



Iowa Ag News – Chemical Use

Corn: Fall 2021



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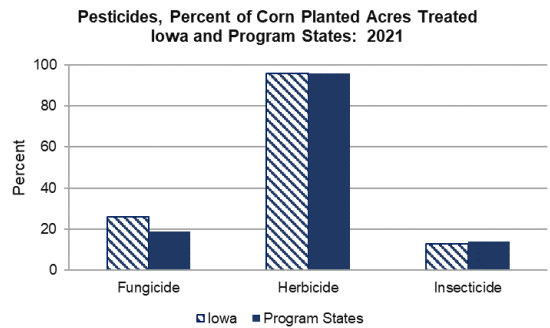
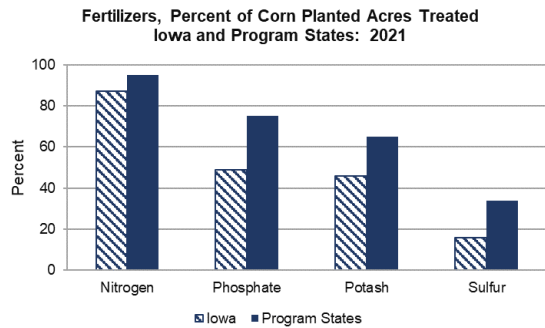
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The National Agricultural Statistics Service (NASS) Agricultural Chemical Use Program is the U.S. Department of Agriculture's official source of statistics about on-farm and post-harvest fertilizer and pesticide use and pest management practices.

In the fall of 2021, NASS collected data for the 2021 crop year, the one-year period beginning after the 2020 harvest and ending after the 2021 harvest, about chemical use and pest management practices used on corn 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. Iowa farmers applied nitrogen to 87 percent of planted acres at an average rate of 149 pounds per acre per year. Macronutrients phosphate (P₂O₅) and potash (K₂O) were applied to roughly half of corn acres, at an average rate of 64 and 89 pounds per acre per year, respectively. The secondary macronutrient, sulfur (S), was applied to 16 percent of acres planted to corn.

Pesticide Use: Herbicide active ingredients were applied to 96 percent of the corn acres planted in Iowa. Atrazine was the most widely used pesticide overall applied to 69 percent of the planted acres. Acetochlor was the active ingredient with the greatest total amount applied in Iowa. Fungicide and insecticide active ingredients were applied to 26 percent and 13 percent of corn acres planted, respectively.



Pesticide Use on Corn - Iowa and Program States: 2021

Active ingredient	Iowa			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						
Azoxystrobin	13	0.093	155	7	0.095	603
Propiconazole	13	0.100	166	7	0.097	605
Prothioconazole	9	0.115	138	4	0.089	281
Trifloxystrobin	9	0.101	121	4	0.085	273
Total ²	26		786	19		3,454
Herbicide ³						
Acetochlor	48	1.342	8,306	34	1.415	41,675
Atrazine	69	0.861	7,663	65	1.054	59,180
Clopyralid	14	0.078	143	15	0.084	1,055
Glyphosate	11	0.738	1,057	11	1.303	12,691
Glyphosate iso. salt	25	0.805	2,600	41	0.934	32,934
Glyphosate pot. salt	24	0.929	2,920	25	1.237	26,812
Mesotrione	47	0.114	699	47	0.132	5,343
S-Metolachlor	16	0.856	1,799	27	1.154	27,002
Total ²	96		29,390	96		237,818
Insecticide						
Bifenthrin	7	0.065	58	6	0.081	430
Total ²	13		175	14		1,099

¹ The 19 program states surveyed about corn in the 2021 ARMS were Colorado, Georgia, 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 include pesticides not listed in the table.

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

Fertilizer Use on Corn - Iowa and Program States: 2021

Active ingredient	Iowa			Program states ¹		
	Planted acres treated	Yearly rate	Total applied	Planted acres treated	Yearly rate	Total applied
	(percent)	(lbs per acre)	(1,000 lbs)	(percent)	(lbs per acre)	(1,000 lbs)
Nitrogen	87	149	1,669,300	95	150	12,299,300
Phosphate	49	64	403,000	75	64	4,132,400
Potash	46	89	533,400	65	77	4,291,200
Sulfur	16	15	30,300	34	19	537,000

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Rotating crops during the past 3 years was the top pest management practice on corn acreage in Iowa.

Pest Management Practices on Corn - Iowa and Program States: 2021

	Iowa		Program states ¹	
	% of area planted	% of operations	% of area planted	% of operations
Avoidance				
Crop or plant variety chosen for specific pest resistance	59	56	60	54
Planting locations planned to avoid cross infestation of pests	8	14	12	11
Planting or harvesting dates adjusted	6	4	11	10
Rotated crops during past 3 years	72	79	79	77
Row spacing, plant density, or row directions adjusted	5	8	8	8
Monitoring				
Diagnostic laboratory services used for pest detection via soil or plant tissue analysis	0	0	5	4
Field mapping data used to assist decisions	18	18	18	12
Scouted -				
established process used	18	6	17	12
for pests due to a pest advisory warning	28	28	11	11
for pests due to a pest development model	3	1	8	8
for pests or beneficial organisms-not scouted	15	19	11	15
for pests or beneficial organism by conducting general observations while performing routine tasks	39	41	29	33
for pests or beneficial organism by deliberately going to the crop acres or growing areas	46	40	60	53
Weather data used to assist decisions	43	34	58	55
Written or electronic records kept to track pest activity	51	33	36	30
Prevention				
Beneficial insect or vertebrate habitat maintained	1	5	6	7
Crop residues removed or burned down	2	4	7	9
Equipment and implements cleaned after field work to reduce spread of pests				
Field edges, ditches, or fence lines chopped, sprayed, mowed, plowed, or burned	48	35	41	38
Field left fallow previous year to manage insects	52	48	42	39
Flamer used to kill weeds	4	8	1	2
No-till or minimum-till used	0	0	(Z)	1
Plowed down crop residue using conventional tillage	51	67	59	61
Seed treated for insect or disease control after purchase	39	25	27	26
Water management practices used	12	14	14	12
	0	0	1	1
Suppression				
Beneficial organisms applied or released	0	0	(Z)	(Z)
Biological pesticides applied	8	6	5	5
Buffer strips or border rows maintained to isolate organic from non-organic crops				
Floral lures, attractants, repellants, pheromone traps, or biological pest controls used	1	1	2	4
Ground covers, mulches, or other physical barriers maintained	3	2	(Z)	(Z)
Pesticides with different mechanisms of action to keep pest from becoming resistant to pesticides	44	51	37	33
Scouting data compared to published information to assist decisions	35	28	43	38
Trap crop grown to manage insects	11	14	23	22
	3	2	1	(Z)

(Z) Less than half of the unit shown.
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