

# WASHINGTON AGRICULTURAL CHEMICAL USAGE APPLES 2003 Crop



U.S. Department of Agriculture  
Washington Agricultural Statistics Service  
P.O. Box 609, Olympia, WA 98507

August 2004

## Apples

Seven states were surveyed for apples in 2003: California, Michigan, New York, North Carolina, Oregon, Pennsylvania, and Washington. Surveyed acreage totaled 305,500 bearing acres. Washington was the largest state surveyed for apples and accounted for 53 percent of the acreage.

### Apples: Pesticide Applications, Bearing Acreage & Percentage Receiving Applications, Major States and Total, 2001 and 2003

State	Bearing Acreage		Area Receiving 1/							
			Herbicide		Insecticide 2/		Fungicide 2/		Other Chemicals	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
Acres								Percent		
California	30,000	27,000	33	35	70	73	52	71	25	7
Kansas 3/	400	-	21	-	84	-	78	-	26	-
Michigan	44,500	42,000	41	36	98	92	98	92	40	15
New York	55,000	41,000	66	61	98	97	98	97	54	19
North Carolina	8,000	7,000	8	2	89	99	89	98	5	2
Oregon	8,700	6,500	54	55	91	92	86	89	56	44
Pennsylvania	23,000	20,000	61	34	96	86	95	80	56	13
<b>Washington</b>	<b>168,000</b>	<b>162,000</b>	<b>54</b>	<b>42</b>	<b>98</b>	<b>99</b>	<b>82</b>	<b>92</b>	<b>86</b>	<b>23</b>
<b>TOTAL</b>	<b>337,600</b>	<b>305,500</b>	<b>52</b>	<b>42</b>	<b>95</b>	<b>94</b>	<b>85</b>	<b>90</b>	<b>65</b>	<b>20</b>

1/ Acreage in California includes non-bearing acres in 2001. Total applied may include applications of some active ingredients made only to non-bearing acres.

2/ Total applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products. 3/ Kansas was not surveyed in 2003.

### Apples: Agricultural Chemical Applications, Washington, 2001 and 2003 1/

Active Ingredient 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
	Percent	Number	Pounds	Per Acre	1,000 Lbs.					
<b>Fertilizer:</b>										
Nitrogen	-	74	-	2.1	-	24	-	51	-	6,114
Phosphate	-	26	-	1.5	-	11	-	17	-	729
Potash	-	24	-	1.7	-	12	-	21	-	810
<b>Herbicides:</b>										
2, 4-D	4	5	1.0	1.3	1.29	0.74	1.36	0.98	10.2	8.1
2, 4-D, Dimeth. salt	7	2	1.2	1.1	0.38	0.79	0.48	0.89	5.9	3.2
Diuron	1	3	1.0	1.0	1.53	1.05	1.56	1.06	2.7	4.8
Glyphosate	41	39	1.4	1.8	1.08	1.07	1.58	1.94	109.7	122.8
Norflurazon	15	8	1.0	1.0	1.35	1.44	1.41	1.53	35.6	20.9
Oryzalin	6	*	1.0	1.2	1.78	1.80	1.88	2.16	20.2	1.2
Oxyfluorfen	5	2	1.0	1.1	1.05	1.14	1.14	1.30	9.0	4.3
Paraquat	22	12	1.3	1.3	0.68	0.67	0.89	0.89	32.6	17.2
Pendimethalin	-	*	-	2.3	-	1.29	-	3.05	-	0.7
Simazine	9	6	1.0	1.1	2.19	1.84	2.28	2.10	35.0	20.7
Sulfosate	4	-	1.3	-	2.20	-	3.01	-	22.6	-
<b>Insecticides:</b>										
Abamectin	-	1	-	1.0	-	0.01	-	0.01	-	**
Acetamiprid	-	25	-	1.4	-	0.12	-	0.17	-	7.1
Azadirachtin	*	-	1.0	-	0.01	-	0.01	-	**	-
Azinphos-methyl	73	78	2.0	2.2	0.94	1.01	1.96	2.29	241.4	289.2
Benzoic acid	17	29	1.1	1.1	0.24	0.21	0.26	0.25	7.6	11.6
Bifenazate	-	3	-	1.0	-	0.37	-	0.40	-	1.7
Bt ( <i>Bacillus thur.</i> )	12	9	1.6	1.4	3/	3/	3/	3/	3/	3/
Carbaryl	67	52	1.4	1.4	1.25	1.38	1.78	1.94	201.9	162.5
Chlorpyrifos	68	63	1.1	1.1	1.81	1.85	2.04	2.12	234.0	217.0
Clofentezine	9	2	1.0	1.0	0.15	0.12	0.17	0.13	2.6	0.4
Diazinon	2	2	1.0	1.2	1.95	1.59	2.05	1.98	5.7	5.1
Dimethoate	*	-	1.1	-	1.27	-	1.44	-	1.8	-
Endosulfan	6	9	1.1	1.0	1.98	1.93	2.36	2.03	25.7	28.4

