United States Department of Agriculture

National Agricultural Statistics Service

Ag Ch 1 (02) a

Agricultural Chemical Usage
2000 Nursery and Floriculture Summary

April 2002

Table of Contents

Page

Table of Contents (continued)

Update Alert

Summary errors were discovered for all chemical applications reported on a square foot basis. The error affected total pounds of active ingredient and rate of application. For purposes of this publication, all chemical application data are converted to a per acre basis.

2000 Nursery and Floriculture Agricultural Chemical Usage

Overview: This report is the first issued by the National Agricultural Statistics Service on the use of agricultural chemicals 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.

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 2000 related to the production of nursery and floriculture crops in six major producing states: California, Florida, Michigan, Oregon, Pennsylvania, and Texas.

There were 2,190 reports (206,680 chemical applications) summarized for the 2000 Nursery and Floriculture Chemical Use Survey.

Highlights

Pest Management Highlights: Scouting for pests, by conducting general observations while performing routine tasks, was reported by 93 percent of the nursery and floriculture operations. Deliberately scouting for pests on a scheduled basis was reported by 52 percent of the operations, and 23 percent reported performing systematic sampling or counting of pest populations.

The leading methods reported for weed, insect or disease control were: pruning out/removing infected plants or plant parts - 85 percent; utilizing ground covers, mulches or other physical barriers - 68 percent; using greenhouse ventilation - 68 percent; tilling, mowing, or burning of field or greenhouse boarders, lanes, etc. - 65 percent; and sanitizing benches/platform devices between uses - 61 percent.

To keep pests from becoming resistant to pesticides, 58 percent of operations in the six program states rotated or tank mixed pesticides in 2000.

Use of beneficial organisms was reported by 19 percent of the operations while 27 percent reported use of biological pesticides.

Monitoring of weather data to assist in making pesticide application decisions was reported by 66 percent of operations.

Chemical Use Highlights: There were 307 active ingredients reported as being used by nursery and floriculture operations in the six program states in 2000. A total of 5.36 million pounds of active ingredient were applied in the six Program States: California, Florida, Michigan, Oregon, Pennsylvania, and Texas.

Other Chemicals (growth regulators, rooting compounds, fumigants, disinfectants, etc.) accounted for 31 percent (1.66 million pounds) of the total. Fungicides accounted for 28 percent (1.53 million pounds) of the total; Insecticides - 24 percent (1.27 million pounds); and Herbicides - 17 percent (909 thousand pounds).

Of the 428 thousand pounds of active ingredient applied to non-production areas, 62 percent were herbicides and 36 percent were in the “other chemicals” class.

Excluding applications to non-production areas:

Nursery commodities received 61 percent of the total active ingredients applied while floriculture commodities received 39 percent.

Among production categories, coniferous evergreens received 14 percent of the total active ingredients applied followed by cut flowers at 13 percent, cut cultivated greens at 12 percent, and deciduous shrubs and other ornamentals at 8 percent. Each of the other production categories accounted for 7 percent or less of the total pounds of active ingredient applied.

Of the 643 thousand pounds of herbicides applied, Christmas trees and deciduous shade trees both accounted for 19 percent of the total, followed by coniferous evergreens at 15 percent, and deciduous flowering trees at 12 percent. Each of the other production categories accounted for 10 percent or less of the total pounds applied.

Glyphosate was the most commonly used herbicide with 21 percent of all operations reporting its use. Oryzalin and oxyfluorfen were the second most commonly used herbicides, both used by 8 percent of all operations.

Of the 1.26 million pounds of insecticides applied, coniferous evergreens accounted for 36 percent of the total, followed by deciduous shrubs and other ornamentals at 13 percent, and broadleaf evergreens at 7 percent. Each of the other production categories accounted for 6 percent or less of the total pounds applied. Acephate was the most commonly used insecticide with 40 percent of all operations reporting its use. Abamectin, used by 26 percent of the operations, was the second most commonly used insecticide, followed by chlorpyrifos, which was used by 24 percent of all operations.

Of the 1.53 million pounds of fungicides applied, cut cultivated greens accounted for 33 percent of the total, followed by cut flowers at 11 percent, and deciduous shrubs and other ornamentals at 9 percent. Each of the other production categories accounted for 8 percent or less of the total pounds applied. Thiophanate-methyl was the most commonly used fungicide with 29 percent of the operations reporting its use. Chlorothalonil, used by 22 percent of the operations, was the second most commonly used fungicide. Mancozeb was the third most commonly used fungicide; reported by 18 percent of all operations.

Of the 1.50 million pounds of other chemicals applied, cut flowers accounted for 25 percent of the total, followed by transplants for commercial truck crop production at 17 percent, and nursery propagation and lining out stock at 11 percent. Each of the other production categories accounted for 10 percent or less of the total pounds applied. Daminozide was the most commonly used other chemical with 13 percent of the operations reporting its use. Paclobutrazol and chlormequat chloride, both used by 8 percent of all operations, were the second most commonly used other chemicals.

The most commonly used chemicals by pesticide class within the production categories were as follows:

All Nursery: Herbicides, glyphosate - 37 percent; Insecticides, acephate - 32 percent; Fungicides, chlorothalonil - 22 percent; and Other Chemicals, metaldehyde - 4 percent.

Transplants for Commercial Truck Crop Production: Herbicides, glyphosate - 9 percent; Insecticides, acephate - 28 percent; Fungicides, copper hydroxide - 28 percent; and Other Chemicals, methyl bromide - 6 percent.

Nursery Propagation or Lining Out Stock: Herbicides, glyphosate - 13 percent; Insecticides, acephate - 22 percent; Fungicides, thiophanate-methyl - 20 percent; and Other Chemicals, indolebutyric acid - 11 percent.

Broadleaf Evergreens: Herbicides, oxyfluorfen - 20 percent; Insecticides, acephate - 45 percent; Fungicides, chlorothalonil - 21 percent; and Other Chemicals, hydrogen peroxide and metaldehyde - 4 percent each.

Coniferous Evergreens: Herbicides, glyphosate - 26 percent; Insecticides, chlorpyrifos - 24 percent; and Fungicides, chlorothalonil - 14 percent.

Deciduous Shade Trees: Herbicides, glyphosate - 33 percent; Insecticides, chlorpyrifos - 17 percent; Fungicides, copper hydroxide - 17 percent; and Other Chemicals, metaldehyde - 3 percent.

Deciduous Flowering Trees: Herbicides, glyphosate - 12 percent; Insecticides, acephate - 27 percent; Fungicides, thiophanate-methyl - 19 percent; and Other Chemicals, hydrogen peroxide - 3 percent.

Deciduous Shrubs and Other Ornamentals: Herbicides, glyphosate - 23 percent; Insecticides, acephate - 31 percent; Fungicides, copper hydroxide and mancozeb - both 21 percent; and Other Chemicals, metaldehyde - 4 percent.

Fruit and Nut Plants: Herbicides, glyphosate - 25 percent; Insecticides, pertroleum distillate - 22 percent; Fungicides, copper hydroxide - 32 percent; and Other Chemicals, metaldehyde - 5 percent.

Christmas Trees: Herbicides, glyphosate - 60 percent; Insecticides, chlorpyrifos - 34 percent; and Fungicides, chlorothalonil - 38 percent.

All Floriculture: Herbicides, glyphosate - 7 percent; Insecticides, acephate - 44 percent; Fungicides, thiophanate-methyl - 38 percent; and Other Chemicals, daminozide - 21 percent.

Cut Flowers: Herbicides, glyphosate - 10 percent; Insecticides, acephate - 50 percent; Fungicides, thiophanate-methyl - 29 percent; and Other Chemicals, methyl bromide - 9 percent.

Flowering Plants: Herbicides, glyphosate - 2 percent; Insecticides, imidacloprid - 47 percent; Fungicides, thiophanate-methyl - 33 percent; and Other Chemicals, chlormequat chloride and daminozide - both 22 percent.

Bedding Plants: Herbicides, glyposate - 3 percent; Insecticides, acephate - 37 percent; Fungicides, thiophanate-methyl - 32 percent; and Other Chemicals, daminozide - 33 percent.

Foliage Plants: Herbicides, glyphosate - 7 percent; Insecticides, acephate - 46 percent; Fungicides, thiophanate-methyl - 31 percent; and Other Chemicals, gibberellic acid - 6 percent.

Floriculture Propagation Material: Insecticides, abamectin - 11 percent; Fungicides, thiophanate-methyl - 42 percent; and Other Chemicals, daminozide and paclobutrazol - both at 10 percent.

Cut Cultivated Greens: Herbicides, prodiamine - 15 percent; Insecticides, chlorpyrifos - 41 percent; Fungicides, mancozeb - 66 percent; and Other Chemicals, ethephon - 5 percent.

Herbaceous Perennials: Herbicides, glyposate - 12 percent; Insecticides, acephate - 26 percent; Fungicides, thiopanate-methyl - 23 percent; and Other Chemicals, metaldehyde - 11 percent.

The percent of operations making chemical applications by power-hydraulic sprayers was 64 percent followed by; hand held-back pack sprayers - 48 percent, hand held shakers-spreaders - 16 percent, growing media drench-douse - 14 percent, foggers-aerosols-misters-electrostatic sprayers-smokers-rotary atomizers - 11 percent, injection-banded-broadcast-knifed in - 11 percent, other methods - 7 percent, chemigation - 4 percent, and cutting-bulb-flower dip - 3 percent.

Nursery and Floriculture Chemical Use Survey
Number of Usable Reports
Program States, 2000

State	Usable Reports	Chemical Applications Summarized			
		Nursery	Floriculture	Non-production Areas	Total
	Number	*Number*	*Number*	*Number*	*Number*
CA	441	23,818	54,144	7,504	85,466
FL	481	12,922	26,472	1,778	41,172
MI	337	3,876	9,058	436	13,370
OR	356	6,832	7,538	1,865	16,235
PA	340	3,765	14,878	1,705	20,348
TX	235	14,224	14,291	1,574	30,089
TOTAL	2,190	65,437	126,381	14,862	206,680

Nursery
Number of Operations by Gross Value of Sales
Program States, 2000

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
	Number	*Number*	*Number*	*Number*	*Number*
CA	245	85	57	61	39
FL	424	210	130	99	73
MI	345	82	38	19	13
OR	525	70	80	67	57
PA	289	56	30	13	13
TX	79	31	22	15	7
TOTAL	1,907	534	357	274	202

Nursery
Number of Operations by Gross Value of Sales
Program States, 2000

State	$2,000,000 to $4,999,999	$5,000,000 to $9,999,999	$10,000,000 or More	Total Operations
	Number	*Number*	*Number*	*Number*
CA	45	16	19	567
FL	37	14	4	991
MI	14	6		517
OR	34	16	18	867
PA	12			413
TX	12	4		170
TOTAL	154	56	41	3,525

Floriculture
Number of Operations by Gross Value of Sales
Program States, 2000

State	$10,000 to $19,999	$20,000 to $39,999	$40,000 to $49,999	$50,000 to $99,999
	Number	*Number*	*Number*	*Number*
CA	47	78	50	150
FL	82	117	62	201
MI	65	86	42	163
OR	24	38	9	55
PA	82	124	68	218
TX	16	27	13	70
TOTAL	316	470	244	857

Floriculture
Number of Operations by Gross Value of Sales
Program States, 2000

State	$100,000 to $499,999	$500,000 or More	Total	Expanded Wholesale Value [1]
	Number	*Number*	*Number*	*1,000 Dollars*
CA	266	240	831	858,459
FL	385	317	1,164	798,459
MI	240	130	726	300,652
OR	47	41	214	96,116
PA	189	50	731	160,902
TX	106	83	315	264,616
TOTAL	1,233	861	3,981	2,479,204

[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 for 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, 2000

Practice	CA	FL	MI	OR	PA	TX	ALL
Scouting/monitoring for pests:							
Conducted general observations while performing routine tasks?	95	92	92	96	92	92	93
Performed deliberate scouting activities on a scheduled basis?	52	47	60	52	56	43	52
Performed systematic sampling or counting?	24	18	30	20	26	20	23
Keep electronic records on weed, insect or disease levels?	28	21	24	29	32	15	25
Detect the presence of weeds, insects, diseases or pathogens by:							
soil analysis?	30	36	24	24	16	18	26
plant tissue analysis?	24	28	18	21	17	15	21
using trap indicator plants?	17	4	23	15	17	14	15
inspecting incoming stock?	72	60	78	71	85	74	73
Using pheromones to monitor insects by trapping?	10	3	17	13	9	10	10
Use insect or disease resistant plant varieties?	49	23	51	46	68	42	46
Control weeds, insects or diseases by:							
using beneficial organisms (insects, nematodes, fungi)?	25	16	18	22	19	16	19
using biological pesticides (BotaniGard, Conserve, etc.)?	35	20	21	15	36	36	27
using trap vegetation?	5	2	5	5	4	2	4
using pheromones to disrupt insect mating?	5	2	5	4	7	8	5
using water management practices such as drainage or treatment of retention water?	40	30	24	33	24	33	31
pruning out/removing infected plants or plant parts?	82	81	88	86	94	82	85
tilling, mowing, or burning of field or greenhouse borders, lanes, etc.?	50	65	74	61	81	62	65
adjusting row spacing or direction?	40	40	42	36	61	41	43
elevating plants?	42	48	49	44	59	53	49
adjusting plant density?	49	48	53	41	69	54	52
using sterilized growing media?	61	53	69	50	77	52	60
sanitizing benches or other platform devices between uses?	62	45	77	62	77	56	61
sanitizing ground covers between uses?	37	32	53	38	42	41	39
sanitizing containers between uses?	58	35	64	52	61	45	51
modifying temperatures?	52	30	69	55	63	51	51
modifying hothouse/greenhouse relative humidity?	51	23	60	54	60	46	47
using greenhouse ventilation?	65	42	86	78	84	70	68
using greenhouse screening?	38	41	27	32	28	42	35
using plant tissue dryness management such as minimizing overhead irrigation to reduce leaf wetness time?	49	42	70	63	67	50	55
utilizing ground covers, mulches or other physical barriers such as gravel, weed mats, etc.?	65	61	67	73	77	69	68

Percent of Nursery and Floriculture Operations Reporting Pest Management Related Practices Program States, 2000

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?	53	57	60	49	75	55	58
Monitor weather data to assist in making pesticide application decisions?	60	69	60	65	76	71	66
Apply pesticides based mostly on: [1]							
a preventive schedule?	40	42	24	29	34	30	34
scouting data compared to university or extension infestation guidelines?	3	7	14	7	8	6	7
scouting data and your established thresholds?	43	41	51	56	49	53	48
other?	13	11	12	8	10	11	11
Obtain most of its pesticides from: [1]							
chemical dealer?	80	90	81	90	82	86	85
chemical manufacturer?	2	2	1	1	2	2	2
other?	18	8	18	9	16	12	14
Mostly get recommendations for pest control/ pesticide use from: [1]							
farm supply dealer/chemical dealer?	45	48	30	51	31	30	40
university/extension personnel/material?	7	20	31	14	32	25	20
commercial scouting service/crop consultant/ pest control advisor?	5	6	2	2	4	2	4
other growers/producers?	10	12	12	12	11	21	12
producers association/newsletter/ trade magazine?	4	3	9	10	11	10	8
employee pest advisor?	13	3	3	3	1	4	5
custom applicator?	2	0	2	2	1	0	1
other?	14	7	10	7	10	8	10

[1] May not add due to rounding.

Percent of Operations making Chemical Applications by Applicator Program States, 2000

Production Category	Licensed Operator/ Employee Applicator	Un-licensed Operator/ Employee Applicator	Hired Custom Applicator	Other
	Percent	*Percent*	*Percent*	*Percent*
All Nursery and Floriculture	72	30	4	2
All Nursery	71	28	7	2
Transplants for Commercial Truck Crop Production	72	24	4	4
Nursery Propagation or Lining Out Stock	61	38	7	2
Broadleaf Evergreens	68	32	5	3
Coniferous Evergreens	71	28	4	1
Deciduous Shade Trees	67	30	3	3
Deciduous Flowering Trees	58	42	1	1
Deciduous Shrubs and Other Ornamentals	72	29	3	2
Fruit and Nut Plants	73	28	3	1
Christmas Trees	70	24	15	1
All Floriculture	72	30	3	3
Cut Flowers	81	22	5	0
Flowering Plants	72	32	2	2
Bedding Plants	70	32	1	4
Foliage Plants	75	26	2	3
Floriculture Propagation Material	67	44	0	0
Cut Cultivated Greens	62	43	0	1
Herbaceous Perennials	71	32	3	2
Non-production Areas	72	28	2	1

Percent of Operations making Chemical Applications by Where Applied Program States, 2000

Production Category	Enclosed Greenhouse	Shade Structure	Natural Shade Area	In the Open Area	Non-production Areas
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
All Nursery and Floriculture	51	16	2	50	6
All Nursery	19	14	2	83	8
Transplants for Commercial Truck Crop Production	50	22	2	27	8
Nursery Propagation or Lining Out Stock	50	23	2	44	1
Broadleaf Evergreens	20	21	6	79	3
Coniferous Evergreens	8	9	1	91	3
Deciduous Shade Trees	8	3	2	88	7
Deciduous Flowering Trees	7	4	4	92	2
Deciduous Shrubs and Other Ornamentals	15	18	2	82	9
Fruit and Nut Plants	14	8	0	90	6
Christmas Trees	3	0	0	96	8
All Floriculture	73	17	2	22	4
Cut Flowers	61	5	0	43	5
Flowering Plants	87	10	0	14	2
Bedding Plants	91	10	0	9	3
Foliage Plants	64	24	1	21	4
Floriculture Propagation Material	78	8	0	22	1
Cut Cultivated Greens	12	73	24	10	2
Herbaceous Perennials	52	14	1	52	7
Non-production Areas	11	2	1	28	73

Percent of Operations making Chemical Applications by Method of Application Program States, 2000

Production Category	Hand held or back pack sprayers	Power or hydraulic sprayers	Hand held shakers or spreaders	Foggers, Aerosols, Misters, Electrostatic sprayers, Smokers, Rotary atomizers	Chemigation
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
All Nursery and Floriculture	48	64	16	11	4
All Nursery	44	68	15	3	1
Transplants for Commercial Truck Crop Production	33	66	2	1	9
Nursery Propagation or Lining Out Stock	32	60	15	2	3
Broadleaf Evergreens	39	69	21	1	0
Coniferous Evergreens	34	70	8	2	1
Deciduous Shade Trees	45	58	13	1	1
Deciduous Flowering Trees	18	77	7	1	1
Deciduous Shrubs and Other Ornamentals	48	60	24	1	1
Fruit and Nut Plants	31	76	6	1	1
Christmas Trees	34	73	1	5	0
All Floriculture	48	59	17	17	6
Cut Flowers	34	77	6	4	1
Flowering Plants	48	50	21	23	3
Bedding Plants	59	47	11	20	1
Foliage Plants	31	70	15	7	4
Floriculture Propagation Material	42	40	5	6	1
Cut Cultivated Greens	11	60	3	0	54
Herbaceous Perennials	36	56	13	6	3
Non-production Areas	64	41	7	1	0

Percent of Operations making Chemical Applications by Method of Application Program States, 2000

Production Category	Injection, Banded, Broadcast, Knifed in	Cutting, bulb or flower dip	Growing media Drench or Douse	Other
	Percent	*Percent*	*Percent*	*Percent*
All Nursery and Floriculture	11	3	14	7
All Nursery	10	3	7	5
Transplants for Commercial Truck Crop Production	7	2	11	2
Nursery Propagation or Lining Out Stock	13	12	11	5
Broadleaf Evergreens	5	0	10	5
Coniferous Evergreens	13	0	2	4
Deciduous Shade Trees	7	0	1	2
Deciduous Flowering Trees	4	1	3	7
Deciduous Shrubs and Other Ornamentals	6	2	10	2
Fruit and Nut Plants	10	1	4	7
Christmas Trees	9	0	0	11
All Floriculture	11	2	19	8
Cut Flowers	8	2	13	1
Flowering Plants	12	2	23	11
Bedding Plants	11	1	21	7
Foliage Plants	4	1	12	3
Floriculture Propagation Material	7	7	27	2
Cut Cultivated Greens	7	1	1	5
Herbaceous Perennials	11	4	16	8
Non-production Areas	3	0	1	2

All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D	1	*	1	8	1		2
2,4-D, Dimeth. salt		*	1	1			*
2,4-DP, Dimeth. salt	*						*
Acetamide	*			*	*		*
Acetic acid			*	1			*
Ammonium benzadox		1	1	1	1	1	1
Asulam				*			*
Atrazine	*		3	13	1		3
Benefin	1			*	*		*
Bensulfuron-methyl					*		*
Bensulide		*					*
Bentazon		*	*		1		*
Bromacil				1		*	*
Bromoxynil	*		*				*
Butoxy. ester 2,4-D				*			*
Chlorimuron-ethyl			*				*
Chlorsulfuron				*			*
Clethodim	*		1	6		*	1
Clopyralid			3	4	4		2
DCPA	*	*			*		*
Dicamba				*			*
Dicamba, Dimet. salt		*	1	1			*
Dichlobenil			1	5	1		1
Dichlorprop				*			*
Diphenamid				*			*
Diquat	2	*	*		*		1
Dithiopyr				*			*
Diuron	1	1	*	2		*	1
EPTC				*	*		*
Fluazifop-P-butyl	1	*	3	*	1	1	1
Fomesafen						*	*
Glufosinate-ammonium			*	*			*
Glyphosate	17	19	22	32	20	11	21
Glyphosate, is. salt	1					*	*
Halosulfuron	*			1	1		*
Hexazinone	*		3	6		*	2
Imazaquin, mon. salt		*					*
Isoxaben	4	4	4	10	3	1	5
Lactofen		*				*	*

See footnote(s) at end of table.

--continued

All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides-cont							
Linuron	*			*			*
MCPA	*		*			*	*
MCPP, DMA salt		*	1	1			*
MSMA		*	1				*
Metolachlor	*		1	1	3	*	1
Metribuzin	*			*	*		*
Napropamide	1	*	*	10	*		2
Norflurazon	1	1					*
Oryzalin	6	3	7	18	9	6	8
Oxadiazon	6	5	1	10	1	2	5
Oxyfluorfen	6	7	5	16	8	3	8
Paraquat	1	*	1	1	*	1	1
Pendimethalin	3	6	2	4	3	4	4
Prodiamine	2	5	1	4	4	1	3
Pronamide	*		*	*	1		*
Propanil					*		*
Quizalofop-ethyl				*			*
S-Metolachlor			*	*	2		*
Sethoxydim	*	1	*	*	1	*	*
Simazine	1	*	8	8	12	1	5
Sodium metaborate				*			*
Sulfometuron methyl				*	1	1	*
Sulfosate	*						*
Tebuthiuron	*						*
Thiazopyr	*			*			*
Triclopyr	*	*	*	8	2	*	2
Trifluralin	1	2	4	2	4	2	2
Vernolate	1						*
Insecticides							
Abamectin	35	29	25	10	30	27	26
Acephate	49	47	29	31	37	46	40
Aldicarb	1				1	*	*
Allethrin			*				*
Azadirachtin	12	3	10	3	9	7	7
Azinphos-methyl	*		2	1	1	*	1
Beauveria bassiana	4	2	4	2	8	2	4
Bendiocarb	*	3	3	1	5	3	3
Bifenazate	4	7	2	6	4	10	5
Bifenthrin	10	11	16	14	18	19	14
Bt (Bacillus thur.)	15	10	4	2	5	17	8
Buprofezin	*						*

See footnote(s) at end of table.

--continued

All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Carbaryl	3	19	15	3	15	9	11
Carbofuran	*			1			*
Chlorpyrifos	28	19	28	20	25	26	24
Cinnamaldehyde	2	*	4	2	5	3	2
Clofentezine	*	1	*	*	*	*	*
Cryolite	*			*			*
Cyfluthrin	10	3	15	5	20	9	10
Cypermethrin	*						*
Cyromazine	5	1	1	*	*	*	1
Deltamethrin	1	*					*
Diazinon	23	14	9	13	13	16	15
Dichlorvos		*	2		1	1	1
Dicofol	4	6	3	2	2	3	4
Dienochlor	15	2	2	3	5	7	5
Diflubenzuron	3	7	7	1	4	7	5
Dimethoate	7	16	2	4	4	3	7
Disulfoton	*	*	1	*	1	4	1
Endosulfan	1	10	7	7	12	7	7
Esfenvalerate	1	1	1	2	*	1	1
Ethion		1					*
Ethoprop		1		*			*
Ethoxy sec. alcohols						1	*
Ethyl parathion	*						*
Fenamiphos		*	1	*			*
Fenbutatin-oxide	2	2	1	1	2	*	2
Fenitrothion				*			*
Fenoxycarb	2	4	4	2	5	10	4
Fenpropathrin	1	5	6	1	5	11	4
Fluvalinate	24	11	10	4	7	11	11
Formetanate hydro.	1				*	*	*
Hexythiazox	4	5	2	1	5	1	3
Hydramethylnon	1	2				2	1
Imidacloprid	13	10	32	8	36	30	19
Jojoba oil	1						*
Kinoprene	4		1	*	*	2	1
Lambda-cyhalothrin	*	*	1	2	*	2	1
Lindane	*	1	4	*	5	2	2
Malathion	16	10	9	6	5	12	9
Methamidophos					*		*
Methidathion	*	*	*				*

See footnote(s) at end of table.

--continued

All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Methiocarb	5	2	6	1	7	4	4
Methomyl	1	*	1		1		1
Methoxychlor			*				*
Methyl parathion			*				*
Mevinphos						*	*
N-octy-bicyclohepten	*		*	*	1	*	*
Naled	1	*	*	*			*
Neem oil					*	2	*
Neem oil, clar. hyd.	2	5		*	2	5	2
Nicotine	1		1	1	4	1	1
Oxamyl	2	1	*	*	2	1	1
Oxydemeton-methyl		*	1	1	4	*	1
Oxythioquinox	3	1	*	4	2	1	2
Permethrin	10	4	1	1	*	3	3
Petroleum distillate	13	10	5	8	8	12	9
Petroleum oil			2		1	1	1
Phorate	*						*
Phosmet	1		*	*	2	1	1
Piperonyl butoxide	7	*	3	3	2	1	3
Pirimicarb					*		*
Potassium salts	18	8	5	7	10	11	9
Propargite	1	*		*		1	*
Pseudomonas cepacia					*		*
Pymetrozine	12	2	7	2	7	6	6
Pyrethrins	8	*	3	3	3	1	3
Pyridaben	4	3	2	*	*	6	2
Pyridine	4	*	1	*	1	3	2
Pyriproxyfen	1		*	*	1	*	*
Resmethrin	1		1	1	1		1
Rotenone	2		*		1	1	*
S-Kinoprene	4	1	5	6	9	7	5
Sabadilla	1						*
Silicon dioxide	*	*	1		*	*	*
Spinosad	21	7	13	1	23	19	13
Sulfotepp	1	*	1	2	4	4	2
Tebufenozide						*	*
Tefluthrin						*	*
Tetramethrin				*			*
Thiodicarb	*						*
Triazamate				*	*		*
Trichlorfon	*			*			*

See footnote(s) at end of table.

--continued

All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
AQ-10 Biofungicide	*			*			*
Agrobacterium radio.	*		*	1	1	1	1
Azoxystrobin	10	7	1	2	1	4	4
Bacillus subtilus	*						*
Basic copper sulfate	1		*	*			*
Benomyl	3	1	4	3	3	2	3
Butanone	5	*	4	2	9	1	3
Calcium polysulfide	1				1		*
Captafol				*			*
Captan	4	6	6	8	5	6	6
Chloroneb		*					*
Chlorothalonil	18	27	21	22	24	20	22
Copper (metallic)			*	2	*		*
Copper amm. complex	1	1				*	*
Copper chloride hyd.	*						*
Copper hydroxide	13	34	3	20	1	8	16
Copper oxychlo. sul.				*			*
Copper oxychloride	1	*	*	*			*
Copper resinate		*	*	*	*		*
Copper sulfate	10	8	6	5	6	9	7
Cresol	*						*
Cyproconazole						*	*
Cyprodinil	*						*
Dicloran	*			*			*
Dinocap						*	*
Dodine			*	3			1
Etridiazole	1	11	26	5	21	20	13
Fenarimol	7	1	1	2	1	2	2
Fenbuconazole				2		1	*
Fenhexamid	9	1	3	2	7	2	4
Ferbam		*	*	*		*	*
Fludioxonil	*	5	11	2	5	3	4
Flutolanil		1	1				*
Fosetyl-al	23	18	5	8	3	10	12
Iprodione	20	11	10	7	5	8	10
Kresoxim-methyl				*	1	*	*
Mancozeb	17	40	9	9	6	12	18
Maneb	3	2	*		*	1	1
Mefenoxam	17	18	17	9	15	21	16

See footnote(s) at end of table.

--continued

All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides-cont							
Metalaxyl	15	8	5	3	8	8	8
Metiram		1					*
Milban				*	*		*
Mint oil				1			*
Myclobutanil	15	1	2	3	1	1	4
Oxycarboxin	*	1		1	*		*
Oxytetracycline				1	*		*
PCNB	9	5	10	2	2	9	6
Piperalin	8	1	2	1	3	3	2
Potassium bicarbon.	3		1	1	1	*	1
Propamocarb hydroch.	*	*	1		*	*	*
Propiconazole	5	5	1	3	1	5	3
Pseudomonas fluores.	*						*
Streptomyces gris.	*		*				*
Streptomycin	5	6	*	3	1	1	3
Sulfur	11	*	*	2	*	*	3
Tebuconazole	*	5		*			1
Thiabendazole		1	2	*	1	*	1
Thiophanate	2	3	4	*	3	1	2
Thiophanate-methyl	24	36	35	11	29	40	29
Thiram	*		*			*	*
Triadimefon	4	1	2	3	1	5	2
Trichoderma harz.	5	2	3	1	5	3	3
Trifloxystrobin	5	1	2	2	2	1	2
Triflumizole	*				*		*
Triforine	3	1	2	1	1	2	1
Triphenyltin hydrox.						*	*
Vinclozolin	5	1	4	3	7	2	3
Xylenol	*						*
Ziram	*			1			*
Zoxamide						1	*

See footnote(s) at end of table.

--continued

All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%		*	*	*	*	1	*
Alk. dim. benzyl 60%	2	2	1	2	2	2	2
Alk. dim. eth. benz.	2	2	1	2	2	2	2
Alk. dim. ethbz. am.	*			*			*
Alkyl. dim. benz. am	*						*
Aluminum phosphide	1						*
Ammonium soap	*			*			*
Ancymidol	2	*	4	1	5	9	3
Benzyladenine	*		1	*	1	*	*
Bitrex			*				*
Brodifacoum	1		*			*	*
Bromadiolone	*		*				*
Butyl mercaptan			*				*
Capsaicin	1		1	1	1		1
Chlormequat chloride	5	1	18	3	14	19	8
Chlorophacinone	*					*	*
Chloropicrin	2	*	*	*			*
Cholecalciferol	*						*
Citric acid				1			*
Cytokinins		*			*		*
Daminozide	8	4	24	3	21	30	13
Dazomet	1	*		*			*
Decyldimethyloctyl	*						*
Dichloropropene	*		*				*
Didecyl dim. ammon.	*						*
Dikegulac-sodium	1	*		*			*
Dimethyldioctyl	*						*
Diphacinone	1		*	*	*		*
Dodecadien-1-ol						*	*
Dodecanol						*	*
E-8-Dodecenyl cetat	*						*
Ethephon	2	2	10	1	14	4	5
Farnesol	1	*			*	*	*
Fatty acids	*			*			*
Fatty alcohols		*		*			*
GABA				*			*
Garlic oil	*				*	*	*
Gibberellic acid	1	4	1	*	*	*	1
Gibberellins A4A7	*		1	*	1	*	*
Gliocladium virens	*		1	*		1	*

See footnote(s) at end of table.

--continued

All Nursery and Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals-cont							
Hydrogen peroxide	*	5	5	7	3	1	4
Indolebutyric acid	2	2	2	2	2	3	2
Iron phosphate	1	*		1			*
L-Glutamic acid				*			*
Metaldehyde	12	4	1	5	1	6	5
Metam-sodium		*	*	*		*	*
Methyl bromide	6	1	2	1	*	1	2
Methyl nonyl ketone	*						*
NAA	2	1	2	2	*	1	1
NAD	*		*				*
Nerolidol	1	*			*	*	*
Paclobutrazol	8	3	18	1	11	17	8
Pelargonic acid	1	*	2	1	1	*	1
Potassium gibber.					*		*
Propionic acid	*						*
Silicic acid	*			*			*
Sodium chlorate		*		*	*		*
Sodium hypochlorite	*	1		*	1	1	*
Strychnine	*						*
Tetradecanol						*	*
Tetrasodium salt	*			*			*
Uniconazole	2	1	5	*	4	9	3
Warfarin						*	*
Z-8-Dodecen acetate	*						*
Z-8-Dodecenol	*						*
Zinc phosphide	*		*				*

* Less than one percent.

All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D	1	1	3	11	3		4
2,4-D, Dimeth. salt		1	1	2			1
2,4-DP, Dimeth. salt	*						*
Acetamide	*			*	*		*
Acetic acid			*	1			*
Ammonium benzadox				1		1	*
Asulam				*			*
Atrazine	*		7	18	4		6
Benefin	*			*	*		*
Bensulfuron-methyl					*		*
Bentazon		*	1				*
Bromacil				1		*	*
Bromoxynil	1						*
Butoxy. ester 2,4-D				*			*
Chlorimuron-ethyl			*				*
Chlorsulfuron				*			*
Clethodim			3	8		1	3
Clopyralid			7	4	12		3
Dicamba				*			*
Dicamba, Dimet. salt		1	1	2			1
Dichlobenil			1	7	3		2
Dichlorprop				*			*
Diphenamid				*			*
Diquat	2	*			*		*
Dithiopyr				*			*
Diuron	1		*	3			1
EPTC				*	*		*
Fluazifop-P-butyl	*		7	*	3	2	2
Fomesafen						1	*
Glufosinate-ammonium			1	1			*
Glyphosate	27	33	51	41	48	16	37
Glyphosate, is. salt	*						*
Halosulfuron	1			1	2		1
Hexazinone	*		8	8		1	3
Isoxaben	6	4	8	13	7	3	8
Lactofen		*				1	*
Linuron				*			*
MCPA			*				*
MCPP, DMA salt		1	1	2			1

See footnote(s) at end of table.

