

# WASHINGTON AGRICULTURAL CHEMICAL USAGE PEARS 2001 Crop



August 2002

## Pears

Three states were surveyed for pears in 2001: California, Oregon, and Washington. Surveyed acreage totaled 60,800 bearing acres. Washington was the largest state surveyed for pears and accounted for 41 percent of the acreage.

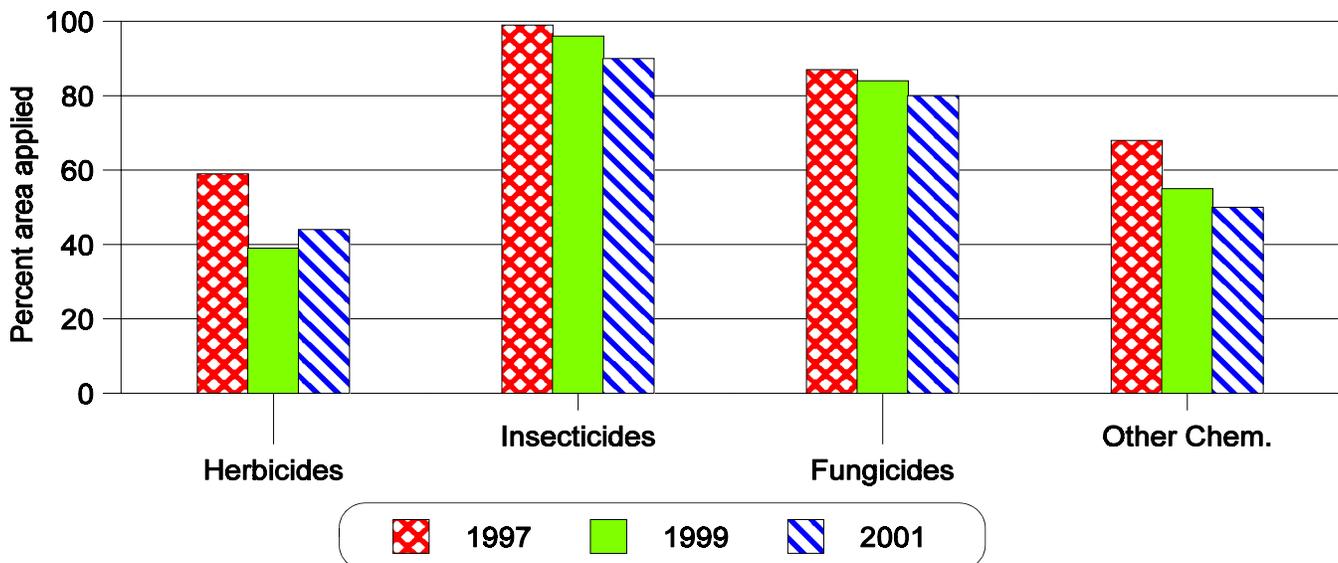
### Pears: Pesticide Applications, Total Acreage and Percentage Receiving Applications, Major States and Total, 1999 and 2001

State	Bearing Acreage		Area Receiving							
			Herbicide		Insecticide		Fungicide		Other Chemicals	
	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001
	Acres		Percent							
California 1/	20,300	19,000	44	60	77	87	76	81	42	62
Michigan 2/	850	-	51	-	92	-	90	-	15	-
New York 2/	2,000	-	43	-	79	-	78	-	10	-
Oregon	17,800	17,000	68	44	99	97	99	96	60	57
Pennsylvania 2/	1,000	-	24	-	97	-	95	-	7	-
<b>Washington</b>	<b>24,400</b>	<b>24,800</b>	<b>39</b>	<b>44</b>	<b>96</b>	<b>90</b>	<b>84</b>	<b>80</b>	<b>55</b>	<b>50</b>
<b>TOTAL</b>	<b>66,350</b>	<b>60,800</b>	<b>48</b>	<b>49</b>	<b>91</b>	<b>91</b>	<b>86</b>	<b>85</b>	<b>50</b>	<b>56</b>

1/ Acreage in California includes nonbearing acres.

2/ Michigan, New York, and Pennsylvania were not surveyed in 2001.

