United States
Department of
Agriculture

National
Agricultural
Statistics
Service

Agricultural Chemical Usage

1999 Field Crops Summary

May 2000

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Update Alert

Summary errors for the chemicals ethyl parathion and methyl parathion were discovered for sunflowers in Kansas. Previously published applications of the insecticide ethyl parathion on sunflowers in Kansas were in error and should have all been reported as applications of methyl parathion. The affected sunflower tables have been revised (pages 99-101).

1999 Agricultural Chemical Use Estimates for Field Crops

Overview: The agricultural chemical use estimates in this report refer to on-farm use of commercial fertilizers and pesticides on targeted crops for the 1999 crop year. Farm and ranch operators were enumerated late in the growing season or after the farm operator had indicated that planned applications were completed. The chemical use data were not summarized for geographical areas other than published in this report.

The data were compiled from the Agricultural Resources Management Study (ARMS), conducted primarily during the months of October-December of 1999. Relevant portions of the survey instruments used in data collection are included in the back of this publication.

Targeted crops in the 1999 ARMS include corn, upland cotton, fall potatoes, soybeans, peanuts, and sunflowers. Winter wheat was a target commodity for Indiana only.

Agricultural Chemical Use Survey Coverage, 1998 and 1999

Crop	1998 States Surveyed	1998 Reports Summarized	1998 US Acreage Included	1999 States Surveyed	1999 Reports Summarized	1999 US Acreage Included
	--- Number ---		Percent	--- Number ---		Percent
Corn	16	2,461	89	15	2,325	88
Cotton, Upland	10	1,502	92	10	1,607	91
Peanuts	-	-	-	4	617	81
Potatoes, Fall	2	287	8	11	1,322	92
Soybeans	16	2,466	91	17	2,525	92
Sunflowers	-	-	-	3	463	82
Wheat, Winter	19	1,804	87	1	177	1

This report excludes pesticides used for seed treatments and postharvest applications to the commodity. Spot treatments, which account for a small percentage (approximately 1%) of total applications, are also excluded.

Highlights

Corn: Nitrogen was applied to 98 percent of the 1999 corn acreage in the 15 States surveyed: Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Nebraska, North Carolina, Missouri, Ohio, South Dakota, Texas, and Wisconsin. Growers in Kentucky, Michigan, Missouri, Ohio, and Texas reported 100 percent of the acreage treated. Corn growers used an average of 1.7 applications per acre while applying 77 pounds of nitrogen per treatment. In the States surveyed, 82 percent of the planted corn acreage 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 was the most commonly used herbicide with 70 percent of the reported acreage being treated. Atrazine was applied at a rate of 1.02 pounds per acre. Metolachlor and Acetochlor were the next two most widely used herbicides and were applied to 29 and 27 percent of the reported acreage, respectively.

In 1999, thirty percent of the corn acreage was treated with insecticides. Chlorpyrifos and Terbufos were the most commonly used insecticides, representing 7.5 million out of the total 10.1 million pounds of insecticide applied in the 15 States surveyed. Chlorpyrifos was applied at the rate of 1.08 pounds per acre and Terbufos was applied at 1.09 pounds per acre.

Upland Cotton: Nitrogen fertilizer was applied on 86 percent of the upland cotton acreage during 1999 in the 10 States surveyed: Alabama, Arizona, Arkansas, California, Georgia, Louisiana, Mississippi, North Carolina, Tennessee, and Texas. The area treated with phosphates totaled 59 percent of the planted acreage in the States surveyed. Tennessee and Georgia producers reported the greatest use of phosphates, treating 99 and 98 percent of their planted acreage, respectively. The largest increase in phosphate use was in California, which showed a 28 point increase from the previous year. Potash was applied to 52 percent of the area planted to upland cotton in 1999 for the 10 States surveyed. Tennessee and Georgia producers treated their entire acreage and the Southeastern region continued to be the largest users of potash. Arizona and California continued to be the smallest users with each State treating 15 and 19 percent of the acres, respectively.

Herbicides were applied to 97 percent of the upland cotton planted acreage in the States surveyed. Texas, Arkansas, and Louisiana showed increases of 4,3, and 2 percentage points, respectively, while Arizona's use decreased 5 points from 1998 levels. Trifluralin continued to be the most commonly used herbicide, and was applied to 52 percent of the acreage, down 5 points from 1998.

Insecticide applications were made to 84 percent of the upland cotton planted acres in 1999 for the 10 States Surveyed. Most States showed decreases in use from the previous year, although Georgia and Texas use increased. Louisiana and Mississippi percent of acres treated was unchanged from 1998. Malathion, at approximately 30.5 million pounds, continued to be the active ingredient with the highest total pounds applied for upland cotton.

Area treated with other chemicals totaled 61 percent of the 1999 planted acreage. North Carolina use of other chemicals showed a decrease of 32 percentage points from 1998, while Louisiana had an increase of 5 points. Tennessee use of other chemicals was down 4 points from the previous year. Texas continued to treat the smallest percent of acreage with other chemicals, at 32 percent, 13 points below last year's use.

Peanuts: Nitrogen was applied to 64 percent of the total 1999 peanut acreage in the four States surveyed: Texas, Alabama, Georgia, and North Carolina. Texas reported the highest percentage of Nitrogen applications with 91 percent of the acreage planted being treated. Growers used an average of 1.3 applications of nitrogen per acre while applying 30 pounds per treatment. In the States surveyed, 70 percent of the planted peanut acreage received phosphates and potash was applied to 68 percent of the acreage.

Herbicides were applied to 97 percent of the peanut acreage in 1999 for the four States surveyed. Pendimethalin was the most commonly used herbicide with 48 percent of the reported acreage being treated. Pendimethalin was applied at the rate of 0.79 pound per acre. 2,4-DB, Paraquat and Bentazon were the next three most commonly used herbicides and they were applied to 38, 33 and 32 percent of the reported acreage, respectively.

In 1999, 60 percent of the peanut acreage was treated with insecticides. Aldicarb and Phorate were the most widely used insecticides, with 32 and 17 percent of the reported acreage treated, respectively. Aldicarb was applied at the rate of 0.99 pound per acre and Phorate was applied at 0.83 pound per acre.

Fall Potatoes: Eleven fall potato producing States were included in the 1999 survey: Colorado, Idaho, Indiana, Maine, Michigan, Minnesota, North Dakota, Oregon, Pennsylvania, Washington, and Wisconsin.

Nitrogen fertilizer was applied to 100 percent of the fall potato acreage in all States, except in Colorado, Minnesota, North Dakota, and Pennsylvania. The number of nitrogen applications averaged 3.8 per acre with a total of 243.2 million pounds applied. Phosphate was applied to 98 percent of the acres in the States surveyed with a total of 190.1 million pounds being applied. Potash was applied to 88 percent of the fall potato acreage. About 163.6 million pounds of potash were applied in total.

Herbicides were applied to 93 percent of the potato acreage in 1999 in the 11 States surveyed. Coverage ranged from 100 percent in Maine, Michigan, and Oregon to 67 percent of the crop receiving herbicides in Indiana. Metribuzin was the most widely applied active ingredient and was used on 73 percent of the total acreage while EPTC was applied to 26 percent of the planted acres. Pendimethalin and Rimsulfuron were applied to 20 and 15 percent of the planted acres, respectively.

Insecticides were applied to 93 percent of the 1999 fall potato acreage. Usage ranged from treatment on 100 percent of the acres in Michigan and Wisconsin to 76 percent of the acres in Colorado. The three most common active ingredients were Imidacloprid, Methamidophos, and Phorate which were applied to 34, 29, and 23 percent of the fall potato acreage, respectively.

Fungicide treatments were applied to 95 percent of the fall potato acreage. Maine treated 100 percent of the acreage, followed closely by Michigan and North Dakota with 99 percent each. Chlorothalonil was used the most, as it was applied on 72 percent of the acreage, followed by Mancozeb on 65 percent of the fall potato acreage.

Usage of other chemicals, primarily desiccants, varied widely among the 11 States with an average of 45 percent of the fall potato acreage being treated. Diquat was the most commonly used active ingredient in the States surveyed and was applied to 38 percent of the planted area.

Soybeans: Soybean producers in the 17 States surveyed (Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, Ohio, Pennsylvania, South Dakota, and Tennessee) applied nitrogen fertilizer to 18 percent of the area planted to soybeans. The percent of acres treated ranged from 5 percent in Louisiana to 54 percent in North Carolina. The average number of nitrogen applications per acre was 1.0 with an average application rate of 20 pounds per acre. Phosphate was applied on 26 percent of the soybean planted acreage in the States surveyed. Producers in North Carolina applied phosphates to 71 percent of the soybean acreage, while applications by Minnesota's producers covered only 13 percent of the planted acreage. Potash was applied to 28 percent of the planted soybean acreage in the 17 States surveyed.

In the 17 States surveyed, 96 percent of the soybean acreage was treated with herbicides. The most widely used herbicides were Glyphosate, applied to 62 percent of the soybean acreage, followed by Imazethapyr applied to 16 percent of the acreage. Pendimethalin and Trifluralin were both applied to 14 percent of the soybean acreage.

Soybean growers in the States surveyed applied insecticide to only 2 percent of the soybean acres planted. Although there were too few reports to publish some individual state data for the insecticides, data are published for Arkansas, Illinois, Kansas, Louisiana, Mississippi, North Carolina, Ohio, Pennsylvania, and Tennessee. Of the published States, Louisiana was the largest user of insecticides with 53 percent of the acreage treated. The soybean growers also reported few fungicide or other chemical applications.

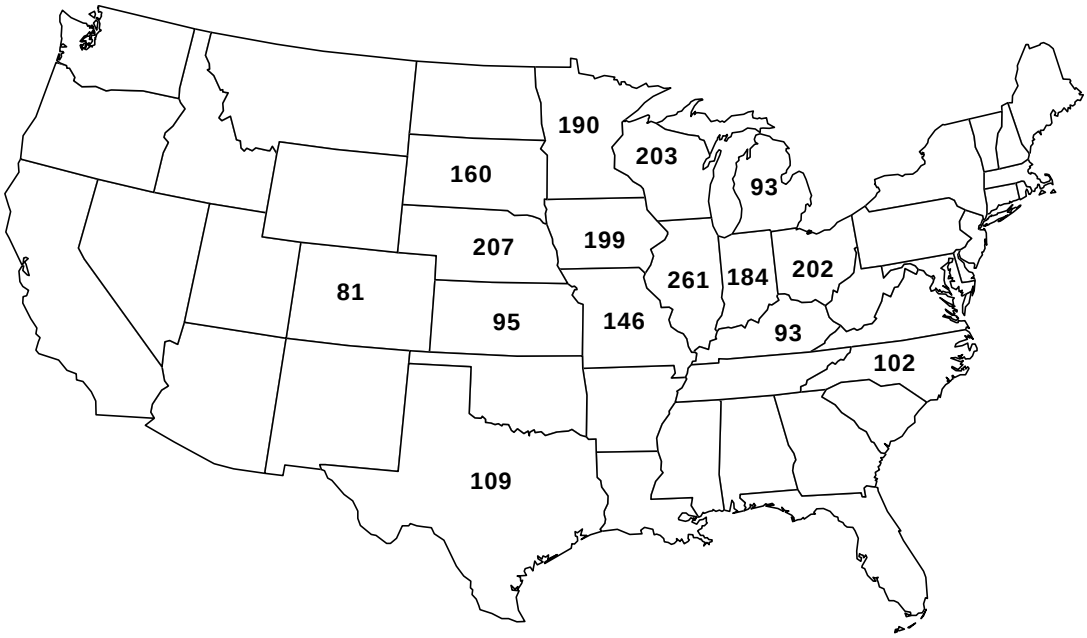
Sunflower: Nitrogen was applied to 90 percent of the total 1999 sunflower acreage in the three States surveyed: Kansas, North Dakota, and South Dakota. North Dakota reported the highest percentage of Nitrogen applications with 96 percent of the acreage planted treated. Growers used an average of 1.3 applications per acre applying 49 pounds per treatment. In the States surveyed, 43 percent of the planted sunflower acreage received phosphates, and potash was applied to 8 percent of the acreage.

Herbicides were applied to 95 percent of the sunflower acreage in 1999. Ethalfluralin was the most commonly used herbicide with 40 percent of the reported acreage being treated. Ethalfluralin was applied at the rate of 1.10 pound per acre. Trifluralin, Glyphosate, and Sethoxydim were the next three most commonly used herbicides and they were applied to 29,14,and 12 percent of the reported acreage, respectively.

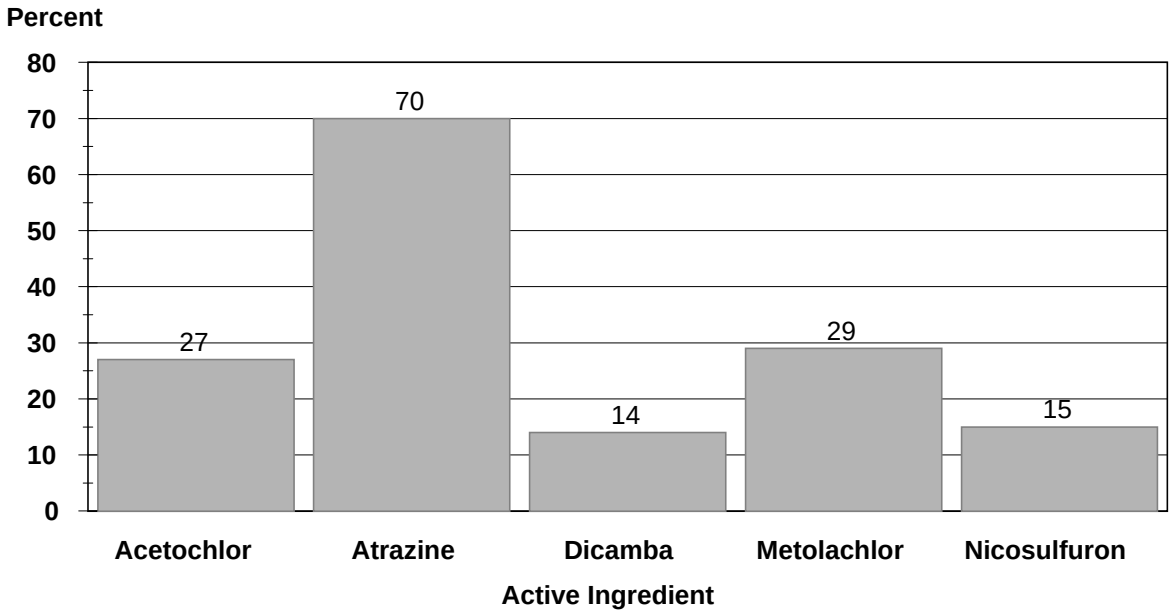
In 1999, 33 percent of the sunflower acreage was treated with insecticides. Esfenvelerate was the most widely used insecticide, with 25 percent of the reported acreage treated. Esfenvelerate was applied at the rate of 0.02 pounds per acre.

Winter Wheat: Nitrogen fertilizer was applied to 97 percent of the area planted for 1999 in Indiana. Phosphate fertilizers were applied to 91 percent of the collective acreage. Indiana growers treated 39 percent of the winter wheat acreage with herbicides; 2,4-D was the most prevalent in terms of total amount applied.