--continued

All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides-cont							
MSMA		1	1				*
Metolachlor	*		1	2	7	1	1
Metribuzin	*			*	*		*
Napropamide	2	1	1	13			4
Norflurazon	1	3					1
Oryzalin	10	5	16	25	24	11	15
Oxadiazon	8	6	1	12	1	5	7
Oxyfluorfen	11	13	14	23	22	7	16
Paraquat	2	1	2	1	*	1	1
Pendimethalin	7	10	5	5	8	7	7
Prodiamine	3	4	2	5	6	3	4
Pronamide			*	1	3		1
Propanil					*		*
S-Metolachlor			1	*	4		1
Sethoxydim	1	1	*	1	3	1	1
Simazine	2		20	11	35	2	10
Sodium metaborate				*			*
Sulfometuron methyl				*	2	3	1
Sulfosate	*						*
Tebuthiuron	*						*
Thiazopyr	*			*			*
Triclopyr	1	*	*	11	5	*	4
Trifluralin	2	3	5	2	9	3	4
Vernolate	1						*
Insecticides							
Abamectin	19	20	1	4	2	15	10
Acephate	37	41	15	28	23	41	32
Aldicarb	1					1	*
Allethrin			*				*
Azadirachtin	3	2	1	1	1	2	2
Azinphos-methyl	*		4	1	2	*	1
Beauveria bassiana	2	1	1	1	*	1	1
Bendiocarb	*	3	2	1	2		2
Bifenazate	*	3	*	6	1	5	3
Bifenthrin	6	9	9	8	8	12	8
Bt (Bacillus thur.)	11	9	1	1	1	9	5
Carbaryl	3	24	35	3	37	12	17
Carbofuran	*			1			*
Chlorpyrifos	22	19	32	22	34	25	24
Cinnamaldehyde	1	*	*	1		1	1
Clofentezine	1	*			*	*	*

See footnote(s) at end of table.

--continued

All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Cryolite	*			*			*
Cyfluthrin	6	1	9	5	3	6	5
Cypermethrin	*						*
Cyromazine	*	1	1	*		1	*
Deltamethrin	3	*					*
Diazinon	24	11	8	10	8	19	13
Dicofol	5	6	3	2	6	4	4
Dienochlor	6	2		1	1	1	2
Diflubenzuron	1	2	8	*	*	2	2
Dimethoate	3	25	3	4	8	4	9
Disulfoton	1	*	*	*	3	7	1
Endosulfan		6	4	8	1	3	5
Esfenvalerate	3	1	2	3	*	3	2
Ethion		1					*
Ethoprop				1			*
Ethoxy sec. alcohols						1	*
Ethyl parathion	*						*
Fenamiphos			1				*
Fenbutatin-oxide	2	1	3	1	2	1	2
Fenitrothion				*			*
Fenoxycarb	3	7	*	1	*	9	3
Fenpropathrin	1	4		*		6	2
Fluvalinate	13	4	1	3	*	7	5
Formetanate hydro.	1						*
Hexythiazox	5	4	5	1	10	3	4
Hydramethylnon	2	3				1	1
Imidacloprid	12	6	7	2	4	11	6
Jojoba oil	*						*
Kinoprene	1		*			1	*
Lambda-cyhalothrin	*		1	2		3	1
Lindane	*	2	11	*	14	3	4
Malathion	21	12	15	4	7	20	12
Methidathion	*		1				*
Methiocarb	3	1	*	*	1	2	1
Methomyl	1	*			1		*
Methoxychlor			1				*
Methyl parathion			*				*
Mevinphos						1	*
N-octy-bicyclohepten			*			1	*
Naled	1						*

See footnote(s) at end of table. --continued

All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Neem oil						3	*
Neem oil, clar. hyd.	3	3			3	5	2
Nicotine	*				*		*
Oxamyl	1	*			*	1	*
Oxydemeton-methyl		*	3	2	10	1	2
Oxythioquinox	3	1	*	5	4		3
Permethrin	6	2	1	*	1	3	2
Petroleum distillate	14	14	8	9	9	15	11
Petroleum oil			5		4	*	1
Phosmet	1		*	1	1	3	1
Piperonyl butoxide	4	*	3	*	1	1	1
Potassium salts	10	7	3	3	1	5	5
Propargite	1	1		1		2	1
Pymetrozine	2	3	1	1	*	4	2
Pyrethrins	4	*	3	*	1	1	1
Pyridaben	*	3	*	*		2	1
Pyridine	1	1	*	*		1	*
Pyriproxyfen				*			*
Resmethrin	1			*			*
Rotenone	2						*
S-Kinoprene	3			2	*	2	1
Sabadilla	1						*
Silicon dioxide		*	2			1	*
Spinosad	5	4	1	1	3	9	3
Sulfotepp	*						*
Tebufenozide						*	*
Tefluthrin						1	*
Tetramethrin				*			*
Thiodicarb	*						*
Triazamate				*	*		*
Fungicides							
AQ-10 Biofungicide				1			*
Agrobacterium radio.	*		1	2	2	3	1
Azoxystrobin	8	9	*	1	*	3	4
Basic copper sulfate	1			*			*
Benomyl	6	1	4	3	3	2	3
Butanone	6	1	1	1		1	2
Calcium polysulfide	1				1		*
Captafol				*			*
Captan	2	4	5	7	4	5	5
Chlorothalonil	17	19	21	21	42	18	22

See footnote(s) at end of table.

--continued

All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides-cont							
Copper (metallic)			1	2	*		1
Copper amm. complex	1	2				1	1
Copper hydroxide	18	35	5	22	2	10	19
Copper oxychlo. sul.				*			*
Copper oxychloride	1	1		*			*
Copper resinate		*	1				*
Copper sulfate	6	6	*	5	*	4	4
Cresol	*						*
Cyproconazole						1	*
Cyprodinil	1						*
Dicloran	1						*
Dodine			*	5			1
Etridiazole	1	7	4	3	2	6	4
Fenarimol	6		1	1	3	2	2
Fenbuconazole				2		2	1
Fenhexamid	1	*		*		1	*
Ferbam				*			*
Fludioxonil		4	1	2	*	3	2
Flutolanil		1	*				*
Fosetyl-al	18	18	4	9	2	7	11
Iprodione	15	9	2	7		4	7
Kresoxim-methyl				*	2	*	*
Mancozeb	9	33	10	9	6	14	15
Maneb	2	2	*		*	1	1
Mefenoxam	17	15	4	8	3	13	11
Metalaxyl	13	9	1	3	3	3	6
Myclobutanil	7	1	2	3	1	1	3
Oxycarboxin	1			*			*
Oxytetracycline				1	*		*
PCNB	5	2	2	1		2	2
Piperalin	1				3	1	1
Potassium bicarbon.	1		1	*		1	1
Propamocarb hydroch.	*	*					*
Propiconazole	6	10	2	3	1	9	5
Pseudomonas fluores.	*						*
Streptomycin	5	5	1	4	2	3	3
Sulfur	6	*		3			2
Tebuconazole	*	*		1			*
Thiabendazole		1	*			*	*
Thiophanate	1	3	1	*	*	1	1
Thiophanate-methyl	14	28	13	7	11	22	16
Thiram	*					*	*
Triadimefon	3	*	3	1	*	5	2
Trichoderma harz.	3	2	*	1		1	1
Trifloxystrobin	3	1	1	1		1	1
Triflumizole	1				*		*
Triforine	2	2	1	1	2	3	2
Vinclozolin	3		*	3	*	*	1
Xylenol	*						*
Ziram	*			2			1

See footnote(s) at end of table.

--continued

All Nursery
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%		1	*	*		3	1
Alk. dim. benzyl 60%	1	1	1	1	*	3	1
Alk. dim. eth. benz.	*	1	1	1	*	3	1
Alk. dim. ethbz. am.	1			*			*
Alkyl. dim. benz. am	*						*
Aluminum phosphide	1						*
Ammonium soap				*			*
Ancymidol	*			*		1	*
Bitrex			*				*
Brodifacoum	2		*			1	*
Bromadiolone	*						*
Butyl mercaptan			*				*
Capsaicin	1		1				*
Chlormequat chloride	1	*	*			4	1
Chlorophacinone						1	*
Chloropicrin	1			*			*
Cholecalciferol	*						*
Daminozide	2	1	*	*	1	4	1
Dazomet	*						*
Decyldimethyloctyl	*						*
Dichloropropene	*		*				*
Didecyl dim. ammon.	*						*
Dikegulac-sodium	1	1					*
Dimethyldioctyl	*						*
Diphacinone	*		1	1	*		*
E-8-Dodecenyl cetat	*						*
Ethephon	1			1	1	1	*
Farnesol	1	*				1	*
Fatty alcohols		*		*			*
Garlic oil	1					1	*
Gibberellic acid	1	*		*			*
Gliocladium virens	1						*
Hydrogen peroxide	*	4	1	7		1	3
Indolebutyric acid	3	4	3	3	1	3	3
Iron phosphate	1			1			*
Metaldehyde	11	2	2	4		1	4
Metam-sodium		1	*	*		1	*
Methyl bromide	5	1	2	1	1	1	1
NAA	2	2	3	2		1	2
NAD	*						*
Nerolidol	1	*				1	*
Paclobutrazol	1	*			1	1	*
Pelargonic acid	1	*	3	1	*	*	1
Silicic acid	1			*			*
Sodium chlorate				*			*
Sodium hypochlorite	1	*		*	*	1	*
Strychnine	*						*
Tetrasodium salt	1			*			*
Uniconazole	*					1	*
Z-8-Dodecen acetate	*						*
Z-8-Dodecenol	*						*
Zinc phosphide	1		1				*

See footnote(s) at end of table.

--continued

Transplants for Commercial Truck Crop Production
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR [1]	PA [1]	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
Fluazifop-P-butyl	2						1
Glyphosate	5						9
Isoxaben							1
Oryzalin							1
Oxyfluorfen	2						1
Pendimethalin	2						1
Insecticides							
Abamectin	22	30					15
Acephate	50	19					28
Azadirachtin	2	10					4
Beauveria bassiana	9						4
Bt (Bacillus thur.)	26	64					26
Chlorpyrifos	4						2
Cyfluthrin							3
Cypermethrin	2						1
Cyromazine	2						1
Diazinon	12						12
Diflubenzuron	2	7					2
Dimethoate	5	15					5
Disulfoton	2						1
Endosulfan		23					5
Esfenvalerate	2	14					4
Fluvalinate	2						2
Imidacloprid	7	24					11
Malathion	11						10
Methomyl	3	9					3
Naled	2						1
Neem oil, clar. hyd.	2						1
Oxamyl	3						1
Permethrin	12	39					13
Petroleum distillate							2
Piperonyl butoxide	2						1
Potassium salts	11						6
Propargite	5						2
Pyrethrins	9						4
Pyridine	2						1
Rotenone	9						4
Spinosad	10	17					11
Thiodicarb	2						1

See footnote(s) at end of table.

--continued

Transplants for Commercial Truck Crop Production
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR [1]	PA [1]	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Azoxystrobin	5	9					3
Benomyl	16	24					11
Captan	2						7
Chlorothalonil	33	34					20
Copper hydroxide	40	53					28
Copper resinate							1
Dicloran	2						1
Fenhexamid	6						2
Fosetyl-al	21						10
Iprodione	18						9
Mancozeb	16	46					15
Maneb	19	24					12
Mefenoxam	24	7					18
Metalaxyl	22						10
Myclobutanil	9						4
PCNB	5						4
Propamocarb hydroch.	5						2
Propiconazole	7						3
Streptomycin	17	23					12
Sulfur	2						1
Thiophanate-methyl	7						11
Trichoderma harz.		10					3
Trifloxystrobin	2						1
Vinclozolin	10						4
Other Chemicals							
Chlormequat chloride							4
Chloropicrin	2						1
Daminozide	2						5
Dazomet	2						1
Dichloropropene	2						1
Diphacinone	2						1
Indolebutyric acid	2						1
Metaldehyde	3						1
Methyl bromide	15						6
Sodium hypochlorite							1

[1] Insufficient number of reports to publish data.

Nursery Propagation or Lining Out Stock
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D			4	5			2
2,4-D, Dimeth. salt			14				1
Ammonium benzadox				1			*
Bentazon		1					*
Bromacil						2	*
Clethodim			10	9			4
Clopyralid			7	1	3		1
Dicamba, Dimet. salt			14				1
Diuron			4				*
Fluazifop-P-butyl			6		3	2	1
Glufosinate-ammonium			4				*
Glyphosate	5	11	40	14	14	3	13
Halosulfuron				1			*
Isoxaben			21	12	4	3	7
Lactofen		3					1
MCPP, DMA salt			14				1
MSMA			14				1
Metolachlor			6	1			1
Napropamide		3	4	2			2
Norflurazon	2	3					1
Oryzalin	4	2	23	13	18	3	9
Oxadiazon		3		9		4	4
Oxyfluorfen	2	6	20	11	48	6	11
Paraquat	2	4		2			2
Pendimethalin		2	8	2	3	6	3
Prodiamine		6	10	8		6	6
Pronamide				1			*
Simazine			10	6	17		4
Trifluralin			9	4	15	7	4
Insecticides							
Abamectin	3	28		5		5	9
Acephate	12	25	8	27	4	41	22
Azadirachtin		6		1			2
Azinphos-methyl			9				1
Beauveria bassiana		2		1			1
Bendiocarb		2		3			1
Bifenazate		5		2		5	2
Bifenthrin	3	8	19	6	4	12	8
Bt (Bacillus thur.)	2	7		1		9	3
Carbaryl		10	16	5	31	6	8

See footnote(s) at end of table.

--continued

Nursery Propagation or Lining Out Stock
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Chlorpyrifos	13	11	35	13	9	11	14
Cinnamaldehyde	2			1			1
Clofentezine		1					*
Cyfluthrin	2	2		11	4	3	5
Cyromazine		4		1			1
Diazinon	15	7	15	10	4	7	10
Dicofol	2	10		1	4	3	3
Dienochlor		2		2			1
Diflubenzuron	2	6	6	1			2
Dimethoate	3	3	3		8		2
Disulfoton						3	*
Endosulfan		4	4	7		3	4
Esfenvalerate		3		1			1
Ethyl parathion	2						*
Fenoxycarb		5		4		3	3
Fenpropathrin		3				3	1
Fluvalinate	3	7		1		3	3
Hexythiazox		3	4		5		1
Hydramethylnon		2					*
Imidacloprid	2	6	4	2		9	4
Lambda-cyhalothrin				3			1
Lindane		3	6		4		1
Malathion	12	8	12			17	6
Methiocarb		1					*
Neem oil, clar. hyd.						7	1
Nicotine	2				5		1
Oxydemeton-methyl		2		1	5		1
Oxythioquinox				1			*
Permethrin	3		3				1
Petroleum distillate	2	2	3	9	4	3	5
Phosmet				1			*
Piperonyl butoxide	3						*
Potassium salts	2	6		7			5
Propargite						3	*
Pymetrozine	1			1		3	1
Pyrethrins	3						*
Pyridaben		2		1			1
Pyridine		1					*
Pyriproxyfen				1			*
S-Kinoprene	2			4			2
Spinosad		2		1		3	1
Tefluthrin						2	*

See footnote(s) at end of table.

--continued

Nursery Propagation or Lining Out Stock
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
AQ-10 Biofungicide				1			*
Azoxystrobin		15		2	5	9	5
Benomyl			4	1	5	3	1
Butanone		2		1			1
Captan	3	6	4	11	14		7
Chlorothalonil	6	16	14	14	9	15	13
Copper amm. complex		1					*
Copper hydroxide	2	15	4	19		13	12
Copper sulfate	16	1	3	4		14	6
Dodine				1			*
Etridiazole	3	9	12	4		5	5
Fenarimol				4			1
Fenhexamid		2					1
Fludioxonil		8	4	1			3
Fosetyl-al	5	22	19	14	9	7	14
Iprodione	14	16	4	3		2	7
Kresoxim-methyl					18		1
Mancozeb	2	27	21	11	22	5	14
Maneb		2				4	1
Mefenoxam	27	22	7	13	9	11	16
Metalaxyl	7	11		11	18		9
Myclobutanil		1	4	3		3	2
Oxycarboxin				1			*
Oxytetracycline				1			*
PCNB	6	2		2		2	2
Potassium bicarbon.			4	2			1
Propamocarb hydroch.		2					1
Propiconazole	3	1		2		7	2
Streptomycin	1	2		4		3	3
Sulfur				5			2
Thiophanate		2	4			3	1
Thiophanate-methyl	11	34	36	13	8	21	20
Triadimefon		3		2		9	2
Trichoderma harz.			3	2			1
Trifloxystrobin		1					*
Vinclozolin	2			2			1

See footnote(s) at end of table.

--continued

Nursery Propagation or Lining Out Stock
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%			4			6	1
Alk. dim. benzyl 60%	2		7	1	5	6	2
Alk. dim. eth. benz.	2		7	1	5	6	2
Ancymidol	2						*
Brodifacoum	8						1
Chlormequat chloride	2	1					1
Daminozide	2					3	1
Dikegulac-sodium	3	3					1
Diphacinone					4		*
Ethephon				2			1
Hydrogen peroxide	2	1		17		6	7
Indolebutyric acid	5	16	6	13	4	10	11
Iron phosphate				5			2
Metaldehyde	2	1		13			5
Metam-sodium		2					*
Methyl bromide	2	5	7	2	8		3
NAA	2	3	6	10		4	5
Paclobutrazol	2					3	1
Pelargonic acid		1		1			1
Sodium hypochlorite		2				3	1

* Less than one percent.

Broadleaf Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D				1			*
2,4-D, Dimeth. salt		4					1
Acetamide				1			*
Ammonium benzadox				1			*
Bromacil				2			1
Clethodim				2			1
Clopyralid					4		*
Dicamba, Dimet. salt		4					1
Dichlobenil				5			2
Diquat	2						*
Diuron	1			3			1
Fluazifop-P-butyl				1	4	2	1
Glyphosate	12	9		12	6	2	10
Halosulfuron				2			1
Isoxaben	9	2		6	26	6	7
MCPP, DMA salt		4					1
MSMA		1					*
Metolachlor				2			1
Metribuzin				1			*
Napropamide	2			14			5
Oryzalin	16	4		13	15	17	11
Oxadiazon	6	1		18	5	8	9
Oxyfluorfen	16	29		21	9	13	20
Paraquat					6		*
Pendimethalin	8	27		4		6	11
Prodiamine	4	4		2		3	3
Pronamide				1			*
S-Metolachlor					4		*
Sethoxydim		2		1			1
Simazine	2			11			4
Tebuthiuron	1						*
Trifluralin	9	2		1	12	3	4
Vernolate	2						*

See footnote(s) at end of table.

--continued

Broadleaf Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides							
Abamectin	17	16		2		14	10
Acephate	78	38		41	29	41	45
Azadirachtin	3	1		1		4	2
Azinphos-methyl				4	6		2
Beauveria bassiana	2					2	1
Bendiocarb	2	11		1	12		4
Bifenazate		8		2		5	3
Bifenthrin	9	14		3	13	15	9
Bt (Bacillus thur.)	2	3		2		4	2
Carbaryl	3	15		1	40	5	9
Carbofuran				4			1
Chlorpyrifos	23	15		13	8	16	15
Cinnamaldehyde	1	1		1		1	1
Clofentezine						1	*
Cyfluthrin	20	3		2	18	8	7
Cyromazine						2	*
Deltamethrin	9	1					2
Diazinon	20	12		14		23	15
Dicofol	10	10		2		3	6
Dienochlor	8	2					2
Diflubenzuron		1		1		2	1
Dimethoate		15		8		6	7
Disulfoton		1				11	2
Endosulfan		4		12		6	6
Fenbutatin-oxide		2				1	1
Fenoxycarb	2	5				5	2
Fenpropathrin				2		6	2
Fluvalinate	24	4		10		8	10
Hexythiazox	6	14		1	12	3	6
Hydramethylnon	2	1					1
Imidacloprid	13	7		2	4	6	6
Kinoprene						2	*
Lambda-cyhalothrin				1		8	2
Lindane		4			20		2
Malathion	16	16		8	16	27	15
Methidathion							*
Methiocarb	3						*
Neem oil						2	*
Neem oil, clar. hyd.		4				5	2
Oxythioquinox	5	1		4	4		3

See footnote(s) at end of table.

--continued

Broadleaf Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Permethrin	7	2		2		1	2
Petroleum distillate	12	23		5	13	17	13
Petroleum oil					3		*
Piperonyl butoxide	2			1		2	1
Potassium salts	4	12				2	4
Propargite						3	1
Pymetrozine	3	4		3		3	3
Pyrethrins	2			1		2	1
Pyridaben		6				1	2
Pyridine		1				3	1
S-Kinoprene	1						*
Silicon dioxide						2	*
Spinosad	6	3				4	3
Tefluthrin						2	*
Tetramethrin				2			*
Fungicides							
AQ-10 Biofungicide				1			*
Agrobacterium radio.						7	1
Azoxystrobin	6	11		1		3	5
Basic copper sulfate	2						*
Benomyl						1	*
Butanone	21			1		1	4
Captan		2		3		1	2
Chlorothalonil	20	30		19	12	19	21
Copper amm. complex		4				2	1
Copper hydroxide	14	22		24		18	19
Copper oxychloride	2						*
Copper resinate		1					*
Copper sulfate	3	7		3		2	4
Dodine				9			3
Etridiazole		9		9		3	6
Fenarimol	6					1	1
Fludioxonil		4		2		2	2
Fosetyl-al	28	16		10	4	3	14
Iprodione	11	15		5		6	9
Mancozeb	9	27		6	4	11	12
Maneb						2	*
Mefenoxam	27	12		7	4	12	12
Metalaxyl	3	1		1		3	2
Myclobutanil	8	2		2		3	3
Oxycarboxin				1			*

See footnote(s) at end of table.

--continued

Broadleaf Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides-cont							
PCNB	6	2		3		1	3
Piperalin						1	*
Potassium bicarbon.	2					1	*
Propiconazole	8	28		5		7	11
Streptomycin	4			8		3	4
Sulfur				2			1
Thiabendazole		4				1	1
Thiophanate	2	3					1
Thiophanate-methyl	9	30		15	9	23	19
Thiram						1	*
Triadimefon	8					3	2
Trifloxystrobin	7			1		1	2
Triforine	2						*
Vinclozolin	2			2			1
Ziram				1			*
Other Chemicals							
Alk. dim. benzyl 50%						3	1
Alk. dim. benzyl 60%				1		3	1
Alk. dim. eth. benz.				1		3	1
Alkyl. dim. benz. am	2						*
Brodifacoum						2	*
Chlormequat chloride						1	*
Chlorophacinone						2	*
Cholecalciferol	2						*
Daminozide				1		3	1
Dazomet	1						*
Decyldimethyloctyl	2						*
Didecyl dim. ammon.	2						*
Dikegulac-sodium	3						1
Dimethyldioctyl	2						*
Diphacinone				1			*
Farnesol	2	1				2	1
Garlic oil						2	*
Gibberellic acid				1			*
Hydrogen peroxide				12			4
Indolebutyric acid				1		1	*
Iron phosphate				1			*
Metaldehyde	16			3		3	4
Nerolidol	2	1				2	1
Paclobutrazol						1	*
Pelargonic acid	2						*
Sodium hypochlorite	3						*
Uniconazole						1	*

* Less than one percent.
[1] Insufficient number of reports to publish data.

Coniferous Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D			5	10			5
2,4-D, Dimeth. salt				*			*
Ammonium benzadox				*			*
Atrazine			7	13			6
Bensulfuron-methyl					1		*
Bromacil				1			1
Butoxy. ester 2,4-D				*			*
Chlorsulfuron				*			*
Clethodim			2	11		5	5
Clopyralid			6	7	7		5
Dicamba, Dimet. salt				*			*
Dichlobenil			2	2			1
Diquat	8						*
Diuron				2			1
EPTC					1		*
Fluazifop-P-butyl			8	*	3		2
Fomesafen						5	*
Glufosinate-ammonium				1			*
Glyphosate	30	19	49	17	33	8	26
Halosulfuron				*	1		*
Hexazinone			4	*		5	1
Isoxaben	18		6	16	8	4	10
Lactofen						5	*
MCPA			1				*
MCPP, DMA salt				*			*
Metolachlor			1	1	1		1
Napropamide	7		1	16			7
Oryzalin	18	3	10	38	18	3	22
Oxadiazon	7	2	1	14	3	5	7
Oxyfluorfen	24	14	16	40	13	13	25
Paraquat				1	1		*
Pendimethalin	21	13	5	5	4	10	7
Prodiamine	10		2	2	12		4
Pronamide				*	1		*
Propanil					1		*
S-Metolachlor			1	*	4		1
Sethoxydim		1		*	2	9	1
Simazine			22	6	20	4	10
Sodium metaborate				1			1
Sulfometuron methyl				*	2		1
Thiazopyr				*			*
Triclopyr			1	11			5
Trifluralin	4		6	*	8	8	3

See footnote(s) at end of table.

--continued

Coniferous Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides							
Abamectin	12	11		3	3	26	5
Acephate	32	15	6	24	18	25	19
Allethrin			1				*
Azadirachtin	8				1	5	1
Azinphos-methyl			2		2		1
Beauveria bassiana					1		*
Bendiocarb			1	1	2		1
Bifenazate		6		16	2	5	8
Bifenthrin	9	12	13	10	4	25	10
Bt (Bacillus thur.)	11	2				3	1
Carbaryl	18	5	27	2	15	4	10
Carbofuran	7			*			*
Chlorpyrifos	21	6	16	32	26	27	24
Cinnamaldehyde	4						*
Clofentezine		2					*
Cyfluthrin		2	1	5	1		3
Deltamethrin	4						*
Diazinon	14		5	6	6	14	6
Dicofol	4	4	2	2	6	24	4
Dienochlor	16						1
Diflubenzuron			4		1		1
Dimethoate	10	11	4	2	10	8	5
Endosulfan		5	1	1		5	2
Esfenvalerate				1		5	*
Ethoxy sec. alcohols						5	*
Fenbutatin-oxide				2		3	1
Fenoxycarb	7	4	1		1	14	2
Fenpropathrin		2		1			*
Fluvalinate	14	5	1	1	1		2
Hexythiazox	4	2	7	3	7	5	4
Hydramethylnon	7						*
Imidacloprid	20	2	3		6	5	3
Lambda-cyhalothrin			1	3			1
Lindane		2	6		10		3
Malathion	11	6	11	5	6	5	7
Methidathion			1				*
Methiocarb	8	2					1
N-octy-bicyclohepten			1				*
Neem oil						5	*
Neem oil, clar. hyd.					8	9	2
Oxamyl						5	*
Oxydemeton-methyl			2	1	2	4	1
Oxythioquinox	11			9	3		5
Petroleum distillate	21	9	10	3	5	16	7
Petroleum oil			1		1		*
Phosmet	4			1			1
Piperonyl butoxide	11		7			5	2
Potassium salts		8		2	1	5	2
Propargite				2			1
Pymetrozine	4	2		1	1		1
Pyrethrins	11		5				1
Resmethrin				1			*
S-Kinoprene	4			2	1		1
Silicon dioxide			5				1
Spinosad		4			1	8	1

See footnote(s) at end of table.

--continued

Coniferous Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Agrobacterium radio.				*			*
Azoxystrobin	12	9		1		10	3
Benomyl			3	1			1
Butanone			1				*
Captan		2	5	3	2	5	3
Chlorothalonil	25	16	11	10	25	8	14
Copper (metallic)			1				*
Copper hydroxide	14	14	2	16	1	13	11
Copper oxychlo. sul.				1			*
Copper sulfate	4			9	1	5	4
Dicloran	4						*
Dodine				*			*
Etridiazole			2	*	4	9	2
Fenarimol	4		1			4	1
Fenhexamid	4						*
Fludioxonil		2	1		1		1
Flutolanil			1				*
Fosetyl-al	26	7		6	2	5	5
Iprodione	30	4	1	8		5	6
Mancozeb	14	48	5	4	3	18	12
Maneb		2			1		*
Mefenoxam	18	4	1	7	1	8	5
Metalaxyl	20	2	1	2	1	5	2
Myclobutanil	4		2				1
Oxycarboxin	4						*
PCNB				1			*
Potassium bicarbon.	14					8	1
Propiconazole	26	2	1	1			2
Streptomycin	7						*
Tebuconazole		3					*
Thiophanate		2	1	*	1		1
Thiophanate-methyl	22	21	7	3	8	9	8
Triadimefon	7					10	1
Trichoderma harz.				1			*
Trifloxystrobin				*			*
Triforine	4	2					*
Vinclozolin	4		1	2	1		1
Ziram				4			2

See footnote(s) at end of table.

--continued

Coniferous Evergreens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 60%		2					*
Alk. dim. eth. benz.		2					*
Chlormequat chloride	4						*
Chloropicrin				1			*
Cholecalciferol	7						*
Daminozide	4						*
Diphacinone			2				*
Ethephon	4				1		*
Farnesol	7					5	1
Hydrogen peroxide				1			*
Indolebutyric acid				1	2		1
Metaldehyde	17						1
Metam-sodium			1			5	*
Methyl bromide			3	1		5	1
NAA				1			*
Nerolidol	7					5	1
Paclobutrazol	4	2					*
Pelargonic acid	7			1	1		1
Sodium chlorate				1			1
Sodium hypochlorite				1			*
Zinc phosphide			1				*

* Less than one percent.

Deciduous Shade Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D			2	9	8		4
2,4-D, Dimeth. salt				8			2
Ammonium benzadox				1			*
Bensulfuron-methyl					2		*
Bentazon			1				*
Clethodim				5			2
Clopyralid			2		8		1
Dicamba, Dimet. salt				8			2
Dichlobenil			1	15	8		5
Dichlorprop				1			*
Diquat					2		*
Diuron	5			1			1
Fluazifop-P-butyl			1				*
Glufosinate-ammonium			1	2			1
Glyphosate	21	26	30	44	44	29	33
Halosulfuron	5			1	8		1
Isoxaben	3		9	9	14	4	6
Linuron				1			*
MCPP, DMA salt				8			2
Metolachlor				4	7		2
Napropamide	3			9			3
Oryzalin	13	2	12	12	8	9	9
Oxadiazon	4	6		10	2	6	5
Oxyfluorfen	6	6	4	8	17	14	8
Paraquat	3		4	5	3		3
Pendimethalin		6		5	10	15	6
Prodiamine	3	1	3	1	4	3	2
Pronamide				1	8		1
Propanil					2		*
S-Metolachlor					2		*
Simazine	7		6	6	15		5
Sulfosate	3						*
Triclopyr				8	8		3
Trifluralin	3		4	1	11	2	2

See footnote(s) at end of table.

--continued

Deciduous Shade Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides							
Abamectin	25			7		8	4
Acephate	39	12	20	23	23	24	20
Aldicarb	3						*
Azadirachtin	3		1	1			1
Beauveria bassiana			1				*
Bendiocarb		1	3				1
Bifenazate				3			1
Bifenthrin	11	5	6	5	2	8	5
Bt (Bacillus thur.)	3		3		2	8	2
Carbaryl	17	1	29	2	35	8	12
Carbofuran				1			*
Chlorpyrifos	40	5	19	8	36	35	17
Cinnamaldehyde				2			*
Clofentezine	3						*
Cyfluthrin	14		4	3	6	2	3
Deltamethrin	6						*
Diazinon	31	5	14	8		13	9
Dicofol	14	6	7	2	4	2	5
Dienochlor	11						1
Diflubenzuron			4				1
Dimethoate	3	27	2	2	11		10
Disulfoton	4		1	1	8	11	3
Endosulfan			6	6			3
Esfenvalerate				1			*
Ethoprop				1			*
Ethyl parathion	3						*
Fenbutatin-oxide	7		6	1			2
Fenitrothion				1			*
Fenoxycarb	6	1		1		20	3
Fenpropathrin		3		1			1
Fluvalinate	19		1			2	2
Formetanate hydro.	3						*
Hexythiazox	3			1		2	1
Hydramethylnon	6						*
Imidacloprid	11	1	7	2	2	2	3
Kinoprene	3						*
Lambda-cyhalothrin			1	2			1
Lindane	3		3		8	12	3
Malathion	22	1	13		5	19	6
Methidathion	3						*
Methiocarb			1			8	1
Methomyl	7						*
Neem oil, clar. hyd.		1				2	1
Oxydemeton-methyl				3		2	1
Oxythioquinox	3			2			1
Permethrin	8	1	1	1		2	2
Petroleum distillate	37	5	16	18	15	4	13
Petroleum oil			8		4	2	2
Phosmet				1			*
Piperonyl butoxide	3			1			*
Potassium salts	15		8	2			3
Propargite	3						*
Pymetrozine	3			2			1
Pyrethrins	3			1			*
Pyridaben		1					*
S-Kinoprene	3			1			1
Spinosad	13	4	1	4	4		4

See footnote(s) at end of table.

