



Wisconsin Ag News – Chemical Use

Corn and Soybeans: Fall 2018

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Cooperating with Wisconsin Department of Agriculture, Trade and Consumer Protection

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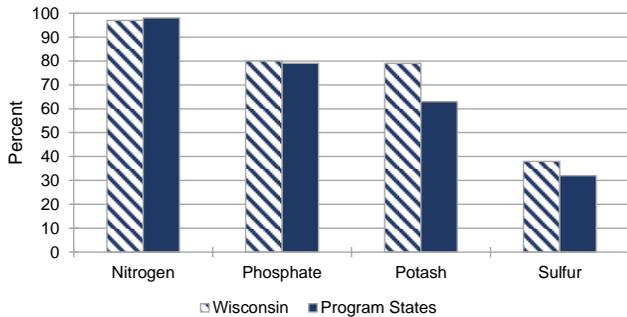
The National Agricultural Statistics Service (NASS) Agricultural Chemical Use Program is the U.S. Department of Agriculture’s official source of statistics about on-farm and post-harvest fertilizer and pesticide use and pest management practices.

In the fall of 2018, NASS collected data for the 2018 crop year, the one-year period beginning after the 2017 harvest and ending after the 2018 harvest, about chemical use and pest management practices used on corn and soybean production. The data was collected as part of the Agricultural Resource Management Survey (ARMS) and the results are presented here.

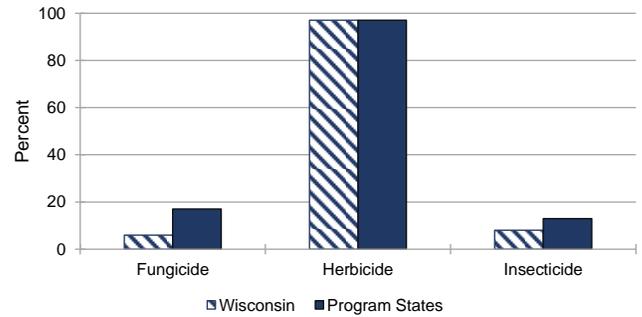
Fertilizer Use: Of the three primary macronutrients, nitrogen (N) was the most widely used on corn. Wisconsin farmers applied nitrogen to 97 percent of planted acres at an average rate of 113 pounds per acre per year. Macronutrients phosphate (P) and potash (K) were applied to the majority of acres, at an average rate of 37 and 76 pounds per acre per year, respectively. The secondary macronutrient, sulfur (S), was applied to 38 percent of acres planted to corn.

Pesticide Use: Herbicide active ingredients were applied to 97 percent of the corn acres planted in Wisconsin. Atrazine was the most widely used pesticide overall applied to 49 percent of the planted acres. S-Metolachlor was the active ingredient with the greatest total amount applied in Wisconsin. Fungicide and insecticide active ingredients were applied to 6 percent and 8 percent of corn acres planted, respectively.

**Fertilizers, Corn Planted Acres Treated
Wisconsin and Program States: 2018**



**Pesticides, Corn Planted Acres Treated
Wisconsin and Program States: 2018**



Fertilizer Use On Corn – Wisconsin and Program States: 2018

Active ingredient	Wisconsin			Program states ¹		
	Planted acres treated (percent)	Yearly rate (lbs per acre)	Total applied (1,000 lbs)	Planted acres treated (percent)	Yearly rate (lbs per acre)	Total applied (1,000 lbs)
Nitrogen	97	113	426,200	98	149	12,007,300
Phosphate	80	37	116,600	79	69	4,510,500
Potash	79	76	232,200	63	87	4,525,900
Sulfur	38	20	29,900	32	18	468,400

Pesticide Use On Corn – Wisconsin and Program States: 2018

Active ingredient	Wisconsin			Program states ¹		
	Planted acres treated (percent)	Yearly rate (lbs per acre)	Total applied (1,000 lbs)	Planted acres treated (percent)	Yearly rate (lbs per acre)	Total applied (1,000 lbs)
Fungicide:						
Total ²	6		30	17		3,775
Herbicide³:						
Acetochlor	24	1.310	1,219	33	1.433	38,757
Atrazine	49	0.642	1,223	65	1.037	55,899
Bicyclopyrone	17	0.030	19	9	0.031	226
Dicamba, sodium salt	11	0.088	38	8	0.103	660
Flumetsulam	14	0.032	18	10	0.031	267
Glyphosate iso. salt	42	0.830	1,375	34	0.993	27,691
Glyphosate pot. salt	28	0.848	942	26	1.187	25,306
Mesotrione	38	0.115	173	42	0.121	4,177
S-Metolachlor	31	1.151	1,389	29	1.198	28,259
Total	97		7,344	97		214,721
Insecticide:						
Total ²	8		21	13		2,087

¹ The 18 program states surveyed about corn in the 2018 ARMS were Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, and Wisconsin.

