NEBRASKA AGRI-FACTS

NASS

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1997 AGRICULTURAL CHEMICAL USAGE

This report is the eighth annual Field Crops Summary issued by NASS containing on-farm agricultural chemical use statistics. The data presented in this report are part of the data series on chemical use funded through the Water Quality Initiative.

The Water Quality Initiative is a multi-agency program designed to provide information for farmers, ranchers, and foresters to address on-farm and off-farm environmental issues. In the past, there has been an inadequate amount of farm level data to determine the magnitude of water quality problems or to permit an assessment of alternatives for farmers and other affected parties. This report and other agricultural chemical reports help fill the needs of analysts evaluating the complex environmental issues of the 1990's.

CORN

Nitrogen was applied to 99% of the total 1997 corn acreage in the 10 States surveyed. All of the major producing States included in the survey had 96% or more of their acreage treated with nitrogen. Growers used an average of 1.7 treatments per acre and used an average 76 pounds per treatment. In the States surveyed, 84% of the planted corn acreage received phosphate fertilizer. Potash fertilizer was applied to 72 percent of the acreage.

Herbicides were applied to 96% of the total corn acreage in the survey, while insecticides were used on 30% of the acreage. Atrazine was the most used herbicide with 69% of the reported acreage being treated. Atrazine was applied at the rate of 1.01 pound per acre.

Dicamba and Metolachlor were the next two most widely used herbicides and they were applied to 29% and 35% of the reported acreage, respectively. Chlorpyrifos and Tefluthrin were the most widely used insecticides with 7% of the reported acreage. Chlorpyrifos was applied at the rate of 1.12 pounds per acre and Tefluthrin was applied at .12 pounds per acre.

In Nebraska, nitrogen was applied to 100% of the acreage, phosphates to 80% and potash to 26%. Herbicides were applied to 98% of the corn acreage while insecticide application covered 62%. There were a total of 192 usable reports. At the national level, the 10 states surveyed accounted for 77.0% of the U.S. corn acres planted in 1997.

Corn: Acreage--Percent Receiving Chemicals, Number of Applications, Rate per Application, 1997

State	Area Planted	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area 1/ Applied	Applica-tions	Rate Per Application	Area 1/ Applied	Applica-tions	Rate Per Application	Area 1/ Applied	Applica-tions	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Pounds	Percent	Number	Pounds	Percent	Number	Pounds	Percent	Percent
Iowa	12,200	99	1.6	77	75	1.1	57	75	1.1	67	98	19
Minnesota	7,000	97	1.5	74	79	1.1	44	81	1.2	46	91	10
Missouri	2,950	100	1.3	116	84	1.1	49	84	1.1	67	97	35
Nebraska	9,000	100	2.0	75	80	1.0	27	26	1.1	13	98	62
So. Dak.	3,800	96	1.4	60	80	1.0	36	31	1.0	22	93	10
Total 2/	62,150	99	1.7	76	84	1.1	52	72	1.1	73	96	30

1/ Refers to acres reported as receiving one or more applications of a specific fertilizer ingredient. 2/ States surveyed were IL, IN, IA, MI, MN, MO, NE, OH, SD, WI.

Corn: Frequency and Extent of Pesticide Usage By Active Ingredient, Nebraska, 1996-1997

Agricultural Chemical 1/	Area Applied 2/		Applications		Rate per Application		Rate per Crop Year		Total Applied	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997