### Pears: Ag Chemical Applications, Washington



**Pears: Agricultural Chemical Applications, Washington, 1999 and 2001 1/**

Agricultural Chemical 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001
<b>Herbicides:</b>	<b>Percent</b>		<b>Number</b>		<b>Pounds Per Acre</b>				<b>1,000 Lbs.</b>	
2, 4-D	6	4	1.7	1.2	0.74	0.89	1.29	1.07	1.9	0.9
Diuron	5	8	1.0	1.0	1.40	1.34	1.43	1.35	1.7	2.6
Glyphosate	31	39	1.3	1.7	1.52	1.18	1.97	2.04	14.9	19.7
Norflurazon	5	9	1.0	1.1	1.88	1.50	1.92	1.65	2.5	3.7
Paraquat	11	7	1.7	1.3	0.57	0.56	1.00	0.75	2.6	1.2
Simazine	5	9	1.0	1.0	1.26	1.43	1.27	1.51	1.5	3.3
<b>Insecticides:</b>										
Abamectin	79	68	1.4	1.5	0.02	0.02	0.03	0.03	0.6	0.5
Amitraz	6	-	1.0	-	1.40	-	1.51	-	2.1	-
Azinphos-methyl	68	46	1.9	2.0	1.01	1.00	1.99	2.02	33.0	22.8
Benzoic acid	-	9	-	1.3	-	0.21	-	0.29	-	0.7
Bifenazate	-	5	-	1.1	-	0.49	-	0.54	-	0.6
Bt(Bacillus thur.) 3/	9	6	2.1	1.3						
Carbaryl	5	6	1.2	1.1	1.36	1.84	1.63	2.09	2.1	3.1
Chlorpyrifos	59	33	1.1	1.0	1.72	1.94	1.98	2.09	28.3	17.1
Clofentezine	-	2	-	1.2	-	0.21	-	0.25	-	0.1
Diazinon	9	7	1.0	1.0	2.06	1.70	2.14	1.70	4.7	2.9
Diflubenzuron	18	-	1.0	-	0.63	-	0.64	-	2.9	-
Endosulfan	65	45	1.1	1.1	2.00	1.94	2.24	2.26	35.7	25.2
Esfenvalerate	9	16	1.3	1.0	0.08	0.07	0.11	0.08	0.2	0.3
Fenbutatin-oxide	9	-	1.2	-	0.49	-	0.62	-	1.3	-
Formetanate hydro.	11	1	1.0	1.0	0.70	0.51	0.72	0.51	1.9	0.2
Hexythiazox	12	-	1.1	-	0.11	-	0.13	-	0.4	-
Imidacloprid	30	23	1.6	1.3	0.17	0.14	0.28	0.19	2.0	1.1
Kaolin	5	15	2.2	2.5	43.41	39.75	99.61	99.72	132.0	370.1
Methidathion	-	1	-	1.0	-	1.50	-	1.50	-	0.5
Methyl parathion	4	-	1.0	-	1.43	-	1.44	-	1.4	-
Oxythioquinox	2	-	1.1	-	0.88	-	1.02	-	0.5	-
Petroleum distillate	92	85	3.6	3.8	14.85	13.49	54.10	51.69	1,211.9	1,095.6
Phosmet	22	28	1.5	1.4	2.51	3.00	3.77	4.37	20.6	29.9
Pyridaben	20	15	1.1	1.1	0.24	0.31	0.27	0.37	1.3	1.3
Pyriproxyfen	24	33	1.0	1.1	0.09	0.10	0.10	0.12	0.6	1.0
Thiamethoxam	-	26	-	1.2	-	0.08	-	0.09	-	0.6
<b>Fungicides:</b>										
Calcium polysulfide	7	10	1.1	1.5	29.10	23.13	32.76	35.75	57.2	88.5
Copper hydroxide	20	30	1.4	1.9	1.61	2.17	2.41	4.16	11.8	30.6
Copper sulfate	3	4	1.3	1.6	0.76	0.66	0.99	1.05	0.7	0.9
Fenarimol	3	2	1.0	1.4	0.07	0.07	0.07	0.10	0.1	**
Kresoxim-methyl	-	1	-	1.5	-	0.14	-	0.21	-	0.1
Mancozeb	41	16	1.1	1.7	4.84	4.58	5.69	7.77	56.5	30.9
Oxytetracycline	43	35	2.9	2.3	0.13	0.14	0.38	0.33	3.9	2.9
Pseudomonas fluores.	3	-	1.4	-	0.13	-	0.19	-	0.1	-
Streptomycin	-	7	-	1.1	-	0.19	-	0.21	-	0.04
Sulfur	52	38	1.6	1.5	8.34	9.29	13.60	14.70	172.6	136.9
Triadimefon	2	-	1.0	-	0.23	-	0.23	-	0.1	-
Trifloxystrobin	-	1	-	1.0	-	0.06	-	0.06	-	**
Triflumizole	33	33	1.1	1.3	0.25	0.25	0.28	0.33	2.3	2.7
Ziram	32	23	1.4	1.2	3.89	3.90	5.55	5.00	43.9	28.0