² Total Fungicide, Herbicide, and Insecticide includes pesticides that are not listed in this table.

³ Given the large number of herbicides applied to row crops, active ingredients that were applied to less than 10 percent of planted acres in Wisconsin are not included in this table, but can be found at www.nass.usda.gov.

The 2018 Agricultural Chemical Use Survey of soybean producers collected data about fertilizer and pesticide use as well as pest management practices in growing soybeans.

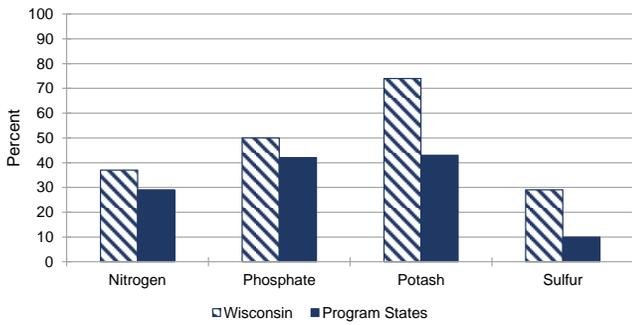
Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients, primarily nitrogen (N), phosphate (P₂O₅), and potash (K₂O). Of the three primary macronutrients, potash was the most widely used on soybean acres planted in Wisconsin. Farmers applied potash to 74 percent of planted acres at an average rate of 106 pounds per acre per year. Macronutrients nitrogen and phosphate were applied at an average rate of 20 and 63 pounds per acre per year, respectively. The secondary macronutrient, sulfur, was applied to 29 percent of acres planted to soybeans.

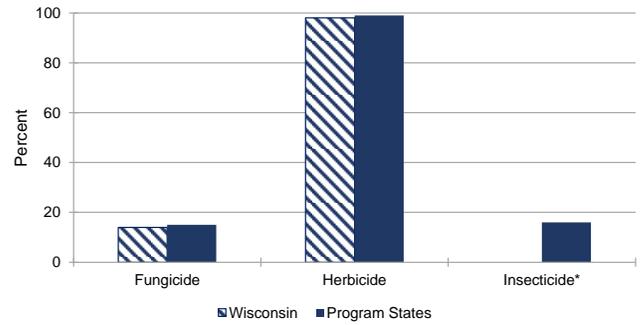
Pesticide Use

The pesticide active ingredients used on soybeans are classified in this report as herbicides (targeting weeds), insecticides (targeting insects), and fungicides (targeting fungal disease). Herbicide active ingredients were applied to 98 percent of the soybean acres planted. Glyphosate isopropylamine was the most widely used pesticide on soybean acres, and was also the active ingredient with the greatest total amount applied. Fungicides were applied to 14 percent of soybean acres planted in Wisconsin.

Fertilizers, Percent of Soybean Planted Acres Treated Wisconsin and Program States: 2018



Pesticides, Percent of Soybean Planted Acres Treated Wisconsin and Program States: 2018



*Wisconsin insecticide data withheld to avoid disclosing data for individual operations.

Fertilizer Use On Soybeans – Wisconsin and Program States: 2018

Active ingredient	Wisconsin			Program states ¹		
	Planted acres treated (percent)	Yearly rate (lbs per acre)	Total applied (1,000 lbs)	Planted acres treated (percent)	Yearly rate (lbs per acre)	Total applied (1,000 lbs)
Nitrogen	37	20	15,900	29	17	416,400
Phosphate	50	63	70,000	42	55	1,974,300
Potash	74	106	171,900	43	87	3,221,400
Sulfur	29	19	11,700	10	13	111,500

Pesticide Use On Soybeans – Wisconsin and Program States: 2018

Active ingredient	Wisconsin			Program states ¹		
	Planted acres treated (percent)	Yearly rate (lbs per acre)	Total applied (1,000 lbs)	Planted acres treated (percent)	Yearly rate (lbs per acre)	Total applied (1,000 lbs)
Fungicide:						
Total ²	14		49	15		3,709
Herbicide ³:						
Glyphosate iso. salt	67	1.053	1,552	47	1.202	48,256
Glyphosate pot. salt	31	1.322	905	28	1.527	36,651
Imazethapyr	10	0.036	8	12	0.047	464
Metribuzin	13	0.193	57	19	0.270	4,419
S-Metolachlor	18	1.416	566	18	1.283	19,439
Total ²	98		3,705	99		184,060
Insecticide:						
Total ²	(D)		(D)	16		2,304

¹ The 19 program states surveyed about soybeans in the 2018 ARMS were Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, South Dakota, Tennessee, Virginia, and Wisconsin.

² Total Fungicide, Herbicide, and Insecticide includes pesticides that are not listed in this table.