Herbicides:	Percent		Number		Pounds per acre				1,000 pounds	
2,4-D	10	9	1.0	1.0	0.32	0.51	0.34	0.52	292	417
Acetochlor	17	28	1.0	1.0	1.63	1.65	1.63	1.65	2,402	4,083
Alachlor	24	8	1.0	1.0	1.30	1.55	1.30	1.55	2,706	1,156
Atrazine	82	73	1.1	1.1	0.92	0.98	1.01	1.07	7,001	6,978
Bromoxynil	3	2	1.0	1.0	0.36	0.31	0.36	0.31	106	68
Cyanazine	9	10	1.0	1.0	1.89	1.23	1.89	1.23	1,411	1,144
Dicamba	9	15	1.0	1.0	0.32	0.32	0.32	0.32	243	418
Dimethenamid	---	3	---	1.0	---	1.06	---	1.06	---	249
Glyphosate	8	5	1.0	1.0	0.58	0.46	0.58	0.46	378	222
Halosulfuron	---	3	---	1.0	---	0.04	---	0.04	---	10
Metolachlor	35	35	1.0	1.0	1.50	1.39	1.51	1.43	4,435	4,522
Nicosulfuron	2	4	1.0	1.0	0.02	0.02	0.02	0.02	5	9
Paraquat	---	1	---	1.0	---	0.49	---	0.49	---	57
Primisulfuron	14	19	1.0	1.0	0.02	0.01	0.02	0.01	25	24
Prosulfuron	11	17	1.0	1.0	0.02	0.01	0.02	0.01	16	20
Rimsulfuron	---	3	---	1.0	---	0.01	---	0.01	---	2
Thifensulfuron	---	3	---	1.0	---	0.004	---	0.004	---	1
Insecticides:										
Bt (Bacillus thur.) 3/	5	6	1.0	1.0	---	---	---	---	---	---
Carbofuran	---	10	---	1.0	---	0.98	---	0.98	---	879
Chlorpyrifos	13	6	1.0	1.2	0.92	0.55	0.92	0.55	984	382
Methyl parathion	13	---	1.2	---	0.42	---	0.53	---	564	---
Permethrin	---	10	---	1.0	---	0.09	---	0.09	---	79
Tefluthrin	10	23	1.0	1.1	0.09	0.12	0.09	0.12	74	270
Terbufos	9	8	1.0	1.0	1.16	0.99	1.16	0.99	933	748

1/ Insufficient reports to publish data for the following agricultural chemicals: Herbicides: Ametryn, Bromoxynil, Butylate, Clopyralid, EPTC, Flumetsulam, Imazethapyr, Metribuzin, Pendimethalin, Pyridate, Sethoxydim, Trifluralin. Insecticides: Aldicarb, Bifenthrin, Chlorethoxyfos, Cyfluthrin, Diazinon, Dimethoate, Fonofos, Lambacyhalothrin, Methyl parathion, Phorate, Phostebupirim,Tebupirimphos. 2/ Refers to acres reported as receiving one or more applications of a specific agricultural chemical. 3/ Rates and total applied are not available because amounts of active ingredients are not comparable between products.

WINTER WHEAT

Nitrogen fertilizer was applied to 84% of the winter wheat harvested acres in the 14 surveyed States; Colorado was the only state treating less than 75% of the grain area. Phosphate fertilizers were applied to 53% of the collective acreage, ranging from just 15% in Oregon to 92% in Ohio. All surveyed States treated at least a portion of the acreage with herbicides; 2,4-D was again the most prevalent in terms of area and total application. The surveyed States represented 35.1 million acres in 1997 and 84% of the U.S. winter wheat acreage.

In Nebraska, nitrogen was applied to 92% of the acreage and phosphates to 74%. Herbicides were applied to 53% of the acreage. There were a total of 81 usable reports.

Winter Wheat: Acreage--Percent Receiving Chemicals, Number of Applications, Rate per Application, 1997

State	Area Harvested	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area 1/ Applied	Applica-tions	Rate Per Application	Area 1/ Applied	Applica-tions	Rate Per Application	Area 1/ Applied	Applica-tions	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	Percent	Number	Pounds	Percent	Number	Pounds	Percent	Number	Pounds	Percent	Percent
Colorado	2,850	68	1.3	27	39	1.1	16	2/	2/	2/	64	13
Kansas	11,000	78	1.5	39	56	1.0	30	8	1.0	22	31	--
Nebraska	1,900	92	1.6	35	74	1.0	34	2/	2/	2/	53	--
So. Dak.	1,050	78	1.3	36	58	1.0	25	2/	2/	2/	89	--
Total 3/	35,065	84	1.5	44	53	1.0	34	15	1.0	51	46	5

1/ Refers to acres reported as receiving one or more applications of a specific fertilizer ingredient. 2/ Insufficient reports to publish state level usage estimates. 3/ Total includes: CO, ID, IL, KS, MO, MT, NE, OH, OK, OR, PA, SD, TX, WA.