Corn: Number of Usable Reports, 1999



Corn - Percent of Acres Treated
Top 5 Active Ingredients for 1999



Surveyed States: CO, IL, IN, IA, KS, KY, MI, MN, MO, NE, NC, OH, SD, TX and WI

Corn: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Planted Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	1,000 Acres	Percent	Mil. Lbs	Percent	Mil. Lbs	Percent	Mil. Lbs
CO	1,230	98	165.6	65	30.3	16	3.4
IL	10,800	98	1,639.8	80	603.2	81	1,003.0
IN	5,800	99	881.8	92	299.1	88	593.3
IA	12,100	98	1,502.8	75	604.9	75	734.7
KS	3,150	99	443.3	70	86.2	22	20.5
KY	1,320	100	234.9	81	66.6	50	64.5
MI	2,200	100	277.9	92	91.9	91	174.4
MN	7,100	92	702.9	90	299.6	86	312.9
MO	2,650	100	422.3	84	136.1	84	169.4
NE	8,600	99	1,115.2	75	232.8	18	22.1
NC	750	99	83.2	82	36.3	88	66.3
OH	3,450	100	527.0	97	236.1	94	324.2
SD	3,600	98	334.6	88	136.2	49	42.5
TX	1,950	100	304.5	80	74.5	40	22.4
WI	3,600	98	305.1	82	104.2	91	177.8
Total	68,300	98	8,940.9	82	3,038.0	67	3,731.4

Corn: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Colorado:	1,230					
Nitrogen		98	1.6	83	138	165.6
Phosphate		65	1.1	34	38	30.3
Potash		16	1.0	17	17	3.4
Illinois:	10,800					
Nitrogen		98	1.8	86	155	1,639.8
Phosphate		80	1.0	67	70	603.2
Potash		81	1.0	105	115	1,003.0
Indiana:	5,800					
Nitrogen		99	2.1	72	154	881.8
Phosphate		92	1.2	46	56	299.1
Potash		88	1.1	100	116	593.3
Iowa:	12,100					
Nitrogen		98	1.4	87	126	1,502.8
Phosphate		75	1.0	61	66	604.9
Potash		75	1.0	77	81	734.7
Kansas:	3,150					
Nitrogen		99	1.6	89	142	443.3
Phosphate		70	1.0	36	39	86.2
Potash		22	1.0	29	30	20.5

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Corn: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999 (continued)

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Kentucky:	1,320					
Nitrogen		100	1.6	106	178	234.9
Phosphate		81	1.0	60	62	66.6
Potash		50	1.0	97	98	64.5
Michigan:	2,200					
Nitrogen		100	1.8	69	126	277.9
Phosphate		92	1.0	44	46	91.9
Potash		91	1.3	63	87	174.4
Minnesota:	7,100					
Nitrogen		92	1.5	71	107	702.9
Phosphate		90	1.0	46	47	299.6
Potash		86	1.0	50	51	312.9
Missouri:	2,650					
Nitrogen		100	1.4	110	160	422.3
Phosphate		84	1.1	55	61	136.1
Potash		84	1.0	73	76	169.4
Nebraska:	8,600					
Nitrogen		99	1.9	68	131	1,115.2
Phosphate		75	1.0	35	36	232.8
Potash		18	1.0	14	14	22.1
North Carolina:	750					
Nitrogen		99	1.9	57	113	83.2
Phosphate		82	1.0	54	59	36.3
Potash		88	1.0	92	101	66.3
Ohio:	3,450					
Nitrogen		100	2.0	76	153	527.0
Phosphate		97	1.1	64	71	236.1
Potash		94	1.2	82	100	324.2
South Dakota:	3,600					
Nitrogen		98	1.5	60	95	334.6
Phosphate		88	1.1	37	43	136.2
Potash		49	1.0	24	24	42.5
Texas:	1,950					
Nitrogen		100	1.9	81	156	304.5
Phosphate		80	1.2	37	48	74.5
Potash		40	1.1	24	28	22.4
Wisconsin:	3,600					
Nitrogen		98	1.6	51	86	305.1
Phosphate		82	1.0	34	35	104.2
Potash		91	1.0	51	54	177.8
Total:	68,300					
Nitrogen		98	1.7	77	133	8,940.9
Phosphate		82	1.0	50	54	3,038.0
Potash		67	1.0	74	81	3,731.4

Corn: Active Ingredients Applied and Publication Status
By States Surveyed, 1999

Active Ingredient	ALL	States Surveyed: CO	IA	IL	IN	KS	KY	MI	MN
Herbicides:									
2,4-D	P	P	P	P	P	P	P	P	P
Acetamide	P		*		*				
Acetochlor	P	P	P	P	P	P	P	P	P
Alachlor	P	P	*	*	P	P		P	P
Ametryn	P								
Atrazine	P	P	P	P	P	P	P	P	P
Bentazon	P		P	P		*		*	
Bromacil	*								*
Bromoxynil	P	*	P	P	*	*		*	P
Butylate	*	*							
Carfentrazone-ethyl	P	*	*		*				
Clopyralid	P	*	P	P	P		*	P	P
Cyanazine	P	*	*	P	P			*	*
Dicamba	P	P	P	P	P	P		P	P
Dicamba, Dimet. salt	P	*	*	P	*				*
Dicamba, Pot. salt	P	P	P	P	*	*			P
Diflufenzopyr-sodium	P	*	*	P	*				*
Dimethenamid	P		P	P	P	*	*	*	P
EPTC	P	*							*
Flumetsulam	P	*	P	P	P		*	P	P
Flumiclorac-Pentyl	*	*	*						
Fluometuron	*	*							
Glufosinate-ammonium	P		*	*	*				*
Glyphosate	P	P	P	P	P	P	P	P	P
Halosulfuron	P		*	*		*	*	*	*
Imazapyr	P	*	*	*	*	*	*		*
Imazethapyr	P	*	*	P	P	*	*		*
Isoxaflutole	P	P	P	P	*	*			
Metolachlor	P	*	P	P	P	P	P	P	P
Metribuzin	P		*		*				
Nicosulfuron	P	P	P	P	P	P	P	P	P
Oxyfluorfen	*								
Paraquat	P			P	*	*	P		
Pendimethalin	P	P	*	P	*	*	*	*	P
Primisulfuron	P		P	P	P	P	P	*	P
Propachlor	*				*				*
Prosulfuron	P			P	*	P	P		
Pyridate	P	P	P	P		*			
Quinclorac	*					*			
Rimsulfuron	P	P	P	P	*	P	*	P	P
Sethoxydim	*						*		
Simazine	P			P	P		P	*	
Sulfosate	P				*		*		
Thifensulfuron	P	P		*					*
Trifluralin	P	*				*	*		

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Corn: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed						
	MO	NC	NE	OH	SD	TX	WI
Herbicides:							
2,4-D	P	P	P	P	P	P	P
Acetamide	*		*				*
Acetochlor	P	*	P	P	P	P	P
Alachlor	P	P	P	P	*	*	P
Ametryn		P					
Atrazine	P	P	P	P	P	P	P
Bentazon	*		*	*			
Bromoxynil	P		P		P	*	*
Butylate	*						
Carfentrazone-ethyl						*	*
Clopyralid	P	*	P	P	P	*	P
Cyanazine	P		P	P	P		P
Dicamba	P	*	P	P	P	P	P
Dicamba, Dimet. salt			P	*	*	*	*
Dicamba, Pot. salt			P	*	P		P
Diflufenzopyr-sodium			P	*	*	*	*
Dimethenamid	P	*	P	*	P	*	P
EPTC			*		P		
Flumetsulam	P	*	P	P	P	*	P
Flumiclorac-Pentyl					*		
Glufosinate-ammonium	*		*		*		*
Glyphosate	P	P	P	P	P	P	P
Halosulfuron			P			*	*
Imazapyr	*		*	*	*		*
Imazethapyr	*		*	*	P		*
Isoxaflutole	*		P	*	*	*	
Metolachlor	P	P	P	P	P	P	P
Metribuzin	*		*				*
Nicosulfuron	P	P	P	P	P	P	P
Oxyfluorfen		*					
Paraquat	*	P		*			
Pendimethalin	*			P	*	*	P
Primisulfuron	*	*	P	P	P	P	P
Propachlor							
Prosulfuron	*		P	*		P	
Pyridate	*		*		*		*
Quinclorac							
Rimsulfuron	P	*	P	P	P	P	P
Sethoxydim					*		
Simazine	*	P		P			*
Sulfosate				*			
Thifensulfuron			*		*		*
Trifluralin		*				*	

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Corn: Active Ingredients Applied and Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed								
	ALL	CO	IA	IL	IN	KS	KY	MI	MN
Insecticides:									
Aldicarb	*								
Azadirachtin	*					*			
Bifenthrin	P	*	*			P			
Bt (Bacillus thur.)	*								*
Carbaryl	*							*	
Carbofuran	P	*	*		*	P		*	
Chlorethoxyfos	P			P	*				
Chlorpyrifos	P	*	P	P	P	*	*	*	*
Cyfluthrin	P	*	*	P	*		*		*
Dimethoate	P	P							
Esfenvalerate	P			*				*	
Ethyl parathion	*	*							
Fipronil	P	*	*	*	*			*	
Lambda-cyhalothrin	P	*	*	P	*	*	P		*
Methyl parathion	P					P			
Permethrin	P	*	*	P	*	*	P		
Phorate	*								*
Propargite	P	P							
Tebupirimphos	P	*	*	P	*		*		*
Tefluthrin	P	*	P	P	P	*	*	*	P
Terbufos	P	P	P	P	P	*		*	*
Fungicides:									
Propiconazole	*		*	*	*			*	
Other Chemicals:									
Garlic oil	*						*		

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Corn: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed						
	MO	NC	NE	OH	SD	TX	WI
Insecticides:							
Aldicarb		*					
Bifenthrin			*			P	
Bt (Bacillus thur.)			*				
Carbofuran	*	*	*			*	
Chlorethoxyfos			*	*			*
Chlorpyrifos	P	*	P	P	*	*	P
Cyfluthrin	*		P	*		P	*
Dimethoate						*	
Esfenvalerate	*					*	
Ethyl parathion			*				
Fipronil			P	*		P	*
Lambda-cyhalothrin	P	*	*	*	*	P	
Methyl parathion			P				
Permethrin	P		P	*		*	
Phorate		*	*				
Propargite						*	
Tebupirimphos	*		P	*		P	*
Tefluthrin		*	P	*	*	P	P
Terbufos		P	P		*	P	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Corn: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State	Planted Acreage	Area Receiving and Total Applied									
		Herbicide		Insecticide 1/		Fungicide 2/		Other Chemical 2/			
	1,000 Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs		
CO	1,230	93	1,763	45	479						
IL	10,800	98	28,467	38	1,833						
IN	5,800	99	14,819	36	1,156						
IA	12,100	99	27,966	25	2,462						
KS	3,150	98	6,619	32	385						
KY	1,320	94	3,487	50	22						
MI	2,200	99	6,128	22	214						
MN	7,100	98	11,126	11	280						
MO	2,650	98	7,988	38	218						
NE	8,600	99	19,747	39	1,295						
NC	750	82	1,340	35	222						
OH	3,450	99	10,136	7	98						
SD	3,600	95	5,862	18	520						
TX	1,950	93	3,190	54	458						
WI	3,600	96	5,421	31	473						
Total	68,300	98	154,059	30	10,115						

1/ Total Applied excludes Bt's (Bacillus thuringiensis). Total quantities are not calculated because amounts of active ingredient are not comparable between products.
2/ Insufficient reports to publish data for one or more of the States surveyed.

Corn: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	8	1.0	0.43	0.47	2,536
Acetamide	*	1.0	0.49	0.49	185
Acetochlor	27	1.0	1.70	1.72	31,824
Alachlor	4	1.0	1.87	1.87	4,573
Ametryn	*	1.0	1.18	1.18	25
Atrazine	70	1.1	1.02	1.15	54,780
Bentazon	2	1.8	0.49	0.92	1,033
Bromoxynil	4	1.0	0.29	0.29	844
Carfentrazone-ethyl	*	1.0	0.25	0.25	32
Clopyralid	11	1.0	0.08	0.08	607
Cyanazine	4	1.0	1.40	1.40	3,378
Dicamba	14	1.0	0.21	0.21	2,029
Dicamba, Dimet. salt	1	1.0	1.98	1.98	1,446
Dicamba, Pot. salt	8	1.0	0.37	0.37	1,997
Diflufenzopyr-sodium	1	1.0	0.79	0.79	578
Dimethenamid	8	1.0	1.16	1.16	6,185
EPTC	*	1.0	3.40	3.40	1,470
Flumetsulam	12	1.0	0.04	0.04	291
Glufosinate-ammonium	2	1.1	0.28	0.32	424
Glyphosate	9	1.2	0.59	0.71	4,162
Halosulfuron	2	1.0	0.06	0.06	75
Imazapyr	2	1.0	0.002	0.002	**
Imazethapyr	2	1.1	0.02	0.02	32
Isoxaflutole	4	1.0	0.08	0.08	213
Metolachlor	29	1.0	1.42	1.48	29,554
Metribuzin	*	1.0	0.12	0.12	54
Nicosulfuron	15	1.0	0.01	0.01	150
Paraquat	*	1.0	0.59	0.59	369
Pendimethalin	1	1.0	0.84	0.85	776
Primisulfuron	6	1.0	0.02	0.02	100
Prosulfuron	3	1.0	0.01	0.01	21
Pyridate	4	1.1	0.77	0.85	2,150
Rimsulfuron	11	1.0	0.009	0.009	74
Simazine	2	1.0	1.00	1.07	1,555
Sulfosate	*	1.0	0.85	0.85	77
Thifensulfuron	*	1.0	0.003	0.003	**
Trifluralin	*	1.0	0.93	0.93	41
Insecticides:					
Bifenthrin	2	1.2	0.06	0.08	93
Carbofuran	1	1.0	0.86	0.86	772
Chlorethoxyfos	1	1.0	0.10	0.10	89
Chlorpyrifos	5	1.0	1.08	1.08	3,921
Cyfluthrin	2	1.0	0.005	0.005	5
Dimethoate	*	1.0	0.46	0.46	36
Esfenvalerate	*	1.0	0.05	0.05	5
Fipronil	1	1.0	0.11	0.11	110
Lambda-cyhalothrin	3	1.2	0.02	0.03	52
Methyl parathion	1	1.0	0.51	0.54	388
Permethrin	3	1.1	0.08	0.10	180

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Corn: Agricultural Chemical Applications,
States Surveyed, 1999 (continued) 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Insecticides: (cont.)					
Propargite	*	1.0	0.97	0.97	82
Tebupirimphos	2	1.0	0.11	0.11	129
Tefluthrin	7	1.0	0.10	0.10	510
Terbufos	5	1.0	1.09	1.11	3,588

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for the 15 states surveyed were 68.3 million acres. States included are CO, IL, IN, IA, KS, KY, MI, MN, MO, NE, NC, OH, SD, TX and WI.

Corn: Agricultural Chemical Applications,
Colorado, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	12	1.0	0.26	0.26	39
Acetochlor	16	1.0	1.08	1.08	211
Alachlor	7	1.0	1.36	1.36	119
Atrazine	42	1.1	0.58	0.64	335
Dicamba	19	1.0	0.17	0.17	39
Dicamba, Pot. salt	12	1.0	0.29	0.29	42
Glyphosate	24	1.1	0.43	0.49	148
Isoxaflutole	14	1.0	0.04	0.04	6
Nicosulfuron	12	1.0	0.01	0.01	2
Pendimethalin	4	1.0	0.57	0.57	32
Pyridate	5	1.0	0.49	0.49	32
Rimsulfuron	11	1.0	0.01	0.01	1
Thifensulfuron	2	1.0	0.005	0.005	**
Insecticides:					
Dimethoate	4	1.0	0.53	0.53	24
Propargite	6	1.0	0.98	0.98	77
Terbufos	15	1.0	1.10	1.10	208

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Colorado were 1.23 million acres.