Note: May not multiply across due to rounding.

\*\* Total applied is less than 50 pounds.

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1/ Bearing acres in 1999 in Washington were 24,400 acres and bearing acres in 2001 in Washington were 24,800 acres.

2/ Insufficient reports to publish data for the following agricultural chemicals: 1999; Herbicides: 2, 4-DB, Bromoxynil, Difenzoquat, Glufosinate-ammonium, Glyphosate, isopropy, Oryzalin, Pendimethalin, Proflurosulfuron. 2001; Herbicides: 2,4-D, Dimeth. salt, Atrazine, Oryzalin, Oxyfluorfen, Sulfosate. 1999; Insecticides: Azadirachtin, Clofentezine, Dimethoate, Ethyl parathion, Fenoxycarb, Methidathion, Permethrin, Potassium salts. 2001; Insecticides: Amitraz, Azadirachtin, Cyd-X Granulo. Virus, Dicofof, Dimethoate, Ethyl parathion, Fenbutatin-oxide, Fenvalerate, Hexythiazox, Indoxacarb, Methyl parathion, Neem oil, clar. hyd., Oxythioquinox, Permethrin, Piperonyl butoxide, Potassium salts, Pyrethrins, Rotenone, Silicon dioxide, Spinosad. 1999; Fungicides: Basic copper sulfate, Copper ammonium carb., Copper oxychlo. sul., Dodine, Fosetyl-al, Kresoxim-methyl, Metalaxyl, Myclobutanil, Streptomycin. 2001; Fungicides: Bacillus subtilis, Bas copper zinc sulf, Basic copper sulfate, Chlorothalonil, Copper chloride hyd., Copper oxychlo. sul., Dodine, Fosetyl-al, Maneb, Metiram, Myclobutanil, Potassium bicarbon., Propiconazole, Pseudomonas fluores., Triadimefon. 1999; Other Chemicals: Cytokinins, Diphacinone, Eithephon, Gibberellic acid, NAD, Strychnine, Tetradecan-1-OL (Z), Zinc phosphide. 2001; Other Chemicals: Aluminum phosphide, Benzyladenine, Butenois acid hydro., Chlorophacinone, Chloropicrin, Cytokinins, Dichloropropene, Diphacinone, E-8-Dodecyl acetat, Eithephon, Garlic oil, Gibberellic acid, Gibberellins A4A7, Gossypolure, NAD, Prohexadione calcium, Strychnine, Z-8-Dodecanol, Z-8-Dodecyl acetate, Zinc phosphide.

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

## Pears: Agricultural Chemical Applications, Washington, 1999 and 2001 1/(cont.)

Agricultural Chemical 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001
	Percent		Number		Pounds Per Acre				1,000 Lbs.	
<b>Other Chemicals:</b>										
Chlorophacinone	2	-	1.0	-	0.13	-	0.13	-	0.1	-
Dodecadien-1-ol	-	15	-	1.0	-	0.05	-	0.05	-	0.2
Dodecanol	10	14	1.0	1.0	0.03	0.03	0.03	0.03	0.1	0.1
E, E-8, 10-Dodecadien	11	-	1.1	-	0.04	-	0.05	-	0.1	-
NAA	-	26	-	1.0	-	0.05	-	0.05	-	0.3
NAA, Potassium salt	-	7	-	1.5	-	0.05	-	0.07	-	0.1
Naphthaleneacetic ac.	43	-	1.2	-	0.04	-	0.05	-	0.5	-
Tetradecanol	10	14	1.0	1.0	0.005	0.006	0.005	0.006	**	**

See footnotes, at end of table, on previous page.

