

South Dakota

1998 AGRICULTURAL CHEMICAL USAGE

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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 1998. All results refer to on-farm use of fertilizers and pesticides on the targeted crops for the 1998 crop year. For South Dakota, these crops included other spring wheat, winter wheat, corn, and soybeans.

OTHER SPRING WHEAT

SOUTH DAKOTA: Nitrogen was applied to 85 percent and phosphate to 66 percent of South Dakota's 1.95 million planted other spring wheat acres in 1998. Producers averaged 1.4 nitrogen applications at a rate of 41 pounds per acre, while phosphate was applied at a rate of 35 pounds per acre. Herbicide was applied to 73 percent of the acreage. The most widely used herbicide was 2,4-D, followed by Dicamba (Banvel) and MCPA.

REGIONAL: Nitrogen was applied to 87 percent of the spring wheat acres in the seven surveyed states, while phosphate was applied to 77 percent. Growers averaged 1.6 nitrogen applications applied at a rate of 46 pounds per acre. Phosphate was applied at a rate of 31 pounds per acre. Herbicide was applied to 91 percent of the spring wheat acres. The most popular herbicides were 2,4-D, MCPA, and fenoxaprop (Whip).

OTHER SPRING WHEAT, SOUTH DAKOTA Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application

Year 1/	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
1995	1,250	95	1.3	38	68	1.0	26	12	1.0	15	97	2/
1997	2,500	90	1.5	42	70	1.0	35	2/	2/	2/	86	2/
1998	1,950	85	1.4	41	66	1.0	35	11	1.0	26	73	2/

1/ Data for South Dakota was not collected in 1996. 2/ Insufficient reports to publish data.

OTHER SPRING WHEAT, VARIOUS STATES Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application, 1998

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
MN	1,950	100	1.7	49	97	1.0	35	64	1.0	30	97	11
MT	3,800	61	1.3	44	56	1.0	30	22	1.0	12	81	1/
ND	6,700	97	1.7	43	87	1.0	29	20	1.0	7	98	7
SD	1,950	85	1.4	41	66	1.0	35	11	1.0	26	73	1/
Total 2/	15,500	87	1.6	46	77	1.0	31	25	1.0	18	91	6

1/ Insufficient reports to publish data. 2/ Refers to 7 major other spring wheat states, which account for 99 percent of the U.S. acreage.

OTHER SPRING WHEAT, SOUTH DAKOTA: Frequency and Extent of Chemical Usage By Active Ingredient, 1998

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	49	1.0	0.36	0.36	341
Bromoxynil	Buctril	4	1.0	0.35	0.35	29
Dicamba	Banvel	30	1.0	0.06	0.06	35
Fenoxaprop-ethyl	Whip	9	1.1	0.07	0.08	15
MCPA	Several	19	1.0	0.33	0.35	128
Thifensulfuron-methyl	Pinnacle	7	1.0	0.010	0.010	2
Tribenuron-methyl	Express	11	1.0	0.004	0.004	1



WINTER WHEAT

SOUTH DAKOTA: Nitrogen was applied to 94 percent of South Dakota's 1.5 million planted winter wheat acres. Phosphate was applied to 92 percent. Winter wheat producers averaged 1.5 nitrogen applications at a rate of 37 pounds per acre, while phosphate was applied once at a rate of 26 pounds per acre. Herbicide was applied to 88 percent of the acreage. The most popular herbicides in South Dakota were 2,4-D and metsulfuron-methyl (Ally).

REGIONAL: Nitrogen was applied to 90 percent of the 1998 planted winter wheat acres in the nineteen surveyed states. Phosphate was applied to 63 percent. Producers averaged 1.6 nitrogen applications at a rate of 42 pounds per acre, while phosphate was applied at a rate of 34 pounds per acre. Most surveyed states treated at least a portion of the acreage with herbicides; 2,4-D was again the most prevalent in terms of area covered.

WINTER WHEAT, SOUTH DAKOTA

Year	Area Harvested	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	1,580	78	1.2	40	65	1.0	28	1/	1/	1/	65	1/
1997	1,150	78	1.3	36	58	1.0	25	1/	1/	1/	89	1/
1998 2/	1,500	94	1.5	37	92	1.0	26	1/	1/	1/	88	1/

1/ Insufficient reports to publish data. 2/ 1998 is area planted.