--continued

Deciduous Shade Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
AQ-10 Biofungicide				1			*
Azoxystrobin	6	3		1		2	2
Benomyl	8		1		8	2	2
Butanone			1	3			1
Calcium polysulfide					8		1
Captafol				1			*
Captan	7		7	1	8	2	3
Chlorothalonil	28	4	4	4	4	10	6
Copper (metallic)				8			2
Copper hydroxide	33	22	4	28		7	17
Copper sulfate	6	1					1
Cresol	5						*
Dodine				8			2
Etridiazole				1		3	1
Fenarimol	3		1	1	8	2	2
Fludioxonil				1			*
Fosetyl-al	18	1		4		2	3
Iprodione	13			2			1
Kresoxim-methyl				1			*
Mancozeb	18	7	4	9	7	5	8
Maneb			1		2		*
Mefenoxam	13	5		2			3
Metalaxyl	15	10		2		7	5
Myclobutanil	6		1	6			2
Oxycarboxin	5			1			1
Oxytetracycline				1			*
PCNB	3					2	*
Potassium bicarbon.				2			*
Propiconazole	6	12	1	6		7	6
Streptomycin	6			4	8		2
Sulfur	3	1		8			3
Thiophanate			1				*
Thiophanate-methyl	21	11	1	4	10	8	8
Thiram	3						*
Triadimefon	7		1	2		7	2
Trifloxystrobin			1	1			1
Triforine	3	8					3
Vinclozolin				3			1
Xylenol	5						*

See footnote(s) at end of table.

--continued

Deciduous Shade Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%				1			*
Alk. dim. benzyl 60%	7			2		2	1
Alk. dim. eth. benz.				1		2	*
Alk. dim. ethbz. am.	7			2			1
Aluminum phosphide	3						*
Ammonium soap				1			*
Bitrex			2				*
Butyl mercaptan			2				*
Capsaicin	3		2				1
Chloropicrin	7						*
Dichloropropene	3						*
Diphacinone	3						*
E-8-Dodecenyl cetat	3						*
Ethephon				1			*
Fatty alcohols				1			*
Hydrogen peroxide				3			1
Indolebutyric acid	3					2	*
Metaldehyde	8		5	5			3
Methyl bromide	10						1
NAA	3					2	*
NAD	3						*
Pelargonic acid			2	1			1
Silicic acid	7			2			1
Tetrasodium salt	7			2			1
Z-8-Dodecen acetate	3						*
Z-8-Dodecenol	3						*

* Less than one percent.

Deciduous Flowering Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA [1]	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
Bromacil				1			*
Clethodim				8			2
Dichlobenil				2			1
Diquat	3	5					1
EPTC				1			*
Glyphosate			47	7		4	12
Halosulfuron	4			1			2
Isoxaben	3		7	5		4	4
Metolachlor				4			2
Napropamide				18			5
Oryzalin	3	5	19	15			9
Oxadiazon	3			9		9	4
Oxyfluorfen	3	10	9	3		9	7
Paraquat				7			3
Pendimethalin	3	10	3	2		9	5
Prodiamine	3		3	3		8	3
Pronamide				1			*
S-Metolachlor							1
Sethoxydim			3				*
Simazine			13	8			5
Trifluralin	3		5			4	2
Insecticides							
Abamectin	28			1		16	7
Acephate	14	37	19	29		43	27
Aldicarb	3						*
Azadirachtin	5	3					2
Beauveria bassiana						4	1
Bifenazate				1			*
Bifenthrin	7	8		6			5
Bt (Bacillus thur.)	3	9		1			3
Carbaryl	14	11	24	4		22	15
Chlorpyrifos	10	14	3	20		11	14
Cinnamaldehyde	5					3	1
Cyfluthrin	5	3	5	2		6	4
Deltamethrin	3						*
Diazinon	3	9	3	9		11	7
Dicofol	3	3	3	1			2
Diflubenzuron	3		3				1
Dimethoate		7	6				3
Endosulfan				5			1

See footnote(s) at end of table.

--continued

Deciduous Flowering Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA [1]	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Esfenvalerate				13			4
Ethoprop				3			1
Fenbutatin-oxide	3	5					1
Fenitrothion				1			*
Fenoxycarb	12					5	2
Fenpropathrin		3		2		5	2
Fluvalinate	11	3		1		25	6
Formetanate hydro.	3						*
Hexythiazox	4	3		1			2
Hydramethylnon	5	2					1
Imidacloprid	12	3		2		3	4
Kinoprene						5	1
Lambda-cyhalothrin			2	1			1
Lindane			3	1			1
Malathion	17	5	3			12	6
Methidathion	3						*
Methiocarb				1			*
Methomyl	3						*
Neem oil, clar. hyd.	6					7	2
Oxydemeton-methyl				9			2
Oxythioquinox				2			1
Permethrin	3			2		4	2
Petroleum distillate	17	5		12		13	9
Phosmet				2			2
Piperonyl butoxide	3						*
Potassium salts	4					5	1
Propargite	3						*
Pymetrozine	3			2			1
Pyrethrins	3						*
Pyridaben	4						1
Pyridine				2			1
S-Kinoprene						4	1
Spinosad	5			4		8	3

See footnote(s) at end of table.

--continued

Deciduous Flowering Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA [1]	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Agrobacterium radio.				6			2
Azoxystrobin	6	7		1			3
Benomyl			3			4	1
Butanone		5		4		3	2
Chlorothalonil	15	7	16	16		19	13
Copper (metallic)				1			*
Copper hydroxide	8	27	6	23		14	16
Copper oxychloride		5					1
Copper sulfate	8	8					3
Dodine			3	7			2
Etridiazole		5	13	2			4
Fenarimol	4		7	2		4	3
Ferbam				1			*
Fludioxonil				4			1
Fosetyl-al	10	6		6			4
Iprodione	8	3					2
Kresoxim-methyl						3	*
Mancozeb	6	23	9	28		3	16
Maneb		3					1
Mefenoxam	25	5	13	4			8
Metalaxyl	7	3		2		5	3
Myclobutanil	5	5	2	12			6
Oxytetracycline				3			1
PCNB	6		13				3
Piperalin						4	1
Potassium bicarbon.				2			1
Propiconazole	10	3	7	2		13	6
Streptomycin	10	3	3	4		8	5
Thiophanate			3	2			1
Thiophanate-methyl	13	18	35	11		14	19
Triadimefon	6					8	2
Trifloxystrobin				2			1

See footnote(s) at end of table.

--continued

Deciduous Flowering Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA [1]	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%						4	*
Alk. dim. benzyl 60%						4	*
Alk. dim. eth. benz.						4	*
Capsaicin			3				1
Chloropicrin	3						*
Diphacinone				2			1
Ethephon				2			1
Hydrogen peroxide		3		7			3
Indolebutyric acid		3					1
Metaldehyde	10			1			2
Methyl bromide	3						*
NAA		3					1
Pelargonic acid						3	*
Sodium hypochlorite	6						1

* Less than one percent.
[1] Insufficient number of reports to publish data.

Deciduous Shrubs and Other Ornamentals
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D		2		7			2
2,4-D, Dimeth. salt		*					*
2,4-DP, Dimeth. salt	1						*
Acetamide	1				2		*
Acetic acid			2				*
Ammonium benzadox				2		1	*
Atrazine				8			1
Benefin	1			1	2		1
Bentazon			2				*
Bromacil						1	*
Bromoxynil	*						*
Chlorimuron-ethyl			2				*
Clethodim			2	7			1
Clopyralid			5	1	2		1
Dicamba, Dimet. salt		*					*
Dichlobenil				10	5		2
Diphenamid				1			*
Diquat	2						*
Fluazifop-P-butyl			6				*
Glufosinate-ammonium			2				*
Glyphosate	15	32	21	21	20	3	23
Glyphosate, is. salt	1						*
Halosulfuron	1						*
Isoxaben	8	6	21	15	9	7	9
MCPP, DMA salt		*					*
MSMA		1					*
Metolachlor	*		2	1	14	3	2
Metribuzin	1				2		*
Napropamide	2		2	4			1
Norflurazon	2						*
Oryzalin	8	6	25	21	36	6	12
Oxadiazon	12	7	6	11		7	8
Oxyfluorfen	7	13	25	13	27	6	13
Paraquat				1	2		*
Pendimethalin	9	11	2	13	5	11	10
Prodiamine	7	3	6	10	18	5	6
Pronamide			2	3	5		1
S-Metolachlor			2		3		*
Sethoxydim		1		1			1
Simazine			10	10	18	1	3
Triclopyr		1		9			2
Trifluralin	2	4	23	6	17	5	6
Vernolate	*						*

See footnote(s) at end of table.

--continued

Deciduous Shrubs and Other Ornamentals
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides							
Abamectin	16	17	6	6	7	33	15
Acephate	27	38	21	14	39	42	31
Aldicarb	*						*
Azadirachtin	3	2	2	1	4	5	2
Azinphos-methyl				1	1		*
Beauveria bassiana	1		2	1		2	1
Bendiocarb		2	2	1	3		1
Bifenazate	1	*	2	1		12	2
Bifenthrin	8	7	14	9	17	11	9
Bt (Bacillus thur.)	6	8	2	1	5	2	5
Carbaryl	2	27	24	3	19	12	16
Carbofuran				1			*
Chlorpyrifos	28	19	16	6	26	16	19
Cinnamaldehyde	2		1			3	1
Clofentezine		*			1		*
Cryolite				1			*
Cyfluthrin	4	1	13	1	7	4	3
Cyromazine			4			2	*
Deltamethrin	2	*					*
Diazinon	24	12	6	2	14	25	14
Dicofol	2	4	4	1	5	5	3
Dienochlor	6	2		1	3	1	3
Diflubenzuron		2	10			2	2
Dimethoate	1	26	2		6	2	12
Disulfoton					2	2	*
Endosulfan		7		9	1	2	5
Esfenvalerate		*					*
Ethoprop				1			*
Fenamiphos			4				*
Fenbutatin-oxide	2		3		6	2	1
Fenoxycarb	3	8				9	5
Fenpropathrin	2	6		2		11	4
Fluvalinate	12	4	2	1		8	5
Hexythiazox	4	2	6	1	6	7	3
Hydramethylnon	5	3					2
Imidacloprid	17	4	13		5	20	8
Jojoba oil	1						*
Kinoprene	1		2			2	*
Lambda-cyhalothrin			5	4		2	1
Lindane		1	7	1	11		2

See footnote(s) at end of table.

--continued

Deciduous Shrubs and Other Ornamentals
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Malathion	19	11	15	1	6	21	12
Methidathion			5				*
Methiocarb	5	*		1	4		2
Mevinphos						2	*
N-octy-bicyclohepten						2	*
Neem oil						9	1
Neem oil, clar. hyd.	3	3				3	2
Oxamyl	1	1					*
Oxydemeton-methyl				1	3		*
Oxythioquinox	3	1	2	1	3		2
Permethrin	3					2	1
Petroleum distillate	11	12	6	6	5	17	10
Petroleum oil			16				1
Piperonyl butoxide	2					3	1
Potassium salts	11	5	4	1	2	10	5
Propargite	*	1					1
Pymetrozine	2	3	6	1		10	3
Pyrethrins	2					3	1
Pyridaben		2	1			6	1
Pyridine	*	1	1			3	1
Resmethrin	2						*
Rotenone	1						*
S-Kinoprene	5			1		5	2
Sabadilla	1						*
Silicon dioxide						2	*
Spinosad	2	3	2	1	3	14	4
Sulfotepp	*						*

See footnote(s) at end of table.

--continued

Deciduous Shrubs and Other Ornamentals
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Agrobacterium radio.	*		3	4	9	2	2
Azoxystrobin	12	9	1	2		5	7
Basic copper sulfate	1			1			*
Benomyl	2			1	1	1	1
Butanone	4	*	4			1	1
Calcium polysulfide	1						*
Captan	2	4	2	4	2	2	3
Chlorothalonil	18	16	16	15	17	21	17
Copper (metallic)			2		1		*
Copper amm. complex	3						1
Copper hydroxide	12	36	12	12	7	10	21
Copper oxychloride	1			1			*
Copper resinate		*					*
Copper sulfate	6	5		1		4	4
Cyproconazole						2	*
Etridiazole	1	6	3	1	3	10	4
Fenarimol	6		2	1	9	6	3
Fenhexamid	*			1		2	*
Fludioxonil		3	8	3		6	3
Flutolanil		1					1
Fosetyl-al	17	19	4	4	3	17	14
Iprodione	10	9	4	3		8	7
Mancozeb	10	34	19	6	7	25	21
Maneb		1			2		1
Mefenoxam	14	14	6	3	9	20	12
Metalaxyl	10	7	4	1	4	2	6
Myclobutanil	6	1	6	6	1	3	3
Oxycarboxin	*						*
PCNB	6	2	4	1		3	3
Piperalin	1				12	3	1
Potassium bicarbon.	*		6				*
Propiconazole	5	2	10	8	2	13	5
Streptomycin	2	6	2	1		2	3
Sulfur	2						*
Thiabendazole		1	1				*
Thiophanate	1	3	4				2
Thiophanate-methyl	17	23	26	3	29	20	19
Thiram	1						*
Triadimefon	3			1		5	1
Trichoderma harz.	4	3				2	2
Trifloxystrobin	1	1	4	2		3	1
Triflumizole	2						*
Triforine	3			3	8	8	2
Vinclozolin	1			9			2

See footnote(s) at end of table.

--continued

Deciduous Shrubs and Other Ornamentals
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%		1		1			1
Alk. dim. benzyl 60%	*	1	2	1		2	1
Alk. dim. eth. benz.	*	1	2	1		2	1
Aluminum phosphide	1						*
Ancymidol	*			1		2	*
Brodifacoum	1		2			2	1
Capsaicin	2		2				1
Chlormequat chloride	*		2			7	1
Cholecalciferol	1						*
Daminozide	1	2	2	1	3	3	2
Dichloropropene			2				*
Dikegulac-sodium		*					*
Diphacinone			2	1			*
Ethephon	*				1	3	*
Farnesol	2					2	1
Fatty alcohols		*					*
Garlic oil	1					2	*
Gibberellic acid	*	*		1			*
Gliocladium virens	1						*
Hydrogen peroxide		7	3	2			3
Indolebutyric acid	5	2	11			1	3
Iron phosphate	1						*
Metaldehyde	10	3	6	2		2	4
Metam-sodium				1			*
Methyl bromide	1						*
NAA	4	2	11				2
NAD	1						*
Nerolidol	2					2	1
Paclobutrazol	1	*				3	1
Pelargonic acid	1		13				1
Sodium hypochlorite	1						*
Uniconazole	1					2	*
Zinc phosphide	2		5				1

* Less than one percent.

Fruit and Nut Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR	PA [1]	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D	8			2			3
Ammonium benzadox				2			1
Clethodim				8		3	2
Dicamba				2			*
Diquat	2						*
Diuron	2			19			5
Fluazifop-P-butyl	1					6	1
Glyphosate	44	17		18		30	25
Isoxaben	5			2		5	4
Napropamide	3	3		29			9
Norflurazon		20					6
Oryzalin	8			28		32	13
Oxadiazon	4					6	2
Oxyfluorfen	14	3					5
Paraquat	6					6	3
Pendimethalin	6						2
Prodiamine	3	3				5	2
Sethoxydim	3	3					2
Simazine	5			23			7
Sulfosate	2						*
Thiazopyr	2						*
Trifluralin	3					5	2
Insecticides							
Abamectin	20	18		4			13
Acephate	16	21		4		5	14
Aldicarb						6	1
Azadirachtin	5						1
Azinphos-methyl	1			2			1
Beauveria bassiana	2	3		2			2
Bendiocarb		6		2			2
Bifenazate	1						*
Bifenthrin	5	5				5	4
Bt (Bacillus thur.)	24	5				44	13
Carbaryl	3	30				30	13
Chlorpyrifos	16	21		7		35	17
Cinnamaldehyde	3						1
Clofentezine	6						2
Cryolite	2						*
Cyfluthrin	3						1
Cyromazine	1						*
Deltamethrin	2						*

See footnote(s) at end of table.

--continued

Fruit and Nut Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR	PA [1]	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Diazinon	24	4		4			9
Dicofol	4						1
Dimethoate	3						1
Endosulfan		6		12		3	6
Esfenvalerate	16			18		3	10
Ethion		11					3
Fenbutatin-oxide	6	3		2			5
Fenoxycarb	4						1
Fenpropathrin	2					6	1
Fluvalinate	14						4
Formetanate hydro.	5						2
Hexythiazox	4						1
Hydramethylnon		4					1
Imidacloprid	7	4				3	4
Lambda-cyhalothrin	1						*
Lindane				2			3
Malathion	21	13				25	13
Methidathion	1						*
Methiocarb	1						*
Methomyl	2						*
Naled	2						1
Neem oil, clar. hyd.	2						*
Oxamyl							*
Permethrin	8						3
Petroleum distillate	29	12		24		36	22
Petroleum oil							*
Phosmet	4					26	5
Piperonyl butoxide	5	3					4
Potassium salts	16	3				20	7
Propargite	1						*
Pymetrozine	3						1
Pyrethrins	5	3					4
Pyridine	2						1
Rotenone	2						1
S-Kinoprene				2			*
Sabadilla	4						1
Silicon dioxide		3					1
Spinosad	11	3					4
Triazamate							*

See footnote(s) at end of table.

--continued

Fruit and Nut Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR	PA [1]	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Azoxystrobin	5						1
Basic copper sulfate	2						*
Benomyl	15	6		24		3	13
Butanone	1						*
Calcium polysulfide	1						*
Captan	4	2		26		26	11
Chlorothalonil	6			19		4	8
Copper (metallic)				8			2
Copper amm. complex		5					2
Copper hydroxide	33	34		42		8	32
Copper oxychloride	2						*
Copper sulfate	4	10		2			5
Cyprodinil	3						1
Dodine				6			2
Etridiazole		3		2			2
Fenarimol	16			2		5	6
Fenbuconazole				27		20	9
Fenhexamid	1						*
Fosetyl-al	14	14		7			11
Iprodione	28			21			13
Mancozeb	4	28		15		26	17
Maneb	3						1
Mefenoxam	9	5					4
Metalaxyl	20	4					7
Myclobutanil	13			8			6
Oxytetracycline				2			1
PCNB	3						1
Piperalin	1						*
Potassium bicarbon.	5						1
Propiconazole	6			2		3	3
Pseudomonas fluores.	3						1
Streptomycin	8			4		4	4
Sulfur	29						8
Tebuconazole	2			6			2
Thiophanate	1						*
Thiophanate-methyl	5	19		2		29	11
Triadimefon				2			*
Trichoderma harz.	3						1
Trifloxystrobin	6						2
Triflumizole							*
Triforine							2
Vinclozolin	1					3	1
Ziram	3			4			2

See footnote(s) at end of table.

--continued

Fruit and Nut Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI [1]	OR	PA [1]	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Bromadiolone	2						*
Capsaicin	2						*
Chloropicrin	1						*
Daminozide	1						*
Dichloropropene	2						*
Gibberellic acid	7						2
Hydrogen peroxide				6			1
Indolebutyric acid	1						*
Iron phosphate	1						*
Metaldehyde	16						5
Metam-sodium		3					1
Methyl bromide	7						2
NAA	1						*
Pelargonic acid				3			1
Sodium hypochlorite	2						1

* Less than one percent.
[1] Insufficient number of reports to publish data.

Christmas Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D			1	13	4		6
Acetic acid				5			2
Asulam				1			*
Atrazine	3		12	49	9		22
Bromoxynil	4						*
Clethodim			2	1			1
Clopyralid			10	5	17		9
Dicamba				1			*
Dichlobenil				1	1		1
Dithiopyr				1			*
Fluazifop-P-butyl			6		5	5	3
Glyphosate	65		49	76	55	45	60
Halosulfuron	4						*
Hexazinone	3		18	34			16
Metolachlor					6		2
Oryzalin	13		9		19		8
Oxyfluorfen	25		10	19	16	5	16
Paraquat	3		2				1
Pendimethalin	3		10	1	9	5	6
Prodiamine				1	2		1
Pronamide				1	1		*
S-Metolachlor					6		2
Sethoxydim					5		1
Simazine	6		30	6	48	9	23
Sulfometuron methyl				1	2	32	2
Triclopyr	6			14	8	4	8
Insecticides							
Abamectin	6						*
Acephate	3			1	4	73	6
Azinphos-methyl			7		2	5	2
Bifenthrin			2	2	2		2
Carbaryl			35	1	40		20
Chlorpyrifos	3		49	18	45	49	34
Cyfluthrin			13	1		18	4
Diazinon	9			1	6	4	3
Dicofol	13				3		2
Dienochlor					1		*
Diflubenzuron			10			13	4
Dimethoate	11		4	7	6	5	7
Disulfoton					2	5	1
Endosulfan			4	10	1		5

See footnote(s) at end of table.

--continued

Christmas Trees
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Esfenvalerate			5			18	3
Fenbutatin-oxide					1		*
Fluvalinate	15						1
Hexythiazox	3		5		11		5
Hydramethylnon						9	*
Imidacloprid	3		5				1
Lindane			15		10		6
Malathion	6		12	1	1	5	5
Methomyl					2		*
Methoxychlor			2				*
Methyl parathion			1				*
Oxydemeton-methyl			7	1	20		7
Oxythioquinox	9				5		2
Permethrin	6				2		1
Petroleum distillate	10		1	1	4		2
Petroleum oil					6		2
Phosmet	3						*
Piperonyl butoxide					2		*
Pyrethrins					2		*
Spinosad					1		*
Tebufenozide						4	*
Triazamate				1			*
Fungicides							
Agrobacterium radio.				1			*
Benomyl	3		4		1		1
Captan				1	2		1
Chlorothalonil	7		33	31	61	22	38
Copper (metallic)			1				*
Copper hydroxide			1				1
Copper oxychloride							1
Copper resinate			1				*
Copper sulfate	3						*
Fosetyl-al	3						*
Iprodione							1
Mancozeb	3		9	1	2		4
Mefenoxam	3						*
Metalaxyl	4						*
Potassium bicarbon.						5	*
Propiconazole							1
Thiophanate	3					4	1
Thiophanate-methyl	4		1			9	1
Triadimefon			6		1		2
Other Chemicals							
Ethephon					1		*
Methyl bromide	4						*
Paclobutrazol					1		*
Strychine	4						*

* Less than one percent.
[1] Insufficient number of reports to publish data.

All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D			1		*		*
2,4-DP, Dimeth. salt	*						*
Acetamide	*			*	*		*
Acetic acid			*				*
Ammonium benzadox		1	2	*	2	2	1
Atrazine			*				*
Benefin	1						*
Bensulide		*					*
Bentazon					2		*
Bromoxynil	*		*				*
Clethodim	*		*	1			*
Clopyralid				4			*
DCPA	*	*			*		*
Diquat	3	1	*				1
Diuron	*	1		1		*	1
Fluazifop-P-butyl	1	1	1	*		*	1
Glyphosate	9	7	4	8	5	5	7
Glyphosate, is. salt	*					*	*
Imazaquin, mon. salt		*					*
Isoxaben	2	3	1	1	1	1	2
Linuron	*						*
MCPA	*					*	*
Metolachlor	*		*	1	*	*	*
Metribuzin	*			*	*		*
Napropamide	*			1	*		*
Oryzalin	4	*	2	2	1	2	1
Oxadiazon	4	4		5		1	2
Oxyfluorfen	2	2	*	1	1	1	1
Paraquat	1	*		1		*	*
Pendimethalin	1	2		2	1	1	1
Prodiamine	1	5	*	*	2	1	2
Pronamide	*						*
Quizalofop-ethyl				*			*
S-Metolachlor			*	1			*
Sethoxydim					*		*
Simazine	*	1	*	1			*
Sulfosate	*						*
Triclopyr		1	*				*
Trifluralin	1	2	2	*	1	1	1
Vernolate	*						*

See footnote(s) at end of table.

--continued

All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides							
Abamectin	45	34	37	22	41	36	37
Acephate	54	47	37	32	44	47	44
Aldicarb	1				1		*
Allethrin			*				*
Azadirachtin	16	4	15	7	12	10	11
Azinphos-methyl				*			*
Beauveria bassiana	5	3	5	5	11	2	5
Bendiocarb	*	4	3	2	6	4	3
Bifenazate	6	9	2	5	5	15	7
Bifenthrin	11	13	19	25	22	23	17
Bt (Bacillus thur.)	17	9	5	4	7	21	10
Buprofezin	*						*
Carbaryl	2	14	3	1	4	6	6
Carbofuran	*			*			*
Chlorpyrifos	30	19	24	12	20	24	22
Cinnamaldehyde	3	*	6	3	7	5	4
Clofentezine	*	1	*	*	*		*
Cryolite	*						*
Cyfluthrin	12	5	17	6	26	11	13
Cyromazine	7	1	2	*	*		2
Deltamethrin	*						*
Diazinon	21	15	9	18	14	11	15
Dichlorvos		1	3		1	2	1
Dicofol	3	6	2	1	1	2	3
Dienochlor	20	2	4	7	6	11	8
Diflubenzuron	4	11	7	2	6	9	7
Dimethoate	9	8	1	2	2	2	5
Disulfoton		1	1		*	1	*
Endosulfan	1	12	8	4	16	10	9
Esfenvalerate	*		*				*
Ethoprop		2					1
Ethoxy sec. alcohols						1	*
Ethyl parathion	*						*
Fenamiphos		1	1	1			*
Fenbutatin-oxide	1	2		*	2		1
Fenoxycarb	1	2	6	4	7	10	4
Fenpropathrin	1	5	9	2	7	16	6
Fluvalinate	29	15	14	6	10	13	16
Formetanate hydro.	*				*	*	*
Hexythiazox	3	5	*	1	2	1	3

See footnote(s) at end of table.

--continued

All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Hydramethylnon	1	1				2	1
Imidacloprid	14	13	45	21	48	41	28
Jojoba oil	2						*
Kinoprene	6		1	1	*	3	2
Lambda-cyhalothrin	*	1	1	4	*	1	1
Lindane	*		*		*	1	*
Malathion	10	8	5	9	4	8	7
Methamidophos					*		*
Methidathion		1					*
Methiocarb	7	4	9	3	10	4	6
Methomyl	1	*	1		2		1
N-octy-bicyclohepten	*		*	1	1		*
Naled	1	1	*	*			*
Neem oil					*	*	*
Neem oil, clar. hyd.	2	7		*	1	4	3
Nicotine	1		2	2	5	2	2
Oxamyl	3	2	*	*	2	2	2
Oxydemeton-methyl		*		1			*
Oxythioquinox	3	1	*	1	*	1	1
Permethrin	12	5	*	1		3	4
Petroleum distillate	12	5	2	7	7	9	7
Petroleum oil						1	*
Phorate	*						*
Phosmet					1		*
Piperonyl butoxide	8		4	9	3	*	4
Pirimicarb					*		*
Potassium salts	21	8	5	15	14	16	12
Propargite	*	*					*
Pseudomonas cepacia					*		*
Pymetrozine	18	2	10	3	10	7	9
Pyrethrins	10		3	9	4	1	4
Pyridaben	6	3	3	1	1	8	3
Pyridine	6	*	1	1	2	4	2
Pyriproxyfen	1		*	1	1	*	1
Resmethrin	2		2	3	1		1
Rotenone	2		*		1	1	1
S-Kinoprene	4	2	7	13	13	10	7
Sabadilla	*						*
Silicon dioxide	*		*		*		*
Spinosad	29	9	20	2	31	25	20
Sulfotepp	1	1	2	6	6	6	3
Trichlorfon	*			*			*

See footnote(s) at end of table.

--continued

All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
AQ-10 Biofungicide	1						*
Agrobacterium radio.	*			1	1		*
Azoxystrobin	11	5	1	3	1	4	5
Bacillus subtilus	*						*
Basic copper sulfate	*		*				*
Benomyl	1		4	4	4	2	2
Butanone	4	*	5	3	13	*	4
Calcium polysulfide	*						*
Captan	5	7	6	8	4	6	6
Chloroneb		1					*
Chlorothalonil	19	30	21	21	14	18	21
Copper chloride hyd.	*						*
Copper hydroxide	9	30	2	12	1	6	12
Copper oxychloride	*		*				*
Copper resinate		*		*	*		*
Copper sulfate	11	9	9	4	8	11	9
Cyprodinil	*						*
Dicloran	*			*			*
Dinocap						*	*
Etridiazole	1	13	37	9	28	27	19
Fenarimol	7	1	*	1	*	2	2
Fenbuconazole				1			*
Fenhexamid	14	1	5	6	10	2	6
Ferbam		1	*	*		*	*
Fludioxonil	1	6	15	4	7	3	6
Flutolanil		*	1				*
Fosetyl-al	25	17	6	6	3	12	12
Iprodione	22	11	14	6	7	10	13
Kresoxim-methyl				1	1		*
Mancozeb	21	43	8	9	6	9	19
Maneb	3	3				*	1
Mefenoxam	17	18	24	12	19	25	19
Metalaxyl	15	6	6	3	10	11	9
Metiram		1					*
Milban				*	*		*
Mint oil				3			*
Myclobutanil	18	1	1	3	2	1	5
Oxycarboxin	*	1		2	*		1

See footnote(s) at end of table.

--continued

All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides-cont							
Oxytetracycline				*			*
PCNB	11	6	13	5	3	14	8
Piperalin	11	1	2	2	2	4	4
Potassium bicarbon.	4			1	1		1
Propamocarb hydroch.	*		1		*	*	*
Propiconazole	4	1	1	1	1	1	1
Streptomyces gris.	1		*				*
Streptomycin	4	7		1		*	3
Sulfur	14	*	*	1	*	*	3
Tebuconazole	*	8					2
Thiabendazole		*	3	*	2	*	1
Thiophanate	2	3	5	*	4	*	3
Thiophanate-methyl	29	42	47	18	37	49	38
Thiram			*				*
Triadimefon	4	1	2	6	1	4	2
Trichoderma harz.	6	1	4	2	7	4	4
Trifloxystrobin	6	1	2	4	3	*	3
Triforine	4	*	2	1	1	*	1
Triphenyltin hydrox.						*	*
Vinclozolin	6	1	6	4	9	2	5
Zoxamide						1	*
Other Chemicals							
Alk. dim. benzyl 50%		*	*		*	*	*
Alk. dim. benzyl 60%	3	3	1	4	2	1	2
Alk. dim. eth. benz.	3	3	1	4	2	1	2
Alk. dim. ethbz. am.	*						*
Alkyl. dim. benz. am	*						*
Aluminum phosphide	1						*
Ammonium soap	*						*
Ancymidol	3	*	6	3	8	13	4
Benzyladenine	*		2	*	2	*	1
Brodifacoum						*	*
Bromadiolone	*		*				*
Capsaicin	1		*	5	2		1
Chlormequat chloride	8	2	26	9	19	27	14
Chlorophacinone	1					*	*
Chloropicrin	3	*	*				1
Citric acid				3			*
Cytokinins		*			*		*
Daminozide	12	6	36	10	29	45	21
Dazomet	1	*		*			*

See footnote(s) at end of table.

--continued

All Floriculture
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals-cont							
Decyldimethyloctyl	*						*
Dichloropropene	*						*
Didecyl dim. ammon.	*						*
Dikegulac-sodium	1			1			*
Dimethyldioctyl	*						*
Diphacinone	1						*
Dodecadien-1-ol						*	*
Dodecanol						*	*
Ethephon	3	3	16	2	20	5	8
Farnesol	1	*			*	*	*
Fatty acids	*			*			*
GABA				*			*
Garlic oil					*		*
Gibberellic acid	1	6	1	1	1	*	2
Gibberellins A4A7	*		2	*	2	*	1
Gliocladium virens			1	1		1	*
Hydrogen peroxide	*	4	8	6	4	1	4
Indolebutyric acid	1	1	2	1	2	2	1
Iron phosphate	1	1		1			*
L-Glutamic acid				*			*
Metaldehyde	12	5	*	6	1	9	5
Metam-sodium		*		1			*
Methyl bromide	6	*	2			*	2
Methyl nonyl ketone	*						*
NAA	1	1	1	1	*	1	1
NAD			*				*
Nerolidol	1	*			*	*	*
Paclobutrazol	11	5	27	4	15	26	14
Pelargonic acid	1		1		1		1
Potassium gibber.					*		*
Propionic acid	*						*
Silicic acid	*						*
Sodium chlorate		*			*		*
Sodium hypochlorite		1			1	1	*
Strychnine	*						*
Tetradecanol						*	*
Tetrasodium salt	*						*
Uniconazole	3	2	8	1	5	14	5
Warfarin						*	*
Zinc phosphide			*				*

* Less than one percent.

Cut Flowers
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D					5		*
2,4-DP, Dimeth. salt	*						*
Benefin	*						*
Bromoxynil			4				*
Clethodim	1						*
DCPA	*						*
Diquat	2						2
Diuron	1			15			1
Fluazifop-P-butyl	1		4				1
Glyphosate	9		19	20	15		10
Glyphosate, is. salt	1						1
Isoxaben	1		3				1
Linuron	1						1
MCPA	1						*
Metolachlor	1		4				1
Napropamide				11	4		1
Oryzalin	1		11	4			2
Oxadiazon	4						3
Oxyfluorfen	1						*
Paraquat	2						2
Pendimethalin	1						1
Prodiamine	*						*
Pronamide	*						*
Simazine	1						*
Sulfosate	*						*
Trifluralin	1		39				3
Vernolate	1						*
Insecticides							
Abamectin	45		19	21	44		42
Acephate	53		46	14	58		50
Azadirachtin	15		8	4	4		13
Beauveria bassiana	4		8	4	8		4
Bendiocarb	*			7	14		1
Bifenazate	10		8	9	18		10
Bifenthrin	8		19	5	13		9
Bt (Bacillus thur.)	16		4				14
Carbaryl	*				10		1
Chlorpyrifos	28		4	14	19		25
Cinnamaldehyde	3		7				3
Clofentezine				4			*
Cyfluthrin	5				21		5

See footnote(s) at end of table.

