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Agricultural Chemical Usage 2003 Nursery and Floriculture Summary

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2003 Nursery and Floriculture Agricultural Chemical Usage

Overview: This report is the second chemical use survey issued by the National Agricultural Statistics Service on nursery and floriculture crops. The publication is part of a series on “*Agricultural Chemical Usage*”, which also provides statistics for on-farm chemical usage for field crops, fruits, livestock, and vegetables. The last chemical use survey for nursery and floriculture crops was published in 2002 for the 2000 production year.

NASS collects on-farm chemical use data to enhance the quality of information used in the evaluation of issues related to agricultural chemicals. Pest management data are used to measure Integrated Pest Management (IPM) adoption levels and evaluate the impact of alternative pesticide regulations, policies, and practices.

This report includes all chemical use in calendar year 2003 related to the production of nursery and floriculture crops in 6 major producing states: California, Florida, Michigan, Oregon, Pennsylvania, and Texas.

There were 2,121 reports (218,579 chemical applications) summarized for the 2003 Nursery and Floriculture Chemical Use Survey.

Highlights

Nursery and Floriculture Operation Highlights: There were 4,276 nursery operations sampled for the 2003 survey. Of the sampled nursery operations, 56 percent fell within the gross value of sales range of \$10,000 to \$99,999. Only 45 operations had a gross value of sales of greater than \$10 million.

There were 4,359 floriculture operations sampled. Of the sampled operations 1,179 (27 percent) had a gross value of sales between \$100,000 to \$499,999, the most common grouping. Floriculture operations were not grouped beyond a gross value of sales of \$500,000; a direct comparison between nursery and floriculture operations cannot be made.

Of floriculture and nursery operations, 70 percent used licensed operators/employee applicators, 28 percent used unlicensed operators/employee applicators, 5 percent used other methods, and 3 percent hired custom applicators.

The most common locality for chemical applications was in open areas, at 56 percent. Of operations sampled, 44 percent of them applied chemicals in enclosed greenhouses, 14 percent in shade structures, 4 percent in non-production areas, and 3 percent in natural shade areas.

Pest Management Highlights: Scouting for pests by conducting general observations while performing routine tasks was reported by 76 percent of the nursery and floriculture operations. Deliberately scouting for pests on a scheduled basis was an alternative method to gauge infestation levels. Thirty-five percent of operations used this identification method. Electronic records of disease levels were kept by 28 percent of those surveyed.

Seventy-seven of operations surveyed inspected incoming stock to detect weeds, insects, diseases or pathogens. Insect traps were used in 32 percent of operations, and 25 percent of nursery and floriculture operations performed soil analysis to determine pest pressures.

The leading methods reported for weed, insect or disease control were: pruning out/removing infected plants or plant parts - 86 percent; utilizing ground covers, mulches or other physical barriers - 72 percent; using greenhouse ventilation - 67 percent; tilling, mowing, or burning of field or greenhouse borders, lanes, etc. - 65 percent; and sanitizing ground covers between uses - 64 percent.

To decrease the risk of pest infestations, 52 percent of operations chose disease resistant plant varieties, an increase from the 46 percent reported in 2000.

To keep pests from becoming resistant to pesticides, 57 percent of operations in the 6 Program States rotated or tank mixed pesticides in 2003.

Only 40 percent of operations applied pesticides on a preventative schedule, while 49 percent used scouting data and used threshold levels as a guide to spray pesticides.

Monitoring of weather data to assist in making pesticide application decisions was reported by 68 percent of operations.

Chemical Use Highlights: There were 335 active ingredients reported as being used by nursery and floriculture operations in the 6 Program States in 2003. A total of 4.77 million pounds of active ingredient, a decrease from 5.36 million in 2000, was applied in the Program States: California, Florida, Michigan, Oregon, Pennsylvania, and Texas.

Highlights (continued)

Fungicides accounted for 35 percent (1.69 million pounds) of the total chemicals applied. Insecticides - 26 percent (1.25 million pounds); herbicides - 20 percent (984 thousand pounds); and other chemicals (growth regulators, rooting compounds, fumigants, disinfectants, etc.) accounted for 18 percent (857 thousand pounds) of the total.

Of the 649 thousand pounds of active ingredient applied to non-production areas, 94 percent were herbicides and 4 percent were in the other chemicals class. As non-production areas are not in commercial use, the data were not included in the summation of the other production categories for herbicide, insecticide, fungicide, other chemicals and total chemicals applied by production category. Information was also not collected on the percent of operations using an active ingredient for non-production areas.

Nursery commodities received 72 percent of the total active ingredients applied in pounds while floriculture commodities received 28 percent.

Among production categories, transplants for commercial vegetable and strawberry production received 12 percent of the total active ingredients applied in pounds. Cut cultivated greens, deciduous shade trees, deciduous flowering trees, and ornamental grasses each received approximately 10 percent of the total active ingredient. Broadleaf evergreens closely followed at 9 percent. Each of the other production categories accounted for 7 percent or less of the total pounds of active ingredient applied.

Of the 984 thousand pounds of herbicides applied, coniferous evergreen and deciduous shrubs each accounted for 23 percent of the total followed by broadleaf evergreens at 16 percent and fruit and nut plants at 15 percent. Each of the other production categories accounted for 6 percent or less of the total pounds applied. Glyphosate was the most commonly used herbicide with 26 percent of all operations reporting its use. Oxyfluorfen was the second most commonly used herbicide at 8 percent; oryzalin was used in 6 percent of the operations.

Of the 1.25 million pounds of insecticides applied, other woody ornamentals and vines accounted for 20 percent of the total followed by broadleaf evergreens at 12 percent and deciduous shade trees at 11 percent. Each of the other production categories accounted for 7 percent or less of the total pounds applied. Acephate was the most commonly used insecticide with 35 percent of all operations reporting its use. Abamectin, used by 23 percent of the operations, was the second most commonly used insecticide followed by imidacloprid, which was used by 20 percent of all operations.

Of the 1.69 million pounds of fungicides applied, cut cultivated greens accounted for 24 percent of the total followed by deciduous flowering trees and flowering plants at 10 percent. Each of the other production categories accounted for 9 percent or less of the total pounds applied. Chlorothalonil was the most commonly used fungicide with 27 percent of the operations reporting its use. Thiophanate-methyl, used by 20 percent of the operations, was the second most commonly used fungicide. Mancozeb was the third most commonly used fungicide, reported by 17 percent of all operations.

Of the 857 thousand pounds of other chemicals applied, transplants for commercial vegetable and strawberry production accounted for 66 percent of the total followed by bedding plants at 7 percent and flowering plants and coniferous evergreens at 5 percent. Each of the other production categories accounted for 4 percent or less of the total pounds applied. Daminozide was the most commonly used other chemical with 11 percent of the operations reporting its use. Paclobutrazol, used by 9 percent of all operations, was the second most commonly used other chemical; chlormequat chloride rounded out the top three at 8 percent.

Highlights (continued)

The most commonly used pesticide by percent of operations within the production categories were as follows:

All Nursery: herbicides, glyphosate - 40 percent; insecticides, acephate - 25 percent; fungicides, chlorothalonil - 28 percent; and other chemicals, hydrogen peroxide and metaldehyde - 3 percent.

Transplants for Commercial Vegetable & Strawberry Production: herbicides, glyphosate - 7 percent; insecticides, Bacillus thuringiensis - 18 percent; fungicides, copper hydroxide - 21 percent; and other chemicals, metaldehyde and chloropicrin - 10 percent.

Nursery Propagation or Lining-out Stock: herbicides, glyphosate - 22 percent; insecticides, acephate - 20 percent; fungicides, thiophanate - 23 percent; and other chemicals, metaldehyde - 6 percent.

Broadleaf Evergreens: herbicides, glyphosate - 23 percent; insecticides, acephate - 29 percent; fungicides, copper hydroxide - 16 percent; and other chemicals, alkyl dimethyl benzyl 60% and alkyl dimethyl ethyl benzyl - 3 percent each.

Coniferous Evergreens: herbicides, glyphosate - 43 percent; insecticides, chlorpyrifos - 17 percent; fungicides, chlorothalonil - 24 percent; and other chemicals, hydrogen peroxide and sodium hypochlorite - 2 percent.

Deciduous Shade Trees: herbicides, glyphosate - 37 percent; insecticides, acephate - 21 percent; fungicides, copper hydroxide - 12 percent; and other chemicals, hydrogen peroxide and metaldehyde - 2 percent.

Deciduous Flowering Trees: herbicides, glyphosate - 14 percent; insecticides, acephate - 19 percent; fungicides, chlorothalonil and copper hydroxide - 16 percent; and other chemicals, hydrogen peroxide, metaldehyde, and pelargonic acid - 2 percent.

Deciduous Shrubs and Other Ornamentals: herbicides, glyphosate - 23 percent; insecticides, acephate - 40 percent; fungicides, copper hydroxide - 20 percent; and other chemicals, metaldehyde - 8 percent.

Fruit and Nut Plants: herbicides, glyphosate - 26 percent; insecticides, chlorpyrifos - 23 percent; fungicides, copper hydroxide - 22 percent; and other chemicals, chloropicrin, hydrogen peroxide, and methyl bromide - 5 percent.

Christmas Trees: herbicides, glyphosate - 53 percent; insecticides, chlorpyrifos - 32 percent; fungicides, chlorothalonil - 46 percent; and other chemicals, pelargonic acid - 1 percent.

Palms: herbicides, glyphosate - 28 percent; insecticides, acephate - 23 percent; fungicides, mancozeb - 15 percent; and other chemicals, diphacinone - 3 percent.

Ornamental Grasses: herbicides, isoxaben - 10 percent; insecticides - acephate, 24 percent; fungicides, chlorothalonil - 17 percent; and other chemicals, paclobutrazol - 5 percent.

Other Woody Ornamentals and Vines: herbicides, glyphosate - 18 percent; insecticides, acephate - 39 percent; fungicides, copper hydroxide - 32 percent; and other chemicals, hydrogen peroxide - 5 percent.

Highlights (continued)

All Floriculture: herbicides, oxyfluorfen - 3 percent; insecticides, acephate - 42 percent; fungicides, thiophanate-methyl - 27 percent; and other chemicals, daminozide - 19 percent.

Cut Flowers: herbicides, glyphosate - 17 percent; insecticides, acephate - 45 percent; fungicides, chlorothalonil - 23 percent; and other chemicals, metaldehyde - 7 percent.

Flowering Plants: herbicides, glyphosate - 7 percent; insecticides, acephate - 38 percent; fungicides, chlorothalonil and thiophanate-methyl - 18 percent; and other chemicals, daminozide - 19 percent.

Bedding Plants: herbicides, glyphosate - 4 percent; insecticides, imidacloprid - 36 percent; fungicides, thiophanate-methyl - 32 percent; and other chemicals, daminozide - 34 percent.

Foliage Plants: herbicides, glyphosate and oxadiazon - 4 percent; insecticides, acephate - 50 percent; fungicides, mancozeb - 27 percent; and other chemicals, metaldehyde - 11 percent.

Floriculture Propagation Material: herbicides, glyphosate - 16 percent; insecticides, spinosad - 15 percent; fungicides, mefenoxam - 27 percent; and other chemicals, daminozide - 17 percent.

Cut Cultivated Greens: herbicides, isoxaben - 17 percent; insecticides, permethrin - 49 percent; fungicides, mancozeb - 64 percent; and other chemicals, alkyl dimethyl benzyl 50%, alkyl dimethyl benzyl 60%, alkyl dimethyl ethyl benzyl and metaldehyde - all 4 percent.

Herbaceous Perennials: herbicides, glyphosate - 10 percent; insecticides, acephate - 31 percent; fungicides, thiophanate-methyl - 17 percent; and other chemicals, ethephon and metaldehyde - both 11 percent.

The percent of operations making chemical applications by hand-held backpack sprayers was 43 percent followed by hand-held power hydraulic sprayers - 39 percent; tractor powered boom sprayers - 18 percent; growing media drench-douse and tractor powered air blast or mister - both 13 percent; granular shaker and other methods - both 8 percent; stationary fogger, aerosols, misters, electrostatic sprayers, and smokers - 7 percent; granular rotary applicator - 6 percent; machine injection, banded, broadcast, knifed in - 5 percent; chemigation - 4 percent; hand-held fogger - 3 percent; aerial application - 2 percent; and dusting and root ball/ container cutting flower dip - 1 percent.

**Nursery and Floriculture Chemical Use Survey
Number of Usable Reports
Program States, 2003**

State	Usable Reports	Chemical Applications Summarized			
		Nursery	Floriculture	Non-production Areas	Total
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
CA	324	20,200	43,082	5,207	68,489
FL	501	18,786	31,074	2,605	52,465
MI	366	3,817	15,047	498	19,362
OR	294	19,186	4,489	1,467	25,142
PA	332	7,024	8,460	823	16,307
TX	239	14,547	18,494	3,773	36,814
TOTAL	2,121	83,670	120,800	14,379	218,579

**Nursery
Number of Operations by Gross Value of Sales
Program States, 2003**

State	\$10,000 to \$99,999	\$100,000 to \$249,999	\$250,000 to \$499,999	\$500,000 to \$999,999	\$1,000,000 to \$1,999,000
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
CA	287	104	63	79	52
FL	709	233	145	109	88
MI	322	60	36	19	19
OR	498	136	88	72	41
PA	406	75	33	19	9
TX	159	54	28	17	12
TOTAL	2,381	662	393	315	221

**Nursery
Number of Operations by Gross Value of Sales
Program States, 2003**

State	\$2,000,000 to \$4,999,999	\$5,000,000 to \$9,999,999	\$10,000,000 or More	Total Operations
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
CA	53	24	26	688
FL	48	21	7	1,360
MI	14	6		476
OR	33	18	12	898
PA	17			559
TX	17	8		295
TOTAL	182	77	45	4,276

**Floriculture
Number of Operations by Gross Value of Sales
Program States, 2003**

State	\$10,000 to \$19,999	\$20,000 to \$39,999	\$40,000 to \$49,999	\$50,000 to \$99,999
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
CA	84	103	47	167
FL	84	119	58	184
MI	58	96	47	188
OR	59	66	28	74
PA	152	180	93	255
TX	35	36	17	76
TOTAL	472	600	290	944

**Floriculture
Number of Operations by Gross Value of Sales
Program States, 2003**

State	\$100,000 to \$499,999	\$500,000 or More	Total	Expanded Wholesale Value ¹
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
CA	268	268	937	1,002,577
FL	346	296	1,087	823,040
MI	219	134	742	341,964
OR	56	38	321	101,969
PA	178	53	911	184,731
TX	112	85	361	294,191
TOTAL	1,179	874	4,359	2,748,472

¹ Wholesale value of sales as reported by growers with \$100,000 or more in sales of floriculture crops plus a calculated wholesale value of sales of growers with sales below \$100,000. The value of sales for growers below the \$100,000 level was estimated by multiplying the number of growers in each size group by the mid-point of each dollar value range.

**Percent of Nursery and Floriculture Operations
Reporting Pest Management Related Practices
Program States, 2003**

Practice	CA	FL	MI	OR	PA	TX	ALL
Scouting/monitoring for pests							
Conducted general observations while performing routine tasks?	81	76	66	68	81	88	76
Performed deliberate scouting activities on a scheduled basis?	3	8	18	15	8	1	8
Keep electronic records on weed, insect or disease levels?	25	23	33	31	34	22	28
Detect the presence of weeds, insects, diseases or pathogens by:							
Soil analysis?	25	37	22	24	19	14	25
Plant tissue analysis?	24	33	21	19	20	17	24
Using trap indicator plants?	14	5	14	11	11	7	10
Inspecting incoming stock?	64	76	82	72	86	76	77
Use of insect traps?	45	11	37	48	33	27	32
Using pheromones to monitor insects by trapping?	14	3	13	11	8	9	9
Use insect or disease resistant plant varieties?	41	43	53	57	65	55	52
Control weeds, insects or diseases by:							
Using beneficial organisms (insects, nematodes, fungi)?	23	13	14	20	17	22	18
Using biological pesticides (BotaniGard, Conserve, etc.)?	29	22	24	13	32	31	25
Using trap vegetation?	4	2	5	4	2	3	3
Using pheromones to disrupt insect mating?	9	4	5	5	6	8	6
Using water management practices such as drainage or treatment of retention water?	42	42	34	47	36	45	41
Pruning out/removing infected plants or plant parts?	77	87	91	83	91	87	86
Tilling, mowing, or burning of field or greenhouse borders, lanes, etc.?	49	66	74	60	78	60	65
Adjusting row spacing or direction?	35	44	44	49	65	48	47
Elevating plants?	42	50	59	45	54	50	50
Adjusting plant density?	50	47	52	44	64	61	53
Using sterilized growing media?	48	57	72	55	69	62	60
Sanitizing benches or other platform devices between uses?	57	61	74	59	68	64	64
Sanitizing ground covers between uses?	32	40	59	44	44	48	44
Sanitizing containers between uses?	47	42	65	59	60	50	52
Modifying temperatures?	51	36	71	56	62	55	54
Modifying hothouse/greenhouse relative humidity?	54	32	71	57	55	48	51
Using greenhouse ventilation?	66	46	83	72	76	73	67
Using greenhouse screening?	41	47	27	45	30	40	39
Using plant tissue dryness management such as minimizing overhead irrigation to reduce leaf wetness time?	50	53	68	56	61	53	57
Utilizing ground covers, mulches or other physical barriers such as gravel, weed mats, etc.?	56	75	77	73	74	78	72
Use of insect trap?	38	10	37	44	29	26	29

– continued

**Percent of Nursery and Floriculture Operations
Reporting Pest Management Related Practices
Program States, 2003 continued**

Practice	CA	FL	MI	OR	PA	TX	ALL
Rotate or tank mix pesticides for the primary purpose of keeping pests from becoming resistant to pesticides?	47	58	64	51	66	53	57
Monitor weather data to assist in making pesticide application decisions?	56	74	69	71	71	69	68
Apply pesticides based mostly on: ¹							
A preventive schedule?	39	46	39	39	34	40	40
Scouting data compared to university or extension infestation guidelines?	3	6	12	6	15	6	8
Scouting data and your established thresholds?	39	37	43	51	40	41	41
Others?	19	11	6	5	10	13	11
Obtain most of its pesticides from: ¹							
Chemical dealer?	78	91	90	89	86	85	87
Chemical manufacturer?	1	1	1	2	1	2	1
Other?	20	7	9	8	13	13	12
Mostly get recommendations for pest control/pesticide use from: ¹							
Farm supply dealer/chemical dealer?	46	48	42	61	34	42	45
University/extension personnel/material?	5	19	28	11	34	14	19
Commercial scouting service/crop consultant/pest control advisor?	6	5	3	4	4		4
Other growers/producers?	6	10	6	7	8	13	8
Producers association/newsletter/trade magazine?	5	2	9	6	8	9	6
Employee pest advisor?	12	5	3	4	2	6	5
Custom applicator?	1	1	1	3	1		1
Other?	18	9	9	4	10	17	11

¹ May not add due to rounding.

**Herbicides Applied by Production Category
Program States, 2003**

Production Category	Quantity Applied
	<i>1,000 Pounds</i>
All Nursery and Floriculture	983.7
All Nursery	943.0
All Floriculture	40.7
Non-production Area	612.3
Transplants for Commercial Vegetable and Strawberry Production	*
Nursery Propagation or Lining-out Stock	16.3
Broadleaf Evergreens	152.9
Coniferous Evergreens	228.1
Deciduous Shade Trees	63.7
Deciduous Flowering Trees	8.7
Deciduous Shrubs	224.5
Fruit and Nut Plants	4.4
Christmas Trees	150.4
Palms	40.3
Ornamental Grasses	0.9
Other Woody Ornamentals and Vines	52.8
Cut Flowers	6.0
Flowering Plants (potted)	8.2
Bedding Plants (flats, potted, hanging)	2.8
Foliage Plants (potted or hanging)	8.0
Floriculture Propagation Material	3.0
Cut Cultivated Greens	3.6
Herbaceous Perennials	9.0

* Total applied is less than 50 pounds.

**Insecticides Applied by Production Category
Program States, 2003**

Production Category	Quantity Applied
	<i>1,000 Pounds</i>
All Nursery and Floriculture	1,245.2
All Nursery	974.2
All Floriculture	271.0
Non-production Area	7.6
Transplants for Commercial Vegetable and Strawberry Production	9.5
Nursery Propagation or Lining-out Stock	19.1
Broadleaf Evergreens	143.6
Coniferous Evergreens	98.2
Deciduous Shade Trees	135.5
Deciduous Flowering Trees	54.0
Deciduous Shrubs	59.1
Fruit and Nut Plants	58.9
Christmas Trees	90.6
Palms	33.9
Ornamental Grasses	14.6
Other Woody Ornamentals and Vines	257.3
Cut Flowers	35.3
Flowering Plants (potted)	31.7
Bedding Plants (flats, potted, hanging)	18.1
Foliage Plants (potted or hanging)	86.9
Floriculture Propagation Material	14.0
Cut Cultivated Greens	74.7
Herbaceous Perennials	10.3

**Fungicides Applied by Production Category
Program States, 2003**

Production Category	Quantity Applied
	<i>1,000 Pounds</i>
All Nursery and Floriculture	1,686.5
All Nursery	825.1
All Floriculture	861.4
Non-production area	4.4
Transplants for Commercial Vegetable and Strawberry Production	21.2
Nursery Propagation or Lining-out Stock	19.5
Broadleaf Evergreens	132.9
Coniferous Evergreens	103.3
Deciduous Shade Trees	54.8
Deciduous Flowering Trees	12.1
Deciduous Shrubs	177.0
Fruit and Nut Plants	24.6
Christmas Trees	107.9
Palms	25.6
Ornamental Grasses	0.8
Other Woody Ornamentals and Vines	145.3
Cut Flowers	72.6
Flowering Plants (potted)	164.7
Bedding Plants (flats, potted, hanging)	42.9
Foliage Plants (potted or hanging)	139.7
Floriculture Propagation Material	24.4
Cut Cultivated Greens	408.9
Herbaceous Perennials	8.2

**Other Chemicals Applied by Production Category
Program States, 2003**

Production Category	Quantity Applied
	<i>1,000 Pounds</i>
All Nursery and Floriculture	856.5
All Nursery	695.5
All Floriculture	161.1
Non-production Area	24.9
Transplants for Commercial Vegetable and Strawberry Production	565.0
Nursery Propagation or Lining-out Stock	22.3
Broadleaf Evergreens	12.3
Coniferous Evergreens	41.6
Deciduous Shade Trees	12.0
Deciduous Flowering Trees	1.2
Deciduous Shrubs	3.6
Fruit and Nut Plants	33.6
Christmas Trees	*
Palms	0.2
Ornamental Grasses	0.4
Other Woody Ornamentals and Vines	3.2
Cut Flowers	35.1
Flowering Plants (potted)	44.6
Bedding Plants (flats, potted, hanging)	62.4
Foliage Plants (potted or hanging)	10.8
Floriculture Propagation Material	1.4
Cut Cultivated Greens	1.0
Herbaceous Perennials	5.8

* Total applied is less than 50 pounds.

**Total Chemicals Applied by Production Category
Program States, 2003**

Production Category	Quantity Applied
	<i>1,000 Pounds</i>
All Nursery and Floriculture	4,772.0
All Nursery	3,437.8
All Floriculture	1,334.2
Non-production Area	649.1
Transplants for Commercial Vegetable and Strawberry Production	595.7
Nursery Propagation or Lining-out Stock	77.2
Broadleaf Evergreens	441.6
Coniferous Evergreens	471.2
Deciduous Shade Trees	266.0
Deciduous Flowering Trees	76.0
Deciduous Shrubs	464.2
Fruit and Nut Plants	121.4
Christmas Trees	349.0
Palms	100.0
Ornamental Grasses	16.7
Other Woody Ornamentals and Vines	458.6
Cut Flowers	149.0
Flowering Plants (potted)	249.2
Bedding Plants (flats, potted, hanging)	126.2
Foliage Plants (potted or hanging)	245.4
Floriculture Propagation Material	42.8
Cut Cultivated Greens	488.3
Herbaceous Perennials	33.3

**Percent of Operations making Chemical
Applications by Applicator
Program States, 2003**

Production Category	Licensed Operator/ Employee Applicator	Unlicensed Operator/ Employee Applicator	Hired Custom Applicator	Other
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
All Nursery and Floriculture	70	28	3	5
All Nursery	69	29	5	4
Transplants for Commercial Vegetable and Strawberry Production	78	22	6	3
Nursery Propagation or Lining-out Stock	62	36	3	5
Broadleaf Evergreens	63	34	3	9
Coniferous Evergreens	77	24	3	3
Deciduous Shade Trees	62	35	2	7
Deciduous Flowering Trees	73	26	1	3
Deciduous Shrubs	68	32	1	3
Fruit and Nut Plants	80	19	8	
Christmas Trees	76	22	9	2
Palms	68	27	3	3
Ornamental Grasses	48	33		21
Other Woody Ornamentals and Vines	68	27	2	5
All Floriculture	70	27	1	5
Cut Flowers	80	14	2	10
Flowering Plants (potted)	74	26	2	4
Bedding Plants (flats, potted, hanging)	68	30	0	5
Foliage Plants (potted or hanging)	64	32	1	5
Floriculture Propagation Material	74	32		
Cut Cultivated Greens	77	21	1	3
Herbaceous Perennials	71	24	1	6
Non-production Area	60	35	1	7

**Percent of Operations making Chemical
Applications by Where Applied
Program States, 2003**

Production Category	Enclosed Greenhouse	Shade Structure	Natural Shade Area	In the Open Area	Non-production Areas
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
All Nursery and Floriculture	44	14	3	56	4
All Nursery	18	9	2	87	5
Transplants for Commercial Vegetable and Strawberry Production	57	9		46	
Nursery Propagation or Lining-out Stock	51	18	1	46	5
Broadleaf Evergreens	20	19	4	77	7
Coniferous Evergreens	12	6	2	91	3
Deciduous Shade Trees	7	4	0	91	5
Deciduous Flowering Trees	9	6	0	91	2
Deciduous Shrubs	18	17	1	85	5
Fruit and Nut Plants	16	4		90	4
Christmas Trees	1	0		99	1
Palms	6	9	6	87	5
Ornamental Grasses	20	20	5	63	2
Other Woody Ornamentals and Vines	25	13	2	74	1
All Floriculture	68	18	3	26	2
Cut Flowers	45	6	0	54	4
Flowering Plants (potted)	82	12	0	19	2
Bedding Plants (flats, potted, hanging)	91	9	1	11	1
Foliage Plants (potted or hanging)	56	34	2	21	1
Floriculture Propagation Material	76	15		28	2
Cut Cultivated Greens	3	59	39	14	5
Herbaceous Perennials	56	14	1	53	2
Non-production Area	13	1	0	19	77

**Percent of Operations making Chemical
Applications by Method of Application
Program States, 2003**

Production Category	Hand-held backpack sprayer	Hand-held power hydraulic sprayers	Granular shaker	Granular rotary applicator
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
All Nursery and Floriculture	43	39	8	6
All Nursery	42	30	6	8
Transplants for Commercial Vegetable and Strawberry Production	36	39		
Nursery Propagation or Lining-out Stock	41	35	6	12
Broadleaf Evergreens	39	43	7	13
Coniferous Evergreens	42	29	2	9
Deciduous Shade Trees	39	26	5	3
Deciduous Flowering Trees	38	22	5	12
Deciduous Shrubs	41	38	7	10
Fruit and Nut Plants	34	36	2	9
Christmas Trees	30	14	0	3
Palms	36	32	9	2
Ornamental Grasses	41	29	8	7
Other Woody Ornamentals and Vines	32	46	7	12
All Floriculture	42	46	9	5
Cut Flowers	30	42	2	6
Flowering Plants (potted)	40	51	12	3
Bedding Plants (flats, potted, hanging)	49	47	8	3
Foliage Plants (potted or hanging)	33	52	5	5
Floriculture Propagation Material	76	15		28
Cut Cultivated Greens	3	59	39	14
Herbaceous Perennials	56	14	1	53
Non-production Area	58	27	3	3

-continued

**Percent of Operations making Chemical
Applications by Method of Applications
Program States, 2003 - continued**

Production Category	Hand-held fogger	Dusting	Overhead rail sprayer	Root ball/ container cutting flower dip
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
All Nursery and Floriculture	3	1	0	1
All Nursery	0	1	0	1
Transplants for Commercial Vegetable and Strawberry Production		2	6	
Nursery Propagation or Lining-out Stock		3	1	5
Broadleaf Evergreens	0	2	0	3
Coniferous Evergreens	0		0	
Deciduous Shade Trees	1	2		1
Deciduous Flowering Trees	3	2	0	
Deciduous Shrubs	0	3	1	2
Fruit and Nut Plants				1
Christmas Trees				
Palms		1		
Ornamental Grasses		1		
Other Woody Ornamentals and Vines		1		1
All Floriculture	4	1	0	1
Cut Flowers	5	0		
Flowering Plants (potted)	4	1	0	1
Bedding Plants (flats, potted, hanging)	3	1	0	2
Foliage Plants (potted or hanging)	5	2		1
Floriculture Propagation Material	2			
Cut Cultivated Greens	5			
Herbaceous Perennials	2			
Non-production Area	1	1	0	0

-continued

**Percent of Operations making Chemical
Applications by Method of Applications
Program States, 2003 - continued**

Production Category	Drench	Stationary fogger, aerosols, mistors, electrostatic sprayers, smokers	Tractor powered boom sprayer	Tractor powered air blast or mister
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
All Nursery and Floriculture	13	7	18	13
All Nursery	5	2	27	22
Transplants for Commercial Vegetable and Strawberry Production	6		19	4
Nursery Propagation or Lining-out stock	11	3	17	11
Broadleaf Evergreens	4	2	19	12
Coniferous Evergreens	2	0	34	22
Deciduous Shade Trees	3	1	19	23
Deciduous Flowering Trees	4	2	16	19
Deciduous Shrubs	5	1	19	10
Fruit and Nut Plants	3	1	34	11
Christmas Trees		2	38	46
Palms	10	2	24	5
Ornamental Grasses	11	4	6	4
Other Woody Ornamentals and Vines	7	2	18	11
All Floriculture	20	12	9	4
Cut Flowers	4	2	26	2
Flowering Plants (potted)	20	10	6	1
Bedding Plants (flats, potted, hanging)	25	19	1	1
Foliage Plants (potted or hanging)	16	7	10	6
Floriculture Propagation Material				
Cut Cultivated Greens				
Herbaceous Perennials				
Non-production Area	3	1	8	2

-continued

**Percent of Operations making Chemical
Applications by Method of Applications
Program States, 2003 - continued**

Production Category	Aerial application	Chemigation	Machine injection, banded, broadcast, knifed in	Other
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
All Nursery and Floriculture	2	4	5	8
All Nursery	3	1	5	6
Transplant for Commercial Vegetable and Strawberry Production	3	2	8	1
Nursery Propagation or Lining-out Stock	1	2	3	5
Broadleaf Evergreens	1	1	3	7
Coniferous Evergreens	3	1	7	5
Deciduous Shade Trees	0	0	4	5
Deciduous Flowering Trees	1	1	3	7
Deciduous Shrubs	1		5	7
Fruit and Nut Plants		1	9	3
Christmas Trees	7	0	2	3
Palms			1	1
Ornamental Grasses			1	6
Other Woody Ornamentals and Vines			3	4
All Floriculture	1	6	4	10
Cut Flowers	5	0	2	2
Flowering Plants (potted)		2	4	13
Bedding Plants (flats, potted, hanging)	0	3	5	13
Foliage Plants (potted or hanging)		2	1	3
Floriculture Propagation Material				
Cut Cultivated Greens				
Herbaceous Perennials				
Non-production Area		0	2	6

**Active Ingredient - Total Applied
by Production Category and Pesticide Class
by State, 2003**

Pesticide Class					
State	Herbicides	Insecticides	Fungicides	Other Chemicals	All
All Nursery and Floriculture					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	93.3	233.8	167.9	726.8	1,221.9
FL	416.7	605.5	1,147.9	35.0	2,205.1
MI	63.2	99.3	86.1	21.6	270.2
OR	192.3	184.7	215.2	16.7	608.9
PA	209.0	91.3	37.5	2.4	340.2
TX	9.1	30.6	31.9	54.0	125.7
Total ¹	983.7	1,245.2	1,686.5	856.5	4,772.0
All Nursery					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	81.4	165.3	68.0	623.8	938.4
FL	401.8	448.6	433.0	5.9	1,289.4
MI	56.7	89.5	67.6	10.1	223.9
OR	188.6	169.3	210.8	9.9	578.6
PA	206.7	87.3	34.5	0.3	328.8
TX	7.8	14.2	11.2	45.5	78.7
Total ¹	943.0	974.2	825.1	695.5	3,437.8
Transplants for Commercial Vegetable & Strawberry Production					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	*	2.5	12.8	558.7	574.1
FL		6.4	4.2		10.6
MI	*	0.4	3.9	4.8	9.1
OR	*	*	0.2	1.5	1.7
PA		*	*	*	*
TX		0.1	0.1	0.1	0.2
Total ¹	*	9.5	21.2	565.0	595.7
Nursery Propagation or Lining-out Stock					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	2.7	0.7	0.5	18.3	22.2
FL	5.2	3.9	9.2	1.3	19.6
MI	0.8	13.3	3.3	1.8	19.2
OR	4.4	0.4	3.9	0.5	9.2
PA	2.7	*	0.1	*	2.9
TX	0.5	0.7	2.5	0.4	4.1
Total ¹	16.3	19.1	19.5	22.3	77.2
Broadleaf Evergreens					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	12.9	24.6	3.3	8.3	49.2
FL	121.6	29.5	88.0	*	239.1
MI	1.7	2.5	3.8	*	7.9
OR	14.8	80.7	34.7	3.9	134.1
PA	1.2	1.0	0.7		2.9
TX	0.7	5.4	2.3	0.1	8.5
Total ¹	152.9	143.6	132.9	12.3	441.6
Coniferous Evergreens					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	4.8	4.5	4.6	1.3	15.2
FL	0.9	1.3	12.0	1.4	15.6
MI	11.0	7.8	7.8	0.2	26.8
OR	37.1	14.4	64.8	1.4	117.7
PA	172.6	68.8	13.2		254.6
TX	1.7	1.4	0.9	37.3	41.3
Total ¹	228.1	98.2	103.3	41.6	471.2

See footnote(s) at end of table.

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**Active Ingredient - Total Applied
by Production Category and Pesticide Class
by State, 2003 - continued**

Pesticide Class					
State	Herbicides	Insecticides	Fungicides	Other Chemicals	All
Deciduous Shade Trees					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	6.9	2.7	1.4	1.1	12.2
FL	25.5	115.3	42.8	*	183.6
MI	4.3	2.4	2.1	3.2	12.0
OR	23.9	12.9	7.5	0.1	44.4
PA	1.6	1.5	0.6	*	3.7
TX	1.5	0.7	0.4	7.5	10.1
Total ¹	63.7	135.5	54.8	12.0	266.0
Deciduous Flowering Trees					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	0.3	3.6	0.6	*	4.5
FL	0.1	18.9	0.5	0.7	20.3
MI	0.3	0.5	0.4		1.1
OR	7.7	28.5	9.2	0.4	45.8
PA	0.3	1.6	0.3	*	2.2
TX	0.1	0.8	1.1	*	2.1
Total ¹	8.7	54.0	12.1	1.2	76.0
Deciduous Shrubs					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	34.1	2.2	3.1	1.4	40.8
FL	172.6	38.9	150.9	1.4	363.9
MI	1.5	3.4	0.9	0.1	5.8
OR	7.3	9.5	18.2	0.5	35.5
PA	7.3	2.3	1.0	*	10.5
TX	1.7	2.8	3.1	0.2	7.7
Total ¹	224.5	59.1	177.0	3.6	464.2
Fruit and Nut Plants					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	3.2	22.1	8.8	32.0	66.2
FL	0.3	31.0	2.4	*	33.7
MI	0.1	4.0	8.5	*	12.6
OR	0.6	0.7	4.2	1.6	7.1
PA	*	0.4	0.7	*	1.1
TX	0.2	0.6	*		0.7
Total ¹	4.4	58.9	24.6	33.6	121.4
Christmas Trees					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	1.3	0.4		*	1.7
FL	0.1	1.2	0.4		1.6
MI	37.0	55.2	36.9		129.0
OR	91.1	21.9	52.9	*	165.8
PA	20.9	11.3	17.5	*	49.8
TX	0.1	0.7	0.3	*	1.1
Total ¹	150.4	90.6	107.9	*	349.0
Palms					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	2.5	0.9	2.5	0.2	6.0
FL	37.8	32.5	23.1		93.4
OR	*				*
TX	*	0.6	*		0.7
Total ¹	40.3	33.9	25.6	0.2	100.0

See footnote(s) at end of table.

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**Active Ingredient - Total Applied
by Production Category and Pesticide Class
by State, 2003 - continued**

Pesticide Class					
State	Herbicides	Insecticides	Fungicides	Other Chemicals	All
Ornamental Grasses					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	0.2	0.1	0.1	0.4	0.8
FL	0.3	14.1	0.6	*	15.0
MI	*	*	*	*	*
OR	0.1	*	*	*	0.2
PA		*	0.1	*	0.1
TX	0.3	0.3	*	*	0.6
Total ¹	0.9	14.6	0.8	0.4	16.7
Other Woody Ornamentals and Vines					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	12.4	100.9	30.3	2.0	145.7
FL	37.7	155.5	99.0	0.9	293.1
MI	0.1	0.1	0.1	*	0.3
OR	1.6	0.3	15.1	*	17.0
PA	0.1	0.4	0.4	0.2	1.0
TX	0.9	0.1	0.4	*	1.5
Total ¹	52.8	257.3	145.3	3.2	458.6
All Floriculture					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	11.9	68.5	99.9	103.1	283.5
FL	14.9	156.9	714.9	29.1	915.8
MI	6.5	9.8	18.5	11.5	46.3
OR	3.7	15.4	4.4	6.8	30.3
PA	2.3	4.0	3.0	2.1	11.3
TX	1.3	16.4	20.7	8.5	47.0
Total ¹	40.7	271.0	861.4	161.1	1,334.2
Cut Flowers					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	3.7	26.8	59.4	33.8	123.6
FL		1.7	6.5	1.0	9.3
MI	2.1	4.3	4.4		10.8
OR	0.2	1.0	1.4	0.1	2.7
PA	*	0.6	0.6	*	1.2
TX	*	0.8	0.3	0.2	1.4
Total ¹	6.0	35.3	72.6	35.1	149.0
Flowering Plants					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	4.6	10.8	16.2	18.9	50.5
FL	3.0	11.4	142.7	15.8	172.9
MI	*	0.5	2.3	1.1	4.0
OR		0.3	1.1	5.8	7.3
PA	0.2	1.6	0.8	1.3	3.8
TX	0.4	7.0	1.5	1.7	10.7
Total ¹	8.2	31.7	164.7	44.6	249.2
Bedding Plants					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	2.0	5.4	17.2	49.9	74.5
FL	0.2	3.1	4.3	0.6	8.2
MI	*	2.5	8.1	4.5	15.2
OR	0.1	0.7	0.2	0.5	1.6
PA	*	1.2	1.2	0.7	3.1
TX	0.4	5.1	11.9	6.2	23.6
Total ¹	2.8	18.1	42.9	62.4	126.2

See footnote(s) at end of table.

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**Active Ingredient - Total Applied
by Production Category and Pesticide Class
by State, 2003 - continued**

Pesticide Class					
State	Herbicides	Insecticides	Fungicides	Other Chemicals	All
Foliage Plants					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	0.1	8.2	3.8	0.5	12.6
FL	7.7	77.7	135.0	10.0	230.4
MI	*	*	0.3	*	0.4
OR	*	*	0.1	*	0.1
PA		0.1	*	*	0.1
TX	0.2	0.8	0.5	0.3	1.9
Total ¹	8.0	86.9	139.7	10.8	245.4
Floriculture Propagation Material					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	0.1	12.7	1.2	*	14.0
FL	0.3	0.6	22.2	0.7	23.8
MI		*	0.4	0.3	0.7
OR	2.6	*	0.6	0.3	3.5
PA		0.2	*	*	0.2
TX	*	0.5	0.1	*	0.6
Total ¹	3.0	14.0	24.4	1.4	42.8
Cut Cultivated Greens					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	0.3	*	0.2		0.5
FL	2.4	61.7	403.8	1.0	468.9
MI	0.1				0.1
OR	0.8	12.9	0.9	*	14.7
TX	0.1	0.1	4.0		4.1
Total ¹	3.6	74.7	408.9	1.0	488.3
Herbaceous Perennials					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	1.3	4.5	2.0	*	7.8
FL	1.3	0.6	0.4	*	2.3
MI	4.1	2.4	3.0	5.6	15.1
OR	*	0.4	*	0.1	0.6
PA	2.1	0.3	0.4	0.1	2.9
TX	0.2	2.0	2.4	0.1	4.6
Total ¹	9.0	10.3	8.2	5.8	33.3
Non-production Areas					
	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>	<i>1,000 Pounds</i>
CA	315.9	2.7	1.3	13.8	333.7
FL	201.4	1.8	*	0.8	204.1
MI	12.3	0.3	*	8.0	20.6
OR	48.1	0.5	2.5	0.7	51.8
PA	14.4	0.2	0.1	0.9	15.5
TX	20.1	2.2	0.4	0.7	23.4
Total ¹	612.3	7.6	4.4	24.9	649.1

* Total applied is less than 50 pounds.

¹ Totals may not add due to rounding.

