



# WASHINGTON'S AGRICULTURAL VEGETABLE CHEMICAL USAGE, 2006

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## SWEET CORN, PROCESSING

Results of the 2006 Vegetable Chemical Use Survey are presented in the following tables. The survey was designed to collect data on chemical applications made from the end of the 2005 harvest through completion of the 2006 harvest from a sampling of vegetable growers in Washington. Targeted crops in Washington included asparagus, processing carrots, processing sweet corn, dry onions, processing green peas, and strawberries. The probability nature of the survey allowed for estimates that are representative of chemical use on all targeted vegetables in the state.

Survey results include estimates of total area treated, number of applications, rates per application and per crop year, and total pounds of chemicals applied. Data are summarized for the primary nutrients and for the active ingredients of pesticides and other chemicals applied. Pesticide data were collected for specific formulations of active ingredients (trade name products) and then converted to active ingredient. Therefore, the estimates associated with a particular active ingredient may represent applications of several trade name products. Pesticide application rates also reflect partial

coverage applications as a result of band, spot, and alternate row spraying techniques.

Five states were surveyed for **processing sweet corn** in 2006: Minnesota, New York, Oregon, Washington, and Wisconsin. Surveyed acreage totaled 346,100 acres and Washington accounted for 23 percent of total surveyed acreage.

Nitrogen, phosphate, potash, and sulfur applications were made to 94, 78, 64, and 33 percent of the planted acreage, respectively, in the five Program States listed above. Herbicides were used on 86 percent of the surveyed acres. The most commonly used herbicides in Program States were **Atrazine**, **S-Metolachlor**, and **Dimethenamid-P**, on 62, 37, and 23 percent of the acreage, respectively. Insecticides were used on 72 percent of the surveyed acres. The two insecticides most commonly applied were **Bifenthrin**, on 51 percent, and **Zeta-cypermethrin**, on 12 percent of the acreage. Fungicides were used on 8 percent of the Program States acres. **Azoxystrobin** was the leading fungicide, as it was applied to 5 percent of acreage, followed by **Propiconazole** and **Pyraclostrobin**, both of which were applied to 2 percent of the acreage.



**Sweet Corn, Processing: Pesticide Applications, Planted Acreage & Percentage Receiving Applications,  
Program States & Total, 2004 & 2006**

State	Planted Acreage		Area Receiving 1/							
			Herbicide		Insecticide		Fungicide		Other	
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
	Acres		Percent							
Minnesota	138,000	135,200	91	89	83	83	25	17	**	
New York	19,500	18,400	95	89	44	35	13		**	
Oregon	28,500	26,100	98	87	69	67	**		**	
Washington	96,100	80,200	95	70	75	68	**		**	
Wisconsin	80,700	86,200	87	96	53	67	27	6	**	
<b>TOTAL</b>	<b>362,800</b>	<b>346,100</b>	<b>92</b>	<b>86</b>	<b>71</b>	<b>72</b>	<b>17</b>	<b>8</b>	<b>**</b>	

\*\* Insufficient reports to publish data for one or more pesticide classes.

1/ Refers to acres receiving one or more applications of a specific pesticide class.



**Sweet Corn, Processing: Fertilizer Use, Percent of Acres Treated, Program States, Total, 2004 & 2006**

State	Planted Acreage		Percent of Acres Treated 1/							
			Nitrogen		Phosphate		Potash		Sulfur	
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
	Acres		Percent							
Minnesota	138,000	135,200	-	91	-	68	-	59	-	**
New York	19,500	18,400	-	100	-	100	-	83	-	**
Oregon	28,500	26,100	-	89	-	80	-	84	-	60
Washington	96,100	80,200	-	91	-	68	-	32	-	60
Wisconsin	80,700	86,200	-	100	-	96	-	90	-	52
<b>TOTAL</b>	<b>362,800</b>	<b>346,100</b>	<b>-</b>	<b>94</b>	<b>-</b>	<b>78</b>	<b>-</b>	<b>64</b>	<b>-</b>	<b>33</b>

\*\* Insufficient reports to publish data for the fertilizer primary nutrient.

1/ Refers to acres receiving one or more applications of a specific fertilizer ingredient.

- Fertilizer use was not included in the 2004 Vegetable Chemical Use Survey.