See footnotes at end of table (next page).

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# Apples: Agricultural Chemical Applications, Washington, 2001 and 2003 1/ (continued)

Active Ingredient 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
<b>Insecticides (continued):</b>	Percent		Number		Pounds Per Acre		1,000 Lbs.			
Fenbutatin-oxide	5	1	1.0	1.0	0.87	0.76	0.88	0.78	8.0	1.6
Formetanate hydro.	13	14	1.0	1.0	0.74	0.83	0.81	0.87	17.0	20.0
Imidacloprid	38	45	1.2	1.4	0.06	0.05	0.08	0.08	4.8	5.8
Kaolin	8	11	1.2	1.4	29.48	37.04	36.65	54.59	509.4	973.6
Malathion	1	-	1.1	-	0.75	-	0.84	-	1.6	-
Petroleum distillate	79	80	1.6	2.0	21.90	18.90	36.47	38.02	4,858.4	4,946.7
Phosmet	18	12	1.5	1.2	3.06	2.90	4.57	3.50	138.3	70.7
Pyrethrins	-	1	-	1.6	-	0.06	-	0.09	-	0.2
Pyridaben	7	8	1.2	1.0	0.22	0.25	0.27	0.26	3.3	3.2
Pyriproxyfen	*	*	1.2	1.0	0.11	0.08	0.14	0.08	0.2	0.1
Spinosad	50	40	1.3	1.4	0.10	0.10	0.14	0.15	12.0	9.5
Thiamethoxam	-	2	-	1.2	-	0.07	-	0.09	-	0.3
<b>Fungicides:</b>										
Bacillus subtilis	-	*	-	1.0	-	3/	-	3/	-	3/
Basic copper sulfate	-	2	-	1.2	-	0.39	-	0.47	-	1.4
Calcium polysulfide	14	22	1.2	1.3	20.82	19.42	25.34	26.84	613.9	938.2
Captan	-	*	-	1.1	-	2.69	-	3.04	-	4.4
Copper hydroxide	13	10	1.1	1.2	1.33	1.71	1.50	2.06	31.5	32.8
Fenarimol	17	27	1.1	1.1	0.07	0.07	0.08	0.08	2.4	3.5
Fosetyl-al	6	3	1.2	1.3	1.51	2.34	1.88	3.14	19.7	17.5
Kresoxim-methyl	14	5	1.1	1.0	0.15	0.15	0.17	0.16	3.9	1.3
Mancozeb	13	13	1.2	1.3	3.18	3.70	3.82	5.07	82.1	106.0
Mefenoxam	4	*	1.2	1.6	0.63	1.51	0.76	2.50	4.8	1.5
Myclobutanil	36	48	1.3	1.6	0.12	0.11	0.16	0.19	9.9	14.5
Oxytetracycline	17	9	1.2	1.3	0.18	0.18	0.22	0.24	6.4	3.4
Potassium bicarbonate	-	3	-	1.1	-	2.40	-	2.76	-	14.4
Pseudomonas fluores.	-	4	-	1.4	-	0.24	-	0.36	-	2.1
Streptomycin	-	3	-	1.6	-	0.21	-	0.34	-	1.7
Sulfur	48	33	1.4	1.4	6.52	7.70	9.32	10.88	756.5	578.5
Thiram	-	4	-	1.0	-	3.28	-	3.43	-	23.9
Triadimefon	6	5	1.0	1.4	0.18	0.23	0.18	0.33	1.9	2.4
Trifloxystrobin	9	15	1.2	1.1	0.06	0.07	0.07	0.08	1.1	2.1
Triflumizole	42	37	1.3	1.3	0.27	0.24	0.36	0.33	25.6	19.5
Ziram	3	8	1.0	1.0	3.86	3.90	4.10	4.27	21.0	57.1
<b>Other Chemicals:</b>										
Benzyladenine	32	29	1.1	1.1	0.03	0.03	0.03	0.03	1.9	1.5
Butenic Acid Hydro.	8	11	1.0	1.0	0.10	0.09	0.10	0.10	1.4	1.7
Chlorophacinone	1	-	1.0	-	0.06	-	0.06	-	0.1	-
Cytokinins	3	3	1.0	1.2	5/	4/	5/	4/	**	**
Dodecadien-1-ol	26	34	1.0	1.0	0.06	0.05	0.06	0.06	2.8	3.2
Dodecanol	21	31	1.0	1.0	0.03	0.03	0.04	0.03	1.2	1.5
Ethepron	31	30	1.2	1.9	0.59	0.44	0.70	0.83	36.6	40.8
Gibberellic acid	3	1	1.2	1.1	0.03	0.02	0.04	0.02	0.2	**
Gibberellins A4A7	32	28	1.1	1.1	0.03	0.02	0.03	0.03	1.8	1.3
Monocarbamide dihyd.	2	-	1.0	-	5.10	-	5.12	-	13.3	-
NAA	40	41	1.2	1.3	0.03	0.03	0.03	0.03	2.1	2.3
NAA, Potassium salt	7	-	1.1	-	0.04	-	0.05	-	0.6	-
NAD	13	13	1.1	1.1	0.05	0.06	0.06	0.07	1.3	1.5
Pelargonic acid	*	-	1.0	-	0.96	-	1.00	-	0.7	-
Prohexadione calcium	5	13	1.4	1.5	0.24	0.28	0.34	0.41	2.6	8.4
Tetradecanol	21	31	1.0	1.0	0.007	0.006	0.007	0.006	0.2	0.3
Zinc phosphide	4	3	1.0	1.0	0.19	0.11	0.20	0.11	1.4	0.6