**Active Ingredient Publication Status
by Production Category
Program States, 2003**

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Vegetable & Strawberry Production	Nursery Propagation or Lining-out Stock
Herbicides				
(Meth)propionic acid	*			
2,4-D	P	P		*
2,4-D, Dimeth. salt	*	*		
2,4-DP, Dimeth. salt	P	P		*
Acetamide	P	P		
Acetic acid	*	*		
Acetochlor	*	*		
Acifluorfen	*	*		
Ammonium benzadox	*	*		
Atrazine	P	P		
Benefin	P	P		*
Bentazon	P	P		
Bromacil	*	*		
Bromoxynil	*			
Carfentrazone-ethyl	*	*		
Clethodim	P	P		
Clopyralid	P	P		*
Clopyralid mono salt	*	*		
Colleto. gloeospor.	*	*		
Copper ethanolamine	*	*		
Cyanazine	*	*		
DCPA	P	*		
Dicamba	*	*		
Dicamba, Dimet. salt	*	*		
Dichlobenil	P	P		*
Diflufenzopyr-sodium	*	*		
Diquat	P	*		
Dithiopyr	*	*		
Diuron	P	*		*
Fenoxaprop	*			
Fluazifop-P-butyl	P	P		*
Flumetsulam	*	*		
Flumioxazin	*	*		
Fluroxypyr	*	*		
Fomesafen	*	*		
Fosamine	*	*		
Glufosinate-ammonium	P	P		
Glyphosate	P	P	*	P
Glyphosate diam salt	*	*		
Halosulfuron	*	P		
Hexazinone	P	P		
Imazamox	*	*		
Imazaquin, mon. salt	*	*		
Imazethapyr	*	*		
Isooctyl propionate	*	*		
Isoxaben	P	P		*
Lactofen	*	*		
Linuron	P	*		*
MCPA	*	*		
MCPB	*			
MCPP, DMA salt	*	*		
MSMA	*			
Metolachlor	P	P		
Metribuzin	P	P		
Metsulfuron-methyl	*	*		
Napropamide	P	P		*
Norflurazon	*	*		*
Oryzalin	P	P	*	P
Oxadiazon	P	P	*	*
Oxyfluorfen	P	P	*	P

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Vegetable & Strawberry Production	Nursery Propagation or Lining-out Stock
Herbicides-continued				
Paraquat	P	P		*
Pendimethalin	P	P	*	P
Primisulfuron	*	*		
Prodiamine	P	P		P
Prometon	*	*		
Pronamide	*	*		
Propanil	*	*		
Propazine	*	*		
Prosulfuron	*	*		
Pyrazon	*			
Pyridate	*	*		
Quinclorac	*	*		
Quizalofop-ethyl	*	*		
S-Metolachlor	P	P		*
Sethoxydim	P	P		*
Simazine	P	P	*	*
Sulfometuron methyl	P	P		
Sulfosate	*	*		*
Sulfosulfuron	*	*		
Tebuthiuron	*			
Terbacil	*	*	*	
Triasulfuron	*	*		
Triclopyr	P	P		*
Trifluralin	P	*		*
Vernolate	P	P		
Insecticides				
Abamectin	P	P	P	P
Acephate	P	P	P	P
Acetamiprid	P	P		*
Aldicarb	*	*		
Allethrin	*			
Amitraz	*	*		
Azadirachtin	P	P	*	P
Azinphos-methyl	P	P		*
Beauveria bassiana	P	P	*	*
Bendiocarb	P	P		*
Bifenazate	P	P	*	P
Bifenthrin	P	P	*	P
Bioallethrin	*			
Boric acid	*			
Bt (Bacillus thur.) ¹	(¹)	(¹)	(¹)	(¹)
Canola oil	*	*		
Carbaryl	P	P	*	P
Carbofuran	P	P		*
Chlorfenapyr	P	P		*
Chlorpyrifos	P	P	*	P
Cinnamaldehyde	P	P		*
Clofentezine	P	P		*
Clove oil	*	*		
Cottonseed oil	*	*		
Cryolite	*			
Cyfluthrin	P	P		P
Cyromazine	P	*	*	*
Deltamethrin	P	P		
Diazinon	P	P	*	P
Dichlorvos	P			
Dicofol	P	P	*	*
Dienochlor	P	P		*
Diflubenzuron	P	P		P
Dimethoate	P	P		*
Disulfoton	*	*		

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Vegetable & Strawberry Production	Nursery Propagation or Lining-out Stock
Insecticides-continued				
Eamectin benzoate	*			
Endosulfan	P	P	*	*
Esfenvalerate	P	P	*	
Ethion	*	*		
Ethoprop	P	*		
Ethoxy sec. alcohols	*			
Ethyl parathion	*	*		
Etoazole	P	P		*
Fenamiphos	*	*		
Fenbutatin-oxide	P	P	*	*
Fenitrothion	*	*		
Fenoxycarb	P	P		*
Fenpropathrin	P	P	*	*
Fenpyroximate	P	*		*
Fenvalerate	*	*		
Fipronil	*	*		
Flucythrinate	*			
Fluvalinate	P	P		*
Fonofos	*			
Formetanate hydro.	*	*		
Hexythiazox	P	P		*
Hydramethylnon	*	P		*
Imidacloprid	P	P	P	P
Indoxacarb	*	*	*	
Jojoba oil	P	*		
Kaolin	*	*		
Kinoprene	P	*		
Lambda-cyhalothrin	P	P		*
Lindane	P	*		*
Malathion	P	P	*	P
Methamidophos	*	*	*	
Methidathion	P	P		*
Methiocarb	P	P		*
Methomyl	P	*	*	
Methoxychlor	*	*		
Methyl parathion	*	*		
Mevinphos	*			
Myrothecium verruc.	*			
Naled	*			
Neem oil	*	*		
Neem oil, clar. hyd.	P	P	*	*
Nicotine	P	*		
Novaluron	P	*	*	
Octacide-264	P	*		*
Oxamyl	P	*	*	
Oxydemeton-methyl	P	P		
Oxythioquinox	P	P		*
Permethrin	P	P	*	*
Petroleum distillate	P	P	*	P
Petroleum oil	P	P		
Phenothrin	*			
Phorate	*			
Phosalone	*			
Phosmet	P	P		
Piperonyl butoxide	P	P	*	*
Potassium salts	*	P	*	P
Propargite	P	P		
Pymetrozine	P	P	*	*
Pyrethrins	P	P	*	*
Pyridaben	P	P		*

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Vegetable & Strawberry Production	Nursery Propagation or Lining-out Stock
Insecticides-continued				
Pyridine	P	P		P
Pyriproxyfen	*			
Resmethrin	P	*		
Rosemary oil	*			
Rotenone	P	*	*	
S-Kinoprene	P	P		*
S-Methoprene	P	*		
Sabadilla	*			
Sesame Oil	*	*		
Silicon dioxide	P	*		
Spinosad	P	P	*	P
Sulfotepp	*	*		
Tebufenozide	P	P		*
Tefluthrin	*			
Thiamethoxam	*	*		
Tralomethrin	*	*		
Triazamate	P	P		
Trichlorfon	*			
Zeta-cypermethrin	*	*		
Fungicides				
AQ-10 Biofungicide ¹	(¹)			
Agriphage	*	*	*	
Azoxystrobin	P	P	P	P
Bacillus subtilus ¹	(¹)	(¹)		
Basic copper sulfate	P	P		*
Benomyl	P	P	*	*
Borax Decahydrate	*	*		
Butanone	P	P	*	*
Calcium polysulfide	*	*		
Captan	*	P	*	P
Chloroneb	P			
Chlorothalonil	P	P	*	P
Copper (metallic)	*	*		
Copper amm. complex	*	*		
Copper chloride hyd.	*	*		
Copper hydroxide	P	P	P	P
Copper oxide	*	*		
Copper oxychlor. sul.	*	*		*
Copper oxychloride	*	*		*
Copper resinate	P	P	*	*
Copper sulfate	P	P	*	P
Cresol	*	*		
Cymoxanil	*	*		
Cyprodinil	*	*	*	
Dicloran	*			
Dimethomorph	P	*	*	*
Dodine	P	P		*
Etridiazole	P	P	*	P
Fenarimol	*	*		*
Fenbuconazole	*	*		*
Fenhexamid	P	P	*	*
Ferbam	*	*		
Fludioxonil	P	P	*	P
Flutolanil	P	P		*
Fosetyl-al	P	P	*	P
Halobrom	*	*		
Iprodione	P	P	*	P
Kresoxim-methyl	P	*		
Mancozeb	P	P	P	P
Maneb	P	P	*	*
Mefenoxam	P	P	*	P

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Vegetable & Strawberry Production	Nursery Propagation or Lining-out Stock
Fungicides-continued				
Metalaxyl	*	P	*	*
Metiram	P			
Milban	*			
Myclobutanil	P	P	*	*
Oxycarboxin	P	*		
Oxytetracycline	*	*		
PCNB	P	*	*	*
Phosphorous acid	P	P		*
Piperalin	P	P	*	
Potassium bicarbon.	P	P	*	*
Propamocarb hydroch.	*	*		
Propiconazole	P	P	*	*
Pseudomonas fluores.	*	*		
Pyraclostrobin	*	*	*	
Sodium Percarbonate	*	*		*
Streptomyces gris. ¹	(¹)			
Streptomycin	P	P	P	*
Streptomycin sulfate	*	*		
Sulfur	P	P	*	*
Tebuconazole	P	*		
Thiabendazole (TBZ)	P	P		
Thiophanate	P	P	*	P
Thiophanate-methyl	P	P	P	P
Thiram	*	*		*
Triadimefon	P	P		*
Trichoderma harz.	*	P	*	*
Trifloxystrobin	P	P	*	*
Triflumizole	*	*		
Triforine	P	P		*
Triphenyltin hydrox.	*	*		
Vinclozolin	P	P	*	*
Xylenol	*	*		
Zineb	*			
Ziram	*	*		
Other Chemicals				
Alk. dim. benzyl 50%	P	P		*
Alk. dim. benzyl 60%	P	P		*
Alk. dim. eth. benz.	P	P		*
Alkyl. dim. benz. am	*			
Aluminum phosphide	*	*		
Aminopyridine	*	*		
Ammonium soap	*	*		
Ancymidol	P	*		*
Benzyladenine	P	*		
Brodifacoum	*	*		
Bromadiolone	*	*		*
Busan 881	*			
Capsaicin	*	*		
Chlormequat chloride	P	P	*	*
Chlorophacinone	*	*		
Chloropicrin	P	P	P	*
Cytokinins	*			
Daminozide	P	P		*
Dazomet	P	*		*
Decenol	*	*		
Decenyl acetate	*	*		
Decyldimethyloctyl	*			
Dichloropropene	*	*		*
Didecyl dim. ammon.	*			
Difethialone	*	*		*
Dikegulac-sodium	P	*		

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Vegetable & Strawberry Production	Nursery Propagation or Lining-out Stock
Other Chemicals-continued				
Dimethyldioctyl	*			
Diphacinone	P	P		*
E-8-Dodecenyl acetat	*	*		
Endothall	*			
Ethephon	P	P	*	*
Farnesol	*	*		*
Fatty acids	*	*		
GABA	*	*		
Garlic oil	*	*		
Gibberellic acid	P	*		
Gibberellins A4A7	P	*		
Gliocladium virens	*			
Harpin protein	*	*	*	
Hydrogen peroxide	P	P	*	P
Indolebutyric acid	*	*		*
Iron phosphate	P	P		*
L-Glutamic acid	*	*		
Maleic hydrazide	*			
Mefluidide, diet.	*			
Mepiquat chloride	*			
Metaldehyde	P	P	*	P
Metam-sodium	P	*		*
Methyl bromide	P	P	P	*
Mineral oil	*	*		
Monocarbamide dihyd.	*	*		
NAA	*	*		*
NAD	*	*		*
Nerolidol	*	*		*
Paclobutrazol	P	P	*	*
Pelargonic acid	P	P		*
Propionic acid	*	*		
Sodium chlorate	*	*	*	
Sodium hypochlorite	P	*		*
Strychnine	*	*		
Thidiazuron	*			
Uniconazole	P	P		*
Z-8-Dodecanol	*	*		
Z-8-Dodecen acetate	*	*		
Zinc phosphide	*	*		*

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Herbicides				
2,4-D	*	P	*	*
2,4-D, Dimeth. salt				*
2,4-DP, Dimeth. salt	*		*	
Acetamide	*	*		*
Acifluorfen		*		
Ammonium benzadox		*		
Atrazine	*	P	*	
Benefin	*		*	
Bentazon		*	*	
Bromacil		*		
Carfentrazone-ethyl	*			
Clethodim	*	P	P	*
Clopyralid	*	P	*	*
Clopyralid mono salt		*	*	
Colleto. gloeospor.		*		
Cyanazine		*		
DCPA		*		
Dicamba			*	*
Dicamba, Dimet. salt			*	*
Dichlobenil	*	P	P	*
Di flufenzopyr-sodium			*	
Diquat	*		*	*
Dithiopyr		*		
Diuron	*	*	*	*
Fluazifop-P-butyl		P	*	*
Flumetsulam				*
Flumioxazin		*		
Fosamine		*	*	
Glufosinate-ammonium	*	*	*	
Glyphosate	P	P	P	P
Glyphosate diam salt	*	*		
Halosulfuron	*	*	*	*
Hexazinone	*	P		
Imazamox		*		
Imazaquin, mon. salt				*
Imazethapyr				*
Isoxaben	P	P	P	P
Linuron			*	
MCPA	*	*		
MCPA, DMA salt				*
Metolachlor	*	P	*	*
Metribuzin	*	*		*
Napropamide	*	P	*	*
Norflurazon				*
Oryzalin	P	P	P	P
Oxadiazon	*	P	P	*
Oxyfluorfen	P	P	P	P
Paraquat	*	*	*	*
Pendimethalin	P	P	P	P
Primisulfuron	*			
Prodiamine	P	P	P	*
Pronamide			*	
Prosulfuron	*			
Pyridate	*			
Quinclorac			*	
Quizalofop-ethyl			*	
S-Metolachlor	*	P	*	
Sethoxydim	*	P		*
Simazine	P	P	P	*
Sulfometuron methyl		*		

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Herbicides-continued				
Sulfosate		*		
Sulfosulfuron	*			
Triclopyr	*	P	*	*
Trifluralin	P	*	*	*
Vernolate	*		*	*
Insecticides				
Abamectin	P	P	P	P
Acephate	P	P	P	P
Acetamiprid	*	*		
Aldicarb	*	*		
Azadirachtin	P	P	*	*
Azinphos-methyl	*	*	*	*
Beauveria bassiana	*			
Bendiocarb	*	*	*	*
Bifenazate	P	P	*	*
Bifenthrin	P	P	P	P
Bt (Bacillus thur.) ¹	(¹)	(¹)	(¹)	(¹)
Canola oil				*
Carbaryl	P	P	P	P
Carbofuran	*	*		
Chlorfenapyr	*			
Chlorpyrifos	P	P	P	P
Cinnamaldehyde	*	*	*	*
Clofentezine	*	P		*
Clove oil	*			
Cottonseed oil	*			
Cyfluthrin	P	P	*	*
Cyromazine	*	*	*	
Deltamethrin	P	*	*	*
Diazinon	P	P	P	P
Dicofol	*	P	*	*
Dienochlor	*	*		*
Diflubenzuron	*	P	*	*
Dimethoate	P	P	*	*
Disulfoton	*	*	*	*
Endosulfan	*	P	*	*
Esfenvalerate		P	*	P
Ethion			*	
Ethoprop		*	*	
Ethyl parathion		*		
Etoxazole	*	*		
Fenbutatin-oxide	*	*	*	*
Fenitrothion		*		
Fenoxycarb	*	*	*	*
Fenpropathrin	*	*	*	
Fenpyroximate	*		*	
Fipronil			*	
Fluvalinate	*	P	P	*
Hexythiazox	P	P	P	*
Hydramethylnon	*		*	*
Imidacloprid	P	P	P	P
Jobba oil	*			
Kaolin	*			
Kinoprene	*		*	
Lambda-cyhalothrin	*	P	*	*
Lindane		*	*	*
Malathion	P	P	P	P
Methidathion	*	*	*	
Methiocarb	*	*	*	*
Methomyl			*	*
Methyl parathion		*	*	

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Insecticides-continued				
Neem oil	*			*
Neem oil, clar. hyd.	*	*	*	
Novaluron	*			
Octacide-264	*			*
Oxydemeton-methyl		P	*	*
Oxythioquinox		*	*	*
Permethrin	P	*	P	*
Petroleum distillate	P	P	P	P
Petroleum oil	*	*	*	*
Phosmet	*	*	*	*
Piperonyl butoxide	*	*	*	*
Potassium salts	P	P	*	*
Propargite	*	*	*	*
Pymetrozine	P	*	P	*
Pyrethrins	*	*	*	*
Pyridaben	*	*	*	
Pyridine	P	*	P	*
Resmethrin		*		
Rotenone		*		
S-Kinoprene	P	*	*	
S-Methoprene	*			
Silicon dioxide	*	*		
Spinosad	P	P	P	P
Tebufenozide		*	*	*
Thiamethoxam	*			

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Fungicides				
Azoxystrobin	P	P	P	*
Bacillus subtilus ¹		(¹)	(¹)	
Basic copper sulfate	*	*	*	*
Benomyl	*	*	*	*
Butanone	P	P	P	*
Calcium polysulfide			*	*
Captan	P	P	P	*
Chlorothalonil	P	P	P	P
Copper amm. complex				*
Copper hydroxide	P	P	P	P
Copper oxychlo. sul.	*	*		*
Copper oxychloride	*	*	*	*
Copper resinate	P	*	*	
Copper sulfate	P	P	*	*
Cymoxanil	*			
Dimethomorph	*	*		
Dodine	*	*	*	*
Etridiazole	P	P	*	*
Fenarimol	*	*	*	*
Fenhexamid	*	*	*	*
Ferbam	*			
Fludioxonil	*	*	P	*
Flutolanil	*		*	*
Fosetyl-al	P	P	P	P
Halobrom	*			
Iprodione	P	P	*	*
Kresoxim-methyl	*	*	*	
Mancozeb	P	P	*	P
Maneb	*	*	*	*
Mefenoxam	P	P	P	P
Metalaxyl	*	P	*	*
Myclobutanil	P	P	P	P
Oxycarboxin		*		
Oxytetracycline		*	*	
PCNB	P	*	*	*
Phosphorous acid	*	*	*	
Potassium bicarbon.	*	*	*	*
Propamocarb hydroch.	*			
Propiconazole	P	P	P	P
Pyraclostrobin		*		
Sodium Percarbonate	*	*		
Streptomycin	P	*	P	*
Sulfur	P	*	*	*
Tebuconazole		*	*	
Thiabendazole (TBZ)	*	*	*	
Thiophanate	P	P	P	P
Thiophanate-methyl	P	P	P	P
Thiram		*		
Triadimefon	*	P	P	*
Trichoderma harz.	*	*		*
Trifloxystrobin	*	*	*	*
Triflumizole			*	
Triforine	*	*	*	*
Vinclozolin	*	*	*	*
Ziram	*			

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Other Chemicals				
Alk. dim. benzyl 50%	*	*		*
Alk. dim. benzyl 60%	*	*	*	*
Alk. dim. eth. benz.	*		*	*
Ammonium soap	*	*	*	
Ancymidol			*	
Brodifacoum	*	*	*	
Bromadiolone	*	*	*	
Capsaicin	*	*	*	
Chlormequat chloride	*	*	*	
Chloropicrin				
Daminozide	*	*		
Decenol	*			
Decenyl acetate	*			
Dichloropropene	*	*	*	*
Difethialone	*	*	*	
Dikegulac-sodium	*			
Diphacinone	*			
Ethephon	*	*	*	*
Farnesol	*	*	*	
Fatty acids	*	*	*	*
Garlic oil	P	P	*	*
Gibberellic acid	*	*	*	
Hydrogen peroxide	P	*		*
Indolebutyric acid	*		*	
Iron phosphate		*	*	
Metaldehyde		*	*	*
Methyl bromide	*	*	*	*
Mineral oil	*	*	*	*
Monocarbamide dihyd.	*	*		
NAA	*		*	*
Nerolidol				
Paclobutrazol				
Pelargonic acid				
Propionic acid				
Sodium hypochlorite				
Uniconazole				
Zinc phosphide				

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs	Fruit and Nut Plants	Christmas Trees	Palms
Herbicides				
2,4-D	*		P	
2,4-D, Dimeth. salt		*	*	
2,4-DP, Dimeth. salt	*		*	
Acetamide			P	
Acetic acid			*	
Ammonium benzadox	*			
Atrazine			P	*
Benefin	*			
Bentazon			*	
Clethodim	*	*	*	
Clopyralid	*	*	P	
Clopyralid mono salt	*	*	*	
Copper ethanolamine	*	*		
Dicamba			*	
Dichlobenil	*	*		
Diquat	*			*
Diuron		*	*	
Fluazifop-P-butyl	*		P	*
Flumioxazin	*		*	
Fluroxypyr	*			
Fomesafen			*	
Glufosinate-ammonium	*		*	
Glyphosate	P	P	P	P
Halosulfuron				*
Hexazinone			P	
Isooctyl propionate			*	
Isoxaben	P	*		P
Linuron		*		
MCPA		*		
Metolachlor	*	*	*	
Metribuzin			P	
Metsulfuron-methyl			*	
Napropamide		*	*	
Oryzalin	P	P	P	*
Oxadiazon	P			*
Oxyfluorfen	P	P	P	*
Paraquat	*	P		
Pendimethalin	P	*	P	P
Prodiamine	P	*	*	P
Prometon			*	
Pronamide	*		*	
Propanil				*
Propazine	*			
S-Metolachlor	*		P	
Sethoxydim		*	P	
Simazine	P	*	P	
Sulfometuron methyl			*	
Triasulfuron	*			
Triclopyr	*		P	
Trifluralin	P	*	*	*
Vernolate	*			*

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs	Fruit and Nut Plants	Christmas Trees	Palms
Insecticides				
Abamectin	P	P	*	P
Acephate	P	P	P	P
Acetamiprid	*	*		*
Aldicarb	*			
Amitraz				*
Azadirachtin	P	*	*	*
Azinphos-methyl		*	*	
Beauveria bassiana	*			*
Bendiocarb	P			
Bifenazate	P	*	*	*
Bifenthrin	P	*		*
Bt (Bacillus thur.) ¹	(¹)	(¹)	(¹)	(¹)
Carbaryl	P	P	P	P
Carbofuran	*			
Chlorfenapyr				*
Chlorpyrifos	P	P	P	P
Cinnamaldehyde	*			*
Clofentezine	*	*		*
Cyfluthrin	P	*	P	*
Cyromazine	*			
Deltamethrin	*	*		*
Diazinon	P	P	*	*
Dicofol	*	*	*	
Dienochlor	*	*		
Diflubenzuron	*	*	P	
Dimethoate	P		P	P
Disulfoton	*		*	*
Endosulfan	P	P	P	*
Esfenvalerate	*	P	*	*
Ethion				*
Ethoprop		*		
Ethyl parathion			*	
Etoxazole	*			
Fenamiphos	*			
Fenbutatin-oxide	*	*	*	
Fenoxycarb	*	*		
Fenpropathrin	P	*		*
Fenpyroximate	*			
Fenvalerate			*	
Fluvalinate	P	*	*	P
Formetanate hydro.		*	*	
Hexythiazox	P	*	P	*
Hydramethylnon				*
Imidacloprid	P	P	*	*
Jojoba oil	*			
Kaolin	*	*		
Kinoprene	*			
Lambda-cyhalothrin	*	*		*
Lindane				
Malathion	P	P	P	P
Methidathion	*	*		*
Methiocarb	*	*		*
Methomyl	*	*		
Methoxychlor	*		*	
Neem oil	*		*	
Neem oil, clar. hyd.	*	*	*	*
Novaluron	*			
Oxydemeton-methyl			P	
Oxythioquinox	*	*	*	
Permethrin	P	*	P	*

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs	Fruit and Nut Plants	Christmas Trees	Palms
Insecticides-continued				
Petroleum distillate	P	P	P	P
Petroleum oil	*		*	
Phosmet		P	*	
Piperonyl butoxide	*	*		
Potassium salts	P	*	*	*
Propargite	*	*	*	
Pymetrozine	P			*
Pyrethrins	*	*		
Pyridaben	P	*		
Pyridine	P			*
Resmethrin	*			
S-Kinoprene				*
S-Methoprene				*
Silicon dioxide	*	*		
Spinosad	P	P		*
Tebufozide	*		P	
Thiamethoxam	*			
Tralomethrin			*	
Triazamate			P	
Zeta-cypermethrin			*	
Fungicides				
Azoxystrobin	P		P	P
Bacillus subtilus ¹		(¹)		
Basic copper sulfate	*	*		
Benomyl	*	*		
Borax Decahydrate	*			
Butanone	*			*
Calcium polysulfide		*		
Captan	*	P		
Chlorothalonil	P	P	P	P
Copper (metallic)	*			
Copper amm. complex	*	*		
Copper chloride hyd.		*		
Copper hydroxide	P	P	*	P
Copper oxide		*		
Copper oxychloro. sul.	*			
Copper oxychloride	*			
Copper resinate	P	*	*	*
Copper sulfate	P	*		*
Cyprodinil		*		
Dimethomorph	*			
Dodine	*	*		
Etridiazole	*		*	P
Fenarimol	*	*		*
Fenbuconazole		*		
Fenhexamid	*		*	*
Fludioxonil	P			*
Flutolanil	*	*		*
Fosetyl-al	P	P		P
Halobrom	*			
Iprodione	P	*	*	P
Kresoxim-methyl	*			
Mancozeb	P	P	P	P
Maneb	*	*		*
Mefenoxam	P	*	*	P
Metalaxyl	*		*	*
Myclobutanil	P	P		*
Oxycarboxin	*			
Oxytetracycline		*		
PCNB	P		*	*
Phosphorous acid	*	*		

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs	Fruit and Nut Plants	Christmas Trees	Palms
Fungicides-continued				
Piperalin	*			
Potassium bicarbon.	*			
Propiconazole	P	P	*	P
Pseudomonas fluores.		*		
Pyraclostrobin		*		
Streptomycin	P	P		
Streptomycin sulfate		*		
Sulfur	*	*	*	*
Tebuconazole	*	*		
Thiabendazole (TBZ)	*			
Thiophanate	P	*	P	P
Thiophanate-methyl	P	P	*	P
Thiram		*	*	
Triadimefon	P	*	P	
Trichoderma harz.	*			
Trifloxystrobin	P	*		*
Triflumizole		*		
Triforine	*	*		
Vinclozolin	*			
Ziram		*		

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs	Fruit and Nut Plants	Christmas Trees	Palms
Other Chemicals				
Alk. dim. benzyl 50%			*	
Alk. dim. benzyl 60%	*		*	
Alk. dim. eth. benz.	*		*	
Aluminum phosphide		*	*	
Ammonium soap	*			
Benzyladenine	*			
Capsaicin		*	*	
Chlormequat chloride	*			*
Chlorophacinone		*		
Chloropicrin		*		
Daminozide	*			*
Dazomet	*	*		
Dichloropropene		*		
Difethialone	*			
Dikegulac-sodium	*	*		
Diphacinone	*	*		*
E-8-Dodecenyl acetat		*		
Ethephon	*			
Farnesol	*			*
GABA		*		
Garlic oil	*			
Gibberellic acid	*			
Gibberellins A4A7	*			
Harpin protein		*		
Hydrogen peroxide	P	*		
Indolebutyric acid	*			*
Iron phosphate	*			*
L-Glutamic acid		*		
Metaldehyde	P	*		*
Metam-sodium		*		
Methyl bromide	*	*		
NAA	*			*
NAD		*		
Nerolidol	*			*
Paclobutrazol	*			*
Pelargonic acid	*	*		*
Propionic acid			*	
Sodium hypochlorite	*			
Strychnine			*	
Uniconazole	*			
Z-8-Dodecanol		*		
Z-8-Dodecen acetate		*		

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses	Other Woody Ornamentals and Vines	All Floriculture	Cut Flowers
Herbicides				
(Meth)propionic acid			*	
2,4-D	*	*	*	
2,4-D, Dimeth. salt			*	
2,4-DP, Dimeth. salt	*			
Acetamide		*		
Acetochlor	*			
Ammonium benzadox			*	
Atrazine		*	*	
Benefin	*	*	*	
Bentazon			*	
Bromoxynil			*	*
Carfentrazone-ethyl	*			
Clethodim			*	
Clopyralid			*	
DCPA		*	P	*
Dicamba			*	
Dicamba, Dimet. salt			*	
Dichlobenil		*	*	
Diquat		*	P	*
Dithiopyr			*	
Diuron			P	*
Fenoxaprop			*	
Fluazifop-P-butyl		*	P	*
Flumetsulam			*	
Glufosinate-ammonium			*	*
Glyphosate	*	P	P	*
Glyphosate diam salt			*	
Halosulfuron		*	*	
Isoxaben	*	P	P	*
Lactofen		*	*	
Linuron			*	*
MCPA			*	
MCPB			*	*
MCPP, DMA salt			*	
MSMA			*	
Metolachlor		*	*	*
Metribuzin		*	*	
Napropamide	*	*	P	*
Norflurazon			*	
Oryzalin	*	P	P	
Oxadiazon	*	P	*	*
Oxyfluorfen	*	P	P	*
Paraquat			*	
Pendimethalin	*	P	P	*
Primisulfuron			*	
Proclamate	*	P	P	*
Prosulfuron			*	
Pyrazon			*	*
S-Metolachlor		*	P	*
Sethoxydim		*	*	
Simazine		*	P	*
Sulfosate			*	*
Sulfosulfuron			*	
Tebuthiuron			*	*
Triclopyr	*	*	*	*
Trifluralin	*	P	P	*
Vernolate		*	P	*

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses	Other Woody Ornamentals and Vines	All Floriculture	Cut Flowers
Insecticides				
Abamectin	*	P	P	P
Acephate	P	P	P	P
Acetamiprid		*	P	*
Allethrin			*	
Azadirachtin	*	P	P	P
Azinphos-methyl			*	
Beauveria bassiana	*	*	P	P
Bendiocarb		*	P	*
Bifenazate	*	P	P	P
Bifenthrin	P	P	P	P
Bioallethrin			*	
Boric acid			*	*
Bt (Bacillus thur.) ¹	(¹)	(¹)	(¹)	(¹)
Carbaryl	*	P	P	*
Chlorfenapyr		*	P	P
Chlorpyrifos	*	P	P	P
Cinnamaldehyde	*	P	P	*
Clofentezine		P	P	*
Cryolite			*	*
Cyfluthrin	*	P	P	P
Cyromazine	*	*	P	P
Deltamethrin	*	P	*	*
Diazinon	*	*	P	P
Dichlorvos			P	
Dicofol	*	P	P	*
Dienochlor		*	P	P
Diiflubenzuron	*	P	P	P
Dimethoate	*	P	P	P
Disulfoton	*	*	*	
Emamectin benzoate			*	
Endosulfan	*	P	P	P
Esfenvalerate			*	*
Ethion		*		
Ethoprop			*	
Ethoxy sec. alcohols			*	
Ethyl parathion			*	
Etoxazole		P	P	*
Fenamiphos	*		*	
Fenbutatin-oxide		P	P	P
Fenoxycarb		*	P	*
Fenpropathrin	*	P	P	*
Fenpyroximate			P	*
Fenvalerate			*	
Flucythrinate			*	*
Fluvalinate	P	P	P	P
Fonofos			*	*
Formetanate hydro.			*	*
Hexythiazox		P	P	*
Hydramethylnon	*	*	*	
Imidacloprid	*	P	P	*
Jojoba oil		*	*	*
Kinoprene		*	P	*
Lambda-cyhalothrin		*	P	*
Lindane		*	*	
Malathion	*	P	P	P
Methidathion		*	P	
Methiocarb	*	P	P	P
Methomyl		*	*	
Methyl parathion			*	
Mevinphos			*	

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses	Other Woody Ornamentals and Vines	All Floriculture	Cut Flowers
Insecticides-continued				
Myrothecium verruc.			*	
Naled			*	*
Neem oil			*	
Neem oil, clar. hyd.		P	P	
Nicotine		*	P	*
Novaluron		*	P	P
Octacide-264			P	
Oxamyl		*	P	*
Oxythioquinox		*	P	*
Permethrin	*	*	P	P
Petroleum distillate	*	P	P	P
Phenothrin			*	
Phorate			*	*
Phosalone			*	*
Phosmet			*	*
Piperonyl butoxide	*	*	P	P
Potassium salts	*	P	P	P
Propargite		*	*	*
Pymetrozine		P	P	P
Pyrethrins		*	P	P
Pyridaben		P	P	P
Pyridine	*	P	P	P
Pyriproxyfen			*	
Resmethrin			*	
Rosemary oil			*	
Rotenone			P	
S-Kinoprene	*	*	P	P
S-Methoprene		*	*	*
Sabadilla			*	
Sesame Oil		*		
Silicon dioxide		*	*	*
Spinosad	*	P	P	P
Sulfotepp		*	P	
Tebufenozide		*	*	
Tefluthrin			*	
Thiamethoxam		*	*	
Trichlorfon			*	
Fungicides				
AQ-10 Biofungicide ¹			(¹)	(¹)
Azoxystrobin	*	P	P	*
Bacillus subtilus ¹		(¹)	(¹)	(¹)
Basic copper sulfate		*	*	*
Benomyl		*	*	
Borax Decahydrate		*		
Butanone	*	P	P	P
Calcium polysulfide		*	*	
Captan		P	P	P
Chloroneb			P	
Chlorothalonil	P	P	P	P
Copper (metallic)		*	*	
Copper hydroxide	P	P	P	P
Copper oxychloride		*	*	*
Copper resinate	*	P	P	*
Copper sulfate	*	P	P	P
Cresol		*		
Cymoxanil			*	
Dicloran			*	*
Dimethomorph		*	P	*
Dodine			*	
Etridiazole	*	*	P	P
Fenarimol	*	*	P	P

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses	Other Woody Ornamentals and Vines	All Floriculture	Cut Flowers
Fungicides-continued				
Fenbuconazole			*	*
Fenhexamid	*	*	P	P
Ferbam			*	
Fludioxonil	*	P	*	*
Flutolanil		*	P	*
Fosetyl-al	*	P	P	P
Iprodione	*	P	P	P
Kresoxim-methyl	*		P	*
Mancozeb	P	P	P	P
Maneb		*	P	*
Mefenoxam	P	P	P	*
Metalaxyl	*	P	*	P
Metiram			P	
Milban			*	*
Myclobutanil	*	P	P	P
Oxycarboxin		*	*	
PCNB	*	P	P	*
Phosphorous acid		*	*	*
Piperalin		*	P	P
Potassium bicarbon.		*	P	P
Propamocarb hydroch.			*	
Propiconazole	*	P	P	P
Sodium Percarbonate		*		
Streptomyces gris. ¹			(¹)	(¹)
Streptomycin	*	P	P	P
Streptomycin sulfate			*	
Sulfur		P	P	P
Tebuconazole			P	
Thiabendazole (TBZ)		*	P	*
Thiophanate	P	P	P	P
Thiophanate-methyl	P	P	P	P
Thiram			*	
Triadimefon		P	P	*
Trichoderma harz.		P	*	P
Trifloxystrobin		P	P	P
Triforine			P	*
Triphenyltin hydrox.		*		
Vinclozolin		*	P	P
Xylenol		*		
Zineb			*	

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses	Other Woody Ornamentals and Vines	All Floriculture	Cut Flowers
Other Chemicals				
Alk. dim. benzyl 50%		*	P	
Alk. dim. benzyl 60%		*	P	
Alk. dim. eth. benz.		*	P	
Alkyl. dim. benz. am			*	
Aluminum phosphide			*	*
Aminopyridine		*		
Ancymidol			P	*
Benzyladenine			P	
Brodifacoum	*	*		
Bromadiolone		*	*	
Busan 881			*	
Capsaicin			*	
Chlormequat chloride	*	P	P	*
Chlorophacinone		*	*	
Chloropicrin			*	*
Cytokinins			*	
Daminozide	*	*	P	P
Dazomet			*	*
Decyldimethyloctyl			*	
Dichloropropene			*	
Didecyl dim. ammon.			*	
Dikegulac-sodium		*	P	
Dimethyldioctyl			*	
Diphacinone	*	*	*	*
Endothall			*	
Ethephon	*	*	P	*
Farnesol		*	*	
Fatty acids			*	
Garlic oil			*	*
Gibberellic acid		*	P	
Gibberellins A4A7			P	
Gliocladium virens			*	*
Harpin protein			*	
Hydrogen peroxide	*	P	P	
Indolebutyric acid		*	P	
Iron phosphate	*	*	P	*
Maleic hydrazide			*	*
Mefluidide, diet.			*	
Mepiquat chloride			*	
Metaldehyde	*	P	P	P
Metam-sodium			*	*
Methyl bromide	*	*	P	P
NAA		*	*	
Nerolidol		*	*	
Paclobutrazol	*	P	P	*
Pelargonic acid		*	P	
Propionic acid			*	*
Sodium hypochlorite			P	*
Thidiazuron			*	
Uniconazole	*	*	P	*
Zinc phosphide		*		

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Flowering Plants	Bedding Plants	Foliage Plants	Floriculture Propagation Material
Herbicides				
(Meth)propionic acid	*			
2,4-D		*		
Ammonium benzodax		*	*	
Atrazine		*		
Benefin	*	*	*	
Clethodim		*		*
Clopyralid	*			
DCPA		*		
Dicamba	*			
Diquat	*	*		
Dithiopyr	*	*		
Diuron	*	*		
Fenoxaprop	*			
Flumetsulam	*			
Glufosinate-ammonium		*		
Glyphosate	P	P	P	P
Glyphosate diam salt	*	*	*	
Halosulfuron	*	*		
Isoxaben	P	*	*	
MCPA	*			
MSMA	*			
Metribuzin		*		
Napropamide	*			*
Norflurazon		*		*
Oryzalin	P	P	*	*
Oxadiazon	P	*	*	
Oxyfluorfen	*	*	*	*
Paraquat	*	*		
Pendimethalin	P	P	*	*
Primisulfuron	*	*		
Prodiamine	*	*	*	
Prosulfuron		*		
S-Metolachlor		*		*
Simazine			*	*
Sulfosate		*		
Sulfosulfuron	*			
Triclopyr	*	*		
Trifluralin	*	*	*	
Vernolate	*	*		
Insecticides				
Abamectin	P	P	P	P
Acephate	P	P	P	*
Acetamiprid	P	P		
Azadirachtin	P	P	P	*
Azinphos-methyl			*	
Beauveria bassiana	P	P	*	*
Bendiocarb	P	P	P	*
Bifenazate	P	P	P	*
Bifenthrin	P	P	P	P
Bt (Bacillus thur.) ¹	(¹)	(¹)	(¹)	(¹)
Carbaryl	P	P		*
Chlorfenapyr	P	*	P	*
Chlorpyrifos	P	P	P	*
Cinnamaldehyde		*	*	
Clofentezine	P	P	P	*
Cyfluthrin	P	P	P	*
Cyromazine	P	P		*
Deltamethrin	*	*	*	
Diazinon	P	P	P	*
Dichlorvos	*	*	*	
Dicofol	P	P	*	

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Flowering Plants	Bedding Plants	Foliage Plants	Floriculture Propagation Material
Insecticides-continued				
Dienochlor	P	P	*	
Diiflubenzuron	P	P	P	*
Dimethoate	P	*	P	
Disulfoton	*		*	*
Emamectin benzoate		*		
Endosulfan	P	*	P	*
Esfenvalerate		*		
Ethyl parathion	*			
Etoxazole	P	P	*	
Fenbutatin-oxide	*	*	P	
Fenoxycarb	*	*	*	
Fenpropathrin	P	P	P	*
Fenpyroximate	P	P	*	
Fluvalinate	P	P	P	
Hexythiazox	P	P	*	*
Hydramethylnon		*	*	
Imidacloprid	P	P	P	P
Jojoba oil	*			
Kinoprene	*	*	*	
Lambda-cyhalothrin	*	*	*	*
Lindane	*	*		
Malathion	P	P	P	*
Methidathion			P	
Methiocarb	P	P	P	*
Methomyl	*	*		
Methyl parathion	*	*	*	
Mevinphos	*			
Naled			*	
Neem oil	*	*		
Neem oil, clar. hyd.	*	*	P	
Nicotine	*	P	*	
Novaluron	P	P	*	
Octacide-264	P	*		*
Oxamyl	*	*	*	
Oxythioquinox		*		
Permethrin	P	P	*	*
Petroleum distillate	P	*	P	*
Phenothrin	*	*		
Phosalone	*			
Phosmet			*	
Piperonyl butoxide	P	P	*	*
Potassium salts	P	P	P	*
Propargite		*		
Pymetrozine	P	P	P	*
Pyrethrins	P	P	*	*
Pyridaben	P	P	*	
Pyridine	P	P	P	*
Pyriproxyfen	*	*	*	
Resmethrin	*	*		*
Rotenone	*	*		
S-Kinoprene	P	P	*	*
S-Methoprene			*	
Sabadilla	*	*		
Silicon dioxide	*	*	*	
Spinosad	P	P	P	P
Sulfotepp	*	*		
Tebufenozide			*	
Thiamethoxam			*	
Trichlorfon		*		

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Flowering Plants	Bedding Plants	Foliage Plants	Floriculture Propagation Material
Fungicides				
Azoxystrobin	P	*	P	*
Bacillus subtilis ¹	(¹)	(¹)		
Basic copper sulfate	*	*		
Benomyl	*			
Butanone	P	P	*	
Captan	P	P	*	*
Chloroneb		*		
Chlorothalonil	P	P	P	P
Copper hydroxide	P	P	P	*
Copper oxychloride	*	*		
Copper resinate	P	P	P	*
Copper sulfate	P	P	P	P
Cymoxanil			*	
Dimethomorph	*	P		
Dodine		*		
Etridiazole	*	P	P	P
Fenarimol	P	P	*	
Fenbuconazole			*	
Fenhexamid	P	P	*	*
Ferbam	*			
Fludioxonil	P	*	P	P
Flutolanil	*	P	*	
Fosetyl-al	P	P	P	*
Iprodione	P	P	P	P
Kresoxim-methyl	*	*		
Mancozeb	P	P	P	P
Maneb	*	*	*	
Mefenoxam	P	P	P	P
Metalaxyl	P	P	P	*
Myclobutanil	P	P	*	*
Oxycarboxin	*			
PCNB	P		*	*
Piperalin	P	P	*	
Potassium bicarbon.	P	P	*	*
Propamocarb hydroch.		*		
Propiconazole	P	P	*	*
Streptomyces gris. ¹	(¹)		(¹)	
Streptomycin	P	P	P	*
Streptomycin sulfate		*		
Sulfur	*	P	*	
Tebuconazole			*	
Thiabendazole (TBZ)	P	P	*	*
Thiophanate	P	P	P	*
Thiophanate-methyl	P	P	*	P
Thiram	*	*	*	
Triadimefon	P	*		
Trichoderma harz.	P	*	*	*
Trifloxystrobin	P	P	*	*
Triforine	*	*	*	
Vinclozolin	P	P	*	
Zineb	*			

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Flowering Plants	Bedding Plants	Foliage Plants	Floriculture Propagation Material
Other Chemicals				
Alk. dim. benzyl 50%	*	*	*	
Alk. dim. benzyl 60%	P	P	*	
Alk. dim. eth. benz.	P	P	*	
Alkyl. dim. benz. am		*		
Ancymidol	P	P	*	*
Benzyladenine	P	*	*	
Busan 881		*		
Capsaicin		*		
Chlormequat chloride	P	P	P	P
Chlorophacinone		*		
Chloropicrin	*	*		
Cytokinins		*		
Daminozide	P	P	P	*
Dazomet				*
Decyldimethyloctyl		*		
Dichloropropene		*		
Didecyl dim. ammon.		*		
Dikegulac-sodium	*	*	*	
Dimethyldioctyl		*		
Endothall		*		
Ethephon	P	P	P	*
Farnesol	*	*		
Fatty acids	*			
Garlic oil		*	*	
Gibberellic acid	P	*	P	
Gibberellins A4A7	P	*	*	
Gliocladium virens		*		
Harpin protein	*			
Hydrogen peroxide	P	P	P	*
Indolebutyric acid	*	P		*
Iron phosphate		*		
Mefluidide, diet.	*			
Mepiquat chloride	*			
Metaldehyde	P	P	*	*
Metam-sodium	*			
Methyl bromide	*	*		
NAA	*	*		*
Nerolidol	*	*		
Paclobutrazol	P	P	P	P
Pelargonic acid	*	*		
Sodium hypochlorite	*	*	*	
Thidiazuron		*		
Uniconazole	P	P	*	*

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Cut Cultivated Greens	Herbaceous Perennials	Non-production Areas
Herbicides			
2,4-D	*		*
2,4-D, Dimeth. salt		*	*
2,4-DP, Dimeth. salt			*
Acetic acid			*
Acifluorfen			*
Amitrole			*
Atrazine	*		*
Benfin		*	*
Bentazon		*	*
Bromoxynil		*	
Clethodim			*
Clopyralid			P
Copper ethanolamine			*
DCPA		*	
Desmedipham			*
Dicamba	*		*
Dicamba, Dimet. salt		*	*
Dichlobenil	*		*
Diquat		*	P
Diuron	*		P
EPTC			*
Fenoxaprop			*
Fluazifop-P-butyl	*	*	*
Glufosinate-ammonium			P
Glyphosate	P	*	P
Halosulfuron		*	*
Hexazinone			P
Isooctyl propionate			*
Isoxaben	*	P	P
MCPA			*
MCPP, DMA salt		*	*
MCPP-P, DMA Salt			*
MSMA			*
Metolachlor			*
Napropamide		*	*
Norflurazon	*		P
Oryzalin	*	*	P
Oxadiazon	*	*	P
Oxyfluorfen	*	P	P
Paraquat	*		P
Pendimethalin	*	*	P
Phenmedipham			*
Prodiamine	P	*	P
Propanil			*
Pyraflufen ethyl			*
S-Metolachlor		*	*
Sethoxydim			*
Simazine	*		P
Sulfometuron methyl			*
Sulfosate			*
Sulfosulfuron			*
Tebuthiuron			*
Terbacil			*
Triclopyr	*		P
Trifluralin		*	P
Triflurosulfuronmethyl			*
Vernolate			P

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Cut Cultivated Greens	Herbaceous Perennials	Non-production Areas
Insecticides			
Abamectin	*	P	*
Acephate	*	P	P
Acetamiprid			*
Allethrin	*		
Azadirachtin		P	
Beauveria bassiana		*	
Bendiocarb		*	*
Bifenazate	P	P	
Bifenthrin	*	*	P
Bioallethrin	*		
Bt (Bacillus thur.) ¹	(1)	(1)	(1)
Carbaryl	P	P	P
Carbofuran			*
Chlorfenapyr		*	*
Chlorpyrifos	P	P	P
Cinnamaldehyde		*	*
Clofentezine		P	
Cyfluthrin	*	P	*
Cyromazine		*	
Deltamethrin	*	*	*
Diazinon	*	P	P
Dicofol	P	*	
Diflubenzuron	P	P	*
Dimethoate	P	*	*
Disulfoton			*
Endosulfan	P	P	*
Ethoprop	*		
Ethoxy sec. alcohols	*		
Etoxazole	*	P	
Fenamiphos	*		*
Fenbutatin-oxide	P	*	
Fenoxycarb		*	P
Fenpropathrin		*	
Fenpyroximate		*	
Fenvalerate		*	*
Fluvalinate	*	P	
Hexythiazox	*	P	*
Hydramethylnon			P
Imidacloprid	*	P	*
Lambda-cyhalothrin		*	*
Lindane		*	*
Malathion	P	P	*
Methiocarb		P	*
Myrothecium verruc.	*		
Neem oil, clar. hyd.	*	*	
Nicotine		*	
Nosema locustae			*
Novaluron		*	*
Octacide-264	*	*	
Oxamyl	*		
Oxythioquinox	*	*	
Permethrin	P	*	*
Petroleum distillate	P	P	*
Phorate	*		
Piperonyl butoxide	*	P	
Potassium salts		P	*
Propargite	*	*	
Pymetrozine		P	
Pyrethrins		P	
Pyridaben		P	

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Cut Cultivated Greens	Herbaceous Perennials	Non-production Areas
Insecticides-continued			
Pyridine		P	*
Rosemary oil		*	
Rotenone		*	
S-Kinoprene	*	*	*
S-Methoprene		*	*
Silicon dioxide		*	
Spinosad	P	P	*
Tefluthrin	*		
Thiamethoxam	*	*	
Fungicides			
Azoxystrobin	*	P	*
Bacillus subtilis ¹		(¹)	
Basic copper sulfate	*		*
Benomyl			*
Butanone		*	*
Calcium polysulfide	*		
Captan	*	*	
Chloroneb	P		
Chlorothalonil	P	P	*
Copper (metallic)		*	
Copper amm. complex			*
Copper hydroxide	P	*	*
Copper oxychloride	*		*
Copper resinate		*	*
Copper sulfate		P	*
Dimethomorph		*	
Dodine		*	
Etridiazole	*	P	*
Fenarimol		*	
Fenhexamid		P	*
Ferbam	*		
Fludioxonil	*	*	*
Flutolanil	*	*	
Fosetyl-al	P	P	
Iprodione	*	P	*
Kresoxim-methyl		*	
Mancozeb	P	P	*
Maneb	P		
Mefenoxam	*	P	*
Metalaxyl		*	
Metiram	P		
Myclobutanil		P	*
Oxycarboxin		*	
PCNB	*	*	
Piperalin		*	*
Potassium bicarbon.		*	*
Propiconazole	P	*	*
Streptomyces gris. ¹		(¹)	
Streptomycin		*	
Sulfur	*	*	*
Tebuconazole	P		
Thiabendazole (TBZ)		*	
Thiophanate	P	P	*
Thiophanate-methyl	P	P	*
Triadimefon	*	*	
Trichoderma harz.		*	*
Trifloxystrobin		P	
Triforine		*	
Vinclozolin		*	
Zinc chloride			*

See footnote(s) at end of table.

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**Active Ingredient Publication Status
by Production Category
Program States, 2003 - continued**

Active Ingredient	Cut Cultivated Greens	Herbaceous Perennials	Non-production Areas
Other Chemicals			
Alk. dim. benzyl 50%	*	*	*
Alk. dim. benzyl 60%	*	*	*
Alk. dim. eth. benz.	*	*	*
Aluminum phosphide	*		
Ammonium soap			*
Ancymidol		*	
Benzyladenine		*	
Bromadiolone		*	*
Capsaicin		*	
Chlormequat chloride		P	
Chloropicrin		*	*
Daminozide		P	
Dichloropropene			*
Didecyl dim. ammon.			*
Diphacinone	*		*
Ethephon		P	
Farnesol		*	
Garlic oil		*	
Gibberellic acid		*	
Gibberellins A4A7		*	
Hydrogen peroxide	*	P	P
Indolebutyric acid		*	*
Iron phosphate		*	*
Metaldehyde	*	P	P
Methyl bromide		*	*
NAA		*	*
Nerolidol		*	
Paclobutrazol		P	*
Pelargonic acid			P
Sodium hypochlorite			P
Uniconazole		P	

P Usage data are published for this active ingredient.

* Rate data are not published for this active ingredient.