## Pears: Agricultural Chemical Applications, Major States, 1999 and 2001 1/

Agricultural Chemical 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001
	Percent		Number		Pounds Per Acre				1,000 Lbs.	
<b>Herbicides:</b>										
2, 4-D	8	4	1.3	1.2	0.60	0.84	0.81	1.02	4.3	2.5
2, 4-D, Dimeth. salt	-	5	-	1.1	-	1.17	-	1.36	-	4.3
2, 4-DP, Dimeth. salt	-	2	-	1.6	-	0.46	-	0.77	-	1.1
Diuron	10	10	1.2	1.3	1.16	1.21	1.40	1.63	9.2	9.7
Glyphosate	41	40	1.5	1.7	0.77	0.82	1.22	1.40	32.7	34.1
Norflurazon	3	8	1.0	1.1	1.98	2.02	2.01	2.23	3.5	10.3
Oryzalin	1	-	1.0	-	1.72	-	1.77	-	1.4	-
Oxyfluorfen	5	6	1.2	1.2	0.40	0.30	0.52	0.37	1.8	1.2
Paraquat	11	12	1.3	1.4	0.51	0.42	0.72	0.62	5.1	4.7
Simazine	17	12	1.4	1.3	1.02	1.26	1.47	1.66	16.8	12.4
Sulfosate	-	5	-	1.0	-	2.25	-	2.35	-	7.5
Terbacil	*	-	1.0	-	0.63	-	0.63	-	0.1	-
<b>Insecticides:</b>										
Abamectin	61	60	1.3	1.3	0.02	0.02	0.02	0.03	0.8	0.9
Amitraz	18	4	1.2	1.0	1.34	1.24	1.63	1.28	19.0	3.2
Azadirachtin	-	4	-	1.8	-	0.03	-	0.05	-	0.1
Azinphos-methyl	54	44	1.9	1.7	0.98	1.05	1.89	1.88	67.5	50.6
Benzoic acid	-	8	-	1.2	-	0.23	-	0.28	-	1.3
Bifenazate	-	6	-	1.0	-	0.47	-	0.48	-	1.7
Bt (Bacillus thur.) 3/	6	4	1.8	1.5	-	-	-	-	-	-
Carbaryl	3	2	1.1	1.1	1.31	1.84	1.51	2.09	2.7	3.1
Chlorpyrifos	39	28	1.1	1.1	1.79	1.78	1.98	2.05	51.4	34.9
Clofentezine	5	2	1.2	1.1	0.11	0.16	0.13	0.17	0.4	0.2
Diazinon	7	3	1.2	1.0	1.67	1.82	2.03	1.83	8.9	3.8
Dicofol	*	-	1.0	-	1.88	-	1.90	-	0.9	-
Diiflubenzuron	7	-	1.0	-	0.64	-	0.65	-	3.0	-
Dimethoate	*	3	1.2	1.0	0.71	0.43	0.88	0.43	0.4	0.7
Endosulfan	38	-	1.1	-	2.02	-	2.22	-	56.1	-
Esfenvalerate	24	24	1.2	1.1	0.06	0.07	0.08	0.08	1.1	1.2
Fenbutatin-oxide	6	*	1.1	1.0	0.62	0.65	0.72	0.66	2.7	0.2
Fenpropathrin	-	1	-	1.0	-	0.32	-	0.34	-	0.2
Formetanate hydro.	5	1	1.0	1.0	0.82	0.72	0.86	0.72	3.1	0.4
Hexythiazox	15	4	1.1	1.0	0.12	0.13	0.14	0.14	1.4	0.4
Imidacloprid	19	15	1.4	1.2	0.19	0.15	0.27	0.19	3.3	1.7
Kaolin	2	14	2.2	2.1	43.41	31.55	99.61	67.51	132.0	576.1
Methidathion	*	1	1.0	1.0	1.59	1.44	1.59	1.50	0.9	1.3
Methomyl	*	-	1.0	-	0.65	-	0.68	-	0.2	-
Methyl parathion	17	-	1.3	-	1.60	-	2.22	-	24.4	-
Oxamyl	1	-	1.0	-	1.47	-	1.58	-	1.2	-
Oxythioquinox	1	-	1.1	-	0.78	-	0.86	-	0.6	-
Permethrin	*	4	1.7	1.4	0.12	0.17	0.21	0.25	0.1	0.6
Petroleum distillate	83	86	3.2	3.4	18.49	16.86	60.74	58.32	3,342.8	3,040.9
Petroleum oil	-	4	-	1.4	-	9.62	-	14.12	-	33.3
Phosmet	36	32	1.7	1.4	2.62	3.00	4.58	4.33	107.9	83.3

