



2017 AGRICULTURAL CHEMICAL USE SURVEY

Wheat

Eighteen states . . .

. . . accounted for 90 percent of U.S. acres planted to wheat in 2017.

About the Survey

The Agricultural Chemical Use Program of the National Agricultural Statistics Service (NASS) is the U.S. Department of Agriculture'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 wheat chemical use survey in the fall of 2017.

Access the Data

Access wheat chemical use data through the Quick Stats 2.0 database (<http://quickstats.nass.usda.gov>).

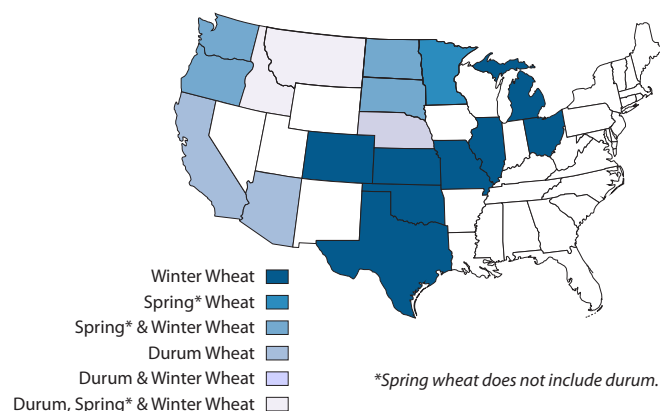
- In Program, select "Survey"
- In Sector, select "Environmental"
- In Group, select "Field Crops"
- In Commodity, select "Wheat"
- Select your category, data item, geographic level, and year

For methodology information, go to <http://bit.ly/AgChem> and click "Methodology."

The 2017 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 90 percent of the 46.0 million acres planted to wheat in the United States in 2017, including 85 percent of winter wheat acres and 99 percent of spring and durum wheat acres. (Fig. 1 and box on p. 2)

Data are for the 2017 crop year, the one-year period beginning after the 2016 harvest and ending after the 2017 harvest.

Fig. 1. States in the 2017 Wheat Chemical Use Survey



Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients, primarily nitrogen (N), phosphate (P₂O₅), and potash (K₂O). For the 2017 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, 2017 Crop Year

	% of Planted Acres	Avg. Rate for Year (lbs/acre)	Total Applied (mil lbs)
Winter			
Nitrogen	83	72	1,690.0
Phosphate	58	31	506.3
Potash	15	40	172.5
Spring (excl durum)			
Nitrogen	96	98	984.5
Phosphate	89	40	367.7
Potash	34	21	73.9
Durum			
Nitrogen	98	88	196.8
Phosphate	91	31	64.7
Potash	28	13	8.2

Pesticide Use

In the surveyed states, farmers used 96 different pesticide active ingredients on winter wheat acres, 82 different ingredients on spring (excl durum) wheat acres, and 63 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, applied to 61 percent of winter wheat planted acres, 96 percent of spring (excl durum) wheat acres, and 93 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, 2017 Crop Year
(% of planted acres)

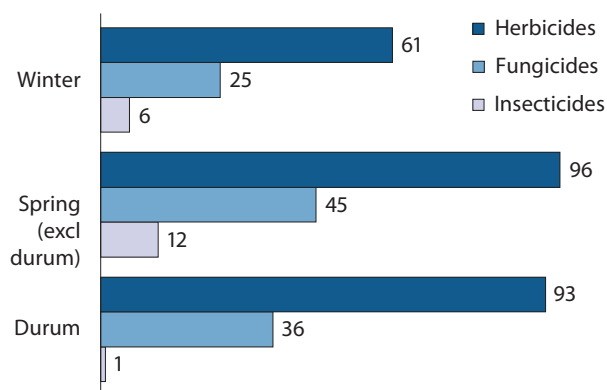


Table 2. Top Herbicides Applied to Wheat Planted Acres, 2017 Crop Year

Active Ingredient	% of Planted Acres	Avg. Rate for Year (lbs/acre)	Total Applied (mil lbs)
Winter			
Glyphosate isopropylamine salt	22	1.299 ^a	8.2 ^a
2;4-D; 2-EHE	18	0.529	2.6
Spring (excl durum)			
Fluroxypyr 1-MHE	46	0.083	0.4
Glyphosate isopropylamine salt	37	0.845 ^a	3.2 ^a
Durum			
Glyphosate isopropylamine salt	58	0.772 ^a	1.0 ^a
Fluroxypyr 1-MHE	39	0.094	0.1

^a 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, 2017
(% of wheat planted acres)

	Winter	Spring*	Durum
<i>Prevention</i> : Used no-till or minimum till	64	80	90
<i>Avoidance</i> : Rotated crops during past three years	53	87	84
<i>Monitoring</i> : Scouted for weeds (deliberately, or by general observations while performing tasks)	87	98	97
<i>Suppression</i> : Maintained ground covers, mulches, or other physical barriers	36	51	55

*Excluding durum.

Surveyed States: Acres of Wheat Planted, 2017

	Winter	Spring*	Durum
U.S. Total (thousands of acres)	32,696.0	11,009.0	2,307.0
	(percent of total)		
Arizona			3.9
California			1.5
Colorado	6.8		
Idaho	2.2	3.8	1.0
Illinois	1.5		
Kansas	23.2		
Michigan	1.4		
Minnesota		10.5	
Missouri	1.9		
Montana	5.3	22.7	38.5
Nebraska	3.4		
North Dakota	0.2	48.5	54.6
Ohio	1.4		
Oklahoma	13.7		
Oregon	2.1	0.6	
South Dakota	2.7	8.8	
Texas	14.3		
Washington	5.1	4.4	
Total, Surveyed States (percent of U.S. Total)	85.2 (15 states)	99.3 (7 states)	99.5 (5 states)

Numbers may not add due to rounding.

*Excluding durum.