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

**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003**

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
(Meth)propionic acid	(¹)	*		
2,4-D	0.31	1.7	0.31	1.6
2,4-D, Dimeth. salt	(¹)	0.1	(¹)	*
2,4-DP, Dimeth. salt	0.26	0.1	0.26	0.1
Acetamide	0.60	7.6	0.60	7.6
Acetic acid	(¹)	2.8	(¹)	2.8
Acetochlor	(¹)	*	(¹)	*
Acifluorfen	(¹)	0.1	(¹)	0.1
Ammonium benzadox	(¹)	*	(¹)	*
Atrazine	2.49	40.1	2.51	40.0
Benefin	1.25	2.1	1.89	2.0
Bentazon	0.32	0.2	0.32	0.2
Bromacil	(¹)	*	(¹)	*
Bromoxynil	(¹)	0.1		
Carfentrazone-ethyl	(¹)	0.3	(¹)	0.3
Clethodim	0.16	0.6	0.15	0.4
Clopyralid	0.20	1.8	0.20	1.8
Clopyralid mono salt	(¹)	28.7	(¹)	28.7
Colleto. gloeospor.	(¹)	*	(¹)	*
Copper ethanolamine	(¹)	*	(¹)	*
Cyanazine	(¹)	0.9	(¹)	0.9
DCPA	7.76	0.7	(¹)	0.2
Dicamba	(¹)	*	(¹)	*
Dicamba, Dimet. salt	(¹)	*	(¹)	*
Dichlobenil	2.37	2.6	2.43	2.5
Diflufenzopyr-sodium	(¹)	*	(¹)	*
Diquat	0.43	0.5	(¹)	0.3
Dithiopyr	(¹)	0.1	(¹)	0.1
Diuron	1.60	5.7	(¹)	4.5
Fenoxaprop	(¹)	*		
Fluazifop-P-butyl	0.26	0.9	0.26	0.9
Flumetsulam	(¹)	0.2	(¹)	*
Flumioxazin	(¹)	0.1	(¹)	0.1
Fluroxypyr	(¹)	0.6	(¹)	0.6
Fomesafen	(¹)	*	(¹)	*
Fosamine	(¹)	*	(¹)	*
Glufosinate-ammonium	0.91	0.1	0.70	0.1
Glyphosate	0.98	200.7	0.94	184.0
Glyphosate diam salt	(¹)	0.3	(¹)	0.2
Halosulfuron	0.08	*	0.11	*
Hexazinone	0.91	7.8	0.91	7.8
Imazamox	(¹)	*	(¹)	*
Imazaquin, mon. salt	(¹)	*	(¹)	*
Imazethapyr	(¹)	*	(¹)	*
Isooctyl propionate	(¹)	*	(¹)	*
Isoxaben	0.83	121.1	0.83	119.7
Lactofen	(¹)	0.6	(¹)	0.6
Linuron	0.21	0.2	(¹)	0.1
MCPA	(¹)	*	(¹)	*
MCPB	(¹)	*		
MCPP, DMA salt	(¹)	*	(¹)	*
MSMA	(¹)	*		
Metolachlor	0.06	1.6	0.05	1.3
Metribuzin	0.15	1.9	0.15	1.9
Metsulfuron-methyl	(¹)	*	(¹)	*
Napropamide	2.82	19.0	2.85	18.1
Norflurazon	(¹)	0.9	(¹)	0.5
Oryzalin	1.73	84.9	1.71	78.9
Oxadiazon	0.46	5.8	0.40	4.5
Oxyfluorfen	0.71	75.5	0.71	74.2

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides-continued				
Paraquat	0.36	0.7	0.36	0.7
Pendimethalin	2.72	147.9	2.75	145.3
Primisulfuron	(¹)	*	(¹)	*
Prodiamine	0.97	35.0	0.97	34.2
Prometon	(¹)	*	(¹)	*
Pronamide	(¹)	0.1	(¹)	0.1
Propanil	(¹)	*	(¹)	*
Propazine	(¹)	*	(¹)	*
Prosulfuron	(¹)	*	(¹)	*
Pyrazon	(¹)	*		
Pyridate	(¹)	*	(¹)	*
Quinclorac	(¹)	*	(¹)	*
Quizalofop-ethyl	(¹)	*	(¹)	*
S-Metolachlor	1.87	3.7	1.69	2.6
Sethoxydim	0.22	0.3	0.22	0.3
Simazine	1.69	154.7	1.70	153.7
Sulfometuron methyl	0.04	*	0.04	*
Sulfosate	(¹)	0.3	(¹)	0.2
Sulfosulfuron	(¹)	*	(¹)	*
Tebuthiuron	(¹)	*		
Terbacil	(¹)	*	(¹)	*
Triasulfuron	(¹)	0.4	(¹)	0.4
Triclopyr	0.50	2.9	0.51	2.9
Trifluralin	1.53	13.1	2.53	11.5
Vernolate	3.16	5.2	1.94	3.2
Insecticides				
Abamectin	0.01	1.0	0.01	0.6
Acephate	0.58	156.6	0.46	110.0
Acetamiprid	0.13	0.1	0.08	*
Aldicarb	(¹)	*	(¹)	*
Allethrin	(¹)	*		
Amitraz	(¹)	*	(¹)	*
Azadirachtin	0.03	0.4	0.03	0.1
Azinphos-methyl	0.49	1.7	0.49	1.7
Beauveria bassiana	0.52	0.9	0.31	*
Bendiocarb	0.96	1.5	1.03	0.7
Bifenazate	0.23	5.8	0.15	3.0
Bifenthrin	0.09	3.9	0.09	2.6
Bioallethrin	(¹)	*		
Boric acid	(¹)	*		
Canola oil	(¹)	*	(¹)	*
Carbaryl	1.28	124.7	1.21	87.5
Carbofuran	0.12	0.1	0.12	0.1
Chlorfenapyr	0.08	0.1	0.05	*
Chlorpyrifos	0.74	89.6	0.78	68.0
Cinnamaldehyde	1.47	0.6	1.18	0.1
Clofentezine	0.15	1.9	0.13	1.5
Clove oil	(¹)	*	(¹)	*
Cottonseed oil	(¹)	*	(¹)	*
Cryolite	(¹)	*		
Cyfluthrin	0.07	5.8	0.08	5.6
Cyromazine	0.20	1.4	0.08	0.2
Deltamethrin	0.003	*	0.003	*
Diazinon	0.29	15.9	0.22	11.9
Dichlorvos	1.02	0.3		
Dicofol	0.51	5.2	0.51	2.6
Dienochlor	0.39	1.2	0.64	0.9
Diflubenzuron	0.08	6.2	0.21	2.0
Dimethoate	1.02	63.9	1.07	62.5

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Disulfoton	0.84	3.9	0.80	3.7
Emamectin benzoate	(¹)	*		
Endosulfan	0.67	35.0	0.70	28.4
Esfenvalerate	0.03	0.6	0.03	0.6
Ethion	(¹)	0.1	(¹)	0.1
Ethoprop	0.73	1.3	(¹)	1.2
Ethoxy sec. alcohols	(¹)	0.4		
Ethyl parathion	(¹)	0.2	(¹)	0.2
Etoxazole	0.05	0.1	0.04	*
Fenamiphos	(¹)	0.2	(¹)	*
Fenbutatin-oxide	0.51	2.1	0.64	1.0
Fenitrothion	(¹)	0.2	(¹)	0.2
Fenoxycarb	0.02	0.1	0.02	*
Fenpropathrin	0.19	0.7	0.16	0.4
Fenpyroximate	0.08	0.1	(¹)	*
Fenvalerate	(¹)	*	(¹)	*
Fipronil	(¹)	*	(¹)	*
Flucythrinate	(¹)	*		
Fluvalinate	0.13	3.8	0.26	1.0
Fonofos	(¹)	*		
Formetanate hydro.	(¹)	*	(¹)	*
Hexythiazox	0.08	1.1	0.09	0.8
Hydramethylnon	0.01	*	0.01	*
Imidacloprid	0.21	8.5	0.16	4.9
Indoxacarb	(¹)	0.1	(¹)	0.1
Joboba oil	8.44	1.7	(¹)	*
Kaolin	(¹)	0.1	(¹)	0.1
Kinoprene	0.72	0.2	(¹)	*
Lambda-cyhalothrin	0.02	0.1	0.02	0.1
Lindane	0.62	0.2	0.59	0.2
Malathion	0.77	117.8	0.75	110.8
Methamidophos	(¹)	0.1	(¹)	0.1
Methidathion	0.49	3.9	0.50	3.4
Methiocarb	0.96	2.9	0.94	1.1
Methomyl	0.55	1.2	(¹)	1.2
Methoxychlor	(¹)	*	(¹)	*
Methyl parathion	(¹)	*	(¹)	*
Mevinphos	(¹)	*		
Myrothecium verruc.	(¹)	6.6		
Naled	(¹)	0.5		
Neem oil	(¹)	0.7	(¹)	0.3
Neem oil, clar. hyd.	3.78	45.2	3.02	28.1
Nicotine	2.71	*	(¹)	*
Novaluron	0.04	*	(¹)	*
Octacide-264	0.19	*	(¹)	*
Oxamyl	0.64	0.2	(¹)	0.1
Oxydemeton-methyl	0.42	1.8	0.42	1.8
Oxythioquinox	0.80	1.9	0.59	1.5
Permethrin	0.18	9.4	0.19	2.3
Petroleum distillate	5.48	447.0	5.29	391.7
Petroleum oil	6.28	3.1	6.28	3.1
Phenothrin	(¹)	*		
Phorate	(¹)	0.1		
Phosalone	(¹)	*		
Phosmet	0.69	1.2	0.69	1.1
Piperonyl butoxide	0.22	0.2	0.24	0.1
Potassium salts	2.19	18.1	1.06	7.1
Propargite	0.79	2.6	0.73	2.2
Pymetrozine	0.27	4.4	0.54	2.7

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Pyrethrins	0.02	*	0.05	*
Pyridaben	0.21	1.8	0.19	1.3
Pyridine	0.10	7.1	0.10	6.8
Pyriproxyfen	(¹)	*		
Resmethrin	0.21	*	(¹)	*
Rosemary oil	(¹)	*		
Rotenone	0.01	*	(¹)	*
S-Kinoprene	0.29	13.0	0.46	0.6
S-Methoprene	0.01	*	(¹)	*
Sabadilla	(¹)	*		
Sesame Oil	(¹)	*	(¹)	*
Silicon dioxide	2.54	0.5	(¹)	0.2
Spinosad	0.09	3.6	0.06	0.9
Sulfotepp	0.31	*	(¹)	*
Tebufozide	0.09	0.1	0.07	0.1
Tefluthrin	(¹)	*		
Thiamethoxam	(¹)	*	(¹)	*
Tralomethrin	(¹)	*	(¹)	*
Triazamate	0.23	0.8	0.23	0.8
Trichlorfon	(¹)	*		
Zeta-cypermethrin	(¹)	*	(¹)	*
Fungicides				
Agriphage	(¹)	*	(¹)	*
Azoxystrobin	0.08	6.7	0.08	1.9
Basic copper sulfate	0.59	5.2	0.59	5.2
Benomyl	0.58	0.6	0.59	0.6
Borax Decahydrate	(¹)	*	(¹)	*
Butanone	0.03	0.5	0.02	0.4
Calcium polysulfide	(¹)	0.4	(¹)	0.4
Captan	2.61	25.4	0.72	5.1
Chloroneb	2.01	2.8		
Chlorothalonil	1.23	277.7	1.40	158.7
Copper (metallic)	(¹)	*	(¹)	*
Copper amm. complex	(¹)	*	(¹)	*
Copper chloride hyd.	(¹)	*	(¹)	*
Copper hydroxide	0.66	106.0	0.72	72.8
Copper oxide	(¹)	0.1	(¹)	0.1
Copper oxychlor. sul.	(¹)	0.1	(¹)	0.1
Copper oxychloride	0.61	11.4	0.60	11.3
Copper resinate	0.12	1.6	0.12	1.4
Copper sulfate	0.26	3.1	0.39	1.6
Cresol	(¹)	*	(¹)	*
Cymoxanil	(¹)	*	(¹)	*
Cyprodinil	(¹)	*	(¹)	*
Dicloran	(¹)	*		
Dimethomorph	0.16	0.1	(¹)	0.1
Dodine	0.70	1.7	0.70	1.7
Etridiazole	3.64	35.2	4.61	27.4
Fenarimol	0.07	1.1	0.03	1.0
Fenbuconazole	(¹)	*	(¹)	*
Fenhexamid	0.69	3.4	0.80	0.5
Ferbam	(¹)	1.6	(¹)	*
Fludioxonil	0.17	1.6	0.09	0.7
Flutolanil	1.41	82.1	1.41	81.8
Fosetyl-al	2.62	94.0	2.08	47.8
Halobrom	(¹)	*	(¹)	*
Iprodione	0.72	87.9	1.20	74.9
Kresoxim-methyl	0.08	*	(¹)	*
Mancozeb	1.22	529.7	1.08	137.4

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides-continued				
Maneb	1.33	38.9	0.74	7.1
Mefenoxam	0.27	12.6	0.31	7.7
Metalaxyl	0.31	1.6	0.28	0.4
Metiram	1.34	3.3		
Milban	(¹)	*		
Myclobutanil	0.12	2.5	0.09	1.5
Oxycarboxin	0.88	0.1	(¹)	0.1
Oxytetracycline	(¹)	0.2	(¹)	0.2
PCNB	2.40	14.0	1.91	4.8
Phosphorous acid	1.08	0.4	1.08	0.4
Piperalin	0.72	2.4	0.44	*
Potassium bicarbon.	2.06	4.4	1.99	0.5
Propamocarb hydroch.	(¹)	0.3	(¹)	*
Propiconazole	0.08	6.5	0.08	6.0
Pseudomonas fluores.	(¹)	*	(¹)	*
Pyraclostrobin	(¹)	*	(¹)	*
Sodium Percarbonate	(¹)	0.8	(¹)	0.8
Streptomycin	0.16	1.0	0.16	0.6
Streptomycin sulfate	(¹)	*	(¹)	*
Sulfur	2.05	77.5	1.98	49.6
Tebuconazole	0.20	9.1	(¹)	0.2
Thiabendazole (TBZ)	2.18	1.3	1.16	0.2
Thiophanate	0.47	102.0	0.55	27.9
Thiophanate-methyl	0.78	115.4	0.76	73.9
Thiram	1.25	1.5	(¹)	1.2
Triadimefon	0.19	0.7	0.21	0.7
Trichoderma harz.	0.31	0.2	0.13	*
Trifloxystrobin	0.12	0.4	0.12	0.1
Triflumizole	(¹)	*	(¹)	*
Triforine	0.08	*	0.08	*
Triphenyltin hydrox.	(¹)	*	(¹)	*
Vinclozolin	0.69	8.3	0.75	7.8
Xylenol	(¹)	*	(¹)	*
Zineb	(¹)	*		
Ziram	(¹)	0.6	(¹)	0.6

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Other Chemicals				
Alk. dim. benzyl 50%	0.04	*	0.01	*
Alk. dim. benzyl 60%	0.30	0.9	0.29	0.4
Alk. dim. eth. benz.	0.30	0.9	0.29	0.4
Alkyl. dim. benz. am	(¹)	*		
Aluminum phosphide	(¹)	0.1	(¹)	*
Aminopyridine	(¹)	*	(¹)	*
Ammonium soap	(¹)	*	(¹)	*
Ancymidol	0.004	*	(¹)	*
Benzyladenine	0.18	*	(¹)	*
Brodifacoum	(¹)	*	(¹)	*
Bromadiolone	(¹)	*	(¹)	*
Busan 881	(¹)	*		
Capsaicin	(¹)	*	(¹)	*
Chlormequat chloride	1.35	7.8	0.77	1.1
Chlorophacinone	(¹)	*	(¹)	*
Chloropicrin	120.59	255.0	124.82	245.6
Cytokinins	(¹)	*		
Daminozide	2.71	23.3	3.57	0.6
Dazomet	411.79	12.5	(¹)	0.7
Decenol	(¹)	*	(¹)	*
Decenyl acetate	(¹)	*	(¹)	*
Decyldimethyloctyl	(¹)	*		
Dichloropropene	(¹)	31.5	(¹)	29.3
Didecyl dim. ammon.	(¹)	*		
Difethialone	(¹)	*	(¹)	*
Dikeregulac-sodium	3.60	0.4	(¹)	0.1
Dimethyl dioctyl	(¹)	*		
Diphacinone	0.01	*	0.02	*
E-8-Dodecenyl acetat	(¹)	*	(¹)	*
Endothall	(¹)	*		
Ethephon	0.32	0.6	0.57	*
Farnesol	(¹)	*	(¹)	*
Fatty acids	(¹)	7.7	(¹)	2.3
GABA	(¹)	*	(¹)	*
Garlic oil	(¹)	8.1	(¹)	*
Gibberellic acid	0.05	0.1	(¹)	*
Gibberellins A4A7	0.18	*	(¹)	*
Gliocladium virens	(¹)	*		
Harpin protein	(¹)	*	(¹)	*
Hydrogen peroxide	2.68	14.4	2.07	3.0
Indolebutyric acid	0.63	0.1	1.27	0.1
Iron phosphate	0.21	0.3	0.21	0.3
L-Glutamic acid	(¹)	*	(¹)	*
Maleic hydrazide	(¹)	*		
Mefluidide, diet.	(¹)	*		
Mepiquat chloride	(¹)	0.1		
Metaldehyde	0.96	10.4	0.83	5.7
Metam-sodium	130.39	22.9	(¹)	6.9
Methyl bromide	195.42	449.6	191.39	391.4
Mineral oil	(¹)	0.7	(¹)	0.7
Monocarbamide dihyd.	(¹)	1.0	(¹)	1.0
NAA	0.64	*	(¹)	*
NAD	(¹)	*	(¹)	*
Nerolidol	(¹)	*	(¹)	*
Pacllobutrazol	0.04	0.3	0.02	*
Pelargonic acid	3.78	6.0	2.86	4.6
Propionic acid	(¹)	*	(¹)	*
Sodium chlorate	(¹)	*	(¹)	*
Sodium hypochlorite	2.91	1.3	(¹)	0.7
Strychnine	(¹)	*	(¹)	*
Thidiazuron	(¹)	*		
Uniconazole	0.01	*	0.02	*
Z-8-Dodecanol	(¹)	*	(¹)	*
Z-8-Dodecen acetate	(¹)	0.3	(¹)	0.3
Zinc phosphide	(¹)	*	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Transplants for Commercial Vegetable & Strawberry Production		Nursery Propagation or Lining-out Stock	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
2,4-D			(¹)	*
2,4-DP, Dimeth. salt			(¹)	*
Benfen			(¹)	1.8
Clethodim			(¹)	*
Clopyralid			(¹)	*
Dichlobenil			(¹)	*
Diuron			(¹)	*
Fluazifop-P-butyl			(¹)	*
Glyphosate	(¹)	*	1.19	7.2
Isoxaben			(¹)	1.1
Linuron			(¹)	*
Napropamide			(¹)	0.4
Norflurazon			(¹)	0.4
Oryzalin	(¹)	*	1.45	1.2
Oxadiazon	(¹)	*	(¹)	0.1
Oxyfluorfen	(¹)	*	1.15	0.7
Paraquat			(¹)	0.1
Pendimethalin	(¹)	*	0.89	0.7
Prodiamine			0.82	1.6
S-Metolachlor			(¹)	*
Sethoxydim			(¹)	*
Simazine	(¹)	*	(¹)	0.6
Sulfosate			(¹)	0.2
Terbacil	(¹)	*		
Triclopyr			(¹)	*
Trifluralin			(¹)	0.3
Insecticides				
Abamectin	0.004	*	0.01	*
Acephate	0.55	1.5	0.64	1.5
Acetamiprid			(¹)	*
Azadirachtin	(¹)	*	0.02	*
Azinphos-methyl			(¹)	*
Beauveria bassiana	(¹)	*	(¹)	*
Bendiocarb			(¹)	*
Bifenazate	(¹)	*	0.05	*
Bifenthrin	(¹)	*	0.04	0.1
Carbaryl	(¹)	0.1	4.67	12.7
Carbofuran			(¹)	*
Chlorfenapyr			(¹)	*
Chlorpyrifos	(¹)	*	0.75	0.7
Cinnamaldehyde			(¹)	*
Clofentezine			(¹)	*
Cyfluthrin			0.21	0.7
Cyromazine	(¹)	0.1	(¹)	*
Diazinon	(¹)	0.1	0.74	0.1
Dicofol	(¹)	*	(¹)	0.1
Dienochlor			(¹)	*
Diflubenzuron			0.11	*
Dimethoate			(¹)	0.1
Endosulfan	(¹)	2.2	(¹)	0.1
Esfenvalerate	(¹)	*		
Etoxazole			(¹)	*
Fenbutatin-oxide	(¹)	*	(¹)	0.1
Fenoxycarb			(¹)	*
Fenpropathrin	(¹)	0.1	(¹)	*
Fenpyroximate			(¹)	*
Fluvalinate			0.21	0.1
Hexythiazox			(¹)	*
Hydramethylnon			(¹)	*
Imidacloprid	0.33	1.3	0.22	0.6

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Transplants for Commercial Vegetable & Strawberry Production		Nursery Propagation or Lining-out Stock	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Indoxacarb	(¹)	0.1		
Lambda-cyhalothrin			(¹)	*
Lindane			(¹)	0.1
Malathion	(¹)	0.3	2.59	0.6
Methamidophos	(¹)	0.1		
Methidathion			(¹)	*
Methiocarb			(¹)	0.1
Methomyl	(¹)	0.3		
Neem oil, clar. hyd.	(¹)	0.3	(¹)	0.1
Novaluron	(¹)	*		
Octacide-264			(¹)	*
Oxamyl	(¹)	0.1		
Oxythioquinox			(¹)	*
Permethrin	(¹)	*	(¹)	*
Petroleum distillate	(¹)	0.4	9.14	0.5
Piperonyl butoxide	(¹)	*	(¹)	*
Potassium salts	(¹)	*	4.13	0.4
Pymetrozine	(¹)	2.4	(¹)	*
Pyrethrins	(¹)	*	(¹)	*
Pyridaben			(¹)	*
Pyridine			0.17	*
Rotenone	(¹)	*		
S-Kinoprene			(¹)	*
Spinosad	(¹)	0.2	0.12	*
Tebufozide			(¹)	*
Fungicides				
Agriphage	(¹)	*		
Azoxystrobin	0.18	0.3	0.17	*
Basic copper sulfate			(¹)	1.9
Benomyl	(¹)	0.1	(¹)	*
Butanone	(¹)	*	(¹)	*
Captan	(¹)	2.8	2.39	0.6
Chlorothalonil	0.52	3.0	0.88	2.2
Copper hydroxide	0.50	1.9	0.36	1.1
Copper oxychlo. sul.			(¹)	*
Copper oxychloride			(¹)	*
Copper resinate	(¹)	*	(¹)	*
Copper sulfate	(¹)	0.9	0.05	*
Cyprodinil	(¹)	*		
Dimethomorph	(¹)	*	(¹)	*
Dodine			(¹)	*
Etridiazole	(¹)	0.1	6.17	1.8
Fenarimol			(¹)	1.0
Fenbuconazole			(¹)	*
Fenhexamid	(¹)	*	(¹)	0.2
Fludioxonil	(¹)	*	0.49	0.1
Flutolanil			(¹)	*
Fosetyl-al	(¹)	5.5	1.91	1.1
Iprodione	(¹)	*	0.75	0.2
Mancozeb	1.45	1.5	1.05	2.4
Maneb	(¹)	3.6	(¹)	*
Mefenoxam	(¹)	*	0.30	0.4
Metalaxyl	(¹)	*	0.25	*
Myclobutanil	(¹)	0.1	(¹)	*
PCNB	(¹)	*	26.89	1.9
Phosphorous acid			(¹)	*
Piperalin	(¹)	*		
Potassium bicarbon.	(¹)	0.1	(¹)	*
Propiconazole	(¹)	*	0.06	0.1

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Transplants for Commercial Vegetable & Strawberry Production		Nursery Propagation or Lining-out Stock	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides-continued				
Pyraclostrobin	(¹)	*	(¹)	0.5
Sodium Percarbonate			(¹)	*
Streptomycin	0.20	*	(¹)	*
Sulfur	(¹)	0.4	(¹)	*
Thiophanate	(¹)	0.2	3.38	3.6
Thiophanate-methyl	0.35	0.7	1.01	0.2
Thiram			(¹)	*
Triadimefon			(¹)	*
Trichoderma harz.	(¹)	*	(¹)	*
Trifloxystrobin	(¹)	*	(¹)	*
Triforine			(¹)	*
Vinclozolin	(¹)	*	(¹)	0.1
Other Chemicals				
Alk. dim. benzyl 50%			(¹)	*
Alk. dim. benzyl 60%			(¹)	*
Alk. dim. eth. benz.			(¹)	*
Ancymidol			(¹)	*
Bromadiolone			(¹)	*
Chlormequat chloride	(¹)	*	(¹)	*
Chloropicrin	153.29	242.2	(¹)	*
Daminozide			(¹)	0.2
Dazomet			(¹)	*
Dichloropropene			(¹)	14.2
Difethialone			(¹)	*
Diphacinone			(¹)	*
Ethephon	(¹)	*	(¹)	*
Farnesol			(¹)	*
Harpin protein	(¹)	*		
Hydrogen peroxide	(¹)	0.1	5.15	1.3
Indolebutyric acid			(¹)	0.1
Iron phosphate			(¹)	*
Metaldehyde	(¹)	*	0.34	0.8
Metam-sodium			(¹)	3.4
Methyl bromide	203.39	322.8	(¹)	1.7
NAA			(¹)	*
NAD			(¹)	*
Nerolidol			(¹)	*
Paclobutrazol	(¹)	*	(¹)	*
Pelargonic acid			(¹)	*
Sodium chlorate	(¹)	*		
Sodium hypochlorite			(¹)	0.5
Uniconazole			(¹)	*
Zinc phosphide			(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens		Coniferous Evergreens	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
2,4-D	(¹)	*	0.50	0.3
2,4-DP, Dimeth. salt	(¹)	*		
Acetamide	(¹)	*	(¹)	0.1
Acifluorfen			(¹)	0.1
Ammonium benzadox			(¹)	*
Atrazine	(¹)	1.0	1.63	1.8
Benefin	(¹)	0.2		
Bentazon			(¹)	0.2
Bromacil			(¹)	*
Carfentrazone-ethyl	(¹)	0.2		
Clethodim	(¹)	*	0.10	0.1
Clopyralid	(¹)	*	0.21	0.5
Clopyralid mono salt			(¹)	*
Colleto. gloeospor.			(¹)	*
Cyanazine			(¹)	0.9
DCPA			(¹)	0.2
Dichlobenil	(¹)	0.6	1.33	0.7
Diquat	(¹)	*		
Dithiopyr			(¹)	0.1
Diuron	(¹)	1.1	(¹)	0.1
Fluazifop-P-butyl			0.30	0.5
Flumioxazin			(¹)	*
Glufosinate-ammonium	(¹)	*	(¹)	*
Glyphosate	1.33	9.2	0.92	20.3
Glyphosate diam salt	(¹)	*	(¹)	0.2
Halosulfuron	(¹)	*	(¹)	*
Hexazinone	(¹)	*	2.17	1.3
Imazamox			(¹)	*
Isoxaben	0.74	0.7	0.25	7.6
MCPA	(¹)	*	(¹)	*
Metolachlor	(¹)	*	0.04	1.0
Metribuzin	(¹)	*	(¹)	*
Napropamide	(¹)	1.4	1.92	0.8
Oryzalin	1.83	4.6	1.54	16.2
Oxadiazon	(¹)	1.1	2.35	0.6
Oxyfluorfen	1.46	2.2	0.74	45.4
Paraquat	(¹)	*	(¹)	0.1
Pendimethalin	2.93	124.6	2.12	6.2
Primisulfuron	(¹)	*		
Prodiamine	0.59	0.7	0.71	0.6
Prosulfuron	(¹)	*		
Pyridate	(¹)	*		
S-Metolachlor	(¹)	0.6	1.50	0.7
Sethoxydim	(¹)	*	0.38	0.1
Simazine	1.15	4.0	1.77	121.3
Sulfometuron methyl			(¹)	*
Sulfosate			(¹)	*
Sulfosulfuron	(¹)	*		
Triclopyr	(¹)	*	0.35	0.3
Trifluralin	2.31	0.4	(¹)	0.1
Vernolate	(¹)	0.1		

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens		Coniferous Evergreens	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides				
Abamectin	0.01	0.1	0.01	0.1
Acephate	0.63	68.9	0.93	3.3
Acetamiprid	(¹)	*	(¹)	*
Aldicarb	(¹)	*	(¹)	*
Azadirachtin	0.02	*	0.02	*
Azinphos-methyl	(¹)	0.1	(¹)	0.6
Beauveria bassiana	(¹)	*		
Bendiocarb	(¹)	0.2	(¹)	*
Bifenazate	0.14	0.4	0.14	0.7
Bifenthrin	0.10	0.5	0.13	0.5
Carbaryl	1.50	3.7	0.43	4.5
Carbofuran	(¹)	*	(¹)	*
Chlorfenapyr	(¹)	*		
Chlorpyrifos	0.50	3.5	0.92	12.2
Cinnamaldehyde	(¹)	*	(¹)	*
Clofentezine	(¹)	0.6	0.18	0.6
Clove oil	(¹)	*		
Cottonseed oil	(¹)	*		
Cyfluthrin	0.08	0.2	0.05	0.1
Cyromazine	(¹)	0.1	(¹)	*
Deltamethrin	0.005	*	(¹)	*
Diazinon	0.26	2.9	1.25	0.8
Dicofol	(¹)	0.1	0.41	0.4
Dienochlor	(¹)	0.8	(¹)	*
Diiflubenzuron	(¹)	*	0.06	0.1
Dimethoate	0.12	0.1	1.23	53.6
Disulfoton	(¹)	*	(¹)	0.1
Endosulfan	(¹)	0.2	0.78	4.0
Esfenvalerate			0.03	0.1
Ethoprop			(¹)	0.1
Ethyl parathion			(¹)	0.2
Etoxazole	(¹)	*	(¹)	*
Fenbutatin-oxide	(¹)	*	(¹)	0.1
Fenitrothion	(¹)	*	(¹)	0.2
Fenoxycarb	(¹)	*	(¹)	*
Fenpropathrin	(¹)	0.1	(¹)	*
Fenpyroximate	(¹)	*		
Fluvalinate	0.27	0.3	0.23	*
Hexythiazox	0.07	*	0.05	0.1
Hydramethylnon	(¹)	*		
Imidacloprid	0.21	0.1	0.41	0.8
Joboba oil	(¹)	*		
Kaolin	(¹)	*		
Kinoprene	(¹)	*		
Lambda-cyhalothrin	(¹)	*	0.02	*
Lindane			(¹)	*
Malathion	0.66	0.8	1.28	3.0
Methidathion	(¹)	*	(¹)	*
Methiocarb	(¹)	0.4	(¹)	0.1
Methyl parathion			(¹)	*
Neem oil	(¹)	*		
Neem oil, clar. hyd.	(¹)	15.5	(¹)	*
Novaluron	(¹)	*		
Octacide-264	(¹)	*		
Oxydemeton-methyl			0.43	1.0
Oxythioquinox			(¹)	*
Permethrin	0.10	0.5	(¹)	0.2
Petroleum distillate	6.74	34.4	2.82	9.3
Petroleum oil	(¹)	0.8	(¹)	0.2
Phosmet	(¹)	*	(¹)	0.3

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens		Coniferous Evergreens	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Piperonyl butoxide	(¹)	*	(¹)	*
Potassium salts	7.29	1.7	5.91	0.3
Propargite	(¹)	*	(¹)	*
Pymetrozine	0.17	*	(¹)	0.1
Pyrethrins	(¹)	*	(¹)	*
Pyridaben	(¹)	*	(¹)	*
Pyridine	0.14	5.7	(¹)	*
Resmethrin			(¹)	*
Rotenone			(¹)	*
S-Kinoprene	0.45	0.5	(¹)	*
S-Methoprene	(¹)	*		
Silicon dioxide	(¹)	*	(¹)	*
Spinosad	0.06	0.1	0.08	0.1
Tebufenozide			(¹)	*
Thiamethoxam	(¹)	*		
Fungicides				
Azoxystrobin	0.12	0.1	0.14	0.2
Basic copper sulfate	(¹)	1.9	(¹)	0.7
Benomyl	(¹)	*	(¹)	0.4
Butanone	0.06	*	0.01	0.1
Captan	3.61	*	0.93	0.2
Chlorothalonil	1.05	14.9	1.43	18.7
Copper hydroxide	2.12	27.8	0.21	1.4
Copper oxychlor. sul.	(¹)	*	(¹)	*
Copper oxychloride	(¹)	6.8	(¹)	2.3
Copper resinate	0.16	0.3	(¹)	0.3
Copper sulfate	1.29	0.4	0.27	*
Cymoxanil	(¹)	*		
Dimethomorph	(¹)	*	(¹)	*
Dodine	(¹)	*	(¹)	0.1
Etridiazole	9.22	18.8	1.73	0.2
Fenarimol	(¹)	*	(¹)	*
Fenhexamid	(¹)	0.2	(¹)	*
Ferbam	(¹)	*		
Fludioxonil	(¹)	0.1	(¹)	0.2
Flutolanil	(¹)	*		
Fosetyl-al	2.01	3.0	2.26	2.5
Halobrom	(¹)	*		
Iprodione	0.70	4.1	1.48	54.3
Kresoxim-methyl	(¹)	*	(¹)	*
Mancozeb	1.43	8.7	0.83	12.5
Maneb	(¹)	0.1	(¹)	2.1
Mefenoxam	0.31	4.1	1.18	1.1
Metalaxyl	0.09	*	0.08	*
Myclobutanil	0.07	0.4	0.13	*
Oxycarboxin			(¹)	*
Oxytetracycline			(¹)	*
PCNB	4.83	0.5	(¹)	0.6
Phosphorous acid	(¹)	0.1	(¹)	0.1
Potassium bicarbon.	(¹)	0.1	(¹)	*
Propamocarb hydroch.	(¹)	*		
Propiconazole	0.08	3.0	0.09	0.1
Pyraclostrobin			(¹)	*
Sodium Percarbonate	(¹)	*	(¹)	0.3
Streptomycin	0.13	*	(¹)	*
Sulfur	2.22	0.1	(¹)	0.1
Tebuconazole			(¹)	*
Thiabendazole (TBZ)	(¹)	*	(¹)	0.1
Thiophanate	0.57	3.2	0.23	0.4

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Broadleaf Evergreens		Coniferous Evergreens	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides-continued				
Thiophanate-methyl	4.58	33.5	0.68	4.1
Thiram			(¹)	*
Triadimefon	(¹)	0.1	0.22	0.1
Trichoderma harz.	(¹)	*	(¹)	*
Trifloxystrobin	(¹)	*	(¹)	*
Triforine	(¹)	*	(¹)	*
Vinclozolin	(¹)	*	(¹)	*
Ziram	(¹)	*		
Other Chemicals				
Alk. dim. benzyl 50%	(¹)	*	(¹)	*
Alk. dim. benzyl 60%	(¹)	0.1	(¹)	0.1
Alk. dim. eth. benz.	(¹)	0.1	(¹)	0.1
Ammonium soap	(¹)	*		
Ancymidol			(¹)	*
Brodifacoum	(¹)	*		
Bromadiolone	(¹)	*		
Capsaicin	(¹)	*	(¹)	*
Chlormequat chloride	(¹)	0.9	(¹)	*
Chloropicrin			(¹)	0.7
Daminozide	(¹)	0.1	(¹)	*
Decenol	(¹)	*		
Decenyl acetate	(¹)	*		
Dichloropropene			(¹)	5.5
Difethialone	(¹)	*		
Dikegulac-sodium	(¹)	0.1		
Diphacinone	(¹)	*	(¹)	*
Ethephon			(¹)	*
Farnesol	(¹)	*	(¹)	*
Fatty acids	(¹)	2.3		
Garlic oil	(¹)	*		
Gibberellic acid	(¹)	*		
Hydrogen peroxide	2.35	0.2	(¹)	0.1
Indolebutyric acid	(¹)	*	(¹)	*
Iron phosphate	(¹)	0.2	(¹)	*
Metaldehyde	1.21	1.1	1.49	0.8
Methyl bromide	(¹)	5.4	(¹)	32.5
Monocarbamide dihyd.			(¹)	1.0
NAA	(¹)	*		
Nerolidol	(¹)	*	(¹)	*
Pacllobutrazol	(¹)	*	(¹)	*
Pelargonic acid	(¹)	1.7	(¹)	0.6
Propionic acid			(¹)	*
Sodium hypochlorite	(¹)	*	(¹)	0.2
Uniconazole			(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Deciduous Shade Trees		Deciduous Flowering Trees	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
2,4-D	(¹)	*	(¹)	0.1
2,4-D, Dimeth. salt			(¹)	*
2,4-DP, Dimeth. salt	(¹)	*		
Acetamide			(¹)	*
Atrazine	(¹)	0.1		
Benfen	(¹)	*		
Bentazon	(¹)	*		
Clethodim	0.56	0.1	(¹)	0.1
Clopyralid	(¹)	*	(¹)	*
Clopyralid mono salt	(¹)	2.2		
Dicamba	(¹)	*	(¹)	*
Dicamba, Dimet. salt	(¹)	*	(¹)	*
Dichlobenil	3.14	0.9	(¹)	0.1
Di flufenzopyr-sodium	(¹)	*		
Diquat	(¹)	*	(¹)	*
Diuron	(¹)	0.2	(¹)	2.7
Fluazifop-P-butyl	(¹)	*	(¹)	*
Flumetsulam			(¹)	*
Fosamine	(¹)	*		
Glufosinate-ammonium	(¹)	*		
Glyphosate	3.23	32.4	1.66	1.5
Halosulfuron	(¹)	*	(¹)	*
Imazaquin, mon. salt			(¹)	*
Imazethapyr			(¹)	*
Isoxaben	0.58	1.3	0.52	0.2
Linuron	(¹)	0.1		
MCPP, DMA salt			(¹)	*
Metolachlor	(¹)	*	(¹)	0.1
Metribuzin			(¹)	*
Napropamide	(¹)	10.5	(¹)	0.4
Norflurazon			(¹)	0.1
Oryzalin	1.11	9.7	1.31	1.9
Oxadiazon	0.23	1.1	(¹)	0.3
Oxyfluorfen	0.42	0.7	0.82	0.5
Paraquat	(¹)	0.2	(¹)	0.1
Pendimethalin	0.79	0.4	0.92	0.1
Prodiamine	0.97	0.6	(¹)	0.1
Pronamide	(¹)	*		
Quinclorac	(¹)	*		
Quizalofop-ethyl	(¹)	*		
S-Metolachlor	(¹)	0.1		
Sethoxydim			(¹)	*
Simazine	1.49	0.7	(¹)	0.3
Triclopyr	(¹)	*	(¹)	*
Trifluralin	(¹)	2.3	(¹)	*
Vernolate	(¹)	0.1	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Deciduous Shade Trees		Deciduous Flowering Trees	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides				
Abamectin	0.01	0.2	0.01	*
Acephate	0.39	6.2	0.49	3.0
Azadirachtin	(¹)	*	(¹)	*
Azinphos-methyl	(¹)	*	(¹)	*
Bendiocarb	(¹)	*	(¹)	*
Bifenazate	(¹)	*	(¹)	*
Bifenthrin	0.03	0.1	0.36	0.2
Canola oil			(¹)	*
Carbaryl	0.87	12.3	0.81	1.2
Chlorpyrifos	0.40	6.4	0.50	1.2
Cinnamaldehyde	(¹)	*	(¹)	*
Clofentezine			(¹)	*
Cyfluthrin	(¹)	0.4	(¹)	0.1
Cyromazine	(¹)	*		
Deltamethrin	(¹)	*	(¹)	*
Diazinon	0.42	5.1	0.39	0.3
Dicofol	(¹)	*	(¹)	0.1
Dienochlor			(¹)	*
Diflubenzuron	(¹)	1.4	(¹)	*
Dimethoate	(¹)	0.2	(¹)	*
Disulfoton	(¹)	0.3	(¹)	*
Endosulfan	(¹)	0.9	(¹)	*
Esfenvalerate	(¹)	*	0.02	0.2
Ethion	(¹)	*		
Ethoprop	(¹)	1.0		
Fenbutatin-oxide	(¹)	*	(¹)	*
Fenoxycarb	(¹)	*	(¹)	*
Fenpropathrin	(¹)	*		
Fenpyroximate	(¹)	*		
Fipronil	(¹)	*		
Fluvalinate	0.30	0.1	(¹)	*
Hexythiazox	0.06	*	(¹)	*
Hydramethylnon	(¹)	*	(¹)	*
Imidacloprid	0.03	0.2	0.03	*
Kinoprene	(¹)	*		
Lambda-cyhalothrin	(¹)	*	(¹)	*
Lindane	(¹)	*	(¹)	*
Malathion	1.09	6.2	1.62	1.9
Methidathion	(¹)	2.9		
Methiocarb	(¹)	*	(¹)	*
Methomyl	(¹)	0.2	(¹)	0.1
Methyl parathion	(¹)	*		
Neem oil			(¹)	0.3
Neem oil, clar. hyd.	(¹)	10.2		
Octacide-264			(¹)	*
Oxydemeton-methyl	(¹)	*	(¹)	*
Oxythioquinox	(¹)	0.7	(¹)	*
Permethrin	0.21	1.0	(¹)	*
Petroleum distillate	6.75	76.2	9.92	44.6
Petroleum oil	(¹)	0.4	(¹)	0.4
Phosmet	(¹)	0.1	(¹)	*
Piperonyl butoxide	(¹)	*	(¹)	*
Potassium salts	(¹)	0.6	(¹)	*
Propargite	(¹)	0.1	(¹)	0.1
Pymetrozine	0.41	*	(¹)	*
Pyrethrins	(¹)	*	(¹)	*
Pyridaben	(¹)	0.8		
Pyridine	0.09	1.0	(¹)	*
S-Kinoprene	(¹)	*		
Spinosad	0.05	0.3	0.03	*
Tebufenozide	(¹)	*	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Deciduous Shade Trees		Deciduous Flowering Trees	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides				
Azoxystrobin	0.06	0.4	(¹)	*
Basic copper sulfate	0.11	0.3	(¹)	0.2
Benomyl	(¹)	*	(¹)	*
Butanone	0.03	0.2	(¹)	*
Calcium polysulfide	(¹)	0.1	(¹)	0.1
Captan	0.04	0.1	(¹)	0.2
Chlorothalonil	0.96	16.0	1.20	3.1
Copper amm. complex			(¹)	*
Copper hydroxide	0.90	5.4	0.75	2.6
Copper oxychlo. sul.			(¹)	*
Copper oxychloride	0.40	1.2	(¹)	0.9
Copper resinate	(¹)	0.3		
Copper sulfate	(¹)	0.1	(¹)	*
Dodine	(¹)	*	(¹)	*
Etridiazole	(¹)	*	(¹)	*
Fenarimol	(¹)	*	(¹)	*
Fenhexamid	(¹)	*	(¹)	*
Fludioxonil	0.04	0.2	(¹)	*
Flutolanil	(¹)	*	(¹)	*
Fosetyl-al	1.62	5.5	1.77	0.7
Iprodione	(¹)	0.1	(¹)	*
Kresoxim-methyl	(¹)	*		
Mancozeb	0.40	2.3	2.79	2.7
Maneb	(¹)	*	(¹)	0.1
Mefenoxam	0.18	0.1	0.06	*
Metalaxyl	(¹)	*	(¹)	0.2
Myclobutanil	0.12	0.5	0.05	0.1
Oxytetracycline	(¹)	*		
PCNB	(¹)	*	(¹)	*
Phosphorous acid	(¹)	*		
Potassium bicarbon.	(¹)	0.2	(¹)	*
Propiconazole	0.11	1.9	0.14	0.1
Streptomycin	0.16	0.3	(¹)	*
Sulfur	(¹)	0.7	(¹)	0.6
Tebuconazole	(¹)	*		
Thiabendazole (TBZ)	(¹)	*		
Thiophanate	0.46	11.1	0.28	0.2
Thiophanate-methyl	0.29	0.1	0.55	0.1
Triadimefon	0.19	*	(¹)	*
Trichoderma harz.			(¹)	*
Trifloxystrobin	(¹)	*	(¹)	*
Triflumizole	(¹)	*		
Triforine	(¹)	*	(¹)	*
Vinclozolin	(¹)	7.6	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Deciduous Shade Trees		Deciduous Flowering Trees	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Other Chemicals				
Alk. dim. benzyl 50%			(¹)	*
Alk. dim. benzyl 60%	(¹)	*	(¹)	*
Alk. dim. eth. benz.	(¹)	*	(¹)	*
Ancymidol	(¹)	*		
Brodifacoum	(¹)	*		
Capsaicin	(¹)	*		
Chlormequat chloride	(¹)	*		
Chloropicrin	(¹)	0.2		
Daminozide	(¹)	*		
Diphacinone	(¹)	*	(¹)	*
Farnesol	(¹)	*		
Hydrogen peroxide	(¹)	0.1	(¹)	*
Indolebutyric acid	(¹)	*		
Iron phosphate	(¹)	*	(¹)	*
Metaldehyde	(¹)	0.7	(¹)	*
Methyl bromide	(¹)	10.9		
Mineral oil			(¹)	0.7
NAA	(¹)	*		
Nerolidol	(¹)	*		
Paclobutrazol	(¹)	*	(¹)	*
Pelargonic acid	(¹)	*	(¹)	0.4
Sodium hypochlorite	(¹)	*	(¹)	*
Zinc phosphide	(¹)	*	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs		Fruit and Nut Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
2,4-D	(¹)	*		
2,4-D, Dimeth. salt			(¹)	*
2,4-DP, Dimeth. salt	(¹)	*		
Ammonium benzadox	(¹)	*		
Benefin	(¹)	0.1		
Clethodim	(¹)	*	(¹)	*
Clopyralid	(¹)	0.7	(¹)	*
Clopyralid mono salt	(¹)	26.5		
Copper ethanalamine	(¹)	*	(¹)	*
Dichlobenil	(¹)	0.3	(¹)	0.1
Diquat	(¹)	0.1		
Diuron			(¹)	*
Fluazifop-P-butyl	(¹)	*		
Flumioxazin	(¹)	*		
Fluroxypyr	(¹)	0.6		
Glufosinate-ammonium	(¹)	*		
Glyphosate	5.03	8.5	1.48	2.0
Isoxaben	1.00	107.8	(¹)	*
Linuron			(¹)	*
MCPA			(¹)	*
Metolachlor	(¹)	*	(¹)	*
Napropamide	(¹)	4.2	(¹)	*
Oryzalin	2.01	41.1	1.01	1.6
Oxadiazon	0.32	0.6		
Oxyfluorfen	1.70	8.7	0.21	0.2
Paraquat	(¹)	*	0.16	0.2
Pendimethalin	2.72	7.8	(¹)	*
Prodiamine	0.65	8.0	(¹)	0.1
Pronamide	(¹)	0.1		
Propazine	(¹)	*		
S-Metolachlor	(¹)	*		
Sethoxydim			(¹)	*
Simazine	2.74	1.0	(¹)	*
Triasulfuron	(¹)	0.4		
Triclopyr	(¹)	*		
Trifluralin	2.16	5.2	(¹)	*
Vernolate	(¹)	2.7		

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs		Fruit and Nut Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides				
Abamectin	0.01	*	0.01	*
Acephate	0.50	14.0	1.12	2.7
Acetamiprid	(¹)	*	(¹)	*
Aldicarb	(¹)	*		
Azadirachtin	0.03	*	(¹)	*
Azinphos-methyl			(¹)	0.6
Beauveria bassiana	(¹)	*		
Bendiocarb	2.35	0.3		
Bifenazate	0.13	1.1	(¹)	0.3
Bifenthrin	0.05	0.3	(¹)	*
Carbaryl	0.78	1.8	0.89	4.0
Carbofuran	(¹)	*		
Chlorpyrifos	0.98	10.0	0.66	0.9
Cinnamaldehyde	(¹)	*		
Clofentezine	(¹)	*	(¹)	0.1
Cyfluthrin	0.05	*	(¹)	*
Cyromazine	(¹)	*		
Deltamethrin	(¹)	*	(¹)	*
Diazinon	0.64	0.7	0.68	0.2
Dicofol	(¹)	*	(¹)	0.4
Dienochlor	(¹)	*	(¹)	*
Diflubenzuron	(¹)	*	(¹)	0.3
Dimethoate	0.31	0.7		
Disulfoton	(¹)	1.0		
Endosulfan	0.87	0.1	0.49	0.9
Esfenvalerate	(¹)	*	0.02	0.2
Ethoprop			(¹)	0.2
Etoxazole	(¹)	*		
Fenamiphos	(¹)	*		
Fenbutatin-oxide	(¹)	*	(¹)	*
Fenoxycarb	(¹)	*	(¹)	*
Fenpropathrin	0.30	*	(¹)	0.1
Fenpyroximate	(¹)	*		
Fluvalinate	0.36	0.2	(¹)	*
Formetanate hydro.			(¹)	*
Hexythiazox	0.14	*	(¹)	*
Imidacloprid	0.22	1.1	0.06	0.2
Jjoba oil	(¹)	*		
Kaolin	(¹)	*	(¹)	0.1
Kinoprene	(¹)	*		
Lambda-cyhalothrin	(¹)	*	(¹)	*
Malathion	1.00	3.1	0.66	0.1
Methidathion	(¹)	*	(¹)	0.4
Methiocarb	(¹)	0.1	(¹)	0.1
Methomyl	(¹)	*	(¹)	0.6
Methoxychlor	(¹)	*		
Neem oil	(¹)	*		
Neem oil, clar. hyd.	(¹)	0.1	(¹)	*
Novaluron	(¹)	*		
Oxythioquinox	(¹)	*	(¹)	*
Permethrin	0.21	0.1	(¹)	0.1
Petroleum distillate	16.07	21.8	8.42	45.0
Petroleum oil	(¹)	1.1		
Phosmet			0.59	0.6
Piperonyl butoxide	(¹)	*	(¹)	*
Potassium salts	3.35	0.4	(¹)	0.2
Propargite	(¹)	0.1	(¹)	0.1
Pymetrozine	0.08	0.1		
Pyrethrins	(¹)	*	(¹)	*
Pyridaben	0.21	0.2	(¹)	0.2

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs		Fruit and Nut Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Pyridine	0.09	*		
Resmethrin	(¹)	*		
S-Kinoprene	(¹)	*		
Silicon dioxide	(¹)	0.1	(¹)	*
Spinosad	0.04	*	0.07	0.1
Tebufenozide	(¹)	*		
Thiamethoxam	(¹)	*		
Fungicides				
Azoxystrobin	0.06	0.3	(¹)	0.2
Basic copper sulfate	(¹)	*	(¹)	0.1
Benomyl	(¹)	*	(¹)	*
Borax Decahydrate	(¹)	*		
Butanone	(¹)	*		
Calcium polysulfide			(¹)	0.2
Captan	(¹)	0.2	0.57	0.5
Chlorothalonil	0.92	3.5	0.79	3.2
Copper (metallic)	(¹)	*		
Copper amm. complex	(¹)	*	(¹)	*
Copper chloride hyd.			(¹)	*
Copper hydroxide	0.46	3.9	1.29	7.8
Copper oxide			(¹)	0.1
Copper oxychlor. sul.	(¹)	*		
Copper oxychloride	(¹)	0.1		
Copper resinate	0.08	*	(¹)	0.4
Copper sulfate	0.04	*	(¹)	*
Cyprodinil			(¹)	*
Dimethomorph	(¹)	*		
Dodine	(¹)	0.1	(¹)	1.4
Etridiazole	(¹)	0.1		
Fenarimol	(¹)	*	(¹)	*
Fenbuconazole			(¹)	*
Fenhexamid	(¹)	*		
Fludioxonil	0.13	*		
Flutolanil	(¹)	81.8	(¹)	*
Fosetyl-al	2.00	18.4	2.53	0.4
Halobrom	(¹)	*		
Iprodione	0.90	12.1	(¹)	0.2
Kresoxim-methyl	(¹)	*		
Mancozeb	1.10	26.3	1.22	2.4
Maneb	(¹)	*	(¹)	1.0
Mefenoxam	0.07	0.2	(¹)	0.1
Metalaxyl	(¹)	*		
Myclobutanil	0.07	*	0.07	0.4
Oxycarboxin	(¹)	*		
Oxytetracycline			(¹)	0.1
PCNB	8.51	0.4		
Phosphorous acid	(¹)	*	(¹)	*
Piperalin	(¹)	*		
Potassium bicarbon.	(¹)	*	(¹)	*
Propiconazole	0.08	0.4	0.06	*
Pseudomonas fluores.			(¹)	*
Pyraclostrobin			(¹)	*
Streptomycin	0.24	*	0.17	0.2
Streptomycin sulfate			(¹)	*
Sulfur	(¹)	0.4	(¹)	3.8
Tebuconazole	(¹)	0.1	(¹)	0.1
Thiabendazole (TBZ)	(¹)	*		
Thiophanate	0.40	4.5	(¹)	*
Thiophanate-methyl	0.33	23.9	0.86	1.1