--continued

Cut Flowers
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Cyromazine	8						7
Deltamethrin	*						*
Diazinon	22		8	4	13		19
Dichlorvos			4				*
Dicofol	2		4	5			3
Dienochlor	26		4	8	32		22
Diflubenzuron	1						1
Dimethoate	11		8	5			9
Endosulfan			11	10	27		3
Esfenvalerate			4				*
Ethoprop							*
Fenamiphos				11			1
Fenoxycarb			4	5	14		1
Fenpropathrin	1				14		2
Fluvalinate	30		4		14		24
Hexythiazox	4			5			3
Hydramethylnon	1						1
Imidacloprid	5		8	11	14		6
Jojoba oil	2						2
Kinoprene	5						4
Lambda-cyhalothrin				5			*
Lindane	*		4				1
Malathion	8		4		24		9
Methiocarb	5		4	5			5
Methomyl	1						1
Naled	3		8	4			3
Neem oil, clar. hyd.	2						2
Nicotine	*		4				1
Oxamyl	*						*
Oxythioquinox	3						2
Permethrin	10						9
Petroleum distillate	15		8		5		12
Piperonyl butoxide	5		7				4
Potassium salts	21		8	12	19		19
Pymetrozine	18			4	9		15
Pyrethrins	7		7				6
Pyridaben	4		8	4	4		4
Pyridine	7						5
Pyriproxyfen	*				5		1
Resmethrin			4				*
Rotenone	2						2
S-Kinoprene	3		4	4	10		3
Silicon dioxide	*		4				*
Spinosad	38		4	4	8		31
Trichlorfon	1			4			1

See footnote(s) at end of table.

--continued

Cut Flowers
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
AQ-10 Biofungicide	1						1
Agrobacterium radio.	1			4			1
Azoxystrobin	9			5			8
Basic copper sulfate	1						*
Benomyl	*						*
Butanone	4		28	4	14		7
Calcium polysulfide	*						*
Captan	9		15	26	10		10
Chlorothalonil	26		7	36	18		25
Copper chloride hyd.	*						*
Copper hydroxide	7		4	9	5		8
Copper oxychloride	1						*
Copper sulfate	6		11		14		6
Dicloran	*			4			*
Etridiazole	1		8		20		3
Fenarimol	10			4			9
Fenhexamid	15			12	4		13
Fludioxonil	1				5		1
Fosetyl-al	25		3				20
Iprodione	22		7	27			20
Kresoxim-methyl				9			*
Mancozeb	25			4	14		23
Maneb	3						3
Mefenoxam	20				4		16
Metalaxyl	12				5		10
Milban				4			*
Myclobutanil	24		4	4	9		20
Oxycarboxin	*						1
PCNB	8		12	20			8
Piperalin	17		4	4	16		15
Potassium bicarbon.	8			9			6
Propiconazole	5						4
Streptomycin	2						2
Sulfur	24						19
Tebuconazole							*
Thiabendazole				7			*
Thiophanate	1				4		2
Thiophanate-methyl	30		22	16	37		29
Triadimefon	1						1
Trichoderma harz.	3		7				3
Trifloxystrobin	11			5	4		9
Triforine	4			12	5		4
Vinclozolin	8		4	7			7

See footnote(s) at end of table.

--continued

Cut Flowers
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%							*
Alk. dim. benzyl 60%	2						2
Alk. dim. eth. benz.	2						2
Alk. dim. ethbz. am.	*						*
Alkyl. dim. benz. am	*						*
Aluminum phosphide	1						1
Ancymidol	*			11	8		1
Capsaicin			4				*
Chlormequat chloride	1				5		1
Chloropicrin	5						4
Daminozide	1			4	5		1
Dazomet	1						1
Decyldimethyloctyl	*						*
Dichloropropene	*						*
Didecyl dim. ammon.	*						*
Dimethyldioctyl	*						*
Diphacinone	1						1
Ethephon	1				5		1
Farnesol	1						*
Gibberellic acid	2						1
Hydrogen peroxide			4				*
Indolebutyric acid							*
Iron phosphate	*						*
Metaldehyde	7			11			6
Metam-sodium				11			1
Methyl bromide	12						9
Methyl nonyl ketone	*						*
Nerolidol	1						*
Paclobutrazol	*						*
Pelargonic acid	*						*
Silicic acid	*						*
Strychnine	1						1
Tetrasodium salt	*						*

* Less than one percent.
[1] Insufficient number of reports to publish data.

Flowering Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
Acetamide	1			1			*
Ammonium benzadox			3	1	2	2	1
Atrazine			1				*
Diquat	2	3					1
Diuron				1			*
Glyphosate	8	1		1	1	3	2
Isoxaben	1			1	*	1	1
MCPA						1	*
Metolachlor				1			*
Metribuzin	1			1			*
Oryzalin	2				*	1	*
Oxadiazon	1			1			*
Oxyfluorfen	1	1			1		1
Paraquat				1			*
Pendimethalin	2	1		1		2	1
Prodiamine						1	*
S-Metolachlor				1			*
Simazine				1			*
Trifluralin	1			1		1	*
Insecticides							
Abamectin	44	21	33	31	25	44	32
Acephate	51	51	23	32	31	34	35
Aldicarb	1				2		1
Azadirachtin	21	6	18	8	11	2	11
Beauveria bassiana	9	11	5	1	3	2	5
Bendiocarb			3	1	3	3	2
Bifenazate	3	5	2	4	6	13	5
Bifenthrin	11	7	15	29	20	25	18
Bt (Bacillus thur.)	17	15	1	4	5	11	8
Carbaryl	1	19		1	3	4	4
Carbofuran	1			1			*
Chlorpyrifos	26	14	22	13	20	17	19
Cinnamaldehyde	4		3	3	3	2	3
Clofentezine	1	1					*
Cyfluthrin	12	8	19	6	20	5	14
Cyromazine	6	4	3	1	1		2
Diazinon	18	20	5	18	11	2	11
Dichlorvos			4		2	3	2
Dicofol	3	1	2	3	1	1	1
Dienochlor	14	2	5	5	*	8	5
Diflubenzuron	5	3	4		7	7	4

See footnote(s) at end of table.

--continued

Flowering Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Dimethoate	10	12		1	2	1	4
Disulfoton			2				*
Endosulfan	4	4	13	1	13	11	9
Fenbutatin-oxide	5	3			2		1
Fenoxycarb	1	6	9	4	7	12	7
Fenpropathrin	2	3	10	2	5	9	6
Fluvalinate	35	14	13	7	10	6	13
Formetanate hydro.	1				*		*
Hexythiazox	2	3			2	1	1
Hydramethylnon	1	1					*
Imidacloprid	29	33	59	20	58	58	47
Jojoba oil	2						*
Kinoprene	11		2	1		5	3
Lambda-cyhalothrin			2	7	1	2	2
Lindane					*		*
Malathion	4	14	4	13	3	7	7
Methamidophos					*		*
Methiocarb	6	5	12	2	10	7	8
Methomyl			*				*
N-octy-bicyclohepten	1			1	1		1
Neem oil					*		*
Neem oil, clar. hyd.	1	11		1			2
Nicotine	3		1		2	1	1
Oxamyl	6		*	1	1		1
Oxydemeton-methyl		1		1			*
Oxythioquinox	1			2		3	1
Permethrin	8			1		2	1
Petroleum distillate	10	6	2	5	5	3	5
Petroleum oil						3	*
Phorate	1						*
Piperonyl butoxide	5		3	1	3		2
Pirimicarb					*		*
Potassium salts	18	2	4	5	7	14	8
Propargite		2					*
Pymetrozine	19	5	11	5	11	5	9
Pyrethrins	5		3	1	3		2
Pyridaben	11	1	2	2		11	4
Pyridine	9	1	1	2	3	2	3
Pyriproxyfen	2		1	1	*	1	1
Resmethrin	6		1	3	3		2
Rotenone	1						*
S-Kinoprene	2		11	11	13	5	8
Sabadilla	1						*
Silicon dioxide			*				*
Spinosad	18	9	21	4	25	28	19
Sulfotepp	6	3	2	12	6	8	6

See footnote(s) at end of table.

--continued

Flowering Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Agrobacterium radio.				1	2		1
Azoxystrobin	7	2	1	3	2	6	3
Benomyl	2		2	9		1	2
Butanone	2	1	4	3	14		5
Calcium polysulfide	1						*
Captan		3	2	11	3	1	3
Chlorothalonil	9	12	14	19	15	25	16
Copper hydroxide	5	14	1	10	2	7	5
Copper sulfate	22	13	10	4	6	15	11
Cyprodinil	1						*
Etridiazole		20	31	5	28	24	21
Fenarimol	5	4		3	*	1	2
Fenhexamid	17	4	6	5	5	4	6
Ferbam		1	*	1			*
Fludioxonil		6	16	3	7	4	7
Flutolanil		1					*
Fosetyl-al	16	11	7	6	2	8	7
Iprodione	21	11	7	3	1	11	8
Kresoxim-methyl					2		*
Mancozeb	18	31	3	4	3	8	10
Maneb	1	1					*
Mefenoxam	17	23	21	5	19	25	19
Metalaxyl	10	5	3	3	11	15	8
Milban					*		*
Myclobutanil	13	5	1	3	3	1	4
Oxycarboxin				1			*
Oxytetracycline				1			*
PCNB	12	8	11	5	4	13	9
Piperalin	6	3	2	1	3	4	3
Potassium bicarbon.	2						*
Propamocarb hydroch.			2		*		*
Propiconazole	2	1		1	1	1	1
Streptomycin	7			2			1
Sulfur	3			1		1	1
Tebuconazole	1						*
Thiabendazole			5		1	1	1
Thiophanate	2	4	3		1	1	2
Thiophanate-methyl	24	44	36	20	31	43	33
Thiram			*				*
Triadimefon	7		2		1	7	2
Trichoderma harz.	4		3		3	6	3
Trifloxystrobin	1	1	3	5	2	1	2
Triforine	4		2		*		1
Vinclozolin	3	1	3	5	6	1	3
Zoxamide						2	*

See footnote(s) at end of table.

--continued

Flowering Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%					*	1	*
Alk. dim. benzyl 60%	2	7	1	2	3	1	3
Alk. dim. eth. benz.	2	7	1	2	3	1	3
Aluminum phosphide	1						*
Ammonium soap	1						*
Ancymidol	2		7	3	6	14	6
Benzyladenine			3	1	3		2
Bromadiolone	1		1				*
Capsaicin	1				3		1
Chlormequat chloride	23	9	26	15	23	29	22
Chlorophacinone	2						*
Chloropicrin			*				*
Daminozide	30	17	24	12	20	33	22
Dazomet	1						*
Dikegulac-sodium	3			1			1
Ethephon	7	8	21	2	16	6	12
Farnesol	2						*
Fatty acids				1			*
Garlic oil					*		*
Gibberellic acid	2		*	2	*	1	1
Gibberellins A4A7			3	1	3		2
Gliocladium virens						3	*
Hydrogen peroxide	1		7	3	*		2
Indolebutyric acid	2		2		*	3	1
Iron phosphate	1						*
Metaldehyde	17	4		1	2	2	4
Methyl bromide	1		2				1
NAA	1		1			3	1
NAD			*				*
Nerolidol	2						*
Paclobutrazol	24	15	28	5	12	14	17
Pelargonic acid	1				*		*
Sodium chlorate		1					*
Sodium hypochlorite					2	1	1
Uniconazole	6	7	6	2	5	11	6

* Less than one percent.

Bedding Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
Ammonium benzadox			1		1	1	1
Bensulide		1					*
Clethodim				1			*
DCPA					*		*
Diquat	1						*
Diuron	1			1		1	*
Fluazifop-P-butyl		5					*
Glyphosate	1	20	2		3	5	3
Glyphosate, is. salt						1	*
Isoxaben						1	*
Metolachlor						1	*
Oryzalin	1	1		1	*	2	1
Oxadiazon	4			1		1	1
Oxyfluorfen	1			1	*	1	*
Paraquat		3		2		1	*
Pendimethalin	1			1		1	*
Prodiamine				1		1	*
Quizalofop-ethyl				1			*
Trifluralin						1	*
Insecticides							
Abamectin	37	28	33	10	37	19	30
Acephate	47	40	32	31	38	37	37
Aldicarb	2						*
Azadirachtin	15	12	8	9	9	9	9
Beauveria bassiana	3	7	3	9	11	*	6
Bendiocarb			2		7		3
Bifenazate	1	7	1	1		7	2
Bifenthrin	15	13	11	24	18	10	15
Bt (Bacillus thur.)	27	36	4	6	7	20	11
Carbaryl	8	8	3	2	2	4	3
Chlorpyrifos	21	8	22	13	12	23	17
Cinnamaldehyde	4		4	4	5	3	4
Clofentezine			*				*
Cryolite	1						*
Cyfluthrin	28	5	13	7	19	9	15
Cyromazine	4		1		*		1
Diazinon	22	7	7	17	10	11	11
Dichlorvos			3				1
Dicofol	4	5	1			2	1
Dienochlor	7		1	5	4	7	4

See footnote(s) at end of table.

--continued

Bedding Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Diflubenzuron	7	6	5	4	4	7	5
Dimethoate	1	12					1
Disulfoton					*		*
Endosulfan	1	7	6	6	14	6	8
Esfenvalerate	1						*
Ethoxy sec. alcohols						2	*
Fenbutatin-oxide					2		1
Fenoxycarb	4	2	5	3	5	8	5
Fenpropathrin	1	11	5	2	6	17	7
Fluvalinate	27	13	9	1	6	11	9
Formetanate hydro.	1				*	1	*
Hexythiazox	2				*	1	*
Hydramethylnon						2	*
Imidacloprid	17	14	24	24	30	14	23
Jojoba oil	1						*
Kinoprene	4		2		*	1	1
Lambda-cyhalothrin	1						*
Lindane						2	*
Malathion	11		2	7	2	5	4
Methamidophos					*		*
Methiocarb	6	5	7	3	7	1	5
Methomyl	1				*		*
N-octy-bicyclohepten				1	*		*
Neem oil					*	1	*
Neem oil, clar. hyd.	6				1	3	1
Nicotine			3	3	4	2	3
Oxamyl	8		*		1	1	1
Oxythioquinox	4		*			2	1
Permethrin	19					1	2
Petroleum distillate	6	7	1	8	4	9	5
Piperonyl butoxide	23		2	20	2		5
Pirimicarb					*		*
Potassium salts	29	15	2	16	12	12	12
Pseudomonas cepacia					*		*
Pymetrozine	21		10	5	7	7	9
Pyrethrins	22		2	20	2	2	5
Pyridaben	6	7	2		*	4	2
Pyridine	4		1		*	6	2
Pyriproxyfen				1	*	1	*
Resmethrin	1		1	5			1
Rotenone	2					2	*
S-Kinoprene	1	1	3	14	6	9	5
Silicon dioxide					*		*
Spinosad	26	16	17	3	26	20	20
Sulfotepp			1	1	2	4	2

See footnote(s) at end of table.

--continued

Bedding Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Azoxystrobin	13	7	1	4		1	2
Bacillus subtilus	1						*
Basic copper sulfate			*				*
Benomyl	4		3		3	1	2
Butanone	5		3	1	6		3
Calcium polysulfide	1						*
Captan			6		1	3	2
Chlorothalonil	22	7	19	21	9	9	14
Copper hydroxide	19	29	2	3		5	5
Copper oxychloride			*				*
Copper resinate				1			*
Copper sulfate	10	7	5	2	7	8	6
Dicloran	1						*
Etridiazole		3	32	10	18	19	19
Fenarimol	8						1
Fenhexamid	8	8	2	3	11	1	6
Fludioxonil		3	12	5	6	4	7
Flutolanil			1				*
Fosetyl-al	24	13	4	8	2	12	7
Iprodione	16	15	13	6	9	10	11
Mancozeb	19	15	9	11	5	6	9
Maneb	2					1	*
Mefenoxam	10	4	20	22	15	19	17
Metalaxyl	18		7	3	7	8	7
Mint oil				8			1
Myclobutanil	16	1	1	2	*		2
Oxycarboxin				1			*
PCNB	10	3	9	1	3	10	6
Piperalin	5		*	3	1	1	1
Potassium bicarbon.	1			1	1		1
Propamocarb hydroch.	1		1				*
Propiconazole	2			1		1	*
Streptomyces gris.	4						*
Streptomycin	3	6		1			1
Sulfur	1				*		*
Thiabendazole			2		2		1
Thiophanate	2	7	5	1	4	1	3
Thiophanate-methyl	19	24	43	15	29	42	32
Triadimefon	10		1	6			2
Trichoderma harz.	14		2	4	7	2	5
Trifloxystrobin	2		1	4	3	1	2
Triforine	4		*		*		1
Triphenyltin hydrox.						1	*
Vinclozolin	3		7	2	9	4	6

See footnote(s) at end of table.

--continued

Bedding Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%			*		1		*
Alk. dim. benzyl 60%	6		1	4	1	1	2
Alk. dim. eth. benz.	6		1	4	1	1	2
Alkyl. dim. benz. am	1						*
Ancymidol	4	1	3	3	7	6	5
Benzyladenine			*		1		1
Brodifacoum						1	*
Capsaicin	2			8			1
Chlormequat chloride	13	3	23	6	14	22	16
Chlorophacinone	1					1	*
Chloropicrin		1					*
Citric acid				8			1
Cytokinins					*		*
Daminozide	22	12	43	12	30	53	33
Decyldimethyloctyl	1						*
Didecyl dim. ammon.	1						*
Dimethyldioctyl	1						*
Dodecadien-1-ol						1	*
Dodecanol						1	*
Ethephon	3	7	10	2	20	3	11
Farnesol						1	*
GABA				1			*
Garlic oil					1		*
Gibberellic acid	2	1		1	*		*
Gibberellins A4A7					1		*
Hydrogen peroxide	1	8	4	9	5	2	4
Indolebutyric acid				1	2	1	1
L-Glutamic acid				1			*
Metaldehyde	10	8		1		9	3
Methyl bromide		1	2			1	1
NAA					*		*
Nerolidol						1	*
Paclobutrazol	28	15	24	6	15	32	20
Pelargonic acid	1				2		1
Potassium gibber.					*		*
Propionic acid	1						*
Sodium chlorate					*		*
Sodium hypochlorite					*		*
Tetradecanol						1	*
Uniconazole	9	5	7	1	3	14	6
Warfarin						1	*

* Less than one percent.

Foliage Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
Ammonium benzadox		2					1
Benefin	2						*
DCPA		*					*
Diquat	4						1
Diuron		1		4			1
Glyphosate	11	9	6	4			7
Isoxaben		6				3	4
Napropamide	2						*
Oryzalin	3						*
Oxadiazon		7				3	4
Oxyfluorfen	2	3				4	2
Pendimethalin		2				4	2
Prodiamine	2	4				1	2
Triclopyr		1					1
Trifluralin		3				1	2
Vernolate	1						*
Insecticides							
Abamectin	39	47	27	14	56	25	41
Acephate	53	56	23	29	27	25	46
Azadirachtin	10	3	6	3	5	5	5
Beauveria bassiana	1	2	6	3	4		2
Bendiocarb		6		3	11	12	6
Bifenazate		12	4	4	9	9	9
Bifenthrin	14	16	26	18	23	27	18
Bt (Bacillus thur.)	3	7	14			13	7
Carbaryl		11	3			1	6
Chlorpyrifos	37	13	14	9	14	11	16
Cinnamaldehyde		*	6		12	6	2
Clofentezine		1					1
Cyfluthrin	11	4	5		28	12	7
Diazinon	12	17	13	7	5	9	14
Dichlorvos		1				2	1
Dicofol	1	4	7				3
Dienochlor	19	3	7	12	12	3	7
Diflubenzuron	6	1			2	3	2
Dimethoate	5	7		9	10	5	6
Disulfoton		1				3	1
Endosulfan		12	5		17	2	9
Fenbutatin-oxide		1					*
Fenoxycarb		1			8		1
Fenpropathrin	2	6	10	4		8	5

See footnote(s) at end of table.

--continued

Foliage Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Fluvalinate	29	21	24			11	19
Hexythiazox	1	7		2	8	2	5
Hydramethylnon		2					1
Imidacloprid	11	9	25	10	15	21	12
Kinoprene	7						1
Lambda-cyhalothrin		1					1
Malathion	20	8	10				8
Methidathion		1					1
Methiocarb	2	3		2	9	2	3
Methomyl	2		7				1
Naled		1					1
Neem oil					2		*
Neem oil, clar. hyd.	2	6			8		4
Nicotine			2				*
Oxamyl	4	3				5	3
Oxythioquinox				5			*
Permethrin	1			3			*
Petroleum distillate	9	5			2	8	5
Piperonyl butoxide	5		2		2		1
Potassium salts	7	10	8	8	22	11	10
Pymetrozine	7	2		7	2		2
Pyrethrins	5		2		9		1
Pyridaben	6	4	2			6	3
Pyridine	4				2	2	1
Pyriproxyfen	2				2	2	1
Resmethrin	1		6				1
Rotenone					8		1
S-Kinoprene	11	3	12	14	11	16	7
Spinosad	11	9	2	6	17	13	9
Sulfotepp		*					*
Fungicides							
Azoxystrobin	16	6					6
Benomyl			3			7	1
Butanone	1		2	2	2		*
Captan		11				18	8
Chlorothalonil	8	31	8	8	8	3	21
Copper hydroxide		40		35		5	25
Copper resinate		*					*
Copper sulfate	10	8	6			3	7
Etridiazole		14	27	3	2	8	12
Fenarimol	2						*

See footnote(s) at end of table.

--continued

Foliage Plants
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides-cont							
Fenhexamid	3	*		3	6	2	1
Fludioxonil		7		7	8		5
Fosetyl-al	21	21		7		3	15
Iprodione	19	11	6	3		3	10
Mancozeb	4	36	6	10	8	5	24
Maneb		1					1
Mefenoxam	17	22	5	3	11	3	16
Metalaxyl	13	9		4	2	2	7
Myclobutanil	7	*		6			1
Oxytetracycline				4			*
PCNB	9	7	6			12	7
Piperalin	3		6				1
Propiconazole	3	1		7			1
Streptomycin	8	10		4		1	7
Sulfur	6	*					1
Thiophanate	2	2					2
Thiophanate-methyl	30	38	21	16	21	14	31
Triadimefon		*					*
Trichoderma harz.	5	2	5	3			2
Trifloxystrobin	1	*		4			*
Triforine			3			2	*
Vinclozolin	4	1		3			1
Other Chemicals							
Alk. dim. benzyl 60%	3	2		4			2
Alk. dim. eth. benz.	3	2		4			2
Ancymidol	5	*			2	6	1
Bromadiolone	1						*
Capsaicin					3		*
Chlormequat chloride	2	*		5	2	2	1
Daminozide	7	2	2	3		8	3
Ethephon	2	1	13		17		3
Farnesol		*				2	*
Fatty acids	1						*
Gibberellic acid		9	6		2		6
Gliocladium virens			6				1
Hydrogen peroxide		5	8	6			4
Indolebutyric acid	5	1	8				2
Iron phosphate	1	1					1
Metaldehyde	11	5				2	5
NAA	4	1					1
Nerolidol		*				2	*
Paclobutrazol	3	1			14		2
Pelargonic acid	5						1
Sodium hypochlorite		1					1
Uniconazole	3	*				6	1

* Less than one percent.

Floriculture Propagation Material
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA [1]	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
Isoxaben			6				1
Oxadiazon		3					1
S-Metolachlor			6				1
Trifluralin							1
Insecticides							
Abamectin	36	29					11
Acephate	20	12		5			9
Azadirachtin	18	9					7
Beauveria bassiana	7	7					3
Bendiocarb				3			4
Bifenazate		12					3
Bifenthrin	19	25					9
Bt (Bacillus thur.)	18	9					6
Carbaryl							1
Chlorpyrifos	12	13	24				10
Cinnamaldehyde							1
Cyfluthrin	5	8					3
Cyromazine		3					1
Diazinon	11						3
Dienochlor							1
Diflubenzuron	12	8	5				5
Dimethoate							1
Endosulfan							1
Fenoxycarb							1
Fenpropathrin							2
Fluvalinate	5	5	6				3
Hexythiazox		7					2
Hydramethylnon		4					1
Imidacloprid	5	16	18	8			9
Methiocarb		14	5				5
N-octy-bicyclohepten							1
Neem oil, clar. hyd.							1
Oxamyl							1
Permethrin	5	3					1
Petroleum distillate			6				2
Piperonyl butoxide	7						1
Potassium salts	5	5					2
Pymetrozine	18	5					5
Pyrethrins	7						1
Pyridaben		16					5
Pyridine	5						1
S-Kinoprene	5	4					1
Spinosad	11	16	5				10

See footnote(s) at end of table.

--continued

Floriculture Propagation Material
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA [1]	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
AQ-10 Biofungicide	6						1
Azoxystrobin	11	8		4			4
Benomyl				5			1
Butanone	5						2
Captan	13	4		14			5
Chlorothalonil	11	20	10	21			12
Copper hydroxide	5	28		9			8
Copper sulfate	12	13	31	4			14
Etridiazole		24	9	21			30
Fenarimol							1
Fenhexamid	12	4	5				4
Fludioxonil		17	9				6
Fosetyl-al	49	13					9
Iprodione	49	16					10
Mancozeb	42	28					11
Mefenoxam	18	24	4	5			17
Metalaxyl	42						7
Milban							1
Myclobutanil		4	5				2
Oxycarboxin		32		16			9
PCNB	31	20	5				10
Piperalin							1
Potassium bicarbon.	6						1
Propiconazole	7						1
Streptomycin	6	9					2
Thiophanate	5		6				2
Thiophanate-methyl	49	46	9	21			42
Triadimefon		32					9
Trichoderma harz.	13						2
Trifloxystrobin	6	4					2
Vinclozolin							1

See footnote(s) at end of table.

--continued

Floriculture Propagation Material
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL	MI	OR	PA [1]	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 50%							1
Alk. dim. benzyl 60%				12			3
Alk. dim. eth. benz.				12			3
Ancymidol	12		24				5
Benzyladenine	8						1
Chlormequat chloride	5	7	10				7
Chloropicrin	5						1
Daminozide	5	7	15				10
Dazomet				6			1
Ethephon		8					3
Gibberellic acid		3					1
Gibberellins A4A7	8						1
Gliocladium virens				9			2
Hydrogen peroxide		17	6	7			8
Indolebutyric acid	7	8	10	7			5
Metaldehyde	5			3			1
Methyl bromide	5						1
NAA			10	7			3
Paclobutrazol	5	8	15				10
Sodium chlorate							1
Uniconazole	7						1

[1] Insufficient number of reports to publish data.

Cut Cultivated Greens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA [1]	FL	MI [1]	OR [1]	PA [1]	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
Clethodim							1
Clopyralid							1
Diuron		4					3
Fluazifop-P-butyl		1					4
Glyphosate		1					5
Imazaquin, mon. salt		1					1
Isoxaben							3
Napropamide							1
Oryzalin							3
Oxadiazon		1					2
Oxyfluorfen							4
Paraquat							1
Pendimethalin							2
Prodiamine		18					15
Simazine		4					3
Insecticides							
Abamectin		1					4
Acephate		5					8
Azadirachtin							1
Azinphos-methyl							1
Beauveria bassiana		1					1
Bifenazate		3					3
Bifenthrin							1
Bt (Bacillus thur.)		1					1
Carbaryl		22					18
Chlorpyrifos		46					41
Cyfluthrin		1					1
Diazinon							2
Dicofol		17					13
Diflubenzuron		51					40
Dimethoate		2					2
Endosulfan		21					17
Ethoprop		11					9
Fenamiphos		3					3
Fenbutatin-oxide		9					8
Fluvalinate		4					3
Hexythiazox		2					2
Imidacloprid							5
Malathion		2					2
Methidathion		1					1
Neem oil, clar. hyd.		4					4
Oxydemeton-methyl							1
Oxythioquinox		4					3
Permethrin		30					24
Petroleum distillate		3					3
Potassium salts		2					3
Pymetrozine							1
Spinosad		5					5

See footnote(s) at end of table.

--continued

Cut Cultivated Greens
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA [1]	FL	MI [1]	OR [1]	PA [1]	TX [1]	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Captan		1					1
Chloroneb		4					3
Chlorothalonil		50					42
Copper chloride hyd.							1
Copper hydroxide		2					2
Copper sulfate		1					2
Etridiazole		1					2
Fenhexamid							1
Ferbam		3					2
Fludioxonil		1					1
Fosetyl-al		7					6
Iprodione		1					1
Mancozeb		83					66
Maneb		10					8
Mefenoxam		1					2
Metalaxyl							1
Metiram		7					6
Myclobutanil							1
PCNB		1					1
Streptomycin							1
Sulfur							1
Tebuconazole		48					38
Thiabendazole		2					1
Thiophanate		2					1
Thiophanate-methyl		50					41
Trifloxystrobin		2					2
Other Chemicals							
Capsaicin							*
Cytokinins		1					1
Ethephon							5
Hydrogen peroxide		1					1
Indolebutyric acid							1
Iron phosphate							1
Metaldehyde		3					4
Metam-sodium		1					1
Paclobutrazol							1

* Less than one percent.
[1] Insufficient number of reports to publish data.

Herbaceous Perennials
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Herbicides							
2,4-D			4				1
Acetamide					1		*
Acetic acid			1				*
Ammonium benzadox					6		2
Bentazon					11		3
Bromoxynil	2						*
Clethodim			1	2			1
Clopyralid				21			4
DCPA					1		*
Diquat	2		1				1
Diuron				3			*
Fluazifop-P-butyl			5				1
Glyphosate	12		6	32	12		12
Isoxaben	10		4	3	6	6	5
Metolachlor				2	1	3	1
Metribuzin					1		*
Napropamide				3			*
Oryzalin	13		8	4	4	3	6
Oxadiazon	8			21		3	5
Oxyfluorfen	10		2	4		3	3
Paraquat	2						*
Pendimethalin	7			3	2	3	6
Prodiamine	2		4		12	8	6
S-Metolachlor				2			*
Sethoxydim					1		*
Simazine			1	4			1
Triclopyr			1				*
Trifluralin	2		2		8	3	3
Vernolate	2						*
Insecticides							
Abamectin	49		12	6	14	16	18
Acephate	35		24	21	17	48	26
Aldicarb	3						*
Allethrin			2				*
Azadirachtin	14		15	7	4	22	11
Beauveria bassiana	5		1		8		3
Bendiocarb			3		3		2
Bifenazate			5	8	3	22	6
Bifenthrin	9		18	10	6	18	12
Bt (Bacillus thur.)	5		1	2	1	5	3
Buprofezin	2						*
Carbaryl			5		2	19	4
Chlorpyrifos	27		15	8	7	25	14
Cinnamaldehyde	12		19	7	5	3	8
Clofentezine					2		1

See footnote(s) at end of table.

--continued

Herbaceous Perennials
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Insecticides-cont							
Cyfluthrin	7		3	2	12	3	6
Cyromazine	10			3	1		2
Diazinon	2		5	7	10	17	9
Dicofol	5				2	3	2
Dienochlor	5			7	8	14	6
Diflubenzuron	2		13		5	17	7
Dimethoate	5		3				1
Disulfoton						2	*
Endosulfan			5		9	3	4
Esfenvalerate			2				*
Ethyl parathion	2						*
Fenamiphos			5				1
Fenoxycarb			2	4	7	6	4
Fenpropathrin	2		7	3	3	10	4
Fluvalinate	25			16	2	6	8
Hexythiazox	2		3	2	5	3	3
Hydramethylnon	2						*
Imidacloprid	7		14	7	26	47	19
Kinoprene	2			3	2	3	2
Lambda-cyhalothrin			2				*
Lindane					1		*
Malathion			2		3	11	3
Methiocarb	18		5	4	1		4
Methomyl			2		10		3
N-octy-bicyclohepten			2		1		1
Neem oil					2		1
Neem oil, clar. hyd.	2				1	14	2
Nicotine	3			2	6		2
Oxamyl					8		2
Oxythioquinox					1		*
Permethrin	13		3			3	3
Petroleum distillate	2			6	13	6	6
Phosmet					10		3
Piperonyl butoxide	7		3		2	3	3
Potassium salts	5		9	30	3	9	10
Propargite	2						*
Pymetrozine	37		9	3	6	6	11
Pyrethrins	16		3		2		4
Pyridaben	8		2		2	2	2
Pyridine	2		2		2	9	2
Pyriproxyfen					6	3	2
Resmethrin					1		*
Rotenone	2		2				1
S-Kinoprene				7	10	3	4
Silicon dioxide					1		*
Spinosad	25		17		15	19	15
Sulfotepp				2	6		2

See footnote(s) at end of table.
--continued

Herbaceous Perennials
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fungicides							
Agrobacterium radio.				3			*
Azoxystrobin	7		1	2	1	11	4
Benomyl					10	2	3
Butanone	2			5	15		6
Captan	4		5		14		6
Chlorothalonil	17		26	7	14	8	15
Copper hydroxide	9		2	6	2	7	5
Copper resinate					1		*
Copper sulfate	15		2	2	9	15	7
Dinocap						3	*
Etridiazole			12	10	10	6	8
Fenarimol	24		2		2		5
Fenbuconazole				5			1
Fenhexamid	3		10	10	7		6
Fludioxonil			5	3	10	3	6
Flutolanil			2				1
Fosetyl-al	17		3		3	6	5
Iprodione	17		6	2	2	8	6
Mancozeb	16		5	7	10	7	11
Maneb	5						1
Mefenoxam	17		15	2	19	5	13
Metalaxyl	6			4	5	16	5
Myclobutanil	16		2		1	5	4
Oxycarboxin				2	1		1
PCNB	12		9	3	2	6	6
Piperalin	13				1	14	4
Potassium bicarbon.	2				1		1
Propamocarb hydroch.						3	*
Propiconazole	4		5	3	2	3	3
Streptomyces gris.			2				*
Streptomycin	5						1
Sulfur	4		2				1
Thiabendazole			2				*
Thiophanate			3	3	3		2
Thiophanate-methyl	12		42	12	24	22	23
Triadimefon			3	20	1	3	5
Trichoderma harz.	2		7	2	6		4
Trifloxystrobin	4		3	3	9		4
Triforine	3						*
Vinclozolin	7		3	3	6	3	4

See footnote(s) at end of table.

