NASS *Highlights*

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2019 AGRICULTURAL CHEMICAL USE SURVEY

Wheat

Eighteen states . . .

. . . accounted for 91 percent of the 45.1 million U.S. acres planted to wheat 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 wheat chemical use survey in the fall of 2019.

Access the Data

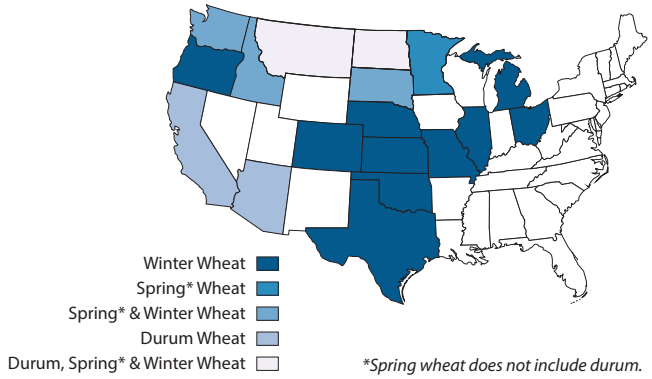
Access 2019 and earlier wheat chemical use data through the Quick Stats database (http://quickstats.nass.usda.gov).

- In Program, select "Survey"
- In Sector, select "Environmental"
- In Group, select "Field Crops"
- In Commodity, select "Wheat"
- 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 wheat producers collected data about fertilizer and pesticide use as well as pest management practices in growing wheat. NASS conducted the survey in 18 states that together accounted for 91 percent of the 45.1 million acres planted to wheat in the United States in 2019, including 87 percent of winter wheat acres, 100 percent of spring wheat and 99.6 percent of durum wheat acres. (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 Wheat Chemical Use Survey



**Spring wheat does not include durum.*

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 2019 crop year, farmers applied nitrogen to nearly all acres planted to spring and durum wheat. (Table 1)

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

	% of Acres with Nutrient [a]	Avg. Rate for Year (lbs/acre)	Total Applied (mil lbs)
Winter			
Nitrogen (N)	88	73	1,734.4
Phosphate (P_2O_5)	63	31	531.3
Potash (K_2O)	15	46	187.2
Spring (excl durum)			
Nitrogen (N)	97	102	1,246.6
Phosphate (P_2O_5)	89	39	437.3
Potash (K_2O)	31	25	96.6
Durum			
Nitrogen (N)	98	83	108.8
Phosphate (P_2O_5)	84	29	32.9
Potash (K_2O)	11	11	1.7

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

Pesticide Use

In the surveyed states, farmers used 87 different pesticide active ingredients on winter wheat acres, 63 different ingredients on spring (excl durum) wheat acres, and 52 on durum wheat acres. These pesticide active ingredients are classified as herbicides (targeting weeds), insecticides (targeting insects), fungicides (targeting fungal disease), and other. Herbicides were used most extensively, with application to 66 percent of winter wheat planted acres, 97 percent of spring (excl durum) wheat acres, and 96 percent of durum wheat acres. (Fig. 2) Table 2 shows the most widely applied herbicides for each wheat type.

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

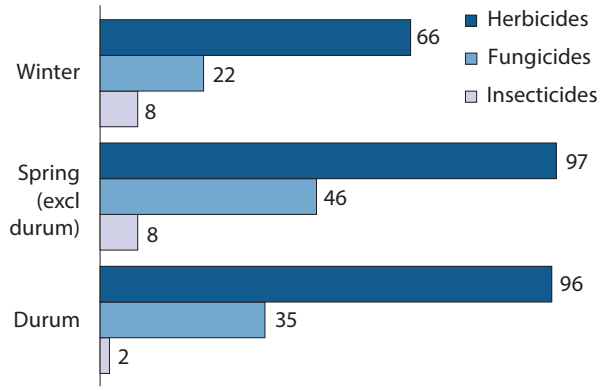


Table 2. Top Herbicides Applied to Wheat Planted Acres, 2019 Crop Year

Active Ingredient	% of Acres with Ingredient [a]	Avg. Rate for Year (lbs/acre)	Total Applied (lbs)
Winter			
2,4-D; 2-EHE	20	0.540	2,924,000[b]
Metsulfuron-methyl	20	0.003	16,000
Spring			
Fluroxypyr 1-MHE	46	0.089	526,000
Bromoxynil octanoate	37	0.155	721,000
Durum			
Glyphosate isopropylamine salt	46	0.555	339,000[b]
Bromoxynil octanoate	39	0.210	108,000

[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. Wheat growers reported practices in four categories. Table 3 shows the most widely used practice in each category.

- *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.

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

	Winter	Spring*	Durum
Prevention: Used no-till or minimum till	55	67	83
Avoidance: Rotated crops during past three years	63	91	95
Monitoring: Scouted for weeds (deliberately, or by general observations while performing tasks)	88	97	98
Suppression: Maintained ground covers, mulches, or other physical barriers	45	56	68
Suppression: Used pesticides with different mechanisms of action		56	

**Excluding durum.*

Surveyed States: Acres of Wheat Planted, 2019

	Winter	Spring*	Durum
U.S. Total (thousands of acres)	**31,159.0**	**12,660.0**	**1,334.0**
	(percent of total)		
Arizona			2.5
California			2.2
Colorado	6.9		
Idaho	2.3	3.6	
Illinois	2.1		
Kansas	22.1		
Michigan	1.7		
Minnesota		11.5	
Missouri	1.8		
Montana	6.4	22.9	41.2
Nebraska	3.4		
North Dakota	0.3	52.9	54.0
Ohio	1.6		
Oklahoma	13.5		
Oregon	2.4		
South Dakota	2.8	5.1	
Texas	14.4		
Washington	5.6	4.0	
Total, Surveyed States (percent of U.S. Total)	**87.4** (15 states)	**100.0** (6 states)	**99.6** (4 states)

Numbers may not add due to rounding. **Excluding durum.*

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