See footnotes at end of table.

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## Pears: Agricultural Chemical Applications, Major States, 1999 and 2001 1/ (cont.)

Agricultural Chemical 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001
<b>Insecticides (continued):</b>	Percent		Number		Pounds Per Acre				1,000 Lbs.	
Pyridaben	19	11	1.0	1.1	0.29	0.32	0.31	0.37	3.9	2.4
Pyriproxyfen	15	-	1.0	-	0.10	-	0.11	-	1.1	-
Tebufenozide	-	5	-	1.4	-	0.27	-	0.38	-	1.1
Thiamethoxam	-	16	-	1.1	-	0.08	-	0.09	-	0.9
<b>Fungicides:</b>										
Basic copper sulfate	*	3	1.0	1.1	4.36	2.81	4.50	3.33	2.8	5.7
Benomyl	15	3	2.3	1.3	0.43	0.53	1.01	0.70	10.3	1.3
Calcium polysulfide	24	17	1.3	1.3	13.41	20.67	18.33	26.87	293.7	275.8
Captan	*	-	2.4	-	1.81	-	4.44	-	1.7	-
Copper chloride hyd.	-	*	-	1.6	-	0.50	-	0.81	-	0.2
Copper hydroxide	18	25	1.8	1.7	1.80	1.71	3.23	2.99	37.9	46.2
Copper oxychlor. sul.	22	*	2.6	1.0	1.62	4.60	4.31	4.60	62.6	2.2
Copper oxychloride	-	8	-	1.5	-	1.54	-	2.43	-	11.5
Copper sulfate	2	4	1.4	1.3	1.12	0.59	1.56	0.78	2.1	1.7
Cyprodinil	6	1	1.5	1.1	0.14	0.18	0.22	0.21	0.9	0.1
Dodine	20	8	1.7	1.7	1.39	1.01	2.43	1.76	31.6	8.1
Fenarimol	5	1	1.2	1.2	0.07	0.07	0.09	0.09	0.3	0.1
Ferbam	*	-	2.0	-	2.11	-	4.31	-	2.3	-
Fosetyl-al	2	2	2.2	1.4	1.54	2.18	3.47	3.17	5.2	3.8
Kresoxim-methyl	1	2	1.0	1.2	0.16	0.13	0.17	0.16	0.1	0.2
Mancozeb	55	34	2.0	1.7	3.32	3.92	6.91	6.82	253.2	139.3
Maneb	-	*	-	1.2	-	6.01	-	7.26	-	3.7
Metiram	*	-	2.0	-	3.34	-	6.79	-	0.4	-
Myclobutanil	*	2	1.2	1.0	0.12	0.10	0.14	0.10	0.1	0.1
Oxytetracycline	41	42	2.9	3.2	0.15	0.14	0.44	0.45	11.9	11.5
Pseudomonas fluores.	11	6	2.7	2.8	0.13	0.10	0.36	0.29	2.6	1.1
Streptomycin	30	27	2.3	2.3	0.13	0.09	0.30	0.22	6.0	3.6
Sulfur	44	38	1.6	1.4	9.29	10.34	15.32	15.22	448.1	352.6
Triadimefon	5	5	1.0	1.1	0.21	0.24	0.21	0.28	0.7	0.8
Trifloxystrobin	-	18	-	1.6	-	0.07	-	0.11	-	1.1
Triflumizole	35	30	1.4	1.3	0.27	0.25	0.37	0.34	8.6	6.0
Ziram	39	33	1.4	1.2	4.21	4.64	5.91	5.97	151.9	118.4
<b>Other Chemicals:</b>										
Butenoic acid hydro.	-	*	-	1.0	-	0.10	-	0.11	-	**
Chlorophacinone	*	-	1.0	-	0.13	-	0.13	-	0.1	-
Cytokinins 4/	-	1	-	1.0	-	-	-	-	-	**
Dodecadien-1-ol	-	17	-	1.1	-	0.06	-	0.07	-	0.8
Dodecanol	-	11	-	1.0	-	0.03	-	0.04	-	0.3
E, E-8, 10-Dodecadien	5	-	1.1	-	0.05	-	0.05	-	0.2	-
Gibberellic acid	*	-	1.6	-	0.06	-	0.10	-	**	-
NAA	-	31	-	1.2	-	0.06	-	0.08	-	1.5
NAA, Potassium salt	-	12	-	1.1	-	0.05	-	0.06	-	0.4
NAD	*	-	1.0	-	0.04	-	0.04	-	**	-
Naphthaleneacetic ac.	44	-	1.2	-	0.05	-	0.06	-	1.9	-
Strychnine	-	*	-	1.0	-	0.01	-	0.01	-	**
Tetradecanol	5	11	1.0	1.0	0.005	0.007	0.006	0.007	**	0.1
Zinc phosphide	-	2	-	1.0	-	0.12	-	0.12	-	0.1

