



# AGRICULTURAL CHEMICAL USE

Field Crops 2011:  
Barley and Sorghum (May 16, 2012)

## Overview

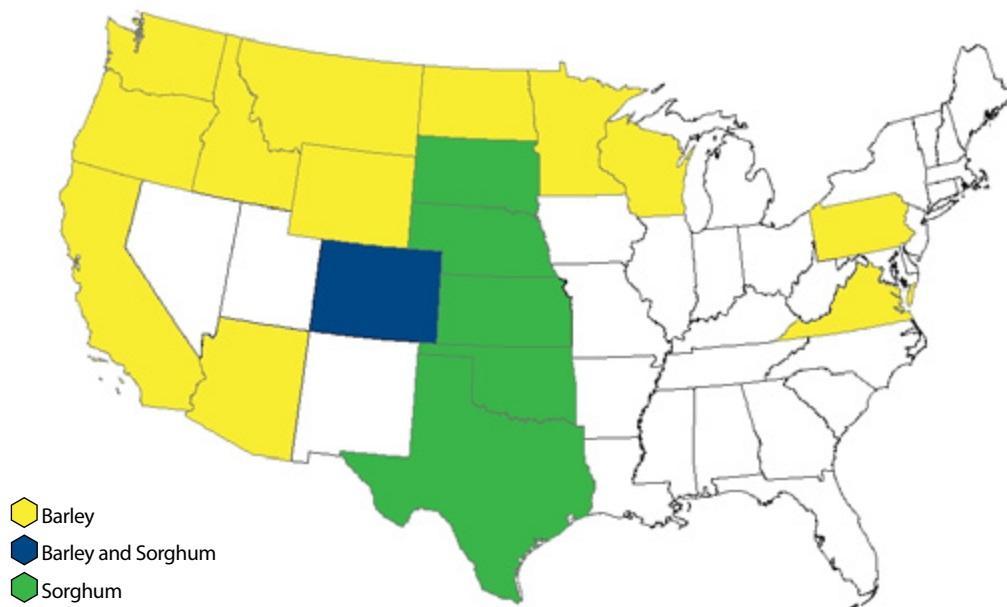
The National Agricultural Statistics Service (NASS) Agricultural Chemical Use Program is the U.S. Department of Agriculture's official source of statistics about on-farm and post-harvest fertilizer and pesticide use and pest management practices.

In fall 2011, NASS collected data about fertilizer and pesticide use, as well as pest management practices, on barley and sorghum acreage planted for the 2011 crop year. These data were collected as part of the Agricultural Resource Management Survey (ARMS). The barley results were based on 1,266 individual questionnaires from producers in 13 program states. These states were Arizona,

California, Colorado, Idaho, Minnesota, Montana, North Dakota, Oregon, Pennsylvania, Virginia, Washington, Wisconsin, and Wyoming (Figure 1). These states accounted for 92 percent of the barley acreage planted in the United States in the 2011 crop year.

The sorghum results are based on 548 individual questionnaires from producers in six program states. These states were Colorado, Kansas, Nebraska, Oklahoma, South Dakota, and Texas (Figure 1). These States accounted for 91 percent of the sorghum acreage planted in the United States in the 2011 crop year.

Figure 1. Agricultural Chemical Use on Barley and Sorghum: Program States by Crop, 2011





## Barley Highlights

### Fertilizers

Nitrogen (N) was the most widely used primary macronutrient on barley. Farmers applied nitrogen to 86 percent of acres planted to barley at an average rate of 72 pounds per acre for the 2011 crop year (Table 1). The macronutrient phosphate (P) was applied to 68 percent of barley acres planted, potash (K) to 28 percent. The micronutrient sulfur (S) was applied to 30 percent of acres planted to barley.

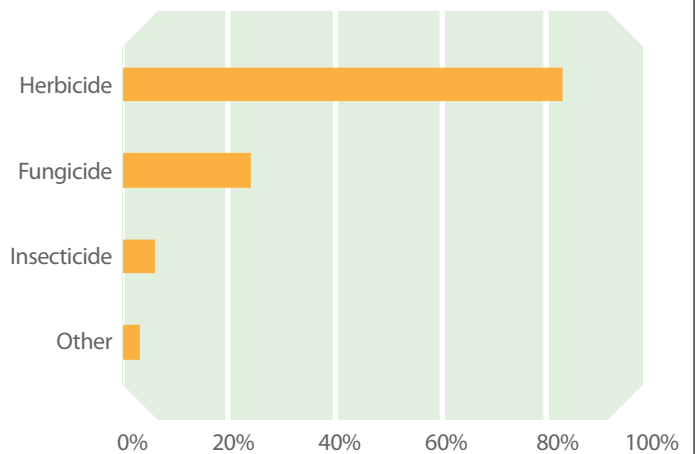
**Table 1. Fertilizers: Applications to Barley Planted Acres, 2011 Program States**

	Percent of Planted Acres Treated	Crop Year Average Rate	Total Applied
	%	lbs/acre	lbs
Nitrogen	86	72	145,600,000
Phosphate	68	30	48,000,000
Potash	28	24	15,800,000
Sulfur	30	21	14,500,000

### Pesticides

In the 13 States surveyed, a total of 71 unique pesticide active ingredients were applied to acres planted to barley. Of the four pesticide classes, herbicides were the most commonly used, applied to 83 percent of barley acres planted (Figure 2). Fungicides and insecticides were applied to 24 percent and 6 percent of acres, respectively. Etephon, a plant growth regulator used to control lodging in barley, was the only active ingredient in the other class that was reported. Based on percent of acres planted, the three most commonly used active ingredients were herbicides: pinoxaden, followed by glyphosate isopropylamine salt and bromoxynil octanoate (Table 2).

