

# South Dakota

## 1999 AGRICULTURAL CHEMICAL USAGE

Released: August 2000

**OVERVIEW:** The agricultural chemical use estimates in this report are based on data compiled from the Agricultural Resources Management Study conducted during the fall of 1999. All results refer to on-farm use of fertilizers and pesticides on the targeted crops for the 1999 crop year. For South Dakota, these crops included sunflower, soybeans, and corn.

### SUNFLOWER

**SOUTH DAKOTA:** Nitrogen was applied to 78 percent of South Dakota's 920,000 acres in 1999, averaging 1.4 applications at a rate of 40 pounds per acre. Phosphate was applied to 41 percent of the acreage. There were insufficient reports to publish data for potash application. Herbicide was applied to 93 percent of the sunflower acreage. Trifluralin (Treflan) was the most popular herbicide, followed by Glyphosate (Roundup) and Ethalfuralin (Curbit). The most popular insecticide was Esfenvalerate (Asana) which was applied to 33 percent of the sunflower crop, followed by Methyl parathion and Ethyl parathion.

**REGIONAL:** Nitrogen was applied to 90 percent of the total 1999 sunflower acreage in the 3 states surveyed: Kansas, North Dakota, and South Dakota. Growers used an average of 1.3 applications per acre applying 49 pounds per treatment. In the states surveyed, 43 percent received phosphates, and potash was applied to 8 percent of the acreage. Herbicides were applied to 95 percent of the sunflower acreage. Ethalfuralin (Curbit, Sonalan) was the most used herbicide with 40 percent of the reported acreage being treated. Insecticides were used on 33 percent of the sunflower acreage. Esfenvalerate (Asana) was the most widely use insecticide, with 25 percent of the reported acreage treated.

#### SUNFLOWER, SOUTH DAKOTA, 1999 Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application

Year	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Percent
1999	920	78	1.4	40	41	1.0	33	1/	1/	1/	93	46

1/ Insufficient reports to publish data.

#### SUNFLOWER, SELECTED STATES, 1999 Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application

State	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Percent
KS	280	92	1.3	45	69	1.0	23	2/	2/	2/	82	56
ND	1,700	96	1.3	54	40	1.0	24	2/	2/	2/	99	22
SD	920	78	1.4	40	41	1.0	33	2/	2/	2/	93	46
Total 1/	2,900	90	1.3	49	43	1.0	27	8	1.0	7	95	33

1/ Refers to 3 major sunflower states, which account for 82 percent of U.S. acreage. 2/ Insufficient reports to publish data.

#### SUNFLOWER, SOUTH DAKOTA, 1999: Frequency and Extent of Chemical Usage

Active Ingredient	Trade Name	Area Applied	Applications	Rate Per Application	Rate Per Crop Year	Total Applied
		Percent	Number	- - - Pounds Per Acre - - -		1,000 Pounds
<b>HERBICIDES:</b>						
Ethalfuralin	Curbit	14	1.0	0.99	0.99	128
Glyphosate	several	22	1.0	0.49	0.51	102
Pendimethalin	Prowl	9	1.0	1.32	1.32	115
Sethoxydim	Poast	12	1.0	0.28	0.28	30
Trifluralin	Treflan	46	1.0	0.93	0.93	398
<b>INSECTICIDES:</b>						
Esfenvalerate	Asana	33	1.0	0.02	0.02	7
Ethyl parathion	several	3	1.0	0.28	0.28	8
Methyl parathion	several	4	1.0	0.55	0.55	20



## SOYBEANS

**SOUTH DAKOTA:** Nitrogen was applied to 47 percent of South Dakota's 4.1 million soybean acres in 1999. South Dakota growers averaged 1.0 application at the rate of 20 pounds per acre, while phosphate was applied once to 47 percent of the acreage and potash to 19 percent. Herbicide was applied to 98 percent of the soybean acreage. Glyphosate (Roundup) and Imazethapyr (Pursuit) were the most popular herbicides, applied to 55 and 33 percent of the planted acres, respectively. There was insufficient data to publish insecticide usage.

**REGIONAL:** Soybean producers in the 17 states surveyed applied nitrogen fertilizer to 18 percent of the area planted. The average number of nitrogen applications per acre was 1.0, with an average application rate of 20 pounds per acre. Phosphate was applied to 26 percent of the soybean planted acreage in the states surveyed. Potash was applied to 28 percent of the planted soybean acreage in the 17 states surveyed. An average of 96 percent of the soybean acreage was treated with herbicides in the 17 states surveyed. The most widely used herbicide was Glyphosate (Roundup), followed by Imazethapyr (Pursuit), Pendimethalin (Prowl), and Trifluralin (Treflan).

### SOYBEANS, SOUTH DAKOTA, SELECTED YEARS, Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application

Year 1/	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide 2/
		Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Percent
1993	1,800	15	1.0	25	18	1.0	37	4	2/	2/	92	3/
1997	3,500	35	1.2	29	34	1.0	36	18	1.0	23	90	3/
1998	3,450	32	1.0	27	32	1.0	35	11	1.0	8	96	3/
1999	4,100	47	1.0	20	47	1.0	45	19	1.0	27	98	0

1/ Data for South Dakota was not collected for 1994, 1995, or 1996. 2/ Total applied excludes Bt's (*Bacillus thuringiensis*). Quantities are not available because because amounts of active ingredient are not comparable between products. 3/ Insufficient reports to publish data.