Note: Data may not multiply across due to rounding. \* Area applied is less than 0.5 percent. \*\* Total applied is less than 50 pounds.

1/ Bearing acres in 2001 in Washington were 172,000 acres and bearing acres in 2003 in Washington were 162,000 acres. 2/ Insufficient reports to publish data for the following agricultural chemicals: 2001; Herbicides: 2, 4-DP, Dimeth. salt, Dinoseb, Glufosinate-ammonium, Hexazinone, Napropamide, Pendimethalin, Pronamide, Prosulfuron, Terbacil. 2001; Insecticides: Abamectin, Carbophenothion, Cyd-X Granulo. Virus, Dicofol, Esfenvalerate, Ethion, Ethyl parathion, Fenpropothrin, Hexthiazox, Indoxacarb, Methidathion, Methomyl, Methoxychlor, Oxamyl, Oxythioquinox, Permethrin, Phosphamidon, Potassium salts, Pyrethrins, Tebufenoziide, Thiamethoxam. 2001; Fungicides: Azoxystrobin, Benomyl, Captan, Copper chloride hyd., Copper sulfate, Cyprodinil, Dichlone, Dodine, Maneb, Potassium bicarbon., Propiconazole, Pseudomonas fluores., Streptomycin, Tebuconazole, Thiophanate-methyl, Thiram, Vinclozolin. 2001; Other Chemicals: Aluminum phosphide, Chloropicrin, Dichloropropene, Diphacinone, E-8-Dodecenyl acetat, Garlic oil, Gossyplure, Harpin protein, Indolebutyric acid, Lactic acid, Metam-sodium, Strychnine, Tetradecen-1-OL (Z), Tetradecen-1-yl (E), Z-8-Dodecanol, Z-8-Dodecen acetate. 2003; Herbicides: Atrazine, Dichlobenil, Glufosinate-ammonium, Glyphosate diam salt, Napropamide, Prometryn, Pronamide, Sulfosate. Insecticides: Amitraz, Azadirachtin, Cyd-X Granulo. Virus, Dicofol, Diflubenzuron, Dimethoate, Esfenvalerate, Ethion, Ethyl parathion, Fenpropothrin, Hexthiazox, Indoxacarb, Lambda-cyhalothrin, Malathion, Methidathion, Methomyl, Methyl parathion, Oxamyl, Oxythioquinox, Permethrin, Phosphamidon, Piperonyl butoxide, Potassium salts, Rynia, Tebufenoziide. Fungicides: Copper chloride hyd., Copper sulfate, Cyprodinil, Maneb, Phosphorous acid, Propiconazole, Pyraclostrobin, Thiophanate-methyl, Vinclozolin. Other Chemicals: Aluminum phosphide, Chlorophacinone, Chloropicrin, DNOC, Decenol, Decenyl acetate, Dichloropropene, E-8-Dodecenyl acetat, Harpin protein, Monocarbamide dihyd., Strychnine, Tetradecen-1-OL (Z), Z-8-Dodecanol, Z-8 Dodecen acetate.