**Sweet Corn, Processing: Agricultural Chemical Applications, Washington, 2004 & 2006 1/**

Active Ingredient 2/	Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
<b>Fertilizers</b>	<b>Percent</b>		<b>Number</b>		<b>Pounds Per Acre</b>				<b>1,000 Pounds</b>	
Nitrogen	-	91	-	12.7	-	106	-	1,344	-	98,274.2
Phosphate	-	68	-	6.3	-	60	-	377	-	20,433.3
Potash	-	32	-	15.7	-	80	-	1,248	-	31,924.2
Sulfur	-	60	-	7.4	-	24	-	174	-	8,445.7
<b>Herbicides</b>										
Alachlor	40	18	1.0	1.1	1.99	1.945	2.01	2.119	77.7	31.4
Atrazine	45	33	1.2	1.1	0.60	0.579	0.70	0.649	30.2	17.0
Bentazon	5	-	1.0	-	0.65	-	0.65	-	3.1	-
Carfentrazone-ethyl	19	-	1.2	-	0.02	-	0.02	-	0.4	-
Dimethenamid-P	16	8	1.4	1.0	0.68	0.603	0.96	0.611	14.6	3.7
EPTC	-	6	-	1.0	-	3.592	-	3.592	-	16.2
Glyphosate iso. salt	15	20	1.1	1.1	0.78	0.704	0.86	0.796	12.2	12.5
Mesotrione	-	6	-	1.0	-	0.090	-	0.095	-	0.4
Methanone	-	14	-	1.0	-	0.014	-	0.014	-	0.2
Nicosulfuron	4	7	1.0	1.2	0.03	0.030	0.03	0.036	0.1	0.2
Pendimethalin	31	30	1.2	1.0	0.56	0.617	0.70	0.634	20.6	15.2
S-Metolachlor	7	12	1.7	1.1	1.31	1.251	2.24	1.327	16.1	12.9
<b>Insecticides</b>										
Bifenthrin	15	-	1.9	-	0.05	-	0.10	-	1.4	-
Chlorpyrifos	7	-	1.1	-	1.12	-	1.24	-	8.8	-
Lambda-cyhalothrin	13	12	2.3	1.6	0.03	0.022	0.07	0.035	0.8	0.3
Permethrin	16	-	2.9	-	0.12	-	0.34	-	5.3	-
Zeta-cypermethrin	33	41	2.7	1.8	0.04	0.032	0.10	0.058	3.3	1.9

1/ Planted acres in 2004 and 2006 for Washington were 96,100 acres and 80,200 acres respectively.

2/ Insufficient reports to publish data for the following agricultural chemicals: 2004: Herbicides: 2,4-D, Dimeth. salt, Bromoxynil, Dimethenamid, EPTC, Fluroxypyr, MCPA, Metribuzin, Paraquat. Insecticides: Chlorethoxyfos, Dimethoate, Esfenvalerate, Tefluthrin. Fungicides: Azoxystrobin. Other Chemicals: Monocarbamide dihyd. 2006: Herbicides: 2,4-D, dimeth. salt, Bromoxynil octanoate, Carfentrazone-ethyl, Dicamba, sodium salt, Fluroxypyr, MCPA, 2-ethylhexyl, Metolachlor. Insecticides: Bifenthrin, Chlorethoxyfos, Chlorpyrifos, Cyfluthrin, Esfenvalerate, Permethrin, Petroleum distillate, Spinosad, Tefluthrin.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical.

Note: Data may not multiple across due to rounding.

