylamine Salt		Saber, Weed-B-Gon
I	abamectin		Agri-Mek
I	acephate		Orthene
H	alachlor		Lasso
I	aldicarb		Temik
O	allium sativum		Allium Sativum
O	aluminum phosphide		Fumitoxin
H	ametryn		Evik
I	amitraz		Mitac
O	ammonium soap		Hinder
F	Ampelomyces quisquales isolate		AQ10
H	atrazine		AAtrex
I	azadirachtin		Align, Neemix, Margosan-o
I	azinphos-methyl		Guthion
F	azoxystrobin		Abound, Heritage, Quadris
F	basic cupric zinc sulfate		Zinc Coposil Dust
F	basic copper sulfate		Top Cop, Tri-Basic
F	benomyl		Benlate
O	benzyladenine		Accel
I	bifenthrin		Capture, Brigade
O	brodifacoum		several
H	bromacil		Hyvar
O	bromadiolone		several
H	bromoxynil		Brominal, Buctril
I	Bt (Bacillus thuringiens)		several
O	butenic acid hydro.		Retain
F	calcium polysulfide		several
F	captafol		Difolatan
F	captan		Captan
I,O	carbaryl		Sevin, Savit
I	carbofuran		Furadan
I	carbophenothion		Trithion
F	carboxin		Vitavax
O	chlorophacinone		Rozol
O	chloropicrin		several
F	chlorothalonil		Bravo
I	chlorpyrifos		Lorsban
O	cholecalciferol		Quintox
H	clethodim		Select
I	clofentezine		Apollo
H	clopyralid		Reclaim, Stinger
F	copper (metallic)		Cop-O-Zinc

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Class :	Common Name	:	Trade Name
F	copper ammonium carb.		Copper-Count-N
F	copper chloride hydroxide		Copper Oxychloride
F	copper hydroxide		several
F	copper oxide		Nordox
F	copper oxychloride sulfate		C-O-C-S
F	copper oxychloride		Microspense
F	copper resinate		Tenn-Cop
F	copper sulfate		Copper sulfate
I	cube resin, other		Fruit Tree Spring
F	cresol		Creolin
I	cryolite		Kryocide
O	cyanamid		Dormex
I	cyfluthrin		Baythroid
I	cyhexatin		Pictran
O	cytokinins		Triggrr, Promalin
I	cypermethrin		Ammo, Cymbush
F	cyprodinil		Switch, Vanguard
F	DCNA		Botran
H	DCPA		Dacthal
I	diazinon		several
H	dichlobenil		Casoron, Norosac
F	dichlone		Phygon
O	dichloropropene		Telone
F	dicloran		Botran
I	dicofol		Kelthane
H	difenzoquat		Avenge
I	diflubenzuron		Dimilin
I	dimethoate		several
F	dimethyphenol		Gallex
F	dinocap		Karathane
O	diphacinone		Ramik
H	diquat		Diquat
I	disulfoton		Di-Syston
H	diuron		Karmex, Direx
O	DNOC		Elgetol
O	dodecanol		Isomate
O	dodecenyl acetate		Checkmate
O	Z-8-dodecenyl Acetate		Checkmate, Disrupt, Isomate
F	dodine		Cyprex, Syllit
O	E,E-8, 10-dodecadien		Disrupt, Checkmate
I	endosulfan		Thiodan
H	EPTC		Eptam
I	esfenvalerate		Asana
O	ethephon		Ethrel
I	ethion		Ethion
I	ethoprop		Mocap
I	ethyl parathion		several
O	farnesol		Stirrup
I	fenamiphos		Nemacur
F	fenarimol		Rubigan
F	fenbuconazole		RH-7592
I	fenbutatin-oxide		Vendex
I	fenoxycarb		Comply
I	fenpropathrin		Danitol
I	fenvalerate		several