### SOYBEANS, SELECTED STATES, 1999 Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application

State	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide 2/
		Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Percent
IA	10,800	7	1.1	27	17	1.0	55	22	1.0	72	99	0
MN	7,000	13	1.0	20	13	1.0	33	13	1.0	58	97	0
NE	4,300	25	1.1	15	25	1.0	29	16	1.0	23	96	1
SD	4,100	47	1.0	20	47	1.0	45	19	1.0	27	98	0
Total 1/	67,840	18	1.0	20	26	1.0	46	28	1.0	78	96	2

1/ Refers to 17 major soybean states, which account for 92 percent of U.S. acreage. 2/ Total applied excludes Bt's (*Bacillus thuringiensis*). Quantities are not available because amounts of active ingredient are not comparable between products.

### SOYBEANS, SOUTH DAKOTA, 1999 Frequency and Extent of Chemical Usage

Active Ingredient	Trade Name Planted	Area Applied	Applications	Rate per Application	Rate per Crop year	Total Applied
		Percent	Number	Pounds per Acre		1,000 Lbs.
Bentazon	Basagran	16	1.0	0.93	0.93	593
Chlorimuron-ethyl	Classic	14	1.0	0.003	0.003	2
Glyphosate	several	55	1.2	0.71	0.92	2,069
Imazethapyr	Pursuit	33	1.0	0.02	0.02	27
Pendimethalin	Prowl	26	1.0	0.43	0.44	470
Sulfosate	Touchdown	5	1.0	0.72	0.72	160
Trifluralin	Treflan	18	1.0	0.65	0.65	490

## CORN

**SOUTH DAKOTA:** Nitrogen was applied to 98 percent of South Dakota's 3.6 million corn acres in 1999, averaging 1.5 applications at a rate of 60 pounds per acre. Phosphate was applied to 88 percent of the acreage and potash to 49 percent. Herbicide was applied to 95 percent of the corn acreage. Atrazine (AAtrex) and acetochlor (Harness) were the most popular, with applications of 42 percent and 30 percent, respectively. Insecticide was applied to 18 percent of the total acres.

**REGIONAL:** Nitrogen was applied to 98 percent of the total 1999 corn acreage in the 15 states surveyed. Growers used an average of 1.7 applications per acre, applying 77 pounds per treatment. In the states surveyed, 82 percent received phosphates, and potash was applied to 67 percent of the acreage. Herbicides were applied to 98 percent of the corn acreage in 1999. Atrazine (AAtrex) was the most used herbicide with 70 percent of the acreage being treated.

**CORN, SOUTH DAKOTA, 1996-1999,  
Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application**

Year	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Percent
1996	4,000	88	1.5	60	77	1.0	33	39	1.0	20	91	25
1997	3,800	96	1.4	60	80	1.0	36	31	1.0	22	93	10
1998	3,900	94	1.3	62	78	1.0	38	25	1.0	22	95	1/
1999	3,600	98	1.5	60	88	1.1	37	49	1.0	24	95	18

1/ Insufficient reports to publish data.

**CORN, SELECTED STATES, 1999  
Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application**

State	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide 2/
		Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Applications	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Percent
IA	12,100	98	1.4	87	75	1.0	61	75	1.0	77	99	25
MN	7,100	92	1.5	71	90	1.0	46	86	1.0	50	98	11
NE	8,600	99	1.9	68	75	1.0	35	18	1.0	14	99	39
SD	3,600	98	1.5	60	88	1.1	37	49	1.0	24	95	18
Total 1/	68,300	98	1.7	77	82	1.0	50	67	1.0	74	98	30

1/ Refers to 15 major corn states, which account for 88 percent of U.S. acreage. 2/ Total applied excludes Bt's (Bacillus thuringiensis). Total quantities are not calculated because amounts of active ingredient are not comparable between products.

CORN  
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# CORN (Cont.)

## CORN, SOUTH DAKOTA, 1999 Frequency and Extent of Chemical Usage

Active Ingredient	Trade Name	Area Applied	Applications	Rate Per Application	Rate Per Crop Year	Total Applied
		Percent	Number	- - - Pounds Per Acre - - -		1,000 Pounds
2,4-D	several	13	1.0	0.71	0.72	350
Acetochlor	Harness	30	1.0	1.55	1.56	1,707
Atrazine	AAtrex	42	1.0	0.69	0.71	1,066
Bromoxynil	Buctril	16	1.0	0.29	0.29	163
Clopyralid	Stinger	16	1.0	0.08	0.08	45
Cyanazine	Bladex	8	1.0	1.42	1.42	400
Dicamba	Banvel	22	1.0	0.19	0.19	148
Dicamba, Pot. salt	Marksman	4	1.0	0.30	0.30	45
Dimethenamid	Frontier	4	1.0	1.24	1.24	182
EPTC	several	5	1.0	3.09	3.09	501
Flumetsulam	Broadstrike	17	1.0	0.03	0.03	18
Glyphosate	several	8	1.1	0.45	0.50	138
Imazethapyr	Pursuit	2	1.0	0.05	0.05	3
Metolachlor	Dual	16	1.0	1.64	1.64	944
Nicosulfuron	Accent	22	1.0	0.01	0.01	9
Primisulfuron	Beacon	8	1.2	0.01	0.02	5
Rimsulfuron	Basis	14	1.0	0.009	0.009	5

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