Note: Data may not multiply across due to rounding. \* Applied to less than one percent of the acres. \*\* Total applied is less than 50 pounds.

1/ Bearing acres in 1999 for the 6 major states were 66,350 acres. States included were CA, MI, NY, OR, PA, & WA. Acres in 2001 for the 3 major states were 60,800 acres. States include were CA, OR, & WA. Acreage in California includes non-bearing acres.

2/ Insufficient reports to publish data for the following agricultural chemicals: 1999; Herbicides: 2, 4-D, dimethylamine, 2, 4-DB, Bromoxynil, Difenoquat, Glyphosate, isopropyl, Pendimethalin, Prosulfuron, Trifluralin. 2001; Herbicides: Atrazine, Fluazifop-P-butyl, Oryzalin, Pendimethalin, Prosulfuron, Sethoxydim. 1999; Insecticides: Azadirachtin, Carbofuran, Ethion, Ethyl parathion, Fenoxycarb, Malathion, Potassium salts, Propargite, Pyrethrins, Rotenone, Ryania, Tebufenozide. 2001; Insecticides: Cryolite, Cyd-X Granulo. Virus, Dicofof, Endosulfan, Ethyl parathion, Fenvalerate, Indoxacarb, Methyl parathion, Neem oil, clar. hyd., Oxamyl, Oxythioquinox, Piperonyl butoxide, Potassium salts, Pyrethrins, Pyriproxyfen, Rotenone, Silicon dioxide, Spinosad. 1999; Fungicides: Basic cupric zinc su., Chlorothalonil, Copper ammonium carb., Fenbuconazole, Glyodin, Maneb, Metalaxyl, Propiconazole, Tebuconazole, Thiram, Vinclozolin. 2001; Fungicides: Agrobacterium radio., Bacillus subtilis, Bas copper zinc sulf, Captan, Carboxin, Chlorothalonil, Copper oxide, Iprodione, Metiram, Potassium bicarbon., Propiconazole. 1999; Other Chemicals: Aluminum phosphide, Butenoic acid hydro., Cytokinins, Diphacinone, Ethephon, Paecilomyces fumosor, Strychnine, Tetradecen-1-OL (Z), Z-8-Dodecenyl acetate, Zinc phosphide. 2001; Other Chemicals: Aluminum phosphide, Benzyladenine, Chlorophacinone, Chloropicrin, Dichloropropene, Diphacinone, E-8-Dodecenyl acetat, Ethephon, Garlic oil, Gibberellic acid, Gibberellins A4A7, Gossypure, Monocarbamide dihyd., NAD, Prohexadione calcium, Z-8-Dodecanol, Z-8-Dodecenyl acetate. 3/ Rates and total applied are not available, amounts of active ingredient are not comparable between products. 4/ Rates and total applied are not available because amounts of active ingredient are too small.