NASS *Highlights*

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2021 AGRICULTURAL CHEMICAL USE SURVEY

Corn

Nineteen states. . .

. . . accounted for 92.1% of U.S. acres planted to corn in 2021.

About the Survey

The Agricultural Chemical Use Program of USDA's National Agricultural Statistics Service (NASS) is the federal government's official source of statistics about on-farm and post-harvest commercial fertilizer and pesticide use and pest management practices. NASS conducts field crop agricultural chemical use surveys in cooperation with USDA's Economic Research Service as part of the Agricultural Resource Management Survey. NASS conducted the corn chemical use survey in the fall of 2021.

Access the Data

Access 2021 and earlier corn chemical use data through the Quick Stats database (http://quickstats.nass.usda.gov).

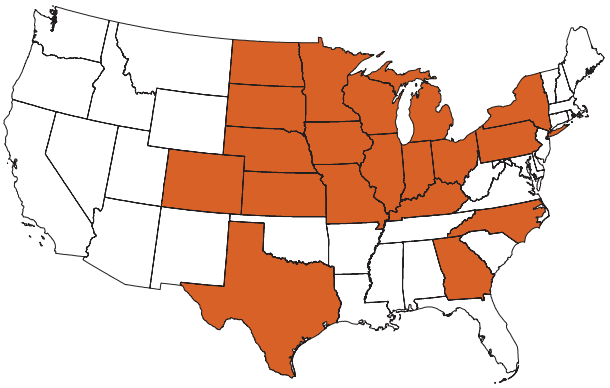
- In Program, select "Survey"
- In Sector, select "Environmental"
- In Group, select "Field Crops"
- In Commodity, select "Corn"
- Select your category, data item, geographic level, and year

For pre-defined Quick Stats queries, go to http://bit.ly/AgChem and click "Data Tables" under the 2021 Corn, Cotton, and Rice heading. For methodology information, click "Methodology."

The 2021 Agricultural Chemical Use Survey of corn producers collected data about fertilizer and pesticide use as well as pest management practices for corn production. NASS conducted the survey in 19 states that accounted for 92.1% of the 93.4 million acres planted to corn in the United States in 2021: Colorado, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, and Wisconsin. (Fig. 1)

The data are for the 2021 crop year, the one-year period beginning after the 2020 harvest and ending with the 2021 harvest. (Table 4)

Fig. 1. States in the 2021 Corn Chemical Use Survey



Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients. For the 2021 crop year, farmers applied nitrogen to 95% of planted acres, at an average rate of 150 pounds per acre, for a total of 12.3 billion pounds. Farmers applied phosphate to 75% of planted acres, potash to 65%, and sulfur to 34% of planted acres. (Table 1)

Table 1. Fertilizer Applied to Corn Planted Acres, 2021 Crop Year

	% of Acres with Nutrient[a]	Average Rate (lbs/acre)	Total Applied (bil lbs)
Nitrogen (N)	95	150	12.3
Phosphate (P_2O_5)	75	64	4.1
Potash (K_2O)	65	77	4.3
Sulfur (S)	34	19	0.5

[a]*Acres with multiple nutrients are counted in each category.*

Pesticide Use

The pesticide active ingredients used on corn are classified as herbicides (targeting weeds), insecticides (targeting insects), fungicides (targeting fungal disease), or other chemicals (targeting all other pests and other materials, including extraneous crop foliage). Herbicides were used most extensively, applied to 96% of planted acres. Fungicides and insecticides were applied to 19% and 14% of planted acres, respectively. (Fig. 2)

Among herbicides, atrazine was the most widely used active ingredient (applied to 65% of planted acres), followed by mesotrione (47%) and glyphosate isopropylamine salt (41%). (Table 2)

Fig. 2. Pesticides Applied to Corn Planted Acres, 2021 Crop Year
(% of planted acres)

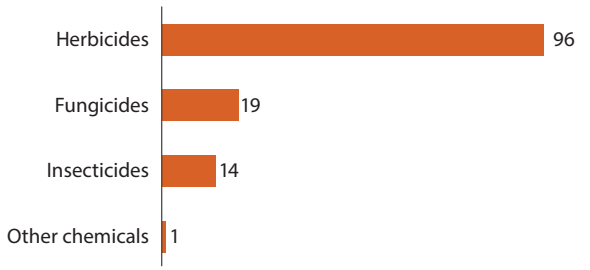


Table 2. Top Herbicides Applied to Corn Planted Acres, 2021 Crop Year

Active Ingredient	% of Acres with Ingredient[a]	Average Rate (lbs/acre)	Total Applied (mil lbs)
Atrazine	65	1.054	59.1
Mesotrione	47	0.132	5.3
Glyphosate isopropylamine salt	41	0.934[b]	32.9[b]
Acetochlor	34	1.415	41.7
S-Metolachlor	27	1.154	27.0

[a]*Acres with multiple ingredients are counted in each category.*
[b]*Expressed in acid equivalent.*

Pest Management Practices

The survey asked growers to report on the practices they used to manage pests, defined as weeds, insects, or diseases. Corn growers reported practices in four categories: prevention, avoidance, monitoring, and suppression.

- *Prevention,* practices involve actions to keep a pest population from infesting a crop or field.
- *Avoidance,* practices use cultural measures to mitigate or eliminate the detrimental effects of pests.
- *Monitoring,* practices involve observing or detecting pests through systematic sampling, counting, or other forms of scouting.
- *Suppression,* practices involve controlling or reducing existing pest populations to mitigate crop damage.

The most widely used pest prevention practice in growing corn was no till or minimum till, used on 59% of planted acres. The top avoidance practice was rotating crops (79%). Using weather data to assist with pesticide applications was the most widely used monitoring practice (60%) and using pesticides with different mechanisms of action was the top suppression practice (43%). (Table 3)

Table 3. Top Practice in Pest Management Category, 2021
(% of corn planted acres)

Prevention: No till or minimum till	59
Avoidance: Rotated crops during last three years	79
Monitoring: Used weather data to assist with making pesticide applications	60
Suppression: Used pesticides with different mechanisms of action to keep pests from becoming resistant to pesticides	43

Table 4. U.S. and Surveyed States: Acres of Corn Planted, 2021

U.S. Total	Millions of Acres 93.4	% of U.S. 100
Iowa	12.90	13.82
Illinois	11.00	11.78
Nebraska	9.90	10.60
Minnesota	8.40	9.00
South Dakota	6.15	6.59
Kansas	5.70	6.11
Indiana	5.40	5.78
North Dakota	4.10	4.39
Wisconsin	4.00	4.28
Missouri	3.60	3.86
Ohio	3.55	3.80
Michigan	2.35	2.52
Texas	2.15	2.30
Kentucky	1.55	1.66
Colorado	1.38	1.48
Pennsykvania	1.33	1.42
New York	1.05	1.12
North Carolina	0.96	1.03
Georgia	0.48	0.51
Total, Surveyed States	**85.95**	**92.07**

Numbers may not add due to rounding.