Corn: Agricultural Chemical Applications,
Illinois, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	7	1.0	0.54	0.54	411
Acetochlor	24	1.0	2.04	2.04	5,317
Atrazine	84	1.1	1.08	1.25	11,384
Bentazon	4	1.9	0.33	0.64	279
Bromoxynil	4	1.0	0.29	0.29	138
Clopyralid	5	1.0	0.07	0.07	38
Cyanazine	1	1.0	1.57	1.57	224
Dicamba	8	1.0	0.15	0.15	129
Dicamba, Dimet. salt	2	1.0	2.17	2.17	558
Dicamba, Pot. salt	13	1.0	0.41	0.41	582
Diflufenzopyr-sodium	2	1.0	0.87	0.87	223
Dimethenamid	11	1.0	0.94	0.95	1,150
Flumetsulam	7	1.0	0.04	0.04	32
Glyphosate	7	1.0	0.57	0.58	425
Imazethapyr	3	1.0	0.02	0.02	6
Isoxaflutole	5	1.0	0.08	0.08	49
Metolachlor	33	1.0	1.59	1.60	5,733
Nicosulfuron	14	1.0	0.01	0.01	19
Paraquat	1	1.0	0.72	0.72	112
Pendimethalin	1	1.0	0.94	0.94	150
Primisulfuron	4	1.0	0.02	0.02	8
Prosulfuron	1	1.0	0.007	0.007	1
Pyridate	8	1.0	0.73	0.73	628
Rimsulfuron	13	1.0	0.01	0.01	15
Simazine	4	1.2	0.96	1.17	541
Insecticides:					
Chlorethoxyfos	4	1.0	0.08	0.08	32
Chlorpyrifos	9	1.0	1.08	1.08	1,102
Cyfluthrin	3	1.0	0.005	0.005	2
Lambda-cyhalothrin	3	1.0	0.02	0.02	7
Permethrin	1	1.0	0.09	0.09	13
Tebupirimphos	3	1.0	0.10	0.10	38
Tefluthrin	12	1.0	0.13	0.13	171
Terbufos	4	1.0	1.14	1.14	454

1/ Planted acres in 1999 for Illinois were 10.8 million acres.

Corn: Agricultural Chemical Applications,
Indiana, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	1.0	0.34	0.34	121
Acetochlor	31	1.0	1.64	1.64	2,942
Alachlor	2	1.0	1.53	1.53	179
Atrazine	91	1.0	1.25	1.26	6,666
Clopyralid	9	1.0	0.09	0.09	45
Cyanazine	3	1.0	1.89	1.89	310
Dicamba	2	1.1	0.20	0.22	29
Dimethenamid	2	1.0	1.32	1.32	121
Flumetsulam	11	1.0	0.04	0.04	24
Glyphosate	5	1.0	0.47	0.47	130
Imazethapyr	3	1.0	0.008	0.008	2
Metolachlor	47	1.0	1.40	1.41	3,842
Nicosulfuron	3	1.0	0.02	0.02	4
Primisulfuron	5	1.0	0.02	0.03	7
Simazine	3	1.0	0.94	0.94	144
Insecticides:					
Chlorpyrifos	7	1.0	1.12	1.12	455
Tefluthrin	14	1.0	0.10	0.10	88
Terbufos	8	1.0	0.91	0.91	416

1/ Planted acres in 1999 for Indiana were 5.80 million acres.

Corn: Agricultural Chemical Applications,
Iowa, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	7	1.0	0.42	0.42	335
Acetochlor	42	1.0	1.58	1.66	8,318
Atrazine	65	1.3	0.78	1.04	8,205
Bentazon	5	2.0	0.63	1.29	705
Bromoxynil	9	1.0	0.31	0.31	321
Clopyralid	10	1.0	0.08	0.08	93
Dicamba	18	1.0	0.21	0.21	449
Dicamba, Pot. salt	19	1.0	0.38	0.38	849
Dimethenamid	13	1.0	1.11	1.11	1,762
Flumetsulam	10	1.0	0.03	0.03	34
Glyphosate	9	1.0	0.57	0.62	644
Isoxaflutole	5	1.0	0.10	0.10	62
Metolachlor	20	1.1	1.42	1.65	3,936
Nicosulfuron	13	1.0	0.01	0.01	18
Primisulfuron	5	1.0	0.02	0.02	13
Pyridate	12	1.1	0.82	0.97	1,422
Rimsulfuron	11	1.0	0.008	0.008	10
Insecticides:					
Chlorpyrifos	6	1.0	1.08	1.08	728
Tefluthrin	5	1.0	0.11	0.11	65
Terbufos	8	1.0	1.32	1.36	1,360

1/ Planted acres in 1999 for Iowa were 12.1 million acres.

Corn: Agricultural Chemical Applications,
Kansas, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	9	1.0	0.33	0.33	90
Acetochlor	8	1.0	1.85	1.85	445
Alachlor	7	1.0	2.00	2.00	411
Atrazine	89	1.1	0.98	1.09	3,046
Dicamba	12	1.1	0.10	0.12	47
Glyphosate	17	1.9	0.43	0.85	460
Metolachlor	47	1.1	0.98	1.08	1,605
Nicosulfuron	7	1.0	0.01	0.01	3
Primisulfuron	16	1.0	0.03	0.03	15
Prosulfuron	13	1.0	0.009	0.009	4
Rimsulfuron	7	1.0	0.01	0.01	3
Insecticides:					
Bifenthrin	11	1.0	0.08	0.08	28
Carbofuran	4	1.0	0.54	0.54	61
Methyl parathion	8	1.0	0.49	0.49	122

1/ Planted acres in 1999 for Kansas were 3.15 million acres.

Corn: Agricultural Chemical Applications,
Kentucky, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	3	1.0	0.49	0.49	21
Acetochlor	38	1.0	1.36	1.36	678
Atrazine	87	1.0	1.54	1.57	1,806
Glyphosate	14	1.2	0.74	0.91	166
Metolachlor	29	1.0	1.43	1.43	537
Nicosulfuron	5	1.0	0.03	0.03	2
Paraquat	17	1.0	0.50	0.50	112
Primisulfuron	13	1.0	0.02	0.02	3
Prosulfuron	11	1.0	0.007	0.007	1
Simazine	7	1.0	1.22	1.22	109
Insecticides:					
Lambda-cyhalothrin	45	1.0	0.02	0.02	9
Permethrin	4	1.0	0.07	0.07	4

1/ Planted acres in 1999 for Kentucky were 1.32 million acres.

Corn: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	5	1.2	0.42	0.52	60
Acetochlor	43	1.0	1.75	1.75	1,644
Alachlor	11	1.0	2.64	2.64	668
Atrazine	69	1.0	1.25	1.25	1,906
Clopyralid	8	1.0	0.09	0.09	16
Dicamba	13	1.0	0.36	0.36	100
Flumetsulam	15	1.0	0.06	0.06	22
Glyphosate	19	1.2	0.76	0.92	389
Metolachlor	30	1.0	1.52	1.59	1,057
Nicosulfuron	10	1.0	0.02	0.02	3
Rimsulfuron	7	1.0	0.01	0.01	2

1/ Planted acres in 1999 for Michigan were 2.20 million acres.

Corn: Agricultural Chemical Applications,
Minnesota, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	11	1.4	0.43	0.61	481
Acetochlor	32	1.0	1.61	1.61	3,614
Alachlor	2	1.0	1.71	1.71	265
Atrazine	24	1.0	0.61	0.61	1,017
Bromoxynil	6	1.0	0.24	0.24	103
Clopyralid	28	1.0	0.08	0.08	163
Dicamba	27	1.0	0.27	0.27	520
Dicamba, Pot. salt	6	1.0	0.23	0.23	93
Dimethenamid	18	1.0	1.35	1.35	1,706
Flumetsulam	28	1.0	0.03	0.03	60
Glyphosate	7	1.0	0.70	0.70	337
Metolachlor	10	1.0	2.31	2.31	1,564
Nicosulfuron	30	1.0	0.02	0.02	38
Pendimethalin	1	1.0	0.77	0.77	62
Primisulfuron	3	1.0	0.02	0.02	6
Rimsulfuron	20	1.0	0.008	0.008	12
Insecticides:					
Tefluthrin	7	1.0	0.11	0.11	50

1/ Planted acres in 1999 for Minnesota were 7.10 million acres.

Corn: Agricultural Chemical Applications, Missouri, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	12	1.1	0.36	0.40	122
Acetochlor	24	1.0	2.36	2.36	1,505
Alachlor	9	1.0	1.80	1.80	446
Atrazine	95	1.1	1.35	1.54	3,885
Bromoxynil	3	1.0	0.31	0.31	27
Clopyralid	8	1.0	0.07	0.07	14
Cyanazine	4	1.0	2.17	2.17	219
Dicamba	1	1.0	0.27	0.27	10
Dimethenamid	4	1.0	1.09	1.09	123
Flumetsulam	9	1.0	0.04	0.04	10
Glyphosate	4	1.2	0.82	1.02	118
Metolachlor	33	1.0	1.37	1.37	1,209
Nicosulfuron	9	1.0	0.01	0.01	3
Rimsulfuron	7	1.0	0.008	0.008	1
Insecticides:					
Chlorpyrifos	4	1.0	0.98	0.98	114
Lambda-cyhalothrin	12	1.0	0.02	0.02	7
Permethrin	18	1.0	0.09	0.09	44

1/ Planted acres in 1999 for Missouri were 2.65 million acres.

Corn: Agricultural Chemical Applications, Nebraska, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	1.0	0.28	0.28	144
Acetochlor	20	1.0	1.56	1.56	2,655
Alachlor	9	1.0	2.09	2.09	1,550
Atrazine	87	1.0	1.01	1.10	8,286
Bromoxynil	1	1.0	0.25	0.25	27
Clopyralid	3	1.0	0.12	0.12	32
Cyanazine	9	1.0	1.41	1.41	1,123
Dicamba	8	1.0	0.27	0.27	186
Dicamba, Dimet. salt	2	1.0	2.29	2.29	347
Dicamba, Pot. salt	4	1.0	0.31	0.31	113
Diflufenzopyr-sodium	2	1.0	0.91	0.91	139
Dimethenamid	3	1.0	1.34	1.34	322
Flumetsulam	4	1.0	0.04	0.04	14
Glyphosate	5	1.3	0.65	0.87	410
Halosulfuron	8	1.0	0.09	0.09	60
Isoxaflutole	7	1.0	0.08	0.08	43
Metolachlor	39	1.0	1.10	1.17	3,926
Nicosulfuron	13	1.0	0.01	0.01	13
Primisulfuron	6	1.0	0.03	0.03	15
Prosulfuron	6	1.0	0.01	0.01	5
Rimsulfuron	13	1.0	0.01	0.01	11

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Corn: Agricultural Chemical Applications,
Nebraska, 1999 (continued)1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Insecticides:					
Chlorpyrifos	4	1.0	1.09	1.09	345
Cyfluthrin	4	1.0	0.006	0.006	2
Fipronil	3	1.0	0.12	0.12	32
Methyl parathion	5	1.1	0.51	0.56	266
Permethrin	5	1.8	0.06	0.11	44
Tebupirimphos	4	1.0	0.12	0.12	41
Tefluthrin	11	1.0	0.08	0.08	79
Terbufos	4	1.0	1.12	1.12	392

1/ Planted acres in 1999 for Nebraska were 8.60 million acres.

Corn: Agricultural Chemical Applications,
North Carolina, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	13	1.0	0.16	0.16	16
Alachlor	8	1.0	1.74	1.86	111
Ametryn	3	1.0	1.18	1.18	25
Atrazine	69	1.0	1.04	1.06	551
Glyphosate	19	1.1	0.44	0.50	72
Metolachlor	41	1.0	1.23	1.23	379
Nicosulfuron	13	1.0	0.02	0.02	2
Paraquat	10	1.0	0.57	0.57	45
Simazine	10	1.0	0.96	0.96	71
Insecticides:					
Terbufos	19	1.0	0.98	0.98	142

1/ Planted acres in 1999 for North Carolina were 750,000 acres.

Corn: Agricultural Chemical Applications,
Ohio, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	13	1.0	0.47	0.47	216
Acetochlor	25	1.0	1.96	1.99	1,701
Alachlor	7	1.0	1.26	1.26	312
Atrazine	83	1.0	1.30	1.33	3,786
Clopyralid	16	1.0	0.10	0.10	53
Cyanazine	10	1.0	1.57	1.57	566
Dicamba	11	1.0	0.21	0.21	82
Flumetsulam	20	1.0	0.04	0.04	26
Glyphosate	8	1.0	0.66	0.68	185
Metolachlor	45	1.0	1.67	1.67	2,568
Nicosulfuron	9	1.0	0.01	0.01	4
Pendimethalin	3	1.0	0.81	0.81	75
Primisulfuron	2	1.0	0.02	0.02	2
Rimsulfuron	6	1.0	0.01	0.01	3
Simazine	13	1.0	1.07	1.07	461
Insecticides:					
Chlorpyrifos	2	1.0	1.24	1.24	80

1/ Planted acres in 1999 for Ohio were 3.45 million acres.

Corn: Agricultural Chemical Applications,
South Dakota, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	13	1.0	0.71	0.72	350
Acetochlor	30	1.0	1.55	1.56	1,707
Atrazine	42	1.0	0.69	0.71	1,066
Bromoxynil	16	1.0	0.29	0.29	163
Clopyralid	16	1.0	0.08	0.08	45
Cyanazine	8	1.0	1.42	1.42	400
Dicamba	22	1.0	0.19	0.19	148
Dicamba, Pot. salt	4	1.0	0.30	0.30	45
Dimethenamid	4	1.0	1.24	1.24	182
EPTC	5	1.0	3.09	3.09	501
Flumetsulam	17	1.0	0.03	0.03	18
Glyphosate	8	1.1	0.45	0.50	138
Imazethapyr	2	1.0	0.05	0.05	3
Metolachlor	16	1.0	1.64	1.64	944
Nicosulfuron	22	1.0	0.01	0.01	9
Primisulfuron	8	1.2	0.01	0.02	5
Rimsulfuron	14	1.0	0.009	0.009	5

1/ Planted acres in 1999 for South Dakota were 3.60 million acres.

Corn: Agricultural Chemical Applications,
Texas, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	11	1.0	0.42	0.46	100
Acetochlor	2	1.0	1.20	1.20	42
Atrazine	79	1.0	1.07	1.16	1,787
Dicamba	8	1.0	0.13	0.13	20
Glyphosate	18	1.0	0.70	0.74	262
Metolachlor	30	1.0	1.41	1.47	858
Nicosulfuron	29	1.0	0.02	0.02	12
Primisulfuron	23	1.0	0.02	0.02	8
Prosulfuron	23	1.0	0.02	0.02	8
Rimsulfuron	9	1.0	0.01	0.01	2
Insecticides:					
Bifenthrin	20	1.0	0.02	0.02	9
Cyfluthrin	4	1.0	0.005	0.005	**
Fipronil	5	1.0	0.14	0.14	13
Lambda-cyhalothrin	3	1.0	0.02	0.02	1
Tebupirimphos	4	1.0	0.10	0.10	8
Tefluthrin	2	1.0	0.09	0.09	3
Terbufos	19	1.0	0.99	0.99	359

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Texas were 1.95 million acres.