³ Given the large number of herbicides applied to row crops, active ingredients that were applied to less than 10 percent of planted acres in Wisconsin are not included in this table, but can be found at www.nass.usda.gov.

(D) Withheld to avoid disclosing data for individual operations.

Scouting for weeds was the top pest management practice on corn and soybean acreage.

Pest Management Practices – Wisconsin and Program States: 2018

	Wisconsin				Program states			
	Corn		Soybeans		Corn ¹		Soybeans ²	
	% of area planted	% of operations	% of area planted	% of operations	% of area planted	% of operations	% of area planted	% of operations
Avoidance								
Crop or plant variety chosen for specific pest resistance	63	64	55	49	58	54	53	50
Planting locations planned to avoid cross infestation of pests	23	23	19	11	20	19	15	13
Planting or harvesting dates adjusted	15	16	25	17	21	19	17	17
Rotated crops during past 3 years	82	85	90	84	84	85	77	74
Row spacing, plant density, or row directions adjusted	7	6	22	21	18	15	21	19
Monitoring								
Diagnostic laboratory services used for pest detection via soil or plant tissue analysis	12	17	4	4	9	9	5	4
Field mapping data used to assist decisions	32	36	14	16	19	18	12	10
Scouted-								
established process used	30	27	28	18	23	20	22	19
for pests due to a pest advisory warning	8	3	13	8	11	9	13	11
for pests due to a pest development model	6	3	16	9	11	9	9	8
for pests or beneficial organisms-not scouted	10	13	6	12	4	8	4	6
for pests or beneficial organism by conducting general observations while performing routine tasks	14	24	19	22	30	32	26	31
for pests or beneficial organism by deliberately going to the crop acres or growing areas	75	63	74	66	66	60	71	63
Scouted for diseases-								
by employee	79	66	85	73	84	76	85	80
by farm supply company or chemical dealer	6	3	3	2	2	2	1	1
by independent crop consultant or commercial scout	21	22	13	15	12	14	12	13
by operator, partner, or family member	23	27	19	13	15	13	17	13
by operator, partner, or family member	49	49	65	71	71	71	69	74
Scouted for insects & mites-								
by employee	77	68	85	79	84	76	88	84
by farm supply company or chemical dealer	8	3	3	2	2	2	1	1
by independent crop consultant or commercial scout	22	22	13	13	12	14	12	13
by operator, partner, or family member	24	26	19	11	15	13	17	12
by operator, partner, or family member	46	50	65	73	71	71	70	74
Scouted for weeds-								
by employee	90	87	93	88	94	90	94	92
by farm supply company or chemical dealer	6	2	3	2	2	2	1	1
by independent crop consultant or commercial scout	20	18	17	17	11	12	11	12
by operator, partner, or family member	21	21	16	8	14	12	15	11
by operator, partner, or family member	53	60	65	73	73	75	72	76
Weather data used to assist decisions	72	66	80	75	66	66	66	65
Written or electronic records kept to track pest activity	42	37	27	17	43	38	36	31
Prevention								
Beneficial insect or vertebrate habitat maintained	9	5	4	4	11	9	5	5
Crop residues removed or burned down	6	7	3	7	8	11	11	14
Equipment & implements cleaned after field work to reduce spread of pests	21	18	31	33	43	40	40	39
Field edges, ditches, or fence lines were chopped, sprayed, mowed, plowed, or burned	29	31	37	29	56	50	52	49
Field left fallow previous year to manage insects	3	3	0	0	1	1	(Z)	(Z)
Flamer used to kill weeds	1	2	0	0	(Z)	1	(Z)	(Z)
No-till or minimum-till used	76	64	72	68	65	65	64	67
Plowed down crop residue using conventional tillage	26	43	29	27	27	29	20	19
Seed treated for insect or disease control after purchase	18	18	29	15	24	22	33	28
Water management practices used	1	1	0	0	6	4	4	2
Suppression								
Beneficial organisms applied or released	(Z)	(Z)	3	3	1	1	1	1
Biological pesticides applied	3	2	3	2	11	9	3	3
Buffer strips or border rows maintained to isolate organic from non-organic crops	10	13	2	1	8	10	5	5
Floral lures, attractants, repellants, pheromone traps, or biological pest controls used	0	0	0	0	1	(Z)	(Z)	(Z)
Ground covers, mulches, or other physical barriers maintained	46	48	23	17	45	44	34	32
Pesticides with different mechanisms of action to keep pest from becoming resistant to pesticides	35	38	38	31	44	41	40	38
Scouting data compared to published information to assist decisions	23	24	23	28	28	26	28	23
Trap crop grown to manage insects	2	2	0	0	1	1	(Z)	(Z)

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(Z) Less than half the rounding unit.