**Sweet Corn, Processing: Agricultural Chemical Applications, Program States, 2004 & 2006 1/**

Active Ingredient 2/	Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
<b>Fertilizers</b>	<b>Percent</b>		<b>Number</b>		<b>Pounds Per Acre</b>				<b>1,000 Pounds</b>	
Nitrogen	-	94	-	9.5	-	79	-	746	-	253,209.3
Phosphate	-	78	-	5.4	-	50	-	267	-	73,065.8
Potash	-	64	-	6.5	-	83	-	543	-	124,896.6
Sulfur	-	33	-	7.2	-	20	-	142	-	16,871.0
<b>Herbicides</b>										
2, 4-D	1	-	1.4	-	0.38	-	0.52	-	1.7	-
Alachlor	23	5	1.1	1.1	1.97	1.950	2.16	2.106	178.1	36.0
Atrazine	69	62	1.1	1.1	0.64	0.585	0.72	0.616	181.9	132.0
Bentazon	31	20	1.0	1.0	0.55	0.388	0.56	0.389	64.2	26.9
Carfentrazone-ethyl	13	10	1.1	1.0	0.01	0.010	0.01	0.011	0.7	0.4
Clopyralid	-	1	-	1.2	-	0.067	-	0.079	-	0.4
Dimethenamid	2	1	1.0	1.0	1.23	1.025	1.24	1.046	8.6	5.3
Dimethenamid-P	15	23	1.2	1.0	0.77	0.829	0.89	0.841	48.4	66.7
EPTC	7	3	1.0	1.0	3.35	3.788	3.38	3.796	84.0	39.6
Fluroxypyr	2	-	1.3	-	0.07	-	0.09	-	0.6	-
Glyphosate iso. salt	8	11	1.1	1.1	0.75	0.778	0.85	0.834	25.9	31.1
Mesotrione	-	18	-	1.0	-	0.126	-	0.130	-	8.2
Methanone	-	5	-	1.0	-	0.015	-	0.015	-	0.2
Metolachlor	1	2	1.3	1.0	1.20	1.138	1.51	1.138	4.7	7.0
Nicosulfuron	10	11	1.0	1.1	0.03	0.029	0.03	0.030	1.0	1.1
Paraquat	1	-	1.0	-	0.49	-	0.50	-	1.4	-
Pendimethalin	10	9	1.2	1.0	0.61	0.673	0.74	0.687	27.2	21.5
S-Metolachlor	30	37	1.1	1.0	1.50	1.420	1.66	1.477	176.8	184.3
Sethoxydim	-	1	-	1.0	-	0.296	-	0.296	-	1.0
Simazine	2	-	1.0	-	0.87	-	0.90	-	5.8	-
<b>Insecticides</b>										
Bifenthrin	8	51	2.0	2.6	0.05	0.039	0.09	0.100	2.6	17.6
Chlorethoxyfos	1	-	1.0	-	0.19	-	0.19	-	0.6	-
Chlorpyrifos	4	3	1.1	1.0	1.20	0.889	1.34	0.921	17.8	9.9
Cyfluthrin	*	-	1.0	-	0.02	-	0.02	-	**	-
Esfenvalerate	1	1	1.9	1.0	0.03	0.039	0.06	0.040	0.2	0.1
Ethoprop	1	1	1.0	1.0	0.96	0.721	0.99	0.721	5.2	2.4
Lambda-cyhalothrin	37	5	2.7	1.4	0.02	0.022	0.07	0.032	8.9	0.5
Permethrin	6	-	2.5	-	0.12	-	0.30	-	6.4	-
Tebupirimphos	*	-	1.0	-	0.13	-	0.13	-	0.1	-
Tefluthrin	2	2	1.0	1.0	0.13	0.135	0.13	0.135	0.9	0.9
Zeta-cypermethrin	17	12	2.7	1.7	0.04	0.031	0.11	0.053	6.7	2.2
<b>Fungicides</b>										
Azoxystrobin	15	5	1.5	1.2	0.09	0.113	0.13	0.141	7.0	2.6
Propiconazole	10	2	1.3	1.2	0.09	0.112	0.11	0.132	3.9	0.8
Pyraclostrobin	-	2	-	1.5	-	0.099	-	0.145	-	1.2

\* Area applied is less than 0.5 percent. \*\* Total applied is less than 50 pounds.

1/ Planted acres in 2004 for the 5 major states were 362,800, and planted acres in 2006 for the 5 major states were 346,100 . States included in 2004 and 2006 were MN, NY, OR, WA, & WI.

2/ Insufficient reports to publish data for the following agricultural chemicals: 2004: Herbicides: Dimeth. salt, Acetic acid (2,4-D), Ametryn, Bromoxynil, Clomazone, Clopyralid, Cyanazine, Dicamba, Ethalfluralin, Glyphosate diam salt, Halosulfuron, MCPA, MCPB, Metribuzin. Insecticides: Dimethoate, Malathion, Methomyl, Methyl parathion, Mevinphos, Petroleum distillate. Fungicides: Captan, Mancozeb, Thiophanate-methyl. Other Chemicals: Aminopyridine, Garlic oil, Monocarbamide dihyd. 2006: Herbicides: 2,4-D, BEE, 2,4-D, dimeth. salt, Bromoxynil octanoate, Dicamba, sodium salt, Diflufenzopyr-sodium, Fluroxypyr, Halosulfuron, Imazethapyr, MCPA, 2-ethylhexyl, Paraquat, Simazine, Sulfosate. Insecticides: Azadirachtin, Chlorethoxyfos, Cyfluthrin, Methomyl, Mevinphos, Permethrin, Petroleum distillate, Phosmet, Pyrethrins, Spinosad.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical.

Note: Data may not multiple across due to rounding.