**Figure 2. Pesticides: Percent of Barley Planted Acres Treated, 2011 Program States**



**Table 2. Top Pesticides Used, by Percent of Barley Planted Acres Treated, 2011 Program States**

Active Ingredient	Pesticide Class	Percent of Planted Acres Treated	Crop Year Average Rate	Total Applied
		%	lbs/acre	lbs
Pinoxaden	Herbicide	42	0.050	49,000
Glyphosate isopropylamine salt	Herbicide	35	1.161	943,000
Bromoxynil octanoate	Herbicide	32	0.221	163,000



## Sorghum Highlights

### Fertilizers

Nitrogen (N) was the most widely used primary macronutrient on sorghum. Farmers applied nitrogen to 81 percent of acres planted to sorghum at an average rate of 67 pounds per acre for the 2011 crop year (Table 3). The macronutrient phosphate (P) was applied to 54 percent of planted sorghum acres, potash (K) to 9 percent. The micronutrient sulfur (S) was applied to 16 percent of acres planted to sorghum.

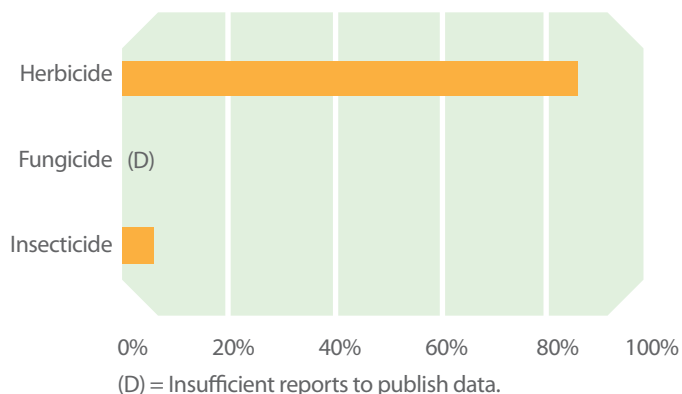
**Table 3. Fertilizers: Applications to Sorghum Planted Acres, 2011 Program States**

	Percent of Planted Acres Treated	Crop Year Average Rate	Total Applied
	%	lbs/acre	lbs
Nitrogen	81	67	269,100,000
Phosphate	54	26	69,100,000
Potash	9	16	7,000,000
Sulfur	16	9	7,500,000

### Pesticides

In the six States surveyed, a total of 48 unique pesticide active ingredients were applied to acres planted to sorghum. Of the four pesticide classes, herbicides were the most commonly used, applied to 86 percent of sorghum acres planted (Figure 3). Insecticides were applied to 6 percent of acres planted to sorghum. Pyraclostrobin was the only fungicide that was reported, but there were not a sufficient number of reports to publish the data. No active ingredients in the other pesticide class were reported. Based on percent of acres planted, the three most commonly used active ingredients were herbicides: atrazine followed by glyphosate isopropylamine salt and S-metolachlor (Table 4).

**Figure 3. Pesticides: Percent of Sorghum Planted Acres Treated, 2011 Program States**



**Table 4. Top Pesticides Used, by Percent of Sorghum Planted Acres Treated, 2011 Program States**

Active Ingredient	Pesticide Class	Percent of Planted Acres Treated	Crop Year Average Rate	Total Applied
		%	lbs/acre	lbs
Atrazine	Herbicide	64	1.316	4,206,000
Glyphosate isopropylamine salt	Herbicide	47	1.282	2,986,000
S-metolachlor	Herbicide	37	1.178	2,142,000

## Pest Management Practices: Barley and Sorghum

Barley and sorghum growers reported using pest management practices in each of the following four categories: prevention, avoidance, monitoring, and suppression. Scouting for weeds was the top management practice for both barley and sorghum acres planted (Table 5).

**Table 5. Top Practice in Each Pest Management Category, by Percent of Barley and Sorghum Acres, 2011 Program States**

Category	Top Practice in Category	Percent of Planted Acres Treated	
		Barley	Sorghum
Prevention	No-till or minimum till used	60	67
Avoidance	Rotated crop during past 3 years	70	80
Monitoring	Scouted for weeds	92	82
Suppression	Ground covers, mulches, or other physical barriers maintained	45	51

### For More Information: Data Summary Published to Quick Stats 2.0 (May 16, 2012)

The 2011 agricultural chemical use data for barley and sorghum are available through the Quick Stats 2.0 database on the NASS Website: [www.nass.usda.gov](http://www.nass.usda.gov). To access the database, go to '[quickstats.nass.usda.gov](http://quickstats.nass.usda.gov)' and follow the instructions below.

Commodity	Quick Stats 2.0 Search			
	'Program'	'Sector'	'Group'	'Commodity'
Barley	Survey	Environmental	Field Crops	Barley
Sorghum	Survey	Environmental	Field Crops	Sorghum