Corn: Agricultural Chemical Applications,
Wisconsin, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	2	1.0	0.53	0.53	30
Acetochlor	17	1.0	1.66	1.66	1,013
Alachlor	3	1.0	1.99	1.99	248
Atrazine	37	1.0	0.80	0.80	1,054
Clopyralid	32	1.0	0.09	0.09	105
Cyanazine	6	1.0	0.85	0.85	188
Dicamba	39	1.0	0.18	0.18	256
Dicamba, Pot. salt	14	1.0	0.40	0.40	208
Dimethenamid	8	1.0	1.31	1.31	372
Flumetsulam	39	1.0	0.04	0.04	51
Glyphosate	7	1.4	0.82	1.16	278
Metolachlor	21	1.0	1.79	1.79	1,345
Nicosulfuron	34	1.0	0.01	0.01	18
Pendimethalin	3	1.0	0.81	0.86	86
Primisulfuron	21	1.0	0.02	0.02	16
Rimsulfuron	23	1.0	0.01	0.01	8
Insecticides:					
Chlorpyrifos	6	1.0	1.09	1.09	251
Tefluthrin	9	1.0	0.08	0.08	26

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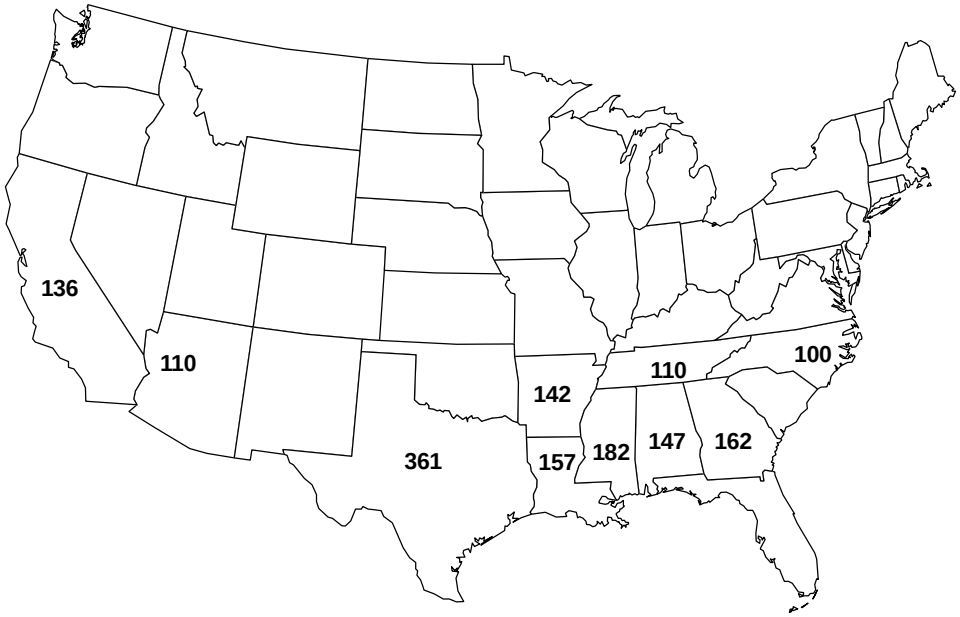
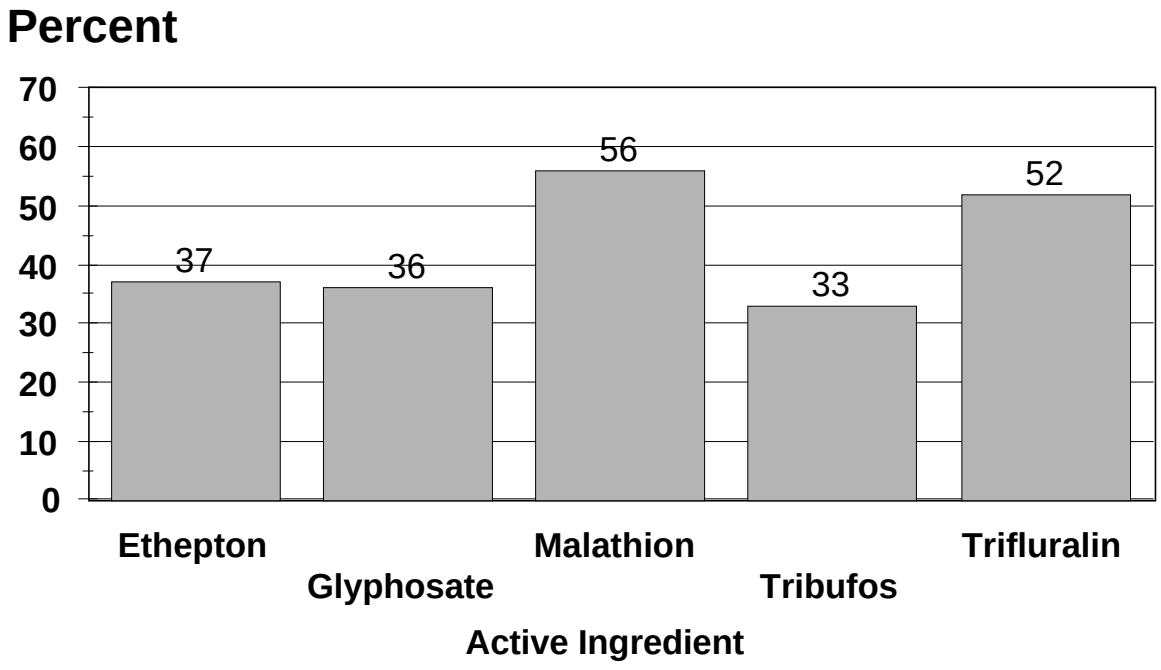
Upland Cotton: Number of Usable Reports, 1999



Upland Cotton - Percent of Acres Treated
Top 5 Active Ingredients for 1999



Surveyed states: AL, AR, AZ, CA, GA, LA, MS, NC, TN and TX

Upland Cotton: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Planted Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	1,000 Acres	Percent	Mil. Lbs	Percent	Mil. Lbs	Percent	Mil. Lbs
AL	565	97	46.5	94	36.3	95	45.3
AZ	270	99	39.6	22	5.0	15	0.7
AR	970	97	88.0	82	31.8	85	63.5
CA	610	99	92.6	51	19.1	19	11.1
GA	1,470	100	127.2	98	81.3	100	160.3
LA	615	100	52.4	43	14.7	45	18.9
MS	1,200	100	133.3	36	21.2	65	85.8
NC	880	96	66.3	89	37.0	96	90.3
TN	570	100	51.2	99	30.2	100	50.9
TX	6,150	71	281.8	45	112.8	23	26.6
Total	13,300	86	978.9	59	389.4	52	553.4

Upland Cotton: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Alabama:	565					
Nitrogen		97	1.5	55	84	46.5
Phosphate		94	1.0	64	69	36.3
Potash		95	1.1	74	84	45.3
Arizona:	270					
Nitrogen		99	2.6	56	149	39.6
Phosphate		22	1.3	62	84	5.0
Potash		15	1.2	14	18	0.7
Arkansas:	970					
Nitrogen		97	1.5	59	93	88.0
Phosphate		82	1.0	40	40	31.8
Potash		85	1.0	75	77	63.5
California:	610					
Nitrogen		99	1.9	78	154	92.6
Phosphate		51	1.0	57	61	19.1
Potash		19	1.1	87	97	11.1
Georgia:	1,470					
Nitrogen		100	1.9	45	87	127.2
Phosphate		98	1.2	46	57	81.3
Potash		100	1.2	87	109	160.3

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Upland Cotton: Fertilizer Primary Nutrient Applications, States Surveyed and Total, 1999 (continued)

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Louisiana:	615					
Nitrogen		100	1.1	74	85	52.4
Phosphate		43	1.1	48	55	14.7
Potash		45	1.0	64	68	18.9
Mississippi:	1,200					
Nitrogen		100	1.6	68	111	133.3
Phosphate		36	1.0	46	50	21.2
Potash		65	1.0	108	109	85.8
North Carolina:	880					
Nitrogen		96	2.0	39	78	66.3
Phosphate		89	1.0	43	47	37.0
Potash		96	1.3	81	107	90.3
Tennessee:	570					
Nitrogen		100	1.2	70	90	51.2
Phosphate		99	1.0	54	54	30.2
Potash		100	1.0	88	89	50.9
Texas:	6,150					
Nitrogen		71	1.2	50	64	281.8
Phosphate		45	1.0	41	41	112.8
Potash		23	1.0	18	18	26.6
Total:	13,300					
Nitrogen		86	1.5	55	85	978.9
Phosphate		59	1.0	46	49	389.4
Potash		52	1.1	71	80	553.4

Upland Cotton: Active Ingredients Applied and Publication Status
By States Surveyed, 1999

Active Ingredient	States Surveyed					
	ALL	AL	AR	AZ	CA	GA
Herbicides:						
2,4-D	P	*	P			*
2,4-DB	*					
Bromoxynil	P	*	P	P	*	*
Chlorimuron-ethyl	*					
Clethodim	P	*	*	*	*	*
Clomazone	P	P	P			*
Cloransulam-methyl	*					
Cyanazine	P	P	P	P	P	P
DCPA	*					
DSMA	P	P	P			*
Dicamba	P		*			
Diuron	P	P	P	P	P	P
Fenoxaprop	P		*			
Fluazifop-P-butyl	P	P	P	*	*	*
Fluometuron	P	P	P	*		P
Glyphosate	P	P	P	P	P	P
Lactofen	P	*	*			
Linuron	*			*		
MSMA	P	P	P	*	*	P
Metolachlor	P	*	P		P	*
Metribuzin	*					
Napropamide	*					
Norflurazon	P	P	P			*
Oxyfluorfen	P			*	P	
Pendimethalin	P	P	P	P	P	P
Prometryn	P	P	P	P	P	*
Pyrithiobac-sodium	P	P	P	P	P	P
Quizalofop-ethyl	P		P			
Sethoxydim	P	*	P		*	*
Sulfosate	*		*			
Thifensulfuron	*					
Tribenuron-methyl	*					
Trifluralin	P	P	P	P	P	P

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Upland Cotton: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	LA	MS	NC	TN	TX
Herbicides:					
2,4-D	P	*			P
2,4-DB			*		
Bromoxynil	P	P	P	P	P
Chlorimuron-ethyl	*				
Clethodim	P	P		*	P
Clomazone	P	P	*	P	*
Cloransulam-methyl			*		
Cyanazine	P	P	P	P	*
DCPA		*			
DSMA	*	*	*	*	*
Dicamba					*
Diuron	P	P	*	P	P
Fenoxaprop	P	*		*	
Fluazifop-P-butyl	P	P	*	P	*
Fluometuron	P	P	P	P	P
Glyphosate	P	P	P	P	P
Lactofen	*	P		*	
Linuron			*		
MSMA	P	P	P	P	P
Metolachlor	P	P	*	P	P
Metribuzin	*				
Napropamide					*
Norflurazon	P	P	P	*	P
Oxyfluorfen	*	*			*
Pendimethalin	P	P	P	P	P
Prometryn	P	P	P		P
Pyrithiobac-sodium	P	P	P	P	P
Quizalofop-ethyl	P	*			*
Sethoxydim		*	*	*	*
Sulfosate		*			
Thifensulfuron	*				
Tribenuron-methyl	*				
Trifluralin	P	P	P	P	P

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Upland Cotton: Active Ingredients Applied and Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed					
	ALL	AL	AR	AZ	CA	GA
Insecticides:						
Abamectin	P				P	
Acephate	P	P	P	P	*	P
Aldicarb	P	P	P	P	P	P
Amitraz	*				*	
Azinphos-methyl	P		P			
Bifenthrin	P	*	P	*	P	
Bt (Bacillus thur.)	P			*	*	
Buprofezin	*			*		
Carbaryl	*				*	
Carbofuran	P		*		*	
Chlorfenapyr	*					
Chlorpyrifos	P	*		P	P	*
Cyfluthrin	P	*	P	P	*	P
Cypermethrin	P	P	P	*		P
Deltamethrin	P	*	P			P
Dicofol	P		*	*	P	
Dicrotophos	P	P	P			*
Diflubenzuron	*					*
Dimethoate	P	*	P	P	P	*
Disulfoton	P	P	P	*		*
Endosulfan	P	*		P		
Esfenvalerate	P	*		*		*
Ethion	*					
Fenpropathrin	P			P	*	
Helicoverpa zea NPV	*					*
Imidacloprid	P	*	P		P	
Lambda-cyhalothrin	P	P	P	P	*	P
Malathion	P		P			
Methamidophos	P				*	
Methomyl	P	*	P	P	*	*
Methyl parathion	P	*	P	*		P
Naled	P				P	
Oxamyl	P	*	P	P	P	*
Oxydemeton-methyl	*				*	
Permethrin	P	*				*
Petroleum distillate	*		*			
Phorate	P	P	*	*	P	P
Phosphamidon	*					
Profenofos	P		P	*	P	
Propargite	P			*	P	
Pyriproxyfen	P			P	*	
Spinosad	P		P		*	P
Thiodicarb	P				P	
Tralomethrin	P	*	*			P
Zeta-cypermethrin	P		P	*	P	*

--continued

Upland Cotton: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	LA	MS	NC	TN	TX
Insecticides:					
Acephate	P	P	P	P	P
Aldicarb	P	P	P	P	P
Amitraz	*	*		*	
Azinphos-methyl	*	*		P	P
Bifenthrin	P	*	*		
Bt (Bacillus thur.)	*	*			P
Carbaryl					*
Carbofuran	P	P		*	P
Chlorfenapyr	*	*			
Chlorpyrifos	*			*	
Cyfluthrin	P	P	P	P	*
Cypermethrin	P	P	*	*	P
Deltamethrin	P	*		*	
Dicofol					*
Dicrotophos	P	P		P	P
Dimethoate	P	*	*	P	P
Disulfoton	P	P	P	P	*
Endosulfan		*			P
Esfenvalerate	*	P	*		P
Ethion				*	
Imidacloprid	P	P		P	P
Lambda-cyhalothrin	P	P	P	P	P
Malathion	P	P		P	P
Methamidophos	*	*			
Methomyl		*			
Methyl parathion	P	P		P	P
Oxamyl	P	P		P	P
Oxydemeton-methyl					*
Permethrin	*		*		*
Petroleum distillate		*			*
Phorate	*	P	P		P
Phosphamidon		*			
Profenofos	*	P		*	*
Spinosad	P	P			*
Thiodicarb	*	*		*	*
Tralomethrin	*	*			*
Zeta-cypermethrin	P	P	P	*	P

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Upland Cotton: Active Ingredients Applied and Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed: ALL	AL	AR	AZ	CA	GA
Fungicides:						
Benomyl	*					
Carboxin	P	*	*		*	
Etridiazole	P	P	*			*
Iprodione	*					
Mancozeb	*					
Mefenoxam	P	P	P			
Metalaxyl	P	*	P		*	
PCNB	P	P	P		*	*
Other Chemicals:						
Arsenic acid	*					
Bacillus cereus	P	P	P	P	P	P
Cacodylic acid	P			*	P	*
Chloropicrin	*					*
Cyclanilide	P	P	P		P	P
Cytokinins	*					
Dichloropropene	P	*		*		*
Dimethipin	P	P	*			P
Endothall	P	*		P	*	
Ethephon	P	P	P	P	P	P
Garlic oil	*			*		
Gibberellic acid	*					
Gossyplure	P			P		
Hexadecadien (Z,Z)	P			P		
IBA	*					
Mepiquat chloride	P	P	P	P	P	P
Metam-sodium	*				*	
Monocarbamide dihyd.	P	*	P	*	P	P
Paraquat	P	P	*	P	P	P
Potassium gibber.	*					
Sodium chlorate	P	*	P	P	P	P
Thidiazuron	P	P	P	P	P	P
Tribufos	P	P	P	P	P	P

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

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Upland Cotton: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	LA	MS	NC	TN	TX
Fungicides:					
Benomyl	*				
Carboxin		*		*	
Etridiazole	P	P	*	P	*
Iprodione		*			
Mancozeb					*
Mefenoxam	*	P	*	*	
Metalaxyl	P	P	*	P	
PCNB	P	P	P	P	*
Other Chemicals:					
Arsenic acid		*			
Bacillus cereus	P	P	P	P	P
Cacodylic acid		*	*		
Cyclanilide	P	P	P	P	P
Cytokinins	*	*		*	*
Dichloropropene					
Dimethipin	P	P	P	*	*
Endothall					*
Ethephon	P	P	P	P	P
Garlic oil					*
Giberellic Acid		*			*
IBA	*	*			*
Mepiquat chloride	P	P	P	P	P
Monocarbamide dihyd.	P	P	P		P
Paraquat	P	P	P	P	P
Potassium gibber.	*	*			*
Sodium chlorate	P	P	P	*	*
Thidiazuron	P	P	P	*	P
Tribufos	P	P	P	P	P

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Upland Cotton: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State	Planted Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide 1/		Fungicide		Other Chemical 3/	
	1,000 Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
AL	565	99	1,154	87	436	30	130	78	617
AZ 2/	270	90	519	60	360			95	1,361
AR	970	96	1,949	85	900	17	140	97	2,372
CA	610	98	1,006	94	861	1	7	100	2,406
GA	1,470	98	4,249	92	816	*	3	78	2,992
LA	615	98	1,763	98	4,206	9	40	88	707
MS	1,200	100	3,821	98	6,580	17	180	99	1,980
NC	880	96	2,079	91	533	6	42	57	996
TN	570	96	1,385	95	1,222	27	132	89	585
TX	6,150	97	7,081	76	23,417	1	49	32	1,840
Total	13,300	97	25,006	84	39,331	7	723	61	15,856

* Amount represents less than 1 percent.