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

4/ Rate per acre is less than 0.005 lbs.

5/ Rates and total applied are not available because amounts of active ingredients are too small.

# Apples: Agricultural Chemical Applications, Major States, 2001 and 2003 1/

Active Ingredient 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
<b>Fertilizers:</b>	Percent		Number		Pounds Per Acre				1,000 Lbs.	
Nitrogen	-	71	-	1.8	-	30	-	55	-	11,950
Phosphate	-	28	-	1.5	-	21	-	33	-	2,835
Potash	-	36	-	1.4	-	33	-	48	-	5,282
<b>Herbicides:</b>										
2, 4-D	5	6	1.1	1.2	0.91	0.74	1.00	0.92	16.3	17.8
2, 4-D, Dimeth. salt	8	5	1.2	1.1	0.52	0.82	0.65	0.91	16.9	13.9
Diuron	8	7	1.0	1.1	1.06	1.09	1.12	1.22	31.3	27.6
Glufosinate-ammonium	*	*	1.2	1.1	0.45	0.44	0.58	0.49	1.9	0.6
Glyphosate	34	32	1.4	1.6	0.95	1.06	1.34	1.74	153.4	172.1
Norflurazon	10	7	1.0	1.0	1.35	1.38	1.43	1.46	47.9	29.1
Oryzalin	3	*	1.0	1.1	1.79	1.80	1.88	2.00	20.9	2.4
Oxyfluorfen	-	4	-	1.1	-	0.50	-	0.55	-	7.1
Paraquat	20	13	1.3	1.3	0.53	0.64	0.72	0.85	48.4	33.9
Pendimethalin	*	*	1.0	1.4	0.62	1.60	0.65	2.35	1.2	2.2
Simazine	14	10	1.0	1.1	1.41	1.65	1.48	1.84	71.5	58.9
Sulfosate	6	1	1.1	1.2	1.90	1.86	2.15	2.25	44.3	10.0
Terbacil	2	4	1.0	1.0	0.55	0.26	0.57	0.26	4.6	3.3
<b>Insecticides:</b>										
Abamectin	6	5	1.1	1.2	0.01	0.01	0.01	0.01	0.2	0.2
Acetamiprid	-	18	-	1.4	-	0.10	-	0.14	-	7.7
Azadirachtin	*	*	1.1	1.0	0.01	0.02	0.01	0.02	**	2/
Azinphos-methyl	72	73	2.9	2.8	0.66	0.82	1.93	2.33	466.9	522.9
Benzoic acid	19	30	1.8	1.3	0.16	0.14	0.29	0.20	18.1	17.9
Bifenazate	-	5	-	1.1	-	0.36	-	0.42	-	6.2
Bt (Bacillus thur.)	13	13	1.5	1.8	3/	3/	3/	3/	3/	3/
Carbaryl	56	46	1.3	1.4	1.17	1.25	1.63	1.76	305.8	245.4
Chlorpyrifos	52	51	1.1	1.1	1.50	1.59	1.78	1.84	310.1	286.5
Clofentezine	8	4	1.1	1.1	0.13	0.11	0.14	0.12	3.7	1.6
Cyd-X-Granulo. Viru.	1	3	2.6	1.4	3/	3/	3/	3/	3/	3/
Diazinon	5	6	1.6	1.8	0.64	0.77	1.08	1.45	17.4	27.9
Dicofol	*	*	1.1	1.0	1.38	1.35	1.59	1.41	2.6	3.0
Dimethoate	3	2	1.7	1.6	0.77	0.77	1.33	1.27	12.6	7.3
Endosulfan	11	10	1.2	1.1	1.28	1.51	1.58	1.75	57.3	52.5