WINTER WHEAT, VARIOUS STATES

Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate Per Application, 1998

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	10,700	92	1.5	39	74	1.0	30	13	1.0	34	35	--
MT	1,400	90	1.5	35	88	1.1	24	31	1.0	11	89	--
NE	1,900	85	1.4	32	59	1.0	22	12	1.0	4	52	1/
SD	1,500	94	1.5	37	92	1.0	26	1/	1/	1/	88	1/
Total 2/	40,420	90	1.6	42	63	1.0	34	22	1.0	46	47	3

1/ Insufficient reports to publish data. 2/ Refers to 19 major winter wheat states, which account for 87 percent of U.S. acreage.

WINTER WHEAT, SOUTH DAKOTA: Frequency and Extent of Chemical Usage By Active Ingredient, 1998

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	47	1.0	0.25	0.25	175
Dicamba	Barvel	28	1.0	0.12	0.12	52
Glyphosate	Roundup	37	1.8	0.34	0.61	341
MCPA	Several	3	1.0	0.25	0.25	13
Metsulfuron-methyl	Ally	44	1.0	0.004	0.004	3

CORN

SOUTH DAKOTA: Nitrogen was applied to 94 percent of South Dakota's 3.9 million corn acres in 1998, averaging 1.3 applications at a rate of 62 pounds per acre. Phosphate was applied to 78 percent of the acreage and potash to 25 percent. Herbicide was applied to 95 percent of the corn acreage. Acetochlor (Harness) and Atrazine (Aatrex) were the most popular, with both being applied to 35 percent of the planted acres. There was insufficient data to publish insecticide usage.

REGIONAL: Nitrogen was applied to 98 percent of the total 1998 corn acreage in the sixteen corn states that were surveyed. Growers used an average of 1.7 applications per acre, applying 80 pounds per acre. In the states surveyed, 83 percent received phosphates, and potash was applied to 67 percent of the acreage. Herbicides were applied to 96 percent of the corn acreage in 1998. Atrazine (Aatrex) was the most used herbicide with 69 percent of the reported acreage being treated.

CORN, SOUTH DAKOTA

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/

1/ Insufficient reports to publish data.

CORN, VARIOUS STATES

Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate Per Application, 1998

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
IA	12,500	96	1.5	83	81	1.0	59	81	1.0	78	98	18
MN	7,300	96	1.6	78	91	1.0	52	87	1.1	66	97	10
NE	8,800	99	1.8	71	70	1.1	32	21	1.2	15	93	44
SD	3,900	94	1.3	62	78	1.0	38	25	1.0	22	95	1/
Total 2/	71,390	98	1.7	80	83	1.1	51	67	1.1	76	96	30

1/ Insufficient reports to publish data. 2/ Refers to 16 major corn states, which account for 89 percent of U.S. acreage.

CORN, SOUTH DAKOTA: Frequency and Extent of Chemical Usage By Active Ingredient, 1998

Active Ingredient	Trade Name	Area Applied	Applications	Rate Per Application	Rate Per Crop Year	Total Applied
		Percent	Number	- - - Pounds Per Acre - - -		1,000 Pounds
HERBICIDES:						
2,4-D	Several	13	1.0	0.35	0.37	189
Acetochlor	Harness	35	1.2	1.03	1.33	1,834
Atrazine	AAtrex	35	1.0	0.60	0.63	851
Bromoxynil	Buctril	5	1.0	0.17	0.17	33
Clopyralid	Stinger	14	1.0	0.10	0.10	55
Cyanazine	Bladex	7	1.0	0.77	0.77	202
Dicamba	Banvel	33	1.0	0.31	0.31	394
Dimethenamid	Frontier	8	1.0	1.34	1.34	423
EPTC	Eradicane	27	1.3	3.25	4.46	4,734
Flumetsulam	Broadstrike	14	1.0	0.04	0.04	21
Glyphosate	Roundup	14	1.0	0.49	0.51	284
Metolachlor	Dual	14	1.0	1.45	1.47	804
Nicosulfuron	Accent	19	1.0	0.02	0.02	14
Primisulfuron	Beacon	9	1.0	0.02	0.02	7
Rimsulfuron	Basis	7	1.0	0.010	0.010	3

SOYBEANS

SOUTH DAKOTA: Nitrogen was applied to 32 percent of South Dakota's 3.45 million soybean acres. South Dakota growers averaged 1.0 application at the rate of 27 pounds per acre, while phosphate was applied once to 32 percent of the acreage and potash to 11 percent. Herbicide was applied to 96 percent of the soybean acreage. Glyphosate (Roundup) and Imazethapyr (Pursuit) were the most popular herbicides, applied to 47 percent and 33 percent of the planted acres, respectively. There was insufficient data to publish insecticide usage.