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Deciduous Shrubs		Fruit and Nut Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides-continued				
Thiram			(¹)	0.1
Triadimefon	0.05	*	(¹)	*
Trichoderma harz.	(¹)	*		
Trifloxystrobin	0.05	*	(¹)	*
Triflumizole			(¹)	*
Triforine	(¹)	*	(¹)	*
Vinclozolin	(¹)	*		
Ziram			(¹)	0.6
Other Chemicals				
Alk. dim. benzyl 60%	(¹)	0.1		
Alk. dim. eth. benz.	(¹)	0.1		
Aluminum phosphide			(¹)	*
Ammonium soap	(¹)	*		
Benzyladenine	(¹)	*		
Capsaicin			(¹)	*
Chlormequat chloride	(¹)	*		
Chlorophacinone			(¹)	*
Chloropicrin			(¹)	2.5
Daminozide	(¹)	0.1		
Dazomet	(¹)	0.1	(¹)	0.6
Dichloropropene			(¹)	9.6
Difethialone	(¹)	*		
Dikeregulac-sodium	(¹)	*	(¹)	*
Diphacinone	(¹)	*	(¹)	*
E-8-Dodecenyl acetat			(¹)	*
Ethephon	(¹)	*		
Farnesol	(¹)	*		
GABA			(¹)	*
Garlic oil	(¹)	*		
Gibberellic acid	(¹)	*		
Gibberellins A4A7	(¹)	*		
Harpin protein			(¹)	*
Hydrogen peroxide	0.76	0.3	(¹)	*
Indolebutyric acid	(¹)	*		
Iron phosphate	(¹)	*	(¹)	*
L-Glutamic acid			(¹)	*
Metaldehyde	1.21	0.8	(¹)	0.1
Metam-sodium			(¹)	3.5
Methyl bromide	(¹)	0.4	(¹)	16.9
NAA	(¹)	*		
NAD			(¹)	*
Nerolidol	(¹)	*		
Pacllobutrazol	(¹)	*		
Pelargonic acid	(¹)	1.7	(¹)	*
Sodium hypochlorite	(¹)	*		
Uniconazole	(¹)	*		
Z-8-Dodecanol			(¹)	*
Z-8-Dodecen acetate			(¹)	0.3

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Christmas Trees		Palms	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
2,4-D	0.38	1.2		
2,4-D, Dimeth. salt	(¹)	*		
2,4-DP, Dimeth. salt	(¹)	0.1		
Acetamide	0.60	7.5		
Acetic acid	(¹)	2.8		
Atrazine	2.58	36.8	(¹)	0.3
Bentazon	(¹)	*		
Clethodim	(¹)	0.2		
Clopyralid	0.20	0.6		
Clopyralid mono salt	(¹)	*		
Dicamba	(¹)	*		
Diquat			(¹)	*
Diuron	(¹)	0.4		
Fluazifop-P-butyl	0.38	0.2	(¹)	*
Flumioxazin	(¹)	0.1		
Fomesafen	(¹)	*		
Glufosinate-ammonium	(¹)	*		
Glyphosate	0.90	46.8	3.13	37.9
Halosulfuron			(¹)	*
Hexazinone	0.81	6.4		
Isooctyl propionate	(¹)	*		
Isoxaben			0.43	*
Metolachlor	(¹)	0.2		
Metribuzin	0.15	1.9		
Metsulfuron-methyl	(¹)	*		
Napropamide	(¹)	0.1		
Oryzalin	1.71	1.3	(¹)	*
Oxadiazon			(¹)	*
Oxyfluorfen	0.60	12.4	(¹)	0.1
Pendimethalin	1.40	2.2	0.77	*
Prodiamine	(¹)	*	0.83	0.3
Prometon	(¹)	*		
Pronamide	(¹)	*		
Propanil			(¹)	*
S-Metolachlor	1.77	1.2		
Sethoxydim	0.30	0.1		
Simazine	1.47	25.4		
Sulfometuron methyl	(¹)	*		
Triclopyr	0.73	2.5		
Trifluralin	(¹)	*	(¹)	1.5
Vernolate			(¹)	0.2

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Christmas Trees		Palms	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides				
Abamectin	(¹)	*	0.04	*
Acephate	0.41	1.4	0.23	0.8
Acetamiprid			(¹)	*
Amitraz			(¹)	*
Azadirachtin	(¹)	*	(¹)	*
Azinphos-methyl	(¹)	0.4		
Beauveria bassiana			(¹)	*
Bifenazate	(¹)	*	(¹)	*
Bifenthrin	0.12	0.7	0.04	*
Carbaryl	1.21	30.4	0.60	1.5
Chlorfenapyr			(¹)	*
Chlorpyrifos	0.91	30.9	0.75	1.6
Cinnamaldehyde			(¹)	*
Clofentezine			(¹)	*
Cyfluthrin	0.05	0.4	(¹)	*
Deltamethrin			(¹)	*
Diazinon	(¹)	0.1	(¹)	0.9
Dicofol	(¹)	*		
Diflubenzuron	0.07	0.2		
Dimethoate	0.55	6.5	0.46	0.7
Disulfoton	(¹)	2.2	(¹)	*
Endosulfan	0.27	4.4	(¹)	*
Esfenvalerate	(¹)	0.1		
Ethion			(¹)	*
Ethyl parathion	(¹)	*		
Fenbutatin-oxide	(¹)	0.6		
Fenpropathrin			(¹)	*
Fenvalerate	(¹)	*		
Fluvalinate	(¹)	0.1	0.50	0.1
Formetanate hydro.	(¹)	*		
Hexythiazox	0.12	0.5	(¹)	*
Hydramethylnon			(¹)	*
Imidacloprid	(¹)	0.2	(¹)	*
Lambda-cyhalothrin			(¹)	*
Lindane	(¹)	*		
Malathion	1.46	5.2	1.29	1.1
Methidathion			(¹)	0.1
Methiocarb			(¹)	*
Methoxychlor	(¹)	*		
Neem oil	(¹)	*		
Neem oil, clar. hyd.	(¹)	0.2	(¹)	0.1
Oxydemeton-methyl	0.44	0.7		
Oxythioquinox	(¹)	0.8		
Permethrin	0.32	0.3	(¹)	*
Petroleum distillate	2.64	1.5	10.48	26.6
Petroleum oil	(¹)	0.1		
Phosmet	(¹)	0.1		
Potassium salts	(¹)	0.3	(¹)	0.3
Propargite	(¹)	1.7		
Pymetrozine			(¹)	*
Pyridine			(¹)	*
S-Kinoprene			(¹)	*
S-Methoprene			(¹)	*
Spinosad			(¹)	*
Tebufozide	0.05	*		
Tralomethrin	(¹)	*		
Triazamate	0.23	0.8		
Zeta-cypermethrin	(¹)	*		

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Christmas Trees		Palms	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides				
Azoxystrobin	0.10	0.1	0.04	*
Butanone			(¹)	*
Captan	(¹)	0.1	(¹)	*
Chlorothalonil	1.91	86.6	1.13	1.4
Copper hydroxide	(¹)	0.1	0.58	2.0
Copper resinate	(¹)	*	(¹)	*
Copper sulfate			(¹)	*
Etridiazole	(¹)	0.1	2.58	0.2
Fenarimol			(¹)	*
Fenhexamid	(¹)	*	(¹)	*
Fludioxonil			(¹)	*
Flutolanil			(¹)	*
Fosetyl-al			2.93	1.8
Iprodione	(¹)	0.1	1.60	0.5
Mancozeb	1.23	5.9	2.10	13.0
Maneb			(¹)	*
Mefenoxam	(¹)	0.1	0.83	0.9
Metalaxyl	(¹)	*	(¹)	*
Myclobutanil			(¹)	*
PCNB	(¹)	0.5	(¹)	*
Propiconazole	(¹)	*	0.09	*
Sulfur	(¹)	12.7	(¹)	3.3
Thiophanate	0.32	0.2	2.23	1.7
Thiophanate-methyl	(¹)	*	0.52	0.7
Thiram	(¹)	1.1		
Triadimefon	0.25	0.3		
Trifloxystrobin			(¹)	*
Other Chemicals				
Alk. dim. benzyl 50%	(¹)	*		
Alk. dim. benzyl 60%	(¹)	*		
Alk. dim. eth. benz.	(¹)	*		
Aluminum phosphide	(¹)	*		
Capsaicin	(¹)	*		
Chlormequat chloride			(¹)	*
Daminozide			(¹)	*
Diphacinone			(¹)	*
Farnesol			(¹)	*
Indolebutyric acid			(¹)	*
Iron phosphate			(¹)	*
Metaldehyde			(¹)	0.1
NAA			(¹)	*
Nerolidol			(¹)	*
Paclobutrazol			(¹)	*
Pelargonic acid	(¹)	*	(¹)	*
Propionic acid	(¹)	*		
Strychnine	(¹)	*		

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses		Other Woody Ornamentals and Vines	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
2,4-D	(¹)	*	(¹)	*
2,4-DP, Dimeth. salt	(¹)	*		
Acetamide			(¹)	*
Acetochlor	(¹)	*		
Atrazine			(¹)	0.1
Benefin	(¹)	*	(¹)	*
Carfentrazone-ethyl	(¹)	0.1		
DCPA			(¹)	*
Dichlobenil			(¹)	*
Diquat			(¹)	0.2
Fluazifop-P-butyl			(¹)	0.1
Glyphosate	(¹)	0.2	0.22	17.9
Halosulfuron			(¹)	*
Isoxaben	(¹)	0.1	0.66	0.8
Lactofen			(¹)	0.6
Metolachlor			(¹)	*
Metribuzin			(¹)	*
Napropamide	(¹)	*	(¹)	0.2
Oryzalin	(¹)	0.1	0.44	1.4
Oxadiazon	(¹)	*	2.14	0.8
Oxyfluorfen	(¹)	*	1.26	3.4
Pendimethalin	(¹)	0.2	1.12	3.1
Prodiamine	(¹)	*	1.22	22.1
S-Metolachlor			(¹)	*
Sethoxydim			(¹)	0.1
Simazine			(¹)	0.5
Triclopyr	(¹)	*	(¹)	*
Trifluralin	(¹)	0.1	2.94	1.5
Vernolate			(¹)	0.1
Insecticides				
Abamectin	(¹)	*	0.003	*
Acephate	0.57	0.4	0.32	6.3
Acetamiprid			(¹)	*
Azadirachtin	(¹)	*	0.03	*
Beauveria bassiana	(¹)	*	(¹)	*
Bendiocarb			(¹)	*
Bifenazate	(¹)	*	0.19	0.4
Bifenthrin	0.05	*	0.08	0.2
Carbaryl	(¹)	*	2.25	15.4
Chlorfenapyr			(¹)	*
Chlorpyrifos	(¹)	0.1	0.38	0.5
Cinnamaldehyde	(¹)	*	1.23	*
Clofentezine			0.07	0.2
Cyfluthrin	(¹)	*	0.07	3.6
Cyromazine	(¹)	*	(¹)	*
Deltamethrin	(¹)	*	0.002	*
Diazinon	(¹)	*	0.03	0.6
Dicofol	(¹)	*	0.52	1.3
Dienochlor			(¹)	*
Diflubenzuron	(¹)	*	0.08	*
Dimethoate	(¹)	*	0.31	0.7
Disulfoton	(¹)	*	(¹)	0.1
Endosulfan	(¹)	*	1.04	15.6
Ethion			(¹)	*
Etoxazole			0.04	*
Fenamiphos	(¹)	*		
Fenbutatin-oxide			0.45	0.1
Fenoxycarb			(¹)	*
Fenpropathrin	(¹)	*	0.20	*
Fluvalinate	0.62	*	0.23	0.3

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses		Other Woody Ornamentals and Vines	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Hexythiazox			0.08	0.1
Hydramethylnon	(¹)	*	(¹)	*
Imidacloprid	(¹)	*	0.12	0.3
Jojoba oil			(¹)	*
Kinoprene			(¹)	*
Lambda-cyhalothrin			(¹)	*
Lindane			(¹)	*
Malathion	(¹)	0.1	0.69	88.3
Methidathion			(¹)	*
Methiocarb	(¹)	*	0.78	0.4
Methomyl			(¹)	*
Neem oil, clar. hyd.			3.01	1.6
Nicotine			(¹)	*
Novaluron			(¹)	*
Oxamyl			(¹)	*
Oxythioquinox			(¹)	*
Permethrin	(¹)	*	(¹)	0.1
Petroleum distillate	(¹)	14.0	3.27	117.4
Piperonyl butoxide	(¹)	*	(¹)	*
Potassium salts	(¹)	*	1.26	2.9
Propargite			(¹)	*
Pymetrozine			0.15	0.1
Pyrethrins			(¹)	*
Pyridaben			0.07	*
Pyridine	(¹)	*	0.08	*
Rotenone			(¹)	*
S-Kinoprene	(¹)	*	(¹)	*
S-Methoprene			(¹)	*
Sesame Oil			(¹)	*
Silicon dioxide			(¹)	*
Spinosad	(¹)	*	0.08	0.1
Sulfotepp			(¹)	*
Tebufenozide			(¹)	*
Thiamethoxam			(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses		Other Woody Ornamentals and Vines	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides				
Azoxystrobin	(¹)	*	0.12	0.3
Basic copper sulfate			(¹)	*
Benomyl			(¹)	*
Borax Decahydrate			(¹)	*
Butanone	(¹)	*	0.01	*
Calcium polysulfide			(¹)	*
Captan			1.49	0.4
Chlorothalonil	1.84	0.2	0.96	5.9
Copper (metallic)			(¹)	*
Copper hydroxide	0.50	*	0.39	18.7
Copper oxychloride			(¹)	*
Copper resinate	(¹)	*	0.08	0.1
Copper sulfate	(¹)	*	0.14	0.1
Cresol			(¹)	*
Dimethomorph			(¹)	*
Etridiazole	(¹)	*	3.70	6.1
Fenarimol	(¹)	*	(¹)	*
Fenhexamid	(¹)	*	(¹)	*
Fludioxonil	(¹)	*	0.23	0.1
Flutolanil			(¹)	*
Fosetyl-al	(¹)	0.1	2.53	8.9
Iprodione	(¹)	*	1.31	3.1
Kresoxim-methyl	(¹)	*		
Mancozeb	0.91	0.1	1.01	59.5
Maneb			(¹)	0.1
Mefenoxam	0.24	*	0.21	0.6
Metalaxyl	(¹)	*	0.11	*
Myclobutanil	(¹)	*	0.16	*
Oxycarboxin			(¹)	0.1
PCNB	(¹)	*	3.05	0.7
Phosphorous acid			(¹)	*
Piperalin			(¹)	*
Potassium bicarbon.			(¹)	*
Propiconazole	(¹)	*	0.04	0.4
Sodium Percarbonate			(¹)	*
Streptomycin	(¹)	*	0.11	*
Sulfur			1.38	27.6
Thiabendazole (TBZ)			(¹)	*
Thiophanate	0.47	*	0.45	2.8
Thiophanate-methyl	2.91	0.2	1.87	9.3
Triadimefon			0.09	*
Trichoderma harz.			0.14	*
Trifloxystrobin			0.12	*
Triphenyltin hydrox.			(¹)	*
Vinclozolin			(¹)	*
Xylenol			(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Ornamental Grasses		Other Woody Ornamentals and Vines	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Other Chemicals				
Alk. dim. benzyl 50%			(¹)	*
Alk. dim. benzyl 60%			(¹)	*
Alk. dim. eth. benz.			(¹)	*
Aminopyridine			(¹)	*
Brodifacoum	(¹)	*	(¹)	*
Bromadiolone			(¹)	*
Chlormequat chloride	(¹)	*	0.81	0.2
Chlorophacinone			(¹)	*
Daminozide	(¹)	*	(¹)	0.1
Dikégulac-sodium			(¹)	*
Diphacinone	(¹)	*	(¹)	*
Ethephon	(¹)	*	(¹)	*
Farnesol			(¹)	*
Gibberellic acid			(¹)	*
Hydrogen peroxide	(¹)	*	2.05	0.9
Indolebutyric acid			(¹)	*
Iron phosphate	(¹)	*	(¹)	0.1
Metaldehyde	(¹)	*	1.10	1.2
Methyl bromide	(¹)	0.4	(¹)	0.4
NAA			(¹)	*
Nerolidol			(¹)	*
Paclobutrazol	(¹)	*	0.01	*
Pelargonic acid			(¹)	0.1
Uniconazole	(¹)	*	(¹)	*
Zinc phosphide			(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Floriculture		Cut Flowers	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
(Meth)propionic acid	(¹)	*		
2,4-D	(¹)	0.1		
2,4-D, Dimeth. salt	(¹)	0.1		
Ammonium benzadox	(¹)	*		
Atrazine	(¹)	0.1		
Benefin	(¹)	*		
Bentazon	(¹)	*		
Bromoxynil	(¹)	0.1	(¹)	0.1
Clethodim	(¹)	0.1		
Clopyralid	(¹)	*		
DCPA	8.87	0.5	(¹)	0.3
Dicamba	(¹)	*		
Dicamba, Dimet. salt	(¹)	*		
Dichlobenil	(¹)	0.1		
Diquat	0.76	0.2	(¹)	*
Dithiopyr	(¹)	*		
Diuron	1.38	1.2	(¹)	0.2
Fenoxaprop	(¹)	*		
Fluazifop-P-butyl	0.29	*	(¹)	*
Flumetsulam	(¹)	0.2		
Glufosinate-ammonium	(¹)	*	(¹)	*
Glyphosate	1.90	16.7	1.47	1.9
Glyphosate diam salt	(¹)	0.1		
Halosulfuron	(¹)	*		
Isoxaben	0.46	1.4	(¹)	0.6
Linuron	(¹)	0.1	(¹)	0.1
MCPA	(¹)	*		
MCPB	(¹)	*	(¹)	*
MCPP, DMA salt	(¹)	*		
MSMA	(¹)	*		
Metolachlor	(¹)	0.3	(¹)	0.3
Metribuzin	(¹)	*		
Napropamide	2.38	0.9	(¹)	0.2
Norflurazon	(¹)	0.4		
Oryzalin	1.92	6.0		
Oxadiazon	0.77	1.3	0.61	0.7
Oxyfluorfen	0.46	1.3	(¹)	*
Paraquat	(¹)	*		
Pendimethalin	1.04	2.6	(¹)	0.1
Primisulfuron	(¹)	*		
Prodiamine	1.29	0.8	(¹)	*
Prosulfuron	(¹)	*		
Pyrazon	(¹)	*	(¹)	*
S-Metolachlor	2.34	1.1	(¹)	*
Simazine	0.92	1.0	(¹)	0.1
Sulfosate	(¹)	*	(¹)	*
Sulfosulfuron	(¹)	*		
Tebuthiuron	(¹)	*	(¹)	*
Triclopyr	(¹)	0.1	(¹)	*
Trifluralin	0.86	1.6	(¹)	1.3
Vernolate	3.98	2.0	(¹)	0.1

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Floriculture		Cut Flowers	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides				
Abamectin	0.01	0.4	0.02	0.1
Acephate	0.77	46.6	0.67	9.9
Acetamiprid	0.20	0.1	0.17	0.1
Allethrin	(¹)	*		
Azadirachtin	0.03	0.3	0.03	0.1
Azinphos-methyl	(¹)	*		
Beauveria bassiana	0.53	0.9	0.39	0.4
Bendiocarb	0.93	0.8	(¹)	*
Bifenazate	0.38	2.9	0.62	1.6
Bifenthrin	0.09	1.3	0.11	0.1
Bioallethrin	(¹)	*		
Boric acid	(¹)	*	(¹)	*
Carbaryl	1.50	37.1	(¹)	0.1
Chlorfenapyr	0.08	0.1	0.08	*
Chlorpyrifos	0.65	21.6	0.54	3.6
Cinnamaldehyde	1.50	0.6	(¹)	0.1
Clofentezine	0.23	0.3	(¹)	*
Cryolite	(¹)	*	(¹)	*
Cyfluthrin	0.04	0.3	0.03	*
Cyromazine	0.24	1.2	0.28	0.6
Deltamethrin	(¹)	*	(¹)	*
Diazinon	0.94	4.0	0.74	1.1
Dichlorvos	1.02	0.3		
Dicofol	0.52	2.6	(¹)	*
Dienochlor	0.38	0.3	0.38	0.1
Diflubenzuron	0.06	4.2	0.12	*
Dimethoate	0.35	1.4	1.13	0.4
Disulfoton	(¹)	0.2		
Emamectin benzoate	(¹)	*		
Endosulfan	0.55	6.6	0.29	0.8
Esfenvalerate	(¹)	*	(¹)	*
Ethoprop	(¹)	*		
Ethoxy sec. alcohols	(¹)	0.4		
Ethyl parathion	(¹)	*		
Etoxazole	0.05	*	(¹)	*
Fenamiphos	(¹)	0.2		
Fenbutatin-oxide	0.47	1.1	0.47	0.1
Fenoxycarb	0.03	*	(¹)	*
Fenpropathrin	0.25	0.3	(¹)	*
Fenpyroximate	0.08	*	(¹)	*
Fenvalerate	(¹)	*		
Flucythrinate	(¹)	*	(¹)	*
Fluvalinate	0.12	2.8	0.17	0.2
Fonofos	(¹)	*	(¹)	*
Formetanate hydro.	(¹)	*	(¹)	*
Hexythiazox	0.07	0.3	0.16	0.1
Hydramethylnon	(¹)	*		
Imidacloprid	0.47	3.6	0.11	0.1
Jjoba oil	(¹)	1.7	(¹)	0.5
Kinoprene	0.74	0.2	(¹)	*
Lambda-cyhalothrin	0.02	*	(¹)	*
Lindane	(¹)	*		
Malathion	1.65	6.9	1.70	1.2
Methidathion	0.43	0.4		
Methiocarb	0.97	1.7	1.05	0.6
Methomyl	(¹)	*		
Methyl parathion	(¹)	*		
Mevinphos	(¹)	*		
Myrothecium verruc.	(¹)	6.6		
Naled	(¹)	0.5	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Floriculture		Cut Flowers	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Neem oil	(¹)	0.4		
Neem oil, clar. hyd.	6.38	17.1		
Nicotine	2.74	*	(¹)	*
Novaluron	0.04	*	0.08	*
Octacide-264	0.04	*		
Oxamyl	1.54	0.1	(¹)	0.1
Oxythioquinox	2.82	0.4	(¹)	*
Permethrin	0.18	7.0	0.34	0.2
Petroleum distillate	7.14	55.3	6.22	4.8
Phenothrin	(¹)	*		
Phorate	(¹)	0.1	(¹)	*
Phosalone	(¹)	*	(¹)	*
Phosmet	(¹)	*	(¹)	*
Piperonyl butoxide	0.21	0.2	0.22	0.1
Potassium salts	7.14	10.9	10.41	5.9
Propargite	(¹)	0.4	(¹)	*
Pymetrozine	0.15	1.7	0.33	0.8
Pyrethrins	0.02	*	0.02	*
Pyridaben	0.30	0.5	0.18	*
Pyridine	0.10	0.3	0.11	0.1
Pyriproxyfen	(¹)	*		
Resmethrin	(¹)	*		
Rosemary oil	(¹)	*		
Rotenone	0.01	*	(¹)	*
S-Kinoprene	0.28	12.3	0.24	0.2
S-Methoprene	(¹)	*	(¹)	*
Sabadilla	(¹)	*		
Silicon dioxide	(¹)	0.3	(¹)	0.3
Spinosad	0.11	2.8	0.15	1.1
Sulfotepp	1.12	*		
Tebufenozide	(¹)	*		
Tefluthrin	(¹)	*		
Thiamethoxam	(¹)	*		
Trichlorfon	(¹)	*		

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Floriculture		Cut Flowers	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides				
Azoxystrobin	0.08	4.8	0.12	0.1
Basic copper sulfate	(¹)	*	(¹)	*
Benomyl	(¹)	*		
Butanone	0.07	0.2	0.08	0.1
Calcium polysulfide	(¹)	*		
Captan	8.07	20.3	0.48	0.4
Chloroneb	2.01	2.8		
Chlorothalonil	1.07	119.0	1.29	17.4
Copper (metallic)	(¹)	*		
Copper hydroxide	0.58	33.2	0.98	0.3
Copper oxychloride	(¹)	0.1	(¹)	*
Copper resinate	0.20	0.2	0.18	*
Copper sulfate	0.20	1.5	0.09	*
Cymoxanil	(¹)	*		
Dicloran	(¹)	*	(¹)	*
Dimethomorph	0.17	*	(¹)	*
Dodine	(¹)	*		
Etridiazole	2.09	7.8	1.57	0.1
Fenarimol	0.07	0.1	0.08	0.1
Fenbuconazole	(¹)	*	(¹)	*
Fenhexamid	0.68	2.9	0.69	0.8
Ferbam	(¹)	1.6		
Fludioxonil	0.39	1.0	0.22	0.1
Flutolanil	0.68	0.3	(¹)	*
Fosetyl-al	3.39	46.2	1.87	4.0
Iprodione	0.63	13.0	0.78	3.5
Kresoxim-methyl	0.09	*	(¹)	*
Mancozeb	1.28	392.3	0.81	7.9
Maneb	1.48	31.8	(¹)	0.1
Mefenoxam	0.25	4.9	0.20	0.5
Metalaxyl	0.31	1.2	0.04	0.1
Metiram	1.34	3.3		
Milban	(¹)	*	(¹)	*
Myclobutanil	0.18	1.0	0.24	0.7
Oxycarboxin	(¹)	*		
PCNB	2.77	9.2	1.68	2.1
Phosphorous acid	(¹)	*	(¹)	*
Piperalin	0.72	2.3	0.72	2.0
Potassium bicarbon.	2.07	3.9	2.02	3.5
Propamocarb hydroch.	(¹)	0.3		
Propiconazole	0.13	0.5	0.15	0.2
Streptomycin	0.17	0.4	0.10	0.1
Streptomycin sulfate	(¹)	*		
Sulfur	2.19	27.9	2.27	23.9
Tebuconazole	0.20	8.9		
Thiabendazole (TBZ)	2.61	1.1	(¹)	*
Thiophanate	0.45	74.1	0.52	1.8
Thiophanate-methyl	0.84	41.5	0.33	2.2
Thiram	(¹)	0.3		
Triadimefon	0.11	0.1	(¹)	*
Trichoderma harz.	0.33	0.2	0.44	*
Trifloxystrobin	0.11	0.3	0.12	0.1
Triforine	0.07	*	(¹)	*
Vinclozolin	0.25	0.6	0.19	0.4
Zineb	(¹)	*		

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	All Floriculture		Cut Flowers	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Other Chemicals				
Alk. dim. benzyl 50%	0.04	*		
Alk. dim. benzyl 60%	0.30	0.5		
Alk. dim. eth. benz.	0.30	0.5		
Alkyl. dim. benz. am	(¹)	*		
Aluminum phosphide	(¹)	*	(¹)	*
Ancymidol	0.004	*	(¹)	*
Benzyladenine	0.18	*		
Bromadiolone	(¹)	*		
Busan 881	(¹)	*		
Capsaicin	(¹)	*		
Chlormequat chloride	1.41	6.6	(¹)	*
Chlorophacinone	(¹)	*		
Chloropicrin	37.09	9.5	(¹)	1.2
Cytokinins	(¹)	*		
Daminozide	2.70	22.8	3.96	1.0
Dazomet	(¹)	11.8	(¹)	11.7
Decyldimethyloctyl	(¹)	*		
Dichloropropene	(¹)	2.2		
Didecyl dim. ammon.	(¹)	*		
Dikegulac-sodium	3.73	0.3		
Dimethyldioctyl	(¹)	*		
Diphacinone	(¹)	*	(¹)	*
Endothall	(¹)	*		
Ethephon	0.31	0.6	(¹)	*
Farnesol	(¹)	*		
Fatty acids	(¹)	5.4		
Garlic oil	(¹)	8.1	(¹)	*
Gibberellic acid	0.05	0.1		
Gibberellins A4A7	0.18	*		
Gliocladium virens	(¹)	*	(¹)	*
Harpin protein	(¹)	*		
Hydrogen peroxide	2.86	11.3		
Indolebutyric acid	0.07	*		
Iron phosphate	0.24	*	(¹)	*
Maleic hydrazide	(¹)	*	(¹)	*
Mefluidide, diet.	(¹)	*		
Mepiquat chloride	(¹)	0.1		
Metaldehyde	1.16	4.7	1.02	0.5
Metam-sodium	(¹)	16.0	(¹)	8.9
Methyl bromide	229.11	58.3	315.52	11.7
NAA	(¹)	*		
Nerolidol	(¹)	*		
Paclobutrazol	0.04	0.3	0.002	*
Pelargonic acid	8.15	1.4		
Propionic acid	(¹)	*	(¹)	*
Sodium hypochlorite	1.98	0.6	(¹)	0.1
Thidiazuron	(¹)	*		
Uniconazole	0.01	*	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Flowering Plants		Bedding Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
(Meth)propionic acid	(¹)	*		
2,4-D			(¹)	*
Ammonium benzadox			(¹)	*
Atrazine			(¹)	*
Benefin	(¹)	*	(¹)	*
Clethodim			(¹)	*
Clopyralid	(¹)	*		
DCPA			(¹)	*
Dicamba	(¹)	*		
Diquat	(¹)	*	(¹)	0.1
Dithiopyr	(¹)	*	(¹)	*
Diuron	(¹)	0.2	(¹)	*
Fenoxaprop	(¹)	*		
Flumetsulam	(¹)	0.2		
Glufosinate-ammonium			(¹)	*
Glyphosate	2.48	3.3	1.55	1.4
Glyphosate diam salt	(¹)	*	(¹)	*
Halosulfuron	(¹)	*	(¹)	*
Isoxaben	0.67	0.1	(¹)	*
MCPA	(¹)	*		
MSMA	(¹)	*		
Metribuzin			(¹)	*
Napropamide	(¹)	*		
Norflurazon			(¹)	*
Oryzalin	1.77	1.9	1.02	0.6
Oxadiazon	1.40	0.1	(¹)	*
Oxyfluorfen	(¹)	0.4	(¹)	*
Paraquat	(¹)	*	(¹)	*
Pendimethalin	0.98	0.3	1.63	0.1
Primisulfuron			(¹)	*
Prodiamine	(¹)	*	(¹)	*
Prosulfuron			(¹)	*
S-Metolachlor			(¹)	*
Sulfosate			(¹)	*
Sulfosulfuron	(¹)	*		
Triclopyr	(¹)	*	(¹)	*
Trifluralin	(¹)	0.1	(¹)	0.1
Vernolate	(¹)	1.6	(¹)	0.3

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Flowering Plants		Bedding Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides				
Abamectin	0.01	0.1	0.01	*
Acephate	1.05	7.5	0.65	5.1
Acetamiprid	0.37	*	0.17	*
Azadirachtin	0.04	0.1	0.03	0.1
Beauveria bassiana	0.54	0.1	0.85	0.4
Bendiocarb	1.98	0.4	0.95	*
Bifenazate	0.39	0.4	0.37	0.1
Bifenthrin	0.15	0.4	0.07	0.3
Carbaryl	1.47	0.3	1.09	0.2
Chlorfenapyr	0.09	*	(¹)	*
Chlorpyrifos	1.14	1.8	1.16	1.7
Cinnamaldehyde			(¹)	*
Clofentezine	0.34	0.2	0.14	*
Cyfluthrin	0.11	0.1	0.03	0.1
Cyromazine	0.25	0.4	0.13	0.1
Deltamethrin	(¹)	*	(¹)	*
Diazinon	1.04	0.5	1.24	0.1
Dichlorvos	(¹)	*	(¹)	0.1
Dicofol	0.54	0.7	0.32	0.1
Dienochlor	0.38	0.3	0.28	*
Diiflubenzuron	0.04	0.2	0.21	*
Dimethoate	0.42	0.3	(¹)	*
Disulfoton	(¹)	*		
Emamectin benzoate			(¹)	*
Endosulfan	0.84	1.1	0.74	0.4
Esfenvalerate			(¹)	*
Ethyl parathion	(¹)	*		
Etoxazole	0.06	*	0.04	*
Fenbutatin-oxide	(¹)	0.1	(¹)	*
Fenoxycarb	(¹)	*	0.09	*
Fenpropathrin	0.26	0.1	0.25	0.1
Fenpyroximate	0.06	*	0.08	*
Fluvalinate	0.20	0.4	0.13	0.3
Hexythiazox	0.07	*	0.21	*
Hydramethylnon			(¹)	*
Imidacloprid	0.39	1.2	0.37	0.8
Jojoba oil	(¹)	1.2		
Kinoprene	(¹)	*	(¹)	*
Lambda-cyhalothrin	(¹)	*	(¹)	*
Lindane	(¹)	*	(¹)	*
Malathion	3.09	2.6	1.08	0.1
Methiocarb	0.89	0.3	0.75	0.2
Methomyl	(¹)	*	(¹)	*
Methyl parathion	(¹)	*	(¹)	*
Mevinphos	(¹)	*		
Neem oil	(¹)	*	(¹)	0.4
Neem oil, clar. hyd.	3.30	0.3	(¹)	0.4
Nicotine	(¹)	*	1.64	*
Novaluron	0.07	*	0.03	*
Octacide-264	0.09	*	(¹)	*
Oxamyl	(¹)	*	(¹)	*
Oxythioquinox			(¹)	0.4
Permethrin	0.32	0.4	0.21	0.5
Petroleum distillate	11.16	7.8	6.42	3.6
Phenothrin	(¹)	*	(¹)	*
Phosalone	(¹)	*		
Piperonyl butoxide	0.29	*	0.14	0.1
Potassium salts	4.32	0.6	4.34	1.1
Propargite			(¹)	*
Pymetrozine	0.09	0.7	0.15	0.3

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Flowering Plants		Bedding Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Pyrethrins	0.02	*	0.01	*
Pyridaben	0.37	0.2	0.25	0.1
Pyridine	0.12	0.1	0.09	*
Pyriproxyfen	(¹)	*	(¹)	*
Resmethrin	(¹)	*	(¹)	*
Rotenone	(¹)	*	(¹)	*
S-Kinoprene	0.43	0.1	0.27	0.2
Sabadilla	(¹)	*	(¹)	*
Silicon dioxide	(¹)	*	(¹)	*
Spinosad	0.08	0.5	0.12	0.5
Sulfotepp	(¹)	*	(¹)	*
Trichlorfon			(¹)	*
Fungicides				
Azoxystrobin	0.07	3.8	0.25	0.5
Basic copper sulfate	(¹)	*	(¹)	*
Benomyl	(¹)	*		
Butanone	0.08	*	0.06	*
Captan	1.29	0.6	3.12	0.2
Chloroneb			(¹)	*
Chlorothalonil	1.11	22.7	1.56	12.2
Copper hydroxide	0.78	14.0	0.56	0.5
Copper oxychloride	(¹)	*	(¹)	*
Copper resinate	0.24	0.1	0.17	*
Copper sulfate	0.15	0.2	0.11	0.2
Dimethomorph	(¹)	*	0.13	*
Dodine			(¹)	*
Etridiazole	2.97	2.6	1.26	0.8
Fenarimol	0.08	*	0.06	*
Fenhexamid	0.80	0.8	0.56	0.9
Ferbam	(¹)	0.6		
Fludioxonil	0.32	0.1	0.58	0.3
Flutolanil	(¹)	*	1.58	*
Fosetyl-al	2.11	5.0	2.38	3.8
Iprodione	0.32	3.1	1.09	3.6
Kresoxim-methyl	(¹)	*	(¹)	*
Mancozeb	1.07	44.5	1.42	3.4
Maneb	(¹)	0.1	(¹)	0.4
Mefenoxam	0.49	0.7	0.70	3.0
Metalaxyl	0.11	0.1	0.08	*
Myclobutanil	0.19	0.2	0.11	0.1
Oxycarboxin	(¹)	*		
PCNB	3.24	1.7	2.68	2.2
Piperalin	0.96	0.2	0.52	0.1
Potassium bicarbon.	2.77	0.2	2.37	0.2
Propamocarb hydroch.			(¹)	0.3
Propiconazole	0.12	*	0.10	*
Streptomycin	0.33	0.1	0.08	*
Streptomycin sulfate			(¹)	*
Sulfur	(¹)	1.1	4.82	2.0
Thiabendazole (TBZ)	4.73	0.5	2.33	0.2
Thiophanate	0.47	52.0	1.08	3.2
Thiophanate-methyl	2.31	9.3	1.22	4.2
Thiram	(¹)	0.1	(¹)	*
Triadimefon	0.13	*	0.08	*
Trichoderma harz.	0.04	*	0.69	0.2
Trifloxystrobin	0.20	0.1	0.19	*
Triforine	(¹)	*	(¹)	*
Vinclozolin	0.63	0.1	1.10	*
Zineb	(¹)	*		

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Flowering Plants		Bedding Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Other Chemicals				
Alk. dim. benzyl 50%	(¹)	*	(¹)	*
Alk. dim. benzyl 60%	0.73	0.2	0.23	*
Alk. dim. eth. benz.	0.73	0.2	0.23	*
Alkyl. dim. benz. am			(¹)	*
Ancymidol	0.01	*	0.002	*
Benzyladenine	0.25	*	(¹)	*
Busan 881			(¹)	*
Capsaicin			(¹)	*
Chlormequat chloride	1.49	2.2	0.83	3.1
Chlorophacinone			(¹)	*
Chloropicrin	(¹)	6.0	(¹)	2.2
Cytokinins			(¹)	*
Daminozide	2.28	7.3	2.83	12.9
Decyldimethyloctyl			(¹)	*
Dichloropropene			(¹)	2.2
Didecyl dim. ammon.			(¹)	*
Dikegulac-sodium	(¹)	0.1	(¹)	*
Dimethyldioctyl			(¹)	*
Endothall			(¹)	*
Ethephon	0.29	0.4	0.51	0.1
Farnesol	(¹)	*	(¹)	*
Fatty acids	(¹)	5.4		
Garlic oil			(¹)	*
Gibberellic acid	0.12	*	(¹)	*
Gibberellins A4A7	0.25	*	(¹)	*
Gliocladium virens			(¹)	*
Harpin protein	(¹)	*		
Hydrogen peroxide	3.54	8.1	1.19	1.4
Indolebutyric acid	(¹)	*	0.05	*
Iron phosphate			(¹)	*
Mefluidide, diet.	(¹)	*		
Mepiquat chloride	(¹)	0.1		
Metaldehyde	1.68	1.3	2.28	0.7
Metam-sodium	(¹)	7.1		
Methyl bromide	(¹)	4.9	(¹)	38.8
NAA	(¹)	*	(¹)	*
Nerolidol	(¹)	*	(¹)	*
Paclobutrazol	0.04	0.1	0.05	0.2
Pelargonic acid	(¹)	1.0	(¹)	0.3
Sodium hypochlorite	(¹)	*	(¹)	0.3
Thidiazuron			(¹)	*
Uniconazole	0.01	*	0.01	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Foliage Plants		Floriculture Propagation Material	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
Ammonium benzadox	(¹)	*		
Benefin	(¹)	*		
Clethodim			(¹)	0.1
Glyphosate	2.78	6.2	0.83	0.5
Glyphosate diam salt	(¹)	*		
Isoxaben	(¹)	0.1		
Napropamide			(¹)	0.1
Norflurazon			(¹)	0.1
Oryzalin	(¹)	0.3	(¹)	*
Oxadiazon	(¹)	0.5		
Oxyfluorfen	(¹)	0.4	(¹)	0.1
Pendimethalin	(¹)	0.3	(¹)	0.5
Proflamifen	(¹)	0.3		
S-Metolachlor			(¹)	1.1
Simazine	(¹)	*	(¹)	0.5
Trifluralin	(¹)	*		
Insecticides				
Abamectin	0.01	0.2	0.01	*
Acephate	0.67	18.9	(¹)	*
Azadirachtin	0.04	*	(¹)	*
Azinphos-methyl	(¹)	*		
Beauveria bassiana	(¹)	*	(¹)	*
Bendiocarb	0.62	0.4	(¹)	*
Bifenazate	0.24	0.4	(¹)	*
Bifenthrin	0.07	0.3	0.16	0.1
Carbaryl	1.50	19.7	(¹)	0.2
Chlorfenapyr	0.07	0.1	(¹)	*
Chlorpyrifos	1.27	4.6	(¹)	*
Cinnamaldehyde	(¹)	*		
Clofentezine	0.15	0.1	(¹)	*
Cyfluthrin	0.02	*	(¹)	*
Cyromazine			(¹)	0.2
Deltamethrin	(¹)	*		
Diazinon	1.03	2.0	(¹)	*
Dichlorvos	(¹)	0.2		
Dicofol	(¹)	0.1		
Dienochlor	(¹)	*		
Diflubenzuron	0.11	*	(¹)	*
Dimethoate	0.19	0.4		
Disulfoton	(¹)	0.1	(¹)	*
Endosulfan	1.45	0.6	(¹)	*
Etoxazole	(¹)	*		
Fenbutatin-oxide	0.58	0.3		
Fenoxycarb	(¹)	*		
Fenpropathrin	0.23	0.1	(¹)	*
Fenpyroximate	(¹)	*		
Fluvalinate	0.11	1.7		
Hexythiazox	0.06	0.2	(¹)	*
Hydramethylnon	(¹)	*		
Imidacloprid	0.50	0.9	4.86	0.4
Kinoprene	(¹)	0.1		
Lambda-cyhalothrin	(¹)	*	(¹)	*
Malathion	1.53	2.2	(¹)	0.1
Methidathion	0.43	0.4		
Methiocarb	1.07	0.6	(¹)	*
Methyl parathion	(¹)	*		
Naled	(¹)	0.5		
Neem oil, clar. hyd.	6.39	15.8		
Nicotine	(¹)	*		
Novaluron	(¹)	*	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Foliage Plants		Floriculture Propagation Material	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Octacide-264			(¹)	*
Oxamyl	(¹)	*		
Permethrin	(¹)	0.1	(¹)	*
Petroleum distillate	7.99	12.6	(¹)	12.9
Phosmet	(¹)	*		
Piperonyl butoxide	(¹)	*	(¹)	*
Potassium salts	4.42	2.6	(¹)	*
Pymetrozine	0.18	*	(¹)	*
Pyrethrins	(¹)	*	(¹)	*
Pyridaben	(¹)	*		
Pyridine	0.11	0.1	(¹)	*
Pyriproxyfen	(¹)	*		
Resmethrin			(¹)	*
S-Kinoprene	(¹)	*	(¹)	*
S-Methoprene	(¹)	*		
Silicon dioxide	(¹)	*		
Spinosad	0.17	0.4	0.15	*
Tebufenozide	(¹)	*		
Thiamethoxam	(¹)	*		
Fungicides				
Azoxystrobin	0.15	0.3	(¹)	*
Butanone	(¹)	*		
Captan	(¹)	0.4	(¹)	18.4
Chlorothalonil	0.95	18.3	0.83	1.2
Copper hydroxide	0.49	18.1	(¹)	*
Copper resinate	0.21	*	(¹)	*
Copper sulfate	0.27	1.0	0.12	*
Cymoxanil	(¹)	*		
Etridiazole	1.71	2.7	3.25	1.4
Fenarimol	(¹)	*		
Fenbuconazole	(¹)	*		
Fenhexamid	(¹)	0.1	(¹)	*
Fludioxonil	0.30	0.2	0.41	*
Flutolanil	(¹)	0.2		
Fosetyl-al	4.82	30.1	(¹)	*
Iprodione	0.93	2.3	0.91	*
Mancozeb	1.03	49.6	0.32	0.3
Maneb	(¹)	0.8		
Mefenoxam	0.06	0.5	0.05	0.1
Metalaxyl	2.57	1.0	(¹)	*
Myclobutanil	(¹)	*	(¹)	*
PCNB	4.93	2.5	(¹)	*
Piperalin	(¹)	*		
Potassium bicarbon.	(¹)	0.1	(¹)	*
Propiconazole	(¹)	0.1	(¹)	*
Streptomycin	0.24	0.1	(¹)	*
Sulfur	(¹)	0.6		
Tebuconazole	(¹)	*		
Thiabendazole (TBZ)	(¹)	0.4	(¹)	0.1
Thiophanate	0.43	3.0	0.42	0.1
Thiophanate-methyl	1.30	7.1	5.16	2.5
Thiram	(¹)	0.2		
Trichoderma harz.	(¹)	*	(¹)	*
Trifloxystrobin	(¹)	*	(¹)	0.1
Triforine	(¹)	*		
Vinclozolin	(¹)	*		