--continued

Herbaceous Perennials
Percent of Operations Using an Active Ingredient
Program States, 2000

	CA	FL [1]	MI	OR	PA	TX	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Other Chemicals							
Alk. dim. benzyl 60%	3		1				1
Alk. dim. eth. benz.	3		1				1
Ancymidol	2		2		1	9	2
Benzyladenine			2			3	1
Capsaicin				5			1
Chlormequat chloride	5		2	2	1		2
Daminozide	7		8		3	12	5
Dichloropropene	2						*
Ethephon	2				11	3	4
Farnesol					2	3	1
Garlic oil					1		*
Gibberellic acid			1		1		1
Gibberellins A4A7			2			3	1
Hydrogen peroxide			5	12	1		4
Indolebutyric acid	3			2			1
Iron phosphate	3			7			2
Metaldehyde	15		4	25	2	21	11
Methyl bromide	2		1				1
Nerolidol					2	3	1
Paclobutrazol	9		9		3	6	5
Pelargonic acid			8				2
Sodium hypochlorite						3	*
Uniconazole	3		3		1		1
Zinc phosphide			2				*

* Less than one percent.
[1] Insufficient number of reports to publish data.

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Truck Crop Production	Nursery Propagation or Lining Out Stock
Herbicides				
2,4-D	P	P		*
2,4-D, Dimeth. salt	P	P		*
2,4-DP, Dimeth. salt	*	*		
Acetamide	P	*		
Acetic acid	P	P		
Ammonium benzadox	P	P		*
Asulam	*	*		
Atrazine	P	P		
Benefin	P	*		
Bensulfuron-methyl	*	*		
Bensulide	*			
Bentazon	P	*		*
Bromacil	*	*		*
Bromoxynil	*	*		
Butoxy. ester 2,4-D	*	*		
Chlorimuron-ethyl	*	*		
Chlorsulfuron	*	*		
Clethodim	P	P		P
Clopyralid	P	P		P
DCPA	*			
Dicamba	*	*		
Dicamba, Dimet. salt	P	P		*
Dichlobenil	P	P		
Dichlorprop	*	*		
Diphenamid	*	*		
Diquat	P	P		
Dithiopyr	*	*		
Diuron	*	P		*
EPTC	*	*		
Fluazifop-P-butyl	P	P	*	*
Fomesafen	*	*		
Glufosinate-ammonium	P	P		*
Glyphosate	P	P	*	P
Glyphosate, is. salt	*	*		
Halosulfuron	P	P		*
Hexazinone	P	P		
Imazaquin, mon. salt	*			
Isoxaben	P	P	*	P
Lactofen	*	*		*
Linuron	*	*		

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Truck Crop Production	Nursery Propagation or Lining Out Stock
Herbicides-cont				
MCPA	*	*		
MCPP, DMA salt	P	P		*
MSMA	*	*		*
Metolachlor	P	P		*
Metribuzin	P	*		
Napropamide	P	P		P
Norflurazon	P	P		*
Oryzalin	P	P	*	P
Oxadiazon	P	P		P
Oxyfluorfen	P	P	*	P
Paraquat	P	P		P
Pendimethalin	P	P	*	P
Prodiamine	P	P		P
Pronamide	P	P		*
Propanil	*	*		
Quizalofop-ethyl	*			
S-Metolachlor	P	P		
Sethoxydim	P	P		
Simazine	P	P		P
Sodium metaborate	*	*		
Sulfometuron methyl	P	P		
Sulfosate	*	*		
Tebuthiuron	*	*		
Thiazopyr	*	*		
Triclopyr	P	P		
Trifluralin	P	P		P
Vernolate	*	*		

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Truck Crop Production	Nursery Propagation or Lining Out Stock
Insecticides				
Abamectin	P	P	P	P
Acephate	P	P	P	P
Aldicarb	P	*		
Allethrin	*	*		
Azadirachtin	P	P	*	*
Azinphos-methyl	P	P		*
Beauveria bassiana	P	P	*	*
Bendiocarb	P	P		P
Bifenazate	P	P		P
Bifenthrin	P	P		P
Bt (Bacillus thur.)	([1])	([1])	([1])	([1])
Buprofezin	*			
Carbaryl	P	P		P
Carbofuran	P	P		
Chlorpyrifos	P	P	*	P
Cinnamaldehyde	P	P		*
Clofentezine	P	P		*
Cryolite	*	*		
Cyfluthrin	P	P	*	P
Cypermethrin	*	*	*	
Cyromazine	P	*	*	*
Deltamethrin	P	P		
Diazinon	P	P	P	P
Dichlorvos	P			
Dicofol	P	P		P
Dienochlor	P	P		*
Diflubenzuron	P	P	*	P
Dimethoate	P	P	*	P
Disulfoton	P	P	*	*
Endosulfan	P	P	*	P
Esfenvalerate	P	P	*	*
Ethion	*	*		
Ethoprop	P	*		
Ethoxy sec. alcohols	*	*		
Ethyl parathion	*	*		*
Fenamiphos	P	*		
Fenbutatin-oxide	P	P		
Fenitrothion	*	*		
Fenoxycarb	P	P		*
Fenpropathrin	P	P		*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Truck Crop Production	Nursery Propagation or Lining Out Stock
Insecticides-cont				
Fluvalinate	P	P	*	P
Formetanate hydro.	P	P		
Hexythiazox	P	P		*
Hydramethylnon	P	P		*
Imidacloprid	P	P	P	P
Jojoba oil	P	*		
Kinoprene	P	P		
Lambda-cyhalothrin	P	P		*
Lindane	P	P		*
Malathion	P	P	P	P
Methamidophos	*			
Methidathion	P	*		
Methiocarb	P	P		*
Methomyl	P	P	*	
Methoxychlor	*	*		
Methyl parathion	*	*		
Mevinphos	*	*		
N-octy-bicyclohepten	P	*		
Naled	P	*	*	
Neem oil	*	*		
Neem oil, clar. hyd.	P	P	*	*
Nicotine	P	*		*
Oxamyl	*	*	*	
Oxydemeton-methyl	P	P		*
Oxythioquinox	P	P		*
Permethrin	P	P	P	*
Petroleum distillate	P	P	*	P
Petroleum oil	P	P		
Phorate	*			
Phosmet	P	P		*
Piperonyl butoxide	P	P	*	*
Pirimicarb	*			
Potassium salts	P	P	*	P
Propargite	P	P	*	*
Pseudomonas cepacia	*			
Pymetrozine	P	P		*
Pyrethrins	P	P	*	*
Pyridaben	P	P		*
Pyridine	P	P	*	*
Pyriproxyfen	P	*		*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Truck Crop Production	Nursery Propagation or Lining Out Stock
Insecticides-cont				
Resmethrin	*	*		
Rotenone	P	P	*	
S-Kinoprene	P	*		P
Sabadilla	*	*		
Silicon dioxide	P	*		
Spinosad	P	P	P	*
Sulfotepp	P	*		
Tebufenozide	*	*		
Tefluthrin	*	*		*
Tetramethrin	*	*		
Thiodicarb	*	*	*	
Triazamate	*	*		
Trichlorfon	*			
Fungicides				
AQ-10 Biofungicide	([1])	([1])		([1])
Agrobacterium radio.	P	P		
Azoxystrobin	P	P	*	*
Bacillus subtilus	([1])			
Basic copper sulfate	P	P		
Benomyl	P	P	P	*
Butanone	P	P		*
Calcium polysulfide	P	*		
Captafol	*	*		
Captan	P	P	P	P
Chloroneb	*			
Chlorothalonil	P	P	P	P
Copper (metallic)	P	P		
Copper amm. complex	P	P		*
Copper chloride hyd.	*			
Copper hydroxide	P	P	P	P
Copper oxychlo. sul.	*	*		
Copper oxychloride	P	P		
Copper resinate	P	*	*	
Copper sulfate	P	P		P
Cresol	*	*		
Cyproconazole	*	*		
Cyprodinil	*	*		
Dicloran	P	*	*	
Dinocap	*			
Dodine	P	P		*
Etridiazole	P	*		P

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Truck Crop Production	Nursery Propagation or Lining Out Stock
Fungicides-cont				
Fenarimol	P	P		*
Fenbuconazole	P	*		
Fenhexamid	P	P	*	*
Ferbam	P	*		
Fludioxonil	P	P		P
Flutolanil	P	*		
Fosetyl-al	P	P	P	P
Iprodione	*	P	P	P
Kresoxim-methyl	P	*		*
Mancozeb	P	P	P	P
Maneb	P	P	P	*
Mefenoxam	*	P	P	*
Metalaxyl	P	P	P	P
Metiram	P			
Milban	*			
Mint oil	*			
Myclobutanil	P	P	*	P
Oxycarboxin	P	P		*
Oxytetracycline	P	P		*
PCNB	P	P	*	*
Piperalin	P	P		
Potassium bicarbon.	P	P		*
Propamocarb hydroch.	P	*	*	*
Propiconazole	P	P	*	P
Pseudomonas fluores.	*	*		
Streptomyces gris.	([1])			
Streptomycin	P	P	P	P
Sulfur	P	P	*	*
Tebuconazole	P	*		
Thiabendazole	P	*		
Thiophanate	*	P		*
Thiophanate-methyl	P	P	P	P
Thiram	*	*		
Triadimefon	*	P		P
Trichoderma harz.	P	P	*	*
Trifloxystrobin	*	P	*	*
Triflumizole	*	*		
Triforine	P	P		
Triphenyltin hydrox.	*			
Vinclozolin	P	P	*	*
Xylenol	*	*		
Ziram	P	P		
Zoxamide	*			

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Truck Crop Production	Nursery Propagation or Lining Out Stock
Other Chemicals				
Alk. dim. benzyl 50%	P	P		*
Alk. dim. benzyl 60%	P	P		P
Alk. dim. eth. benz.	P	P		P
Alk. dim. ethbz. am.	*	*		
Alkyl. dim. benz. am	*	*		
Aluminum phosphide	P	*		
Ammonium soap	*	*		
Ancymidol	*	*		*
Benzyladenine	P			
Bitrex	*	*		
Brodifacoum	*	*		*
Bromadiolone	*	*		
Butyl mercaptan	*	*		
Capsaicin	P	P		
Chlormequat chloride	P	P	*	*
Chlorophacinone	*	*		
Chloropicrin	P	P	*	
Cholecalciferol	*	*		
Citric acid	*			
Cytokinins	*			
Daminozide	P	P	*	*
Dazomet	P	*	*	
Decyldimethyloctyl	*	*		
Dichloropropene	P	*	*	
Didecyl dim. ammon.	*	*		
Dikegulac-sodium	P	*		*
Dimethyldioctyl	*	*		
Diphacinone	P	P	*	*
Dodecadien-1-ol	*			
Dodecanol	*			
E-8-Dodecenyl cetat	*	*		
Ethephon	P	P		*
Farnesol	P	P		
Fatty acids	*			
Fatty alcohols	*	*		
GABA	*			
Garlic oil	*	*		
Gibberellic acid	P	P		
Gibberellins A4A7	P			
Gliocladium virens	*	*		

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	All Nursery and Floriculture	All Nursery	Transplants for Commercial Truck Crop Production	Nursery Propagation or Lining Out Stock
Other Chemicals-cont				
Hydrogen peroxide	P	P		P
Indolebutyric acid	P	P	*	P
Iron phosphate	P	P		*
L-Glutamic acid	*			
Metaldehyde	P	P	*	*
Metam-sodium	P	*		*
Methyl bromide	P	P	P	P
Methyl nonyl ketone	*			
NAA	P	P		P
NAD	*	*		
Nerolidol	P	P		
Paclobutrazol	P	P		*
Pelargonic acid	P	P		*
Potassium gibber.	*			
Propionic acid	*			
Silicic acid	*	*		
Sodium chlorate	*	*		
Sodium hypochlorite	P	P	*	*
Strychnine	*	*		
Tetradecanol	*			
Tetrasodium salt	*	*		
Uniconazole	P	*		
Warfarin	*			
Z-8-Dodecen acetate	*	*		
Z-8-Dodecenol	*	*		
Zinc phosphide	*	*		

P Usage data are published for this active ingredient.
* Usage 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 Publication Status
by Production Category
Program States, 2000

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Herbicides				
2,4-D	*	P	P	
2,4-D, Dimeth. salt	*	*	*	
Acetamide	*			
Ammonium benzadox	*	*	*	
Atrazine		P		
Bensulfuron-methyl		*	*	
Bentazon			*	
Bromacil	*	*		*
Butoxy. ester 2,4-D		*		
Chlorsulfuron		*		
Clethodim	*	P	*	*
Clopyralid	*	P	*	
Dicamba, Dimet. salt	*	*	*	
Dichlobenil	P	P	P	*
Dichlorprop			*	
Diquat	*	*	*	*
Diuron	*	*	*	
EPTC		*		*
Fluazifop-P-butyl	*	*	*	
Fomesafen		*		
Glufosinate-ammonium		*	*	
Glyphosate	P	P	P	P
Halosulfuron	*	*	*	*
Hexazinone		*		
Isoxaben	P	P	P	P
Lactofen		*		
Linuron			*	
MCPA		*		
MCPP, DMA salt	*	*	*	
MSMA	*			
Metolachlor	*	P	P	*
Metribuzin	*			
Napropamide	P	P	P	P
Oryzalin	P	P	P	P
Oxadiazon	P	P	P	P
Oxyfluorfen	P	P	P	P
Paraquat	*	*	P	P
Pendimethalin	P	P	P	P
Prodiamine	P	P	P	P
Pronamide	*	*	*	*
Propanil		*	*	
S-Metolachlor	*	P	*	*
Sethoxydim	*	P		*
Simazine	P	P	P	P
Sodium metaborate		*		
Sulfometuron methyl		*		
Sulfosate			*	
Tebuthiuron	*			
Thiazopyr		*		
Triclopyr		P	*	
Trifluralin	P	P	P	*
Vernolate	*			

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Insecticides				
Abamectin	P	P	P	P
Acephate	P	P	P	P
Aldicarb			*	*
Allethrin		*		
Azadirachtin	*	*	*	*
Azinphos-methyl	P	*		
Beauveria bassiana	*	*	*	*
Bendiocarb	P	P	*	
Bifenazate	P	P	*	*
Bifenthrin	P	P	P	P
Bt (Bacillus thur.)	([1])	([1])	([1])	([1])
Carbaryl	P	P	P	P
Carbofuran	*	*	*	
Chlorpyrifos	P	P	P	P
Cinnamaldehyde	*	*	*	*
Clofentezine	*	*	*	
Cyfluthrin	P	P	P	P
Cyromazine	*			
Deltamethrin	P	*	*	*
Diazinon	P	P	P	P
Dicofol	P	P	P	*
Dienochlor	*	*	*	
Diflubenzuron	*	P	*	*
Dimethoate	P	P	P	*
Disulfoton	P		*	
Endosulfan	P	P	P	*
Esfenvalerate		*	*	P
Ethoprop			*	*
Ethoxy sec. alcohols		*		
Ethyl parathion			*	
Fenbutatin-oxide	*	*	*	*
Fenitrothion			*	*
Fenoxycarb	*	P	P	*
Fenpropathrin	P	*	*	*
Fluvalinate	P	P	P	P
Formetanate hydro.			*	*
Hexythiazox	P	P	*	*
Hydramethylnon	*	*	*	*
Imidacloprid	P	P	P	P
Kinoprene	*		*	*
Lambda-cyhalothrin	*	P	*	*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Insecticides-cont				
Lindane	*	P	P	*
Malathion	P	P	P	P
Methidathion	*	*	*	*
Methiocarb	*	*	*	*
Methomyl			*	*
N-octy-bicyclohepten		*		
Neem oil	*	*		
Neem oil, clar. hyd.	P	*	*	*
Oxamyl		*		
Oxydemeton-methyl		P	P	P
Oxythioquinox	P	P	*	*
Permethrin	P		P	*
Petroleum distillate	P	P	P	P
Petroleum oil	*	*	P	
Phosmet		*	*	*
Piperonyl butoxide	*	P	*	*
Potassium salts	*	P	P	*
Propargite	*	*	*	*
Pymetrozine	P	P	*	*
Pyrethrins	*	*	*	*
Pyridaben	*		*	*
Pyridine	*			*
Resmethrin		*		
S-Kinoprene	*	*	*	*
Silicon dioxide	*	*		
Spinosad	P	P	P	P
Tefluthrin	*			
Tetramethrin	*			

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Broadleaf Evergreens	Coniferous Evergreens	Deciduous Shade Trees	Deciduous Flowering Trees
Fungicides				
AQ-10 Biofungicide	([1])		([1])	
Agrobacterium radio.	*	*		*
Azoxystrobin	*	P	*	P
Basic copper sulfate	*			
Benomyl	*	P	*	*
Butanone	P	*	*	*
Calcium polysulfide			*	
Captafol			*	
Captan	P	P	P	
Chlorothalonil	P	P	P	P
Copper (metallic)		*	*	*
Copper amm. complex	*			
Copper hydroxide	P	P	P	P
Copper oxychlo. sul.		*		
Copper oxychloride	*			*
Copper resinate	*			
Copper sulfate	P	P	*	P
Cresol			*	
Dicloran		*		
Dodine	*	*	*	P
Etridiazole	P	P	*	*
Fenarimol	*	*	P	P
Fenhexamid		*		
Ferbam				*
Fludioxonil	P	*	*	*
Flutolanil		*		
Fosetyl-al	P	P	P	P
Iprodione	P	P	P	*
Kresoxim-methyl			*	*
Mancozeb	P	P	P	P
Maneb	*	*	*	*
Mefenoxam	P	P	P	P
Metalaxyl	P	P	P	P
Myclobutanil	P	*	P	P
Oxycarboxin	*	*	*	
Oxytetracycline			*	*
PCNB	P	*	*	*
Piperalin	*			*
Potassium bicarbon.	*	*	*	*
Propiconazole	P	P	P	P
Streptomycin	P	*	P	P
Sulfur	*		*	
Tebuconazole		*		
Thiabendazole	*			
Thiophanate	*	*	*	*
Thiophanate-methyl	P	P	P	P
Thiram	*		*	
Triadimefon	P	*	P	*
Trichoderma harz.		*		
Trifloxystrobin	*	*	*	*
Triforine	*	*	*	
Vinclozolin	*	P	*	
Xylenol			*	
Ziram	*	*		

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

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.	*	*	*	*
Alk. dim. ethbz. am.			*	
Alkyl. dim. benz. am	*			
Aluminum phosphide			*	
Ammonium soap			*	
Bitrex			*	
Brodifacoum	*			
Butyl mercaptan			*	
Capsaicin			*	*
Chlormequat chloride	*	*		
Chlorophacinone	*			
Chloropicrin		*	*	*
Cholecalciferol	*	*		
Daminozide	*	*		
Dazomet	*			
Decyldimethyloctyl	*			
Dichloropropene			*	
Didecyl dim. ammon.	*			
Dikegulac-sodium	*			
Dimethyldioctyl	*			
Diphacinone	*	*	*	*
E-8-Dodecenyl cetat			*	
Ethephon		*	*	*
Farnesol	*	*		
Fatty alcohols			*	
Garlic oil	*			
Gibberellic acid	*			
Hydrogen peroxide	P	*	*	*
Indolebutyric acid	*	*	*	*
Iron phosphate	*			
Metaldehyde	P	*	P	*
Metam-sodium		*		
Methyl bromide		P	*	*
NAA		*	*	*
NAD			*	
Nerolidol	*	*		
Paclobutrazol	*	*		
Pelargonic acid	*	*	*	*
Silicic acid			*	
Sodium chlorate		*		
Sodium hypochlorite	*	*		*
Tetrasodium salt			*	
Uniconazole	*			
Z-8-Dodecen acetate			*	
Z-8-Dodecenol			*	
Zinc phosphide		*		

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals	Fruit and Nut Plants	Christmas Trees	All Floriculture
Herbicides				
2,4-D	*	*	P	*
2,4-D, Dimeth. salt	*			
2,4-DP, Dimeth. salt	*			*
Acetamide	*			*
Acetic acid	*		P	*
Ammonium benzadox	*	*		P
Asulam			*	
Atrazine	*		P	*
Benefin	*			*
Bensulide				*
Bentazon	*			*
Bromacil	*			
Bromoxynil	*		*	*
Chlorimuron-ethyl	*			
Clethodim	P	*	*	P
Clopyralid	*		P	*
DCPA				*
Dicamba		*	*	
Dicamba, Dimet. salt	*			
Dichlobenil	P		*	
Diphenamid	*			
Diquat	*	*		P
Dithiopyr			*	
Diuron		*		*
Fluazifop-P-butyl	*	*	P	P
Glufosinate-ammonium	*			
Glyphosate	P	P	P	P
Glyphosate, is. salt	*			*
Halosulfuron	*		*	
Hexazinone			P	
Imazaquin, mon. salt				*
Isoxaben	P	P		P
Linuron				*
MCPA				*
MCPP, DMA salt	*			
MSMA	*			
Metolachlor	P		P	P
Metribuzin	*			*
Napropamide	P	P		P
Norflurazon	*	*		

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals	Fruit and Nut Plants	Christmas Trees	All Floriculture
Herbicides-cont				
Oryzalin	P	P	P	P
Oxadiazon	P	*		P
Oxyfluorfen	P	P	P	P
Paraquat	*	P	*	*
Pendimethalin	P	*	P	P
Prodiamine	P	*	*	P
Pronamide	P		*	*
Quizalofop-ethyl				*
S-Metolachlor	*		P	*
Sethoxydim	*	*	*	*
Simazine	P	P	P	P
Sulfometuron methyl			P	
Sulfosate		*		*
Thiazopyr		*		
Triclopyr	*		P	*
Trifluralin	P	*		P
Vernolate	*			*
Insecticides				
Abamectin	P	P	*	P
Acephate	P	P	P	P
Aldicarb	*	*		*
Allethrin				*
Azadirachtin	P	*		P
Azinphos-methyl	*	*	P	*
Beauveria bassiana	P	*		P
Bendiocarb	P	*		P
Bifenazate	P	*		P
Bifenthrin	P	P	P	P
Bt (Bacillus thur.)	([1])	([1])		([1])
Buprofezin				*
Carbaryl	P	P	P	P
Carbofuran	*			*
Chlorpyrifos	P	P	P	P
Cinnamaldehyde	P	*		P
Clofentezine	*	*		P
Cryolite	*	*		*
Cyfluthrin	P	*	P	P
Cyromazine	*	*		P
Deltamethrin	*	*		*
Diazinon	P	P	P	P
Dichlorvos				P

See footnote(s) at end of table. --continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals	Fruit and Nut Plants	Christmas Trees	All Floriculture
Insecticides-cont				
Dicofol	P	*	P	P
Dienochlor	P		*	P
Diflubenzuron	P		P	P
Dimethoate	*	*	P	P
Disulfoton	*		*	P
Endosulfan	P	P	P	P
Esfenvalerate	*	P	P	*
Ethion		*		
Ethoprop	*			P
Ethoxy sec. alcohols				*
Ethyl parathion				*
Fenamiphos	*			P
Fenbutatin-oxide	*	P	*	P
Fenoxycarb	*	*		P
Fenpropathrin	P	*		P
Fluvalinate	P	*	P	P
Formetanate hydro.		*		*
Hexythiazox	P	*	P	P
Hydramethylnon	P	*	*	P
Imidacloprid	P	P	P	P
Jojoba oil	*			P
Kinoprene	*			P
Lambda-cyhalothrin	P	*		P
Lindane	P	*	P	P
Malathion	P	P	P	P
Methamidophos				*
Methidathion	*	*		*
Methiocarb	P	*		P
Methomyl		*	*	P
Methoxychlor			*	
Methyl parathion			*	
Mevinphos	*			
N-octy-bicyclohepten	*			P
Naled		*		P
Neem oil	*			*
Neem oil, clar. hyd.	P	*		P
Nicotine				P
Oxamyl	*	*		P
Oxydemeton-methyl	*		P	*
Oxythioquinox	P		P	P

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals	Fruit and Nut Plants	Christmas Trees	All Floriculture
Insecticides-cont				
Permethrin	P	P	*	P
Petroleum distillate	P	P	P	P
Petroleum oil	*	*	*	*
Phorate				*
Phosmet		P	*	*
Piperonyl butoxide	*	P	*	P
Pirimicarb				*
Potassium salts	*	P		P
Propargite	*	*		*
Pseudomonas cepacia				*
Pymetrozine	P	*		P
Pyrethrins	P	P	*	P
Pyridaben	P			P
Pyridine	P	*		P
Pyriproxyfen				P
Resmethrin	*			*
Rotenone	*	*		P
S-Kinoprene	P	*		P
Sabadilla	*	*		*
Silicon dioxide	*	*		*
Spinosad	P	P	*	P
Sulfotepp	*			P
Tebufenozide			*	
Triazamate		*	*	
Trichlorfon				*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals	Fruit and Nut Plants	Christmas Trees	All Floriculture
Fungicides				
AQ-10 Biofungicide				([1])
Agrobacterium radio.	P		*	P
Azoxystrobin	P	*		P
Bacillus subtilus				([1])
Basic copper sulfate	*	*		*
Benomyl	*	P	P	P
Butanone	P	*		P
Calcium polysulfide	*	*		*
Captan	P	P	*	P
Chloroneb				*
Chlorothalonil	P	P	P	*
Copper (metallic)	*	*	*	
Copper amm. complex	*	*		
Copper chloride hyd.				*
Copper hydroxide	P	P	*	P
Copper oxychloride	*	*	*	*
Copper resinate	*		*	*
Copper sulfate	P	P	*	P
Cyproconazole	*			
Cyprodinil		*		*
Dicloran				*
Dinocap				*
Dodine		*		
Etridiazole	*	*		P
Fenarimol	P	*		P
Fenbuconazole		*		*
Fenhexamid	*	*		P
Ferbam				P
Fludioxonil	P			P
Flutolanil	*			*
Fosetyl-al	P	P	*	P
Iprodione	P	P	*	*
Kresoxim-methyl				*
Mancozeb	P	P	P	P
Maneb	*	*		P
Mefenoxam	P	*	*	*
Metalaxyl	P	P	*	P
Metiram				P
Milban				*
Mint oil				*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals	Fruit and Nut Plants	Christmas Trees	All Floriculture
Fungicides-cont				
Myclobutanil	P	P		P
Oxycarboxin	*			*
Oxytetracycline		*		*
PCNB	P	*		*
Piperalin	P	*		P
Potassium bicarbon.	*	*	*	P
Propamocarb hydroch.				P
Propiconazole	P	P	*	*
Pseudomonas fluores.		*		
Streptomyces gris.				([1])
Streptomycin	P	P		P
Sulfur	*	P		P
Tebuconazole		*		P
Thiabendazole	*			P
Thiophanate	P	*	*	*
Thiophanate-methyl	P	P	P	P
Thiram	*			*
Triadimefon	P	*	P	*
Trichoderma harz.	P	*		P
Trifloxystrobin	P	*		*
Triflumizole	*	*		
Triforine	P	*		P
Triphenyltin hydrox.				*
Vinclozolin	P	*		P
Ziram		*		
Zoxamide				*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals	Fruit and Nut Plants	Christmas Trees	All Floriculture
Other Chemicals				
Alk. dim. benzyl 50%	*			P
Alk. dim. benzyl 60%	P			P
Alk. dim. eth. benz.	P			P
Alk. dim. ethbz. am.				*
Alkyl. dim. benz. am				*
Aluminum phosphide	*			*
Ammonium soap				*
Ancymidol	*			*
Benzyladenine				P
Brodifacoum	*			*
Bromadiolone		*		*
Capsaicin	*	*		*
Chlormequat chloride	P			P
Chlorophacinone				*
Chloropicrin		*		P
Cholecalciferol	*			
Citric acid				*
Cytokinins				*
Daminozide	P	*		P
Dazomet				P
Decyldimethyloctyl				*
Dichloropropene	*	*		*
Didecyl dim. ammon.				*
Dikegulac-sodium	*			*
Dimethyldioctyl				*
Diphacinone	*			*
Dodecadien-1-ol				*
Dodecanol				*
Ethephon	*		*	P
Farnesol	*			P
Fatty acids				*
Fatty alcohols	*			
GABA				*
Garlic oil	*			*
Gibberellic acid	*	*		P
Gibberellins A4A7				P
Gliocladium virens	*			*
Hydrogen peroxide	P	*		*
Indolebutyric acid	*	*		P
Iron phosphate	*	*		P

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals	Fruit and Nut Plants	Christmas Trees	All Floriculture
Other Chemicals-cont				
L-Glutamic acid				*
Metaldehyde	P	*		P
Metam-sodium	*	*		*
Methyl bromide	*	*	*	P
Methyl nonyl ketone				*
NAA	P	*		P
NAD	*			*
Nerolidol	*			P
Paclobutrazol	P		*	P
Pelargonic acid	*	*		P
Potassium gibber.				*
Propionic acid				*
Silicic acid				*
Sodium chlorate				*
Sodium hypochlorite	*	*		P
Strychnine			*	*
Tetradecanol				*
Tetrasodium salt				*
Uniconazole	*			P
Warfarin				*
Zinc phosphide	*			*

P Usage data are published for this active ingredient.
* Usage 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 Publication Status
by Production Category
Program States, 2000

Active Ingredient	Cut Flowers	Flowering Plants	Bedding Plants	Foliage Plants
Herbicides				
2,4-D	*			
2,4-DP, Dimeth. salt	*			
Acetamide		*		
Ammonium benzadox		P	*	*
Atrazine		*		
Benefin	*			*
Bensulide			*	
Bromoxynil	*			
Clethodim	*		*	
DCPA	*		*	*
Diquat	P	*	*	*
Diuron	*	*	*	*
Fluazifop-P-butyl	*		*	
Glyphosate	P	*	P	P
Glyphosate, is. salt	*		*	
Isoxaben	*	P	*	P
Linuron	*			
MCPA	*	*		
Metolachlor	*	*	*	
Metribuzin		*		
Napropamide	*			*
Oryzalin	P	P	P	*
Oxadiazon	P	*	*	P
Oxyfluorfen	*	*	*	P
Paraquat	*	*	P	
Pendimethalin	*	P	*	P
Prodiamine	*	*	*	*
Pronamide	*			
Quizalofop-ethyl			*	
S-Metolachlor		*		
Simazine	*	*		
Sulfosate	*			
Triclopyr				*
Trifluralin	P	*	*	*
Vernolate	*			*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Cut Flowers	Flowering Plants	Bedding Plants	Foliage Plants
Insecticides				
Abamectin	P	P	P	P
Acephate	P	P	P	P
Aldicarb		*	*	
Azadirachtin	P	P	P	P
Beauveria bassiana	P	P	P	P
Bendiocarb	P	*	*	P
Bifenazate	P	*	P	P
Bifenthrin	P	P	P	P
Bt (Bacillus thur.)	([1])	([1])	([1])	([1])
Carbaryl	P	P	*	P
Carbofuran		*		
Chlorpyrifos	P	P	P	P
Cinnamaldehyde	P	*	P	P
Clofentezine	*	*	*	*
Cryolite			*	
Cyfluthrin	P	P	P	P
Cyromazine	P	*	P	
Deltamethrin	*			
Diazinon	P	P	P	P
Dichlorvos	*	P	*	*
Dicofol	P	P	P	P
Dienochlor	P	P	P	P
Diflubenzuron	*	P	P	P
Dimethoate	P	P	*	P
Disulfoton		*	*	*
Endosulfan	P	P	P	P
Esfenvalerate	*		*	
Ethoprop	*			
Ethoxy sec. alcohols			*	
Fenamiphos	*			
Fenbutatin-oxide		P	*	*
Fenoxycarb	P	P	P	*
Fenpropathrin	P	P	P	*
Fluvalinate	P	P	P	P
Formetanate hydro.		*	*	
Hexythiazox	P	*	*	P
Hydramethylnon	*	*	*	*
Imidacloprid	*	P	P	P
Jojoba oil	P	*	*	
Kinoprene	P	P	P	*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Cut Flowers	Flowering Plants	Bedding Plants	Foliage Plants
Insecticides-cont				
Lambda-cyhalothrin	*	*	*	*
Lindane	*	*	*	
Malathion	P	P	P	P
Methamidophos		*	*	
Methidathion				*
Methiocarb	P	P	P	P
Methomyl	*	*	*	*
N-octy-bicyclohepten		*	*	
Naled	P			*
Neem oil		*	*	*
Neem oil, clar. hyd.	P	P	P	P
Nicotine	*	P	P	*
Oxamyl	*	*	P	P
Oxydemeton-methyl		*		
Oxythioquinox	*	*	*	*
Permethrin	P	P	P	*
Petroleum distillate	P	P	P	P
Petroleum oil		*		
Phorate		*		
Piperonyl butoxide	P	P	P	P
Pirimicarb		*	*	
Potassium salts	P	P	P	P
Propargite		*		
Pseudomonas cepacia			*	
Pymetrozine	P	P	P	P
Pyrethrins	P	P	P	P
Pyridaben	P	P	P	P
Pyridine	P	P	P	P
Pyriproxyfen	*	P	*	*
Resmethrin	*	*	P	*
Rotenone	*	*	*	*
S-Kinoprene	P	P	P	P
Sabadilla		*		
Silicon dioxide	*	*	*	
Spinosad	P	P	P	P
Sulfotepp		P	P	*
Trichlorfon	*			