1/ Total Applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.

2/ Insufficient reports to publish data for one or more of the pesticide classes.

3/ Total applied excludes Bacillus Cereus. Total quantities are not calculated, because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	1	1.0	0.47	0.47	83
Bromoxynil	7	1.6	0.34	0.56	541
Clethodim	2	1.3	0.12	0.16	49
Clomazone	3	1.0	0.33	0.33	132
Cyanazine	15	1.1	0.72	0.80	1,555
DSMA	2	1.1	1.04	1.17	235
Dicamba	*	1.0	0.29	0.29	6
Diuron	24	1.1	0.31	0.36	1,130
Fenoxaprop	*	1.0	0.18	0.18	5
Fluazifop-P-butyl	1	1.2	0.16	0.19	34
Fluometuron	27	1.2	0.62	0.75	2,670
Glyphosate	36	1.6	0.65	1.06	5,122
Lactofen	*	1.2	0.07	0.09	10
MSMA	18	1.3	0.91	1.18	2,851
Metolachlor	5	1.0	1.04	1.04	676
Norflurazon	5	1.4	0.61	0.86	519
Oxyfluorfen	*	1.0	0.21	0.21	9
Pendimethalin	24	1.0	0.74	0.78	2,515
Prometryn	14	1.1	0.67	0.76	1,416
Pyrithiobac-sodium	14	1.2	0.04	0.05	97
Quizalofop-ethyl	*	1.8	0.05	0.10	10
Sethoxydim	*	1.0	0.22	0.22	19
Trifluralin	52	1.1	0.70	0.77	5,308
Insecticides:					
Abamectin	2	1.0	0.007	0.007	2
Acephate	14	1.5	0.37	0.58	1,047
Aldicarb	29	1.0	0.59	0.63	2,440
Azinphos-methyl	3	2.0	0.24	0.49	211
Bifenthrin	2	1.0	0.06	0.06	15
Bt (Bacillus thur.)2/	1	1.4			
Carbofuran	5	1.0	0.23	0.24	159
Chlorpyrifos	1	1.3	0.78	1.07	210
Cyfluthrin	8	1.6	0.03	0.05	49
Cypermethrin	5	1.0	0.06	0.07	45
Deltamethrin	1	1.4	0.01	0.02	4
Dicofol	2	1.0	0.91	0.95	228
Dicrotophos	13	1.2	0.26	0.33	576
Dimethoate	3	1.3	0.23	0.30	108
Disulfoton	4	1.0	0.67	0.69	342
Endosulfan	2	1.5	0.48	0.73	198
Esfenvalerate	2	1.0	0.03	0.04	8
Fenpropathrin	*	1.0	0.18	0.18	3
Imidacloprid	3	1.4	0.03	0.05	19
Lambda-cyhalothrin	10	1.6	0.03	0.05	57
Malathion	40	6.8	0.84	5.74	30,485
Methamidophos	*	1.1	0.52	0.61	16
Methomyl	*	1.1	0.22	0.24	22
Methyl parathion	8	2.2	0.60	1.33	1,466
Naled	*	1.0	0.84	0.84	60

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Upland Cotton: Agricultural Chemical Applications,
States Surveyed, 1999 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Insecticides:					
Oxamyl	14	1.4	0.23	0.33	627
Permethrin	*	1.0	0.04	0.04	**
Phorate	4	1.0	0.73	0.73	393
Profenofos	3	1.3	0.60	0.80	357
Propargite	*	1.0	1.23	1.31	44
Pyriproxyfen	*	1.0	0.05	0.05	2
Spinosad	3	1.2	0.07	0.08	28
Thiodicarb	*	1.0	0.45	0.49	42
Tralomethrin	3	1.3	0.02	0.03	9
Zeta-cypermethrin	4	1.5	0.04	0.06	33
Fungicides:					
Carboxin	*	1.0	0.16	0.16	4
Etridiazole	2	1.0	0.14	0.14	42
Mefenoxam	2	1.0	0.04	0.04	14
Metalaxyl	2	1.3	0.08	0.11	30
PCNB	6	1.1	0.72	0.80	629
Other Chemicals:					
Bacillus cereus 2/	11	1.7			
Cacodylic acid	*	1.0	0.41	0.41	46
Cyclanilide	11	1.0	0.13	0.14	206
Dichloropropene	*	1.0	30.51	30.51	1,823
Dimethipin	2	1.0	0.30	0.30	96
Endothall	*	1.0	0.06	0.06	4
Ethephon	37	1.0	1.00	1.09	5,305
Gossyplure	*	1.0	0.004	0.004	**
Hexadecadien (Z,Z)	*	1.0	0.004	0.005	**
Mepiquat chloride	20	1.6	0.03	0.04	118
Monocarbamide dihyd.	4	1.0	2.61	2.67	1,359
Paraquat	20	1.1	0.26	0.30	777
Sodium chlorate	5	1.1	3.28	3.71	2,407
Thidiazuron	29	1.1	0.07	0.08	303
Tribufos	33	1.0	0.70	0.75	3,280

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for the 10 states surveyed were 13.3 million acres. States included are AL, AZ, AR, CA, GA, LA, MS, NC, TN and TX.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications,
Alabama, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Clomazone	3	1.0	0.19	0.19	3
Cyanazine	12	1.0	0.70	0.72	47
DSMA	9	1.0	0.55	0.55	27
Diuron	8	1.0	0.12	0.12	5
Fluazifop-P-butyl	3	1.1	0.13	0.15	3
Fluometuron	28	1.1	0.69	0.81	129
Glyphosate	75	2.0	0.62	1.30	546
MSMA	18	1.1	1.12	1.25	127
Norflurazon	3	1.0	0.65	0.65	12
Pendimethalin	25	1.0	0.76	0.77	107
Prometryn	11	1.2	0.69	0.89	57
Pyrithiobac-sodium	9	1.0	0.04	0.04	2
Trifluralin	21	1.0	0.65	0.65	76
Insecticides:					
Acephate	3	1.3	0.18	0.25	4
Aldicarb	63	1.0	0.70	0.70	252
Cypermethrin	3	1.3	0.05	0.07	1
Dicrotophos	29	1.3	0.18	0.24	39
Disulfoton	12	1.0	0.94	0.94	65
Lambda-cyhalothrin	5	1.6	0.02	0.02	**
Phorate	2	1.0	0.89	0.89	11
Fungicides:					
Etridiazole	13	1.0	0.16	0.16	12
Mefenoxam	16	1.0	0.03	0.03	3
PCNB	30	1.0	0.68	0.68	115
Other Chemicals:					
Bacillus cereus 2/	24	1.8			
Cyclanilide	25	1.0	0.11	0.11	16
Dimethipin	7	1.0	0.31	0.31	12
Ethephon	46	1.0	0.91	0.94	241
Mepiquat chloride	26	1.8	0.02	0.04	6
Paraquat	4	1.0	0.34	0.34	7
Thidiazuron	19	1.0	0.06	0.06	6
Tribufos	54	1.0	0.70	0.72	219

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Alabama were 565,000 acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications, Arizona, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromoxynil	14	1.9	0.46	0.90	34
Cyanazine	10	1.0	1.05	1.05	28
Diuron	60	1.1	0.35	0.42	68
Glyphosate	10	2.1	0.71	1.52	41
Pendimethalin	46	1.1	1.01	1.19	149
Prometryn	43	1.0	1.14	1.20	138
Pyrithiobac-sodium	9	1.0	0.09	0.10	2
Trifluralin	24	1.0	0.60	0.63	41
Insecticides:					
Acephate	42	1.5	0.86	1.33	152
Aldicarb	3	1.0	1.06	1.06	9
Chlorpyrifos	16	1.6	0.70	1.19	52
Cyfluthrin	5	1.0	0.04	0.04	**
Dimethoate	5	1.2	0.29	0.35	4
Endosulfan	22	1.4	0.83	1.17	69
Fenpropathrin	6	1.0	0.18	0.18	3
Lambda-cyhalothrin	12	1.4	0.03	0.05	2
Methomyl	4	1.4	0.27	0.39	4
Oxamyl	13	1.3	0.59	0.77	27
Pyriproxyfen	13	1.0	0.05	0.05	2
Other Chemicals:					
Bacillus cereus 2/	21	1.6			
Endothall	6	1.0	0.06	0.06	1
Ethephon	8	1.0	1.19	1.19	24
Gossyplure	10	1.0	0.004	0.004	**
Hexadecadien (Z,Z)	10	1.0	0.004	0.005	**
Mepiquat chloride	28	1.5	0.04	0.07	5
Paraquat	25	1.0	0.33	0.33	22
Sodium chlorate	29	1.0	4.46	4.81	372
Thidiazuron	68	1.0	0.07	0.07	13
Tribufos	27	1.0	1.28	1.28	92

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Arizona were 270,000 acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications, Arkansas, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	3	1.0	0.36	0.36	11
Bromoxynil	43	1.6	0.30	0.50	207
Clomazone	5	1.0	0.40	0.40	18
Cyanazine	26	1.0	0.44	0.46	116
DSMA	4	1.0	0.75	0.75	31
Diuron	18	1.2	0.35	0.43	76
Fluazifop-P-butyl	2	1.8	0.19	0.36	7
Fluometuron	61	1.1	0.49	0.56	333
Glyphosate	18	1.6	0.35	0.56	98
MSMA	26	1.1	0.78	0.91	226
Metolachlor	9	1.0	0.64	0.64	56
Norflurazon	29	1.0	0.44	0.48	135
Pendimethalin	28	1.0	0.70	0.70	194
Prometryn	18	1.7	0.37	0.63	109
Pyrithiobac-sodium	40	1.4	0.04	0.06	23
Quizalofop-ethyl	3	2.3	0.07	0.16	5
Sethoxydim	2	1.0	0.07	0.07	1
Trifluralin	44	1.0	0.66	0.69	294
Insecticides:					
Acephate	20	1.3	0.37	0.49	93
Aldicarb	31	1.0	0.61	0.64	188
Azinphos-methyl	11	1.0	0.25	0.27	30
Bifenthrin	9	1.1	0.05	0.06	5
Cyfluthrin	25	1.7	0.03	0.05	12
Cypermethrin	12	1.0	0.02	0.02	3
Deltamethrin	4	1.8	0.01	0.02	**
Dicrotophos	15	1.6	0.28	0.45	68
Dimethoate	3	1.1	0.16	0.19	5
Disulfoton	2	1.0	0.85	0.85	17
Imidacloprid	10	1.7	0.02	0.03	3
Lambda-cyhalothrin	18	2.1	0.02	0.05	9
Malathion	14	1.3	0.83	1.10	144
Methomyl	3	1.1	0.18	0.21	7
Methyl parathion	10	1.0	0.32	0.33	32
Oxamyl	29	1.6	0.42	0.70	200
Profenofos	13	1.0	0.33	0.33	40
Spinosad	5	1.0	0.05	0.05	2
Zeta-cypermethrin	19	1.7	0.03	0.06	11
Fungicides:					
Mefenoxam	12	1.0	0.04	0.04	5
Metalaxyl	4	1.0	0.05	0.05	2
PCNB	16	1.0	0.83	0.83	132

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Upland Cotton: Agricultural Chemical Applications,
Arkansas, 1999 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Bacillus cereus 2/	22	2.0			
Cyclanilide	18	1.2	0.10	0.13	23
Ethephon	80	1.2	0.96	1.21	940
Mepiquat chloride	31	1.8	0.02	0.04	11
Monocarbamide dihyd.	12	1.0	2.95	2.95	330
Sodium chlorate	10	1.1	3.61	4.25	429
Thidiazuron	17	1.0	0.05	0.05	8
Tribufos	78	1.2	0.63	0.80	608

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Arkansas were 970,000 acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications, California, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Cyanazine	5	1.0	1.30	1.30	39
Diuron	47	1.0	0.03	0.04	11
Glyphosate	22	1.0	0.97	1.05	142
Metolachlor	6	1.0	2.00	2.00	73
Oxyfluorfen	5	1.0	0.28	0.28	9
Pendimethalin	25	1.0	1.02	1.05	159
Prometryn	24	1.0	1.69	1.71	252
Pyrithiobac-sodium	11	1.0	0.06	0.06	4
Trifluralin	56	1.0	0.90	0.91	312
Insecticides:					
Abamectin	54	1.0	0.007	0.007	2
Aldicarb	27	1.1	1.05	1.17	195
Bifenthrin	9	1.0	0.08	0.08	4
Chlorpyrifos	19	1.2	0.97	1.16	133
Dicofol	38	1.0	0.92	0.95	219
Dimethoate	6	1.0	0.49	0.49	18
Imidacloprid	8	1.1	0.04	0.05	2
Naled	12	1.0	0.84	0.84	60
Oxamyl	5	1.1	0.71	0.81	26
Phorate	9	1.0	1.02	1.02	56
Profenofos	10	1.0	0.98	0.98	58
Propargite	5	1.0	1.18	1.18	37
Thiodicarb	7	1.0	0.52	0.52	22
Zeta-cypermethrin	5	1.0	0.13	0.13	4
Other Chemicals:					
Bacillus cereus 2/	7	1.4			
Cacodylic acid	11	1.0	0.55	0.55	36
Cyclanilide	9	1.0	0.22	0.22	12
Ethephon	64	1.0	1.28	1.36	533
Mepiquat chloride	40	1.2	0.09	0.12	29
Monocarbamide dihyd.	16	1.0	2.54	2.77	264
Paraquat	49	1.1	0.27	0.31	92
Sodium chlorate	37	1.2	4.00	4.89	1,106
Thidiazuron	47	1.0	0.07	0.07	21
Tribufos	23	1.0	1.46	1.57	218