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Foliage Plants		Floriculture Propagation Material	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Other Chemicals				
Alk. dim. benzyl 50%	(¹)	*		
Alk. dim. benzyl 60%	(¹)	0.2		
Alk. dim. eth. benz.	(¹)	0.2		
Ancymidol	(¹)	*	(¹)	*
Benzyladenine	(¹)	*		
Chlormequat chloride	0.92	0.1	0.35	*
Daminozide	1.73	0.1	4.61	1.0
Dazomet			(¹)	0.2
Dikegulac-sodium	(¹)	0.1		
Ethephon	0.30	*	(¹)	*
Garlic oil	(¹)	8.1		
Gibberellic acid	0.03	*		
Gibberellins A4A7	(¹)	*		
Hydrogen peroxide	1.76	0.4	(¹)	0.2
Indolebutyric acid			(¹)	*
Metaldehyde	0.56	1.2	(¹)	*
NAA			(¹)	*
Pacllobutrazol	0.03	*	0.07	*
Sodium hypochlorite	(¹)	0.2		
Uniconazole	(¹)	*	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Cut Cultivated Greens		Herbaceous Perennials	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides				
2,4-D	(¹)	*		
2,4-D, Dimeth. salt			(¹)	0.1
Atrazine	(¹)	0.1		
Benefin			(¹)	*
Bentazon			(¹)	*
Bromoxynil			(¹)	*
DCPA			(¹)	0.2
Dicamba	(¹)	*		
Dicamba, Dimet. salt			(¹)	*
Dichlobenil	(¹)	0.1	(¹)	*
Diquat			(¹)	*
Diuron	(¹)	0.8		
Fluazifop-P-butyl	(¹)	*	(¹)	*
Glyphosate	1.19	0.9	1.45	2.6
Halosulfuron			(¹)	*
Isoxaben	(¹)	*	0.45	0.7
MCPP, DMA salt			(¹)	*
Napropamide			(¹)	0.6
Norflurazon	(¹)	0.4		
Oryzalin	(¹)	0.1	2.96	3.2
Oxadiazon	(¹)	0.1	(¹)	*
Oxyfluorfen	(¹)	0.1	0.58	0.1
Paraquat	(¹)	*		
Pendimethalin	(¹)	0.1	0.41	1.2
Prodiamine	1.29	0.5	(¹)	*
S-Metolachlor			(¹)	*
Simazine	(¹)	0.5		
Triclopyr	(¹)	*		
Trifluralin			(¹)	0.1
Insecticides				
Abamectin	(¹)	*	0.01	*
Acephate	1.31	3.4	3.21	1.7
Allethrin	(¹)	*		
Azadirachtin			0.05	*
Beauveria bassiana			(¹)	*
Bendiocarb			0.45	*
Bifenazate	0.19	0.3	0.25	0.1
Bifenthrin	(¹)	0.1	0.11	*
Bioallethrin	(¹)	*		
Carbaryl	1.52	16.3	0.76	0.3
Chlorfenapyr			(¹)	*
Chlorpyrifos	0.50	9.7	0.31	0.1
Cinnamaldehyde			(¹)	0.5
Clofentezine			0.22	0.1
Cyfluthrin	(¹)	*	0.07	*
Cyromazine			(¹)	*
Deltamethrin	(¹)	*	(¹)	*
Diazinon	(¹)	0.3	0.92	*
Dicofol	0.52	1.7	(¹)	*
Diflubenzuron	0.06	4.0	0.30	*
Dimethoate	0.46	0.2	(¹)	0.1
Endosulfan	0.54	3.2	0.58	0.3
Ethoprop	(¹)	*		
Ethoxy sec. alcohols	(¹)	0.4		
Etoxazole	(¹)	*	0.08	*
Fenamiphos	(¹)	0.2		
Fenbutatin-oxide	0.47	0.6	(¹)	*
Fenoxycarb			(¹)	*
Fenpropathrin			(¹)	*
Fenpyroximate			(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Cut Cultivated Greens		Herbaceous Perennials	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides-continued				
Fenvalerate			(¹)	*
Fluvalinate	(¹)	0.1	0.20	0.1
Hexythiazox	(¹)	*	0.07	*
Imidacloprid	(¹)	*	0.83	0.2
Lambda-cyhalothrin			(¹)	*
Lindane			(¹)	*
Malathion	0.61	0.3	0.74	0.4
Methiocarb			1.10	*
Myrothecium verruc.	(¹)	6.6		
Neem oil, clar. hyd.	(¹)	0.3	(¹)	0.3
Nicotine			(¹)	*
Novaluron			(¹)	*
Octacide-264	(¹)	*	(¹)	*
Oxamyl	(¹)	*		
Oxythioquinox	(¹)	*	(¹)	*
Permethrin	0.17	5.8	(¹)	*
Petroleum distillate	3.50	9.3	7.57	4.4
Phorate	(¹)	0.1		
Piperonyl butoxide	(¹)	*	0.91	*
Potassium salts			9.45	0.8
Propargite	(¹)	*	(¹)	0.3
Pymetrozine			0.11	*
Pyrethrins			0.07	*
Pyridaben			0.21	0.1
Pyridine			0.04	*
Rosemary oil			(¹)	*
Rotenone			(¹)	*
S-Kinoprene	(¹)	11.6	0.25	0.2
Silicon dioxide			(¹)	*
Spinosad	0.05	0.2	0.07	*
Tefluthrin	(¹)	*		
Thiamethoxam	(¹)	*	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Cut Cultivated Greens		Herbaceous Perennials	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides				
Azoxystrobin	(¹)	*	0.12	0.1
Basic copper sulfate	(¹)	*		
Butanone			(¹)	*
Calcium polysulfide	(¹)	*		
Captan	(¹)	*	(¹)	0.2
Chloroneb	2.01	2.8		
Chlorothalonil	1.00	45.3	2.09	2.0
Copper (metallic)			(¹)	*
Copper hydroxide	0.26	0.3	(¹)	*
Copper oxychloride	(¹)	*		
Copper resinate			(¹)	*
Copper sulfate			0.14	*
Dimethomorph			(¹)	*
Dodine			(¹)	*
Etridiazole	(¹)	*	2.65	0.3
Fenarimol			(¹)	*
Fenhexamid			0.74	0.4
Ferbam	(¹)	1.0		
Fludioxonil	(¹)	*	1.46	0.1
Flutolanil	(¹)	*	(¹)	*
Fosetyl-al	2.68	2.6	2.12	0.6
Iprodione	(¹)	*	0.80	0.4
Kresoxim-methyl			(¹)	*
Mancozeb	1.41	286.1	1.27	0.6
Maneb	1.63	30.3		
Mefenoxam	(¹)	*	0.18	0.1
Metalaxyl			(¹)	*
Metiram	1.34	3.3		
Myclobutanil			0.10	*
Oxycarboxin			(¹)	*
PCNB	(¹)	*	7.00	0.7
Piperalin			(¹)	*
Potassium bicarbon.			(¹)	*
Propiconazole	0.06	*	(¹)	0.1
Streptomycin			(¹)	*
Sulfur	(¹)	0.3	(¹)	0.1
Tebuconazole	0.20	8.9		
Thiabendazole (TBZ)			(¹)	*
Thiophanate	0.30	12.5	3.38	1.5
Thiophanate-methyl	0.53	15.2	2.44	1.0
Triadimefon	(¹)	*	(¹)	*
Trichoderma harz.			(¹)	*
Trifloxystrobin			0.08	*
Triforine			(¹)	*
Vinclozolin			(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Cut Cultivated Greens		Herbaceous Perennials	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>	<i>Pounds</i>	<i>1,000 Pounds</i>
Other Chemicals				
Alk. dim. benzyl 50%	(¹)	*	(¹)	*
Alk. dim. benzyl 60%	(¹)	*	(¹)	0.1
Alk. dim. eth. benz.	(¹)	*	(¹)	0.1
Aluminum phosphide	(¹)	*		
Ancymidol			(¹)	*
Benzyladenine			(¹)	*
Bromadiolone			(¹)	*
Capsaicin			(¹)	*
Chlormequat chloride			24.64	1.1
Chloropicrin			(¹)	0.1
Daminozide			4.72	0.4
Diphacinone	(¹)	*		
Ethephon			0.06	*
Farnesol			(¹)	*
Garlic oil			(¹)	*
Gibberellic acid			(¹)	*
Gibberellins A4A7			(¹)	*
Hydrogen peroxide	(¹)	0.2	9.19	1.0
Indolebutyric acid			(¹)	*
Iron phosphate			(¹)	*
Metaldehyde	(¹)	0.8	0.56	0.1
Methyl bromide			(¹)	2.9
NAA			(¹)	*
Nerolidol			(¹)	*
Paclobutrazol			0.03	*
Uniconazole			0.01	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Non-production Areas	
	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>
Herbicides		
2,4-D	0.42	0.3
2,4-D, Dimeth. salt	(1)	*
2,4-DP, Dimeth. salt	(1)	*
Acetic acid	(1)	*
Acifluorfen	(1)	*
Amitrole	(1)	*
Atrazine	(1)	0.9
Benefin	(1)	*
Bentazon	(1)	14.0
Clethodim	(1)	*
Clopyralid	0.14	0.1
Copper ethanolamine	(1)	*
Desmedipham	(1)	*
Dicamba	(1)	*
Dicamba, Dimet. salt	(1)	*
Dichlobenil	(1)	8.6
Diquat	0.59	0.8
Diuron	0.92	10.9
EPTC	(1)	1.3
Fenoxaprop	(1)	*
Fluazifop-P-butyl	(1)	*
Glufosinate-ammonium	1.33	0.1
Glyphosate	1.10	227.5
Halosulfuron	(1)	1.0
Hexazinone	0.74	1.3
Isooctyl propionate	(1)	*
Isoxaben	0.28	17.2
MCPA	(1)	*
MCP, DMA salt	(1)	*
MCP, DMA Salt	(1)	*
MSMA	(1)	0.1
Metolachlor	(1)	0.9
Napropamide	(1)	0.2
Norflurazon	(1)	0.1
Oryzalin	1.02	8.3
Oxadiazon	1.50	0.6
Oxyfluorfen	0.86	2.4
Paraquat	1.00	1.0
Pendimethalin	0.87	10.3
Phenmedipham	(1)	*
Prodiamine	1.10	23.3
Propanil	(1)	*
Pyraflufen ethyl	(1)	*
S-Metolachlor	(1)	20.3
Sethoxydim	(1)	0.6
Simazine	1.97	46.7
Sulfometuron methyl	(1)	*
Sulfosate	(1)	108.2
Sulfosulfuron	(1)	0.3
Tebuthiuron	(1)	2.4
Terbacil	(1)	0.1
Triclopyr	0.73	0.7
Trifluralin	0.41	0.3
Triflurosulfuronmethyl	(1)	*
Vernolate	2.47	101.5

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Non-production Areas	
	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>
Insecticides		
Abamectin	(¹)	*
Acephate	1.43	1.6
Acetamiprid	(¹)	*
Bendiocarb	(¹)	*
Bifenazate	(¹)	*
Bifenthrin	0.09	1.5
Carbaryl	0.94	0.1
Carbofuran	(¹)	*
Chlorfenapyr	(¹)	*
Chlorpyrifos	1.04	1.0
Cinnamaldehyde	(¹)	*
Cyfluthrin	(¹)	0.3
Deltamethrin	(¹)	*
Diazinon	1.32	0.5
Diflubenzuron	(¹)	*
Dimethoate	(¹)	*
Disulfoton	(¹)	*
Endosulfan	(¹)	0.1
Fenamiphos	(¹)	*
Fenoxycarb	0.02	*
Fenvalerate	(¹)	*
Hexythiazox	(¹)	*
Hydramethylnon	0.01	0.2
Imidacloprid	(¹)	0.1
Lambda-cyhalothrin	(¹)	*
Lindane	(¹)	*
Malathion	(¹)	0.1
Methiocarb	(¹)	0.1
Nosema locustae	(¹)	*
Novaluron	(¹)	*
Permethrin	(¹)	*
Petroleum distillate	(¹)	0.2
Potassium salts	(¹)	1.8
Pyridine	(¹)	*
S-Kinoprene	(¹)	*
S-Methoprene	(¹)	*
Spinosad	(¹)	*

See footnote(s) at end of table.

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**Active Ingredient
by Rate per Acre and Total Applied
Program States, 2003 - continued**

Active Ingredient	Non-production Areas	
	Rate per Acre	Total Applied
	<i>Pounds</i>	<i>1,000 Pounds</i>
Fungicides		
Azoxystrobin	(¹)	*
Basic copper sulfate	(¹)	0.2
Benomyl	(¹)	*
Butanone	(¹)	*
Chlorothalonil	5.45	2.3
Copper amm. complex	(¹)	*
Copper hydroxide	(¹)	*
Copper oxychloride	(¹)	0.6
Copper resinate	(¹)	*
Copper sulfate	(¹)	0.1
Etridiazole	(¹)	*
Fenhexamid	(¹)	*
Fludioxonil	(¹)	*
Iprodione	(¹)	0.1
Mancozeb	(¹)	0.5
Mefenoxam	(¹)	*
Myclobutanil	(¹)	*
Piperalin	(¹)	*
Potassium bicarbon.	(¹)	*
Propiconazole	(¹)	*
Sulfur	(¹)	0.2
Thiophanate	(¹)	0.3
Thiophanate-methyl	(¹)	*
Trichoderma harz.	(¹)	*
Zinc chloride	(¹)	*
Other Chemicals		
Alk. dim. benzyl 50%	(¹)	*
Alk. dim. benzyl 60%	4.95	0.4
Alk. dim. eth. benz.	4.95	0.4
Ammonium soap	(¹)	*
Bromadiolone	(¹)	*
Chloropicrin	(¹)	*
Dichloropropene	(¹)	*
Didecyl dim. ammon.	(¹)	*
Diphacinone	(¹)	*
Hydrogen peroxide	3.90	0.3
Indolebutyric acid	(¹)	*
Iron phosphate	(¹)	*
Metaldehyde	0.63	3.1
Methyl bromide	(¹)	12.2
NAA	(¹)	*
Paclobutrazol	(¹)	*
Pelargonic acid	7.77	7.6
Sodium hypochlorite	15.67	0.9

* Total applied is less than 50 pounds

¹ Insufficient number of reports or data deemed too unreliable to publish.

**All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
(Meth)propionic acid	*						*
2,4-D		*	1	8	1		2
2,4-D, Dimeth. salt			*	*		*	*
2,4-DP, Dimeth. salt	1			2	1		*
Acetamide	*			2			*
Acetic acid			*	1	*		*
Acetochlor						*	*
Acifluorfen					*		*
Ammonium benzadox		*	*	*		*	*
Atrazine	*	*	3	12	3	*	3
Benefin	2		*	1		*	*
Bentazon			1	*	*		*
Bromacil	*						*
Bromoxynil	*		*				*
Carfentrazone-ethyl						*	*
Clethodim			*	5	*	1	1
Clopyralid	*		2	2	3		1
Clopyralid mono salt	1			*	*		*
Colleto. gloeospor.	*						*
Copper ethanolamine					*		*
Cyanazine				*			*
DCPA	1		*	*	*		*
Dicamba	*	*		*	*		*
Dicamba, Dimet. salt			*	*		*	*
Dichlobenil			2	6	3		2
Diiflufenzopyr-sodium				*			*
Diquat	2			*		*	*
Dithiopyr	*				*		*
Diuron	*	*		1	*		*
Fenoxaprop	*						*
Fluazifop-P-butyl	*	*	3	1	1	1	1
Flumetsulam		1					*
Flumioxazin			1		*	*	*
Fluroxypyr			*				*
Fomesafen					*		*
Fosamine						*	*
Glufosinate-ammonium	1	*	*	1	*		*
Glyphosate	28	14	26	47	29	14	26
Glyphosate diam salt	*						*
Halosulfuron	1		*	1			*
Hexazinone			3	8			2
Imazamox				*			*
Imazaquin, mon. salt						*	*
Imazethapyr				*			*
Isooctyl propionate					*		*
Isoxaben	6	3	4	8	2	5	4
Lactofen	*						*
Linuron	*		*	*			*
MCPA	*			*		*	*
MCPB	*						*
MCPP, DMA salt			*			*	*
MSMA	*						*
Metolachlor	*	*	*	1	1		*
Metribuzin	*			2		1	*
Metsulfuron-methyl					*		*
Napropamide	1	*	1	5			1
Norflurazon		1		1			*
Oryzalin	5	2	5	15	6	2	6
Oxadiazon	7	4	*	4	2	3	3

See footnote(s) at end of table.

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**All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides-continued							
Oxyfluorfen	7	5	6	16	11	5	8
Paraquat	1	*	1	1	*	1	1
Pendimethalin	6	5	2	3	4	5	4
Primisulfuron				1			*
Prodiamine	3	5	1	3	2	3	3
Prometon				*			*
Pronamide	*		*	*			*
Propanil	*						*
Propazine		*					*
Prosulfuron				1			*
Pyrazon	*						*
Pyridate	*						*
Quinclorac				*			*
Quizalofop-ethyl			*				*
S-Metolachlor	1		1	1	2	1	1
Sethoxydim	*	1	*	*	1	1	1
Simazine	2	1	11	7	18	1	7
Sulfometuron methyl		*			1		*
Sulfosate	*		*	*	*		*
Sulfosulfuron				1			*
Tebuthiuron					*		*
Terbacil			*				*
Triasulfuron	*						*
Triclopyr	1		1	10	2		2
Trifluralin	3	1	3	2	1	5	2
Vernolate	4					*	1
Insecticides							
Abamectin	35	26	23	14	16	30	23
Acephate	48	48	23	26	20	44	35
Acetamiprid	5	1	1	*	*	4	2
Aldicarb	*			*			*
Allethrin		*					*
Amitraz	*						*
Azadirachtin	11	3	9	6	7	12	7
Azinphos-methyl	*	*	1	*	1		*
Beauveria bassiana	2	1	2	1	3	5	2
Bendiocarb	*	3	1	3	5	5	3
Bifenazate	12	8	4	8	5	8	7
Bifenthrin	14	19	18	12	13	25	16
Bioallethrin		*					*
Boric acid	*						*
Bt (Bacillus thur.)	15	10	1	2	2	15	7
Canola oil	*						*
Carbaryl	3	21	24	3	13	10	14
Carbofuran				1		*	*
Chlorfenapyr	4	2	*	1	*	1	2
Chlorpyrifos	20	14	25	15	17	16	18
Cinnamaldehyde	2	*	1	1	1	1	1
Clofentezine	*	3	2	3	1	3	2
Clove oil				*			*
Cottonseed oil				*			*
Cryolite	*						*
Cyfluthrin	10	4	13	2	10	7	8
Cyromazine	6	1	*	1	1	1	1
Deltamethrin	4	*	*	*	1	*	1
Diazinon	15	10	5	9	4	12	9
Dichlorvos		2	*		*	1	1
Dicofol	2	6	2	3	3	2	3

See footnote(s) at end of table.

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**All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Dienochlor	5	1	1	3	1	1	2
Diiflubenzuron	6	6	7	1	5	6	5
Dimethoate	2	15	2	4	5	2	6
Disulfoton		2	1	*	1	3	1
Emamectin benzoate			1				*
Endosulfan	1	7	7	8	10	6	6
Esfenvalerate	1	*	*	4	1	1	1
Ethion		1					*
Ethoprop		*		1			*
Ethoxy sec. alcohols		1					*
Ethyl parathion				*	*		*
Etoxazole		2	1	*	1	5	1
Fenamiphos		*	*			*	*
Fenbutatin-oxide	5	3	2	1	*	2	2
Fenitrothion				*		*	*
Fenoxycarb	1	1	2	1	3	3	2
Fenpropathrin	3	2	6	3	2	7	3
Fenpyroximate	2	1	*	1	1	3	1
Fenvalerate				*		*	*
Fipronil						*	*
Flucythrinate							*
Fluvalinate	16	10	7	3	4	11	8
Fonofos	*						*
Formetanate hydro.	*		*				*
Hexythiazox	7	7	3	4	4	1	5
Hydramethylnon	2	1				1	1
Imidacloprid	21	11	28	9	26	32	20
Indoxacarb	*	*					*
Joboba oil	1					*	*
Kaolin	*	*		*			*
Kinoprene	1	*	1	1	*	2	1
Lambda-cyhalothrin	2	*	1	4	*	3	1
Lindane	1	*	2		4	*	1
Malathion	16	14	7	7	5	15	11
Methamidophos		*					*
Methidathion	*	2	*			*	1
Methiocarb	5	3	4	3	2	3	3
Methomyl	1	*	*	*	*		*
Methoxychlor	1			*			*
Methyl parathion		*		*	*	*	*
Mevinphos	*						*
Myrothecium verruc.		1					*
Naled	*	*					*
Neem oil		*		*	*	1	*
Neem oil, clar. hyd.	2	4	*	1		2	2
Nicotine			1	*	2	1	1
Novaluron	2	1	1	1	1	3	1
Octacide-264	*	1	*	*	*	*	1
Oxamyl	*	*	*	*	1	*	*
Oxydemeton-methyl			*	1	4		1
Oxythioquinox	1	*		1	1	*	*
Permethrin	11	7	1	*	2	3	4
Petroleum distillate	17	14	4	9	6	10	10
Petroleum oil			*		1	*	*
Phenothrin			*		*		*
Phorate	*	*					*
Phosalone	*						*
Phosmet	1		3		1		1
Piperonyl butoxide	7	1	2	*	3	2	2

See footnote(s) at end of table.

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**All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Potassium salts	8	3	4	7	6	6	5
Propargite	1	*	*	2			*
Pymetrozine	16	2	6	4	11	10	8
Pyrethrins	8	1	2	*	3	3	3
Pyridaben	4	2	2	2	1	10	3
Pyridine	12	4	3	5	5	13	6
Pyriproxyfen			1		*		*
Resmethrin		*	*	*	1	1	*
Rosemary oil			*				*
Rotenone	2		*		*	1	*
S-Kinoprene	3	1	4	7	3	8	3
S-Methoprene	*	*			1		*
Sabadilla	*					1	*
Sesame Oil		*					*
Silicon dioxide	*	*			1	*	*
Spinosad	24	8	16	7	21	19	15
Sulfotepp		*	*	1	1	1	*
Tebufenozide		1		*		2	*
Tefluthrin		*					*
Thiamethoxam		1		*	*	*	*
Tralomethrin					*		*
Triazamate				1			*
Trichlorfon		*					*
Zeta-cypermethrin						*	*
Fungicides							
AQ-10 Biofungicide	*						*
Agriphage		*				*	*
Azoxystrobin	13	6	1	5	2	6	5
Bacillus subtilis	1	*	*	*	1		*
Basic copper sulfate	*	*	*	2			*
Benomyl	1	*	1	*	1		1
Borax Decahydrate		*					*
Butanone	7	1	4	3	6	1	3
Calcium polysulfide	*			1			*
Captan	3	6	4	3	2	3	4
Chloroneb	*	2					*
Chlorothalonil	22	27	29	23	30	26	27
Copper (metallic)		*	*		*		*
Copper amm. complex	*			*			*
Copper chloride hyd.				*			*
Copper hydroxide	15	32	2	12	2	12	14
Copper oxide	*						*
Copper oxychlor. sul.				*			*
Copper oxychloride	*			2	1		*
Copper resinate	4	4	2	1	2	2	3
Copper sulfate	10	9	5	6	6	8	7
Cresol		*					*
Cymoxanil	*	*					*
Cyprodinil	1						*
Dicloran	*						*
Dimethomorph	*	*	*	2	*	1	1
Dodine			*	2	*	*	*
Etridiazole	1	12	17	7	16	22	12
Fenarimol	6	*	1	1	*	2	1
Fenbuconazole	*	*		*	*		*
Fenhexamid	11	1	6	6	11	4	6
Ferbam		1				*	*
Fludioxonil	8	4	4	5	7	6	5

See footnote(s) at end of table.

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**All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Flutolanil	*	1	1	*		*	1
Fosetyl-al	18	14	2	9	1	9	9
Halobrom	*						*
Iprodione	21	8	7	7	4	5	9
Kresoxim-methyl	*		2	*		*	*
Mancozeb	15	36	12	10	4	7	17
Maneb	2	3	*	1		*	1
Mefenoxam	20	14	11	13	12	13	14
Metalaxyl	7	5	2	4	4	5	5
Metiram		1					*
Milban	*						*
Myclobutanil	17	2	3	6	2	4	5
Oxycarboxin	*	*		1			*
Oxytetracycline			*	*			*
PCNB	7	5	3	3	2	7	4
Phosphorous acid	*	*		2			*
Piperalin	8	*		1		1	2
Potassium bicarbon.	4	*	*	2	4	1	2
Propamocarb hydroch.	*	*			1	*	*
Propiconazole	9	7	2	6	*	8	5
Pseudomonas fluores.	*						*
Pyraclostrobin	*	*		*			*
Sodium Percarbonate			*	1		*	*
Streptomyces gris.	*		1		*		*
Streptomycin	7	4	1	2	1	2	3
Streptomycin sulfate			*	*		*	*
Sulfur	10	1	*	3		1	2
Tebuconazole		5	*		*	1	1
Thiabendazole (TBZ)	1	1	2		1	1	1
Thiophanate	13	26	15	10	11	15	16
Thiophanate-methyl	16	25	25	10	15	26	20
Thiram	*	1		1	*		*
Triadimefon	6	1	1	3	1	4	2
Trichoderma harz.	3	1	1	1	6	6	3
Trifloxystrobin	7	1	2	4	2	2	3
Triflumizole				*	*		*
Triforine	4	*	2	1	1	2	1
Triphenyltin hydrox.	*						*
Vinclozolin	3	*	1	2	2	1	1
Xylenol		*					*
Zineb		*					*
Ziram	*		*	*		*	*
Other Chemicals							
Alk. dim. benzyl 50%		1	1	1	*	3	1
Alk. dim. benzyl 60%	4	2	1	2	1	3	2
Alk. dim. eth. benz.	4	2	1	2	1	3	2
Alkyl. dim. benz. am				*			*
Aluminum phosphide	*			*			*
Aminopyridine					*		*
Ammonium soap	*						*
Ancymidol	3	1	3	2	3	11	3
Benzyladenine	*	*	1	*	2	*	1
Brodifacoum	*						*
Bromadiolone	1					*	*
Busan 881						*	*
Capsaicin	*		1	*		1	*
Chlormequat chloride	6	1	14	4	13	19	8
Chlorophacinone	*						*

See footnote(s) at end of table.

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**All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals-continued							
Chloropicrin	3	*	*	1		1	1
Cytokinins					*		*
Daminozide	8	1	19	5	18	29	11
Dazomet	1			*	*		*
Decenol	*						*
Decenyl acetate	*						*
Decyldimethyloctyl				*			*
Dichloropropene	1					*	*
Didecyl dim. ammon.				*			*
Difethialone	*	*		*			*
Dikegulac-sodium	1	*		*		*	*
Dimethyldioctyl				*			*
Diphacinone	1	*	*	*			*
E-8-Dodecenyl acetat	*						*
Endothall				*			*
Ethephon	5	1	11	2	14	7	6
Farnesol	*					1	*
Fatty acids				1			*
GABA	*						*
Garlic oil	*	*	*	*		*	*
Gibberellic acid	1	2	*	2	1	*	1
Gibberellins A4A7	*	*	1	*	1	*	1
Gliocladium virens		*		*			*
Harpin protein	*	*		1		*	*
Hydrogen peroxide	4	6	7	7	4	2	5
Indolebutyric acid	2	*	1	2	2	1	1
Iron phosphate	3		1	1			1
L-Glutamic acid	*						*
Maleic hydrazide	*						*
Mefluidide, diet.	*						*
Mepiquat chloride	*						*
Metaldehyde	15	5	1	8	1	3	5
Metam-sodium	1	*		*			*
Methyl bromide	3	*	1	1		1	1
Mineral oil		*					*
Monocarbamide dihyd.				*			*
NAA	*	*	1	1	1	1	1
NAD	*			1			*
Nerolidol	*					1	*
Paclobutrazol	11	2	15	5	9	22	9
Pelargonic acid	2	*	*	1	1	*	1
Propionic acid	*			*	*		*
Sodium chlorate	*						*
Sodium hypochlorite		1	2	*	*	5	1
Strychnine						*	*
Thidiazuron					*		*
Uniconazole	2	1	4	1	2	8	2
Z-8-Dodecanol	*						*
Z-8-Dodecen acetate	*						*
Zinc phosphide	*			*	*		*

* Less than one percent.

**All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D		*	3	10	2		3
2,4-D, Dimeth. salt				*		1	*
2,4-DP, Dimeth. salt	1			2	1		1
Acetamide	*			3			1
Acetic acid			1	1	*		*
Acetochlor						*	*
Acifluorfen					*		*
Ammonium benzadox				*		1	*
Atrazine	1	1	5	15	5	*	5
Benefin	2		1	1		*	1
Bentazon			2	*	*		*
Bromacil	*						*
Carfentrazone-ethyl						*	*
Clethodim			1	6	1	1	2
Clopyralid			5	3	6		2
Clopyralid mono salt	2			*	*		*
Colleto. gloeospor.	*						*
Copper ethanolamine					1		*
Cyanazine				*			*
DCPA				*	*		*
Dicamba				*	1		*
Dicamba, Dimet. salt				*		*	*
Dichlobenil			4	7	5		3
Diflufenzopyr-sodium				*			*
Diquat	2			*			*
Dithiopyr					*		*
Diuron	1			1			*
Fluazifop-P-butyl	1	1	4	*	3	1	2
Flumetsulam		1					*
Flumioxazin			1		*	*	*
Fluroxypyr			*				*
Fomesafen					1		*
Fosamine						*	*
Glufosinate-ammonium	1	*	*	1	*		*
Glyphosate	37	21	44	59	56	15	40
Glyphosate diam salt	1						*
Halosulfuron	1			1			*
Hexazinone			5	10			3
Imazamox				*			*
Imazaquin, mon. salt						*	*
Imazethapyr				*			*
Isooctyl propionate					*		*
Isoxaben	11	4	5	9	4	7	6
Lactofen	*						*
Linuron			1	1			*
MCPA				*		*	*
MCPP, DMA salt						*	*
Metolachlor		1	*	1	3		1
Metribuzin	*			3			1
Metsulfuron-methyl					*		*
Napropamide	1	*	1	5			2
Norflurazon		*		*			*
Oryzalin	10	3	9	18	12	4	10
Oxadiazon	5	6	*	5	3	4	4
Oxyfluorfen	15	8	10	21	22	8	14
Paraquat	1	*	2	1		1	1
Pendimethalin	11	10	4	4	7	8	7
Primisulfuron				*			*
Prodiamine	7	8	1	4	3	4	4

See footnote(s) at end of table.

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**All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides-continued							
Prometon				1			*
Pronamide	*		*	*			*
Propanil	1						*
Propazine		*					*
Prosulfuron				*			*
Pyridate	1						*
Quinclorac				*			*
Quizalofop-ethyl			*				*
S-Metolachlor	2		1	2	3	*	1
Sethoxydim	*	2	1	*	2	2	1
Simazine	3	1	20	8	37	1	13
Sulfometuron methyl		*			1		*
Sulfosate			*	1			*
Sulfosulfuron				*			*
Terbacil			*				*
Triasulfuron	*						*
Triclopyr	*		2	12	4		4
Trifluralin	6	2	3	2	2	8	3
Vernolate	4					*	*
Insecticides							
Abamectin	23	15	1	10	4	10	10
Acephate	39	40	9	18	13	37	25
Acetamiprid	2	3		*			1
Aldicarb	*			*			*
Amitraz	1						*
Azadirachtin	6	3		3	2	5	3
Azinphos-methyl	*	*	2	1	1		1
Beauveria bassiana	1	*		1	1		1
Bendiocarb	*	1	*	3	3	2	2
Bifenazate	7	4	1	8	4	5	5
Bifenthrin	18	12	9	11	7	14	11
Bt (Bacillus thur.)	8	9	1	1	1	6	4
Canola oil	1						*
Carbaryl	2	19	39	2	25	8	18
Carbofuran				1		1	*
Chlorfenapyr	1	1		1	*	*	*
Chlorpyrifos	18	10	32	16	23	19	19
Cinnamaldehyde	1	*		1	*	1	1
Clofentezine	*	2	1	3	*	3	2
Clove oil				*			*
Cottonseed oil				*			*
Cyfluthrin	7	6	13	1	2	4	5
Cyromazine	1	*	*	*	*	1	*
Deltamethrin	10		*		1	*	1
Diazinon	16	9	6	6	4	14	8
Dicofol	3	5	3	4	4	1	4
Dienochlor	1	1		1	1		1
Diflubenzuron	2	1	7	1	1	4	2
Dimethoate	1	20	2	5	10	3	9
Disulfoton		3	1	*	2	4	2
Endosulfan	1	4	1	9	1	5	4
Esfenvalerate	2	*	1	5	1	1	2
Ethion		2					*
Ethoprop				1			*
Ethyl parathion				*	*		*
Etoxazole		1	*	*		5	1
Fenamiphos			*			*	*
Fenbutatin-oxide	3	2	2	2	*	1	2

See footnote(s) at end of table.

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**All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Fenitrothion				*		*	*
Fenoxycarb	2	1	*	*		4	1
Fenpropathrin	4	1	1	1	*	6	2
Fenpyroximate				*	*	2	*
Fenvalerate						*	*
Fipronil						1	*
Fluvalinate	12	7	2	1	2	3	4
Formetanate hydro.	*		1				*
Hexythiazox	6	4	4	5	7	2	5
Hydramethylnon	6	1				1	1
Imidacloprid	21	10	4	3	5	13	8
Indoxacarb	1	*					*
Jojoba oil	*					*	*
Kaolin	*	*		*			*
Kinoprene	1			*		*	*
Lambda-cyhalothrin	4	*	1	5	*	1	2
Lindane	2	*	2		5	*	2
Malathion	21	18	9	5	8	14	12
Methamidophos		*					*
Methidathion	1	1	*			*	1
Methiocarb	5	1	*	1	*	1	1
Methomyl	1	*	1	*			*
Methoxychlor	2			*			*
Methyl parathion				*			*
Neem oil		1		*	*	*	*
Neem oil, clar. hyd.	3	3	*	1		2	1
Nicotine					*		*
Novaluron	*	*		1		3	*
Octacide-264		*				*	*
Oxamyl	1	*			*		*
Oxydemeton-methyl			*	2	9		2
Oxythioquinox	1	*		*	1	*	*
Permethrin	5	1	1	*	3	3	2
Petroleum distillate	18	23	5	9	5	7	12
Petroleum oil			1		2	1	1
Phosmet	1		5		2		1
Piperonyl butoxide	4	1			*	2	1
Potassium salts	7	5	1	3	4	2	4
Propargite	*			2			1
Pymetrozine	6	2	2	3	1	5	3
Pyrethrins	5	*	*		*	2	1
Pyridaben	2	2	1	1	1	2	1
Pyridine	7	5	*	3	1	5	3
Resmethrin		*		*	*		*
Rotenone	1		*				*
S-Kinoprene	2			2	1	2	1
S-Methoprene	1	1			1		*
Sesame Oil		*					*
Silicon dioxide		*				*	*
Spinosad	11	3	1	3	2	5	4
Sulfotepp					*		*
Tebufozide		*		*		5	*
Thiamethoxam		*		*			*
Tralomethrin					1		*
Triazamate				1			*
Zeta-cypermethrin						*	*

See footnote(s) at end of table.

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**All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides							
Agriphage		*				*	*
Azoxystrobin	11	6	1	5	2	3	4
Bacillus subtilis	1		1				*
Basic copper sulfate	1	*		2			1
Benomyl	2	1	1	*	3		1
Borax Decahydrate		1					*
Butanone	5	*	2	3	1	1	2
Calcium polysulfide	*			1			*
Captan	4	3	5	3	2	3	3
Chlorothalonil	19	24	27	25	47	23	28
Copper (metallic)		*			*		*
Copper amm. complex	1			1			*
Copper chloride hyd.				*			*
Copper hydroxide	21	32	3	14	2	13	15
Copper oxide	*						*
Copper oxychlo. sul.				*			*
Copper oxychloride	*			2			*
Copper resinate	3	4	1	2	1	2	2
Copper sulfate	6	7	1	4	2	6	4
Cresol		*					*
Cymoxanil	1						*
Cyprodinil	2						*
Dimethomorph	1	*		*		1	*
Dodine			1	3	*		1
Etridiazole	1	9	5	4	2	5	5
Fenarimol	3		1	1		1	1
Fenbuconazole				*	*		*
Fenhexamid	3	*	*	2	*	1	1
Ferbam						1	*
Fludioxonil	6	3	*	3	1	3	2
Flutolanil	1	1	*	*			1
Fosetyl-al	17	10	2	9	1	8	8
Halobrom	*						*
Iprodione	14	5	2	4	1	4	4
Kresoxim-methyl	*		1			*	*
Mancozeb	12	24	14	8	4	7	13
Maneb	4	2	*	1		*	1
Mefenoxam	17	14	3	10	2	6	9
Metalaxyl	4	6	*	3	*	3	3
Myclobutanil	12	1	4	5	1	3	4
Oxycarboxin		*		*			*
Oxytetracycline			1	*			*
PCNB	5	3	1	*	1	3	2
Phosphorous acid	1	*		2			1
Piperalin	1	*			*	*	*
Potassium bicarbon.	1	*		2		2	1
Propamocarb hydroch.					1	*	*
Propiconazole	11	12	3	8	1	11	7
Pseudomonas fluores.	1						*
Pyraclostrobin	1	*		*			*
Sodium Percarbonate			*	1		*	*
Streptomycin	7	2	2	3	1	2	3
Streptomycin sulfate			1	*			*
Sulfur	8	2	*	3		1	2
Tebuconazole			1		*	1	*
Thiabendazole (TBZ)	1	1	*		*	*	*
Thiophanate	10	24	7	7	4	8	11
Thiophanate-methyl	15	21	9	5	2	12	11
Thiram	*			2	*		*

See footnote(s) at end of table.

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**All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Triadimefon	7	3	2	3		6	3
Trichoderma harz.	2	*	*	1	1	4	1
Trifloxystrobin	4	1	1	3	2	2	2
Triflumizole				*	*		*
Triforine	1	1	2	1	*	1	1
Triphenyltin hydrox.	*						*
Vinclozolin	1	*	1	*	1	*	*
Xylenol		*					*
Ziram	1		1	*		*	*

See footnote(s) at end of table.

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**All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals							
Alk. dim. benzyl 50%		*		1		3	*
Alk. dim. benzyl 60%	6	1		1		3	1
Alk. dim. eth. benz.	6	1		1		3	1
Aluminum phosphide	1						*
Aminopyridine					*		*
Ammonium soap	*						*
Ancymidol	2						*
Benzyladenine	*						*
Brodifacoum	*						*
Bromadiolone	1						*
Capsaicin	*		1			*	*
Chlormequat chloride	4	*	*	1	1	5	1
Chlorophacinone	1						*
Chloropicrin	4	*	1	1		2	1
Daminozide	4	*	1	1	2	1	1
Dazomet				*	*		*
Decenol	*						*
Decenyl acetate	*						*
Dichloropropene	2					*	*
Difethialone	*	*		*			*
Dikegulac-sodium	1			1		*	*
Diphacinone	3		1	*			1
E-8-Dodecenyl acetat	*						*
Ethephon	2		*		1	1	1
Farnesol	*					2	*
Fatty acids				*			*
GABA	*						*
Garlic oil	*			*			*
Gibberellic acid	1	*		1	*		*
Gibberellins A4A7	*						*
Harpin protein	1	*		1		*	*
Hydrogen peroxide	3	3	2	4	1	3	3
Indolebutyric acid	6	*	*	1	1	1	1
Iron phosphate	5			*			1
L-Glutamic acid	*						*
Metaldehyde	16	2	*	4	*	2	3
Metam-sodium	2			*			*
Methyl bromide	4	*	1	1		2	1
Mineral oil		*					*
Monocarbamide dihyd.				*			*
NAA	*	*	*	1	1	1	1
NAD	*			1			*
Nerolidol	*					2	*
Paclobutrazol	3	*	1	1	1	4	1
Pelargonic acid	3	*	*	1	1	*	1
Propionic acid				*	*		*
Sodium chlorate	1						*
Sodium hypochlorite		1	2	*		1	1
Strychnine						*	*
Uniconazole	2	*	*		1	1	1
Z-8-Dodecanol	*						*
Z-8-Dodecen acetate	*						*
Zinc phosphide	*			*	*		*

* Less than one percent.

**Transplants for Commercial Vegetable & Strawberry Production
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
Glyphosate	17			19			7
Oryzalin			11				2
Oxadiazon				14			1
Oxyfluorfen				14			1
Pendimethalin				14			1
Simazine				10			1
Terbacil			11				2
Insecticides							
Abamectin	22	25					11
Acephate	28	37	7		3	14	17
Azadirachtin	5	9					3
Beauveria bassiana					15		3
Bifenazate	7				15		6
Bifenthrin						14	1
Bt (Bacillus thur.)	28	54				20	18
Carbaryl	5		11				3
Chlorpyrifos	5						2
Cyromazine	4	7					2
Diazinon	10		11	14		39	10
Dicofol	7						2
Endosulfan		7					1
Esfenvalerate	5	7					3
Fenbutatin-oxide	7						2
Fenpropathrin			11			7	2
Imidacloprid	17	34			4	38	15
Indoxacarb	6	8					3
Malathion	5				22	14	8
Methamidophos		8					1
Methomyl		8					1
Neem oil, clar. hyd.	7						2
Novaluron	2						1
Oxamyl	5	8					3
Permethrin	9	10				7	5
Petroleum distillate	4						1
Piperonyl butoxide	5					7	2
Potassium salts		37			26		11
Pymetrozine		7					1
Pyrethrins	15					7	5
Rotenone	3						1
Spinosad	13	27				7	8
Fungicides							
Agriphage		9				7	2
Azoxystrobin	22	34		43		7	16
Benomyl	15		11				7
Butanone	5						2
Captan	5		22				5
Chlorothalonil	32	32		14	3	20	18
Copper hydroxide	28	26	27	23		29	21
Copper resinate						7	1
Copper sulfate		7			17		5
Cyprodinil	12						4
Dimethomorph	5						2
Etridiazole		20					2
Fenhexamid	7						2
Fludioxonil	16						5
Fosetyl-al	26					14	10
Iprodione	10						3

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**Transplants for Commercial Vegetable & Strawberry Production
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Mancozeb	13	27	7			20	11
Maneb	21	15					9
Mefenoxam	11		23	43		7	11
Metalaxyl	3	8					2
Myclobutanil	10		22				6
PCNB	3						1
Piperalin	7						2
Potassium bicarbon.	5					7	2
Propiconazole	9					7	4
Pyraclostrobin	7	8					3
Streptomycin	11	18				7	7
Sulfur	8						3
Thiophanate		20					2
Thiophanate-methyl	9	16	15			7	8
Trichoderma harz.						7	1
Trifloxystrobin			7		15		4
Vinclozolin	7						2
Other Chemicals							
Chlormequat chloride	6						2
Chloropicrin	14		11	43			10
Ethephon					15		3
Harpin protein	5			43		7	6
Hydrogen peroxide	4		5			7	3
Metaldehyde	7						2
Methyl bromide	14		11	43			10
Paclobutrazol	6				13		5
Sodium chlorate	7						2

**Nursery Propagation or Lining-out Stock
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D		1		3			1
2,4-DP, Dimeth. salt				6			2
Benefin				3			1
Clethodim				1			*
Clopyralid			4				1
Dichlobenil			4				1
Diuron				1			*
Fluazifop-P-butyl			12				2
Glyphosate	19	23	13	40	3		22
Isoxaben	6	1	2	4	3	11	4
Linuron			7				1
Napropamide		2		2			1
Norflurazon		2					1
Oryzalin	7	7	11	9		10	7
Oxadiazon	3	1		2		4	2
Oxyfluorfen		26	20	12	8	4	13
Paraquat		2		2			1
Pendimethalin	4	20		9		7	8
Prodiamine		3		3	7	7	3
S-Metolachlor						3	*
Sethoxydim			3			14	1
Simazine			13	1		5	2
Sulfosate			4	1			1
Triclopyr				3			1
Trifluralin	4		4	3	2	15	3
Insecticides							
Abamectin	33	9	2	13	2	19	12
Acephate	28	21	13	21	13	15	20
Acetamiprid		4					1
Azadirachtin		5		4		7	3
Azinphos-methyl		2					*
Beauveria bassiana		1		1			1
Bendiocarb			3	2		4	1
Bifenazate		1		9		7	3
Bifenthrin	7	3	9	10	2	22	8
Bt (Bacillus thur.)	3	4	2	2		17	4
Carbaryl		11	9	1		4	4
Carbofuran				2			1
Chlorfenapyr		1				4	1
Chlorpyrifos	34	8	11	4	3	11	10
Cinnamaldehyde				2			1
Clofentezine			4	3		11	2
Cyfluthrin	9	5	10	2	13	15	7
Cyromazine			2				*
Diazinon	3	4		5		4	3
Dicofol		7					2
Dienochlor	3			2			1
Diflubenzuron	3	3	9			8	3
Dimethoate		8		1		5	2
Endosulfan		4		1		3	2
Etoxazole						4	*
Fenbutatin-oxide		2					*
Fenoxycarb			2			3	*
Fenpropathrin	3	2				7	1
Fenpyroximate						4	*
Fluvalinate	7	4	16	2	9	7	7
Hexythiazox	2	1	4			4	1
Hydramethylnon	6						1

See footnote(s) at end of table.

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**Nursery Propagation or Lining-out Stock
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Imidacloprid	14	10	12	6		11	8
Lambda-cyhalothrin				3		3	1
Lindane	11				5		2
Malathion	2	2	16	11		21	8
Methidathion	3						*
Methiocarb	3	3				4	1
Neem oil, clar. hyd.			4			6	1
Octacide-264						4	*
Oxythioquinox	3				3		1
Permethrin		1		1			1
Petroleum distillate		21	2	4		7	7
Piperonyl butoxide	3					7	1
Potassium salts		4	4	6	16		5
Pymetrozine		1	2	3	2	15	3
Pyrethrins	3					7	1
Pyridaben		4		1		3	2
Pyridine	9	3	2	3		15	4
S-Kinoprene						4	*
Spinosad	7	3		1	9	3	3
Tebufozide						4	*
Fungicides							
Azoxystrobin	10	7		4		7	5
Basic copper sulfate		2		4			2
Benomyl			7				1
Butanone	3		16		2	4	3
Captan		4	19	2		22	6
Chlorothalonil	19	23	14	14	13	19	17
Copper hydroxide		24	8	14	9	14	13
Copper oxychlo. sul.				1			*
Copper oxychloride				4			1
Copper resinate	3	2				4	1
Copper sulfate	7	8	2	2		21	5
Dimethomorph						4	*
Dodine				1			*
Etridiazole		17	30	5	2	11	10
Fenarimol			3	1			1
Fenbuconazole				1			*
Fenhexamid	3	1	2	3		7	2
Fludioxonil	3	3	2	7	4	7	4
Flutolanil		4		2			1
Fosetyl-al	14	10	5	23	9	7	13
Iprodione	9	4	2	14		7	7
Mancozeb	3	21	4	13	9	18	12
Maneb		2	4				1
Mefenoxam	9	31	9	26	13	26	21
Metalaxyl	7	5			4		2
Myclobutanil			2	4		4	2
PCNB	7	6	3	2		4	4
Phosphorous acid				2			1
Potassium bicarbon.				3			1
Propiconazole		1	6	16		13	7
Sodium Percarbonate			2	3			1
Streptomycin		1			9		1
Sulfur		1					*
Thiophanate	9	39	27	18	25	7	23
Thiophanate-methyl	7	18	24	6		26	12
Thiram	3			6			2
Triadimefon	3			2			1

See footnote(s) at end of table.

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**Nursery Propagation or Lining-out Stock
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Trichoderma harz.				3		4	1
Trifloxystrobin				1	2	4	1
Triforine				4			1
Vinclozolin			3				*
Other Chemicals							
Alk. dim. benzyl 50%		3		1		13	2
Alk. dim. benzyl 60%	3	4		3		13	3
Alk. dim. eth. benz.	3	4		3		13	3
Ancymidol	3						*
Bromadiolone	4						*
Chloromequat chloride	3					4	1
Chloropicrin			4	2			1
Daminozide	3	1			11	4	2
Dazomet					3		*
Dichloropropene	8						1
Difethialone				2			1
Diphacinone			3	2			1
Ethephon	3					4	1
Farnesol						7	1
Hydrogen peroxide	3	3	11	3		13	5
Indolebutyric acid	3	1		5	16	10	5
Iron phosphate	7			2			1
Metaldehyde	20	5		7		3	6
Metam-sodium	6						1
Methyl bromide			4	2			1
NAA				5	16	10	4
NAD	3			6			2
Nerolidol						7	1
Paclobutrazol	3		2			4	1
Pelargonic acid				3			1
Sodium hypochlorite		7					2
Uniconazole					9	4	1
Zinc phosphide				1			*

* Less than one percent.

**Broadleaf Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D				9			2
2,4-DP, Dimeth. salt	5						1
Acetamide	2						*
Atrazine				12			3
Benfin	8		6	2			3
Carfentrazone-ethyl						2	*
Clethodim				3			1
Clopyralid				2			1
Dichlobenil				9	24		6
Diquat	3						1
Diuron				1			*
Glufosinate-ammonium	4						1
Glyphosate	40	4	35	35	14	2	23
Glyphosate diam salt	2						*
Halosulfuron	1			3			1
Hexazinone				2			1
Isoxaben	10	4		5	5	21	7
MCPA						2	*
Metolachlor		1			3		1
Metribuzin	2						*
Napropamide	1			5			2
Oryzalin	19	1	31	16	13	5	13
Oxadiazon	6	3		12	3	8	6
Oxyfluorfen	8	8	8	13	6	14	9
Paraquat		2	23				2
Pendimethalin	10	10		8	3	14	8
Primisulfuron				1			*
Prodiamine	17	3	2	4		6	6
Prosulfuron				1			*
Pyridate	2						*
S-Metolachlor	7		2				2
Sethoxydim		7		2			2
Simazine	4		2	8	12		5
Sulfosulfuron				1			*
Triclopyr				9			2
Trifluralin	5	3		2	8	21	6
Vernolate	10						2
Insecticides							
Abamectin	27	7		12	1	22	12
Acephate	47	32	6	26	16	36	29
Acetamiprid	6						1
Aldicarb	2						*
Azadirachtin	8	3		9	3	8	6
Azinphos-methyl			12				1
Beauveria bassiana	2			3			1
Bendiocarb		2		11	9	4	5
Bifenazate	6	5		10	1	20	7
Bifenthrin	24	3	2	19	8	18	14
Bt (Bacillus thur.)	3	11		2		8	4
Carbaryl		12	23	2	12	12	8
Carbofuran				2			1
Chlorfenapyr	2	2		3	1	2	2
Chlorpyrifos	32	6	8	15	12	29	17
Cinnamaldehyde				1			*
Clofentezine		3		5		6	3
Clove oil				2			*
Cottonseed oil				2			*
Cyfluthrin	11	7		3		14	6

See footnote(s) at end of table.

