



AGRICULTURAL CHEMICAL USE

VEGETABLE CROPS 2010
(July 27, 2011)

Overview

The National Agricultural Statistics Service (NASS) Agricultural Chemical Use Program is the U.S. Department of Agriculture's official source of statistics about on-farm and post-harvest fertilizer and pesticide use and pest management practices.

In the fall of 2010, NASS collected data about fertilizer, chemical use and pest management practices on 29 vegetable crops in 19 states. These data were collected as part of the biennial vegetable chemical usage program, and results are based on 3,272 individual responses.

Target Crops by State, 2010 Vegetable Chemical Use Survey

(PR) Processing (FM) Fresh Market	AZ	CA	CO	FL	GA	IL	MI	MN	NJ	NY	NC	OH	OR	PA	SC	TN	TX	WA	WI	No. of States
Asparagus		X					X											X		3
Snap Beans, (FM)		X		X	X					X	X					X				6
Snap Beans, (PR)						X	X			X			X	X					X	6
Broccoli		X																		1
Cabbage (FM)		X		X	X					X	X						X		X	7
Cantaloupes	X	X															X			3
Carrots (FM)		X					X										X			3
Carrots (PR)		X						X										X	X	4
Cauliflower		X																		1
Celery		X																		1
Sweet Corn, (FM)		X	X	X	X	X	X		X	X	X	X	X	X			X		X	14
Sweet Corn, (PR)								X					X					X	X	4
Cucumbers, (FM)		X		X	X		X		X	X	X									7
Cucumbers, (PR)				X			X				X	X			X		X		X	7
Eggplant									X											1
Garlic		X																		1
Honeydews	X	X																		2
Lettuce, Head	X	X																		2
Lettuce, Other	X	X																		2
Onions		X			X					X			X				X	X	X	7
Green Peas, (PR)								X					X					X	X	4
Bell Peppers		X		X	X				X		X									5
Pumpkins		X				X	X					X		X						5
Spinach (FM)	X	X															X			3
Squash		X		X	X		X		X	X	X									7
Strawberries		X		X									X					X		4
Tomatoes (FM)		X		X	X				X		X	X				X				7
Tomatoes (PR)		X																		1
Watermelons	X	X		X	X						X				X		X			7
No. of Crops	6	24	1	10	9	3	8	3	6	7	9	4	6	3	2	2	8	6	8	



Fertilizers

Of the three primary macronutrients, nitrogen (N) was applied to 98 percent of sweet corn (FM) acreage at an average rate of 166 pounds per acre for the 2010 crop year. Macronutrients phosphate (P) and potash (K) were applied to 93 and 77 percent of the sweet corn acreage at an average rate of 91 and 116 pounds per acre, respectively. The secondary macronutrient, sulfur (S), was applied to 26 percent of acres at a rate of 26 pounds per acre. Fresh market sweet corn was surveyed in more program states than any other vegetable commodity.

Nitrogen was applied to 98 percent of the tomato (FM) acreage at an average rate of 142 pounds per acre for the crop year. Phosphate and potash were applied to 89 and 93 percent of the acreage at an average rate of 111 and 182 pounds per acre, respectively. Sulfur applications were made on 30 percent of the acreage at an average rate of 47 pounds per acre.

Watermelon growers applied nitrogen to 99 percent of the acreage; phosphate, 91 percent; potash 88 percent; and sulfur 25 percent. The average rates per crop year for nitrogen, phosphate, potash and sulfur were 138, 112, 131 and 18 pounds per acre, respectively.

Pesticides

Onion growers applied insecticides to 75 percent of the surveyed acreage. The more commonly used insecticides were Methomyl and Chlorpyrifos on 37 and 30 percent of the acreage, respectively. The average rates per application per crop year for these insecticides were 1.311 and 1.331 pounds per acre, respectively.

Fungicides were applied to 85 percent of the program states' cucumber (FM) acreage in 2010. Chlorothalonil was the most utilized fungicide with 62 percent of the planted acreage being treated at an average rate of 5.427 pounds per acre per crop year. Propamocarb hydrochloride

Fertilizers: Applications to Sweet Corn (FM), Onions, Watermelons, Cucumbers (FM) and Tomatoes (FM) Planted Acres, 2010 Program States

	Fertilizer Nutrient	Acres Treated (%)	Rate per Crop Year (Lbs/Acre)	Total Applied (Lbs)
Sweet Corn (FM)	Nitrogen	98	166	35,519,100
	Phosphate	93	91	18,391,800
	Potash	77	116	19,391,800
	Sulfur	26	26	1,504,300
Onions	Nitrogen	97	196	23,135,300
	Phosphate	71	131	11,267,700
	Potash	67	136	11,349,800
	Sulfur	28	29	1,038,300
Watermelons	Nitrogen	99	138	15,290,600
	Phosphate	91	112	11,507,000
	Potash	88	131	12,857,000
	Sulfur	25	18	511,100
Cucumbers (FM)	Nitrogen	94	117	4,430,300
	Phosphate	66	52	1,401,200
	Potash	82	155	5,147,000
	Sulfur	8	20	614,000
Tomatoes (FM)	Nitrogen	98	142	12,648,300
	Phosphate	89	111	8,781,500
	Potash	93	182	15,176,600
	Sulfur	30	47	1,266,300

was the second most commonly utilized fungicide, applied to 31 percent of acreage. It was

applied at an average rate of 1.414 pounds per acre per crop year.