REGIONAL: Soybean producers in the sixteen states surveyed applied nitrogen to 17 percent of the planted area. The average number of nitrogen applications per acre was 1.1 with an average application rate of 20 pounds per acre. Phosphate was applied on 24 percent of the planted acreage in the surveyed states, while potash was applied to 27 percent of the acreage. In the surveyed states 95 percent of the soybean acreage was treated with herbicides. The most widely used herbicides were Glyphosate (Roundup), Imazethapyr (Pursuit), and Trifluralin (Treflan).

SOYBEANS, SOUTH DAKOTA

Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate per Application

Year 1/	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area Applied	Appli- cations	Rate Per Appli- cation	Area Applied	Appli- cations	Rate Per Appli- cation	Area Applied	Appli- cations	Rate Per Appli- cation	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	2/
1997	3,500	35	1.2	29	34	1.0	36	18	1.0	23	90	2/
1998	3,450	32	1.0	27	32	1.0	35	11	1.0	8	96	2/

1/ Data for South Dakota was not collected for 1994, 1995, or 1996. 2/ Insufficient reports to publish data.

SOYBEANS, VARIOUS STATES

Acreage, Percent Receiving Fertilizer and Pesticides, Number of Applications, Rate Per Application, 1998

State	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area Applied	Appli- cations	Rate Per Appli-	Area Applied	Appli- cations	Rate Per Appli-	Area Applied	Appli- cations	Rate Per Appli-	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Number	Lbs/Acre	Percent	Percent
IA	10,500	10	1.1	18	13	1.0	47	14	1.0	52	100	1/
MN	6,900	18	1.1	21	17	1.0	33	9	1.0	56	97	1/
NE	3,800	22	1.1	14	19	1.0	37	8	1.2	22	88	1/
SD	3,450	32	1.0	27	32	1.0	35	11	1.0	8	96	1/
Total 2/	65,745	17	1.1	20	24	1.0	47	27	1.0	78	95	2

1/ Insufficient reports to publish data. 2/ Refers to 16 major soybean states, which account for 91 percent of U.S. acreage.

SOYBEANS, SOUTH DAKOTA: Frequency and Extent of Chemical Usage By Active Ingredient, 1998

Active Ingredient	Trade Name	Area Applied	Applica- tions	Rate Per Application	Rate Per Crop Year	Total Applied
		Percent	Number	- - - Pounds Per Acre - - -		1,000 Pounds
Acifluorfen	Blazer	11	1.0	0.16	0.16	60
Bentazon	Basagran	18	1.0	0.60	0.60	372
Chlorimuron-ethyl	Classic	5	1.0	0.006	0.006	1
Clethodim	Select	7	1.0	0.12	0.12	29
Fenoxaprop-ethyl	Whip	2	1.0	0.10	0.10	8
Fluazifop-P-butyl	Fusilade	2	1.0	0.03	0.03	3
Fomesafen	Reflex	6	1.0	0.16	0.16	36
Glyphosate	Roundup	47	1.4	0.71	1.04	1,681
Imazamox	Raptor	6	1.0	0.03	0.03	6
Imazethapyr	Pursuit	33	1.0	0.02	0.02	28
Pendimethalin	Prowl	16	1.1	0.70	0.77	417
Quizalofop-ethyl	Assure	2	1.0	0.06	0.06	4
Sethoxydim	Poast	9	1.0	0.34	0.34	108
Thifensulfuron-methyl	Pinnacle	4	1.0	0.001	0.001	1/
Trifluralin	Treflan	24	1.0	0.82	0.82	688

1/ Total applied is less than 1,000 pounds.