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Cut Flowers	Flowering Plants	Bedding Plants	Foliage Plants
Fungicides				
AQ-10 Biofungicide	([1])			
Agrobacterium radio.	*	*		
Azoxystrobin	P	P	P	P
Bacillus subtilus			([1])	
Basic copper sulfate	*		*	
Benomyl	*	P	P	*
Butanone	P	P	P	*
Calcium polysulfide	*	*	*	
Captan	P	P	P	P
Chlorothalonil	*	P	P	P
Copper chloride hyd.	*			
Copper hydroxide	P	P	P	P
Copper oxychloride	*		*	
Copper resinate			*	*
Copper sulfate	P	P	P	P
Cyprodinil		*		
Dicloran	*		*	
Etridiazole	P	P	P	P
Fenarimol	P	P	*	*
Fenhexamid	P	P	P	P
Ferbam		*		
Fludioxonil	*	P	P	P
Flutolanil		*	*	
Fosetyl-al	P	P	P	P
Iprodione	P	*	P	P
Kresoxim-methyl	*	*		
Mancozeb	P	P	P	P
Maneb	P	*	*	*
Mefenoxam	*	P	P	P
Metalaxyl	P	P	P	P
Milban	*	*		
Mint oil			*	
Myclobutanil	P	P	P	P
Oxycarboxin	*	*	*	
Oxytetracycline		*		*
PCNB	P	P	*	P
Piperalin	P	P	*	*
Potassium bicarbon.	P	*	*	
Propamocarb hydroch.		*	*	
Propiconazole	P	P	P	P

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Cut Flowers	Flowering Plants	Bedding Plants	Foliage Plants
Fungicides-cont				
Streptomyces gris.			([1])	
Streptomycin	P	P	P	P
Sulfur	P	P	*	*
Tebuconazole	*	*		
Thiabendazole	*	P	P	
Thiophanate	*	P	*	P
Thiophanate-methyl	P	P	P	P
Thiram		*		
Triadimefon	*	P	P	*
Trichoderma harz.	*	P	*	P
Trifloxystrobin	P	P	P	*
Triforine	P	P	*	*
Triphenyltin hydrox.			*	
Vinclozolin	P	P	P	*
Zoxamide		*		
Other Chemicals				
Alk. dim. benzyl 50%	*	*	*	
Alk. dim. benzyl 60%	P	*	*	P
Alk. dim. eth. benz.	*	*	*	P
Alk. dim. ethbz. am.	*			
Alkyl. dim. benz. am	*		*	
Aluminum phosphide	*	*		
Ammonium soap		*		
Ancymidol	*	P	*	P
Benzyladenine		P	*	
Brodifacoum			*	
Bromadiolone		*		*
Capsaicin	*	*	*	*
Chlormequat chloride	*	P	P	P
Chlorophacinone		*	*	
Chloropicrin	P	*	*	
Citric acid			*	
Cytokinins			*	
Daminozide	P	P	P	P
Dazomet	P	*		
Decyldimethyloctyl	*		*	
Dichloropropene	*			
Didecyl dim. ammon.	*		*	
Dikegulac-sodium		*		
Dimethyldioctyl	*		*	
Diphacinone	*			

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Cut Flowers	Flowering Plants	Bedding Plants	Foliage Plants
Other Chemicals-cont				
Dodecadien-1-ol			*	
Dodecanol			*	
Ethephon	*	*	P	P
Farnesol	*	*	*	*
Fatty acids		*		*
GABA			*	
Garlic oil		*	*	
Gibberellic acid	*	*	P	P
Gibberellins A4A7		P	*	
Gliocladium virens		*		*
Hydrogen peroxide	*	*	*	*
Indolebutyric acid	*	P	P	P
Iron phosphate	*	*		*
L-Glutamic acid			*	
Metaldehyde	P	P	P	*
Metam-sodium	*			
Methyl bromide	P	*	*	
Methyl nonyl ketone	*			
NAA		*	*	*
NAD		*		
Nerolidol	*	*	*	*
Paclobutrazol	*	P	P	*
Pelargonic acid	*	*	*	*
Potassium gibber.			*	
Propionic acid			*	
Silicic acid	*			
Sodium chlorate		*	*	
Sodium hypochlorite		*	*	*
Strychnine	*			
Tetradecanol			*	
Tetrasodium salt	*			
Uniconazole		P	P	*
Warfarin			*	

P Usage data are published for this active ingredient.
* Usage 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 Publication Status
by Production Category
Program States, 2000

Active Ingredient	Floriculture Propagation Material	Cut Cultivated Greens	Herbaceous Perennials	Non - production Areas
Herbicides				
2,4-D			*	P
2,4-D, Dimeth. salt				P
Acetamide			*	
Acetic acid			*	*
Ammonium benzadox			*	
Atrazine				P
Benefin				*
Bentazon			*	*
Bromacil				*
Bromoxynil			*	
Clethodim		*	*	P
Clopyralid		*	*	P
Copper ethanolamine				*
DCPA			*	*
Dicamba				*
Dicamba, Dimet. salt				*
Dichlobenil				P
Diquat			*	P
Dithiopyr				*
Diuron		*	*	P
Fenoxaprop				*
Fluazifop-P-butyl		*	*	P
Glufosinate-ammonium				P
Glyphosate		*	P	P
Glyphosate, is. salt				*
Halosulfuron				P
Hexazinone				*
Imazaquin				*
Imazaquin, mon. salt		*		
Isoxaben	*	*	P	P
Linuron				*
MCPP, DMA salt				*
Metolachlor			*	P
Metribuzin			*	
Napropamide		*	*	P
Oryzalin		*	P	P
Oxadiazon	*	*	P	P
Oxyfluorfen		*	P	P
Paraquat		*	*	P
Pendimethalin		*	P	P

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Floriculture Propagation Material	Cut Cultivated Greens	Herbaceous Perennials	Non - production Areas
Herbicides-cont				
Picloram				*
Prodiamine		P	*	P
Prometon				*
Pronamide				*
Propanoic acid				*
S-Metolachlor	*		*	*
Sethoxydim			*	*
Simazine		*	*	P
Sodium metaborate				*
Sulfometuron methyl				P
Sulfosate				*
Tebuthiuron				*
Triclopyr			*	P
Trifluralin	*		*	*
Vernolate			*	*
Insecticides				
Abamectin	P	*	P	*
Acephate	P	P	P	P
Aldicarb			*	
Allethrin			*	
Azadirachtin	P	*	P	*
Azinphos-methyl		*		
Beauveria bassiana	*	*	P	*
Bendiocarb	*		*	*
Bifenazate	*	*	P	*
Bifenthrin	*	*	P	*
Bt (Bacillus thur.)	([1])	([1])	([1])	([1])
Buprofezin			*	*
Carbaryl	*	P	P	*
Chlorpyrifos	P	P	P	P
Cinnamaldehyde	*		*	
Clofentezine			*	
Cryolite				*
Cyfluthrin	*	*	*	*
Cyromazine	*		*	
Diazinon	*	*	P	P
Dicofol		P	*	
Dienochlor	*		P	*
Diflubenzuron	P	P	P	*
Dimethoate	*	*	*	*
Disulfoton			*	*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Floriculture Propagation Material	Cut Cultivated Greens	Herbaceous Perennials	Non - production Areas
Insecticides-cont				
Endosulfan	*	P	P	*
Esfenvalerate			*	
Ethoprop		P		
Ethyl parathion			*	
Fenamiphos		*	*	
Fenbutatin-oxide		P		
Fenoxycarb	*		P	P
Fenpropathrin	*		P	
Fluvalinate	*	*	P	*
Hexythiazox	*	*	P	*
Hydramethylnon	*		*	P
Imidacloprid	P	*	*	*
Kinoprene			P	
Lambda-cyhalothrin			*	
Lindane			*	*
Malathion		*	P	*
Methidathion		*		
Methiocarb	P		*	*
Methomyl			*	
N-octy-bicyclohepten	*		*	*
Neem oil			*	
Neem oil, clar. hyd.	*	*	*	
Nicotine			*	
Nosema locustae				*
Oxamyl	*		*	
Oxydemeton-methyl		*		
Oxythioquinox		*	*	
Permethrin	*	P	P	*
Petroleum distillate	*	*	P	P
Phosmet			*	
Piperonyl butoxide	*		P	*
Potassium salts	*	*	P	*
Propargite			*	
Pymetrozine	P	*	P	
Pyrethrins	*		P	*
Pyridaben	P		P	*
Pyridine	*		P	*
Pyriproxyfen			*	
Resmethrin			*	*
Rotenone			*	
S-Kinoprene	*		*	
Silicon dioxide			*	
Spinosad	P	P	P	*
Sulfotepp			*	*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Floriculture Propagation Material	Cut Cultivated Greens	Herbaceous Perennials	Non - production Areas
Fungicides				
AQ-10 Biofungicide	([1])			
Agrobacterium radio.			*	
Azoxystrobin	P		*	*
Benomyl	*		*	
Butanone	*		P	*
Captan	P	*	P	*
Chloroneb		*		
Chlorothalonil	P	P	P	*
Copper chloride hyd.		*		
Copper hydroxide	P	*	P	P
Copper resinate			*	*
Copper sulfate	P	*	P	*
Dinocap			*	
Etridiazole	P	*	*	*
Fenarimol	*		P	*
Fenbuconazole			*	
Fenhexamid	P	*	P	*
Ferbam		*		
Fludioxonil	P	*	P	*
Flutolanil			*	*
Fosetyl-al	P	P	*	*
Iprodione	P	*	P	*
Mancozeb	P	P	P	
Maneb		P	*	
Mefenoxam	P	*	*	*
Metalaxyl	P	*	P	
Metiram		P		
Milban	*			
Myclobutanil	*	*	P	
Oxycarboxin	*		*	
PCNB	P	*	P	*
Piperalin	*		*	
Potassium bicarbon.	*		*	*
Propamocarb hydroch.			*	
Propiconazole	*		P	*
Streptomyces gris.			([1])	
Streptomycin	*	*	*	
Sulfur		*	*	*
Tebuconazole		P		
Thiabendazole		*	*	
Thiophanate	*	*	P	
Thiophanate-methyl	P	P	P	P
Triadimefon	*		*	
Trichoderma harz.	*		P	*
Trifloxystrobin	*	*	P	
Triforine			*	
Vinclozolin	*		P	*

See footnote(s) at end of table.

--continued

Active Ingredient Publication Status
by Production Category
Program States, 2000

Active Ingredient	Floriculture Propagation Material	Cut Cultivated Greens	Herbaceous Perennials	Non production Areas
Other Chemicals				
Alk. dim. benzyl 50%	*			P
Alk. dim. benzyl 60%	*		*	P
Alk. dim. eth. benz.	*		*	P
Alkyl. dim. benz. am				*
Aluminum phosphide				*
Ancymidol	*		*	*
Benzyladenine	*		*	
Brodifacoum				*
Bromadiolone				*
Bromethalin				*
Capsaicin		*	*	
Chlorine				*
Chlormequat chloride	P		P	*
Chloropicrin	*			*
Cytokinins		*		
Daminozide	P		P	*
Dazomet	*			
Decyldimethyloctyl				*
Dichloropropene			*	
Didecyl dim. ammon.				*
Difethialone				*
Dimethyldioctyl				*
Diphacinone				*
Ethephon	*	*	P	
Farnesol			*	
Garlic oil			*	
Gibberellic acid	*		*	
Gibberellins A4A7	*		*	
Gliocladium virens	*			
Hydrogen peroxide	*	*	P	P
Indolebutyric acid	P	*	*	
Iron phosphate		*	*	*
Metaldehyde	*	P	P	P
Metam-sodium		*		*
Methyl bromide	*		*	P
NAA	*			
Nerolidol			*	
Paclobutrazol	P	*	P	
Pelargonic acid			*	P
Sodium chlorate	*			*
Sodium hypochlorite			*	*
Uniconazole	*		*	
Zinc phosphide			*	

P Usage data are published for this active ingredient.
* Usage 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, 2000

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
2,4-D	0.42	2.0	0.46	1.7
2,4-D, Dimeth. salt	0.28	0.1	0.28	0.1
Acetamide	([1])	*		
Acetic acid	0.87	0.5	1.14	0.5
Ammonium benzadox	0.11	0.1	0.09	0.1
Atrazine	2.49	40.0	2.49	40.0
Benefin	0.44	0.1		
Bentazon	0.99	0.2		
Clethodim	0.20	0.7	0.19	0.7
Clopyralid	0.16	1.2	0.16	1.1
Dicamba, Dimet. salt	0.03	*	0.03	*
Dichlobenil	3.02	2.8	3.02	2.8
Diquat	0.46	6.3	0.24	0.5
Diuron			1.31	0.4
Fluazifop-P-butyl	0.14	0.8	0.21	0.7
Glufosinate-ammonium	0.75	1.4	0.75	1.4
Glyphosate	0.97	137.8	0.96	127.4
Halosulfuron	0.02	*	0.02	*
Hexazinone	2.06	32.5	2.06	32.5
Isoxaben	0.73	11.4	0.72	9.1
MCPP, DMA salt	0.16	*	0.16	*
Metolachlor	2.03	73.3	1.57	38.6
Metribuzin	([1])	*		
Napropamide	1.97	7.8	1.94	7.5
Norflurazon	2.03	1.5	2.03	1.5
Oryzalin	2.67	99.2	2.72	92.5
Oxadiazon	1.06	15.0	1.67	5.1
Oxyfluorfen	1.14	48.9	1.18	46.6
Paraquat	0.77	3.2	0.59	1.9
Pendimethalin	1.90	88.1	1.89	86.3
Prodiamine	1.14	10.2	1.02	6.5
Pronamide	1.37	0.6	1.37	0.6
S-Metolachlor	1.27	2.8	1.26	2.7
Sethoxydim	0.41	0.2	0.41	0.2
Simazine	1.67	41.7	1.68	40.0
Sulfometuron methyl	0.04	*	0.04	*
Triclopyr	0.43	0.7	0.43	0.7
Trifluralin	1.12	3.8	1.72	2.8

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Insecticides				
Abamectin	0.01	0.6	0.01	0.2
Acephate	0.75	181.5	0.53	87.4
Aldicarb	2.50	0.7		
Azadirachtin	0.03	0.3	0.02	0.1
Azinphos-methyl	0.58	1.4	0.58	1.4
Beauveria bassiana	0.31	1.1	0.24	0.1
Bendiocarb	1.35	8.1	1.38	6.4
Bifenazate	0.11	0.8	0.07	0.3
Bifenthrin	0.09	3.3	0.08	2.0
Carbaryl	1.11	94.1	1.20	75.1
Carbofuran	1.69	1.1	([1])	1.1
Chlorpyrifos	0.64	76.7	0.83	54.0
Cinnamaldehyde	2.60	1.2	2.03	0.2
Clofentezine	0.10	0.1	0.10	*
Cyfluthrin	0.04	0.9	0.04	0.6
Cyromazine	0.18	10.7		
Deltamethrin	0.003	*	0.003	*
Diazinon	0.65	17.7	0.63	9.4
Dichlorvos	([1])	0.5		
Dicofol	0.55	7.3	0.48	4.1
Dienochlor	0.50	2.1	0.27	0.2
Diflubenzuron	0.09	6.6	0.12	1.1
Dimethoate	0.54	11.8	0.44	5.9
Disulfoton	3.06	3.7	3.05	3.7
Endosulfan	0.56	10.4	0.65	4.7
Esfenvalerate	0.03	0.2	0.03	0.2
Ethoprop	4.99	7.1		
Fenamiphos	4.20	5.3		
Fenbutatin-oxide	0.32	2.5	0.58	0.9
Fenoxycarb	0.02	0.3	0.02	0.2
Fenpropathrin	0.20	1.1	0.23	0.5
Fluvalinate	0.16	3.5	0.14	1.4
Formetanate hydro.	0.99	0.4	0.99	0.4
Hexythiazox	0.11	0.7	0.10	0.5
Hydramethylnon	0.01	*	0.01	*

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Insecticides-cont				
Imidacloprid	0.21	6.5	0.13	0.8
Jojoba oil	2.65	0.1		
Kinoprene	0.29	0.4	0.39	0.1
Lambda-cyhalothrin	0.06	0.5	0.06	0.4
Lindane	0.42	4.2	0.42	4.2
Malathion	1.02	95.2	1.03	88.1
Methidathion	0.83	0.5		
Methiocarb	0.79	4.1	0.83	2.6
Methomyl	0.78	0.8	0.79	0.7
N-octy-bicyclohepten	([1])	*		
Naled	1.23	0.5		
Neem oil, clar. hyd.	5.24	17.3	4.34	8.6
Nicotine	0.49	0.1		
Oxydemeton-methyl	0.36	2.1	0.39	1.9
Oxythioquinox	0.31	0.7	0.40	0.6
Permethrin	0.18	9.5	0.20	3.9
Petroleum distillate	6.19	317.2	6.51	266.6
Petroleum oil	6.31	4.6	6.31	4.6
Phosmet	1.36	1.0	1.35	1.0
Piperonyl butoxide	0.44	1.2	0.37	0.6
Potassium salts	13.02	321.3	19.95	276.8
Propargite	0.87	1.1	0.86	1.0
Pymetrozine	0.15	1.1	0.13	0.2
Pyrethrins	0.06	0.2	0.06	0.1
Pyridaben	0.27	0.5	0.49	0.1
Pyridine	0.09	0.2	0.12	*
Pyriproxyfen	0.02	*		
Rotenone	0.004	*	0.01	*
S-Kinoprene	0.37	0.5		
Silicon dioxide	3.45	0.8		
Spinosad	0.10	2.8	0.09	0.5
Sulfotepp	0.97	0.4		

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Fungicides				
Agrobacterium radio.	0.004	*	0.003	*
Azoxystrobin	0.12	1.4	0.13	0.8
Basic copper sulfate	0.14	0.4	([1])	0.4
Benomyl	0.53	1.5	0.50	1.3
Butanone	0.10	0.4	0.11	0.3
Calcium polysulfide	([1])	*		
Captan	1.82	13.3	1.90	10.1
Chlorothalonil	1.24	221.7	1.70	110.9
Copper (metallic)	6.32	0.8	6.32	0.8
Copper amm. complex	0.41	0.8	0.41	0.8
Copper hydroxide	0.68	53.6	0.77	39.1
Copper oxychloride	1.58	72.6	1.58	72.6
Copper resinate	0.18	0.1		
Copper sulfate	0.03	0.3	0.04	0.2
Dicloran	([1])	0.1		
Dodine	0.43	0.6	0.43	0.6
Etridiazole	0.83	11.9		
Fenarimol	0.05	0.2	0.05	0.1
Fenbuconazole	([1])	*		
Fenhexamid	0.42	2.6	0.54	0.3
Ferbam	([1])	0.1		
Fludioxonil	0.53	3.5	0.11	0.1
Flutolanil	([1])	0.2		
Fosetyl-al	2.22	76.8	2.53	49.9
Iprodione			0.69	32.5
Kresoxim-methyl	([1])	*		
Mancozeb	1.29	598.3	1.25	106.5
Maneb	0.75	40.6	0.85	2.8
Mefenoxam			0.54	10.8
Metalaxyl	0.55	4.0	0.38	1.5
Metiram	([1])	8.9		
Myclobutanil	0.10	1.5	0.12	0.9
Oxycarboxin	0.81	0.7	([1])	0.7
Oxytetracycline	0.37	*	([1])	*
PCNB	2.47	23.5	3.12	8.2

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	All Nursery and Floriculture		All Nursery	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Fungicides-cont				
Piperalin	0.68	2.9	0.45	0.2
Potassium bicarbon.	1.44	2.8	1.19	0.7
Propamocarb hydroch.	19.31	3.4		
Propiconazole	0.09	2.2	0.10	1.5
Streptomycin	0.18	1.6	0.17	1.0
Sulfur	4.64	136.6	6.60	99.4
Tebuconazole	0.26	9.8		
Thiabendazole	5.56	0.8		
Thiophanate			0.29	0.8
Thiophanate-methyl	0.83	123.2	0.98	55.6
Triadimefon			0.33	1.6
Trichoderma harz.	0.16	0.3	0.03	*
Trifloxystrobin			0.10	0.3
Triforine	0.06	0.1	0.05	*
Vinclozolin	0.50	5.6	0.48	0.2
Ziram	2.85	0.3	2.85	0.3
Other Chemicals				
Alk. dim. benzyl 50%	0.05	*	0.02	*
Alk. dim. benzyl 60%	0.09	0.5	0.05	0.1
Alk. dim. eth. benz.	0.09	0.5	0.05	0.1
Aluminum phosphide	([1])	0.1		
Benzyladenine	0.01	*		
Capsaicin	0.001	*	0.001	*
Chlormequat chloride	1.08	4.4	0.72	0.1
Chloropicrin	96.41	189.5	110.73	137.7
Daminozide	2.83	35.1	3.89	1.6
Dazomet	343.24	33.1		
Dichloropropene	([1])	71.3		
Dikegulac-sodium	([1])	*		
Diphacinone	0.001	*	0.001	*
Ethephon	0.76	2.0	0.62	*
Farnesol	0.000	*	([1])	*
Gibberellic acid	0.07	0.4	([1])	*
Gibberellins A4A7	0.01	*		
Hydrogen peroxide	7.27	8.6	3.56	1.8
Indolebutyric acid	0.01	*	0.01	*
Iron phosphate	0.40	0.6	([1])	0.1
Metaldehyde	1.06	6.4	1.26	4.3
Metam-sodium	179.82	50.3		
Methyl bromide	228.76	1,076.2	251.85	670.3
NAA	0.01	*	([1])	*
Nerolidol	0.000	*	([1])	*
Paclobutrazol	0.02	0.2	0.04	*
Pelargonic acid	4.19	23.1	4.17	22.7
Sodium hypochlorite	0.98	0.2	1.02	0.2
Uniconazole	0.004	*		

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Transplants for Commercial Truck Crop Production		Nursery Propagation or Lining Out Stock	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
Clethodim			0.24	0.4
Clopyralid			0.23	*
Glyphosate			0.58	1.0
Isoxaben			0.67	0.1
Napropamide			1.94	0.7
Oryzalin			2.93	8.4
Oxadiazon			1.01	*
Oxyfluorfen			1.11	2.0
Paraquat			([1])	0.2
Pendimethalin			2.42	0.5
Prodiamine			0.70	0.2
Simazine			1.73	1.5
Trifluralin			1.38	0.1
Insecticides				
Abamectin	0.01	*	0.01	*
Acephate	0.30	0.6	1.43	1.0
Bendiocarb			([1])	0.3
Bifenazate			0.56	*
Bifenthrin			0.02	*
Carbaryl			1.17	1.0
Chlorpyrifos			0.49	0.4
Cyfluthrin			0.06	*
Diazinon	0.67	0.3	0.81	0.3
Dicofol			0.57	0.1
Diflubenzuron			0.08	*
Dimethoate			0.34	*
Endosulfan			0.58	0.2
Fluvalinate			0.22	0.1
Imidacloprid	([1])	*	0.20	*
Malathion	1.43	0.1	1.48	0.6
Permethrin	0.21	0.2		
Petroleum distillate			17.79	1.0
Potassium salts			4.48	0.1
S-Kinoprene			([1])	0.1
Spinosad	0.07	0.1		

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Transplants for Commercial Truck Crop Production		Nursery Propagation or Lining Out Stock	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Fungicides				
Benomyl	0.41	0.5		
Captan	([1])	6.2	2.12	0.6
Chlorothalonil	1.60	6.9	1.18	2.1
Copper hydroxide	0.78	7.5	0.34	1.3
Copper sulfate			0.02	*
Etridiazole			0.72	2.0
Fludioxonil			0.07	*
Fosetyl-al	3.72	7.4	2.75	1.0
Iprodione	0.93	0.6	0.79	1.3
Mancozeb	1.34	8.1	1.14	3.1
Maneb	0.52	1.2		
Mefenoxam	0.40	0.1		
Metalaxyl	0.22	0.1	0.37	0.2
Myclobutanil			([1])	*
Propiconazole			0.11	*
Streptomycin	0.19	0.7	0.12	*
Thiophanate-methyl	([1])	0.2	0.95	4.8
Triadimefon			0.25	0.1
Other Chemicals				
Alk. dim. benzyl 60%			0.12	*
Alk. dim. eth. benz.			0.12	*
Hydrogen peroxide			3.69	0.7
Indolebutyric acid			([1])	*
Methyl bromide	226.54	165.7	262.31	164.6
NAA			([1])	*

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Broadleaf Evergreens		Coniferous Evergreens	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
2,4-D			([1])	0.2
Atrazine			3.75	15.8
Clethodim			0.12	0.1
Clopyralid			0.22	0.5
Dichlobenil	([1])	0.9	2.60	0.6
Glyphosate	1.37	16.3	1.40	25.5
Isoxaben	0.63	0.9	0.72	1.9
Metolachlor			([1])	0.9
Napropamide	3.35	0.7	1.51	1.3
Oryzalin	1.47	1.4	2.37	15.3
Oxadiazon	1.78	0.5	0.94	0.4
Oxyfluorfen	1.75	4.1	1.14	9.2
Pendimethalin	2.22	7.6	2.19	10.4
Prodiamine	0.69	0.1	0.88	1.4
S-Metolachlor			([1])	1.7
Sethoxydim			([1])	*
Simazine	1.36	0.6	1.76	7.3
Triclopyr			0.16	0.1
Trifluralin	1.91	1.4	2.32	0.3
Insecticides				
Abamectin	0.01	*	0.01	*
Acephate	0.27	34.0	0.82	2.4
Azinphos-methyl	([1])	0.2		
Bendiocarb	1.53	0.7	([1])	5.0
Bifenazate	0.10	0.1	0.04	0.1
Bifenthrin	0.06	*	0.10	0.9
Carbaryl	1.29	2.2	0.47	3.2
Chlorpyrifos	0.95	5.1	0.86	11.8
Cyfluthrin	0.04	*	([1])	*
Deltamethrin	0.004	*		
Diazinon	0.42	2.3	0.27	0.3
Dicofol	0.61	2.4	0.27	0.4
Diflubenzuron			([1])	0.2
Dimethoate	0.82	0.7	0.76	1.7
Disulfoton	([1])	*		
Endosulfan	0.37	0.3	([1])	0.2
Fenoxycarb			0.02	*
Fenpropathrin	0.17	0.1		
Fluvalinate	0.14	0.5	0.11	0.1
Hexythiazox	0.09	*	0.09	*
Imidacloprid	0.16	*	0.08	*

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Broadleaf Evergreens		Coniferous Evergreens	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Insecticides-cont				
Lambda-cyhalothrin			0.06	0.2
Lindane			0.42	0.7
Malathion	0.81	4.1	0.94	60.4
Neem oil, clar. hyd.	5.56	4.6		
Oxydemeton-methyl			0.40	*
Oxythioquinox	0.25	*	0.47	0.4
Permethrin	0.20	3.5		
Petroleum distillate	7.48	23.7	5.44	99.6
Piperonyl butoxide			0.22	*
Potassium salts			25.05	266.4
Pymetrozine	0.19	*	([1])	*
Spinosad	0.10	*	([1])	*
Fungicides				
Azoxystrobin			0.05	0.1
Benomyl			0.66	*
Butanone	0.07	0.1		
Captan	([1])	0.2	0.79	0.6
Chlorothalonil	1.27	9.3	1.87	13.8
Copper hydroxide	0.65	2.9	0.70	1.7
Copper sulfate	0.01	*	0.24	*
Etridiazole	4.10	0.9	1.31	*
Fludioxonil	([1])	*		
Fosetyl-al	2.68	13.7	2.57	3.7
Iprodione	0.70	3.8	0.61	1.0
Mancozeb	1.22	12.8	1.13	31.1
Mefenoxam	0.32	0.5	0.49	2.9
Metalaxyl	0.11	*	0.61	0.6
Myclobutanil	0.18	*		
PCNB	3.28	5.5		
Propiconazole	0.11	0.6	0.13	0.3
Streptomycin	([1])	*		
Thiophanate-methyl	1.71	20.1	0.65	14.0
Triadimefon	0.17	*		
Vinclozolin			([1])	*
Other Chemicals				
Hydrogen peroxide	([1])	0.2		
Metaldehyde	1.77	2.0		
Methyl bromide			([1])	27.7

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Deciduous Shade Trees		Deciduous Flowering Trees	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
2,4-D	([1])	0.1		
Dichlobenil	1.94	0.2		
Glyphosate	0.76	23.7	1.61	0.7
Isoxaben	0.82	1.5	0.42	0.1
Metolachlor	1.51	35.5		
Napropamide	2.65	2.2	([1])	0.4
Oryzalin	0.73	4.3	3.90	48.4
Oxadiazon	2.60	1.5	1.02	0.5
Oxyfluorfen	0.45	0.6	1.98	18.9
Paraquat	0.65	0.8	([1])	0.1
Pendimethalin	2.10	49.4	1.01	9.6
Prodiamine	0.78	0.8	0.36	0.1
Simazine	1.47	1.3	1.70	0.3
Trifluralin	([1])	0.2		
Insecticides				
Abamectin	0.01	*	0.01	*
Acephate	0.78	4.7	0.63	0.9
Bifenthrin	0.06	0.1	0.06	0.2
Carbaryl	0.65	5.2	0.92	2.3
Chlorpyrifos	0.54	2.3	0.65	1.3
Cyfluthrin	0.03	*	([1])	0.1
Diazinon	0.97	1.4	0.66	0.1
Dicofol	0.33	0.2		
Dimethoate	0.69	0.4		
Endosulfan	0.77	0.7		
Esfenvalerate			0.02	*
Fenoxycarb	0.01	*		
Fluvalinate	0.19	0.4	0.38	*
Imidacloprid	0.04	*	0.11	*
Lindane	0.28	0.2		
Malathion	1.54	1.5	1.75	0.3
Oxydemeton-methyl	([1])	0.1	([1])	0.2
Permethrin	0.14	0.1		
Petroleum distillate	8.96	32.2	8.53	9.2
Petroleum oil	5.18	2.6		
Potassium salts	2.48	2.4		
Spinosad	0.09	*	([1])	*

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Deciduous Shade Trees		Deciduous Flowering Trees	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Fungicides				
Azoxystrobin			(1)	*
Captan	2.32	1.0		
Chlorothalonil	2.77	2.1	1.38	0.7
Copper hydroxide	0.64	3.5	2.22	2.6
Copper sulfate			(1)	*
Dodine			(1)	0.2
Fenarimol	(1)	*	(1)	*
Fosetyl-al	1.19	0.4	1.98	0.4
Iprodione	(1)	0.4		
Mancozeb	0.83	1.7	1.08	0.9
Mefenoxam	(1)	0.2	1.29	6.0
Metalaxyl	0.64	0.3	(1)	*
Myclobutanil	0.05	*	0.10	0.1
Propiconazole	0.16	0.1	0.11	0.1
Streptomycin	(1)	*	0.15	*
Thiophanate-methyl	1.10	1.8	0.36	0.5
Triadimefon	0.06	*		
Other Chemicals				
Metaldehyde	0.71	0.2		

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals		Fruit and Nut Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
Clethodim	0.15	0.1		
Dichlobenil	3.15	1.0		
Glyphosate	1.14	28.4	0.71	5.5
Isoxaben	0.77	4.4	0.38	0.2
Metolachlor	3.08	0.2		
Napropamide	1.73	1.4	1.18	0.8
Oryzalin	1.65	6.1	1.75	2.1
Oxadiazon	1.55	2.0		
Oxyfluorfen	1.58	5.7	0.88	1.8
Paraquat			0.57	0.7
Pendimethalin	1.95	5.1		
Prodiamine	1.16	3.2		
Pronamide	1.62	0.3		
Simazine	2.66	2.6	2.02	0.7
Trifluralin	1.34	0.8		
Insecticides				
Abamectin	0.01	0.1	0.01	*
Acephate	1.88	42.0	0.65	1.1
Azadirachtin	0.02	*		
Beauveria bassiana	0.22	0.1		
Bendiocarb	([1])	0.2		
Bifenazate	0.11	0.1		
Bifenthrin	0.08	0.7	0.04	*
Carbaryl	0.98	18.6	3.67	23.7
Chlorpyrifos	0.62	9.3	0.89	1.6
Cinnamaldehyde	([1])	0.1		
Cyfluthrin	0.03	*		
Diazinon	0.75	3.2	0.60	0.7
Dicofol	0.41	0.8		
Dienochlor	0.25	0.1		
Diflubenzuron	0.14	0.8		
Endosulfan	0.83	1.0	0.52	0.5
Esfenvalerate			0.04	0.1
Fenbutatin-oxide			0.75	0.3
Fenpropathrin	0.25	0.4		
Fluvalinate	0.11	0.3		

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals		Fruit and Nut Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Insecticides-cont				
Hexythiazox	0.10	0.2		
Hydramethylnon	0.01	*		
Imidacloprid	0.11	0.2	0.06	*
Lambda-cyhalothrin	0.05	0.2		
Lindane	0.64	0.1		
Malathion	0.91	4.2	1.70	9.7
Methiocarb	0.77	1.6		
Neem oil, clar. hyd.	3.29	3.0		
Oxythioquinox	0.17	*		
Permethrin	0.14	*	0.05	*
Petroleum distillate	6.56	66.2	7.88	29.9
Phosmet			1.39	0.6
Piperonyl butoxide			([1])	*
Potassium salts			3.57	0.2
Pymetrozine	0.12	0.2		
Pyrethrins	0.04	*	([1])	*
Pyridaben	0.17	*		
Pyridine	([1])	*		
S-Kinoprene	0.18	*		
Spinosad	0.11	0.1	0.11	0.1
Fungicides				
Agrobacterium radio.	0.003	*		
Azoxystrobin	0.10	0.3		
Benomyl			0.53	0.3
Butanone	0.16	0.1		
Captan	0.65	0.1	1.50	1.3
Chlorothalonil	1.56	17.1	0.85	2.3
Copper hydroxide	0.76	14.8	0.76	4.8
Copper sulfate	0.03	0.1	0.27	0.1
Fenarimol	0.06	0.1		
Fludioxonil	0.24	0.1		
Fosetyl-al	2.27	20.0	2.41	3.2
Iprodione	0.60	24.8	0.66	0.6
Mancozeb	1.38	41.8	1.57	2.9
Mefenoxam	0.12	0.9		
Metalaxyl	0.18	0.3	0.81	*