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Broadleaf Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Cyromazine				1		4	1
Deltamethrin	12					2	3
Diazinon	9	13	11	11		6	9
Dicofol	3	2			3	4	2
Dienochlor	2			5			2
Diflubenzuron	2			2		4	1
Dimethoate		17	12	1	18	9	9
Disulfoton		6				8	2
Endosulfan		2		5		2	2
Etoxazole		2		2		6	1
Fenbutatin-oxide	3					4	1
Fenoxycarb	2			1		6	1
Fenpropathrin	2			9		11	4
Fenpyroximate				1	1	6	1
Fluvalinate	19	9		2	3	8	7
Hexythiazox	13	4		2	1	8	5
Hydramethylnon	9	2				3	2
Imidacloprid	24	5		6	12	14	11
Jojoba oil	1						*
Kaolin				1			*
Kinoprene				1			*
Lambda-cyhalothrin	2		2	7			3
Malathion	17	5	5	2	15	10	9
Methidathion						2	*
Methiocarb	5			3		4	2
Neem oil						2	*
Neem oil, clar. hyd.		3				4	1
Novaluron				5			1
Octacide-264						2	*
Permethrin	10			1			2
Petroleum distillate	23	29	9	5	3	30	16
Petroleum oil					6	2	1
Phosmet			5				*
Piperonyl butoxide	3					4	1
Potassium salts	13	10		12		8	8
Propargite				7			2
Pymetrozine	10	2		11		12	7
Pyrethrins	6					4	2
Pyridaben	2			3	1	4	2
Pyridine	10	4		10		19	7
S-Kinoprene	6			10		8	5
S-Methoprene		1					*
Silicon dioxide						2	*
Spinosad	14	2		5		6	5
Thiamethoxam		2					*

See footnote(s) at end of table.

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Broadleaf Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides							
Azoxystrobin	11	3	10	4		6	5
Basic copper sulfate				3			1
Benomyl	1				12		2
Butanone	9			2		6	3
Captan	2	7		6		4	4
Chlorothalonil	17	16	18	13		29	15
Copper hydroxide	35	14	2	13		29	16
Copper oxychlor. sul.				1			*
Copper oxychloride				3			1
Copper resinate	7	7		7		4	5
Copper sulfate	6	10		8	1	8	6
Cymoxanil	5						1
Dimethomorph		2		1		2	1
Dodine				2			1
Etridiazole	2	10		8	1	12	6
Fenarimol	4			1		2	1
Fenhexamid	2			7		2	2
Ferbam						3	*
Fludioxonil	6	4		13		4	6
Flutolanil		5		2			1
Fosetyl-al	10	12		15		8	9
Halobrom	2						*
Iprodione	14	6		2		6	5
Kresoxim-methyl			2				*
Mancozeb	9	24	18	11	3	17	13
Maneb				4			1
Mefenoxam	28	21	8	11	1	15	15
Metalaxyl	4	3		3		2	2
Myclobutanil	8	2	2	4		4	3
PCNB	4	7	2	2	1	11	4
Phosphorous acid	2			2			1
Potassium bicarbon.	2	2				2	1
Propamocarb hydroch.					12	2	2
Propiconazole	20	5	5	8		11	9
Sodium Percarbonate				2			*
Streptomycin	8	2		3	1	6	3
Sulfur	4	8		2		2	3
Thiabendazole (TBZ)	4					2	1
Thiophanate	7	35	2	5	6	6	11
Thiophanate-methyl	10	25	2	9	4	28	13
Triadimefon	3			11		4	4
Trichoderma harz.				1	1	6	1
Trifloxystrobin	2	2					1
Triforine	2		5	1		2	1
Vinclozolin	2			2			1
Ziram						2	*

See footnote(s) at end of table.

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Broadleaf Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals							
Alk. dim. benzyl 50%						2	*
Alk. dim. benzyl 60%	15					2	3
Alk. dim. eth. benz.	15					2	3
Ammonium soap	2						*
Brodifacoum	2						*
Bromadiolone	2						*
Capsaicin	2						*
Chlormequat chloride	4			5		2	2
Daminozide	2			5		2	2
Decenol	2						*
Decenyl acetate	2						*
Difethialone		1					*
Dikegulac-sodium	2			4			1
Diphacinone	5		2	2			2
Farnesol						8	1
Fatty acids				2			*
Garlic oil				2			*
Gibberellic acid	4			5			2
Hydrogen peroxide	7	3		1			2
Indolebutyric acid	16			2			4
Iron phosphate	4						1
Metaldehyde	14			6		2	4
Methyl bromide	2						*
NAA	2						*
Nerolidol						8	1
Paclobutrazol	2			4			1
Pelargonic acid	4			3			1
Sodium hypochlorite						2	*

* Less than one percent.

**Coniferous Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D			6	6	3		4
Acetamide				1			*
Acifluorfen					1		*
Ammonium benzodiox				1			*
Atrazine			1	4	2		2
Bentazon			1		1		1
Bromacil	1						*
Clethodim			2	7	2		3
Clopyralid			6	1	8		4
Clopyralid mono salt					1		*
Colleto. gloeospor.	1						*
Cyanazine				1			*
DCPA				1			*
Dichlobenil			2	7	1		3
Dithiopyr					*		*
Diuron	1			1			1
Fluazifop-P-butyl			2		3	16	2
Flumioxazin			2				*
Glufosinate-ammonium			1				*
Glyphosate	41	3	45	52	52	4	43
Glyphosate diam salt	4						*
Halosulfuron	2			1			*
Hexazinone			7	7			3
Imazamox				1			*
Isoxaben	1	2	10	14	1	9	7
MCPA						5	*
Metolachlor		2		1	5		2
Metribuzin				1			*
Napropamide	1		1	11			3
Oryzalin	23	4	17	34	9	9	18
Oxadiazon	5	4		3	5	10	3
Oxyfluorfen	35	13	13	36	24	35	26
Paraquat			6	1			1
Pendimethalin	9	5	3	4	2	15	4
Prodiamine	1	4	4	7	1	4	4
S-Metolachlor			3	5	5		4
Sethoxydim			1		2	4	1
Simazine			17	18	22		15
Sulfometuron methyl					2		1
Sulfosate				1			*
Triclopyr	2		2	11	2		4
Trifluralin	1		1	1		5	1
Insecticides							
Abamectin	11	9	1	11	7	25	8
Acephate	14	13	5	10	15	42	12
Acetamiprid				1			*
Aldicarb				1			*
Azadirachtin	4	3			1	9	1
Azinphos-methyl			1		2		1
Bendiocarb	1			2	4	4	2
Bifenazate	7	5	1	15	1	16	6
Bifenthrin	27	14	10	9	10	31	12
Bt (Bacillus thur.)	1	2	2	1		5	1
Carbaryl		4	23	1	18	16	11
Carbofuran				1			*
Chlorpyrifos	19	5	30	15	11	28	17
Cinnamaldehyde				1			*
Clofentezine		4	1	7	1		3

See footnote(s) at end of table.

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Coniferous Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Cyfluthrin	2		3	2	*	9	2
Cyromazine	2						*
Deltamethrin					4		1
Diazinon	1	9	10	2	2	14	5
Dicofol		11	8	8	5	5	7
Dienochlor		2		1			*
Diflubenzuron	4		3	1		4	1
Dimethoate		2		3	11		4
Disulfoton				1	*		*
Endosulfan			1	2	1	9	1
Esfenvalerate		2		3	2	4	2
Ethoprop				1			*
Ethyl parathion					*		*
Etoxazole						10	*
Fenbutatin-oxide		2			1	9	1
Fenitrothion				1		4	*
Fenoxycarb		2		1		5	1
Fenpropathrin		3				5	*
Fluvalinate	2			2		10	1
Hexythiazox		9	2	13	7	10	7
Imidacloprid	15		1	3	6	21	5
Lambda-cyhalothrin			1	4	*	9	2
Lindane			6		5		3
Malathion	15	6	7	3		14	5
Methidathion			1				*
Methiocarb	2			1		5	1
Methyl parathion				1			*
Neem oil, clar. hyd.						4	*
Oxydemeton-methyl				1	11		4
Oxythioquinox				1			*
Permethrin	2			1	2	16	2
Petroleum distillate	6			9	5	19	5
Petroleum oil					3		1
Phosmet	2		6				1
Piperonyl butoxide	8				1	5	1
Potassium salts	6			4	5	10	3
Propargite				1			*
Pymetrozine	3			1		19	1
Pyrethrins	8		1		1	5	1
Pyridaben			2			10	1
Pyridine				2		10	1
Resmethrin					1		*
Rotenone			1				*
S-Kinoprene	2			2	1	5	1
Silicon dioxide						5	*
Spinosad	2		1	1	1	5	1
Tebufozide						5	*

See footnote(s) at end of table.

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Coniferous Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides							
Azoxystrobin	8	2		2	*	5	2
Bacillus subtilis	3						*
Basic copper sulfate				3			1
Benomyl				1	*		*
Butanone	1			5		10	2
Captan	6	2	3	1	1		2
Chlorothalonil	13	7	26	22	33	41	24
Copper hydroxide	25	23	1	8	4	25	9
Copper oxychlor. sul.				2			*
Copper oxychloride				3			1
Copper resinate	4	7	1		*		2
Copper sulfate	5	6		1		5	1
Dimethomorph						5	*
Dodine				3			1
Etridiazole		6	7	9	4		6
Fenarimol						6	*
Fenhexamid	2			1		4	1
Fludioxonil	2	3		3			1
Fosetyl-al	19	10	1	4	1	21	5
Iprodione	10	5	1	2	*		2
Kresoxim-methyl	2					4	*
Mancozeb	14	22	19	7	5	15	11
Maneb		2		1			*
Mefenoxam	22	5	1	9		25	6
Metalaxyl	6	11	1	6			3
Myclobutanil	8		6	1		9	2
Oxycarboxin				1			*
Oxytetracycline				1			*
PCNB	3				*	9	1
Phosphorous acid				2			1
Potassium bicarbon.				1	1		1
Propiconazole	5	9	1	3		19	3
Pyraclostrobin		3					*
Sodium Percarbonate				2			*
Streptomycin	4			2		6	1
Sulfur	4						*
Tebuconazole			1				*
Thiabendazole (TBZ)	1				1	5	*
Thiophanate	10	13	9	8	5	9	8
Thiophanate-methyl	12	22	9	10	1	40	9
Thiram				1			*
Triadimefon	10	2		1		30	2
Trichoderma harz.	2			1			*
Trifloxystrobin	3		2	4			2
Triforine					1	5	*
Vinclozolin						5	*

See footnote(s) at end of table.

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Coniferous Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals							
Alk. dim. benzyl 50%						4	*
Alk. dim. benzyl 60%	4			1		4	1
Alk. dim. eth. benz.	4			1		4	1
Ancymidol	6						1
Capsaicin	2		1				1
Chlormequat chloride	4						*
Chloropicrin		2				20	1
Daminozide	2						*
Dichloropropene						4	*
Diphacinone	1						*
Ethephon	4						*
Farnesol						15	*
Hydrogen peroxide	1	4		4			2
Indolebutyric acid	2						*
Iron phosphate	2						*
Metaldehyde	11			2			1
Methyl bromide		2				20	1
Monocarbamide dihyd.				1			*
Nerolidol						15	*
Paclobutrazol	2						*
Pelargonic acid	1			1			*
Propionic acid				1			*
Sodium hypochlorite		8	6				2
Uniconazole	6	3					1

* Less than one percent.

Deciduous Shade Trees
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D				8			1
2,4-DP, Dimeth. salt	1						*
Atrazine			1				*
Benefin				5			1
Bentazon			5				1
Clethodim			1	10			2
Clopyralid					4		*
Clopyralid mono salt	7						1
Dicamba				1			*
Dicamba, Dimet. salt				2			*
Dichlobenil			6	6			3
Diflufenzopyr-sodium				2			*
Diquat	3						*
Diuron				1			*
Fluazifop-P-butyl				1			*
Fosamine						2	*
Glufosinate-ammonium		1			3		*
Glyphosate	30	16	50	37	69	29	37
Halosulfuron				2			*
Isoxaben	8	1	3	16	8	3	6
Linuron				2			*
Metolachlor		1		1	14		2
Napropamide	2			5			1
Oryzalin	14	2	7	34	19	3	13
Oxadiazon	3	13		8		8	6
Oxyfluorfen	22	2	3	24	20	9	12
Paraquat			3				1
Pendimethalin	15	5	1	6	5	7	6
Prodiamine	14	4	1	8	10	6	6
Pronamide				1			*
Quinclorac				1			*
Quizalofop-ethyl			1				*
S-Metolachlor			1				*
Simazine			6	5	16		4
Triclopyr				9			2
Trifluralin	5			2	1	1	1
Vernolate	11						1
Insecticides							
Abamectin	10	2		12	1	3	5
Acephate	33	26	9	23	19	26	21
Azadirachtin	3			1			1
Azinphos-methyl				1			*
Bendiocarb		1		3		1	1
Bifenazate	2			7	1	2	2
Bifenthrin	24	7	3	8	9	8	9
Bt (Bacillus thur.)	2	1	1			3	1
Carbaryl		20	30	2	6	10	14
Chlorpyrifos	12	12	11	24	16	21	15
Cinnamaldehyde	3						*
Cyfluthrin	5	1		1	3	1	2
Cyromazine				1			*
Deltamethrin	10		1				2
Diazinon	5	13	9	6		14	8
Dicofol		6	1				2
Diflubenzuron	2	1	1				1
Dimethoate		6	1	2			2
Disulfoton		1	5			1	2
Endosulfan	1			7			2

See footnote(s) at end of table.

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Deciduous Shade Trees
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Esfenvalerate				10			2
Ethion		2					*
Ethoprop				2			*
Fenbutatin-oxide						1	*
Fenoxycarb						3	*
Fenpropathrin	4						*
Fenpyroximate						2	*
Fipronil						2	*
Fluvalinate	12					1	2
Hexythiazox	3	1		5	1		2
Hydramethylnon	1					3	1
Imidacloprid	20	6	3		3	8	6
Kinoprene	2						*
Lambda-cyhalothrin	3		1	4		1	2
Lindane						1	*
Malathion	1	20	2	1		7	6
Methidathion		1					*
Methiocarb	2			2			1
Methomyl	1			1			*
Methyl parathion				1			*
Neem oil, clar. hyd.		1					*
Oxydemeton-methyl				8			1
Oxythioquinox				1			*
Permethrin	5	2		1	19		3
Petroleum distillate	10	11	6	11	14	4	9
Petroleum oil			2		1	2	1
Phosmet			5				1
Piperonyl butoxide	2						*
Potassium salts	2	7		5			3
Propargite	1						*
Pymetrozine	10		4				2
Pyrethrins	2						*
Pyridaben		1					*
Pyridine	5	2		2			1
S-Kinoprene						1	*
Spinosad	3	2	1	2		1	2
Tebufenozide				1			*
Fungicides							
Azoxystrobin	3	1		3			1
Bacillus subtilis	2						*
Basic copper sulfate	2			11			2
Benomyl	1			2			1
Butanone		1	1	4		1	1
Calcium polysulfide				1			*
Captan		1	3	1			1
Chlorothalonil	12	8	9	11	21	10	11
Copper hydroxide	13	16	*	32		3	12
Copper oxychloride	2			11			2
Copper resinate	2	1					*
Copper sulfate	9			6			2
Dodine			1	5			1
Etridiazole				3			1
Fenarimol	4			2		2	1
Fenhexamid	3			3		1	1
Fludioxonil	3	4		3		1	2
Flutolanil				2			*
Fosetyl-al	25	4		8	1	1	6
Iprodione	9			4			2

See footnote(s) at end of table.

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Deciduous Shade Trees
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Kresoxim-methyl			1				*
Mancozeb	16	7	7	7		1	7
Maneb				1			*
Mefenoxam	17	6	*	6		2	5
Metalaxyl	4			1		1	1
Myclobutanil	6	1	2	13	1	3	4
Oxytetracycline				1			*
PCNB			*	2			*
Phosphorous acid				8			1
Potassium bicarbon.				3		3	1
Propiconazole	7	14	3	16		3	8
Streptomycin	5	1	5	9		1	4
Sulfur	1			2		1	1
Tebuconazole			1				*
Thiabendazole (TBZ)		1					*
Thiophanate	5	18	3	7		11	8
Thiophanate-methyl	11	10	1	6	1	6	6
Triadimefon	10	3	1	3		1	3
Trifloxystrobin	4			3			1
Triflumizole				1			*
Triforine						1	*
Vinclozolin		1					*
Other Chemicals							
Alk. dim. benzyl 60%	1						*
Alk. dim. eth. benz.	1						*
Ancymidol	2						*
Brodifacoum	2						*
Capsaicin	2						*
Chlormequat chloride	2						*
Chloropicrin				2		5	1
Daminozide	7		*				1
Diphacinone	2			2			1
Farnesol	1						*
Hydrogen peroxide	2	4		3			2
Indolebutyric acid	2						*
Iron phosphate	3						*
Metaldehyde	8			2			2
Methyl bromide	2		1	2		5	1
NAA	2						*
Nerolidol	1						*
Paclobutrazol	3						*
Pelargonic acid	4			2			1
Sodium hypochlorite			1				*
Zinc phosphide					1		*

* Less than one percent.

Deciduous Flowering Trees
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D				8			3
2,4-D, Dimeth. salt						3	*
Acetamide				1			*
Clethodim				5			2
Clopyralid				1			*
Dicamba				1			*
Dicamba, Dimet. salt						3	*
Dichlobenil			4	7			3
Diquat	3			1			1
Diuron				1			*
Fluazifop-P-butyl				1			*
Flumetsulam		8					2
Glyphosate	17		10	22	31	3	14
Halosulfuron	3			2			1
Imazaquin, mon. salt						3	*
Imazethapyr				2			*
Isoxaben	3	2	8	5	4	3	4
MCPP, DMA salt						3	*
Metolachlor		8		1			2
Metribuzin				1			*
Napropamide				2			1
Norflurazon				1			*
Oryzalin	14		13	16			8
Oxadiazon				3		3	1
Oxyfluorfen	17	4	6	15	20	3	11
Paraquat			6	1			1
Pendimethalin	4	4	4	6	2	3	4
Prodiamine	3	2		1	9	3	3
Sethoxydim			4	1			1
Simazine				4	4		2
Triclopyr				7			2
Trifluralin				3		3	1
Vernolate	7						1
Insecticides							
Abamectin	26	3		4		9	6
Acephate	56	4	14	15	13	39	19
Azadirachtin						3	*
Azinphos-methyl				3			1
Bendiocarb				2		3	1
Bifenazate	4			10	11		5
Bifenthrin	20		15	8	11	36	12
Bt (Bacillus thur.)		4					1
Canola oil	10						1
Carbaryl		8	39	8	28	34	17
Chlorpyrifos	12	3	18	7	2	18	9
Cinnamaldehyde						3	*
Clofentezine				1			*
Cyfluthrin	7	2	2		11	6	3
Deltamethrin						3	*
Diazinon	29	2	8	8		26	10
Dicofol	3		4		11		2
Dienochlor					11		1
Diflubenzuron	4					3	1
Dimethoate		2	4	1			1
Disulfoton		2				3	1
Endosulfan				5		3	2
Esfenvalerate	7			14			5
Fenbutatin-oxide						3	*

See footnote(s) at end of table.

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Deciduous Flowering Trees
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Fenoxycarb						3	*
Fluvalinate	4	3	2		11	3	3
Hexythiazox	3		2				1
Hydramethylnon	3						*
Imidacloprid	17	10				6	5
Lambda-cyhalothrin				8			2
Lindane					18		2
Malathion	7	28	5			6	7
Methiocarb	4			2			1
Methomyl	3						*
Neem oil		8					2
Octacide-264		3				3	1
Oxydemeton-methyl				1			*
Oxythioquinox					11		1
Permethrin	7	2		1			2
Petroleum distillate	14	2		21	4	6	10
Petroleum oil					6		1
Phosmet			4				1
Piperonyl butoxide		3				6	1
Potassium salts	4			5		3	2
Propargite	3						*
Pymetrozine				2		3	1
Pyrethrins	10	3				3	2
Pyridine		8				6	2
Spinosad	30		2	3	11	3	6
Tebufenozide				1			*
Fungicides							
Azoxystrobin			2	9			3
Basic copper sulfate				9			3
Benomyl	3	8					2
Butanone				2		3	1
Calcium polysulfide				1			*
Captan	10		4	5			3
Chlorothalonil	9	20	19	14	11	26	16
Copper amm. complex	8						1
Copper hydroxide	44	15	2	13	11	23	16
Copper oxychlo. sul.				1			*
Copper oxychloride				9			3
Copper sulfate				1	2	3	1
Dodine			4	2			1
Etridiazole		8		2		3	3
Fenarimol			5	1		3	1
Fenhexamid	3			2			1
Fludioxonil	3			2		3	1
Flutolanil				2			1
Fosetyl-al	12	2		8	11		6
Iprodione	15	3	4	1		3	3
Mancozeb	4	8	29	12	11	3	12
Maneb	3	8		2			3
Mefenoxam	16	11			13	6	6
Metalaxyl				3		11	2
Myclobutanil	7		10	12	4	9	7
PCNB				2			1
Potassium bicarbon.				2			1
Propiconazole	6	3	10	12	5	9	8
Streptomycin	4			1	11		2
Sulfur	7			9			4
Thiophanate	12	22	21	7	13	6	13

See footnote(s) at end of table.

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Deciduous Flowering Trees
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Thiophanate-methyl	3	17	12	3	2	12	8
Triadimefon	13	16		2		3	6
Trichoderma harz.						11	1
Trifloxystrobin			2	2			1
Triforine						3	*
Vinclozolin			4				1
Other Chemicals							
Alk. dim. benzyl 50%						3	*
Alk. dim. benzyl 60%		2				3	1
Alk. dim. eth. benz.		2				3	1
Diphacinone	4			2			1
Hydrogen peroxide				4	11		2
Iron phosphate	3						*
Metaldehyde	13			2			2
Mineral oil		3					1
Paclobutrazol				4			1
Pelargonic acid	10			3		3	2
Sodium hypochlorite						3	*
Zinc phosphide					2		*

* Less than one percent.

Deciduous Shrubs
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D				5			1
2,4-DP, Dimeth. salt	5						1
Ammonium benzadox						2	*
Benfen			3	3		2	1
Clethodim			2	6		1	2
Clopyralid			3	3	12		2
Clopyralid mono salt	8						1
Copper ethanolamine					12		1
Dichlobenil			4		31		3
Diquat	3						1
Fluazifop-P-butyl			2				*
Flumioxazin						2	*
Fluroxypyr			3				1
Glufosinate-ammonium			2	3			1
Glyphosate	31	17	22	27	51	1	23
Isoxaben	17	8	10	6	12	5	9
Metolachlor			3		5		1
Napropamide	1		1	6			1
Oryzalin	14	3	18	16	25	3	11
Oxadiazon	3		1	6	16	3	4
Oxyfluorfen	26	9	13	15	16	12	15
Paraquat			4				1
Pendimethalin	13	13	4	12	7	12	11
Prodiamine	13	13	2	4	16	7	9
Pronamide			1				*
Propazine		2					1
S-Metolachlor	8						1
Simazine			4	5	21		3
Triasulfuron	2						*
Triclopyr				5			1
Trifluralin	3	3	2	3	12	5	4
Vernolate	15					2	3
Insecticides							
Abamectin	21	16	6	7	6	18	13
Acephate	45	49	25	32	21	53	40
Acetamiprid	2						*
Aldicarb	2						*
Azadirachtin	2	5			2	16	4
Beauveria bassiana				5			1
Bendiocarb	1	3		8		3	3
Bifenazate	6	7		2	18	15	7
Bifenthrin	21	14	15	18	21	15	17
Bt (Bacillus thur.)	3	11				7	5
Carbaryl	3	13	28	2	4	13	11
Carbofuran				2		2	1
Chlorpyrifos	21	8	14	23	2	9	13
Cinnamaldehyde				2	2	2	1
Clofentezine					2	9	1
Cyfluthrin	12	6	3	2	12	7	7
Cyromazine						3	*
Deltamethrin	2						*
Diazinon	9	5	14	4	5	12	8
Dicofol			1		12	2	1
Dienochlor	1				12		1
Diflubenzuron						5	1
Dimethoate		30	3		11	3	10
Disulfoton		4			9	7	3
Endosulfan		1	2	1		15	3

See footnote(s) at end of table.

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Deciduous Shrubs
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Esfenvalerate				3			1
Etoxazole			1			17	3
Fenamiphos						1	*
Fenbutatin-oxide		1	17			2	3
Fenoxycarb	8	2	2			3	3
Fenpropathrin		1				9	2
Fenpyroximate						2	*
Fluvalinate	6	6	7		12	7	6
Hexythiazox	3	1	2			3	2
Imidacloprid	15	9	2	5	2	21	9
Joboba oil						2	*
Kaolin		2					1
Kinoprene						2	*
Lambda-cyhalothrin	9		1	30		1	7
Malathion	28	15		2		17	12
Methidathion		1	1				1
Methiocarb	6	5	3	3			3
Methomyl	2						*
Methoxychlor	8						1
Neem oil				2			*
Neem oil, clar. hyd.	5			5		6	3
Novaluron						10	1
Oxythioquinox		1			12	2	2
Permethrin	7	1		2	2	4	3
Petroleum distillate	17	11	7	29	4	8	13
Petroleum oil			1		2		*
Piperonyl butoxide	7					2	1
Potassium salts	2	6	1	9		5	4
Propargite	2						*
Pymetrozine	2	1	5	9	4	12	5
Pyrethrins	5					2	1
Pyridaben	2	1				5	1
Pyridine	4	5	1	2	2	7	4
Resmethrin		3		2			1
S-Kinoprene				7		3	2
Silicon dioxide						2	*
Spinosad	14	5			12	10	6
Tebufenozide						2	*
Thiamethoxam				3			*
Fungicides							
Azoxystrobin	7	7	1	11	2	7	6
Basic copper sulfate				7			1
Benomyl	2						*
Borax Decahydrate		2					1
Butanone			1	2	2	3	1
Captan	8	1		2		2	2
Chlorothalonil	18	21	7	12	16	20	16
Copper (metallic)					2		*
Copper amm. complex				2			*
Copper hydroxide	30	30	2	18	14	17	20
Copper oxychlo. sul.				2			*
Copper oxychloride				7			1
Copper resinate	1	3		5		5	3
Copper sulfate		14		4	4	14	7
Dimethomorph				2		4	1
Dodine				7			1
Etridiazole		5		9		3	3
Fenarimol						4	1

See footnote(s) at end of table.

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Deciduous Shrubs
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Fenhexamid	2		1	2		1	1
Fludioxonil	6	2	1	5		5	3
Flutolanil		2	1	3			1
Fosetyl-al	22	12	7	8	12	20	13
Halobrom	2						*
Iprodione	12	7	1	11		10	7
Kresoxim-methyl			1				*
Mancozeb	8	23	15	10	16	11	15
Maneb				3		1	1
Mefenoxam	21	19	7	6	12	12	14
Metalaxyl	7	9		2		2	4
Myclobutanil	9		5		2	5	3
Oxycarboxin				2			*
PCNB	1	5	4			5	3
Phosphorous acid	2			2			1
Piperalin						1	*
Potassium bicarbon.				5	2	2	1
Propiconazole	17	15	9	22		26	16
Streptomycin	9			2	12	2	3
Sulfur	2		1				1
Tebuconazole						2	*
Thiabendazole (TBZ)	2	1				2	1
Thiophanate	8	19	9	8	14	5	11
Thiophanate-methyl	11	28	10	13	2	10	15
Triadimefon	7	4		5		12	5
Trichoderma harz.			3	3		3	1
Trifloxystrobin		1	2	2		5	2
Triforine		5	17				4
Vinclozolin	2					2	1
Other Chemicals							
Alk. dim. benzyl 60%	4			2			1
Alk. dim. eth. benz.	4			2			1
Ammonium soap	2						*
Benzyladenine	2						*
Chlormequat chloride			1	2		14	2
Daminozide			4			5	1
Dazomet				2			*
Difethialone	2			3			1
Dikegulac-sodium						2	*
Diphacinone	3		2	3			1
Ethephon			3				*
Farnesol						7	1
Garlic oil	2						*
Gibberellic acid				2			*
Gibberellins A4A7	2						*
Hydrogen peroxide	3	6		8	12	1	5
Indolebutyric acid	7		2				1
Iron phosphate	2			3			1
Metaldehyde	18	5		16		5	8
Methyl bromide	2						*
NAA			2				*
Nerolidol						7	1
Pacllobutrazol	2		2	2		3	1
Pelargonic acid	8	1	1	3	5		3
Sodium hypochlorite				2			*
Uniconazole	2		1			3	1

* Less than one percent.

Fruit and Nut Plants
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D, Dimeth. salt				4			1
Clethodim						11	1
Clopyralid				4			1
Copper ethanolamine					29		3
Dichlobenil			58	4			7
Diuron	3						1
Glyphosate	41	42	6	15			26
Isoxaben	11		6	4		13	5
Linuron				4			1
MCPA				4			1
Metolachlor				4			1
Napropamide				4			1
Oryzalin	11			7		25	6
Oxyfluorfen	17			4	5	13	7
Paraquat	8			7		23	5
Pendimethalin					5	13	1
Prodiamine	5					24	3
Sethoxydim			6				1
Simazine				7			1
Trifluralin	8		6			12	4
Insecticides							
Abamectin	22	18				52	14
Acephate	20	6		4	34	40	14
Acetamiprid		39					9
Azadirachtin						13	1
Azinphos-methyl	3		21		12		4
Bifenazate	8		21		29	13	9
Bifenthrin	3	3	6	7	29	25	8
Bt (Bacillus thur.)	8					13	3
Carbaryl	3	17	30		47	15	14
Chlorpyrifos	9	66	6	7	12	46	23
Clofentezine	3		21				3
Cyfluthrin	6		6		29		5
Deltamethrin	3						1
Diazinon	21	3		7			9
Dicofol	3				29		4
Dienochlor					29		3
Diflubenzuron	3	5				13	3
Endosulfan			21	13	12	11	7
Esfenvalerate	11		21	25	19		13
Ethoprop				4			1
Fenbutatin-oxide	5	5		5			4
Fenoxycarb		7	6			11	3
Fenpropathrin	11		21				6
Fluvalinate					29		3
Formetanate hydro.	3						1
Hexythiazox	5						2
Imidacloprid	11	18	21		19	11	12
Kaolin	3						1
Lambda-cyhalothrin	3			4	12	12	3
Malathion	27	3			5	27	11
Methidathion	6						2
Methiocarb	4						1
Methomyl	3		21				3
Neem oil, clar. hyd.		3				13	1
Oxythioquinox					29		3
Permethrin	3		21	5	5		5
Petroleum distillate	22	78		7		13	26

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Fruit and Nut Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Phosmet	8		21		66		12
Piperonyl butoxide						13	1
Potassium salts	6	3		17			6
Propargite	3						1
Pyrethrins						13	1
Pyridaben	5		21				4
Silicon dioxide						13	1
Spinosad	8	6		4	29	13	8
Fungicides							
Azoxystrobin	8	6		4			5
Bacillus subtilis			21				2
Basic copper sulfate	3						1
Benomyl					47		5
Calcium polysulfide				9			2
Captan		3	21	12	59		12
Chlorothalonil	5		21	43	34		16
Copper amm. complex				9			2
Copper chloride hyd.				3			1
Copper hydroxide	23	21	21	17	29	27	22
Copper oxide	3						1
Copper resinate			21				2
Copper sulfate	4			21			5
Cyprodinil	3						1
Dodine			21	16	12		7
Fenarimol	3		21	12		15	6
Fenbuconazole					12		1
Flutolanil				4			1
Fosetyl-al	5	20		7	29		11
Iprodione	5		9	4			3
Mancozeb	3		21	16	41	13	11
Maneb	5			7			3
Mefenoxam	8	6			29		7
Myclobutanil	17		21	4	12		9
Oxytetracycline			21				2
Phosphorous acid	3						1
Potassium bicarbon.	3						1
Propiconazole	8			7	7	11	5
Pseudomonas fluores.	5						2
Pyraclostrobin	3			4			2
Streptomycin	11		27		29		9
Streptomycin sulfate			21	4			3
Sulfur	11			8			5
Tebuconazole			21		7		3
Thiophanate	3			9	29		6
Thiophanate-methyl	5		21	4	24	29	9
Thiram				8	12		3
Triadimefon						15	1
Trifloxystrobin	3			17	12		6
Triflumizole					7		1
Triforine	6						2
Ziram	5		21	4			5

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Fruit and Nut Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals							
Aluminum phosphide	3						1
Capsaicin			21				2
Chlorophacinone	3						1
Chloropicrin	15						5
Dazomet				3			1
Dichloropropene	9						3
Dikegulac-sodium	3						1
Diphacinone	3		6				1
E-8-Dodecenyl acetat	3						1
GABA	3						1
Harpin protein		6					1
Hydrogen peroxide				9	29		5
Iron phosphate	4						1
L-Glutamic acid	3						1
Metaldehyde	9						3
Metam-sodium	9			3			3
Methyl bromide	15						5
NAD				3			1
Pelargonic acid			6				1
Z-8-Dodecanol	3						1
Z-8-Dodecen acetate	3						1

Christmas Trees
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D			3	8	1		3
2,4-D, Dimeth. salt						3	*
2,4-DP, Dimeth. salt				1	3		1
Acetamide				10			2
Acetic acid			2	3	1		2
Atrazine	9		12	37	9	3	16
Bentazon				1			*
Clethodim			*	6			2
Clopyralid			6	6	5		5
Clopyralid mono salt				1			*
Dicamba					1		*
Diuron				1			*
Fluazifop-P-butyl			5		4		3
Flumioxazin			2		1		1
Fomesafen					1		*
Glufosinate-ammonium				2			1
Glyphosate	53	9	40	68	59	37	53
Hexazinone			7	26			9
Isooctyl propionate					1		*
Metolachlor			*		*		*
Metribuzin				10			2
Metsulfuron-methyl					*		*
Napropamide			1	1			1
Oryzalin	10			1	8	10	4
Oxyfluorfen	14		3	20	26		15
Pendimethalin	13		5	1	13		7
Prodiamine					1		*
Prometon				2			1
Pronamide	6						*
S-Metolachlor				1	4		1
Sethoxydim		6			2	3	1
Simazine	19	6	35	3	56	7	32
Sulfometuron methyl		6			1		1
Triclopyr			5	11	6		6
Trifluralin			4				1
Insecticides							
Abamectin				1			*
Acephate		9	3	5	3	47	5
Azadirachtin				1	1		*
Azinphos-methyl			1		1		*
Bifenazate					2		1
Bifenthrin			5	7		14	4
Bt (Bacillus thur.)					1	3	*
Carbaryl			46		33	3	25
Chlorpyrifos	4	15	52	12	33	39	32
Cyfluthrin			26			7	8
Diazinon				5	6	3	3
Dicofol	4		1		1		1
Diflubenzuron		4	12		1	10	5
Dimethoate	13		2	10	7	3	6
Disulfoton		39			1		2
Endosulfan			1	19	*		5
Esfenvalerate				5		7	1
Ethyl parathion				1			*
Fenbutatin-oxide				5			1
Fenvalerate						3	*
Fluralinate	24	4					1
Formetanate hydro.			1				*

See footnote(s) at end of table.

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Christmas Trees
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Hexythiazox	5		8	3	8		6
Imidacloprid			1	1			*
Lindane			2		3		2
Malathion	13	5	10	5	7	7	7
Methoxychlor				1			*
Neem oil					1		*
Neem oil, clar. hyd.				1			*
Oxydemeton-methyl			1	1	11		4
Oxythioquinox				1			*
Permethrin			1		2	7	1
Petroleum distillate	5	6	4	1	7		4
Petroleum oil					1		*
Phosmet			3		1		1
Potassium salts				1	*		*
Propargite				3			1
Tebufenozide						37	1
Tralomethrin					1		*
Triazamate				4			1
Zeta-cypermethrin						3	*
Fungicides							
Azoxystrobin		4		1	4		2
Captan				1	1		1
Chlorothalonil		22	40	36	68	30	46
Copper hydroxide		6		1		14	1
Copper resinate			*				*
Etridiazole					1		*
Fenhexamid						3	*
Iprodione				1			*
Mancozeb		11	6	2		7	3
Mefenoxam				1			*
Metalaxyl		6					*
PCNB					1		*
Propiconazole		6		1		3	1
Sulfur				3			1
Thiophanate		10	2	1		17	2
Thiophanate-methyl		22				7	1
Thiram				1			*
Triadimefon			4	1			1
Other Chemicals							
Alk. dim. benzyl 50%				2			*
Alk. dim. benzyl 60%				2			*
Alk. dim. eth. benz.				2			*
Aluminum phosphide	5						*
Capsaicin						3	*
Pelargonic acid					2		1
Propionic acid					1		*
Strychnine						3	*

* Less than one percent.

Palms
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	OR	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides					
Atrazine		3			2
Diquat	3				1
Fluazifop-P-butyl	4				1
Glyphosate	57	22		23	28
Halosulfuron	5				1
Isoxaben	25	3		12	8
Oryzalin			100		1
Oxadiazon	4	3		6	4
Oxyfluorfen	3	1	100	5	3
Pendimethalin	7	1		5	3
Proflamifen	21	10		6	11
Propanil	4				1
Trifluralin	6			12	2
Vernolate	18				3
Insecticides					
Abamectin	18	5			7
Acephate	34	22		5	23
Acetamiprid	3				1
Amitraz	4				1
Azadirachtin	7				1
Beauveria bassiana	3				1
Bifenazate	7				1
Bifenthrin	38	8			12
Bt (Bacillus thur.)	3	2			2
Carbaryl		15			11
Chlorfenapyr	3				1
Chlorpyrifos	25	7		29	12
Cinnamaldehyde	3				1
Clofentezine		1			1
Cyfluthrin	6	4			4
Deltamethrin	11				2
Diazinon	7	4		22	6
Dimethoate		21			16
Disulfoton				6	1
Endosulfan		1			1
Ethion		2			2
Fenpropathrin	7				1
Fluvalinate	18	4			6
Hexythiazox	3				1
Hydramethylnon	18	3			5
Imidacloprid	7	5			5
Lambda-cyhalothrin	3				1
Malathion	19	9			10
Methodathion		2			1
Methiocarb	7				1
Neem oil, clar. hyd.	7				1
Permethrin	6				1
Petroleum distillate	7	22		5	18
Potassium salts	14	1			3
Pymetrozine	3				1
Pyridine	21	2			5
S-Kinoprene	4				1
S-Methoprene	4				1
Spinosad	20				4

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Palms
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	OR	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides					
Azoxystrobin	11	7			7
Butanone	4				1
Captan		2			1
Chlorothalonil	10	13		6	12
Copper hydroxide	20	13			13
Copper resinate	3	4			4
Copper sulfate	6	2			3
Etridiazole		10		5	8
Fenarimol	3				1
Fenhexamid	3				1
Fludioxonil	7				1
Flutolanil	4				1
Fosetyl-al	25	5		10	9
Iprodione	14	2		6	4
Mancozeb	12	17			15
Maneb		3			2
Mefenoxam	31	7		6	12
Metalaxyl		2			1
Myclobutanil	11				2
PCNB	3				1
Propiconazole	23	1			5
Sulfur		3			2
Thiophanate	15	11			11
Thiophanate-methyl	10	12		16	12
Trifloxystrobin	7				1
Other Chemicals					
Chlormequat chloride	7				1
Daminozide	3				1
Diphacinone	14				3
Farnesol	3				1
Indolebutyric acid	4				1
Iron phosphate	7				1
Metaldehyde	14				2
NAA	4				1
Nerolidol	3				1
Paclobutrazol	3				1
Pelargonic acid	3				1

Ornamental Grasses
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D				11			3
2,4-DP, Dimeth. salt				9			3
Acetochlor						5	1
Benefin						5	1
Carfentrazone-ethyl						5	1
Glyphosate	41	4		20			11
Isoxaben	11	8		16		5	10
Napropamide	16		38				2
Oryzalin	41					10	5
Oxadiazon	10		38			10	3
Oxyfluorfen	52	2				5	6
Pendimethalin	11	4				5	3
Prodiamine	11					11	2
Triclopyr				11			3
Trifluralin		8		16		5	9
Insecticides							
Abamectin	11	1			84	5	6
Acephate	11	40	38	4	49	14	24
Azadirachtin					84		4
Beauveria bassiana					33		1
Bifenazate		2				5	1
Bifenthrin	11	4	38	16	33		9
Bt (Bacillus thur.)		9					4
Carbaryl		4					2
Chlorpyrifos	11			8	16	15	6
Cinnamaldehyde						5	1
Cyfluthrin	11	2			16		3
Cyromazine					33		1
Deltamethrin	21						2
Diazinon					33	5	2
Dicofol				16			5
Diflubenzuron	10						1
Dimethoate		5					2
Disulfoton						5	1
Endosulfan				4	16		2
Fenamiphos			38				1
Fenpropathrin					16		1
Fluvalinate	11	3			33	10	5
Hydramethylnon		2					1
Imidacloprid	21		69				3
Malathion			38	13		5	5
Methiocarb	11					5	2
Permethrin	10						1
Petroleum distillate		10				10	6
Piperonyl butoxide						5	1
Potassium salts				11	33		5
Pyridine	11				33		2
S-Kinoprene					16		1
Spinosad	10		31	16	16		7

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Ornamental Grasses
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides							
Azoxystrobin	11	1					2
Butanone					33		1
Chlorothalonil	23	26		12		5	17
Copper hydroxide	23	5				11	6
Copper resinate		2					1
Copper sulfate						5	1
Etridiazole		8	38	3	16	10	7
Fenarimol			38				1
Fenhexamid					33		1
Fludioxonil	11	3			33	5	4
Fosetyl-al	12	1				5	2
Iprodione	12	2			33		3
Kresoxim-methyl			31				1
Mancozeb	10	8	38		33	10	8
Mefenoxam	33	7	38		33	16	10
Metalaxyl	10	8					4
Myclobutanil	10				33		2
PCNB		8				5	4
Propiconazole						16	2
Streptomycin	10						1
Thiophanate	32	8	38			10	8
Thiophanate-methyl		21	38	3	16	21	14
Other Chemicals							
Brodifacoum	11						1
Chlormequat chloride					33		1
Daminozide					49		2
Diphacinone			31				1
Ethephon					49		2
Hydrogen peroxide		4	38			5	3
Iron phosphate	11						1
Metaldehyde	11		31				1
Methyl bromide	11						1
Paclobutrazol						42	5
Uniconazole					16	5	1

**Other Woody Ornamentals and Vines
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D				6			1
Acetamide	1						*
Atrazine				18			2
Benefin						3	*
DCPA					5		*
Dichlobenil				18			2
Diquat	6						1
Fluazifop-P-butyl		3					2
Glyphosate	36	17	9	18	4	3	18
Halosulfuron	3						*
Isoxaben	13	5	3		9	18	7
Lactofen	1						*
Metolachlor		*					*
Metribuzin	1						*
Napropamide	4		3				1
Oryzalin	6	4	35	6	9	7	7
Oxadiazon	7	7		18		13	7
Oxyfluorfen	10	12	38		9	10	11
Pendimethalin	16	14	3			7	11
Prodiamine	10	6				14	6
S-Metolachlor	3						*
Sethoxydim	1	2					1
Simazine	3	2			4		2
Triclopyr				6			1
Trifluralin	7	3				14	4
Vernolate	5						1
Insecticides							
Abamectin	14	26			5	24	18
Acephate	45	44	8	18	28	37	39
Acetamiprid	1	2					1
Azadirachtin	9	3			8		4
Beauveria bassiana	1	1			5		1
Bendiocarb	1	1			5		1
Bifenazate	6	8		3	13	10	7
Bifenthrin	25	16	8		21	10	16
Bt (Bacillus thur.)	9	13					8
Carbaryl		25	16				14
Chlorfenapyr	4	1					1
Chlorpyrifos	11	5		21	5	11	8
Cinnamaldehyde	5	1				3	1
Clofentezine		5				3	3
Cyfluthrin	8	7			17	3	7
Cyromazine					5		*
Deltamethrin	19						3
Diazinon	16	12	8		5	21	12
Dicofol		8	9		14		6
Dienochlor		3			10		2
Diflubenzuron	2	1			5	3	2
Dimethoate	1	23					13
Disulfoton		1			5		1
Endosulfan	1	9		4	5	3	6
Ethion		2					1
Etoxazole		4				3	2
Fenbutatin-oxide	4	3					2
Fenoxycarb		2			5	4	2
Fenpropathrin	1	2				14	2
Fluvalinate	10	11			15		9
Hexythiazox	5	9			3	3	6

See footnote(s) at end of table.

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Other Woody Ornamentals and Vines
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Hydramethylnon	10	*					2
Imidacloprid	26	8		18	5	27	13
Joboba oil	1						*
Kinoprene	1						*
Lambda-cyhalothrin	3	1		3			1
Lindane		1					*
Malathion	17	26		3	24	17	21
Methidathion		1					1
Methiocarb	9	1			5		3
Methomyl	1						*
Neem oil, clar. hyd.	2	6				3	4
Nicotine					5		*
Novaluron		1					*
Oxamyl		1			5		1
Oxythioquinox	2				10		1
Permethrin	3			4			1
Petroleum distillate	15	23		9		3	16
Piperonyl butoxide	1	1				3	1
Potassium salts	9	2		3	5		3
Propargite	1						*
Pymetrozine	8	4			5	3	4
Pyrethrins	3	1				3	1
Pyridaben	3	4			5	7	4
Pyridine	8	5			5		4
Rotenone	3						1
S-Kinoprene	2					7	1
S-Methoprene		1			14		2
Sesame Oil		1					*
Silicon dioxide		1				3	1
Spinosad	9	2	3		15	3	5
Sulfotepp					5		*
Tebufenozide		1					*
Thiamethoxam		1					*
Fungicides							
Azoxystrobin	12	4				3	4
Bacillus subtilis	4						1
Basic copper sulfate	3						1
Benomyl	1						*
Borax Decahydrate		1					*
Butanone	5	1			5	7	2
Calcium polysulfide	1						*
Captan	1	5		3			3
Chlorothalonil	16	29	8	12	7	10	21
Copper (metallic)		1					*
Copper hydroxide	15	48	9	3	10	20	32
Copper oxychloride	2						*
Copper resinate	8	4			5		4
Copper sulfate	8	11	9		5		8
Cresol		1					*
Dimethomorph		1				3	1
Etridiazole	1	7	26	3	3	14	7
Fenarimol	5					3	1
Fenhexamid	3				5		1
Fludioxonil	8	4			5	7	4
Flutolanil		1					1
Fosetyl-al	14	11	8	6	10	15	11
Iprodione	17	7	8		5	11	8
Mancozeb	12	39	9	3	8	7	25

See footnote(s) at end of table.

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**Other Woody Ornamentals and Vines
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Maneb	2	1					1
Mefenoxam	23	7	7		15	12	10
Metalaxyl	2	4					2
Myclobutanil	13	1			5	7	4
Oxycarboxin		1					*
PCNB	11	1				14	3
Phosphorous acid		1					*
Piperalin		1			5		1
Potassium bicarbon.					2	3	*
Propiconazole	14	16				11	12
Sodium Percarbonate						3	*
Streptomycin	8	3			10	3	4
Sulfur	17	*		3			3
Thiabendazole (TBZ)		1	9			3	1
Thiophanate	17	22	8	7	5	14	17
Thiophanate-methyl	19	23	26	3	5	21	19
Triadimefon	6	1					1
Trichoderma harz.	8	1			5	10	3
Trifloxystrobin	5	1			5		2
Triphenyltin hydrox.	2						*
Vinclozolin					8		1
Xylenol		1					*
Other Chemicals							
Alk. dim. benzyl 50%						3	*
Alk. dim. benzyl 60%	4					3	1
Alk. dim. eth. benz.	4					3	1
Aminopyridine					5		*
Brodifacoum	2						*
Bromadiolone	2						*
Chlormequat chloride	3	1			8	14	2
Chlorophacinone	2						*
Daminozide	1				5	3	1
Dikegulac-sodium	2						*
Diphacinone	1						*
Ethephon	2				5	7	1
Farnesol	1					3	*
Gibberellic acid		1			5		1
Hydrogen peroxide	1	4	17	4	13		5
Indolebutyric acid	8	1					2
Iron phosphate	5						1
Metaldehyde	10	1		3	2	3	3
Methyl bromide	2						*
NAA		1					*
Nerolidol	1					3	*
Pacllobutrazol	3	1	14		5	6	2
Pelargonic acid	1						*
Uniconazole		1					*
Zinc phosphide	1						*

* Less than one percent.

