

## 2018 AGRICULTURAL CHEMICAL USE SURVEY

# Corn

### Eighteen states . . .

. . . accounted for 93 percent of U.S. acres planted to corn in 2018.

### About the Survey

The Agricultural Chemical Use Program of USDA's National Agricultural Statistics Service 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 2018.

### Access the Data

Access 2018 and earlier corn chemical use data through the Quick Stats database (<https://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 2018 Corn, Peanuts, and Soybeans heading. For methodology information, click "Methodology."

The 2018 Agricultural Chemical Use Survey of corn producers collected data about fertilizer and pesticide use as well as pest management practices in growing corn. NASS conducted the survey in 18 states that accounted for 93 percent of the 89.1 million acres planted to corn in the United States in 2018: Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, and Wisconsin. (Fig. 1 and box on p. 2)

Data are for the 2018 crop year, the one-year period beginning after the 2017 harvest and ending after the 2018 harvest.

**Fig. 1. States in the 2018 Corn Chemical Use Survey**



## Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients. For the 2018 crop year, farmers applied nitrogen to 98 percent of corn planted acres, at an average rate of 149 pounds per acre, for a total of 12.0 billion pounds. (Table 1)

**Table 1. Fertilizer Applied to Corn Planted Acres, 2018 Crop Year**

	% of Acres with Nutrient <sup>a</sup>	Average Rate (lbs/acre)	Total Applied (bil lbs)
Nitrogen (N)	98	149	12.0
Phosphate (P <sub>2</sub> O <sub>5</sub> )	79	69	4.5
Potash (K <sub>2</sub> O)	63	87	4.5
Sulfur (S)	32	18	0.5

<sup>a</sup>Acres with multiple nutrients are counted in each category.

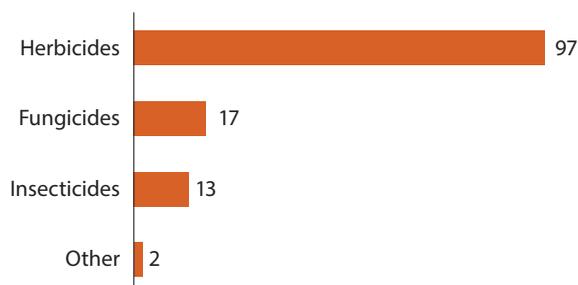


## Pesticide Use

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 97 percent of planted acres. Fungicides and insecticides were applied to 17 and 13 percent of planted acres, respectively. (Fig. 2)

Among herbicides, atrazine was the most widely used active ingredient (applied to 65 percent of planted acres), followed by mesotrione (42 percent) and glyphosate isopropylamine salt (34 percent). (Table 2) Atrazine was also the most widely applied ingredient in the 2014 and 2016 surveys of corn producers.

**Fig. 2. Pesticides Applied to Corn Planted Acres, 2018 Crop Year**  
(% of planted acres)



**Table 2. Top Herbicides Applied to Corn Planted Acres, 2018 Crop Year**

Active Ingredient	% of Acres with Ingredient <sup>a</sup>	Average Rate (lbs/acre)	Total Applied (mil lbs)
Atrazine	65	1.037	55.9
Mesotrione	42	0.121	4.2
Glyphosate isopropylamine salt	34	0.993 <sup>b</sup>	27.7 <sup>b</sup>
Acetochlor	33	1.433	38.8
S-metolachlor	29	1.198	28.3

<sup>a</sup>Acres with multiple ingredients are counted in each category.

<sup>b</sup>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 (PAMS).

- *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.

Table 3 shows the top practice in each category. In all categories, the top practice in 2018 was also the top practice in the 2014 and 2016 surveys.

**Table 3. Top Practice in Pest Management Category, 2018**  
(% of corn planted acres)

<i>Prevention</i> : No till or minimum till	65
<i>Avoidance</i> : Rotated crops during past three years	84
<i>Monitoring</i> : Scouted for weeds (deliberately, or by general observations while performing tasks)	94
<i>Suppression</i> : Maintained ground covers, mulches, or other physical barriers	45

### Surveyed States: Acres of Corn Planted, 2018

U.S. Total	millions of acres 89.1	% of U.S. 100
Iowa	13.2	14.8
Illinois	11.0	12.3
Nebraska	9.6	10.8
Minnesota	7.9	8.9
Kansas	5.5	6.1
Indiana	5.4	6.0
South Dakota	5.3	5.9
Wisconsin	3.9	4.4
Ohio	3.5	3.9
Missouri	3.5	3.9
North Dakota	3.2	3.5
Michigan	2.3	2.6
Texas	2.2	2.5
Colorado	1.5	1.6
Pennsylvania	1.4	1.5
Kentucky	1.3	1.5
New York	1.1	1.2
North Carolina	0.9	1.0
<b>Total, Surveyed States</b>	<b>82.5</b>	<b>92.6</b>

Numbers may not add due to rounding.