Top Insecticides Used by Percent Acres Treated, 2010 Program States

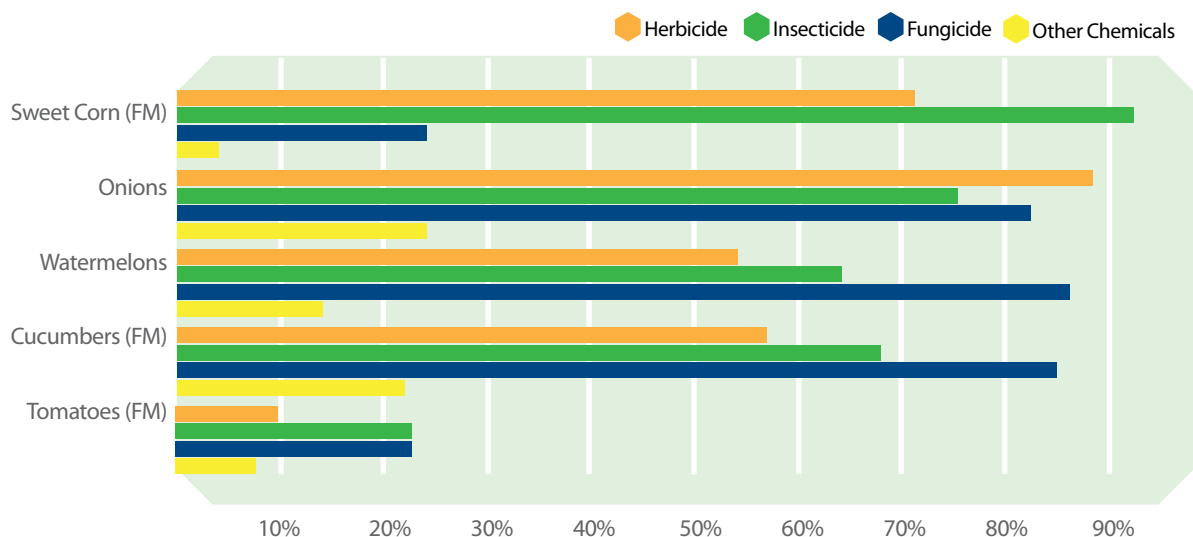
	Insecticide Active Ingredient	Acres Treated (%)	Rate per Crop Year (Lbs/Acre)	Total Applied (Lbs)
Sweet Corn (FM)	Methomyl	60	2.87	371,600
	Lambda-cyhalothrin	37	0.128	10,100
Onions	Methomyl	37	1.311	59,500
	Chlorpyrifos	30	1.331	51,100
Watermelons	Imidacloprid	20	0.288	6,400
	Methoxyfenozide	14	0.267	4,200
Cucumbers (FM)	Bt subsp. kurstaki	19	N/A	N/A
	Methomyl	15	1.138	6,700
Tomatoes (FM)	Zeta-cypermethrin	37	0.101	3,400
	Imidacloprid	33	0.376	11,200

Rates and total applied data are not available for the active ingredient *Bacillus thuringiensis subsp.kurstaki* because amounts of active ingredient are not comparable between products.

Top Fungicides Used by Percent Acres Treated, 2010 Program States

	Fungicide Active Ingredient	Acres Treated (%)	Rate per Crop Year (Lbs/Acre)	Total Applied (Lbs)
Sweet Corn (FM)	Mancozeb	14	4.94	148,300
	Propiconazole	8	0.491	8,900
Onions	Mancozeb	56	3.091	240,300
	Copper Hydroxide	50	1.441	88,600
Watermelons	Chlorothalonil	60	4.854	328,600
	Mancozeb	49	5.454	301,500
Cucumbers (FM)	Chlorothalonil	62	5.427	135,300
	Propamocarb hydrochloride	31	1.414	17,500
Tomatoes (FM)	Chlorothalonil	65	6.087	356,700
	Copper hydroxide	62	4.146	232,600

Pesticides: Percent of Acres Treated, 2010 Program States



Pest Management Practices

Vegetable growers reported using several management practices to aid in the deterrence of pests through prevention, avoidance, monitoring and suppression strategies. The most commonly reported pest management practice for prevention was field edges, ditches or fences were chopped, sprayed, mowed, plowed or burned, used by 72 percent of the vegetable farms on 78 percent of the acres treated.

For avoidance practices, rotating crops during the past 3 years was used by the majority of vegetable farms, 81 percent, on 83 percent of the acreage. For monitoring practices, scouting for insects and mites were the most commonly used scouting practices, used on 93 percent of the vegetable farms on 99 percent of the acres treated.

The most frequently used pest suppression practice was to maintain ground covers, mulches or physical barriers. This practice was used on 48 percent of the vegetable farms. Alternating pesticides with different methods of application was used on 69 percent of the acreage.

Top Pest Management Practices, by Percent of Farms Utilizing Practice, 2010 Program States

	Top Practice	%
Prevention	Field edges, ditches or fence lines were chopped, sprayed, mowed, plowed or burned	72
Avoidance	Rotated crops during past 3 years	81
Monitoring	Scouted for insects and mites	93
Suppression	Ground covers, mulches, or other physical barriers maintained	48

Top Pest Management Practices, by Percent of Acres Utilizing Practice, 2010 Program States

	Top Practice	%
Prevention	Field edges, ditches or fence lines were chopped, sprayed, mowed, plowed, or burned	78
Avoidance	Rotated crops during past 3 years	83
Monitoring	Scouted for insects and mites	99
Suppression	Pesticides with different mechanisms of action used to keep pest from becoming resistant to pesticides	69

For More Information

Data Summary Published to Quick Stats 2.0 on July 27, 2011

The 2010 agricultural chemical use data for vegetables are available through the Quick Stats 2.0 database on the NASS website: www.nass.usda.gov.

To access the database directly, go to '<http://quickstats.nass.usda.gov>' and select the following options:

- Under Program, select 'Survey'
- Under Sector, select 'Environmental'
- Under Group, select 'Vegetables'
- Under Commodity, select the particular vegetable you are interested in