Winter Wheat: Frequency and Extent of Herbicide Usage By Active Ingredient, 1996-1997

Agricultural Chemical	Area Applied 2/		Applications		Rate per Application		Rate per Crop Year		Total Applied	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
	Percent		Number		Pounds per acre				1,000 pounds	
NEBRASKA 1/										
2,4-D	39	29	1.0	1.0	0.28	0.32	0.28	0.32	230	177
Metsulfuron-methyl	29	24	1.0	1.0	0.004	0.004	0.004	0.004	2	2
Triasulfuron	20	17	1.0	1.0	0.02	0.01	0.02	0.01	8	4
MAJOR STATES 3/										
2,4-D	33	24	1.0	1.0	0.43	0.41	0.45	0.42	4,262	3,486
Atrazine	1	---	1.0	---	0.68	---	0.68	---	157	---
Bromoxynil	7	4	1.0	1.0	0.24	0.24	0.24	0.25	477	353
Chlorsulfuron	8	11	1.0	1.0	0.01	0.01	0.01	0.01	24	44
Dicamba	9	6	1.1	1.1	0.08	0.10	0.09	0.11	233	237
Diclofop-methyl	---	1	---	1.0	---	0.81	---	0.81	---	177
Fenoxaprop	---	1	---	1.0	---	0.05	---	0.05	---	10
Glyphosate	7	6	1.1	1.2	0.37	0.36	0.42	0.45	856	978
Imazamethabenz	1	1	1.0	1.0	0.28	0.33	0.28	0.33	58	67
MCPA	9	5	1.0	1.0	0.31	0.30	0.31	0.30	778	488
Metribuzin	1	2	1.0	1.1	0.17	0.27	0.17	0.29	58	193
Metsulfuron-methyl	22	14	1.0	1.0	0.003	0.003	0.003	0.003	20	15
Thifensulfuron	4	7	1.0	1.0	0.01	0.01	0.01	0.01	13	34
Triallate	1	1	1.0	1.0	1.42	0.09	1.42	1.09	252	418
Triasulfuron	7	5	1.0	1.0	0.02	0.01	0.02	0.01	32	26
Tribenuron-methyl	5	8	1.0	1.0	0.006	0.007	0.006	0.007	9	20

1/ Insufficient reports to publish data for the following agricultural chemicals. Herbicides: Atrazine, Chlorsulfuron, Cyanazine, Dicamba, Glyphosate, Paraquat, Thifensulfuron, Tribenuron-methyl. 2/ Refers to acres reported as receiving one or more applications of a specific agricultural chemical. 3/ Major states: CO, ID, IL, KS, MO, MT, NE, OH, OK, OR, PA, SD, TX, WA.

SOYBEANS

Soybean producers in the 19 States surveyed applied nitrogen fertilizer to 20% of the area planted to soybeans. The percent of acres treated ranged from 6% in Arkansas to 3% in Michigan. The average number of nitrogen applications per acre was 1.1 with an average application rate of 23 pounds per acre. Phosphate was applied on 28% of the soybean planted acreage in the surveyed States. Nebraska producers applied phosphate to 31% of the soybean acreage, while Minnesota applications covered 20% of the planted acres. Potash was applied to 33% of the planted soybean acreage.

In the 19 States surveyed, an average of 97% of the soybean acreage was treated with herbicides. The most widely used herbicides were Imazethapyr, applied to 38% of the soybean acres, followed by glyphosate and pendimethalin and applied to 28% and 25% of the acreage, respectively. Growers in the surveyed states applied insecticide to only 2% of the total soybean acres planted. With the exception of insecticide applications in Louisiana and N. Carolina, there were too few reports to publish individual state data for insecticides. Growers reported few fungicide or other chemical applications.

In Nebraska, nitrogen was applied to 31% of the soybean acreage, phosphates to 31%, and potash to only 16%. Herbicides were applied to 99% of the soybean acreage while insecticides were not reported as being applied. There were a total of 177 usable reports. At the national level, the 19 states surveyed in 1997 covered 93% of the U.S. soybean acreage planted.

Soybeans: Acreage--Percent Receiving Chemicals, Number of Applications, Rate per Application, 1997

	Area	Nitrogen			Phosphate			Potash			Herbicide

State	Planted	Area 1/ Applied	Applica-tions	Rate Per Application	Area 1/ Applied	Applica-tions	Rate Per Application	Area 1/ Applied	Applica-tions	Rate Per Application	Area Applied
	1,000 Acres	Percent	Number	Pounds	Percent	Number	Pounds	Percent	Number	Pounds	Percent
Iowa	10,500	16	1.0	18	23	1.0	53	25	1.0	76	99
Minnesota	6,800	16	1.0	14	20	1.0	41	22	1.0	93	96
Missouri	4,900	15	1.0	24	28	1.0	44	35	1.1	72	94
Nebraska	3,500	31	1.1	16	31	1.0	40	16	1.0	20	99
Total 2/	66,215	20	1.1	23	28	1.0	49	33	1.0	85	97

1/ Refers to acres receiving one or more applications of a specific fertilizer ingredient. 2/ States surveyed: AR, DE, IL, IN, IA, KS, KY, LA, MI, MN, MS, MO, NE, NC, OH, PA, SD, TN, WI. 3/ Insufficient reports to publish State level usage estimates.