**All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
(Meth)propionic acid	*						*
2,4-D		*		3			*
2,4-D, Dimeth. salt			*				*
Ammonium benzadox		1	*				*
Atrazine				1	1		*
Benefin	2					*	*
Bentazon			*				*
Bromoxynil	*		*				*
Clethodim				1		*	*
Clopyralid	1						*
DCPA	1		1				*
Dicamba	*	*					*
Dicamba, Dimet. salt			*				*
Dichlobenil				2			*
Diquat	1					*	*
Dithiopyr	*						*
Diuron	*	1		1	*		*
Fenoxaprop	*						*
Fluazifop-P-butyl	*		1	1			*
Flumetsulam		1					*
Glufosinate-ammonium	*			1			*
Glyphosate	21	7	5	12	3	9	9
Glyphosate diam salt	*						*
Halosulfuron	*		*	1			*
Isoxaben	3	1	2	3	*	3	2
Linuron	1						*
MCPA	*						*
MCPB	*						*
MCPB, DMA salt			*				*
MSMA	1						*
Metolachlor	*						*
Metribuzin						1	*
Napropamide	1	1	*	2			1
Norflurazon		2		1			1
Oryzalin	2	1	*	5	1	1	1
Oxadiazon	8	3		*	1	1	3
Oxyfluorfen	2	2		3	1	1	1
Paraquat	*	*			1	*	*
Pendimethalin	3	2	*	2		2	1
Primisulfuron				1			*
Prodiamine	1	2			1	3	1
Prosulfuron				1			*
Pyrazon	*						*
S-Metolachlor	*		*	1		1	*
Simazine	1	1		2			1
Sulfosate	*				1		*
Sulfosulfuron				1			*
Tebuthiuron					*		*
Triclopyr	1			3			*
Trifluralin	1	1	4	1		2	1
Vernolate	4						1

See footnote(s) at end of table.

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**All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides							
Abamectin	39	33	42	21	25	40	34
Acephate	50	53	35	38	25	45	42
Acetamiprid	6		2		*	5	2
Allethrin		1					*
Azadirachtin	13	4	17	12	12	17	11
Azinphos-methyl		1					*
Beauveria bassiana	2	1	4	3	5	7	3
Bendiocarb	*	5	2	3	6	6	4
Bifenazate	14	11	7	7	6	10	10
Bifenthrin	12	23	25	15	16	30	20
Bioallethrin		*					*
Boric acid	*						*
Bt (Bacillus thur.)	19	10	1	2	4	19	9
Carbaryl	4	21	6	5	1	10	9
Chlorfenapyr	5	4	*	2	*	2	2
Chlorpyrifos	20	18	15	10	11	14	15
Cinnamaldehyde	2	*	2	1	2		1
Clofentezine		4	3	2	1	3	2
Cryolite	*						*
Cyfluthrin	11	3	11	5	16	9	9
Cyromazine	9	1	*	1	1	*	2
Deltamethrin	1	*		1		*	*
Diazinon	13	11	3	13	4	9	9
Dichlorvos		3	1		1	2	1
Dicofol	2	7	*		1	2	3
Dienochlor	6		1	5	*	1	2
Diflubenzuron	8	9	6	1	8	8	7
Dimethoate	2	10	1	1		*	3
Disulfoton		1			*	1	*
Emamectin benzoate			1				*
Endosulfan	*	9	12	3	16	6	8
Esfenvalerate	*	*					*
Ethoprop		*					*
Ethoxy sec. alcohols		2					*
Ethyl parathion					*		*
Etoxazole		1	1	1	2	7	2
Fenamiphos		*					*
Fenbutatin-oxide	5	5	1		*	2	3
Fenoxycarb	1	1	3	4	5	3	3
Fenpropathrin	2	3	11	5	3	8	5
Fenpyroximate	2	1	*	2	2	4	2
Fenvalerate				1			*
Flucythrinate	*						*
Fluvalinate	17	13	11	6	6	16	12
Fonofos	*						*
Formetanate hydro.	*						*
Hexythiazox	7	9	1	1	1	2	4
Hydramethylnon		1					*
Imidacloprid	21	12	49	19	42	43	29
Jobba oil	2					*	*
Kinoprene	1	*	1	1	*	3	1
Lambda-cyhalothrin	1	1	*	1		5	1
Lindane			1		3		1
Malathion	14	11	4	10	3	14	9
Methidathion		3					1
Methiocarb	5	4	7	6	2	4	5
Methomyl	1		*		*		*
Methyl parathion		*			*	*	*
Mevinphos	*						*

See footnote(s) at end of table.

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**All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Myrothecium verruc.		1					*
Naled	*	1					*
Neem oil						2	*
Neem oil, clar. hyd.	2	4	*			2	2
Nicotine			2	1	4	1	1
Novaluron	2	1	2	2	2	5	2
Octacide-264	*	2	*	1	1	1	1
Oxamyl	1	*	*	1	1	*	1
Oxythioquinox	1	1		1			1
Permethrin	13	11		*		2	6
Petroleum distillate	15	7	3	8	7	11	8
Phenothrin			1		*		*
Phorate	*	*					*
Phosalone	*						*
Phosmet	*		1				*
Piperonyl butoxide	8	2	3	1	4	3	4
Potassium salts	8	2	7	13	8	8	7
Propargite	1	*	1				*
Pymetrozine	20	2	10	7	19	13	12
Pyrethrins	10	1	3	1	4	4	4
Pyridaben	4	2	3	3	1	14	4
Pyridine	13	4	5	9	9	17	8
Pyriproxyfen			1		1		*
Resmethrin		*	1		1	1	*
Rosemary oil			*				*
Rotenone	2				*	2	1
S-Kinoprene	3	2	7	17	5	11	6
S-Methoprene	*	*					*
Sabadilla	*					1	*
Silicon dioxide	*				1	*	*
Spinosad	29	13	29	12	36	28	24
Sulfotepp		*	*	2	1	1	*
Tebufenozide		1					*
Tefluthrin		*					*
Thiamethoxam		1		1	1	1	*
Trichlorfon		*					*
Fungicides							
AQ-10 Biofungicide	*						*
Azoxystrobin	14	6	1	5	1	8	6
Bacillus subtilis	1	*		1	2		1
Basic copper sulfate	*		*	2			*
Benomyl	*						*
Butanone	7	1	5	1	9	1	4
Calcium polysulfide				1			*
Captan	3	8	3	4	1	2	4
Chloroneb	*	3					1
Chlorothalonil	24	29	29	14	13	25	23
Copper (metallic)			*				*
Copper hydroxide	11	31	*	6	1	9	12
Copper oxychloride	*			2	1		*
Copper resinate	4	4	2	1	3	2	3
Copper sulfate	11	11	9	8	10	10	10
Cymoxanil		*					*
Dicloran	*						*
Dimethomorph	*	*	*	4	1	1	1
Dodine				*		*	*
Etridiazole	*	14	27	13	26	31	17
Fenarimol	8	*	*	2	*	2	2

See footnote(s) at end of table.

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**All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Fenbuconazole	*	1					*
Fenhexamid	14	2	10	14	19	6	10
Ferbam		1				*	*
Fludioxonil	8	5	7	8	12	7	8
Flutolanil	*	1	2			1	1
Fosetyl-al	17	16	2	7	1	9	10
Iprodione	23	10	12	11	8	5	12
Kresoxim-methyl	*		3	1			1
Mancozeb	17	46	9	13	4	7	20
Maneb	1	4		*			1
Mefenoxam	20	13	17	16	20	17	17
Metalaxyl	8	4	4	7	6	6	6
Metiram		1					*
Milban	*						*
Myclobutanil	19	2	2	8	2	4	6
Oxycarboxin	1			3			*
PCNB	8	5	6	8	3	9	6
Phosphorous acid	*						*
Piperalin	11	*	*	2	1	2	3
Potassium bicarbon.	5	*	*	2	6	1	2
Propamocarb hydroch.	*	*					*
Propiconazole	7	4	1	2	*	4	3
Streptomyces gris.	*		2		*		*
Streptomycin	7	5			1	1	3
Streptomycin sulfate						*	*
Sulfur	11	1		1		*	2
Tebuconazole		9				*	2
Thiabendazole (TBZ)	1	1	3		1	1	1
Thiophanate	13	28	20	15	17	18	20
Thiophanate-methyl	17	28	38	19	25	34	27
Thiram	*	1					*
Triadimefon	5	*	1	2	2	2	2
Trichoderma harz.	3	1	1	1	11	6	4
Trifloxystrobin	8	2	4	4	3	2	4
Triforine	5	*	2		1	2	2
Vinclozolin	4	*	1	6	2	1	2
Zineb		*					*
Other Chemicals							
Alk. dim. benzyl 50%		2	1	2	1	3	1
Alk. dim. benzyl 60%	3	3	1	2	1	3	2
Alk. dim. eth. benz.	3	3	1	2	1	3	2
Alkyl. dim. benz. am				1			*
Aluminum phosphide				1			*
Ancymidol	4	1	5	4	5	16	5
Benzyladenine	*	1	2	1	3	*	1
Bromadiolone						*	*
Busan 881						*	*
Capsaicin			1	1		1	*
Chlormequat chloride	7	2	25	8	23	27	14
Chlorophacinone	*						*
Chloropicrin	2	*	*				*
Cytokinins					1		*
Daminozide	10	2	35	12	30	42	19
Dazomet	2			1			*
Decyldimethyloctyl				1			*
Dichloropropene	*						*
Didecyl dim. ammon.				1			*
Dikegulac-sodium	1	*				*	*

See footnote(s) at end of table.

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**All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals-continued							
Dimethyldioctyl				1			*
Diphacinone	*	*					*
Endothall				1			*
Ethephon	7	1	20	5	24	10	11
Farnesol						1	*
Fatty acids				1			*
Garlic oil		*	1	1		*	*
Gibberellic acid	1	3	1	4	1	*	2
Gibberellins A4A7	*	*	2	1	2	*	1
Gliocladium virens		*		1			*
Harpin protein				2			*
Hydrogen peroxide	4	8	12	13	7	2	8
Indolebutyric acid	*		1	2	2		1
Iron phosphate	2		2	2			1
Maleic hydrazide	*						*
Mefluidide, diet.	*						*
Mepiquat chloride	*						*
Metaldehyde	13	8	1	17	2	5	7
Metam-sodium	*	*					*
Methyl bromide	3	*	*	1		*	1
NAA	*		1	2			*
Nerolidol						1	*
Paclobutrazol	15	4	26	11	16	30	15
Pelargonic acid	1		*	2	*		1
Propionic acid	*						*
Sodium hypochlorite		*	2		1	6	1
Thidiazuron					*		*
Uniconazole	3	1	7	2	3	12	4

* Less than one percent.

Cut Flowers
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
Bromoxynil			9				*
DCPA	2						1
Diquat	2						1
Diuron	*				5		1
Fluazifop-P-butyl	1		22				2
Glufosinate-ammonium	1						1
Glyphosate	15		26	36		19	17
Isoxaben	1		4				1
Linuron	1						1
MCPB	*						*
Metolachlor	1						*
Napropamide	1			12			2
Oxadiazon	9						6
Oxyfluorfen	1						1
Pendimethalin	2		4	3			2
Prodiamine	2						1
Pyrazon	*						*
S-Metolachlor	*		5				1
Simazine	2						1
Sulfosate	*						*
Tebuthiuron					5		*
Triclopyr	1						*
Trifluralin	*		13				1
Vernolate	1						1
Insecticides							
Abamectin	36	38	14	26	21	41	33
Acephate	51	40	41	33	3	58	45
Acetamiprid	5					7	4
Azadirachtin	16		5	4	3	7	12
Beauveria bassiana	2			4			2
Bendiocarb					3		*
Bifenazate	18		9	17	11	7	16
Bifenthrin	10		5	7	9	8	9
Boric acid	1						*
Bt (Bacillus thur.)	16	38				25	13
Carbaryl	*	19	5			15	1
Chlorfenapyr	7		5				5
Chlorpyrifos	13		4	3	7	7	11
Cinnamaldehyde	3						2
Clofentezine				3	3		1
Cryolite	1						1
Cyfluthrin	8		4	3	8	7	7
Cyromazine	14	20					10
Deltamethrin	*						*
Diazinon	12			12	5		11
Dicofol	1						1
Dienochlor	6				3		4
Diiflubenzuron	4					7	3
Dimethoate	3		9				3
Endosulfan		59	5		5	7	2
Esfenvalerate		20					*
Etoxazole			5		8	7	1
Fenbutatin-oxide	6						4
Fenoxycarb	1			4			1
Fenpropathrin	*					7	*
Fenpyroximate	*					7	*
Flucythrinate	1						*
Fluvalinate	8		27		4	10	8

See footnote(s) at end of table.

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Cut Flowers
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Fonofos	*						*
Formetanate hydro.	1						*
Hexythiazox	8				5	7	6
Imidacloprid	11		5		21	26	11
Jojoba oil	1						*
Kinoprene	1						1
Lambda-cyhalothrin	*						*
Malathion	11		18				9
Methiocarb	8				3		6
Naled	*						*
Nicotine					3		*
Novaluron	4			4	5	7	4
Oxamyl	*					10	1
Oxythioquinox	2						1
Permethrin	10	20		3			8
Petroleum distillate	11				15	10	9
Phorate	*						*
Phosalone	1						*
Phosmet	*						*
Piperonyl butoxide	6				3		5
Potassium salts	7			7	24	7	8
Propargite	1						*
Pymetrozine	28		5	4	7	7	21
Pyrethrins	9				3		7
Pyridaben	2		5				1
Pyridine	10			4		32	9
Rotenone	2						1
S-Kinoprene	2				3		2
S-Methoprene	*						*
Silicon dioxide	*						*
Spinosad	33	20	9	4	22	59	29
Fungicides							
AQ-10 Biofungicide	1						1
Azoxystrobin	11		4		7	7	9
Bacillus subtilis	1						*
Basic copper sulfate				3			*
Butanone	9		5	4	8		7
Captan	4	19	9			7	4
Chlorothalonil	27	59	40	7	4	7	23
Copper hydroxide	6	20	4	3		15	6
Copper oxychloride				3			*
Copper resinate	2					10	2
Copper sulfate	4	38	4			7	4
Dicloran	*						*
Dimethomorph					3		*
Etridiazole		20	31	3	3	25	3
Fenarimol	8			4		7	7
Fenbuconazole	*						*
Fenhexamid	11	20		10	9	7	10
Fludioxonil	8		4	7	5	7	7
Flutolanil	1						*
Fosetyl-al	18	38		3		17	15
Iprodione	23	38	9	25	15	7	22
Kresoxim-methyl	1			4			1
Mancozeb	18	59		15	15	15	17
Maneb	1						1
Mefenoxam	12	20	4		37	17	12
Metalaxyl	6		5		3	7	5

See footnote(s) at end of table.

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Cut Flowers
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Milban	*						*
Myclobutanil	27	20					20
PCNB	7	38	4	7		7	7
Phosphorous acid	1						*
Piperalin	14			4	3	7	11
Potassium bicarbon.	9			4	6		7
Propiconazole	6			3			4
Streptomyces gris.					3		*
Streptomycin	4	20				7	4
Sulfur	18						13
Thiabendazole (TBZ)	2						1
Thiophanate	8	20		22	5		9
Thiophanate-methyl	16	40	31	7	12	25	16
Triadimefon	4						3
Trichoderma harz.	3						2
Trifloxystrobin	9		5			7	7
Triforine	6						4
Vinclozolin	4	23	5	4			4
Other Chemicals							
Aluminum phosphide	1						*
Ancymidol	1						1
Chlormequat chloride	1				14	7	2
Chloropicrin	2	19					2
Daminozide	4	23			14	7	5
Dazomet	3						2
Diphacinone	1						1
Ethephon	1						1
Garlic oil				4			*
Gliocladium virens		20					*
Iron phosphate	2						1
Maleic hydrazide	1						1
Metaldehyde	6			23			7
Metam-sodium	*						*
Methyl bromide	3	19					2
Paclobutrazol	7					7	5
Propionic acid	*						*
Sodium hypochlorite						10	*
Uniconazole	*					7	*

* Less than one percent.

**Flowering Plants
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
(Meth)propionic acid	1						*
Benefin	5						1
Clopyralid	2						*
Dicamba	1						*
Diquat	*						*
Dithiopyr	1						*
Diuron		3					1
Fenoxaprop	1						*
Flumetsulam		3					1
Glyphosate	15	9	3		7	5	7
Glyphosate diam salt	1						*
Halosulfuron	1						*
Isoxaben	6	3	1			1	2
MCPA	1						*
MSMA	2						*
Napropamide			1				*
Oryzalin	6	3			1		2
Oxadiazon	5				3	1	2
Oxyfluorfen	4	2			1	1	1
Paraquat	1						*
Pendimethalin	5	2				1	1
Prodiamine						2	*
Sulfosulfuron				3			*
Triclopyr	2						*
Trifluralin		3				1	1
Vernolate	9						2
Insecticides							
Abamectin	46	27	29	13	27	26	29
Acephate	49	54	26	41	24	35	38
Acetamiprid	13		6		1	6	4
Azadirachtin	14	8	14	8	6	18	11
Beauveria bassiana	4	1	5	3	4	6	4
Bendiocarb	1	4	1		2	8	3
Bifenazate	20	9	8		2	15	9
Bifenthrin	17	30	10	14	15	20	18
Bt (Bacillus thur.)	16	17		3	1	6	8
Carbaryl	12	12			3	6	6
Chlorfenapyr	6	1	1	3		2	2
Chlorpyrifos	26	12	13	10	5	14	13
Clofentezine		4	3		1	6	2
Cyfluthrin	15	7	9		11	10	9
Cyromazine	5	3			3		2
Deltamethrin				3			*
Diazinon	15	5	1	11	*	6	6
Dichlorvos						1	*
Dicofol		9			*	4	2
Dienochlor	12			6			3
Diiflubenzuron	16	1	1		3	5	5
Dimethoate	2	13				1	3
Disulfoton						3	*
Endosulfan	1	7	14		11	9	7
Ethyl parathion					*		*
Etoxazole		5				12	2
Fenbutatin-oxide	3	4	4			1	2
Fenoxycarb		3	1	4	1	1	2
Fenpropathrin	5	6	9	3	7	7	6
Fenpyroximate	5	3	1	1		3	2
Fluvalinate	24	9	5	3	7	14	11

See footnote(s) at end of table.

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Flowering Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Hexythiazox	7	6	1			1	3
Imidacloprid	30	21	50	22	46	48	36
Joboba oil	4					1	1
Kinoprene	1			4		3	1
Lambda-cyhalothrin	1						*
Lindane					2		1
Malathion	15	7	1	8	2	17	8
Methiocarb	5	4	7		2	5	4
Methomyl	4						1
Methyl parathion					*		*
Mevinphos	*						*
Neem oil						3	*
Neem oil, clar. hyd.	4	8				1	2
Nicotine					4		1
Novaluron	1		1		2	9	2
Octacide-264	1	6	1	3	1	1	2
Oxamyl	1	1		3	*		1
Permethrin	16	1				4	4
Petroleum distillate	19	6	1	11	4	14	9
Phenothrin					*		*
Phosalone	1						*
Piperonyl butoxide	7	6	1	3	2	2	4
Potassium salts	7	1	4	13	5	13	6
Pymetrozine	21	3	7	7	11	10	10
Pyrethrins	8	6	1	3	2	2	4
Pyridaben	8	3	1	6	1	18	6
Pyridine	18	9	9	13	4	28	12
Pyriproxyfen					1		*
Resmethrin		1	2		1		1
Rotenone	4						1
S-Kinoprene	5	4	5	11	4	11	6
Sabadilla						3	*
Silicon dioxide						1	*
Spinosad	33	11	32	10	26	23	23
Sulfotepp					1	3	1
Fungicides							
Azoxystrobin	22	8	1	1	1	6	7
Bacillus subtilis	1				*		*
Basic copper sulfate			1				*
Benomyl	1						*
Butanone	9		2		14	1	5
Captan	1	18		3	3	2	5
Chlorothalonil	25	20	15	15	13	19	18
Copper hydroxide	19	29	1			13	11
Copper oxychloride	1				3		1
Copper resinate	8	3			3	1	3
Copper sulfate	22	15	8		10	10	13
Dimethomorph	1			3		3	1
Etridiazole	1	16	17	13	18	20	14
Fenarimol	14	1	1			4	3
Fenhexamid	22	5	8	13	11	3	11
Ferbam	1						*
Fludioxonil	10	4	8	11	12	9	9
Flutolanil			2				*
Fosetyl-al	19	14	3	3	*	7	8
Iprodione	19	11	8	3	4	4	8
Kresoxim-methyl	1		1				*
Mancozeb	18	35	3	6	1	7	12

See footnote(s) at end of table.

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Flowering Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Maneb	2	3					1
Mefenoxam	23	20	14	14	13	17	17
Metalaxyl	10	9	1	7	8	6	7
Myclobutanil	18	8	2	13	2	5	8
Oxycarboxin	2			6			1
PCNB	10	8	11	6	7	8	8
Piperalin	8		1		*	3	2
Potassium bicarbon.	2	1	1		2	1	1
Propiconazole	11	8	2			2	4
Streptomyces gris.	1						*
Streptomycin	15	2			2	1	4
Sulfur	1					1	*
Thiabendazole (TBZ)	2		7		2	1	2
Thiophanate	22	31	6	8	8	13	15
Thiophanate-methyl	14	22	21	20	14	23	18
Thiram	1	3					1
Triadimefon	5	1			1	1	2
Trichoderma harz.	7	1	2		11	6	5
Trifloxystrobin	10	3	5	6	4	1	5
Triforine	3	1	7		2		2
Vinclozolin	5		1	3			1
Zineb		1					*
Other Chemicals							
Alk. dim. benzyl 50%				4		3	1
Alk. dim. benzyl 60%	7	4		4		3	3
Alk. dim. eth. benz.	7	4		4		3	3
Ancymidol	10	3	5	3	6	15	7
Benzyladenine	1		6		4		2
Chlormequat chloride	14	3	24	7	25	27	17
Chloropicrin	4						1
Daminozide	16	4	15	7	32	38	19
Dikegulac-sodium	4	1				1	1
Ethephon	19	4	17	3	26	15	15
Farnesol						2	*
Fatty acids				3			*
Gibberellic acid	1	1	1	3	1	1	1
Gibberellins A4A7	1		6		4		2
Harpin protein				4			*
Hydrogen peroxide	8	14	4	16	2	2	7
Indolebutyric acid	1		1				*
Mefluidide, diet.	1						*
Mepiquat chloride	1						*
Metaldehyde	17	4		8		7	6
Metam-sodium		1					*
Methyl bromide	5						1
NAA	1						*
Nerolidol						2	*
Paclobutrazol	19	8	16	15	13	12	14
Pelargonic acid	4		1		*		1
Sodium hypochlorite		1			*	4	1
Uniconazole	4	1	12		4	6	4

* Less than one percent.

Bedding Plants
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D				2			*
Ammonium benzadox			*				*
Atrazine					2		1
Benefin						1	*
Clethodim						*	*
DCPA			1				*
Diquat	1					1	*
Dithiopyr	1						*
Diuron					*		*
Glufosinate-ammonium	1			2			*
Glyphosate	20	26	2	2		8	4
Glyphosate diam salt	1						*
Halosulfuron				2			*
Isoxaben	1					2	*
Metribuzin						2	*
Norflurazon				3			*
Oryzalin	2	6		2		2	1
Oxadiazon	7					1	1
Oxyfluorfen	2			2		1	*
Paraquat					1	1	*
Pendimethalin	4	11		2		1	1
Primisulfuron				3			*
Prodiamine						2	*
Prosulfuron				3			*
S-Metolachlor						2	*
Sulfosate					1		*
Triclopyr				2			*
Trifluralin	4			3		1	1
Vernolate	4						*
Insecticides							
Abamectin	26	46	44	21	25	33	33
Acephate	39	37	30	40	20	39	30
Acetamiprid	2		1		*	5	1
Azadirachtin	11	14	14	18	15	20	15
Beauveria bassiana	2		3	5	5	4	4
Bendiocarb		7	2	5	4	2	3
Bifenazate	1	2	6	5	7	8	6
Bifenthrin	13	21	26	20	16	36	22
Bt (Bacillus thur.)	41	19	*	2	5	25	9
Carbaryl	2	3	6	6		10	4
Chlorfenapyr	1		*	2	*	1	1
Chlorpyrifos	20	5	11	8	11	12	12
Cinnamaldehyde	1		1	2	3		2
Clofentezine			3		1		1
Cyfluthrin	20	10	11	9	19	9	14
Cyromazine	4	5	*		1	1	1
Deltamethrin	2					1	*
Diazinon	4		3	9	4	6	4
Dichlorvos			1		1	2	1
Dicofol	7		*		2	2	1
Dienochlor	1		1	5	*	2	1
Diiflubenzuron	4	5	7	2	10	7	7
Dimethoate	1					1	*
Emamectin benzoate			2				1
Endosulfan	1	5	10	5	16	3	9
Esfenvalerate	2						*
Etoxazole			1	2	2	4	2
Fenbutatin-oxide					*	1	*

See footnote(s) at end of table.

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Bedding Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Fenoxycarb			4	3	5	2	4
Fenpropathrin		5	10	9	3	7	6
Fenpyroximate	2	2	*	3	2	3	2
Fluvalinate	21	16	11	9	5	16	10
Hexythiazox	4	7	1		*	1	1
Hydramethylnon		2					*
Imidacloprid	25	8	45	26	37	34	36
Kinoprene	1	2	2			1	1
Lambda-cyhalothrin						5	1
Lindane			2		1		1
Malathion	9	2	2	7	2	8	4
Methiocarb	5	5	7	11	2	3	5
Methomyl			*		*		*
Methyl parathion						1	*
Neem oil						*	*
Neem oil, clar. hyd.	1					1	*
Nicotine			2		2	2	2
Novaluron	1	3	2		2	2	2
Octacide-264			*			1	*
Oxamyl			*		*		*
Oxythioquinox	1	10		2			1
Permethrin	26	3					2
Petroleum distillate	21	3	1	2	7	3	5
Phenothrin			1				*
Piperonyl butoxide	20		2		2	2	3
Potassium salts	10		6	13	7	4	7
Propargite			1				*
Pymetrozine	13	8	9	10	20	11	13
Pyrethrins	21		2		2	2	3
Pyridaben	9	10	3	5	*	9	4
Pyridine	21	15	3	6	8	8	7
Pyriproxyfen			2				1
Resmethrin			*		*	2	*
Rotenone	2				*		*
S-Kinoprene	3	2	7	25	4	11	8
Sabadilla	1						*
Silicon dioxide	2					1	*
Spinosad	26	20	26	16	38	29	29
Sulfotepp		3	*	5	1		1
Trichlorfon		3					*
Fungicides							
Azoxystrobin	20	25	1	10	*	7	5
Bacillus subtilis		3			2		1
Basic copper sulfate	1		*				*
Butanone	3		6	2	6	2	4
Captan		16	4	1	*	2	2
Chloroneb	1						*
Chlorothalonil	31	24	27	18	10	23	20
Copper hydroxide	21	14	*	9		3	4
Copper oxychloride	3						*
Copper resinate	6	2	2		2	2	2
Copper sulfate	10	17	8	10	11	9	10
Dimethomorph		3	*	5	*	1	1
Dodine				1			*
Etridiazole	1	16	26	15	28	31	24
Fenarimol	2		*	3	*	1	1
Fenhexamid	17	7	11	17	22	8	15
Fludioxonil	11	17	4	7	12	6	8

See footnote(s) at end of table.

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Bedding Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides-continued							
Flutolanil			2			1	1
Fosetyl-al	19	7	1	5	1	10	4
Iprodione	28	18	11	9	6	7	10
Kresoxim-methyl			3				1
Mancozeb	24	29	10	14	3	6	9
Maneb	4	3					*
Mefenoxam	40	10	16	29	20	16	20
Metalaxyl	14		4	9	5	3	5
Myclobutanil	14	7	2	6	1	1	3
PCNB	4	3	3	11	1	7	4
Piperalin	7	5	*	2	*	2	1
Potassium bicarbon.	1				8	*	3
Propamocarb hydroch.	2	3					*
Propiconazole	7	5				1	1
Streptomycin	8					*	1
Streptomycin sulfate						*	*
Sulfur	5	10		3			1
Thiabendazole (TBZ)	1	3	3			1	1
Thiophanate	17	21	20	21	18	22	19
Thiophanate-methyl	31	36	39	23	27	39	32
Thiram	1						*
Triadimefon	14		1	3		1	2
Trichoderma harz.	6	2	*		10	6	5
Trifloxystrobin	2	7	2	6	4	3	3
Triforine						1	*
Vinclozolin	7		*	7	3	1	2
Other Chemicals							
Alk. dim. benzyl 50%			1		1	1	1
Alk. dim. benzyl 60%	6		1		1	1	1
Alk. dim. eth. benz.	6		1		1	1	1
Alkyl. dim. benz. am				2			*
Ancymidol	5		5	7	5	14	6
Benzyladenine			*	3	*		1
Busan 881						*	*
Capsaicin			1				*
Chloromequat chloride	16	3	27	11	22	30	22
Chlorophacinone	1						*
Chloropicrin	1						*
Cytokinins					1		*
Daminozide	28	6	41	22	30	48	34
Decyldimethyloctyl				2			*
Dichloropropene	1						*
Didecyl dim. ammon.				2			*
Dikegulac-sodium	1						*
Dimethyldioctyl				2			*
Endothall				3			*
Ethephon	10		18	7	19	6	14
Farnesol						1	*
Garlic oil			1				*
Gibberellic acid	2		1	5	1		1
Gibberellins A4A7			*	3	*		1
Gliocladium virens				3			*
Hydrogen peroxide	9	16	12	9	7	3	9
Indolebutyric acid	1		*	2	3		1
Iron phosphate	4		2	2			1
Metaldehyde	14	3		10	*	4	3
Methyl bromide	3					1	*
NAA	1		*	2			*

See footnote(s) at end of table.

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Bedding Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals-continued							
Nerolidol						1	*
Paclobutrazol	34	8	29	13	16	43	25
Pelargonic acid	2			5			1
Sodium hypochlorite			3		*	5	2
Thidiazuron					*		*
Uniconazole	9	6	6	3	3	17	6

* Less than one percent.

**Foliage Plants
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
Ammonium benzadox		1					1
Benefin	3						*
Glyphosate	12	3				6	4
Glyphosate diam salt	2						*
Isoxaben		1	16	25		4	3
Oryzalin		1		5			1
Oxadiazon		5				4	4
Oxyfluorfen		2		5			1
Pendimethalin		1					*
Prodiamine		2				4	2
Simazine		1					1
Trifluralin	3		16				1
Insecticides							
Abamectin	60	44	5	15	19	23	38
Acephate	31	65	8	15	21	28	50
Azadirachtin		2		15	11	6	3
Azinphos-methyl		1					1
Beauveria bassiana		1			6	5	1
Bendiocarb		6			12	6	5
Bifenazate	12	13	4		18	10	12
Bifenthrin		26	15		11	9	19
Bt (Bacillus thur.)	5	8				3	6
Carbaryl		20				6	14
Chlorfenapyr	2	6			2		4
Chlorpyrifos	37	12	16		11	9	14
Cinnamaldehyde		*	6				1
Clofentezine		5			4		3
Cyfluthrin		3	3		14		3
Deltamethrin		*					*
Diazinon	12	18	2		4	10	14
Dichlorvos		6					4
Dicofol	2	3					2
Dienochlor	2						*
Diflubenzuron	4		5		4	8	2
Dimethoate		9					6
Disulfoton		1					1
Endosulfan	2	4	8		9	1	4
Etoxazole		*				4	1
Fenbutatin-oxide		5				6	3
Fenoxycarb		1	2		11	4	2
Fenpropathrin	2	2		15		5	2
Fenpyroximate	2	*				4	1
Fluvalinate	36	17			14	15	17
Hexythiazox	2	12					8
Hydramethylnon		2					1
Imidacloprid	38	12	10		31	14	16
Kinoprene	2				4	6	1
Lambda-cyhalothrin	2	1				9	2
Malathion	22	12			4	12	11
Methidathion		6					4
Methiocarb	2	5					3
Methyl parathion		1					*
Naled		1					1
Neem oil, clar. hyd.		4				1	2
Nicotine					4		*
Novaluron		1			6		1
Oxamyl					4		*
Permethrin	2	*					1

See footnote(s) at end of table.

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Foliage Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Petroleum distillate	10	6	16	15	6	1	7
Phosmet			6				*
Piperonyl butoxide			16		13		2
Potassium salts		2			11	1	2
Pymetrozine		2	5	15	10	10	4
Pyrethrins			16		13		2
Pyridaben	2	3		15		3	3
Pyridine		3	3				2
Pyriproxyfen					6		*
S-Kinoprene		1		15	9		2
S-Methoprene		1					*
Silicon dioxide					9		1
Spinosad	8	10	12	15	22	11	11
Tebufenozide		1					1
Thiamethoxam		1				2	1
Fungicides							
Azoxystrobin	5	5	2	15	1	1	5
Butanone		1					1
Captan		4					2
Chlorothalonil	2	25	15	15	4	1	18
Copper hydroxide		39				7	26
Copper resinate		5			6		4
Copper sulfate	12	11		15	6	9	10
Cymoxanil		*					*
Etridiazole		17	2			11	12
Fenarimol	10						1
Fenbuconazole		1					1
Fenhexamid	4	*			2		1
Fludioxonil	2	5	2			3	4
Flutolanil		1					*
Fosetyl-al	17	19			1	5	14
Iprodione	14	11	6			1	9
Mancozeb	2	41	2			5	27
Maneb		1		5			1
Mefenoxam	10	13	9	20	7	6	12
Metalaxyl	23	3				6	5
Myclobutanil	2						*
PCNB	9	5	7	15	1	10	6
Piperalin	10						1
Potassium bicarbon.	4				6		1
Propiconazole		1					1
Streptomyces gris.			6				*
Streptomycin	10	7				1	6
Sulfur	2	*					*
Tebuconazole		1					1
Thiabendazole (TBZ)		1	2				1
Thiophanate	10	25	3		7	4	18
Thiophanate-methyl	2	23	2	15	6	21	18
Thiram		1					*
Trichoderma harz.	4	1				4	2
Trifloxystrobin	2	1	2	15			1
Triforine						6	1
Vinclozolin				15			*

See footnote(s) at end of table.

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Foliage Plants
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals							
Alk. dim. benzyl 50%		1				6	1
Alk. dim. benzyl 60%	2	1				6	2
Alk. dim. eth. benz.	2	1				6	2
Ancymidol	3	1		15			1
Benzyladenine	2	1			8		2
Chlormequat chloride		2			1	3	1
Daminozide	6	2	5	15	1	6	3
Dikegulac-sodium		*					*
Ethephon	4	1	13		35	6	5
Garlic oil		1					*
Gibberellic acid		5					3
Gibberellins A4A7	2	*					*
Hydrogen peroxide	2	7	7			1	5
Metaldehyde	29	10		41			11
Paclobutrazol	17	4	5	15	13	7	7
Sodium hypochlorite						7	1
Uniconazole	2		4			1	*

* Less than one percent.

**Floriculture Propagation Material
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
Clethodim				8			2
Glyphosate	50	28		15			16
Napropamide		22					4
Norflurazon		22					4
Oryzalin				26			5
Oxyfluorfen				8		6	3
Pendimethalin				8		6	3
S-Metolachlor				8			2
Simazine				8			2
Insecticides							
Abamectin	18	5	13	15			9
Acephate	16	5			12	18	8
Azadirachtin	9		4			35	7
Beauveria bassiana	9						1
Bendiocarb		5	4				2
Bifenazate		5					1
Bifenthrin	17	17	4		20	18	12
Bt (Bacillus thur.)	16	5					3
Carbaryl		22					4
Chlorfenapyr		5					1
Chlorpyrifos	15		15		54		12
Clofentezine			4				1
Cyfluthrin			4		20		3
Cyromazine	18				8		4
Diazinon	9			7			3
Diflubenzuron	16				28		6
Disulfoton					13		2
Endosulfan		5	4		14		4
Fenpropathrin						18	3
Hexythiazox	5	5					2
Imidacloprid	9	5	4		13	18	8
Lambda-cyhalothrin	6						1
Malathion		22					4
Methiocarb			11				2
Novaluron				7		35	7
Octacide-264	9						1
Permethrin	6						1
Petroleum distillate	9	22					6
Piperonyl butoxide	9						1
Potassium salts					8		1
Pymetrozine	16		6		8		4
Pyrethrins	9						1
Pyridine			22		8		5
Resmethrin					21		3
S-Kinoprene		21					4
Spinosad	16	5	20		55		15

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Floriculture Propagation Material
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides							
Azoxystrobin	9	11			8		5
Captan	13	10		7			5
Chlorothalonil	18	9	34	23	12	28	21
Copper hydroxide		5	4			23	5
Copper resinate	9				8	6	3
Copper sulfate	9	5	27		35	35	17
Etridiazole		15	4	15	26	40	16
Fenhexamid			10		34		6
Fludioxonil	9	11	38		13	5	13
Fosetyl-al	15		4	15			6
Iprodione	9	11	13	7	33		12
Mancozeb	17	5	15		26	23	13
Mefenoxam	58	28	17	15	47	5	27
Metalaxyl			18		26		7
Myclobutanil	9		4				2
PCNB	9	5	18		21		8
Potassium bicarbon.		5		7	8		4
Propiconazole	9	7					3
Streptomycin		31					6
Thiabendazole (TBZ)			10				2
Thiophanate	20	5	28		52	23	19
Thiophanate-methyl	16	17	27	22	26	24	22
Trichoderma harz.		5	4				2
Trifloxystrobin	9	28	4				8
Other Chemicals							
Ancymidol	9	5	15		8	18	9
Chlormequat chloride		11	20		51	23	16
Daminozide		5	42		61		17
Dazomet				7			1
Ethephon			33		8		7
Hydrogen peroxide		4		22			5
Indolebutyric acid				15			3
Metaldehyde	18	7					4
NAA				15			3
Paclobutrazol			33		48		13
Uniconazole		5	13		8		4

**Cut Cultivated Greens
Percent of Operations Using an Active Ingredient
Program States, 2003**

Active Ingredient	CA	FL	MI	OR	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides						
2,4-D		1		48		5
Atrazine				24		2
Dicamba		1				1
Dichlobenil				24		2
Diuron		2		24		3
Fluazifop-P-butyl			100	24		3
Glyphosate	79	7	100	79		17
Isoxaben			100	24	30	3
Norflurazon		6				5
Oryzalin			100			1
Oxadiazon		1		9	30	2
Oxyfluorfen				9		1
Paraquat		1				1
Pendimethalin				9		1
Prodiamine		6			73	7
Simazine		2		24		3
Triclopyr				48		4
Insecticides						
Abamectin	21	2				2
Acephate		12		9		11
Allethrin		3				3
Bifenazate		6				5
Bifenthrin		2		9		3
Bioallethrin		1				1
Bt (Bacillus thur.)		4				3
Carbaryl		32				27
Chlorpyrifos		43		9	43	38
Cyfluthrin				9		1
Deltamethrin		1				1
Diazinon				12		1
Dicofol		20				17
Diiflubenzuron		47				40
Dimethoate		9				7
Endosulfan		22				18
Ethoprop		2				1
Ethoxy sec. alcohols		9				8
Etoxazole		1				1
Fenamiphos		1				1
Fenbutatin-oxide		6				5
Fluvalinate		1				1
Hexythiazox		2				1
Imidacloprid		2				1
Malathion		7				6
Myrothecium verruc.		5				4
Neem oil, clar. hyd.		2				2
Octacide-264		3				3
Oxamyl		1				1
Oxythioquinox		1				1
Permethrin		57			43	49
Petroleum distillate		5		24		6
Phorate		1				1
Piperonyl butoxide		3				3
Propargite		1				1
S-Kinoprene				9		1
Spinosad		21				18
Tefluthrin		1				1
Thiamethoxam					27	*

See footnote(s) at end of table.

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Cut Cultivated Greens
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fungicides						
Azoxystrobin		1				1
Basic copper sulfate				24		2
Calcium polysulfide				24		2
Captan		3				3
Chloroneb		16				14
Chlorothalonil	21	51			43	45
Copper hydroxide		9		24		9
Copper oxychloride				24		2
Etridiazole					43	1
Ferbam		4			43	4
Fludioxonil		1		9		1
Flutolanil		1				1
Fosetyl-al		9		48	27	12
Iprodione		1		24		3
Mancozeb		71		45	43	64
Maneb		15				13
Mefenoxam		1				1
Metiram		8				7
PCNB		1				1
Propiconazole	21	5				6
Sulfur	21	1				2
Tebuconazole		44			43	38
Thiophanate		34		24		30
Thiophanate-methyl		39			43	33
Triadimefon				9		1
Other Chemicals						
Alk. dim. benzyl 50%		5				4
Alk. dim. benzyl 60%		5				4
Alk. dim. eth. benz.		5				4
Aluminum phosphide				24		2
Diphacinone		1				1
Hydrogen peroxide		1				1
Metaldehyde		5				4

* Less than one percent.

Herbaceous Perennials
Percent of Operations Using an Active Ingredient
Program States, 2003

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Herbicides							
2,4-D, Dimeth. salt			1				*
Benefin						2	*
Bentazon			1				*
Bromoxynil	4						*
DCPA			2				1
Dicamba, Dimet. salt			1				*
Dichlobenil				7			1
Diquat						2	*
Fluazifop-P-butyl			3				1
Glyphosate	65		10		3		10
Halosulfuron			1				*
Isoxaben	4	15	5		3	11	5
MCPP, DMA salt			1				*
Napropamide	9		1				1
Oryzalin	4		3	11	3	5	4
Oxadiazon	23				3		3
Oxyfluorfen	4	8		7	3	3	3
Pendimethalin		16	1			6	2
Prodiamine					13	6	4
S-Metolachlor			1				*
Trifluralin		15	10			8	5
Insecticides							
Abamectin	4	31	18	15	13	44	20
Acephate	51	42	17	32	34	37	31
Azadirachtin			12	7	8	14	9
Beauveria bassiana			3		2	5	2
Bendiocarb		15	3	3	8	6	5
Bifenazate	4	8	5	13	14	6	9
Bifenthrin	5	24	10	7	13	15	11
Bt (Bacillus thur.)	4	16	3	4	2	22	7
Carbaryl		40	6	14		9	8
Chlorfenapyr			1	4	2	6	2
Chlorpyrifos		33	13	11		10	9
Cinnamaldehyde	4			4			1
Clofentezine		16	5	7	1	4	4
Cyfluthrin	5	15	3	4	7	7	6
Cyromazine				4			1
Deltamethrin						2	*
Diazinon	23		2	14		11	7
Dicofol						2	*
Diflubenzuron		8	2	4	1	3	2
Dimethoate	4	12	1	4			2
Endosulfan		24	13	7	5	12	9
Etoxazole			2			17	3
Fenbutatin-oxide	24		2			2	3
Fenoxycarb				4	2	2	1
Fenpropathrin		15	1		6	4	3
Fenpyroximate			1		7	4	3
Fenvalerate				4			1
Fluvalinate		12	1	3	11	15	6
Hexythiazox	4		2	7	1	7	4
Imidacloprid			31	4	23	24	19
Lambda-cyhalothrin			1	4			1
Lindane					10		2
Malathion	28	28	12	24	7	4	14
Methiocarb			3	7	6	3	4
Neem oil, clar. hyd.			1			8	2
Nicotine				3			1

See footnote(s) at end of table.

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Herbaceous Perennials
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Insecticides-continued							
Novaluron				4	1		1
Octacide-264					3		1
Oxythioquinox				4			1
Permethrin						2	*
Petroleum distillate	4		3	12	8	20	8
Piperonyl butoxide					9	11	4
Potassium salts	23		14	7	8	7	11
Propargite	25						3
Pymetrozine	4	8	13	4	13	15	11
Pyrethrins					9	13	4
Pyridaben	4				4	24	5
Pyridine	4	8	2	4	13	11	7
Rosemary oil			2				1
Rotenone						10	2
S-Kinoprene			1	7	2	15	4
Silicon dioxide						2	*
Spinosad	4	16	14	4	22	13	13
Thiamethoxam		15		4	7		3
Fungicides							
Azoxystrobin	4	23	2	4	2	13	6
Bacillus subtilis				4	6		2
Butanone			1		12	2	3
Captan			1	13		4	3
Chlorothalonil	9	27	15	4	16	26	15
Copper (metallic)			1				*
Copper hydroxide		12		4	5	7	4
Copper resinate			1	4	5		2
Copper sulfate		23	5	7	18	11	10
Dimethomorph			2	4	2		1
Dodine						2	*
Etridiazole			11	7	12	6	8
Fenarimol			1				*
Fenhexamid	4	15	4	4	16	3	7
Fludioxonil		15	4	4	11	4	6
Flutolanil		17	1				1
Fosetyl-al	4	12	2	4	5	6	4
Iprodione	27	24	7	10	3	6	9
Kresoxim-methyl			3				1
Mancozeb	4	27	10	4	3	7	7
Mefenoxam	4		12	4	13	6	9
Metalaxyl				4	8		2
Myclobutanil	4	15	2	4	2	13	5
Oxycarboxin				7			1
PCNB		12	6	4	1	7	5
Piperalin		15		4	3		2
Potassium bicarbon.				4	4		1
Propiconazole	4	12		7	3	15	5
Streptomyces gris.			8				3
Streptomycin						2	*
Sulfur	21						2
Thiabendazole (TBZ)			1		1	2	1
Thiophanate		15	19	6	28	7	15
Thiophanate-methyl	5	59	22	7	18	12	17
Triadimefon			1	4	13	9	5
Trichoderma harz.				4	1		1
Trifloxystrobin	4	8	7	4	7	2	5
Triforine	24						2
Vinclozolin				4	5		2

See footnote(s) at end of table.

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Herbaceous Perennials
Percent of Operations Using an Active Ingredient
Program States, 2003 - continued

Active Ingredient	CA	FL	MI	OR	PA	TX	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other Chemicals							
Alk. dim. benzyl 50%			1				*
Alk. dim. benzyl 60%			3	4	6		3
Alk. dim. eth. benz.			3	4	6		3
Ancymidol					5	2	1
Benzyladenine			1			2	1
Bromadiolone						2	*
Capsaicin				4		7	2
Chlormequat chloride	5		4	4	5	2	4
Chloropicrin			1				*
Daminozide			12	4	24	6	10
Ethephon			6	4	36	2	11
Farnesol						4	1
Garlic oil						2	*
Gibberellic acid				4			1
Gibberellins A4A7			1			2	1
Hydrogen peroxide		15	6	7	9		6
Indolebutyric acid			5				1
Iron phosphate			2	6			2
Metaldehyde	23		8	19	15	3	11
Methyl bromide			1	4			1
NAA			4				1
Nerolidol						4	1
Paclobutrazol			15	4	19	6	10
Uniconazole			5	4	9	5	5

* Less than one percent.

Survey Procedures: The survey population of interest was any operation with either \$10,000 gross value of sales in nursery products, or \$10,000 gross value of sales in floriculture products in 2002. The scope of nursery products included: transplants for commercial vegetable and strawberry production, propagation or lining-out stock, broadleaf evergreens, coniferous evergreens, deciduous shade trees, deciduous flowering trees, deciduous shrubs, fruit and nut plants, Christmas trees cut and to be cut, palms, ornamental grasses and other woody ornamentals. The scope of floriculture products included: cut flowers, flowering plants (potted or hanging baskets), bedding plants, foliage plants (potted or hanging baskets), propagation material, cut cultivated greens, and herbaceous perennials. Excluded from the survey were aquatic plants, bulbs, flower seed plants, mushrooms, rhizomes, sod, tubers, and vegetable seed plants (See exhibit B).

The sample design was a Multivariate Probability Proportional to Size (MPPS) design. MPPS was used to assure that the value of sales for all targeted crops were included when computing the operation's probability of selection. First, each operation was assigned a probability of selection for every item of interest. The probabilities of selection were calculated as proportional to size, where the measure of size was the gross value of sales for targeted crops. Then, the maximum of these probabilities was identified and used in selecting the sample. The sample was not designed to produce chemical use estimates (rate, total pounds) at the State level for specific active ingredients.