Esfenvalerate	15	11	1.6	1.5	0.03	0.04	0.05	0.06	2.5	1.9
Ethyl parathion	-	*	-	1.1	-	0.15	-	0.17	-	0.1
Fenbutatin-oxide	3	*	1.0	1.1	0.80	0.72	0.86	0.81	9.6	2.4
Fenpropothrin	14	12	1.8	1.9	0.19	0.21	0.34	0.40	16.4	14.6
Formetanate hydro.	6	12	1.0	1.0	0.74	0.53	0.80	0.56	17.4	20.7
Hexythiazox	2	4	1.1	1.0	0.11	0.15	0.12	0.15	0.9	1.6
Imidacloprid	37	38	1.3	1.5	0.05	0.05	0.07	0.08	9.1	9.2
Indoxacarb	2	3	1.8	1.6	0.06	0.07	0.11	0.11	0.7	1.0
Kaolin	5	8	1.2	1.5	30.39	28.61	38.44	42.93	610.3	1,053.1
Lambda-cyhalothrin	-	8	-	2.0	-	0.03	-	0.05	-	1.3
Malathion	*	*	1.4	1.7	0.72	0.30	1.01	0.52	2.4	0.8
Methidathion	2	*	1.1	1.0	0.91	0.84	1.06	0.90	5.8	0.9
Methomyl	7	7	1.8	1.4	0.40	0.62	0.76	0.90	18.0	19.9
Methoxychlor	*	-	1.2	-	0.74	-	0.90	-	1.7	-
Methyl parathion	-	*	-	1.1	-	0.08	-	0.08	-	0.1
Oxamyl	1	*	1.3	1.1	0.41	0.39	0.56	0.46	2.6	0.8
Permethrin	4	3	1.2	1.4	0.11	0.10	0.14	0.14	1.7	1.3
Petroleum distillate	61	63	1.6	1.7	20.06	19.33	32.69	34.52	6,769.4	6,648.6
Phosmet	35	28	2.2	2.3	1.47	1.56	3.37	3.67	398.4	319.3
Pyrethrins	*	1	1.6	1.6	0.03	0.04	0.04	0.07	0.1	0.2
Pyridaben	17	11	1.2	1.1	0.14	0.17	0.18	0.19	10.4	6.5
Pyriproxyfen	*	1	1.3	1.0	0.10	0.07	0.13	0.07	0.3	0.2
Spinosad	36	31	1.4	1.4	0.10	0.10	0.14	0.14	16.6	13.1
Tebufenozide	4	2	1.3	1.3	0.19	0.24	0.25	0.33	3.7	1.7
Thiamethoxam	4	6	1.0	1.1	0.06	0.06	0.06	0.07	0.8	1.3
<b>Fungicides:</b>										
Bacillus subtilis	*	*	1.5	1.0	3/	3/	3/	3/	3/	3/
Basic copper zinc sulf.	*	-	1.0	-	0.14	-	0.15	-	**	-
Basic copper sulfate	4	6	1.3	1.2	0.65	0.77	0.89	0.93	11.6	17.9
Benomyl	9	1	1.9	2.6	0.20	0.07	0.38	0.19	11.3	0.6
Calcium polysulfide	8	16	1.2	1.4	19.28	15.02	24.34	20.98	681.0	997.8
Captan	33	33	4.9	5.4	1.49	1.55	7.36	8.45	824.9	852.0
Chlorothalonil	-	1	-	2.3	-	0.53	-	1.25	-	4.6
Copper chloride hyd.	*	*	1.7	1.5	3.60	2.14	6.45	3.36	11.2	1.2
Copper hydroxide	16	13	1.1	1.2	1.97	1.95	2.24	2.42	118.8	94.2
Copper oxychlo. sul.	3	2	1.2	1.2	2.50	0.21	3.05	0.25	33.4	1.2
Copper oxychloride	3	11	1.2	1.1	1.87	1.06	2.37	1.24	24.8	42.3

See footnotes at end of table (next page).