Soybeans: Frequency and Extent of Herbicide Usage By Active Ingredient, Nebraska, 1996-1997

Agricultural Chemical 1/	Area Applied 2/		Applications		Rate per Application		Rate per Year		Total Applied	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
	Percent		Number		Pounds per acre				1,000 pounds	
2,4-D	3	---	1.0	---	0.26	---	0.26	---	27	---
Acifluorfen	---	10	---	1.0	---	0.20	---	0.20	---	70
Alachlor	12	10	1.0	1.0	1.24	2.10	1.24	2.10	435	754
Bentazon	---	5	---	1.0	---	0.83	---	0.83	---	152
Chlorimuron-ethyl	24	21	1.0	1.0	0.02	0.01	0.02	0.01	13	9
Clethodim	---	3	---	1.0	---	0.09	---	0.09	---	11
Clomazone	---	7	---	1.0	---	0.58	---	0.58	---	138
Fenoxaprop	---	3	---	1.0	---	0.11	---	0.11	---	12
Fluazifop-P-butyl	---	6	---	1.0	---	0.04	---	0.04	---	9
Flumetsulam	---	6	---	1.0	---	0.05	---	0.05	---	9
Glyphosate	6	26	1.3	1.4	0.69	0.59	0.87	0.85	167	773
Imazaquin	---	11	---	1.0	---	0.07	---	0.07	---	27
Imazethapyr	60	38	1.0	1.0	0.05	0.05	0.05	0.05	87	69
Lactofen	28	---	1.0	---	0.06	---	0.06	---	55	---
Metolachlor	2	5	1.0	1.0	1.89	1.83	1.89	1.83	97	289
Metribuzin	15	8	1.0	1.0	0.21	0.22	0.21	0.22	99	59
Pendimethalin	32	26	1.1	1.0	0.82	0.89	0.90	0.91	883	815
Quizalofop-ethyl	---	4	---	1.0	---	0.05	---	0.05	---	7
Sethoxydim	---	11	---	1.0	---	0.25	---	0.25	---	100
Thifensulfuron	10	13	1.0	1.0	0.003	0.003	0.003	0.003	1	2
Trifluralin	18	28	1.0	1.0	0.82	0.74	0.82	0.74	439	729

1/ Insufficient reports to publish data for the following agricultural chemicals. Herbicides: Atrazine, Clopyralid, Cloramben, Dimenyhenamid, Ethalfluralin, Flumiclorac Pentyl, Fomesafen, Linuron. 2/ Refers to acres receiving one or more applications of a specific agricultural chemical.

PESTICIDES: Common Names of Active Ingredients and Trade Names

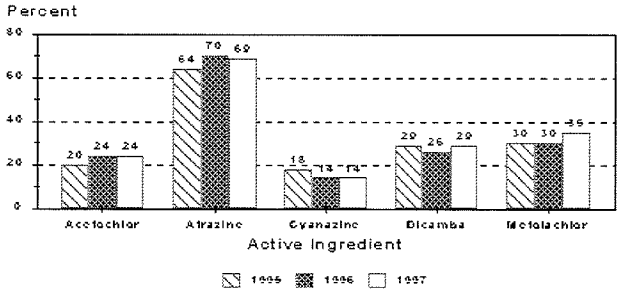
Herbicide Active Ingredient	Trade Name
2,4-D	several
Acetochlor	Harness, Surpass
Acifluorfen	Blazer, Tackle
Alachlor	Lasso
Atrazine	AAtrex
Bentazon	Basagran, Pledge
Bromoxynil	Buctril, Brominal

