



## 2016 AGRICULTURAL CHEMICAL USE SURVEY

# Corn

### 19 states ...

... accounted for 92 percent of U.S. acres planted to corn in 2016.

### 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 as part of the Agricultural Resource Management Survey. NASS conducted the corn chemical use survey in fall 2016.

### Access the Data

Access corn chemical use data through the Quick Stats 2.0 database ([quickstats.nass.usda.gov](http://quickstats.nass.usda.gov)).

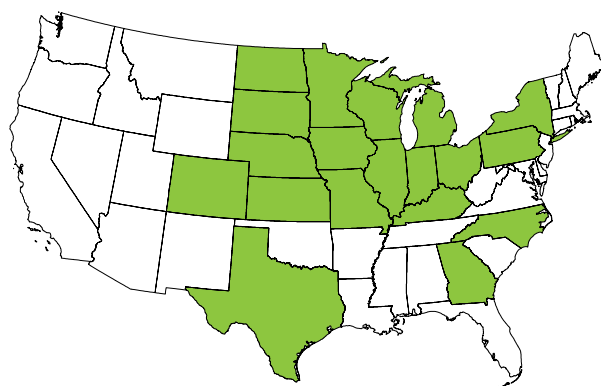
- In Program, select "Survey"
- In Sector, select "Environmental"
- In Group, select "Field Crops"
- In Commodity, select "Corn"
- Select your category, data item, geographic level, and year

For pre-defined Quick Stats queries, go to [bit.ly/AgChem](http://bit.ly/AgChem) and click "Data Tables" under the 2016 Corn and Potatoes heading. For methodology information, click "Methodology."

The 2016 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 19 states that together accounted for 92 percent of the 94 million acres planted to corn in the United States in 2016: 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).

Data are for the 2016 crop year, which includes the one-year period beginning after the 2015 harvest and ending after the 2016 harvest.

**Fig. 1. States in the 2016 Corn Chemical Use Survey**



### Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients. For the 2016 crop year, farmers applied nitrogen to 97 percent of planted acres, at an average rate of 145 pounds per acre, for a total of 12 billion pounds. They applied phosphate to 79 percent of corn planted acres, potash to 65 percent, and sulfur to 33 percent. (Table 1)

**Table 1. Fertilizer Applied to Corn Planted Acres, 2016 Crop Year**

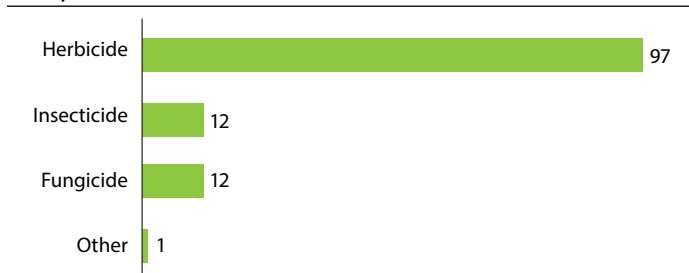
	% of Planted Acres	Avg. Rate for Year (lbs/acre)	Total Applied (bil lbs)
Nitrogen (N)	97	145	12.2
Phosphate (P <sub>2</sub> O <sub>5</sub> )	79	61	4.2
Potash (K <sub>2</sub> O)	65	80	4.5
Sulfur (S)	33	16	0.5

## 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 applied to 97 percent of planted acres. Insecticides and fungicides were each applied to 12 percent of planted acres. (Fig. 2)

Among herbicides, atrazine was the most widely used active ingredient (applied to 60 percent of planted acres) (Table 2). It was also the most widely applied ingredient in the 2014 survey of corn producers.

**Fig. 2. Pesticides Applied to Corn Planted Acres, 2016 Crop Year**  
(% of planted acres)



**Table 2. Top Herbicides Applied to Corn Planted Acres, 2016 Crop Year**

Active Ingredient	% of Planted Acres	Avg. Rate for Year (lbs/acre)	Total Applied (mil lbs)
Atrazine	60	1.082	56.0
Glyphosate potassium salt	33	1.323 <sup>a</sup>	37.6 <sup>a</sup>
Glyphosate isopropylamine salt	32	1.011 <sup>a</sup>	28.5 <sup>a</sup>
Acetochlor	31	1.370	36.6

<sup>a</sup> Expressed in acid equivalent.

## Pest Management Practices

The survey asked growers to report on the practices they used to manage pests, which the survey identifies as weeds, insects, and diseases. Corn growers reported practices in four categories:

- *Prevention* practices involve actions to keep a pest population from infesting a crop or field.

- *Avoidance* practices use cultural measures to mitigate or eliminate detrimental effects of pests.
- *Monitoring* practices observe or detect pests by sampling, counting, or other forms of scouting.
- *Suppression* practices involve controlling or reducing existing pest populations to mitigate crop damage.

The most widely used monitoring practice in growing corn was scouting for weeds, used on 90 percent of corn planted acres. The top avoidance practice was crop rotation (79 percent). (Table 3) In each category, the most widely used practice in 2016 was also the top practice in the 2014 survey.

**Table 3. Top Practice in Category, 2016 Crop Year**  
(% of corn planted acres)

<i>Monitoring</i> : Scouted for weeds (deliberately, or by general observations while performing tasks)	90
<i>Avoidance</i> : Rotated crops during last three years	79
<i>Prevention</i> : Used no-till or minimum till	64
<i>Suppression</i> : Maintained ground covers, mulches, or other physical barriers	38

**Surveyed States: Acres of Corn Planted, 2016**

U.S. Total	millions of acres 94.0	% of U.S. 100
Iowa	13.9	14.8
Illinois	11.6	12.3
Nebraska	9.9	10.5
Minnesota	8.5	9.0
Indiana	5.6	6.0
South Dakota	5.6	6.0
Kansas	5.1	5.4
Wisconsin	4.1	4.3
Missouri	3.7	3.9
Ohio	3.6	3.8
North Dakota	3.5	3.7
Texas	2.9	3.1
Michigan	2.4	2.6
Kentucky	1.5	1.6
Pennsylvania	1.4	1.5
Colorado	1.3	1.4
New York	1.1	1.2
North Carolina	1.0	1.1
Georgia	0.4	0.4
<b>Total, Surveyed States</b>	<b>86.9</b>	<b>92.4</b>

Numbers may not add due to rounding.