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# Apples: Agricultural Chemical Applications, Major States, 2001 and 2003 1/ (cont.)

Active Ingredient 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
	Percent		Number		Pounds Per Acre				1,000 Lbs.	
<b>Fungicides (continued):</b>										
Copper sulfate	2	2	1.1	1.4	1.72	1.04	2.03	1.49	15.6	7.1
Cyprodinil	8	4	1.6	1.4	0.12	0.15	0.21	0.22	5.4	2.9
Dodine	1	6	1.4	1.4	0.80	0.29	1.20	0.43	4.7	7.3
Fenarimol	17	22	1.6	1.6	0.06	0.06	0.10	0.10	5.7	7.0
Ferbam	*	*	1.0	1.0	1.40	0.60	1.46	0.60	0.3	0.8
Fosetyl-al	4	2	1.2	1.4	1.58	1.99	1.95	2.86	23.4	19.8
Kresoxim-methyl	18	13	1.7	1.8	0.12	0.12	0.22	0.23	13.6	8.8
Mancozeb	33	32	2.9	3.3	2.08	2.39	6.11	7.96	679.3	786.3
Maneb	*	*	5.3	3.1	0.95	2.51	5.03	7.98	2.9	20.0
Mefenoxam	2	*	1.2	1.6	0.60	0.80	0.74	1.35	5.0	1.5
Metiram	11	25	3.6	3.5	1.88	0.79	6.80	2.78	251.4	210.8
Myclobutanil	37	44	2.0	2.1	0.09	0.10	0.19	0.22	23.6	29.1
Oxytetracycline	9	6	1.2	1.2	0.19	0.15	0.24	0.20	7.4	3.6
Potassium bicarbon.	-	3	-	1.1	-	1.64	-	1.89	-	14.7
Propiconazole	-	1	-	1.4	-	0.07	-	0.09	-	0.3
Pseudomonas fluores.	1	3	1.0	1.4	0.19	0.15	0.20	0.22	0.8	2.2
Streptomycin	19	15	1.7	1.8	0.18	0.14	0.31	0.25	20.0	11.5
Streptomycin sulfate	-	1	-	3.2	-	0.06	-	0.21	-	0.7
Sulfur	36	28	2.1	2.2	4.94	6.69	10.38	14.79	1,274.3	1,282.5
Thiophanate-methyl	11	15	3.4	3.0	0.22	0.38	0.76	1.17	27.8	54.0
Thiram	4	7	3.2	2.2	1.35	2.06	4.35	4.54	61.4	98.0
Triadimefon	7	6	1.6	2.0	0.10	0.10	0.17	0.20	3.8	3.9
Trifloxystrobin	19	22	1.8	1.5	0.05	0.06	0.10	0.10	6.5	6.5
Triflumizole	24	26	1.5	1.4	0.23	0.19	0.36	0.28	29.5	21.8
Ziram	13	13	2.8	2.2	1.94	2.83	5.47	6.25	237.2	241.7
<b>Other Chemicals:</b>										
Aluminum phosphide	1	-	1.0	-	0.42	-	0.43	-	1.9	-
Benzyladenine	20	18	1.1	1.1	0.03	0.03	0.03	0.03	2.3	1.8
Butenic Acid Hydro.	5	7	1.0	1.0	0.09	0.08	0.10	0.09	1.6	2.0
Chlorophacinone	*	*	1.0	1.0	0.04	4/	0.04	4/	0.1	**
Cytokinins	2	2	1.0	1.2	5/	4/	5/	4/	**	**
Dodecadien-1-ol	14	25	1.0	1.1	0.06	0.04	0.06	0.04	2.9	3.4
Dodecanol	11	23	1.0	1.0	0.03	0.02	0.04	0.02	1.3	1.6
E-8-Dodecenyl acetat.	*	*	1.0	1.1	0.002	0.01	0.002	0.02	**	**
Etephenon	18	18	1.2	1.8	0.51	0.42	0.64	0.77	39.6	42.3
Gibberellic acid	3	2	1.5	1.4	0.02	0.02	0.03	0.03	0.3	0.2
Gibberellins A4A7	20	18	1.1	1.1	0.03	0.02	0.03	0.03	1.9	1.4
Harpin protein	*	-	1.1	-	0.003	-	0.003	-	**	-
Monocarbamide dihyd.	*	*	1.0	1.0	5.15	7.34	5.17	7.80	13.9	21.5
NAA	32	34	1.2	1.3	0.02	0.02	0.03	0.03	3.3	3.1
NAA, Potassium salt	7	-	1.1	-	0.03	-	0.04	-	0.9	-
NAD	8	10	1.1	1.1	0.05	0.05	0.06	0.06	1.5	1.7
Pelargonic acid	*	-	1.0	-	0.96	-	1.00	-	0.7	-
Prohexadione calcium	3	10	1.4	1.6	0.23	0.23	0.33	0.37	3.8	11.5
Strychnine	*	*	1.4	1.0	0.02	0.006	0.02	0.007	**	**
Tetradecanol	11	23	1.0	1.0	0.007	0.005	0.007	0.005	0.3	0.3
Tetradecen-1-OL (Z)	*	2	1.6	1.3	0.08	0.05	0.13	0.07	0.1	0.4
Z-8-Dodecanol	*	*	1.0	1.1	5/	0.003	5/	0.003	**	**
Z-8-Dodecen acetate	*	*	1.0	1.1	0.03	0.23	0.03	0.25	0.1	0.5
Zinc phosphide	3	4	1.1	1.0	0.17	0.09	0.19	0.09	2.1	1.1

