

2019 AGRICULTURAL CHEMICAL USE SURVEY

Sorghum

Six states . . .

. . . accounted for 100 percent of U.S. acres planted to sorghum in 2019.

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 sorghum chemical use survey in the fall of 2019.

Access the Data

Access 2019 and earlier sorghum 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 "Sorghum"
- 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 2019 Barley, Cotton, Sorghum, and Wheat heading. For methodology information, click "Methodology."

The 2019 Agricultural Chemical Use Survey of sorghum producers collected data about fertilizer and pesticide use as well as pest management practices in growing sorghum. NASS conducted the survey among sorghum producers in 6 states that together accounted for 100 percent of the 5.3 million acres planted to sorghum in the United States in 2019: Colorado, Kansas, Nebraska, Oklahoma, South Dakota, and Texas. (Fig. 1 and box on p. 2)

The data are for the 2019 crop year, the one-year period beginning after the 2018 harvest and ending after the 2019 harvest.

Fig. 1. States in the 2019 Sorghum Chemical Use Survey



Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients. For the 2019 crop year, farmers applied nitrogen to 89 percent of planted acres, at an average rate of 77 pounds per acre, for a total of 360.3 million pounds.

They applied phosphate to 58 percent of sorghum planted acres, at an average rate of 25 pounds per acre. (Table 1)

Table 1. Fertilizer Applied to Sorghum Planted Acres, 2019 Crop Year

	% of Acres with Nutrient ^a	Avg. Rate for Year (lbs/acre)	Total Applied (mil lbs)
Nitrogen (N)	89	77	360.3
Phosphate (P ₂ O ₅)	58	25	76.7
Potash (K ₂ O)	10	14	7.7
Sulfur (S)	21	7	7.7

^a Acres with multiple nutrients are counted in each category.

Pesticide Use

The pesticide active ingredients used on sorghum 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, with applications to 89 percent of planted acres. Insecticides were applied to 9 percent of planted acres. (Fig. 2)

Among herbicides, atrazine was the most widely used active ingredient (applied to 71 percent of planted acres), followed by glyphosate isopropylamine salt (45 percent of planted acres). S-metolachlor was applied to 36 percent of the planted acres. (Table 2)

Fig. 2. Pesticides Applied to Sorghum Planted Acres, 2019 Crop Year
(% of planted acres)

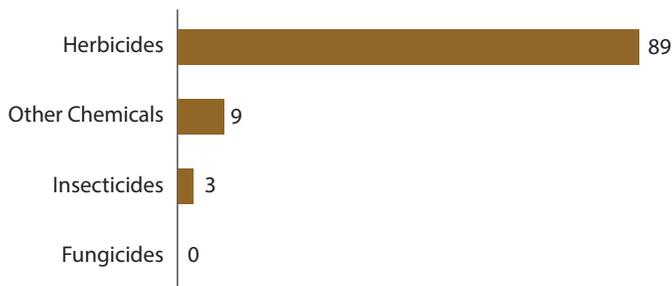


Table 2. Top Herbicides Applied to Sorghum Planted Acres, 2019 Crop Year

Active Ingredient	% of Acres with Ingredient ^a	Avg. Rate for Year (lbs/acre)	Total Applied (mil lbs)
Atrazine	71	1.144	4.3
Glyphosate isopropylamine salt	45	1.030	2.4 ^b
S-Metolachlor	36	1.268	2.4
Dicamba dimethylamine salt	26	0.471	0.6 ^b
Glyphosate potassium salt	24	1.399	1.8 ^b

^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. Sorghum 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 observe or detect pests by 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 prevention practice in growing sorghum was no-till or minimum till, used on 66 percent of planted acres. The top avoidance practice was rotating crops (81 percent). Scouting for weeds was the most widely used monitoring practice (91 percent), and maintaining ground cover, mulching, or using other physical barriers was the top suppression practice (55 percent). (Table 3)

Table 3. Top Practice in Pest Management Category, 2019
(% of sorghum planted acres)

<i>Prevention</i> : Used no-till or minimum till	66
<i>Avoidance</i> : Rotated crops during past three years	81
<i>Monitoring</i> : Scouted for weeds (deliberately, or by general observations while performing other tasks)	91
<i>Suppression</i> : Maintained ground covers, mulches, or other physical barriers	55

Surveyed States: Acres of Sorghum Planted, 2019

	thousands of acres	% of U.S.
U.S. Total	5,265	100
Kansas	2,600	49.4
Texas	1,550	29.4
Colorado	365	6.9
Oklahoma	300	5.7
South Dakota	250	4.8
Nebraska	200	3.8
Total, Surveyed States	5,265	100.0