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Deciduous Shrubs and Other Ornamentals		Fruit and Nut Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Fungicides-cont				
Myclobutanil	0.10	0.1	0.15	0.5
PCNB	5.55	1.5		
Piperalin	([1])	*		
Propiconazole	0.08	0.4	0.08	*
Streptomycin	0.08	0.1	0.09	0.1
Sulfur			6.78	96.1
Thiophanate	0.30	0.7		
Thiophanate-methyl	0.98	13.8	0.26	0.2
Triadimefon	0.41	0.1		
Trichoderma harz.	([1])	*		
Trifloxystrobin	0.12	0.1		
Triforine	0.04	*		
Vinclozolin	0.47	0.1		
Other Chemicals				
Alk. dim. benzyl 60%	([1])	*		
Alk. dim. eth. benz.	([1])	*		
Chlormequat chloride	0.75	0.1		
Daminozide	3.92	1.5		
Hydrogen peroxide	4.18	0.6		
Metaldehyde	1.07	1.4		
NAA	([1])	*		
Paclobutrazol	0.02	*		

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Christmas Trees		All Floriculture	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
2,4-D	0.74	1.0		
Acetic acid	([1])	0.5		
Ammonium benzadox			0.37	*
Atrazine	2.04	24.0		
Clethodim			([1])	*
Clopyralid	0.11	0.4		
Diquat			0.49	5.8
Fluazifop-P-butyl	0.39	0.2	0.04	0.1
Glyphosate	0.71	26.1	1.18	10.4
Hexazinone	1.88	28.9		
Isoxaben			0.76	2.3
Metolachlor	3.95	1.5	2.98	34.7
Napropamide			2.90	0.3
Oryzalin	2.43	6.4	2.12	6.6
Oxadiazon			0.93	9.9
Oxyfluorfen	0.38	4.3	0.72	2.4
Pendimethalin	1.51	1.3	2.49	1.8
Prodiamine			1.44	3.7
S-Metolachlor	0.46	0.5		
Simazine	1.59	25.6	1.48	1.7
Sulfometuron methyl	0.04	*		
Triclopyr	0.76	0.5		
Trifluralin			0.57	1.0
Insecticides				
Abamectin			0.01	0.4
Acephate	0.35	0.8	1.30	94.1
Azadirachtin			0.03	0.2
Azinphos-methyl	0.57	0.7		
Beauveria bassiana			0.32	0.9
Bendiocarb			1.20	1.7
Bifenazate			0.16	0.5
Bifenthrin	0.06	*	0.12	1.3
Carbaryl	1.02	18.9	0.71	19.1
Chlorpyrifos	0.98	22.1	0.37	22.7
Cinnamaldehyde			2.80	1.0
Clofentezine			0.11	*
Cyfluthrin	0.05	0.4	0.04	0.3
Cyromazine			0.16	1.3
Diazinon	1.72	0.8	0.69	8.2
Dichlorvos			([1])	0.5
Dicofol	0.44	0.2	0.69	3.2
Dienochlor			0.54	1.9
Diflubenzuron	0.06	0.1	0.08	5.5

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Christmas Trees		All Floriculture	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Insecticides-cont				
Dimethoate	0.78	1.1	0.69	5.9
Disulfoton			([1])	*
Endosulfan	0.79	1.4	0.45	5.7
Esfenvalerate	0.03	*		
Ethoprop			([1])	6.4
Fenamiphos			4.19	5.1
Fenbutatin-oxide			0.25	1.6
Fenoxycarb			0.10	0.1
Fenpropathrin			0.17	0.6
Fluvalinate	0.16	*	0.18	2.0
Hexythiazox	0.13	0.1	0.12	0.3
Hydramethylnon			0.01	*
Imidacloprid	0.19	0.4	0.27	5.8
Jojoba oil			2.56	0.1
Kinoprene			0.28	0.3
Lambda-cyhalothrin			0.05	*
Lindane	0.42	2.9	([1])	*
Malathion	1.62	7.1	0.80	7.1
Methiocarb			0.69	1.6
Methomyl			0.71	0.1
N-octy-bicyclohepten			([1])	*
Naled			1.27	0.5
Neem oil, clar. hyd.			6.52	8.8
Nicotine			0.50	0.1
Oxamyl			1.36	0.5
Oxydemeton-methyl	0.42	1.3		
Oxythioquinox	0.36	0.1	0.17	0.1
Permethrin			0.16	5.6
Petroleum distillate	11.75	4.8	5.11	50.6
Piperonyl butoxide			0.54	0.7
Potassium salts			3.01	44.5
Pymetrozine			0.16	0.9
Pyrethrins			0.07	0.1
Pyridaben			0.24	0.4
Pyridine			0.09	0.1
Pyriproxyfen			0.02	*
Rotenone			0.004	*
S-Kinoprene			0.33	0.4
Spinosad			0.10	2.3
Sulfotepp			0.97	0.4

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Christmas Trees		All Floriculture	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Fungicides				
Agrobacterium radio.			0.01	*
Azoxystrobin			0.10	0.6
Benomyl	0.69	0.4	1.22	0.2
Butanone			0.09	0.1
Captan			1.23	3.3
Chlorothalonil	1.94	56.6		
Copper hydroxide			0.54	14.5
Copper sulfate			0.01	*
Etridiazole			0.62	6.9
Fenarimol			0.04	0.1
Fenhexamid			0.40	2.3
Ferbam			([1])	0.1
Fludioxonil			0.59	3.4
Fosetyl-al			1.80	26.9
Mancozeb	1.30	4.1	1.31	491.8
Maneb			0.73	37.8
Metalaxyl			0.73	2.5
Metiram			([1])	8.9
Myclobutanil			0.08	0.5
Piperalin			0.70	2.7
Potassium bicarbon.			1.58	2.1
Propamocarb hydroch.			27.84	1.2
Streptomycin			0.20	0.6
Sulfur			2.58	37.2
Tebuconazole			0.26	9.6
Thiabendazole			9.06	0.8
Thiophanate-methyl	0.40	0.1	0.70	67.6
Triadimefon	0.36	1.3		
Trichoderma harz.			0.17	0.2
Triforine			0.16	*
Vinclozolin			0.50	5.3

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Christmas Trees		All Floriculture	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Other Chemicals				
Alk. dim. benzyl 50%			([1])	*
Alk. dim. benzyl 60%			0.37	0.4
Alk. dim. eth. benz.			0.38	0.4
Benzyladenine			0.01	*
Chlormequat chloride			1.09	4.4
Chloropicrin			71.79	51.8
Daminozide			2.77	33.5
Dazomet			343.35	31.4
Ethephon			0.76	2.0
Farnesol			([1])	*
Gibberellic acid			0.07	0.4
Gibberellins A4A7			0.01	*
Indolebutyric acid			([1])	*
Iron phosphate			0.42	0.5
Metaldehyde			0.73	2.1
Methyl bromide			198.64	405.9
NAA			([1])	*
Nerolidol			([1])	*
Paclobutrazol			0.02	0.1
Pelargonic acid			5.54	0.4
Sodium hypochlorite			0.84	*
Uniconazole			0.004	*

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Cut Flowers		Flowering Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
Ammonium benzadox			([1])	*
Diquat	0.50	5.7		
Glyphosate	1.01	1.1		
Isoxaben			([1])	*
Oryzalin	2.04	2.8	([1])	0.4
Oxadiazon	1.01	7.5		
Pendimethalin			1.30	0.3
Trifluralin	0.53	0.8		
Insecticides				
Abamectin	0.01	0.1	0.01	0.1
Acephate	0.41	11.8	0.64	3.5
Azadirachtin	0.03	0.1	0.03	*
Beauveria bassiana	0.41	0.5	0.18	0.2
Bendiocarb	([1])	*		
Bifenazate	0.20	0.1		
Bifenthrin	0.06	0.1	0.13	0.2
Carbaryl	([1])	0.5	0.46	1.3
Chlorpyrifos	0.47	7.2	0.59	1.3
Cinnamaldehyde	3.58	0.4		
Cyfluthrin	0.06	*	0.10	0.1
Cyromazine	0.12	0.2		
Diazinon	0.46	1.4	1.29	1.3
Dichlorvos			([1])	0.1
Dicofol	0.52	*	0.49	0.2
Dienochlor	0.71	1.2	0.32	0.2
Diflubenzuron			0.32	0.1
Dimethoate	0.33	0.2	0.78	0.2
Endosulfan	0.31	*	0.72	0.6
Fenbutatin-oxide			0.25	0.1
Fenoxycarb	([1])	*	0.08	*
Fenpropathrin	0.13	0.1	0.09	*
Fluvalinate	0.17	0.8	0.16	0.3
Hexythiazox	0.12	0.1		
Imidacloprid			0.60	4.8
Jojoba oil	2.60	0.1		
Kinoprene	0.24	0.2	0.60	*

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Cut Flowers		Flowering Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Insecticides-cont				
Malathion	0.61	0.6	1.76	0.2
Methiocarb	0.65	0.3	0.61	0.5
Naled	1.27	0.5		
Neem oil, clar. hyd.	4.69	1.0	5.52	1.3
Nicotine			([1])	0.1
Permethrin	0.19	1.4	0.17	0.3
Petroleum distillate	3.50	15.9	4.49	3.2
Piperonyl butoxide	0.46	0.4	0.65	0.1
Potassium salts	5.08	11.3	4.84	8.4
Pymetrozine	0.18	0.4	0.11	0.2
Pyrethrins	0.06	0.1	0.09	*
Pyridaben	0.19	0.1	0.39	0.1
Pyridine	0.09	*	0.08	*
Pyriproxyfen			0.01	*
S-Kinoprene	0.20	0.1	0.34	0.2
Spinosad	0.10	1.1	0.07	0.3
Sulfotepp			1.33	0.2
Fungicides				
Azoxystrobin	0.08	0.1	0.07	*
Benomyl			1.16	*
Butanone	0.09	*	0.09	*
Captan	1.36	1.0	2.82	1.0
Chlorothalonil			1.46	2.3
Copper hydroxide	0.40	1.3	0.99	1.3
Copper sulfate	0.01	*	0.01	*
Etridiazole	([1])	0.4	1.99	2.7
Fenarimol	0.04	0.1	0.04	*
Fenhexamid	0.42	1.6	0.29	0.3
Fludioxonil			1.38	0.6
Fosetyl-al	1.34	10.1	3.78	4.6
Iprodione	0.57	3.2		
Mancozeb	1.48	54.5	1.22	5.3
Maneb	1.10	0.7		
Mefenoxam			0.55	1.2
Metalaxyl	0.59	0.5	0.39	0.3
Myclobutanil	0.07	0.3	0.10	0.1

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Cut Flowers		Flowering Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Fungicides-cont				
PCNB	1.14	2.6	5.15	6.2
Piperalin	0.75	2.5	0.26	0.1
Potassium bicarbon.	1.62	1.3		
Propiconazole	0.11	0.3	0.19	0.1
Streptomycin	0.12	*	0.16	*
Sulfur	3.02	22.5	17.09	11.5
Thiabendazole			([1])	0.2
Thiophanate			3.84	0.2
Thiophanate-methyl	0.47	11.8	1.62	10.1
Triadimefon			0.19	*
Trichoderma harz.			0.18	0.1
Trifloxystrobin	0.11	0.2	0.17	*
Triforine	0.16	*	([1])	*
Vinclozolin	0.49	4.8	0.45	0.3
Other Chemicals				
Alk. dim. benzyl 60%	0.19	*		
Ancymidol			0.02	*
Benzyladenine			0.03	*
Chlormequat chloride			0.65	2.0
Chloropicrin	65.53	16.3		
Daminozide	([1])	0.2	3.55	21.8
Dazomet	372.94	3.1		
Gibberellins A4A7			0.02	*
Indolebutyric acid			([1])	*
Metaldehyde	0.66	0.8	1.33	0.3
Methyl bromide	190.92	352.7		
Paclobutrazol			0.02	*
Uniconazole			0.004	*

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Bedding Plants		Foliage Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
Glyphosate	1.60	0.8	0.54	3.7
Isoxaben			0.39	0.1
Oryzalin	1.71	0.1		
Oxadiazon			0.42	1.2
Oxyfluorfen			0.59	1.5
Paraquat	([1])	0.5		
Pendimethalin			([1])	1.1
Insecticides				
Abamectin	0.01	*	0.01	0.1
Acephate	0.94	5.1	2.68	67.8
Azadirachtin	0.03	*	0.04	*
Beauveria bassiana	0.29	0.1	0.75	*
Bendiocarb			1.23	1.2
Bifenazate	1.01	*	0.13	0.2
Bifenthrin	0.09	0.3	0.16	0.6
Carbaryl			0.57	2.6
Chlorpyrifos	0.79	0.8	0.27	1.3
Cinnamaldehyde	3.86	0.3	([1])	*
Cyfluthrin	0.05	*	0.05	*
Cyromazine	0.23	*		
Diazinon	0.78	0.4	0.42	1.7
Dicofol	([1])	*	0.61	0.1
Dienochlor	0.06	*	0.68	0.4
Diflubenzuron	0.22	*	0.23	*
Dimethoate			0.49	0.7
Endosulfan	0.48	0.3	0.40	0.7
Fenoxycarb	0.12	0.1		
Fenpropathrin	0.35	0.2		
Fluvalinate	0.16	0.3	0.24	0.6
Hexythiazox			0.09	0.1
Imidacloprid	0.27	0.3	0.04	*
Kinoprene	0.60	*		
Malathion	2.05	0.4	0.49	5.7
Methiocarb	1.05	0.2	0.88	0.4
Neem oil, clar. hyd.	7.38	0.1	7.24	5.8
Nicotine	([1])	0.1		

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Bedding Plants		Foliage Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Insecticides-cont				
Oxamyl	1.35	*	1.41	0.4
Permethrin	0.20	0.6		
Petroleum distillate	15.33	4.1	1.73	1.3
Piperonyl butoxide	1.47	0.1	0.23	*
Potassium salts	2.76	2.9	4.31	6.0
Pymetrozine	0.19	0.1	0.20	0.1
Pyrethrins	0.14	*	0.02	*
Pyridaben	0.20	*	0.12	0.1
Pyridine	0.10	*	([1])	*
Resmethrin	([1])	*		
S-Kinoprene	0.27	*	0.96	0.1
Spinosad	0.14	0.5	0.06	0.1
Sulfotepp	([1])	0.2		
Fungicides				
Azoxystrobin	0.11	0.2	0.13	0.2
Benomyl	1.47	0.1		
Butanone	0.11	*		
Captan	6.68	0.1	0.81	1.1
Chlorothalonil	1.94	2.1	0.81	6.6
Copper hydroxide	0.45	1.2	0.54	9.9
Copper sulfate	0.01	*	0.01	*
Etridiazole	0.82	0.3	0.70	2.7
Fenhexamid	0.50	0.4	([1])	*
Fludioxonil	0.76	0.1	0.61	2.1
Fosetyl-al	1.99	4.7	2.41	5.3
Iprodione	1.11	2.0	1.49	2.1
Mancozeb	1.34	3.5	1.36	40.7
Mefenoxam	0.49	0.5	0.17	0.9
Metalaxyl	0.97	1.3	0.36	0.1
Myclobutanil	0.04	*	0.14	*
PCNB			2.24	1.5
Propiconazole	([1])	*	([1])	*
Streptomycin	0.19	*	0.22	0.5
Thiabendazole	([1])	0.3		
Thiophanate			([1])	*
Thiophanate-methyl	0.93	3.7	1.66	17.3
Triadimefon	0.14	*		
Trichoderma harz.			([1])	*
Trifloxystrobin	0.22	*		
Vinclozolin	1.02	0.2		

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Bedding Plants		Foliage Plants	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Other Chemicals				
Alk. dim. benzyl 60%			0.56	*
Alk. dim. eth. benz.			0.56	*
Ancymidol			0.001	*
Chlormequat chloride	3.44	2.0	1.04	*
Daminozide	2.49	10.1	3.55	0.3
Ethephon	0.36	0.1	0.95	1.8
Gibberellic acid	0.08	*	0.21	0.4
Indolebutyric acid	([1])	*	([1])	*
Metaldehyde	0.53	0.1		
Paclobutrazol	0.02	0.1		
Uniconazole	0.004	*		

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Floriculture Propagation Material		Cut Cultivated Greens	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
Prodiamine			1.69	3.4
Insecticides				
Abamectin	0.01	*		
Acephate	0.50	0.4	0.70	2.3
Azadirachtin	0.01	*		
Carbaryl			1.13	13.8
Chlorpyrifos	0.22	0.1	0.26	7.5
Dicofol			0.73	2.9
Diflubenzuron	([1])	*	0.07	4.4
Endosulfan			0.41	4.1
Ethoprop			([1])	6.4
Fenbutatin-oxide			0.23	1.3
Imidacloprid	0.32	0.1		
Methiocarb	0.73	0.1		
Permethrin			0.13	3.1
Pymetrozine	0.20	*		
Pyridaben	([1])	*		
Spinosad	0.08	0.1	([1])	*
Fungicides				
Azoxystrobin	0.16	*		
Captan	([1])	*		
Chlorothalonil	1.17	3.1	1.60	50.3
Copper hydroxide	0.40	0.2		
Copper sulfate	0.01	*		
Etridiazole	0.56	0.8		
Fenhexamid	([1])	*		
Fludioxonil	0.16	*		
Fosetyl-al	1.02	0.4	1.37	0.8
Iprodione	0.94	0.5		
Mancozeb	0.72	0.4	1.21	385.6
Maneb			1.27	34.7
Mefenoxam	0.25	0.2		
Metalaxyl	([1])	0.3		
Metiram			([1])	8.9
PCNB	10.57	1.2		
Tebuconazole			0.27	9.5
Thiophanate-methyl	1.13	8.1	0.34	14.9
Other Chemicals				
Chlormequat chloride	0.89	0.3		
Daminozide	0.97	0.7		
Indolebutyric acid	([1])	*		
Metaldehyde			([1])	*
Paclobutrazol	0.003	*		

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Herbaceous Perennials		Non-production Areas	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Herbicides				
2,4-D			0.16	1.7
2,4-D, Dimeth. salt			2.78	0.2
Atrazine			([1])	0.7
Clethodim			0.14	*
Clopyralid			([1])	*
Dichlobenil			1.02	2.4
Diquat			0.26	3.0
Diuron			1.24	4.1
Fluazifop-P-butyl			0.19	*
Glufosinate-ammonium			0.62	*
Glyphosate	1.79	2.9	1.90	204.9
Halosulfuron			0.03	*
Isoxaben	0.91	1.1	0.31	1.3
Metolachlor			1.19	1.5
Napropamide			2.46	1.1
Oryzalin	1.55	2.0	2.03	22.3
Oxadiazon	1.92	0.5	1.07	1.6
Oxyfluorfen	0.66	0.2	0.62	3.5
Paraquat			0.55	0.8
Pendimethalin	1.40	0.4	1.13	6.8
Prodiamine			0.72	1.0
Simazine			1.26	5.9
Sulfometuron methyl			([1])	*
Triclopyr			0.04	0.4
Insecticides				
Abamectin	0.01	0.1		
Acephate	0.83	3.3	0.56	0.5
Azadirachtin	0.04	*		
Beauveria bassiana	([1])	0.2		
Bifenazate	0.17	0.1		
Bifenthrin	0.23	*		
Carbaryl	([1])	0.1		
Chlorpyrifos	1.27	4.7	0.65	2.1
Diazinon	1.61	3.2	0.71	0.2
Dienochlor	0.74	*		
Diflubenzuron	0.39	0.8		
Endosulfan	0.52	*		
Fenoxycarb	0.11	*	0.02	*
Fenpropathrin	0.35	*		
Fluvalinate	0.22	*		
Hexythiazox	0.14	*		
Hydramethylnon			0.01	*
Kinoprene	([1])	*		
Malathion	1.31	*		
Permethrin	([1])	0.1		
Petroleum distillate	19.38	1.1	1.04	2.4
Piperonyl butoxide	0.38	*		
Potassium salts	11.51	15.4		
Pymetrozine	0.23	0.1		
Pyrethrins	0.08	*		
Pyridaben	0.35	*		
Pyridine	0.11	*		
Spinosad	0.21	0.2		

See footnote(s) at end of table.

--continued

Active Ingredient
by Rate per Acre and Total Applied
Program States, 2000

Active Ingredient	Herbaceous Perennials		Non-production Areas	
	Rate per Acre	Total Applied	Rate per Acre	Total Applied
	Pounds	*1,000 Pounds*	*Pounds*	*1,000 Pounds*
Fungicides				
Butanone	0.18	*		
Captan	0.64	0.1		
Chlorothalonil	0.17	4.4		
Copper hydroxide	0.79	0.6	([1])	0.1
Copper sulfate	0.01	*		
Fenarimol	([1])	*		
Fenhexamid	0.49	*		
Fludioxonil	0.27	0.5		
Iprodione	2.92	23.7		
Mancozeb	1.28	1.8		
Metalaxyl	0.37	*		
Myclobutanil	0.18	0.1		
PCNB	5.62	1.1		
Propiconazole	0.04	0.3		
Thiophanate	0.01	0.1		
Thiophanate-methyl	1.44	1.6	([1])	*
Trichoderma harz.	([1])	*		
Trifloxystrobin	0.01	0.1		
Vinclozolin	0.73	*		
Other Chemicals				
Alk. dim. benzyl 50%			0.05	*
Alk. dim. benzyl 60%			0.66	0.4
Alk. dim. eth. benz.			0.66	0.4
Chlormequat chloride	0.86	*		
Daminozide	6.12	0.5		
Ethephon	0.11	*		
Hydrogen peroxide	6.47	0.5	1.59	52.4
Metaldehyde	0.70	0.4	1.57	0.9
Methyl bromide			78.38	47.1
Paclobutrazol	0.02	*		
Pelargonic acid			6.94	29.5

* Total applied is less than 50 pounds.
[1] Insufficient number of reports to publish rate data.

Herbicides Applied by Production Category
Program States, 2000 [1]

Production Category	Quantity Applied
	1,000 Pounds
Deciduous Shade Trees	124.0
Christmas Trees	122.2
Coniferous Evergreens	97.9
Deciduous Flowering Trees	79.9
Deciduous Shrubs and Other Ornamentals	62.7
Cut Flowers	56.1
Broadleaf Evergreens	35.0
Fruit and Nut Plants	16.8
Nursery Propagation or Lining Out Stock	16.1
Cut Cultivated Greens	8.7
Herbaceous Perennials	8.6
Foliage Plants	8.0
Bedding Plants	4.1
Flowering Plants	2.4
Transplants for Commercial Truck Crop Production	0.3
Floriculture Propagation Material	0.1
All Nursery and Floriculture	642.7
Non-production Areas	266.3

[1] May not add due to rounding.

Insecticides Applied by Production Category
Program States, 2000 [1]

Production Category	Quantity Applied
	1,000 Pounds
Coniferous Evergreens	456.1
Deciduous Shrubs and Other Ornamentals	161.0
Foliage Plants	99.0
Broadleaf Evergreens	89.7
Cut Cultivated Greens	77.2
Fruit and Nut Plants	71.4
Christmas Trees	66.6
Cut Flowers	59.4
Deciduous Shade Trees	57.1
Herbaceous Perennials	36.9
Flowering Plants	30.1
Bedding Plants	19.0
Deciduous Flowering Trees	17.0
Nursery Propagation or Lining Out Stock	15.4
Transplants for Commercial Truck Crop Production	4.3
Floriculture Propagation Material	1.3
All Nursery and Floriculture	1,261.2
Non-production Areas	6.1

[1] May not add due to rounding.

Fungicides Applied by Production Category
Program States, 2000 [1]

Production Category	Quantity Applied
	1,000 Pounds
Cut Cultivated Greens	507.4
Cut Flowers	163.8
Deciduous Shrubs and Other Ornamentals	143.3
Fruit and Nuts Plants	117.2
Foliage Plants	95.8
Deciduous Flowering Trees	83.2
Coniferous Evergreens	80.8
Broadleaf Evergreens	70.8
Christmas Trees	62.7
Flowering Plants	51.7
Transplants for Commercial Truck Crop Production	40.3
Herbaceous Perennials	37.6
Bedding Plants	26.0
Nursery Propagation or Lining Out Stock	19.8
Floriculture Propagation Material	15.4
Deciduous Flowering Trees	13.2
All Nursery and Floriculture	1,529.1
Non-production Areas	0.3

[1] May not add due rounding.

Other Chemicals Applied by Production Category
Program States, 2000 [1]

Production Category	Quantity Applied
	1,000 Pounds
Cut Flowers	381.4
Transplants for Commercial Truck Crop Production	250.6
Nursery Propagation or Lining Out Stock	167.2
Deciduous Flowering Trees	155.3
Deciduous Shade Trees	153.5
Fruit and Nut Plants	114.1
Flowering Plants	69.1
Bedding Plants	54.4
Herbaceous Perennials	51.6
Coniferous Evergreens	50.9
Floriculture Propagation Material	31.8
Deciduous Schrubs and Other Ornamentals	9.8
Foliage Plants	5.7
Broadleaf Evergreens	4.1
Christmas Trees	2.6
Cut Cultivated Greens	1.0
All Nursery and Floriculture	1,503.2
Non-production Areas	155.0

[1] May not add due to rounding.

Total Chemicals Applied by Production Category
Program States, 2000 [1]

Production Category	Quantity Applied
	1,000 Pounds
Coniferous Evergreens	685.7
Cut Flowers	660.7
Cut Cultivated Greens	594.3
Deciduous Shrubs and Other Ornamentals	376.7
Deciduous Shade Trees	347.8
Deciduous Flowering Trees	335.3
Fruit and Nut Plants	319.6
Transplants for Commercial Truck Crop Production	295.5
Christmas Trees	254.1
Nursery Propagation or Lining Out Stock	218.4
Foliage Plants	208.6
Broadleaf Evergreens	199.5
Flowering Plants	153.3
Herbaceous Perennials	134.7
Bedding Plants	103.5
Floriculture Propagation Material	48.5
All Nursery and Floriculture	4,936.2
Non-production Areas	427.7

[1] May not add due to rounding.

Active Ingredient - Total Applied
by Production Category and Pesticide Class
Program States, 2000 [1]

State	Herbicides	Insecticides	Fungicides	Other Chemicals	All
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
All Nursery and Floriculture					
CA	86.3	167.7	367.4	1,199.5	1,820.9
FL	162.5	824.5	937.4	185.2	2,109.6
MI	69.6	79.6	91.8	26.4	267.4
OR	155.4	65.2	83.4	40.0	344.0
PA	152.7	62.0	30.1	5.0	249.8
TX	16.2	62.1	19.1	47.1	144.5
Total	642.7	1,261.2	1,529.1	1,503.2	4,936.2
All Nursery					
CA	30.1	91.0	179.2	698.6	998.8
FL	147.3	636.7	297.3	132.5	1,213.7
MI	61.6	66.3	44.9	19.0	191.8
OR	151.2	60.8	80.8	27.9	320.7
PA	151.7	32.5	20.9	0.6	205.8
TX	12.9	51.2	8.3	29.5	101.8
Total	554.9	938.4	631.3	908.1	3,032.7
Transplants for Commercial Truck Crop Production					
CA	0.1	3.3	24.2	250.6	278.2
FL		0.7	14.7		15.3
MI	0.2	0.3	1.4		1.9
OR		*	*		*
PA		*		*	*
TX		*	*	*	*
Total	0.3	4.3	40.3	250.6	295.5
Nursery Propagation or Lining Out Stock					
CA	0.4	0.2	0.5	56.2	57.3
FL	2.6	11.8	11.1	96.5	122.0
MI	2.2	1.0	0.7	10.4	14.3
OR	9.1	2.1	6.6	3.5	21.3
PA	1.7	0.1	0.2	0.6	2.5
TX	0.1	0.3	0.7	*	1.0
Total	16.1	15.4	19.8	167.2	218.4
Broadleaf Evergreens					
CA	2.0	6.6	8.8	2.3	19.6
FL	25.7	71.4	53.4	*	150.4
MI	0.5	0.2	0.1	0.1	0.9
OR	5.1	4.9	6.2	1.6	17.7
PA	0.2	1.4	0.1		1.6
TX	1.5	5.3	2.4	0.1	9.3
Total	35.0	89.7	70.8	4.1	199.5

* Total applied is less than 50 pounds.
[1] May not add due to rounding.

Active Ingredient - Total Applied
by Production Category and Pesticide Class
Program States, 2000 [1]

State	Herbicides	Insecticides	Fungicides	Other Chemicals	All
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
Pesticide Class					
Coniferous Evergreens					
CA	2.7	2.4	10.7	0.8	16.5
FL	12.4	420.7	46.3	0.1	479.5
MI	15.1	7.8	2.6	3.5	29.1
OR	55.6	20.1	18.0	17.7	111.4
PA	6.6	3.2	2.6	*	12.3
TX	5.5	1.9	0.6	28.9	36.9
Total	97.9	456.1	80.8	50.9	685.7
Deciduous Shade Trees					
CA	0.7	23.6	3.5	150.1	178.0
FL	1.7	4.8	2.5		9.0
MI	4.6	8.9	1.3	*	14.7
OR	12.4	11.1	4.4	3.4	31.2
PA	103.4	8.0	1.3		112.7
TX	1.2	0.8	0.3	*	2.2
Total	124.0	57.1	13.2	153.5	347.8
Deciduous Flowering Trees					
CA	0.1	4.3	2.5	154.6	161.5
FL	76.5	2.5	77.8	*	156.8
MI	1.1	0.3	0.2	*	1.5
OR	1.9	9.4	2.4	0.2	13.9
PA	0.3	0.1	0.1		0.4
TX	0.1	0.5	0.2	0.5	1.2
Total	79.9	17.0	83.2	155.3	335.3
Deciduous Shrubs and Other Ornamentals					
CA	10.5	28.4	23.0	3.0	64.8
FL	25.9	82.7	88.0	1.5	198.1
MI	14.3	5.9	2.3	5.0	27.5
OR	4.9	2.7	26.4	0.2	34.2
PA	3.1	1.2	0.3	*	4.6
TX	4.0	40.1	3.3	0.1	47.5
Total	62.7	161.0	143.3	9.8	376.7
Fruit and Nut Plants					
CA	11.4	19.1	105.9	78.4	214.8
FL	2.4	41.5	3.1	34.4	81.3
MI	1.5	0.8	1.1		3.4
OR	1.3	7.8	6.3	1.4	16.7
PA		0.5	0.1		0.7
TX	0.3	1.7	0.8		2.7
Total	16.8	71.4	117.2	114.1	319.6

* Total applied is less than 50 pounds.
[1] May not add due to rounding.

Active Ingredient - Total Applied
by Production Category and Pesticide Class
Program States, 2000 [1]

State	Herbicides	Insecticides	Fungicides	Other Chemicals	All
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
			Pesticide Class		
			Christmas Trees		
CA	2.2	3.2	0.1	2.6	8.1
FL	0.1	0.7	0.4		1.2
MI	22.1	41.2	35.1		98.4
OR	61.0	2.7	10.5		74.2
PA	36.5	18.2	16.4	*	71.0
TX	0.3	0.6	0.2		1.1
Total	122.2	66.6	62.7	2.6	254.1
			All Floriculture		
CA	56.2	76.8	188.2	500.9	822.1
FL	15.2	187.9	640.1	52.7	895.9
MI	8.0	13.3	46.9	7.5	75.6
OR	4.2	4.4	2.6	12.1	23.3
PA	1.0	29.4	9.1	4.5	44.0
TX	3.3	11.0	10.8	17.6	42.7
Total	87.9	322.8	897.7	595.1	1,903.5
			Cut Flowers		
CA	50.8	50.9	139.4	367.4	608.3
FL		4.6	18.9	6.1	29.6
MI	4.5	3.2	4.6	*	12.3
OR	0.6	0.3	0.8	8.0	9.7
PA	0.2	0.3	0.2	*	0.7
TX	*	*	*	*	0.1
Total	56.1	59.4	163.8	381.4	660.7
			Flowering Plants		
CA	1.5	9.8	25.8	52.1	89.1
FL	0.7	10.6	8.9	0.5	20.7
MI	*	1.4	8.2	0.9	10.4
OR	0.1	1.0	0.9	1.0	3.0
PA	*	2.1	2.5	2.5	7.1
TX	0.1	5.3	5.3	12.3	23.0
Total	2.4	30.1	51.7	69.1	153.3
			Bedding Plants		
CA	0.1	5.9	9.4	3.9	19.3
FL	2.1	5.7	2.8	39.2	49.8
MI	*	1.5	6.2	4.2	11.9
OR	*	0.3	0.5	0.4	1.2
PA	*	1.8	2.8	1.9	6.5
TX	1.9	3.8	4.4	4.8	14.8
Total	4.1	19.0	26.0	54.4	103.5

* Total applied is less than 50 pounds.
[1] May not add due to rounding.

Active Ingredient - Total Applied
by Production Category and Pesticide Class
Program States, 2000 [1]

State	Herbicides	Insecticides	Fungicides	Other Chemicals	All
	1,000 Lbs	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*	*1,000 Lbs*
Foliage Plants					
CA	0.1	7.6	2.2	0.6	10.5
FL	6.8	90.3	93.1	5.1	195.3
MI	*	0.2	0.3	*	0.5
OR	*	0.2	0.1	*	0.3
PA		0.2	*	*	0.2
TX	1.1	0.5	0.2	*	1.8
Total	8.0	99.0	95.8	5.7	208.6
Floriculture Propagation Material					
CA		0.1	7.0	28.1	35.2
FL	0.1	1.0	8.1	0.8	10.0
MI	*	0.1	*	0.1	0.2
OR		*	*	2.7	2.8
PA		0.1	0.1	*	0.2
TX	*	*	0.1	*	0.2
Total	0.1	1.3	15.4	31.8	48.5
Cut Cultivated Greens					
CA	0.9	*	*	*	1.0
FL	5.5	75.3	507.3	1.0	589.1
MI		*			*
OR	2.2	1.8	0.1	*	4.1
PA	*	*	*	*	*
TX	*	*	*	*	0.1
Total	8.7	77.2	507.4	1.0	594.3
Herbaceous Perennials					
CA	2.8	2.5	4.4	48.8	58.5
FL	*	0.3	1.1	*	1.3
MI	3.4	7.0	27.5	2.2	40.2
OR	1.4	0.7	0.3	*	2.5
PA	0.8	25.0	3.5	0.1	29.3
TX	0.2	1.4	0.8	0.5	2.9
Total	8.6	36.9	37.6	51.6	134.7
Non-production Areas					
CA	89.2	3.3	*	77.3	169.8
FL	26.8	1.1	0.1	0.2	28.2
MI	5.9	0.2	0.1	6.3	12.4
OR	56.4	1.0	*	18.2	75.5
PA	10.3	*	0.1	52.6	63.0
TX	77.7	0.5	*	0.5	78.7
Total	266.3	6.1	0.3	155.0	427.7

* Total applied is less than 50 pounds.
[1] May not add due to rounding.