Note: Data may not multiply across due to rounding. \* Applied on less than 0.5 percent. \*\* Total applied is less than 50 pounds.

1/ Bearing acres in 2001 for the 8 major states were 337,600 acres. States included were CA, KS, MI, NY, NC, OR, PA, & WA. Bearing acres in 2003 for the seven major states were 305,500 acres. States included were CA, MI, NY, NC, OR, PA, & WA. Applications of some active ingredients may refer only to nonbearing acres. 2/ Insufficient reports to publish data for the following agricultural chemicals: 2001; Herbicides: 2, 4-DP, Dimeth. salt, Dinosesb, Glyphosate, is. salt, Hexazinone, MCPA, Napropamide, Oxyfluorfen, Pronamide, Prosulfuron, Thiazopyr. 2001; Insecticides: Carbophenothion, Cyfluthrin, Ethion, Ethyl parathion, Fenamiphos, Methyl parathion, Oxythioquinox, Petroleum oil, Phos�amidon, Potassium salts, Propargite, Rotenone. 2001; Fungicides: Azoxystrobin, Chlorothalonil, Copper oxide, Copper resinate, Dichlone, Fenbuconazole, Fludioxonil, Glyodin, Iprodione, Metalaxyl, Potassium bicarbon., Propiconazole, Tebuconazole, Triforine, Vinclozolin. 2001; Other Chemicals: Chloropicrin, Dichloropropene, Diphenacinone, Garlic oil, Gossypure, Indoleburyic acid, Lactic acid, Metam-sodium, Tetradecen-1-yl (E). 2003; Herbicides: Acifluorfen, Atrazine, Dichlobenil, Disenzquat, EPTC, Ethofumesate, Fenoxaprop, Glyphosate diam salt, Hexazinone, MCPA, Napropamide, Prometryn, Pronamide, Sethoxydim. 2003; Insecticides: Amitraz, Carbofuran, Cyfluthrin, Diflubenzuron, Ethion, Fenamiphos, Lindane, Methoxychlor, Oxythioquinox, Petroleum oil, Phosalone, Phos�amidon, Piperonyl butoxide, Potassium salts, Rymania, Trichlorfon. 2003; Fungicides: Carboxin, Copper resinate, Dicloran, Fenbuconazole, Flutolanil, Iprodione, Metalaxyl, Phosphorous acid, Pyraclostrobin, Tebuconazole, Vinclozolin, Zineb. 2003; Other Chemicals: Aluminum phosphide, Chloropicrin, DNOC, Decenol, Decenyl acetate, Dichloropropene, Harpin protein, Hydrogen peroxide, Lactic acid, Maleic hydrazide, Methyl bromide, Tetradecen-1-yl (E).

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

4/ Rates per acre is less than 0.0005 lbs.

5/ Rates and total applies are not available because amounts of active ingredient are too small.