1/ Planted acres in 1999 for California were 610,000 acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications, Georgia, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Cyanazine	30	1.0	0.66	0.68	299
Diuron	21	1.2	0.46	0.56	170
Fluometuron	31	1.4	0.63	0.90	409
Glyphosate	73	1.4	0.72	1.05	1,130
MSMA	50	1.3	0.93	1.28	931
Pendimethalin	31	1.2	0.77	0.93	422
Pyrithiobac-sodium	8	1.0	0.05	0.05	5
Trifluralin	61	1.0	0.90	0.91	808
Insecticides:					
Acephate	2	1.0	0.30	0.32	8
Aldicarb	65	1.0	0.53	0.53	512
Cyfluthrin	5	1.3	0.03	0.05	3
Cypermethrin	7	1.0	0.08	0.08	8
Deltamethrin	6	1.3	0.02	0.02	2
Lambda-cyhalothrin	3	1.4	0.02	0.03	1
Methyl parathion	13	1.1	0.56	0.61	121
Phorate	7	1.0	0.89	0.89	98
Spinosad	3	1.0	0.06	0.06	3
Tralomethrin	16	1.3	0.02	0.03	7
Other Chemicals:					
Bacillus cereus 2/	7	1.6			
Cyclanilide	28	1.0	0.17	0.17	69
Dimethipin	9	1.0	0.31	0.31	43
Ethephon	60	1.0	1.25	1.25	1,109
Mepiquat chloride	19	1.3	0.02	0.02	7
Monocarbamide dihyd.	4	1.0	2.22	2.22	143
Paraquat	15	1.3	0.43	0.59	130
Sodium chlorate	5	1.0	0.95	0.95	72
Thidiazuron	47	1.0	0.07	0.07	50
Tribufos	41	1.0	0.68	0.68	410

1/ Planted acres in 1999 for Georgia were 1.47 million acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications, Louisiana, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	11	1.0	0.48	0.48	32
Bromoxynil	7	1.5	0.48	0.76	34
Clethodim	13	1.2	0.12	0.14	12
Clomazone	7	1.0	0.42	0.42	18
Cyanazine	28	1.2	1.03	1.27	219
Diuron	49	1.3	0.47	0.64	193
Fenoxaprop	4	1.0	0.19	0.19	4
Fluazifop-P-butyl	6	1.0	0.09	0.09	3
Fluometuron	60	1.0	0.57	0.62	229
Glyphosate	43	1.7	0.63	1.10	293
MSMA	42	1.5	0.81	1.22	318
Metolachlor	14	1.0	1.18	1.18	105
Norflurazon	3	1.0	0.93	0.93	20
Pendimethalin	17	1.0	0.70	0.70	71
Prometryn	20	1.3	0.55	0.75	94
Pyrithiobac-sodium	37	1.1	0.05	0.05	11
Quizalofop-ethyl	6	2.2	0.03	0.07	3
Trifluralin	15	1.0	0.80	0.80	73
Insecticides:					
Acephate	39	1.8	0.29	0.54	129
Aldicarb	29	1.0	0.54	0.54	96
Bifenthrin	10	1.0	0.07	0.07	4
Carbofuran	7	1.0	0.26	0.27	13
Cyfluthrin	6	2.6	0.03	0.07	2
Cypermethrin	16	1.3	0.08	0.10	10
Deltamethrin	3	1.0	0.02	0.02	1
Dicrotophos	21	1.3	0.30	0.40	50
Dimethoate	3	1.1	0.19	0.22	4
Disulfoton	2	1.0	0.74	0.80	9
Imidacloprid	8	1.1	0.09	0.09	5
Lambda-cyhalothrin	24	1.8	0.02	0.04	5
Malathion	84	7.0	0.86	6.07	3,143
Methyl parathion	38	2.5	1.15	2.94	678
Oxamyl	8	1.4	0.24	0.35	16
Spinosad	4	1.5	0.06	0.10	3
Zeta-cypermethrin	7	1.8	0.04	0.07	3
Fungicides:					
Etridiazole	2	1.0	0.14	0.14	2
Metalaxyl	5	1.0	0.10	0.10	3
PCNB	7	1.0	0.82	0.82	33

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Upland Cotton: Agricultural Chemical Applications,
Louisiana,1999 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Bacillus cereus 2/	10	2.2			
Cyclanilide	13	1.0	0.10	0.10	7
Dimethipin	6	1.0	0.26	0.26	9
Ethephon	45	1.1	0.79	0.90	249
Mepiquat chloride	15	2.1	0.02	0.04	4
Monocarbamide dihyd.	3	1.1	2.85	3.31	69
Paraquat	9	1.4	0.49	0.69	36
Sodium chlorate	4	1.0	2.57	2.57	70
Thidiazuron	54	1.0	0.07	0.07	23
Tribufos	57	1.0	0.65	0.69	240

1/ Planted acres in 1999 for Louisiana were 615,000 acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications, Mississippi, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromoxynil	22	1.5	0.37	0.58	153
Clethodim	7	1.0	0.11	0.11	9
Clomazone	6	1.0	0.42	0.42	30
Cyanazine	53	1.2	0.70	0.84	542
Diuron	49	1.0	0.40	0.43	253
Fluazifop-P-butyl	2	1.0	0.11	0.11	3
Fluometuron	74	1.4	0.54	0.76	673
Glyphosate	36	1.3	0.61	0.84	364
Lactofen	3	1.0	0.09	0.09	3
MSMA	44	1.4	0.86	1.20	635
Metolachlor	13	1.0	0.88	0.88	136
Norflurazon	13	2.3	0.80	1.87	297
Pendimethalin	28	1.0	0.77	0.81	272
Prometryn	22	1.2	0.51	0.64	171
Pyrithiobac-sodium	46	1.4	0.03	0.05	25
Trifluralin	29	1.0	0.68	0.68	239
Insecticides:					
Acephate	51	1.7	0.42	0.72	445
Aldicarb	40	1.3	0.54	0.70	338
Carbofuran	21	1.0	0.26	0.26	65
Cyfluthrin	18	1.6	0.03	0.06	12
Cypermethrin	12	1.0	0.06	0.06	10
Dicrotophos	34	1.3	0.29	0.40	163
Disulfoton	3	1.1	0.77	0.85	26
Esfenvalerate	8	1.0	0.03	0.03	3
Imidacloprid	2	1.1	0.02	0.03	1
Lambda-cyhalothrin	14	1.3	0.03	0.04	6
Malathion	86	7.1	0.69	4.94	5,103
Methyl parathion	9	1.7	0.37	0.63	67
Oxamyl	12	1.2	0.20	0.25	36
Phorate	8	1.0	0.68	0.68	65
Profenofos	15	1.5	0.60	0.93	169
Spinosad	13	1.3	0.06	0.09	14
Zeta-cypermethrin	16	1.3	0.04	0.05	10
Fungicides:					
Etridiazole	6	1.0	0.10	0.10	7
Mefenoxam	2	1.0	0.03	0.03	1
Metalaxyl	7	2.0	0.08	0.16	13
PCNB	14	1.5	0.61	0.95	157

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Upland Cotton: Agricultural Chemical Applications, Mississippi, 1999 (continued)1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Other Chemicals:					
Bacillus cereus 2/	15	1.5			
Cyclanilide	10	1.0	0.09	0.09	11
Dimethipin	2	1.0	0.31	0.31	9
Ethephon	47	1.0	0.92	0.99	559
Mepiquat chloride	34	1.3	0.02	0.03	12
Monocarbamide dihyd.	6	1.0	2.67	2.67	184
Paraquat	12	1.3	0.26	0.35	50
Sodium chlorate	8	1.0	3.49	3.53	324
Thidiazuron	78	1.0	0.09	0.09	85
Tribufos	78	1.0	0.76	0.78	733

1/ Planted acres in 1999 for Mississippi were 1.20 million acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications,
North Carolina, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromoxynil	13	1.8	0.36	0.66	74
Cyanazine	24	1.0	0.78	0.78	163
Fluometuron	36	1.0	0.89	0.89	283
Glyphosate	69	1.8	0.73	1.33	803
MSMA	31	1.2	1.12	1.34	367
Norflurazon	4	1.1	0.57	0.65	24
Pendimethalin	31	1.0	0.73	0.74	204
Prometryn	16	1.0	0.64	0.64	92
Pyrithiobac-sodium	10	1.0	0.04	0.04	3
Trifluralin	3	1.0	0.57	0.57	16
Insecticides:					
Acephate	8	1.8	0.18	0.35	25
Aldicarb	66	1.0	0.70	0.71	410
Cyfluthrin	27	1.4	0.03	0.04	11
Disulfoton	11	1.0	0.66	0.66	65
Lambda-cyhalothrin	33	1.6	0.02	0.04	11
Phorate	2	1.0	0.72	0.72	11
Zeta-cypermethrin	*	1.4	0.04	0.06	**
Fungicides:					
PCNB	6	1.0	0.72	0.72	38
Other Chemicals:					
Bacillus cereus 2/	14	1.3			
Cyclanilide	19	1.0	0.21	0.21	35
Dimethipin	3	1.0	0.23	0.23	5
Ethephon	39	1.0	1.29	1.29	447
Mepiquat chloride	23	1.2	0.03	0.04	7
Monocarbamide dihyd.	8	1.0	2.97	2.97	218
Paraquat	16	1.0	0.47	0.47	64
Sodium chlorate	3	1.0	0.57	0.57	14
Thidiazuron	5	1.0	0.06	0.06	3
Tribufos	23	1.0	1.01	1.01	203

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for North Carolina were 880,000 acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications, Tennessee, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bromoxynil	3	1.0	0.26	0.26	5
Clomazone	31	1.0	0.20	0.20	36
Cyanazine	19	1.0	0.88	0.89	98
Diuron	18	1.4	0.50	0.74	74
Fluazifop-P-butyl	2	1.3	0.18	0.25	2
Fluometuron	66	1.0	0.87	0.87	326
Glyphosate	54	1.7	0.58	1.01	308
MSMA	24	1.0	0.98	0.98	137
Metolachlor	9	1.0	1.22	1.22	59
Pendimethalin	47	1.0	0.89	0.89	241
Pyrithiobac-sodium	20	1.0	0.05	0.05	6
Trifluralin	11	1.0	0.57	0.58	36
Insecticides:					
Acephate	6	1.2	0.33	0.41	14
Aldicarb	11	1.0	0.60	0.60	38
Azinphos-methyl	16	2.4	0.23	0.56	51
Cyfluthrin	27	1.6	0.03	0.05	7
Dicrotophos	14	1.2	0.24	0.30	24
Dimethoate	5	1.0	0.16	0.16	5
Disulfoton	29	1.0	0.45	0.46	74
Imidacloprid	16	1.0	0.06	0.07	6
Lambda-cyhalothrin	5	2.6	0.03	0.08	2
Malathion	32	6.5	0.69	4.49	826
Methyl parathion	17	1.8	0.44	0.81	78
Oxamyl	30	1.4	0.19	0.28	48
Fungicides:					
Etridiazole	13	1.0	0.13	0.13	10
Metalaxyl	14	1.0	0.10	0.10	8
PCNB	24	1.0	0.83	0.83	111
Other Chemicals:					
Bacillus cereus 2/	24	1.6			
Cyclanilide	21	1.4	0.10	0.14	16
Ethephon	56	1.1	0.82	0.96	308
Mepiquat chloride	67	1.4	0.03	0.04	15
Paraquat	11	1.1	0.28	0.31	20
Tribufos	60	1.0	0.59	0.59	202

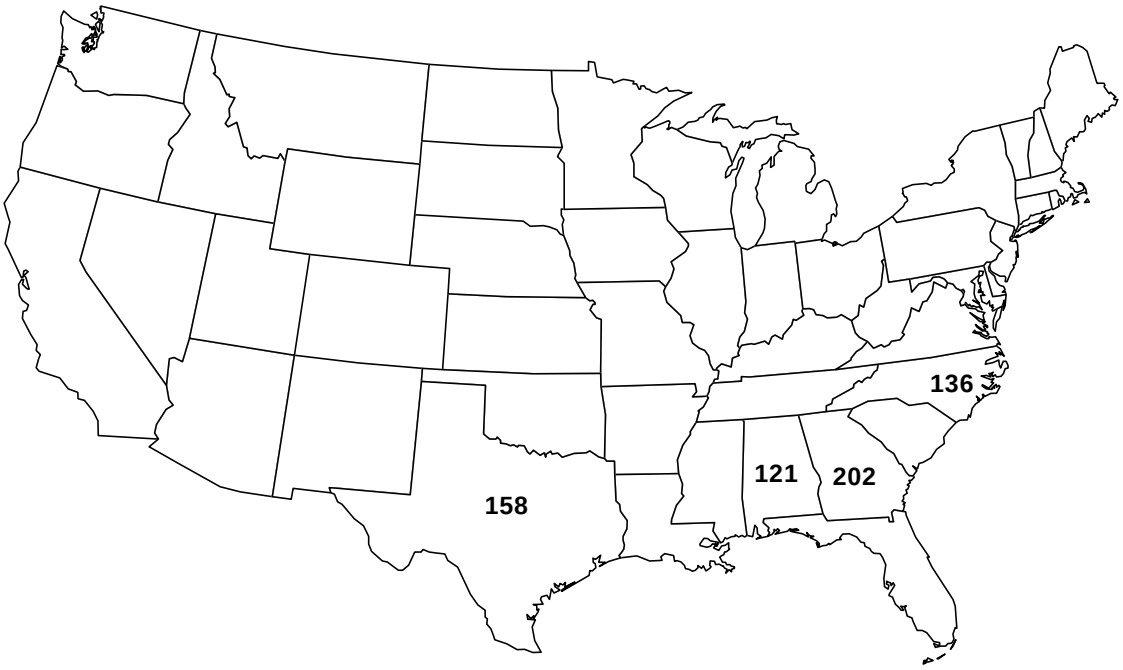
1/ Planted acres in 1999 for Tennessee were 570,000 acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Upland Cotton: Agricultural Chemical Applications, Texas, 1999 1/

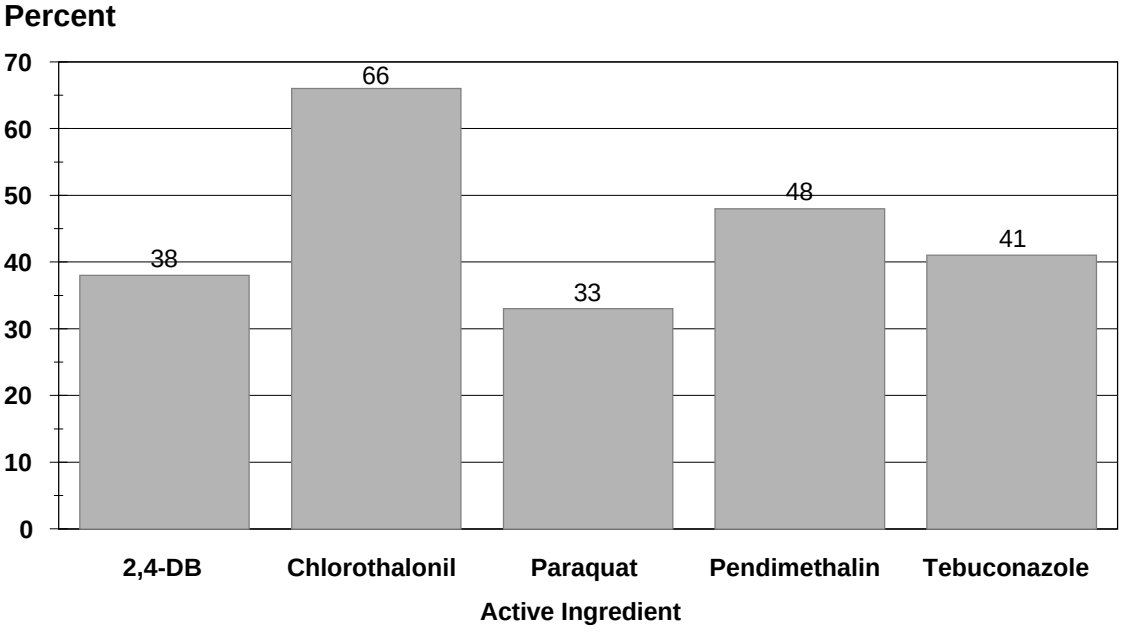
Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	*	1.0	0.47	0.47	26
Bromoxynil	*	1.7	0.26	0.44	26
Clethodim	2	1.8	0.11	0.20	19
Diuron	19	1.1	0.21	0.23	279
Fluometuron	7	1.0	0.67	0.69	284
Glyphosate	22	1.6	0.63	1.02	1,397
MSMA	2	1.1	0.79	0.87	96
Metolachlor	3	1.0	1.04	1.05	210
Norflurazon	1	1.0	0.38	0.38	27
Pendimethalin	18	1.0	0.62	0.64	696
Prometryn	13	1.0	0.61	0.61	502
Pyrithiobac-sodium	3	1.0	0.08	0.08	16
Trifluralin	74	1.1	0.65	0.75	3,413
Insecticides:					
Acephate	8	1.3	0.26	0.34	170
Aldicarb	12	1.1	0.47	0.53	402
Azinphos-methyl	3	2.4	0.24	0.60	128
Bt (Bacillus thur.)2/	3	1.4			
Carbofuran	4	1.0	0.18	0.20	54
Cypermethrin	3	1.0	0.07	0.07	12
Dicrotophos	12	1.1	0.24	0.28	214
Dimethoate	2	1.7	0.24	0.41	59
Endosulfan	3	1.5	0.30	0.47	77
Esfenvalerate	2	1.1	0.04	0.04	5
Imidacloprid	2	1.9	0.01	0.02	2
Lambda-cyhalothrin	6	1.4	0.04	0.06	20
Malathion	56	6.9	0.88	6.17	21,269
Methyl parathion	6	3.1	0.42	1.33	482
Oxamyl	19	1.4	0.16	0.23	270
Phorate	4	1.0	0.58	0.58	127
Zeta-cypermethrin	1	1.3	0.03	0.04	3
Other Chemicals:					
Bacillus cereus 2/	7	1.9			
Cyclanilide	3	1.0	0.08	0.08	17
Ethephon	17	1.0	0.83	0.86	895
Mepiquat chloride	9	2.0	0.02	0.04	22
Monocarbamide dihyd.	*	1.0	1.69	1.69	103
Paraquat	25	1.1	0.20	0.22	346
Thidiazuron	18	1.2	0.06	0.08	88
Tribufos	11	1.0	0.51	0.55	355

* Area applied is less than one percent.
1/ Planted acres in 1999 for Texas were 6.15 million acres.
2/ Rates and total applied are not calculated because amounts of active ingredient are not comparable between products.