Each operation selected in the survey sample was contacted to collect data on all chemical applications made in 2003 related to the production of nursery and/or floriculture products included in the scope of the survey.

It is common in nursery and floriculture production, to make a single chemical application to an area which contains multiple types of plant material. A single chemical application can also be made to multiple types of areas such as in a shade structure and/or in the open. Therefore, for each chemical application, respondents were asked "What was it mostly applied to?" and "Where was it mostly applied?" The data were summarized based on the "mostly" response.

Data were also collected on pest management practices at the operation level. Due to the diversity of production practices corresponding with products produced, some pest management questions only apply to a sub-population of operations. The questions corresponding to sub-populations were identified with a "NA=2" (non-applicable), on the question line in the pest management practices section of the questionnaire (See exhibit A).

Estimation procedures: The use of agricultural chemicals in the nursery and floriculture industry is very different when compared with other sectors of agriculture (field crop, fruit, livestock, vegetable, etc.). Chemical applications to nursery and floriculture commodities are predominately made on a "spot" (small area) basis. Chemical applications are frequently made by chemigation, foggers, aerosols, misters, smokers, root dipping, or drenching of soil. Application rates can be based on teaspoon(s) per pot, per 1,000 cubic feet of greenhouse space, per length of row, or per cubic yard of soil. To provide statistically sound estimates on chemical rates of application, all applications reported as being made by foggers/aerosols/misters/electrostatic sprayers/smokers/rotary atomizers, chemigation, cutting-bulb/flower dip, or growing media drench/douse, were excluded in calculating estimates of rate per acre. Estimates of total pounds of active ingredient applied included all methods of application.

The same production area can be used to produce different types of plant material, or multiple “turns” of the same plant material within the calendar year. Trees may be planted in rows with significant row widths which receive none of the chemicals applied. Due to these, and other unique circumstances, estimates on “percent of area applied”, “number of applications”, and “rate per crop year”, are not available.

Data were summarized by the production categories listed in "Survey Procedures." The production categories were aggregated to estimate chemical use data at the “All Nursery”, “All Floriculture”, and “All Nursery and Floriculture” levels. Estimates on chemical use to non-production areas are not included in the “All Nursery”, “All Floriculture”, or “All Nursery and Floriculture” data.

The chemical applications data, reported by product name or trade name, were reviewed within State and across States for reasonableness and consistency. The review compares reported data with manufacturer recommendations and with data from other operations using the same product. Following this review, product data were converted to a corresponding active ingredient level. The chemical usage estimates in this publication are the survey estimates of those active ingredients.

Estimates in the “Percent of Operations” tables by applicator, by where applied, and by method of application were derived as a percentage of operations engaged in the production of the stated category such as "Fruit and Nut Plants", or “Cut Flowers”, or “All Nursery.” They are not percentages based on “All Nursery and Floriculture Operations”, with the exception of that stated category. Also, they are not estimates on "percent of total applications." They are based on one reported chemical application on a particular production category by a particular type of applicator, or by "where applied" category, or by "method of application."

Some products are labeled for control of pests across pesticide classes; for example, as an insecticide and as a fungicide. In these instances, the active ingredient is listed under the pesticide class for which it is predominately used.

Detailed data within a table may not sum to totals due to independent rounding of published values.

Reliability: The survey was designed so that the estimates are statistically representative of chemical use on nursery and floriculture commodities. The reliability of these survey results is affected by sampling variability and non-sampling errors.

Sampling variability is a measure of how the estimates would differ if other samples had been drawn. The sampling variability expressed as a percent of the estimate is called the coefficient of variation (cv). Sampling variability of the estimates differed considerably by chemical. 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 acephate, will exhibit less variability than a more rarely used product. For more commonly used chemicals, cv's range from 5-50 percent at the program state level. Other items range from 50-200 percent. Items that have an insufficient number of reports or with cv's above 200 percent are not published and are noted with an asterisk (*) in the Active Ingredient Publication Status tables.

Non-sampling errors occur during a survey process, but 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 mistakes between collection and publication. In this survey, all survey procedures and analyses were carried out in a consistent and orderly manner to minimize the occurrence of these types of errors.

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, copper compounds are expressed in their metallic copper equivalent, and others, such as 2,4-D and glyphosate, are expressed in their acid equivalent.

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

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

Floriculture: The production, cultivation and distribution of cut flowers, flowering potted plants, foliage plants, and bedding plants being grown as ornamentals.

Nursery: Any place where plants, shrubs, and trees are grown either for transplanting or as grafting stock.

Operation: Defined for purposes of this survey as one who produced and sold \$10,000 worth of product in 2003. The collection of detailed information is limited to growers with \$100,000 or more in sales.

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, rooting compounds, and disinfectants, are included as other chemicals.

Rate per acre: "Rate per Acre" is the average number of pounds of a pesticide's active ingredient applied in one application to an acre of land regardless of the number of times a particular acre was treated at the same rate

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 contain more than one active ingredient.

Active Ingredients, Trade Names, and Classes

The following is a list of Active ingredients, associated class(es) and trade names 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 nursery and floriculture and NASS does not mean to imply use of any specific trade name.

Class	Active Ingredient	Trade Names
H	(2-Meth-4-chlor) propionic acid	Eliminate
H	1-4-6 Dimethoxypyrimidin	Maverick
H	2,4-D	Amine 4, Barrage, Cleanout, Crossbow, Landmaster II, Lithate, Tiller, Weedmaster, Saber, Trimec, Triplet SF Selective Herbicide, Weedar
H	2,4-D, Dimethylamine salt	2,4-D Amine
H	2-(2,4-DP), Dimethylamine salt	Agri Mek, Avid, Zephyr
I	Abamectin	Acephate, Address, Orthene, Orthenex, Ortho Isotox
I	Acephate	Insect Killer, Ortho Rose & Flower Spray PT 1320, Pinpoint, Precise Nursery Systemic Tame
H	Acetamide	Axiom, Domain
I	Acetamiprid	Assail, Tristar
H	Acetic acid	Brushmaster Brushkiller, 2,4-D Ester, LV4, LV400 2,4-D Weed Killer
H	Acetochlor	Surpass
H	Acifluorfen sodium salt	Conclude B&G, Tackle
I	Aldicarb	Temik
O	Alkyl dim. benzyl ammonium	NAC-7
O	Alkyl dimethyl benzyl 50%	Algaen X Algaecidel, Consan Triple Action 20, Triathlon
O	Alkyl dimethyl benzyl 60%	Algaen X Algaecidel, Consan Triple Action 20, Green-Shield, Physan, R.D.20, Triathlon
O	Alkyl dimethyl ethyl benzy	Algaen X Algaecidel, Consan Triple Action 20, Green Shield, Physan, R.D.20, Triathlon
I	Allethrin	Boot Hill No. 2 Residual Insecticide
O	Aluminum phosphide	Fumitoxin Tablets, Phostoxin
O	Aminopyridine	Avitrol Corn Chops
I	Amitraz	Ovasyn
H	Amitrole	Amitrol-T
H	Ammonium benzadox	Topcide
O	Ammonium soap	Hinder
F	AQ 10 Biofungicide (Ampelomyces quisquales isolate)	AQ 10 Biofungicide
O	Ancymidol	A-Rest Solution
H	Atrazine	Aatrex, Atrazine, Axiom, Bicep II Magnum, Conquest, Laddok, Simazat
I	Azadirachtin	AZA-Direct, Align, Azatin, Ecozin, Margosan-O, Neemix, Ornazin, SuperNeem

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Class	Active Ingredient	Trade Names
I	Azinphos-methyl	Azinphos-Methyl, Guthion
F	Azoxystrobin	Heritage, Quadris
F	Bacillus subtilus	Companion, Rhapsody AS Biofungicide, Serenade Biofungicide
I	Bacillus thuringiensis	Able, Agree, Biobit HPWP, Bt 320 Dust, Condor, Crymax, Cutlass, Deliver, Dipel, Foray, Gnatrol, Javelin, M-One Insecticide, M-Trak Bioinsecticide, MVP, Match Bioinsecticide, Raven, Thuricide Bt, Vectobac, Worm Whipper Bioinsecticide, Xentari
F	Basic copper sulfate	Basic Copper Sulfate, Bonide Garden Dust, C-O-C-S, Microcop, Zinc Coposil
I	Beauveria bassiana	BotaniGard, Mycotrol Botanigard ES Insecticide, Naturalis T & O
I	Bendiocarb	Closure, Dycarb, Turcam
H	Benefin	Balan, Turf Fertilizer w/Team Pro, XL 26
F	Benomyl	Benlate, Benomyl
H	Bentazon	Basagran, Conclude, Laddok
O	Benzyladenine	Accel, BAP 10, Fascination Plant Growth Regulator, Promalin Plant Growth Regulator
I	Bifenazate	Acramite, Floramite
I	Bifenthrin	Attain Total Release, Capture, Talstar
I	Bioallethrin	Zep Flush 'N Kill
I	Boric acid	Bushwhacker Fire Ant Control
O	Brodifacoum	Havoc Rodenticide
H	Bromacil	Krovar IDF
O	Bromadiolone	Contrac
F	Bromochloro dimethylhydantoin	Agribom Tablets
H	Bromoxynil	Buctril
F	Butanone	Strike
F	Calcium polysulfide	Lime Sulfur Solution, Sulforix
I	Canola oil	NEU1161
O	Capsaicin	Hot Pepper Wax, Hot Sauce Animal Repellent
F	Captan	Captan, Captec, Ortho Home Orchard Spray
I	Carbaryl	Carbaryl, Sevin
I	Carbofuran	Furadan
H	Carfentrazone-ethyl	AIM
I	Chlorfenapyr	Pylon
O	Chlormequat chloride	Cycocel Plant Growth Regulant
F	Chloroneb	Scotts Fungicide, Terraneb SP Turf Fungicide
O	Chlorophacinone	Rozol
O	Chloropicrin	Methyl Bromide & Chloropicrin, Tri-Clor Chloropicrin, Tri-con
F	Chlorothalonil	Bravo, Chlorothalonil, Concorde, Consyst, Countdown, Daconil, Echo, Ensign, Exotherm Termil, Ferti-Lome, Flouronil, Manicure 6 Flowable, Pathguard, Reach, Ridomil + Bravo, Spectro, Tattoo, Terranil
I	Chlorpyrifos	Boot Hill No. 2 Residual Insecticide, Chlorpyrifos, Duraguard, Duraplex, Dursban, Lorsban, Mole Cricket Bait, Nufos, Torpedo

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Class	Active Ingredient	Trade Names
I,F	Cinnamaldehyde	Cinnamite
I	Clarified hydrophobic neem oil	Triact, Trilogy
H	Clethodim	Envoy, Prism, Select
I	Clofentezine	Apollo, Ovation
H	Clopyralid	Confront, Lontrel, Stinger
H	Clopyralid monoethanol salt	Transline
I	Clove oil	GC-Mite
H	Colletotrichum gloeosporioides	Collego
F	Copper (metallic)	AgGUARD, Bordeaux
F	Copper ammonium complex	Copper-Count-N, K-Cop, Kop-R-Spray
F	Copper chloride hydroxide	Bravo C/M
H	Copper ethanolamine complex	Cutrine-Plus Algaecide/Herbicide
F	Copper hydroxide	Blue Shield, Champ, Champion WP, Coppercide, Junction, Kocide, Nu-Cop, Ridomil Gold Copper
F	Copper oxide	Nordox
F	Copper oxychloride	C-O-C-S, Microspense COC
F	Copper oxychloride sulfate	C-O-C-S
F	Copper resinate	Camelot, Copper Fungicide, Tenn-Cop
F	Copper sulfate	Basicop, Copper Sulfate, Magna-Bon Pro-Teck, Phytan, Polydex
I	Cottonseed oil	GC-Mite
F	Cresol	Gallex
I	Cryolite	Cryolite Bait
H	Cyanazine	Conquest
I	Cyfluthrin	Baythroid, Countdown EC Premise Insecticide, Decathlon 20 WP Greenhouse & Nursery, Duraplex TR, Tempo
F	Cymoxanil	Curzate, Manex C-8
F	Cyprodinil	Switch, Vanguard
I	Cyromazine	Citation, Triguard
O	Cytokinins	Cytokin Bioregulator Concentrate, Cytoplex HMS
O	Daminozide	B-Nine
O	Dazomet	Basamid Granular
H	DCPA	Dacthal
O	Decenol	Checkmate PTB-XL
O	Decenyl acetate	Checkmate PTB-XL
I	Deltamethrin	Deltagard, Suspend, Zep Flush 'N Kill DM
I	Desmedipham	Betamix
I	Diazinon	D-264 EC500, D-z-n Diazinon, Diazinon, Ferti-Lome, Knox Out, Ortho Diazinon, Spectracide, TKO Pressurized Diazinon Capsule
H	Dicamba	Banvel, Brushmaster Brushkiller, Cleanout, Eliminate, Weedmaster
H	Dicamba, Dimethylamine salt	Distinct, Trimec Herbicide, Triplet SF Selective
H	Dichlobenil	Barrier Ornamental Landscaping, Casoron
O	Dichloropropene	Telone II, Vidden D
H	Dichlorprop	Weedone
I	Dichlorvos	Fulex DDVP Fumigator, GH-19

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Class	Active Ingredient	Trade Names
F	Dicloran	Botran
I	Dicofol	Dicofol, Kelthane
O	Didecyl dim. amm. chloride	Anti-Growth Algaecide Concentrate, NAC-7
I	Dienochlor	Pentac
O	Difethialone	D-Cease
I	Diffubenzuron	Adept, Dimilin, Micromite
H	Diffufenzopyr-sodium	Distinct
O	Dikegulac-sodium	Atrimmec Plant Growth Regulator
I	Dimethoate	Cygon, De-Fend E-267, Digon, Dimate, Dimethoate
I	Dimethomorph	Acrobat, Stature
F	Dimethylphenol	Gallex
O	Diocetyl dim. amm. chloride	NAC-7
O	Diphacinone	Ramik
H,O	Diquat	Diphacinone, Ditrac Tracking Powder, Diquat, Reglone, Reward Landscape & Aquatic, Roundup Quik Pro
F	Disodium tetraborate decahyd.	Prevam Ultra
I	Disulfoton	Di-Syston, Ferti-lome Rose Food, Mocap Plus, Terraclor Super X Plus Di-Syston
H	Dithiopyr	Dimension
H	Diuron	Direx, Diuron, Dropp Ulta, Karmex, Krovar, Sprakil Sk-26 Granular Weed Killer
F	Dodemorph acetate	Milban EC
F	Dodine	Dodine, Syllit
O	E-8-Dodecenyl acetate	Checkmate OFM
H	EPTC	Genep EPTC
I	Endosulfan	Endosulfan, Fulex Thiodan Insecticidal Smoke, Phaser, Thiodan, Thionex Endosulfan
O	Endothall	Herbicide 273
I	Esfenvalerate	Asana
O	Ethephon	Ethrel Plant Regulator, Florel Plant Growth Regulator
I	Ethion	Ethion 4 Miscible
I	Ethoprop	Mocap
I,F	Ethoxy. secondary alcohols	Safe-T Green
I	Ethyl parathion	Aqua 8 Parathion, Ethyl-Methyl Parathion, Parathion Bait
I	Etoxazole	TetraSan
F	Etridiazole	Banrot SWDG, Terraclor, Truban
O	Farnesol	Stirrup
O	Fatty acids	Off-Shoot-O
I	Fenamiphos	Nemacur
F	Fenarimol	Rubigan
F	Fenbuconazole	Enable, Indar
I	Fenbutatin-oxide	Orthenex, Ortho, Isotox Insect Killer, Vendex
F	Fenhexamid	Decree, Elevate
I	Fenitrothion	Pestroy
H	Fenoxaprop-ethyl and-p-ethyl	Puma, Tiller
I	Fenoxycarb	Award, Logic, Precision, Preclude
I	Fenpropathrin	Danitol, Tame, Tame/Orthene TR
I	Fenpyroximate	Akari 5SC Miticide/Insecticide

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Class	Active Ingredient	Trade Names
I	Fenvalerate	Pydrin
F	Ferbam	Ferbam Granuflo
I	Fipronil	Garden Tech Over 'N Out Fire Ant Killer
H	Fluazifop-P-butyl	Fusilade, Ornamec Grass Herbicide
I	Flucythrinate	Pay-Off
F	Fludioxonil	Medallion, Switch
H	Fluetsulam	Broadstrike + Dual, Python WDG, Broadstar, Valor, Starane EC
F	Flutolanil	Contrast, Prostar, SysStar
I	Fluvalinate	Mavrik Aquaflo Insecticide
H	Fomesafen	Flexstar
I	Fonofos	Tenax
I	Formetanate hydrochloride	Carzol
H	Fosamine ammonium	Krenite
F	Fosetyl-al	Aliette, Chipco Alliette, Prodigy
O	GABA (Gamma aminobutyric acid)	Auxigro
O	Garlic oil	Allityn Insect Repellent, Aphid-Pruf, Envirepel, GC-Mite, Garlic Barrier AG Insect Repellent
O	Gibberellic acid	Cytoplex, GibGro, Pro-Gibb, ProVide Plant Growth Regulator
O	Gibberellins A4A7	Accel, Fascination Plant Growth Regulator, Promalin Plant Growth Regulator
O	Gliocladium virens GL-21	SoilGard
H	Glufosinate-ammonium	Finale
H	Glyphosate, N-(phosphonomethyl)	Touchdown IQ
H	Glyphosate, isopropylamin salt	Accord, Aquamaster, Buccaneer Herbicide, Clear Out 41 Plus/ Gly Star Plus, Cornerstone, Credit, Engame, Eraser Systemic Weed & Grass Killer, Gly Star Plus, Gly-Flo Herbicide, Glyphos X-TRA, Glyphomax/Glyphomax Plus, Glyphosate, Honcho, Killzall Weed & Grass Killer, Landmaster II, Mirage, Protocol, Ranger, Razor, Rodeo, Roundup, Silhouette Manage, Permit, Sempra CA
H	Halosulfuron	Manage, Permit, Sempra CA
O	Harpin protein	Messenger
H	Hexazinone	Velpar
I	Hexythiazox	Hexygon, Savey
I	Hydramethylnon	Amdro, Maxforce
O	Hydrogen peroxide	Oxidate, Zerotol
H	Imazamox	Raptor
H	Imazaquin, monoammonium salt	Image
H	Imazethapyr	Passport
I	Imidacloprid	Admire, Marathon, Merit, Provado
O	Indole-3-butyric acid	Cytoplex HMS, Dip'n Grow, Hormex Rooting Powder, Hormodin, Rhizopon AA Water Soluble Tablets, Wood's Rooting Compound
I	Indoxacarb	Avaunt Insecticide
F	Iprodione	Chipco, Iprodione, Rovral, Sextant

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Class	Active Ingredient	Trade Names
O	Iron phosphate	Sluggo
H	Isooctyl propionate	Brushmaster Brushkiller
H	Isoxaben	Gallery, Snapshot
I	Jojoba oil	Detur
I	Kaolin	Kaolin, Surround WP Crop Protectant
I	Kinoprene	Enstar
F	Kresoxim-methyl	Cygnus
O	L-Glutamic acid	Auxigro
H	Lactofen	Phoenix Herbicide
I	Lambda-cyhalothrin	Scimitar, Warrior
I	Lindane	Isotox Lindane Spray, Lindane
H	Linuron	Lorox
H	MCPA	Dagger, Eliminate, MCP Amine 4, Tiller
H	MCPB	Thistol
H	MCPP (Mecoprop), DMA salt	Trimec Herbicide
H	MCPP-P (Mecoprop-P) DMA salt	Triplet SF Selective Herbicide
H	MSMA	Bueno, Weed-Hoe
I	Malathion	Atrapa, Cythion, Fyfanon, Green Devil Spray 50% Malathion, Ortho Home Orchard Spray
O	Maleic hydrazide	Royal MH-30 Xtra
F	Mancozeb	Dithane, Fore, Junction, Mancozeb, Manex, Manzate, Pace Green-Pak Fungicide, Penncozeb, Pentathlon, Protect Turf & Ornamental, Ridomil, Stature, Zyban
F	Maneb	Bravo, Dithane, Maneb, Manex, Pentathion, Pro-Tex
F	Mefenoxam	Flourish Ultra, Flouronil, Quell, Ridomil, Subdue
O	Mefluidide diethanolamine salt	Embark
O	Mepiquat chloride	Pix DF Plant Regulator
F	Metalaxyl	Pace Green-Pak Fungicide, Pythium Control, Ridomil, Subdue
O	Metaldehyde	Corry's Slug Bait, Deadline, Metaldehyde, Slug and Snail Bait Pellets, Slug-Fest, Slugs-n-Snails
O	Metam-sodium	Vapam
I	Methamidophos	Monitor
I	Methidathion	Supracide
I	Methiocarb	Mesuro, Metaldehyde Methiocarb Granules
I	Methomyl	Lannate, Nudrin
I	Methoxychlor	Methoxychlor, Ortho Home Orchard Spray
O	Methyl bromide	Brom-O-Gas, MBC-33, Methyl Bromide, Methyl Bromide & Chloropicrin, Tri-con
I	Methyl parathion	Declare Insecticide, Ethy-Methyl Parathion, Pennacap-M
F	Metiram	Polyram
H	Metolachlor	Broadstrike + Dual, Dual, Pennant
H	Metribuzin	Axiom, Boundary, Domain
H	Metsulfuron-methyl	Escort
I	Mevinphos	Mevinphos
O	Mineral oil	Summit Horticultural Spray Oil
O	Monocarbamide dihydrogen sulfate	Engame

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Class	Active Ingredient	Trade Names
F	Myclobutanil	Chemsico Aerosol MP, Eagle, Nova, RH-144228, Rally, Systhane
I	Myrothecium verrucaria	DiTera
I	N-octy bicycloheptene dicarbo.	Boot Hill No. 2 Residual Insecticide, Pyreth-In, X-clude
O	NAD	Rootone Rooting Hormone
I	Naled	Dibrom 8 Emulsive, GH-18
H	Napropamide	Devrinol, PrePair
O	Napthaleneacetic acid	Dip 'n Grow, Wood's Rooting compound
I,F	Neem oil	Neem Guard
O	Nerolidol	Stirrup M
I	Nicotine	Fulex Nicotine Fumagator, Nicotine Smoke Generator
H	Norflurazon	Solicam, Zorial
I	Nosema locustae	Nolo-Bait Bioinsecticide
I	Novaluron	Pedestal
O	Octyl decyl dim ammonium	NAC-7
H	Oryzalin	Oryza, Rout, Snapshot, Surflan, XL
H	Oxadiazon	Chipco Ronstar, Country Club w/Ronstar, PrePair, Regal, RegalStar, Ronstar
I	Oxamyl	Oxamyl, Vydate
F	Oxycarboxin	Plantvax
I	Oxydemeton-methyl	MSR, Metasystox-R
H	Oxyfluorfen	Goal, OH 2, Regal, Rout
F	Oxytetracycline	Mycoshield
I	Oxythioquinox	Joust, Morestan
O	Paclbutrazol	Bonzi
H,O	Paraquat	Cyclone, Gramoxone
F	PCNB (Pentachloronitrobenzene)	Blocker, Defend, PCNB, Ridomil Gold, Terraclor, Terraguard, Turfcide
O	Pelargonic acid	Scythe, Thinex Blossom Thinner
H	Pendimethalin	Corral, Lesco Pre-M, OH 2, Pendimax, Pendulum, Prowl, Southern Weedgrass Control, Stomp WDG
I	Permethrin	Ambush, Astro, Chemsico Aerosol, Evercide, Intercept, Perm-Up, Waylay, Permethin, Pounce, Real Kill Multipurpose L/G Insect Killer
I	Petroleum distillate	Clean Crop Citrus Soluble Oil, Diazinon Spray, Gavicide, Horticultural Oil, JMS Stylet-Oil, MGK Formula 7243, Oil, Saf-T-Side, Sunspray, Superior Oil, Supreme Oil, Volck Supreme Spray
I	Petroleum oil	Damoil Dormant Oil Spray
H	Phenmedipham	Betamix
H	Phenothrin	Sumithrin Greenhouse Spray
I	Phorate	Tenax, Thimet
I	Phosalone	Zolone
I	Phosmet	Imidan
F	Phosphorous acid	Agri-Fos Systemic Fungicide, Fosphite Fungicide
F	Piperalin	Pipron

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Class	Active Ingredient	Trade Names
I	Piperonyl butoxide	1100 Pyrethrum TR, Bonide Rose Flower & Ornamental Spray, Boot Hill No. 2 Residual Insecticide, Diatect Multipurpose Insecticide, Evergreen Crop Protection, Incite, MGK Formula 7243, PBO-8, Perma Guard Garden & Plant, Prentox Pyronyl Crop Spray, Pyrenone, Pyreth-In Pt 1100, Pyronyl Crop Spray, TC 123, X-clude
O	Potassium N-methyldithiocarb.	K-Pam HL
F	Potassium bicarbonate	Armicarb, FirstStep, Kaligreen, MilStop Broad Spectrum Foliar Fungicide
I	Potassium salts	Insecticidal Soap, M-Pede, Pro-Mate, Safer Insecticidal Soap, Soap
H	Primisulfuron	Spirit
H	Prodiamine	Barricade, Factor, RegalStar II, Regalkade
H	Prometon	Turf King
H	Pronamide	Kerb
F	Propamocarb hydrochloride	Banol, Tattoo
H	Propanil	Stan M-4
I	Propargite	Omite,
H	Propazine	Milogard Maxx
F	Propiconazole	Banner, Orbit, Stratego, Tilt
F	Propionic acid	Cleanout, Spectro Turf Fungicide
H	Prosulfuron	Spirit
F	Pseudomonas fluorescens	Blight Ban A506
I	Pymetrozine	Endeavor, Fulfill
I	Pyraclostrobin	Cabrio, Headline
F	Pyraflufen ethyl	ET
H	Pyrazon	Pyramid DF
I	Pyrethrins	1100 Pyrethrum, Bonide, Diatect, Evergreen, MGK Formula 7243, NEU 1161, Perma Guard, Prentox, Pyronyl Crop Spray, Pyrellin, Pyrenone Crop Spray, Pyrenone Outdoor & Horticultural SEC, Pyreth-In, Pyrocide Emulsifiable, Pyronyl Crop Spray, Rotenone/Pyrethrins, TC 123, X-clude PT1600A
I	Pyridaben	Nexter, Pyramite, Sanmite
H	Pyridate	Tough
I	Pyridin	Distance
I	Pyriproxyfen	Pyrigro
H	Quinclorac	Paramount Herbicide
H	Quizalofop-ethyl	Assure
I	Resmethrin	Delete, Ortho Rose & Flower Spray, Resmethrin, Torpedo
I	Rosemary oil	Hexacide
I	Rotenone	Bonide Garden Dust, Pyrellin, Rotentone, Rotenone/Pyrethrins
I	S-Kinoprene	Enstar II

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Class	Active Ingredient	Trade Names
I	S-Methoprene	Extinguish
H	S-Metolachlor	Bicep II Magnum, Boundary, Dual II Magnum, Pennant Magnum
I	Sabadilla	Veratran D
I	Sesame oil	Organocide
H	Sethoxydim	Colclude B & G, Poast, Prestige, Ultima, Vantage
I	Silicon dioxide	Diatect Multipurpose Insecticide, Perma Guard Garden and Plant
H	Simazine	Princep, Sim-Trol, Simazat, Simazine
F	Sodium Percarbonate	Terracyte
O	Sodium chlorate	First Choice Cotton Defoliant
O	Sodium hypochlorite	Bleach, Clorox Bleach, Liquichlor
I	Spinosad	Conserve SC Turf & Ornamental, SpinTor, Success
F	Streptomyces griseoviridis	Mycostop Biofungicide
F	Streptomycin	Agri-Mycin, Agri-Strep, Streptomycin, Sulfate
O	Strychnine	Gopher Getter AG Bait
H	Sulfometuron methyl	Oust
H	Sulfosate	Touchdown
F,I	Sulfur	Bonide Garden Dust, Bravo S, Green Light Wettable Dusting Sulfur, Kocide 404S, Kolodust Extra, Koloform, Kumulus, Microthiol, RH-144228, Sulfur Dual Spraying and Dusting, Sulfur, Super Six, Terranil, Thiolux
F	Tebuconazole	Elite, Folicur
I	Tebufenozide	Confirm 2F
H	Tebuthiuron	Sprakil SK-26 Granular Weed Killer
I	Tefluthrin	Force
H	Terbacil	Sinbar
	Tetraethyl dithiopyrophosphate	Fulex Dithio Insecticidal Smoke, Plantfume 103 Smoke Generator
F	Thiabendazole (TBZ)	Mertect, Terrazole 35% Wettable Powder
I	Thiamethoxam	Flagship
O	Thidiazuron	Dropp Ultra
F	Thiophanate	Banrot, Cleary, Consyst, Fungo, Spectro
F	Thiophanate-methyl	3336, Banrot 40, Domain FL Systemic Turf & Ornamental Fungicide, Duosan, Fungo Flo, OHP 6672, Scotts Fungicide IX, Systar, Systec, Tilt Plus, Topsin, Zyban
F	Thiram	Rootone Rooting Hormone, Spotrete-F, Thiram
I	Tralomethrin	Stryker
F,O	Triadimefon	Bayleton, Reach, Strike, Amber
I	Triazamate	Aphistar
I	Trichlorfon	Dylox
F	Trichoderma harzianum	PlantShield, RootShield Drench, T-22 Planter Box Bio. Fungicide

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Class	Active Ingredient	Trade Names
H	Triclopyr	Brush-B-Gone, Confront, Crossbow, Garlon, Grazon, Pathfinder II
F	Trifloxystrobin	Compass, Flint, Gem, Stratego
F	Triflumizole	Procure
H	Trifluralin	Passport, Preen, Snapshot, Treflan, Trifluralin, Trilin, Turf Fertilizer w/ Team Pro
H	Triflusulfuron methyl	Upbeet
F	Triforine	Funginex, Orthenex, Ortho Rose & Flower Spray
F	Triphenyltin hydroxide	Pro-Tex
O	Uniconazole	Sumagic
H	Vernolate	Reward
F	Vinclozolin	Curalan, Ornalin, Ronilan, Scotts Vorlan DE
F	Xanthomonas Campestris	Agriphage
O	Z-8-Dodecenol	Checkmate (OFM)
O	Z-8-Dodecenyl acetate	Checkmate (OFM)
I	Zeta-cypermethrin	Fury
F	Zinc chloride	Moss-Kil
O	Zinc phosphide	Zinc Phosphide 2% Bait
F	Zineb	Zineb
F	Ziram	Ziram

EXHIBIT A



U.S. Department of Agriculture
Rm 5805, South Building
1400 Independence Avenue, S.W.
Washington, D.C. 20250-2000
202-720-7017

**NURSERY and FLORICULTURE
CHEMICAL USE SURVEY
JANUARY 2004**

Form Approved
O.M.B. Number 0535-0244
Approval Expires 1/31/07
Project Code 159

VERSION 1	POID _____	SUBTRACT _____	T-TYPE 0	TABLE 000	LINE 00
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CONTACT RECORD		
DATE	TIME	NOTES

RESPONSE CODES	
3 - COMPLETE	
4 - SCREEN OUT	
5 - NO TARGET CROPS or OUT OF BUSINESS	001
8 - REFUSAL	
9 - INACCESSIBLE	
OPTIONAL	003

INTRODUCTION
[Introduce yourself, and ask for the operator. Rephrase in your own words.]

We are collecting information on chemical applications for floriculture and nursery production in 2003 and need your help to collect complete and accurate data. Authority for collection of information on the Nursery and Floriculture Chemical Use Survey is Title 7, Section 2204 of the U.S. Code. This information will be used to compile and publish estimates on chemical use in floriculture and nursery production. Response to this survey is confidential and voluntary.

We encourage you to refer to your records during the interview.

DAF 011 _____	REPORTING UNIT 921 _____
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[Enumerator Note: Show operator Crop show card.]

1. Were your total gross sales of floriculture crops in 2003 greater than \$10,000?
 YES NO
 2. Were your total gross sales of nursery crops and/or Christmas trees in 2003 greater than \$10,000?
 YES NO
- ↓
Conclude interview if answer to items 1 and 2 were NO.

- [Name and address verified and updated if necessary.]
3. [Complete PARTNER boxes below only if the Respondent is in a partnership.]

POID _____				POID _____			
PARTNER NAME				PARTNER NAME			
ADDRESS				ADDRESS			
CITY	STATE	ZIP	PHONE NUMBER	CITY	STATE	ZIP	PHONE NUMBER
POID _____				POID _____			
PARTNER NAME				PARTNER NAME			
ADDRESS				ADDRESS			
CITY	STATE	ZIP	PHONE NUMBER	CITY	STATE	ZIP	PHONE NUMBER

CHEMICAL APPLICATIONS

These questions are about pesticide and chemical (*exclude fertilizer*) applications.

1. In 2003, for your floriculture and/or nursery operation, were any insecticides, herbicides, fungicides, nematocides, miticides, growth regulators, rooting compounds, soil fumigants or other chemicals applied?

YES - [Complete table below] NO - [Go to item 1, on page 16.]

[ENUMERATOR NOTE: In order to combine applications (column 10 greater than 1) the product formulation, to what and where mostly applied, area treated in size, amount applied, rate of application, method of application, and who made the application **MUST** all be the same.]

OFFICE USE EDIT TABLE	1 Incomplete 3 Valid Zero	314	OFFICE USE LINES IN TABLE	T-TYPE 1	TABLE 001	LINE 99	101
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PRODUCTION CATEGORY CODES FOR COLUMN 4		LOCATION CODES FOR COLUMN 5
<p style="text-align: center;">NURSERY</p> <ul style="list-style-type: none"> 1 Transplants for commercial vegetable and strawberry production 2 Nursery propagation or lining-out stock 3 Broadleaf evergreens 4 Coniferous evergreens 5 Deciduous shade trees 6 Deciduous flowering trees 7 Deciduous shrubs 8 Fruit and nut plants 9 Christmas trees 10 Palms 11 Ornamental grasses 12 Other woody ornamentals and vines 20 Non-production area 	<p style="text-align: center;">FLORICULTURE</p> <ul style="list-style-type: none"> 13 Cut flowers 14 Flowering plants (potted) 15 Bedding plants (flats, potted, hanging) 16 Foliage plants (potted or hanging) 17 Floriculture propagation material 18 Cut cultivated greens 19 Herbaceous perennials 20 Non-production area 	<ul style="list-style-type: none"> 1 Greenhouse (<i>Enclosed</i>) 2 Shade Structure (<i>Frames, slat, saran, cloth, screen, nonenclosed greenhouse, etc.</i>) 3 Natural Shade Area (<i>Palm, citrus, etc.</i>) 4 In The Open Production Area 5 Perimeter (<i>non-production areas</i>)

	L I N E	1 What products were applied? <small>[Enter product code.]</small>	2 Was this product bought in liquid or dry form? <small>[Enter L or D]</small>	3 Was this part of a tank mix? <small>[Enter line number of first product in the tank mix.]</small>	4 What was this chemical mostly applied to? <small>[Enter code from above.]</small>	5 Where was this product mostly applied? <small>[Enter code from above.]</small>
CHEMICAL PRODUCT NAME					CODE	CODE
	01	301		302	303	304
	02	301		302	303	304
	03	301		302	303	304
	04	301		302	303	304
	05	301		302	303	304
	06	301		302	303	304
	07	301		302	303	304
	08	301		302	303	304
	09	301		302	303	304
	10	301		302	303	304
	11	301		302	303	304
	12	301		302	303	304

For pesticides not listed on card, specify

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

CHEMICAL APPLICATIONS

UNIT CODES FOR COLUMN 9		METHOD CODES FOR COLUMN 11		APPLICATOR CODES FOR COLUMN 12	
1 Pounds	28 Dry Ounces	1 Hand held back pack sprayer	1 Licensed operator/employee pesticide applicator	2 Unlicensed operator/employee under the direction of licensed applicator 3 Hired custom applicator (Not an employee of operation) 4 Other (Specify _____)	
12 Gallons	30 Grams	2 Hand held wand/gun/boom from power hydraulic sprayers	2		
13 Quarts	40 Kilograms	3 Hand held granular shakers	3		
14 Pints	41 Liters	4 Hand held granular rotary applicator (whirly bird, belly grinder)	4		
15 Liquid Ounces	42 Milliliters	5 Hand held foggers	5	6 Dusting 7 Overhead rail sprayers (track sprayers) 8 Root ball/container/cutting/flower dip 9 Drench 10 Stationary fogger, aerosols, misters, electrostatic sprayers, smokers, rotary atomizers 11 Tractor powered boom sprayer 12 Tractor powered air blast or mister 13 Aerial application 14 Chemigation 15 Machine injection, banded, broadcast, knifed in 16 Other (Specify _____)	
20 Teaspoons	50 Other, bags, WSP, etc. (Specify unit & weight_____)	6	6		
21 Tablespoons		7	7		

Enumerator Note: CHEMICAL APPLICATIONS - for columns 6, 7 & 8 report, **6 and 7** or **6 and 8** or **7 and 8** or **7 only**.

LINE	6 How much area was treated?		7 What was the total amount applied per application?	8 How much was applied per acre OR per 1,000 square feet per application?		9 UNIT [Enter code from above.]	10 How many times was this applied?	11 How was this product applied? [Enter code from above.]	12 Who made the application(s)? [Enter code from above.]
	ACRES	O R SQUARE FEET		RATE PER ACRE	O R RATE PER 1,000 SQUARE FEET				
	CODE	CODE		CODE	CODE				
01	305	308	307	308	309	310	311	312	313
02	305	308	307	308	309	310	311	312	313
03	305	308	307	308	309	310	311	312	313
04	305	308	307	308	309	310	311	312	313
05	305	308	307	308	309	310	311	312	313
06	305	308	307	308	309	310	311	312	313
07	305	308	307	308	309	310	311	312	313
08	305	308	307	308	309	310	311	312	313
09	305	308	307	308	309	310	311	312	313
10	305	308	307	308	309	310	311	312	313
11	305	308	307	308	309	310	311	312	313
12	305	308	307	308	309	310	311	312	313

NOTES and CALCULATIONS:

PEST MANAGEMENT PRACTICES

T-TYPE	TABLE	LINE
0	000	00

1. In 2003, how did your operation scout/monitor for pests--

- a. By conducting general observations while performing routine tasks? CODE
- YES - [Enter code 1 and go to item 2.] NO - [Continue with item 1b.]
- b. By deliberately going to the growing areas specifically for scouting activities?
- YES - [Enter code 1 and go to item 2.] NO - [Continue with item 2c.]

2. In 2003, did your operation--

- a. keep electronic or written records on weed, insect or disease levels? YES = 1
- b. use pheromones to monitor insects by trapping? YES = 1
- c. detect the presence of weeds, insects, diseases or pathogens by--
- (1) soil analysis? YES = 1
- (2) plant tissue analysis? YES = 1
- (3) using trap indicator plants? YES = 1
- (4) inspecting incoming stock? NA = 2, . . . YES = 1
- (5) use of insect traps? NA = 2, . . . YES = 1
- d. use insect or disease resistant plant varieties? NA = 2, . . . YES = 1
- e. control weeds, insects or diseases by--
- (1) using beneficial organisms (*insects, nematodes or fungi*)? YES = 1
- (2) using biological pesticides (*BotaniGard, Conserve, Gnatrol, Nemasys, etc.*)? YES = 1
- (3) using trap vegetation? YES = 1
- (4) using pheromones to disrupt insect mating? YES = 1
- (5) using water management practices such as controlled drainage or treatment of retention water? (*Exclude chemigation.*) NA = 2, . . . YES = 1
- (6) pruning out or removing infected plants or plant parts? YES = 1
- (7) tilling, mowing, or burning of field or greenhouse borders, lanes, etc? YES = 1
- (8) adjusting row spacing or direction? NA = 2, . . . YES = 1
- (9) elevating plants? NA = 2, . . . YES = 1
- (10) adjusting plant density? YES = 1
- (11) use sterilized growing media? NA = 2, . . . YES = 1

PEST MANAGEMENT PRACTICES

2. In 2003, did your operation--(continued)

		CODE
e.	control weeds, insects or diseases by--	341
	(12) sanitizing benches or other platform devices between uses? NA = 2, . . . YES = 1	342
	(13) sanitizing ground covers between uses? NA = 2, . . . YES = 1	343
	(14) sanitizing containers between uses? NA = 2, . . . YES = 1	344
	(15) modifying temperature? NA = 2, . . . YES = 1	345
	(16) modifying hothouse/greenhouse relative humidity? NA = 2, . . . YES = 1	346
	(17) using greenhouse ventilation? NA = 2, . . . YES = 1	347
	(18) using greenhouse screening? NA = 2, . . . YES = 1	348
	(19) using plant tissue dryness management such as minimizing overhead irrigation to reduce leaf wetness time? NA = 2, . . . YES = 1	349
	(20) utilizing ground covers, mulches or other physical barriers such as gravel, weed mats, etc? NA = 2, . . . YES = 1	350
	(21) use of insect traps? NA = 2, . . . YES = 1	351
f.	rotate or tank mix pesticides (use pesticides with different mechanisms of action) for the primary purpose of keeping pests from becoming resistant to pesticides? YES = 1	351
g.	monitor weather data to assist in determining when to make pesticide application decisions? YES = 1	351

h.	apply pesticides based mostly on-- [Enter one code.]	1 PREVENTIVE SCHEDULE?	ENTER ONE CODE
		2 SCOUTING DATA COMPARED TO UNIVERSITY OR EXTENSION INFESTATION GUIDELINES?	
		3 SCOUTING DATA AND YOUR ESTABLISHED THRESHOLDS?	
		4 OTHER? specify _____	
			352

3. In 2003, where did your operation--

a.	obtain most of its pesticides-- [Enter one code.]	1 CHEMICAL DEALER?	ENTER ONE CODE
		2 CHEMICAL MANUFACTURER?	
		3 OTHER? specify _____	
			353

b.	mostly get recommendations for pest control or pesticide use-- [Enter one code.]	1 FARM SUPPLY DEALER / CHEMICAL DEALER?	ENTER ONE CODE
		2 UNIVERSITY / EXTENSION PERSONNEL / MATERIAL?	
		3 COMMERCIAL SCOUTING SERVICE/ CROP CONSULTANT / PEST CONTROL ADVISOR?	
		4 OTHER GROWERS / PRODUCERS?	
		5 PRODUCER ASSOCIATION / NEWSLETTER / TRADE MAGAZINE?	
		6 EMPLOYEE PEST ADVISOR?	
		7 CUSTOM APPLICATOR?	
		8 OTHER? specify _____	
			354

COMPLETION CODE for PEST MANAGEMENT	
1 Incomplete/Refusal	300

CONCLUSION

[Thank the respondent then review this questionnaire.]

1. TIME SPENT COLLECTING DATA	TOTAL ENUMERATION TIME	TOTAL TIME SPENT WITH OPERATOR or RESPONDENT												
	019	012												
2. RESPONDENT														
<table border="1"><tr><td>1 OPERATOR/MANAGER</td><td>CODE</td></tr><tr><td>2 SPOUSE</td><td>013</td></tr><tr><td>3 ACCT / BKPR</td><td></td></tr><tr><td>4 OTHER</td><td></td></tr><tr><td>8 OFFICE HOLD</td><td></td></tr><tr><td>9 PARTNER</td><td></td></tr></table>	1 OPERATOR/MANAGER	CODE	2 SPOUSE	013	3 ACCT / BKPR		4 OTHER		8 OFFICE HOLD		9 PARTNER			
1 OPERATOR/MANAGER	CODE													
2 SPOUSE	013													
3 ACCT / BKPR														
4 OTHER														
8 OFFICE HOLD														
9 PARTNER														
Respondent's name														
Phone (____) _____ -														
3. SUPPLEMENTS USED (Record the total number of chemical supplements used to complete this interview.)	NUMBER	014												
4. ENUMERATOR NAME:	ENUMERATOR ID	015												
5. DATE	MM DD	016												
	EVALUATION	017												
6. Would you like to receive a copy of the results of this survey in the mail? (Results will also be available on the Internet at http://www.usda.gov/inass/)	CODE	018												
	YES = 1													

7. [ENUMERATOR NOTE: Please list names, title and contact information if other people were contacted for assistance in completing this questionnaire, please record their names and phone numbers below.]

NAME/TITLE:

PHONE:

ADDRESS:

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789

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EXHIBIT B

CROP CATEGORY CODES and DESCRIPTIONS (Column 4)

NURSERY	
TRANSPANTS for COMMERCIAL VEGETABLE and STRAWBERRY PRODUCTION CODE 1	
Broccoli, cabbage, cauliflower, other crucifers Greens Peppers Strawberries for commercial production Tomatoes Other	
NURSERY PROPAGATION or LINING-OUT STOCK CODE 2	
Cuttings Lining-out stock Seedlings Root stock	Tissue culture Understock Whips Other
BROADLEAF EVERGREENS CODE 3	
Azalea Boxwood Cotoneaster Euonymus Holly Magnolia	Pieris Pittosporum Privet Rhododendron Viburnum Other
CONIFEROUS EVERGREENS CODE 4	
Arborvitae Cedar (<i>Cedrus</i>) Cypress (<i>Cupressus</i>)	Fir Hemlock Juniper Pine
	Spruce Yew Other
DECIDUOUS SHADE TREES CODE 5	
Ash Birch Honey locust Linden Maple, Japanese Maple, Norway Maple, red	Maple, sugar Maple, other Oak Poplar Sweet gum Willow Other
DECIDUOUS FLOWERING TREES CODE 6	
Amelanchier Crabapple Crapemyrtle Dogwood Golden rain Hawthorn	Magnolia Redbud Ornamental cherry Ornamental pear Ornamental plum Other
DECIDUOUS SHRUBS CODE 7	
Buddleias Hibiscus Hydrangeas Lilacs Roses	Spireas Viburnum Weigelas Winterberry Other
FRUIT and NUT PLANTS CODE 8	
Citrus and subtropical fruit trees Deciduous fruit and nut trees Grapevines Strawberry plants for home use Other small fruit plants (<i>Blueberry, etc.</i>) Other	
CHRISTMAS TREES CODE 9	
Douglas fir Fraser fir Leland Cypress Noble fir	Scotch pine Virginia pine White pine Other
PALMS CODE 10	
Palmal, arecaceae Palms used for outdoor landscaping	

NURSERY	
ORNAMENTAL GRASSES CODE 11	
Grasses for the garden or landscape	Sedges Reeds
OTHER WOODY ORNAMENTALS and VINES CODE 12	
Clematis, Climbing Ground Covers	Other Vines Other
FLORICULTURE	
CUT FLOWERS CODE 13	
Carnation Chrysanthemum; standard, pompon Daffodil Daisy	Iris Gladioli Orchid Rose Snapdragon
	Tulip Zinnia Other
FLOWERING PLANTS (POTTED) CODE 14	
African violet Azalea, finished florist Begonia Chrysanthemum, florist (<i>exclude hardy garden mums</i>) Cyclamen Hibiscus	Hydrangea Kalanchoe Lily, Easter Orchids Poinsettia Potted flowering spring bulbs Other
BEDDING PLANTS (FLATS, POTTED OR HANGING BASKETS) CODE 15	
Begonia Coleus Dusty Miller Geraniums Impatiens Marigold Pansy Petunias	Snapdragons Zinnia Herb culinary type (<i>not for commercial production</i>) Vegetable type (<i>not for commercial production</i>) Other
FOLIAGE PLANTS (POTTED or HANGING BASKETS) CODE 16	
Cacti/succulants Dracaena Ferns (<i>potted</i>) Ficus	Hedera Ivy Palms (<i>potted</i>) Philodendron Other
FLORICULTURE PROPAGATION MATERIAL CODE 17	
Bedding and flowering liners Cuttings Foliage plant liners	Plug seedlings Prefinished plants Production stock Other
CUT CULTIVATED GREENS CODE 18	
Asparagus Boxwood Coniferous greens Eucalyptus	Ferns Hedera Ivy Holly Other
HERBACEOUS PERENNIALS CODE 19	
Chrysanthemum; hardy/garden Day lily Ferns; hardy/garden	Hosta Iris Other
NON-PRODUCTION AREAS CODE 20	
Aisles Driveways Greenhouse perimeter	Property perimeter Walkways Other
EXCLUDE	
Aquatic Plants Bulbs Flower seed plants Mushrooms	Rhizomes Sod Tubers Vegetable seed plants

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