



## 2015 AGRICULTURAL CHEMICAL USE SURVEY

# Soybeans

### 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 soybean chemical use survey in fall 2015.

### Access the Data

Access 2015 soybean chemical use data, as well as results from prior surveys of soybean chemical use, through the Quick Stats 2.0 database (<http://quickstats.nass.usda.gov>).

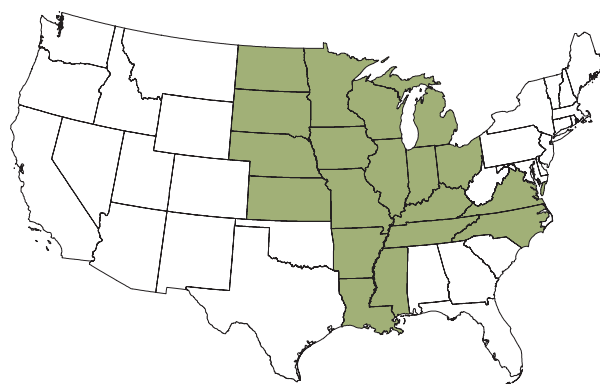
- In Program, select "Survey"
- In Sector, select "Environmental"
- In Group, select "Field Crops"
- In Commodity, select "Soybeans"
- Select your category, data item, geographic level, and year

For pre-defined Quick Stats queries, go to <http://bit.ly/AgChem> and click "Data Tables" under the 2015 Cotton, Oats, Soybeans, and Wheat heading. For methodology information, go to <http://bit.ly/AgChem> and click "Methodology."

The 2015 Agricultural Chemical Use Survey of soybean producers collected data about fertilizer and pesticide use as well as pest management practices in growing soybeans. NASS conducted the survey in 19 states that accounted for 96 percent of the 82.7 million acres planted to soybeans in the United States in 2015: Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, South Dakota, Tennessee, Virginia, and Wisconsin (Fig. 1).

Data are for the 2015 crop year, the one-year period beginning after the 2014 harvest and ending after the 2015 harvest.

**Fig. 1. States in the 2015 Soybean Chemical Use Survey**



### Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients, primarily nitrogen (N), phosphate ( $P_2O_5$ ), and potash ( $K_2O$ ). For the 2015 crop year, farmers applied nitrogen to 28 percent of planted acres, at an average rate of 17 pounds per acre, for a total of 382.3 million pounds. They applied phosphate to 39 percent of soybean planted acres and potash to 38 percent of acres. (Table 1)

**Table 1. Fertilizer Applied to Soybean Planted Acres, 2015 Crop Year**

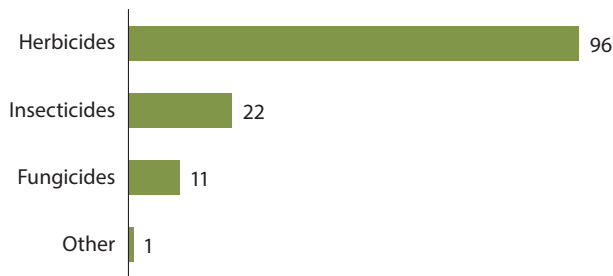
	% of Planted Acres	Avg. Rate for Year (lbs/acre)	Total Applied (mil lbs)
Nitrogen (N)	28	17	382.3
Phosphate ( $P_2O_5$ )	39	51	1,563.1
Potash ( $K_2O$ )	38	83	2,503.5

## Pesticide Use

The pesticide active ingredients used on soybeans are classified in this report as herbicides (targeting weeds), insecticides (targeting insects), fungicides (targeting fungal disease), and other chemicals (targeting all other pests and other materials, including extraneous crop foliage). Herbicides were used most extensively, applied to 96 percent of planted acres. Insecticides and fungicides were applied to 22 and 11 percent of planted acres, respectively. (Fig. 2)

Among herbicides, two different forms of glyphosate were the most widely applied active ingredients (Table 2). They were also the top herbicides in a similar survey in 2012.

**Fig. 2. Pesticides Applied to Soybean Planted Acres, 2015 Crop Year**  
(% of planted acres)



**Table 2. Top Herbicides Applied to Soybean Planted Acres, 2015 Crop Year**

Active Ingredient	% of Planted Acres	Avg. Rate for Year (lbs/acre)	Total Applied (mil lbs)
Glyphosate potassium salt	55	1.619 <sup>a</sup>	70.1 <sup>a</sup>
Glyphosate isopropylamine salt	30	1.106 <sup>a</sup>	25.9 <sup>a</sup>
Sulfentrazone	17	0.175	2.4
Fomesafen sodium	16	0.244 <sup>a</sup>	3.0 <sup>a</sup>
Chlorimuron ethyl	12	0.023	0.2

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

## Pest Management Practices

The survey asked growers to report on the practices they used to manage pests, including weeds, insects, and diseases. Soybean 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 detrimental effects of pests.
- *Monitoring* practices observe or detect pests through 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 soybeans was no-till or minimum till, used on 74 percent of planted acres. The top avoidance practice was rotating crops (90 percent). Scouting for weeds was the most widely used monitoring practice (94 percent). (Table 3)

**Table 3. Top Practice in Pest Management Category, 2015**  
(% of soybean planted acres)

<i>Prevention</i> : Used no-till or minimum till	74
<i>Avoidance</i> : Rotated crops during last three years	90
<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	44

**Surveyed States: Acres of Soybeans Planted, 2015**

U.S. Total	millions of acres	% of U.S.
	82.7	100
Iowa	9.9	11.9
Illinois	9.8	11.9
Minnesota	7.6	9.2
North Dakota	5.8	7.0
Indiana	5.6	6.7
Nebraska	5.3	6.4
South Dakota	5.2	6.2
Ohio	4.8	5.7
Missouri	4.6	5.5
Kansas	3.9	4.7
Arkansas	3.2	3.9
Mississippi	2.3	2.8
Michigan	2.0	2.5
Wisconsin	1.9	2.3
Kentucky	1.8	2.2
North Carolina	1.8	2.2
Tennessee	1.8	2.1
Louisiana	1.4	1.7
Virginia	0.6	0.8
<b>Total, Surveyed States</b>	<b>79.1</b>	<b>95.7</b>

Numbers may not add due to rounding.