Peanuts: Number of Usable Reports, 1999



Peanuts: Percent of Acres Treated
Top 5 Active Ingredients for 1999



Comparable states are AL, GA, NC and TX

Peanuts: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Planted Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	1,000 Acres	Percent	Mil. Lbs	Percent	Mil. Lbs	Percent	Mil. Lbs
AL	207	64	3.1	69	8.1	66	12.5
GA	546	51	4.6	68	15.0	65	22.2
NC	126	42	0.9	46	2.1	62	6.2
TX	360	91	23.9	83	14.6	74	9.9
Total	1,239	64	32.5	70	39.8	68	50.8

Peanuts: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Planted Acreage	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Alabama:	207					
Nitrogen		64	1.1	20	23	3.1
Phosphate		69	1.1	51	57	8.1
Potash		66	1.1	81	91	12.5
Georgia:	546					
Nitrogen		51	1.0	16	16	4.6
Phosphate		68	1.0	40	41	15.0
Potash		65	1.0	63	63	22.2
North Carolina:	126					
Nitrogen		42	1.0	16	16	0.9
Phosphate		46	1.0	35	36	2.1
Potash		62	1.0	79	79	6.2
Texas:	360					
Nitrogen		91	1.7	41	73	23.9
Phosphate		83	1.0	45	49	14.6
Potash		74	1.1	33	37	9.9
Total:	1,239					
Nitrogen		64	1.3	30	41	32.5
Phosphate		70	1.0	43	46	39.8
Potash		68	1.0	57	61	50.8

Peanuts: Active Ingredients Applied and Publication Status
By States Surveyed, 1999

Active Ingredient	States Surveyed				
	ALL	AL	GA	NC	TX
Herbicides:					
2,4-D	P				P
2,4-DB	P	P	P	P	P
3Pyridinecarb. acid	P	P	P	P	P
Acifluorfen	P	P	P	P	P
Alachlor	*			*	*
Benefin	*		*	*	
Bentazon	P	P	P	P	P
Chlorimuron-ethyl	P	P	P		
Clethodim	P	*	P	P	P
Dimethenamid	P	*	*	P	*
Ethalfluralin	P	P	P	*	P
Fluazifop-P-butyl	P	*	*	*	
Glyphosate	P	P	P	*	P
Imazethapyr	P	*	*	P	P
Metolachlor	P	P	P	P	P
Norflurazon	*		*		
Paraquat	P	P	P	P	*
Pendimethalin	P	P	P	P	P
Pyridate	P		*	P	*
Pyridinecarb. acid	P	P	P	P	P
Sethoxydim	P	P	P	P	P
Trifluralin	P	*	P	*	P
Vernolate	P		*	P	P
Insecticides:					
Acephate	P	*	P	P	*
Aldicarb	P	P	P	P	P
Bt (Bacillus thur.)	*			*	
Carbaryl	P	*	P		
Chlorpyrifos	P	*	P	P	*
Disulfoton	P	*	*	*	*
Esfenvalerate	P	*	P	P	*
Fenpropathrin	*		*	*	
Fonofos	*			*	
Lambda-cyhalothrin	P	*	*	*	
Malathion	*			*	
Methomyl	P	P	P	P	
Phorate	P	P	P	P	*
Propargite	*			*	
Pyrethrins	*			*	
Rotenone	*			*	

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Peanuts: Active Ingredients Applied and Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed: ALL	AL	GA	NC	TX
Fungicides:					
Azoxystrobin	P		P		P
Basic copper sulfate	*			*	
Chlorothalonil	P	P	P	P	P
Copper ammonium	*		*		
Copper hydroxide	P	*	P	*	
Copper resinate	*			*	*
Flutolanil	P		*		*
Mancozeb	*			*	
Mefenoxam	*				*
PCNB	*		*		
Propiconazole	P	P	P	P	P
Sulfur	P	*	P	P	*
Tebuconazole	P	P	P	P	P
Thiophanate-methyl	*				*
Other Chemicals:					
Dichloropropene	*			*	
Metam-sodium	P		*	P	
Methyl isothiocya.	*			*	
Pelargonic Acid	*		*		

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Peanuts: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State	Planted	Area Receiving and Total Applied							
	Acreage	Herbicide		Insecticide		Fungicide		Other Chemical 1/	
	1,000 Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
AL	207	99	324	68	159	94	734		
GA	546	99	964	77	570	89	2,186		
NC	126	94	323	91	164	85	205	16	1,203
TX	360	94	327	18	63	35	163		
Total	1,239	97	1,938	60	956	74	3,288	2	1,225

1/ Insufficient reports to publish data for one or more of the States surveyed.

Peanuts: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	*	1.0	0.67	0.67	6
2,4-DB	38	1.2	0.23	0.28	132
3Pyridinecarb. acid	17	1.0	0.01	0.01	2
Acifluorfen	22	1.0	0.24	0.24	67
Bentazon	32	1.0	0.52	0.56	227
Chlorimuron-ethyl	9	1.1	0.006	0.007	**
Clethodim	3	1.1	0.18	0.20	8
Dimethenamid	2	1.1	0.88	0.99	23
Ethalfluralin	29	1.0	0.75	0.76	270
Fluazifop-P-butyl	1	1.0	0.07	0.07	**
Glyphosate	5	1.7	0.52	0.89	53
Imazethapyr	9	1.0	0.02	0.03	3
Metolachlor	21	1.1	1.61	1.77	463
Paraquat	33	1.0	0.14	0.14	56
Pendimethalin	48	1.0	0.79	0.83	500
Pyridate	2	1.0	0.95	0.95	21
Pyridinecarb. acid	17	1.0	0.04	0.04	8
Sethoxydim	5	1.1	0.22	0.24	15
Trifluralin	9	1.0	0.39	0.42	47
Vernolate	1	1.0	1.45	1.45	22
Insecticides:					
Acephate	3	2.6	0.51	1.36	45
Aldicarb	32	1.0	0.99	1.08	431
Carbaryl	2	1.4	0.93	1.36	28
Chlorpyrifos	9	1.1	1.71	2.02	235
Disulfoton	2	1.0	0.93	0.93	21
Esfenvalerate	6	1.1	0.02	0.03	2
Lambda-cyhalothrin	1	1.2	0.02	0.02	**
Methomyl	5	1.0	0.25	0.27	15
Phorate	17	1.0	0.83	0.86	175

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Peanuts: Agricultural Chemical Applications,
States Surveyed, 1999 (continued)1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Fungicides:					
Azoxystrobin	6	1.4	0.25	0.35	26
Chlorothalonil	66	3.4	0.88	3.06	2,483
Copper hydroxide	4	1.7	0.81	1.42	74
Flutolanil	2	1.8	0.56	1.02	31
Propiconazole	13	2.2	0.07	0.17	27
Sulfur	9	3.5	0.93	3.33	368
Tebuconazole	41	2.7	0.20	0.53	268
Other Chemicals:					
Metam-sodium	2	2.1	27.45	58.42	1,225

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for the 4 states surveyed were 1.24 million acres. States included are AL, GA, NC and TX.

Peanuts: Agricultural Chemical Applications,
Alabama, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-DB	39	1.5	0.30	0.47	38
3Pyridinecarb. acid	36	1.0	0.01	0.01	**
Acifluorfen	26	1.0	0.25	0.25	13
Bentazon	31	1.0	0.50	0.50	32
Chlorimuron-ethyl	8	1.0	0.007	0.007	**
Ethalfluralin	32	1.0	0.68	0.71	47
Glyphosate	11	1.0	0.72	0.76	18
Metolachlor	17	1.0	1.66	1.77	61
Paraquat	27	1.0	0.14	0.14	8
Pendimethalin	53	1.0	0.87	0.87	95
Pyridinecarb. acid	11	1.0	0.04	0.04	**
Sethoxydim	8	1.0	0.29	0.30	5
Insecticides:					
Aldicarb	43	1.0	1.16	1.22	108
Methomyl	4	1.0	0.38	0.38	3
Phorate	13	1.0	0.87	0.87	24
Fungicides:					
Chlorothalonil	93	3.7	0.86	3.25	624
Propiconazole	27	2.9	0.02	0.06	4
Tebuconazole	45	2.6	0.20	0.51	48

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Alabama were 207,000 acres.

Peanuts: Agricultural Chemical Applications,
Georgia, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-DB	48	1.1	0.23	0.27	69
3Pyridinecarb. acid	16	1.0	0.01	0.01	1
Acifluorfen	25	1.0	0.25	0.25	34
Bentazon	46	1.0	0.52	0.56	140
Chlorimuron-ethyl	18	1.2	0.006	0.007	**
Clethodim	1	1.0	0.16	0.16	1
Ethalfluralin	46	1.0	0.75	0.75	188
Glyphosate	3	1.0	0.75	0.75	11
Metolachlor	21	1.1	1.59	1.83	210
Paraquat	57	1.0	0.14	0.14	44
Pendimethalin	47	1.0	0.88	0.90	233
Pyridinecarb. acid	27	1.0	0.04	0.04	5
Sethoxydim	3	1.0	0.26	0.26	4
Trifluralin	2	1.0	0.18	0.18	2
Insecticides:					
Acephate	3	4.5	0.57	2.62	41
Aldicarb	37	1.1	0.96	1.10	225
Carbaryl	3	1.3	0.89	1.20	17
Chlorpyrifos	12	1.2	1.88	2.27	144
Esfenvalerate	6	1.1	0.02	0.03	**
Methomyl	8	1.1	0.22	0.24	11
Phorate	27	1.0	0.81	0.84	123
Fungicides:					
Azoxystrobin	10	1.4	0.26	0.38	21
Chlorothalonil	85	3.9	0.88	3.48	1,621
Copper hydroxide	3	3.6	0.37	1.36	19
Propiconazole	14	1.5	0.08	0.12	9
Sulfur	15	4.2	0.98	4.10	334
Tebuconazole	47	3.0	0.20	0.61	156

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Georgia were 546,000 acres.

Peanuts: Agricultural Chemical Applications,
North Carolina, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-DB	57	1.2	0.14	0.17	12
3Pyridinecarb. acid	2	1.8	0.01	0.02	**
Acifluorfen	52	1.0	0.22	0.23	15
Bentazon	57	1.1	0.56	0.64	46
Clethodim	3	1.0	0.21	0.21	1
Dimethenamid	10	1.2	0.89	1.10	14
Imazethapyr	7	1.2	0.01	0.02	**
Metolachlor	55	1.0	1.90	2.05	143
Herbicides:					
Paraquat	28	1.0	0.10	0.10	4
Pendimethalin	45	1.3	0.64	0.85	48
Pyridate	13	1.0	1.07	1.07	18
Pyridinecarb. acid	8	1.0	0.05	0.05	1
Sethoxydim	12	1.0	0.16	0.16	2
Vernolate	4	1.0	2.13	2.13	9
Insecticides:					
Acephate	5	1.0	0.47	0.47	3
Aldicarb	58	1.0	1.04	1.05	76
Chlorpyrifos	25	1.0	1.63	1.63	51
Esfenvalerate	27	1.1	0.02	0.03	1
Methomyl	3	1.0	0.33	0.36	1
Phorate	20	1.0	0.91	0.91	23
Fungicides:					
Chlorothalonil	73	1.7	0.91	1.55	142
Propiconazole	10	1.2	0.08	0.10	1
Sulfur	12	2.1	0.74	1.58	24
Tebuconazole	61	2.3	0.18	0.42	32
Other Chemicals:					
Metam-sodium	16	2.1	27.28	58.84	1,203

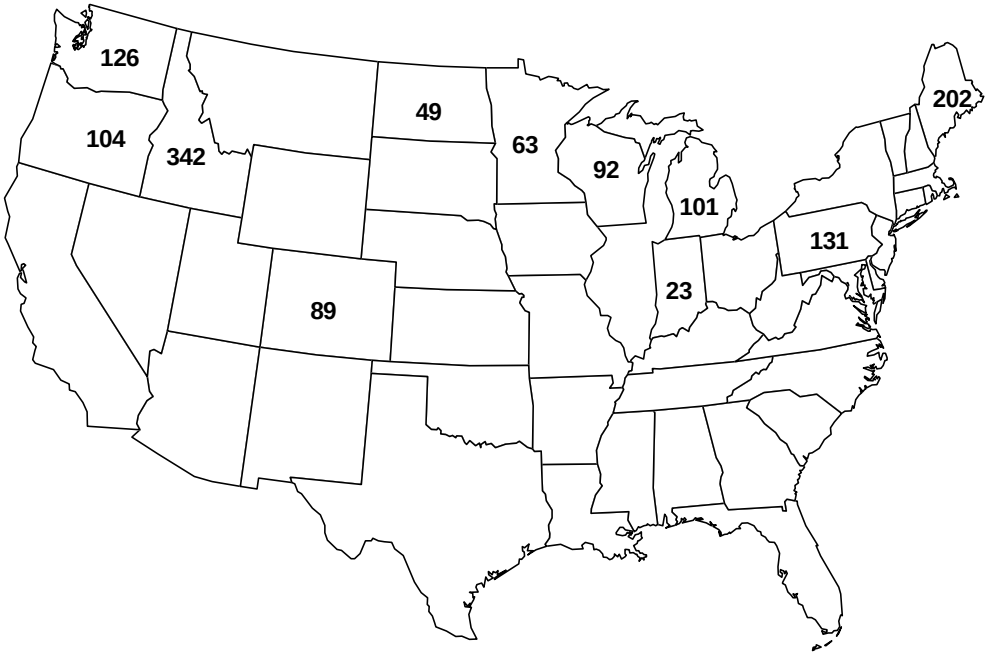
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for North Carolina were 126,000 acres.