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Class :	Common Name	:	Trade Name
F	ferbam		Carbamate
H	fluazifop-P-butyl		Fusilade
F	fludioxonil		Maxim, Switch
I	fluvalinate		Spur, Mavrik
F	folpet		Folpet
O	formaldehyde		Formaldehyde
I	Formetanate hydrochloride		Carzol
F	fosetyl-al		Aliette
O	gamma aminobutric acid		Auxigro
O	garlic oil		Envirepel, Guardian
O	gibberellic acid		ProGibb, ProVide, GibGro, Promalin
O	gibberellins A4A7		Typy
O	gliocladium virens gl-21		Soilgard
H	glufosinate-ammonium		Ignite
F	glyodin		Glyodin
H	glyphosate		Roundup, Rattler
H	glyphosate, isopropy		Roundup PRO, Roundup Super Concentrate
O	gossyplure		No Mate, Stirrup
H	halosulfuron		Battalion
H	hexazinone		Velpar
I	hexythiazox		Savey
I	hydramethylnon		Amdro
O	hydrogen peroxide		Oxidate, Zerotol Algaecide
I	hydrophobic extract neem oil		Neemgard
H	imazaquin		Scepter
I	imidacloprid		Admire
F	iprodione		Rovral
H	isoxaben		Gallery, Snapshot
I	kaolin		Kaolin
F	kresoxim-methyl		Sovran
O	lactic acid		Propel
I	lambdacyhalothin		Karate
O	L-Glutamic acid		Auxigro
I	lindane		Lindane
I	malathion		several
O	maleic hydrazide		Royal MH-30, Super Sprout Stop
F	mancozeb		several
F	maneb		several
H	MCPA		several
F	mefenoxam		Ridomil Gold
F	metalaxyl		Ridomil
O	metaldehyde		Metaldehyde
O	metam-sodium		Vapam
I	methidathion		Supracide
I	methiocarb		Mesuroil
I	methomyl		Lannate
I	methoxychlor		several
O	methyl anthranilate		Birdsheld, ReJek-it
O	methyl bromide		several
I	methyl parathion		several
F	metiram		Polyram
H	metolachlor		Dual, Bicep
I	mevinphos		Phosdrin
H	molinate		Ordram

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Class :	Common Name	:	Trade Name
O	monocarbamide dihydr		Equik
H	MSMA		several
F	myclobutanil		Rally, Nova
I	Myrothecium verrucaria		Ditera
O	NAA		several
O	NAD		Amid-Thin
I	naled		Dibrom
O	naphthaleneacetic acid		Fruit-Fix, NAA
H	napropamide		Devrinol
O	Neem Oil, Hydrophobic		Trilogy
O	nerolidol		Stirrup M
H	norflurazon		Solicam
H	oryzalin		Surflan
I	oxamyl		Vydate
I	oxydemeton-methyl		Metasystox-R
H	oxyfluorfen		Goal
F	oxytetracycline		Mycoshield
I	oxythioquinox		Morestan
O	paclobutrazol		Bonzi, Proturf
H	paraquat		Gramoxone
O	Pelargonic acid		Thinnex Blossom Thinner
H	Pendimethalin		Prowl
I	permethrin		Ambush, Pounce
I	petroleum distillate		several
I	phosalone		Zolone
I	phosmet		Imidan
I	phosphamidon		Phosphamidon
H	Phytophthora palmivora		DeVine
I	piperonyl butoxide		Butacide, Incite
I	potassium salts		Safer Insecticidal Soap
F	potassium bicarbonate		Kaligreen
H	pronamide		Kerb
I	propargite		Comite, Omite
F	propiconazole		Banner, Orbit
H	Prosulfuron		Peak
F	Pseudomonas fluores.		Frostban
I	pyrethrins		Pyrethrins
I	pyridaben		Nexter, Pyramite
I	Pyriproxyfen		Knack
H	quizalofop-ethyl		Assure
I	rotenone		Rotenone
I	ryania		Ryan
I	sabadilla		Sabadilla
H	sethoxydim		Poast
H	simazine		Princep
O	sodium chlorate		several
O	sodium tetrathiocarb		Enzone
I	soybean oil		Golden Natur'l Spray Oil
I	spinosad		SpinTor, Success, Tracer
F	streptomycin		Agri-Strep
O	strychnine		several
H,O	sulfcarbamide		Wilthin, Enquik
H	sulfosate		Touchdown

--continued

Class :	Common Name	:	Trade Name
I,F	sulfur		several
F	tebuconazole		Folicur, Lynx
I	tebufenozide		Confirm
O	tetradecanol		Isomate
O	tetradecen-1-OL (Z)		Checkmate
O	tetradecen-1-y1 (E)		Checkmate TPWF, Normate TPW
H	terbacil		Sinbar
F	thiabendazole		Mertect
H	thiazopyr		Mandate
F	thiophanate-methyl		Topsin
F,O	thiram		Thiram
F	triadimefon		Bayleton
I	trichlorfon		Dylox, Proxol
H	triclopyr		Triclopyr
F	triflumizole		Procure
H	trifluralin		Treflan
F	triforine		Funginex
F	triphenyltin hydroxide		several
H	vernolate		Vernam
F	vinclozolin		Ronilan
I	Zeta-cypermethrin		Fury, Mustang
O	zinc phosphide		several
F	ziram		Ziram