Chlorimuron-ethyl	Classic
Chlorsulfuron	Glean
Clethodim	Select
Clomazone	Command
Cyanazine	Bladex
Dicamba	Banvel
Diclofop-methyl	Hoelon
Dimethenamid	Frontier
Fenoxaprop	Whip, Option
Fluazifop-P-butyl	Fusilade
Flumetsulam	Broadstrike
Glyphosate	Roundup, Ranger, Rattler, Rodeo
Halosulfuron	Permit
Imazeamethabenz	Assert
Imazaquin	Scepter
Imazethapyr	Pursuit
Lactofen	Cobra
MCPA	several
Metolachlor	Dual
Metribuzin	Sencor, Lexone
Metsulfuron-methyl	Ally
Nicosulfuron	Accent
Paraquat	Gramoxone, Cyclone, Starfire
Pendimethalin	Prowl
Primisulfuron	Beacon
Prosulfuron	Peak
Quizalofop-ethyl	Assure
Rimsulfuron	Basis
Sethoxydim	Poast
Thifensulfuron	Pinnacle
Triallate	Far-Go
Triasulfuron	Pinnacle
Tribenuron-methyl	Express
Trifluralin	Treflan, Trilin, Trific
Insecticide Active Ingredient	Trade Name
Bt (Bacillus thuringiensis)	several
Carbofuran	Furadan
Chlorpyrifos	Lorsban, Dursban
Methyl parathion	several
Permethrin	Ambush, Pounce
Tefluthrin	Force
Terbufos	Counter

Corn - Percent of Acres Treated

Top 5 Active Ingredients for 1997

Comparison to 10 Comparable States

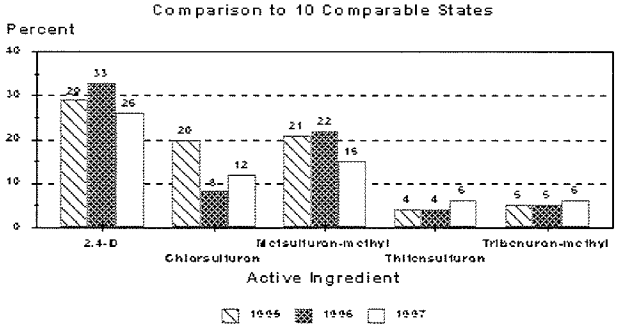


Comparable states are IL, IN, IA, MI, MN, MO, NE, OH, SD and WI

Winter Wheat - Percent of Acres Treated

Top 5 Active Ingredients for 1997

Comparison to 10 Comparable States

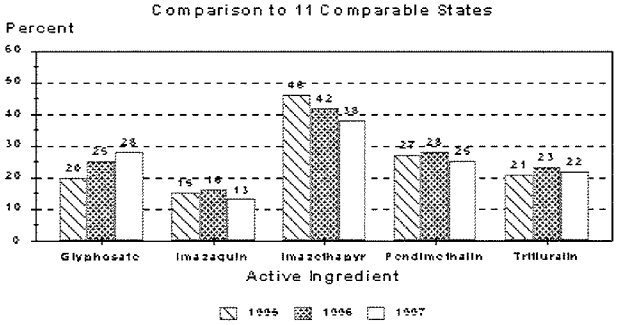


Comparable states are CO, ID, KS, MT, NE, OK, OR, SD, TX and WA.

Soybeans - Percent of Acres Treated

Top 5 Active Ingredients for 1997

Comparison to 11 Comparable States



Comparable states are AR, IL, IN, IA, LA, MN, MS, MO, NE, OH and TN

Data Reliability

The probability nature of the survey provides expansion of data so that the estimates are statistically representative of chemical use on the targeted crops in the surveyed States. A complete census may have yielded different results. The reliability of these survey results are affected by sampling variability and non-sampling errors. Sampling variability of the estimates differed considerably by chemical and crop. In general, the more

Terms and Definitions

Agricultural chemicals *refer to ingredients in both fertilizer and pesticide products.* ***Fertilizer,*** *in this report, refers to applications of nitrogen, phosphate, and potash.* ***Pesticides*** *include any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant. Pests targeted by pesticides include weeds, insects, fungi, and other forms of life.* ***Herbicides, insecticides, fungicides, and other chemicals*** *make up the four classes of pesticides presented in this report. Miticides and nematicides are included as insecticides. Soil fumigants, growth regulators, defoliants, and desiccants are included as other chemicals. This report excludes pesticides used for seed treatments, post-harvest applications to the commodity, and spot treatments.*

Active ingredient *is the specific chemical which kills or controls the target pests.* ***Trade name*** *is the actual product name given to a specific formulation of a pesticide product. A formulation contains a specific concentration of the active ingredient, carrier materials, and other ingredients such as emulsifiers and wetting agents. Some formulations, as in the case of pre-mixes, can contain more than one active ingredient.*

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