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 2000. The scope of nursery products included; transplants for commercial truck crop production, propagation or lining out stock, broadleaf evergreens, coniferous evergreens, deciduous shade trees, deciduous flowering trees, deciduous shrubs and other ornamentals, fruit and nut plants, and Christmas trees. 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 survey sample design was based on value of sales reported in the NASS *1997 Census of Agriculture, Census of Horticultural Specialties* (1998). Each operation was assigned a probability of selection which was proportional to size. Then, a multi-variate probability of selection was assigned to each operation based on the number of production categories (listed above) in which they reported sales, to determine the survey sample. In general, the probability of selection was proportional to the size of operation. The survey 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 in person, to collect data on all chemical applications made in 2000, 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 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 six 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.

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.

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

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

The four classes of pesticides presented in this report and the pests targeted are: herbicides - weeds; insecticides - insects; fungicides - fungi; and other chemicals - other forms of life. Miticides and nematicides are included as insecticides while soil fumigants, growth regulators, rooting compounds, and disinfectants, are included as other chemicals.

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.

Common Names, Trade Names, and Classes

The following is a list of common names, 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 likely not complete for all pesticides used on nursery and floriculture and NASS does not mean to imply use of any specific trade name.

Class	Common Name	Trade Names
H	2,4-D	Amine 4, Barrage, Crossbow, Dri-Clean, LV 6, 2,4-D/Solution, Tordon RTU, Weedmaster, Weedone
H	2,4-D, Dimethylamine salt	Green Light, Riverdale, Saber, Trimec, Weedar
H	2-(2,4-DP),Dimethylamine salt	2,4-D Amine
I	Abamectin	Agri Mek, Avid, Clinch, Zephyr
I	Acephate	Acephate, Address, Orthene, Orthenex, Ortho, PT 1320, Payload, Pinpoint
H	Acetamide	Domain
H	Acetic acid	2,4-D LV 4 Ester, 2,4-D/Salvo
F	Agrobacterium radiobacter	Galltrol-A
I	Aldicarb	Temik
O	Alkyl dim. benzyl ammonium	NAC-7
O	Alkyl dim. ethylbenzyl amm	Gamma-Mene
O	Alkyl dimethyl benzyl 50%	Consan, Triathlon
O	Alkyl dimethyl benzyl 60%	Consan, Gamma-Mene, Green-Shield, Physan, R.D., Triathlon
O	Alkyl dimethyl ethyl benzyl	Consan, Green Shield, Physan, R.D., Traithlon
I	Allethrin	Boot Hill
O	Aluminum phosphide	Fumiphos, Fumitoxin, Gastoxin, Phostoxin
H	Ammonium benzadox	Topcide
O	Ammonium soap	Hinder
O	Ancymidol	A-Rest
F	AQ 10 Biofungicide Ampelomyces quisquales isolate)	AQ 10 Biofungicide
H	Asulam	Asulox
H	Atrazine	Aatrex, Atrazine
I	Azadirachtin	Align, Azatin, Ecozin, Margosan-O, Neemix, Ornazin, SuperNeem
I	Azinphos-methyl	Azinphos-Methyl, Guthion
F	Azoxystrobin	Abound, Heritage, Quadris
F	Bacillus subtilus	Serenade Biofungicide
I	Bacillus thuringiensis	Agree, Biobit HP, Bt 320, Crymax, Cutlass, Dipel, Gnatrol, Javelin, MVP II, Mattch, Raven, Thuricide, Trident II, Vectobac, Xentari
F	Basic copper sulfate	C-O-C-S
I	Beauveria bassiana	BotaniGard, Mycotrol, Natualis
I	Bendiocarb	Closure, Dycarb, Turcam
H	Benefin	XL
F	Benomyl	Benlate, Benomyl
H	Bensulfuron-methyl	Duet
H	Bensulide	Prefar
O	Benzyladenine (6-benzyladenine)	Accel, BAP, Promalin
I	Bifenazate	Floramite
I	Bifenthrin	Attain, Capture, Talstar
O	Bitrex (Benz. dithyl amm. benz.)	Tree Guard
O	Brodifacoum	D-con, Talon-G
H	Bromacil	Bareground, Hyvar, Krovar, Misty
O	Bromethalin	Assault
H	Bromoxynil	Buctril

-- Continued

Class	Common Name	Trade Names
I	Buprofezin	Applaud
F	Butanone	Strike
H	Butoxyethanol ester of 2,4-D	2,4-D/Weedone LV6
F	Butyl mercapten (Butanethiol)	Scoot
F	Calcium polysulfide	Lime Sulfur Solution, Sulforix
O	Capsaicin	Hot Pepper Wax, Hot Sauce, Scoot
F	Captafol	Difolatan
F	Captan	Captan, Captec
I	Carbaryl	Carbaryl, Sevin
I	Carbofuran	Furadan
H	Chlorimuron-ethyl	Classic
O	Chlorine	Chlorine
O	Chlormequat chloride	Cycocel
F	Chloroneb	Terraneb
O	Chlorophacinone	Rozol
O	Chloropicrin	Chloropicrin, Methyl Bromide & Chloropicrin, Tri-Form, Tri-con
F	Chlorothalonil	Bravo, Consyst, Daconil, Echo, Ensign, Exotherm, Termil, Flouronil, Lesco, Manicure, Reach, Ridomil + Bravo, Spectro, Tattoo, Terranil
I	Chlorpyrifos	Boot Hill, Chlorpyrifos, Dual Use, Duraguard, Duraplex, Dursban, Lorsban, Nufos, Pageant, Regatta
H	Chlorsulfuron	Telar
O	Cholecalciferol	Quintox
I,F	Cinnamaldehyde	Cinnamite, Valero
F	Citric acid	Fungastop
H	Clethodim	Envoy, Prism, Select
I	Clofentezine	Apollo, Ovation
H	Clopyralid	Confront, Lontrel, Stinger
F	Copper (metallic)	Bordeaux
F	Copper ammonium complex	Copper-Count-N, Kop-R-Spray
F	Copper chloride hydroxide	Bravo
H	Copper ethanolamine complex	Cutrine-Plus
F	Copper hydroxide	Champ, Champion, Junction, Kocide, Nu-Cop, Spin Out
F	Copper oxychloride	C-O-C-S, Microsperse
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, Phyton, Polydex
F	Cresol	Gallex
I	Cryolite	Cryolite
I	Cyfluthrin	Baythroid, Decathlon, Duraplex, Tempo
I	Cyhalothrin	Scimitar
I	Cypermethrin	Ammo
F	Cyproconazole	Sentinel
F	Cyprodinil	Vangard
I	Cyromazine	Citation
O	Cytokinins	Cytokin, Early Harvest
O	Daminozide	B-Nine
O	Dazomet	Basamid
O	Decyldimethyloctyl	NAC-7
I	Deltamethrin	Deltagard
I	Diazinon	Diazinon, Knox Out

-- Continued

Class	Common Name	Trade Names
H	Dicamba	Weedmaster
H	Dicamba, Dimethylamine salt	Green Light, Riverdale, Trimec
H	Dichlobenil	Barrier, Casoron, Norosac
O	Dichloropropene	Telone, Tri-Form
H	Dichlorprop	Weedone
I	Dichlorvos	Fulex, GH-19
F	Dicloran	Botran
I	Dicofol	Dicofol, Kelthane
O	Didecyl dim. amm. chloride	NAC-7
I	Dienochlor	Pentac
O	Difethialone	D-Cease
I	Diflubenzuron	Adept, Dimilin
O	Dikegulac-sodium	Atrimmec
I	Dimethoate	Cygon, Digon, Dimate, Dimethoate
F	Dimethylphenol	NAC-7
F	Dinocap	Karathane
O	Diphacinone	Ramik
H	Diphenamid	Enide
H,O	Diquat	Reward
I	Disulfoton	Di-Syston
H	Dithiopyr	Dimension
H	Diuron	Direx, Diuron, Karmex, Krovar, Sprakil
O	Dodecadien-1-ol (E,E-8,10-Dodec)	Isomate-C
O	Dodecanol	Isomate-C
F	Dodine	Syllit
O	E-8-Dodecenyl acetate	Checkmate
H	EPTC	Eptam
I	Endosulfan	Endosulfan, Phaser, Thiodan
I	Esfenvalerate	Asana
O	Ethephon	Ethrel, Florel
I	Ethion	Ethion
I	Ethoprop	Mocap
I,F	Ethoxy. secondary alcohols	Safe-T Green
I	Ethyl parathion	Parathion
F	Etridiazole	Banrot, Terraclor, Truban
O	Farnesol	Stirrup
O	Fatty acids	Off-Shoot-O
O	Fatty alcohols	Off-shoot-T
I	Fenamiphos	Nemacur
F	Fenarimol	Lesco, Rubigan
F	Fenbuconazole	Enable, Indar
I	Fenbutatin-oxide	Orthenex, Isotox, Vendex
F	Fenhexamid	Decree
I	Fenitrothion	Pestroy
H	Fenoxaprop-ethyl and-p-ethyl	Fusion
I	Fenoxycarb	Award, Logic, Precision, Preclude
I	Fenpropathrin	Danitol, Tame
F	Ferbam	Carbamate, Ferbam
H	Fluazifop-P-butyl	Fusilade, Fusion, Ornamec
F	Fludioxonil	Medallion
F	Flutolanil	Contrast
I	Fluvalinate	Mavrik
H	Fomesafen	Reflex
I	Formetanate hydrochloride	Carzol

-- Continued

Class	Common Name	Trade Names
F	Fosetyl-al	Aliette, Prodigy
O	GABA (Gamma aminobutyric acid)	Auxigro
O	Garlic oil	Garlic
O	Gibberellic acid	GibGro, Pro-Gibb
O	Gibberellins A4A7	Accel, Promalin
O	Gliocladium virens GL-21	SoilGard
H	Glufosinate-ammonium	Finale
H,O	Glyphosate	Accord, Expedite, Glyfos, Honcho, Mirage, Rodeo, Roundup
H	Glyphosate, isopropylamin salt	Roundup PRO, Roundup Super Concentrate
H	Halosulfuron	Manage, Permit
H	Hexazinone	Velpar
I	Hexythiazox	Hexygon, Savey
I	Hydramethylnon	Amdro
O	Hydrogen peroxide	Oxidate, Zerotol
H	Imazaquin	Backdraft
H	Imazaquin, monoammonium salt	Image
I	Imidacloprid	Marathon, Merit, Provado
O	Indolebutyric acid	Dip'n Grow, Early Harvest, Hormex, Hormodin
F	Iprodione	Benefit, Chipco, Rovral
O	Iron phosphate	Sluggo
H	Isoxaben	Gallery, Snapshot
I	Jojoba oil	Detur
I	Kinoprene	Enstar
F	Kresoxim-methyl	Cygnus, Sovran
O	L-Glutamic acid	Auxigro
H	Lactofen	Cobra
I	Lambda-cyhalothrin	Scimitar
I	Lindane	Lindane
H	Linuron	Lorox
H	MCPA	MCP Amine, Sodium, Weedar
H	MCPP, DMA salt	Green Light, Trimec
H	MSMA	MSMA
I	Malathion	Cythion, Fyfanon, Green Devil, Malathion
F	Mancozeb	Dithane, Fore, Junction, Mancozeb, Manzate, Protect, Ridomil, Zyban
F	Maneb	Blite Out, Bravo, Maneb, Manex
F	Mefenoxam	Flouronil, Quell, Ridomil, Subdue
F	Metalaxyl	Pythium, Ridomil, Subdue
O	Metaldehyde	Deadline, Metaldehyde, Slug Bait, Slug-Fest, Trail's End
O	Metam-sodium	Sectagon, Vapam
I	Methamidophos	Monitor
I	Methidathion	Supracide
I	Methiocarb	Mesurol
I	Methomyl	Lannate
I	Methoxychlor	Methoxychlor
O	Methyl bromide	MBC-33, Methyl Bromide, Methyl Bromide & Chloropicrin, Tri-con
O	Methyl nonyl ketone	Get Off My Garden
I	Methyl parathion	Penncap
F	Metiram	Polyram
H	Metolachlor	Dual, Pennant

-- Continued

Class	Common Name	Trade Names
H	Metribuzin	Domain
I	Mevinphos	Mevinphos
F	Milban	Milban-Dodemorph acetate
F	Mint oil	Fungastop
F	Myclobutanil	Eagle, Nova, Rally, Systhane
I	N-octy bicycloheptene dicarbo.	Boot Hill, Pyreth-In, X-clude
O	NAA (Napthaleneacetic acid)	Dip'n Grow
O	NAD	Rootone
I	Naled	Dibrom, GH-18
H	Napropamide	Devrinol, Pre Pair
I	Neem oil	NeemGard, Triact
I,F	Neem oil, Carified hydrophobic	Triact, Trilogy
O	Nerolidol	Stirrup
I	Nicotine	Black Leaf, Fulex, Nicotine
H	Norflurazon	Solicam
I	Nosema locustae	Semaspore
H	Oryzalin	Rout, Snapshot, Surflan
H	Oxadiazon	Pre Pair, Regal, RegalStar, Ronstar
I	Oxamyl	Oxamyl, Vydate
F	Oxycarboxin	Plantvax
I	Oxydemeton-methyl	Metasystox-R
H	Oxyfluorfen	Goal, OH 2, Regal, Rout
F	Oxytetracycline	Mycoshield
I	Oxythioquinox	Joust, Morestan
O	Paclobutrazol	Bonzi
H,O	Paraquat	Cyclone, Gramoxone
F	PCNB (Pentachloronitrobenzene)	Defend, PCNB, Terraclor, Terraguard, Turfcide
O	Pelargonic acid	Scythe
H	Pendimethalin	Corral, OH 2, Pendulum, Prowl, Southern Weedgrass Control, Stomp
I	Permethrin	Ambush, Astro, Hot Shot, Pounce
I	Petroleum distillate	Gavicide, Horticultural Oil, JMS Stylet-Oil, Oil, Saf-T-Side, Sunspray, Superior Oil, Supreme Oil, Supreme Spray
I	Petroleum oil	Damoil
I	Phorate	Terraclor with Thimet
I	Phosmet	Imidan
H	Picloram	Tordon
F	Piperalin	Pipron
I	Piperonyl butoxide	1100 Pyrethrum, Bonide, Boot Hill, Diatect, Dual Use, Incite, Organic Solutions, PBO-8, Perma, Pyrenone, Pyreth-In, Pyronyl, X-clude
I	Pirimicarb	Pirimor
F	Potassium bicarbonate	Armicarb, FirstStep, Kaligreen
O	Potassium gibberellate	Early Harvest
I	Potassium salts	Demoss, Insecticidal Soap, M-Pede, Pro-Mate Revoke, Sharpshooter, Soap
H	Prodiamine	Barricade, Factor, RegalStar, Regalkade
H	Prometon	Triox, Turf King
H	Pronamide	Kerb
F	Propamocarb hydrochloride	Banol, Tattoo
H	Propanil	Duet

-- Continued

Class	Common Name	Trade Names
O	Propanoic acid	Riverdale
I	Propargite	Omite, Ornamite
F	Propiconazole	Banner, Orbit, Tilt
F	Propionic acid	Spectro
I	Pseudomonas cepacia type wis.	Deny
F	Pseudomonas fluorescens	Frostban
I	Pymetrozine	Endeavor
I	Pyrethrins	1100 Pyrethrum, Bonide, Diatect, Dual Use, Evergreen, Organic Solutions, Perma Guard, Pyrellin, Pyrenone, Crop Spray, Pyreth-In, Pyronyl Crop Spray, Rotenone/Pyrethrins, X-clude
I	Pyridaben	Sanmite
I	Pyridine	Distance
I	Pyriproxyfen	Esteem, Knack, Pyrigro
H	Quizalofop-ethyl	Assure
I	Resmethrin	Delete, Ortho, Resmethrin
I	Rotenone	Pyrellin, Rotenone/Pyrethrins
I	S-Kinoprene	Enstar II
H	S-Metolachlor	Dual II Magnum, Pennant Magnum
I	Sabadilla	Sabadilla, Veratran
H	Sethoxydim	Poast, Vantage
O	Silicic acid (Orthosil)	Gamma-Mene
I	Silicon dioxide	Diatect, Organic Solutions, Perma
H	Simazine	Princep, Sim-Trol, Simazine
O	Sodium chlorate	Bare Spot, Bareground, Knock'um Off, Leafex
O	Sodium hypochlorite	Clorox Bleach
H	Sodium metaborate	Bare Spot, Bareground
I	Spinosad	Conserve, SpinTor, Success
F	Streptomyces griseoviridis	Mycostop Biofungicide
F	Streptomycin	Agri-Mycin, Agri-Strep, Streptomycin
O	Strychnine	Gopher Mix, Strychnine
H	Sulfometuron methyl	Oust
H	Sulfosate	Touchdown
I	Sulfotepp (Tetraethyl dithiopyr)	Fulex Dithio, Plantfume
F,I	Sulfur	Green Light, Kolodust, Microthiol, Sulfur, Super Six, Thiolux
F	Tebuconazole	Elite, Folicur
I	Tebufenozide	Confirm
H	Tebuthiuron	Sprakil
I	Tefluthrin	Fireban
O	Tetradecanol	Isomate
I	Tetramethrin	Hot Shot
O	Tetrasodium salt	Gamma-Mene
F	Thiabendazole	Mertect, Terrazole
H	Thiazopyr	Mandate, Visor
I	Thiodicarb	Larvin
F	Thiophanate	Banrot, Cleary, Consyst, Fungo
F	Thiophanate-methyl	Duosan, Fungo Flo, Systec, Topsin, Zyban
F	Thiram	Rootone, Thiram
F,O	Triadimefon	Bayleton, Reach
I	Triazamate	Aphistar
I	Trichlorfon	Dylox, Proxol

-- Continued

Class	Common Name	Trade Names
F	Trichoderma harzianum	Planter Box, PlantShield, RootShield
H	Triclopyr	Confront, Crossbow, Garlon, Remedy
F	Trifloxystrobin	Compass, Flint
F	Triflumizole	Procure
H	Trifluralin	Preen, Snapshot, Treflan, Trifluralin
F	Triforine	Funginex, Orthenex, Ortho
F	Triphenyltin hydroxide	Blite Out
O	Uniconazole	Sumagic
H	Vernolate	Reward
F	Vinclozolin	Curalan, Ornalin, Ronilan, Vorlan
O	Warfarin	Warfarin/D-Con
F	Xylenol (Dimethylphenol)	Gallex
O	Z-8-Dodecenol	Checkmate
O	Z-8-Dodecenyl acetate	Checkmate
O	Zinc phosphide	Zinc Phosphide
F	Ziram	Ziram
F	Zoxamide	Gavel

2000
NURSERY and FLORICULTURE CHEMICAL USE SURVEY

Exibit A

VERSION	POID	SUBTRACT	T-TYPE	TABLE	LINE
1	_ _ _ _ _ _ _ _	___ ___	0	000	00

CONTACT RECORD		
DATE	TIME	NOTES

RESPONSE CODES

3 - COMPLETE
4 - SCREEN OUT
5 - NO TARGET CROPS
8 - REFUSAL
9 - INACCESSIBLE

001

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 2000 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	REPORTING UNIT
011	921

[**Enumerator Note:** *Show operator Crop show card.*]

1. **Were your total gross sales of floriculture crops in 2000 greater than $10,000?**

☐ **YES** ☐ **NO**

2. **Were your total gross sales of nursery crops in 2000 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*	*PH*	*CITY*	*STATE*	*ZIP*	*PH*
POID _ _ _ _ _ _ _ _				**POID** _ _ _ _ _ _ _ _			
PARTNER NAME				*PARTNER NAME*			
ADDRESS				*ADDRESS*			
CITY	*STATE*	*ZIP*	*PH*	*CITY*	*STATE*	*ZIP*	*PH*

CHEMICAL APPLICATIONS

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

1. In 2000, for your floriculture and/or nursery operation, were any insecticides, herbicides, fungicides, miticides, growth regulators, rooting compounds, 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

PRODUCTION CATEGORY CODES FOR COLUMN 4

NURSERY	FLORICULTURE
1 Transplants for commercial truck crop production	10 Cut flowers
2 Nursery propagation or lining-out stock	11 Flowering plants (potted or hanging)
3 Broadleaf evergreens	12 Bedding plants
4 Coniferous evergreens	13 Foliage plants (potted or hanging)
5 Deciduous shade trees	14 Floriculture propagation material
6 Deciduous flowering trees	15 Cut cultivated greens
7 Deciduous shrubs and other ornamentals	16 Herbaceous perennials
8 Fruit and nut plants	17 Non-production area
9 Christmas trees	
17 Non-production area	

LOCATION CODES FOR COLUMN 5

1 Greenhouse (*Enclosed*)
2 Shade Structure (*Frames, slat, saran, cloth, screen, nonenclosed greenhouse, etc.*)
3 Natural Shade Area (*Palm, citrus, etc.*)
4 In The Open Production Area
5 Perimeter (*non-production areas*)

CHEMICAL PRODUCT NAME	LINE	1 What products were applied? [*Enter product code.*]	2 Was this product bought in liquid or dry form? [*Enter L or D*]	3 Was this part of a tank mix? [*Enter line number of first product in the* ***tank mix***.]	4 What was this chemical mostly applied to? [*Enter code from above.*] CODE	5 Where was this product mostly applied? [*Enter code from above.*] 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 (*Herb., Insect., Fung., etc.)*	Tradename & Formulation	Form Purchased	EPA Number (*Liquid or Dry)*

CHEMICAL APPLICATIONS

UNIT CODES FOR COLUMN 9

1 Pounds	30 Grams
12 Gallons	40 Kilograms
13 Quarts	41 Liters
14 Pints	50 Other, bags, WSP, etc. (*Specify unit & weight* _____)
15 Ounces	

METHOD CODES FOR COLUMN 11

1 Hand held or back pack sprayers
2 Power or hydraulic sprayers
3 Hand held shakers, spreaders
4 Foggers, aerosols, misters, electrostatic sprayers, smokers, rotary atomizers
5 Chemigation
6 Injection, banded, broadcast, knifed in
7 Cutting, bulb or flower dip
8 Growing media drench/douse
9 Other (*Specify* _____)

APPLICATOR CODES FOR COLUMN

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* _____)

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? ACRES	OR	SQUARE FEET	7 What was the total amount applied per application?	8 How much was applied per acre OR per 1,000 square feet per application? RATE PER ACRE	OR	RATE PER 1,000 SQUARE FEET	9 UNIT [*Enter code from above.*] CODE	10 How many times was this applied? NUMBER	11 How was this product applied? [*Enter code from above.*] CODE	12 Who made the application(s)? [*Enter code from above.*] CODE
01	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
02	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
03	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
04	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
05	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
06	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
07	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
08	305		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
09	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
10	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
11	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313
12	305 . __		306	307 . __ __	308 . __ __		309 . __ __	310	311	312	313

NOTES and CALCULATIONS:

PEST MANAGEMENT PRACTICES

T-TYPE	TABLE	LINE
0	000	00

1. In 2000, how did your operation scout/monitor for pests?–

			CODE
a.	Conduct general observations while performing routine tasks?	YES = 1	320
b.	Perform deliberate scouting activities on a scheduled basis?	YES = 1	321
c.	Perform systematic sampling or counting?	YES = 1	322

2. In 2000, did your operation–

a.	keep electronic or written records on weed, insect or disease levels?	YES = 1	323
b.	detect the presence of weeds, insects, diseases or pathogens by--		
	(1) soil analysis?	YES = 1	324
	(2) plant tissue analysis?	YES = 1	325
	(3) using trap indicator plants?	YES = 1	326
	(4) inspecting incoming stock?	NA = 2, YES = 1	327
c.	use pheromones to monitor insects by trapping?	YES = 1	328
d.	use insect or disease resistant plant varieties?	NA = 2, YES = 1	329
e.	control weeds, insects or diseases by--		
	(1) using beneficial organisms (*insects, nematodes or fungi*)?	YES = 1	330
	(2) using biological pesticides (*BotaniGard, Conserve, Gnatrol, Nemasys, etc.*)?	YES = 1	331
	(3) using trap vegetation?	YES = 1	332
	(4) using pheromones to disrupt insect mating?	YES = 1	333
	(5) using water management practices such as controlled drainage or		334
	(6) pruning out or removing infected plants or plant parts?	YES = 1	335
	(7) tilling, mowing, or burning of field or greenhouse borders, lanes, etc?	YES = 1	336
	(8) adjusting row spacing or direction?	NA = 2, YES = 1	337
	(9) elevating plants?	NA = 2, YES = 1	338
	(10) adjusting plant density?	YES = 1	339
	(11) use sterilized growing media?	NA = 2, YES = 1	340

PEST MANAGEMENT PRACTICES

2. In 2000, did your operation--(*continued*)

			CODE
e.	control weeds, insects or diseases by--		
(12)	sanitizing benches or other platform devices between uses?	**NA = 2, . . . YES = 1**	341
(13)	sanitizing ground covers between uses?	**NA = 2, . . . YES = 1**	342
(14)	sanitizing containers between uses?	**NA = 2, . . . YES = 1**	343
(15)	modifying temperature?	**NA = 2, . . . YES = 1**	344
(16)	modifying hothouse/greenhouse relative humidity?	**NA = 2, . . . YES = 1**	345
(17)	using greenhouse ventilation?	**NA= 2, . . . YES = 1**	346
(18)	using greenhouse screening?	**NA = 2, . . . YES = 1**	347
(19)	using plant tissue dryness management such as minimizing	**NA = 2, . . . YES = 1**	348
(20)	utilizing ground covers, mulches or other physical barriers	**NA = 2, . . . YES = 1**	349
f.	rotate or tank mix pesticides (*use pesticides with different mechanisms of action*)		350
g.	monitor weather data to assist in making pesticide application decisions?	**YES = 1**	351

h. apply pesticides based **mostly** on-- [*Enter one code.*] . .

1	PREVENTIVE SCHEDULE?
2	SCOUTING DATA COMPARED TO UNIVERSITY OR EXTENSION INFESTATION GUIDELINES?
3	SCOUTING DATA AND YOUR ESTABLISHED
4	OTHER? *specify* _____

ENTER ONE CODE 352

3. In 2000, where did your operation–

a. obtain **most** of its pesticides– [*Enter one code.*] . . . . . .

1	CHEMICAL DEALER?
2	CHEMICAL MANUFACTURER?
3	OTHER? *specify*

ENTER ONE 353

b. **mostly** get recommendations for pest control or pesticide use– [*Enter one code.*] . . . . . .

1	FARM SUPPLY DEALER / CHEMICAL DEALER?
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* _____

ENTER ONE CODE 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** 019 ___.___ **TOTAL TIME SPENT WITH OPERATOR or RESPONDENT** 012 ___.___

2. **RESPONDENT**

1	OPERATOR/MANAGER
2	SPOUSE
3	ACCT / BKPR
4	OTHER
8	OFFICE HOLD
9	PARTNER

. . . . . **CODE** 013

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** 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/nass/***) . . . . . **YES = 1** **CODE** 018

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: _____

OFFICE USE for POID

789 __ __ __ __ __ __ __ __ __

CROP CATEGORY CODES and DESCRIPTIONS EXHIBIT B

NURSERY

TRANSPLANTS for COMMERCIAL TRUCK CROP 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	Tissue culture	
Lining-out stock	Understock	
Seedlings	Whips	
Root stock	Other	

BROADLEAF EVERGREENS		CODE 3
Azalea	Pieris	
Boxwood	Pittosporum	
Cotoneaster	Privet	
Euonymus	Rhododendron	

CONIFEROUS EVERGREENS			CODE 4
Arborvitae	Fir	Spruce	
Cedar (*Cedrus*)	Hemlock	Yew	
Cypress (*Cupressus*)	Juniper	Other	
	Pine		

DECIDUOUS SHADE TREES		CODE 5
Ash	Maple, sugar	
Birch	Maple, other	
Honey locust	Oak	
Linden	Poplar	
Maple, Japanese	Sweet gum	
Maple, Norway	Willow	
Maple, red	Other	

DECIDUOUS FLOWERING TREES		CODE 6
Amelanchier	Magnolia	
Crabapple	Redbud	
Crapemyrtle	Ornamental cherry	
Dogwood	Ornamental pear	
Golden rain	Ornamental plum	
Hawthorn	Other	

DECIDUOUS SHRUBS and OTHER ORNAMENTALS		CODE 7
Buddleias	Weigelas	
Hibiscus	Ground covers	
Hydrangeas	Clematis, climbing	
Lilacs	Vines	
Roses	Palms, landscape	
Spireas	Other	
Viburnum		

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 (*Blueberry, etc.*)	
Other	

CHRISTMAS TREES		CODE 9
Douglas fir	Scotch pine	
Fraser fir	Virginia pine	
Leland Cypress	White pine	
Noble fir	Other	

FLORICULTURE

CUT FLOWERS			CODE 10
Carnation	Iris	Tulip	
Chrysanthemum; standard, pompon	Gladioli	Zinnia	
Daffodil	Orchid	Other	
Daisy	Rose		
	Snapdragon		

FLOWERING PLANTS (*POTTED or HANGING BASKETS*)		CODE 11
African violet	Hydrangea	
Azalea, finished florist	Kalanchoe	
Begonia	Lily, Easter	
Chrysanthemum, florist (*exclude hardy garden mums*)	Orchids	
	Poinsettia	
Cyclamen	Potted flowering spring bulbs	
Hibiscus	Other	

BEDDING PLANTS		CODE 12
Begonia	Snapdragons	
Coleus	Zinnia	
Dusty Miller	Herb culinary type(*not for commercial production*)	
Geraniums	Vegetable type (*not for commercial production*)	
Impatiens	Other	
Marigold		
Pansy		
Petunias		

FOLIAGE PLANTS (*POTTED or HANGING BASKETS*)		CODE 13
Cacti/succulants	Hedera Ivy	
Dracaena	Palms (potted)	
Ferns (*potted*)	Philodendron	
Ficus	Other	

FLORICULTURE PROPAGATION MATERIAL		CODE 14
Bedding and flowering liners	Plug seedlings	
	Prefinished plants	
Cuttings	Production stock	
Foliage plant liners	Other	

CUT CULTIVATED GREENS		CODE 15
Asparagus	Ferns	
Boxwood	Hedera Ivy	
Coniferous greens	Holly	
Eucalyptus	Other	

HERBACEOUS PERENNIALS		CODE 16
Chrysanthemum; hardy/garden	Hosta	
Day lily	Iris	
Ferns; hardy/garden	Other	

NON-PRODUCTION AREAS		CODE 17
Aisles	Property perimeter	
Driveways	Walkways	
Greenhouse perimeter	Other	

EXCLUDE	
Aquatic Plants	Rhizomes
Bulbs	Sod
Flower seed plants	Tubers
Mushrooms	Vegetable seed plants

Report Features

Released April 17, 2002, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, U.S. Department of Agriculture. For information on "Agricultural Chemical Usage" call (202) 720-6146 office hours 7:30 a.m. to 4:00 p.m. ET.

The next **"Agricultural Chemical Usage"** report will be released on May 15, 2002. This report will cover the use of chemicals used on corn, cotton, potatoes, and soybeans during the 2001 crop year.

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

Chris Cadwallader, Environmental Statistician	(202) 690-0392
Norman Bennett, Head, Environmental and Demographics Section	(202) 720-0684
Linda Hutton, Chief, Environmental, Economics and Demographics Branch	(202) 720-6146

ACCESS TO REPORTS!!

For your convenience, there are several ways to obtain NASS reports, data products, and services:

INTERNET ACCESS

All NASS reports are available free of charge on the worldwide Internet. For access, connect to the Internet and go to the NASS Home Page at: **http:/www.usda.gov/nass/**. Select "Today's Reports" or Publications and then Reports by Calendar or Publications and then Search, by Title or Subject.

E-MAIL SUBSCRIPTION

There are two options for subscribing via e-mail. All NASS reports are available by subscription free of charge direct to your e-mail address. 1) Starting with the NASS Home Page at **http:/www.usda.gov/nass/**, click on **Publications**, then click on the **Subscribe by E-mail** button which takes you to the page describing e-mail delivery of reports. Finally, click on **Go to the Subscription Page** and follow the instructions. 2) If you do NOT have Internet access, send an e-mail message to: **usda-reports@usda.mannlib.cornell.edu**. In the body of the message type the word: **list**.

AUTOFAX ACCESS

NASSFax service is available for some reports from your fax machine. Please call 202-720-2000, using the handset attached to your fax. Respond to the voice prompts. Document 0411 is a list of available reports.

- -

PRINTED REPORTS OR DATA PRODUCTS

CALL OUR TOLL-FREE ORDER DESK: 800-999-6779 (U.S. and Canada)
Other areas, please call 703-605-6220 FAX: 703-605-6900
(Visa, MasterCard, check, or money order acceptable for payment.)

- -

ASSISTANCE

For **assistance** with general agricultural statistics or further information about NASS or its products or services, contact the **Agricultural Statistics Hotline** at **800-727-9540**, 7:30 a.m. to 4:00 p.m. ET, or e-mail: **nass@nass.usda.gov.**