E FERTILIZER APPLICATIONS E

4. I need to record complete information on all commercial fertilizers applied to the bearing target fruit and nut acreage you grew during the 1999 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	10	
	CROP	CROP CODE	NITROGEN N	PHOSPHATE P ₂ O ₅	POTASH K ₂ O	How much was applied per acre per application? <i>[Leave this column blank if actual nutrients were reported.]</i>	UNIT CODES 1 POUNDS 12 GALLONS 13 QUARTS 15 OUNCES, LIQUID 28 OUNCES, DRY 19 ACTUAL NUTRIENTS	How many acres was this applied to? <i>[Include only bearing acres.]</i>	How many times was it applied?	Were these applications made by— 1 Operator, Partner, or Family Member 2 Custom Applicator 3 Employee/ Other	
								ACRES	NUMBER		
01		201	202	203	204	205	206	207	208	209	210
02		201	202	203	204	205	206	207	208	209	210
03		201	202	203	204	205	206	207	208	209	210
04		201	202	203	204	205	206	207	208	209	210
05		201	202	203	204	205	206	207	208	209	210
06		201	202	203	204	205	206	207	208	209	210
07		201	202	203	204	205	206	207	208	209	210
08		201	202	203	204	205	206	207	208	209	210
09		201	202	203	204	205	206	207	208	209	210
10		201	202	203	204	205	206	207	208	209	210
11		201	202	203	204	205	206	207	208	209	210
12		201	202	203	204	205	206	207	208	209	210
13		201	202	203	204	205	206	207	208	209	210
14		201	202	203	204	205	206	207	208	209	210
15		201	202	203	204	205	206	207	208	209	210
16		201	202	203	204	205	206	207	208	209	210
17		201	202	203	204	205	206	207	208	209	210
18		201	202	203	204	205	206	207	208	209	210
19		201	202	203	204	205	206	207	208	209	210
20		201	202	203	204	205	206	207	208	209	210

F CHEMICAL APPLICATIONS F

Now I have some questions about pesticide and chemical applications to your bearing fruit and nut 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 (1998) harvest, did you use **herbicides** on any of your bearing fruit or nut acreage? YES NO
2. Since last year's (1998) harvest, did you use **insecticides, nematocides or miticides** on any of your bearing fruit or nut acreage? YES NO
3. Did you use **fungicides** on any of your bearing fruit or nut acreage since last year's (1998) harvest? YES NO
4. Did you use any other chemicals such as growth regulators, chemical thinners, microbial agents, rodenticides, etc. on any of your bearing fruit or nut acreage since last year's (1998) harvest? YES NO
5. [ENUMERATOR ACTION: Are items 1 - 4 all NO?]
 - YES - [Go to Section H, page 16.]
 - NO - [Go to item 6 on next page.]

		OFFICE USE LINES IN TABLE	T-TYPE 3	TABLE 001	LINE 99	399	
		1	2	3	4	6	7 OR 8
L I N E	CROP	CROP CODE	What products were applied to the [crop]?	Was this product bought in liquid or dry form?	[Enter line number of first product in the tank mix.]	How much was applied per acre per application?	What was the total amount applied per application?
			[Enter product code.]	[Enter L or D.]			
01		301	302		304	305	306
02		301	302		304	305	306
03		301	302		304	305	306
04		301	302		304	305	306
05		301	302		304	305	306
06		301	302		304	305	306
07		301	302		304	305	306
08		301	302		304	305	306
09		301	302		304	305	306
10		301	302		304	305	306

For pesticides not listed on card, specify

Line # Pesticide Type Tradename & Formulation Form Purchased EPA Number
 (Herb., Insect., Fung., etc.) (Liquid or Dry)

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Report Features

Released July 19, 2000 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 October 4, 2000. This report will cover agricultural chemical use of restricted use pesticides for the 1999 crop year for field crops and fruits in major States.

The next "Agricultural Chemical Usage" report for field crops will be released May 2001. This report will cover agricultural chemical use for 2000 crop year for major States.

The next "Agricultural Chemical Usage" report for vegetable crops will be released July 2001. This report will cover agricultural chemical use for 2000 crop year for major States.

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

Mark Aitken, Environmental Statistician (202) 720-9525

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

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

Listed below is the contact within the Economic Research Service for additional information.

Merritt Padgitt, Data and Survey Coordinator
Resource Economic Division (202) 694-5506

The next "Agricultural Chemical Usage" report for fruit crops will be released in July 2002. This report will cover agricultural chemical use for the 2001 crop year for major States.

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