Peanuts: Agricultural Chemical Applications,
Texas, 1999 1/

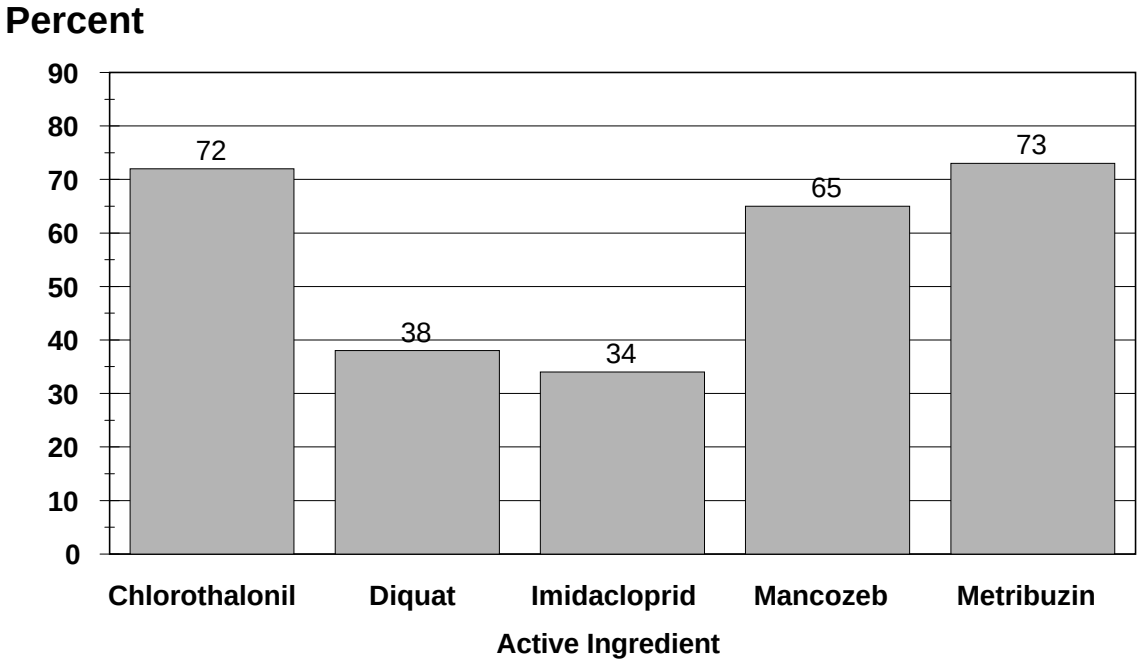
Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	3	1.0	0.67	0.67	6
2,4-DB	15	1.0	0.23	0.25	13
3Pyridinecarb. acid	11	1.0	0.01	0.01	**
Acifluorfen	6	1.0	0.24	0.24	5
Bentazon	5	1.0	0.49	0.49	9
Clethodim	6	1.2	0.21	0.26	5
Ethalfluralin	11	1.0	0.84	0.84	34
Glyphosate	5	3.3	0.26	0.87	15
Imazethapyr	24	1.0	0.03	0.03	3
Metolachlor	12	1.0	1.12	1.12	49
Pendimethalin	49	1.0	0.68	0.70	124
Pyridinecarb. acid	7	1.0	0.02	0.02	1
Sethoxydim	5	1.3	0.18	0.25	4
Trifluralin	27	1.0	0.40	0.43	42
Vernolate	2	1.0	1.07	1.07	7
Insecticides:					
Aldicarb	9	1.0	0.63	0.63	22
Fungicides:					
Azoxystrobin	6	1.2	0.22	0.27	5
Chlorothalonil	17	1.8	0.86	1.56	96
Propiconazole	5	4.0	0.19	0.78	13
Tebuconazole	21	2.2	0.19	0.44	32

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Texas were 360,000 acres.

Fall Potatoes: Number of Usable Reports, 1999



Fall Potatoes - Percent of Acres Treated
Top 5 Active Ingredients for 1999



Surveyed States: CO, ID, IN, ME, MI, MN, ND, OR, PA, WA and WI

Fall Potatoes: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Planted Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	1,000 Acres	Percent	Mil. Lbs	Percent	Mil. Lbs	Percent	Mil. Lbs
CO	77.2	98	14.6	95	13.3	74	5.6
ID	395	100	91.0	99	78.5	82	42.7
IN	5.2	100	0.6	100	0.5	100	0.5
ME	65	100	11.5	100	12.3	100	12.4
MI	48	100	10.1	98	6.6	100	10.0
MN	70	99	8.0	91	5.3	91	9.6
ND	121	99	15.4	98	10.9	83	9.2
OR	56	100	13.5	100	8.2	91	7.5
PA	14.5	97	2.2	97	1.8	97	2.0
WA	170	100	55.5	99	40.7	97	43.7
WI	86	100	20.8	100	12.0	99	20.4
Total	1,107.9	100	243.2	98	190.1	88	163.6

Fall Potatoes: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Planted Acreage	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Colorado:	77.2					
Nitrogen		98	6.2	31	194	14.6
Phosphate		95	1.3	132	183	13.3
Potash		74	1.7	56	99	5.6
Idaho:	395					
Nitrogen		100	4.5	51	231	91.0
Phosphate		99	2.3	86	200	78.5
Potash		82	1.6	79	131	42.7
Indiana:	5.2					
Nitrogen		100	1.7	68	121	0.6
Phosphate		100	1.0	103	104	0.5
Potash		100	1.0	95	97	0.5
Maine:	65					
Nitrogen		100	1.1	153	177	11.5
Phosphate		100	1.0	176	189	12.3
Potash		100	1.0	180	191	12.4
Michigan:	48					
Nitrogen		100	3.8	55	211	10.1
Phosphate		98	1.1	120	140	6.6
Potash		100	1.3	152	210	10.0

--continued

Fall Potatoes: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999 (continued)

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Minnesota:	70					
Nitrogen		99	2.1	53	115	8.0
Phosphate		91	1.1	74	84	5.3
Potash		91	1.2	126	152	9.6
North Dakota:	121					
Nitrogen		99	3.4	37	129	15.4
Phosphate		98	1.2	75	91	10.9
Potash		83	1.2	73	92	9.2
Oregon:	56					
Nitrogen		100	2.4	99	242	13.5
Phosphate		100	1.6	89	147	8.2
Potash		91	1.4	100	147	7.5
Pennsylvania:	14.5					
Nitrogen		97	1.6	92	155	2.2
Phosphate		97	1.1	104	124	1.8
Potash		97	1.2	113	141	2.0
Washington:	170					
Nitrogen		100	3.6	89	327	55.5
Phosphate		99	1.6	142	242	40.7
Potash		97	1.3	194	264	43.7
Wisconsin:	86					
Nitrogen		100	4.4	54	243	20.8
Phosphate		100	1.5	90	140	12.0
Potash		99	2.5	95	239	20.4
Total:	1,107.9					
Nitrogen		100	3.8	57	220	243.2
Phosphate		98	1.7	101	174	190.1
Potash		88	1.5	108	166	163.6

Fall Potatoes: Active Ingredients Applied and Publication Status
By States Surveyed, 1999

Active Ingredient	ALL	States Surveyed: CO	ID	IN	ME	MI	MN
Herbicides:							
2,4-D	P	*				*	*
EPTC	P	P	P	*	*	*	*
Glyphosate	P	*	P	*	*	P	*
Linuron	P		*	P	P	P	*
Metolachlor	P	P	P	P	*	P	P
Metribuzin	P	P	P	*	P	P	P
Pendimethalin	P	P	P	*	*	*	P
Rimsulfuron	P		P		P	P	*
Sethoxydim	P		*	*	*	*	P
Sulfosate	*	*					
Trifluralin	P		P				*
Insecticides:							
Abamectin	*						
Aldicarb	P		P				
Azinphos-methyl	P		*	*	P	*	P
Beauveria bassiana	*				*		
Bt (Bacillus thur.)	P				P		
Carbaryl	P		P	*	P	P	*
Carbofuran	P		P		*		*
Cyfluthrin	P		*			P	P
Diazinon	P		P	*	*	*	
Dimethoate	P		P			P	P
Disulfoton	P	*	P		P	*	
Endosulfan	P	P	P	*	P	P	P
Esfenvalerate	P	P	P	*	P	P	P
Ethoprop	P		P		*	*	
Fonofos	P		P		*		*
Imidacloprid	P	*	P	P	P	P	P
Lambda-cyhalothrin	P		*				
Malathion	P		*		*		
Methamidophos	P	P	P	*	P	P	*
Methomyl	P				*		
Methyl parathion	P	*	*			*	*
Oxamyl	P		*		*	*	
Permethrin	P	P	P	P	P	P	*
Petroleum distillate	*	*					
Phorate	P	*	P	*		P	*
Phosmet	P		*	*	*	P	
Phosphamidon	*		*				
Piperonyl butoxide	P	*		*	*		
Potassium salts	*				*		
Propargite	P		*				
Pyrethrins	P	*			*		
Rotenone	*				*		
Spinosad	P				*		*
Terbufos	*	*					

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Fall Potatoes: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	ND	OR	PA	WA	WI
Herbicides:					
2,4-D	*		*		*
EPTC	*	P	P	P	
Glyphosate	*	P	P	*	P
Linuron		*	P		P
Metolachlor	P	P	P	P	P
Metribuzin	P	P	P	P	P
Pendimethalin	P	P	P	P	P
Rimsulfuron	P	P	*	*	P
Sethoxydim	P	*		*	P
Sulfosate					
Trifluralin	*	P		P	
Insecticides:					
Abamectin		*	*		
Aldicarb		P		P	
Azinphos-methyl	P	*	P	P	P
Bt (Bacillus thur.)			*		*
Carbaryl	*	*	P	P	*
Carbofuran	*	P	*	P	
Chlorpyrifos		*	*		
Cryolite			*		
Cyfluthrin	P				*
Diazinon		*	P	*	P
Dimethoate	P	*	P	P	P
Disulfoton		*	*		*
Endosulfan	P	P	P	*	P
Esfenvalerate	P	*	P	P	P
Ethoprop		P	P	P	*
Fonofos		*			
Imidacloprid	P	P	P	P	P
Lambda-cyhalothrin		*	*	*	
Malathion			*	*	
Methamidophos	*	P	P	P	P
Methomyl			P	*	
Methoxychlor				*	*
Methyl parathion		*	P	*	*
Mevinphos				*	
Oxamyl			P	*	P
Permethrin		*	P	P	P
Phorate	P	P	P	P	*
Phosmet	*		*	*	P
Piperonyl butoxide			*		P
Propargite		P		P	
Pyrethrins					P
Spinosad	P		*	*	*

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Fall Potatoes: Active Ingredients Applied and Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed						
	ALL	CO	ID	IN	ME	MI	MN
Fungicides:							
Azoxystrobin	P	*	P		*	P	P
Bas Copper Zinc Sulf	*				*		
Basic copper sulfate	*		*				*
Benomyl	*					*	
Captan	*					*	
Chlorothalonil	P	P	P	*	P	P	P
Copper ammonium	P	*	P			*	
Copper hydroxide	P	P	P	*	P	P	*
Copper resinate	*						
Copper sulfate	P		*		*	P	
Cymoxanil	P	P	P		P		P
Dicloran	*		*				
Dimethomorph	P	P					P
Iprodione	P		P				
Mancozeb	P	P	P	*	P	P	P
Maneb	P	*	P		P	*	*
Mefenoxam	P	P	P		P	P	P
Metalaxyl	P	P	P		P	*	P
Metiram	P	P	P	*	P	P	P
PCNB	*						*
Propamocarb hydroch.	P				*		
Sulfur	P		*	*	*		*
Tebuconazole	*						*
Triphenyltin hydrox.	P	P	P	*	P	P	P
Other Chemicals:							
Cytokinins	P				*		
Dichloropropene	P		*				
Diquat	P	P	P	*	P	P	P
Endothall	P	*	*		P		*
GABA	*		*				
Gibberellic acid	*				*		
Hydrogen peroxide	*				*		
IBA	P				*		
L-Glutamic acid	*		*				
Maleic hydrazide	P		P		P	P	
Metam-sodium	P	*	P			*	*
Monocarbamide dihyd.	*						
Paraquat	P		*	*	*	*	
Potassium gibber.	P				*		
Sulfuric acid	P	P	P		*		*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Fall Potatoes: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	ND	OR	PA	WA	WI
Fungicides:					
Azoxystrobin	P	P	*	P	P
Basic copper sulfate		*			
Chlorothalonil	P	P	P	P	P
Copper ammonium			*	P	*
Copper hydroxide		P	P	P	P
Copper resinate				*	*
Copper sulfate			*		P
Cymoxanil	P	P	*	P	P
Dicloran				*	
Dimethomorph					*
Iprodione		P		P	
Mancozeb	P	P	P	P	P
Maneb	*	*	*	*	*
Mefenoxam	P	P	P	P	P
Metalaxyl	*	P	P	P	P
Metiram	*	*	*	P	P
PCNB					
Propamocarb hydroch.	*			*	*
Sulfur		*	*	*	
Triphenyltin hydrox.	P	P	*	P	P
Other Chemicals:					
Chloropicrin		*		*	
Cytokinins				*	*
Dichloropropene		P		P	
Diquat	P	P	P	P	P
Endothall			*	*	P
Gibberellic acid					*
IBA					*
Maleic hydrazide		P	*	*	*
Metam-sodium		P		P	*
Monocarbamide dihyd.		*		*	
Paraquat		*	*	*	
Sodium chlorate				*	
Sulfuric acid	*	*			*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Fall Potatoes: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State	Planted Acreage	Herbicide: Area Receiving	Herbicide: Total Applied	Insecticide 1/: Area Receiving	Insecticide 1/: Total Applied	Fungicide: Area Receiving	Fungicide: Total Applied	Other Chemical: Area Receiving	Other Chemical: Total Applied
	1,000 Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
CO	77.2	86	175	76	39	98	387	57	14,056
ID	395	92	953	92	1,066	92	1,502	56	53,358
IN 2/	5.2	67	9	99	2	29	10		
ME	65	100	25	97	29	100	553	24	89
MI	48	100	101	100	52	99	609	56	137
MN	70	86	82	91	54	93	577	16	2,103
ND	121	83	94	95	121	99	966	5	1,315
OR	56	100	129	89	183	97	314	65	7,489
PA	14.5	94	35	99	47	95	125	3	4
WA	170	98	360	99	810	97	1,206	75	19,377
WI	86	98	84	100	193	98	921	16	1,104
Total	1,107.9	93	2,047	93	2,596	95	7,170	45	99,032

1/ Total Applied excludes Bt's (Bacillus thuringiensis). Total BT quantities are not available because amounts of active ingredient are not comparable between products.
2/ Insufficient reports to publish data for one or more of the pesticide classes.

Fall Potatoes: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	2	1.9	0.06	0.12	1
EPTC	26	1.0	3.48	3.69	1,077
Glyphosate	3	1.0	0.65	0.65	20
Linuron	5	1.0	0.63	0.63	35
Metolachlor	16	1.0	1.75	1.76	315
Metribuzin	73	1.0	0.42	0.45	366
Pendimethalin	20	1.0	0.80	0.81	178
Rimsulfuron	15	1.0	0.02	0.02	2
Sethoxydim	3	1.0	0.29	0.29	9
Trifluralin	8	1.0	0.51	0.51	43
Insecticides:					
Aldicarb	5	1.0	2.65	2.72	141
Azinphos-methyl	7	1.1	0.42	0.48	38
Bt (Bacillus thur.)2/	*	1.6			
Carbaryl	3	1.2	0.85	1.02	30
Carbofuran	10	1.2	1.44	1.85	204
Cyfluthrin	3	1.3	0.03	0.04	**
Diazinon	2	1.1	1.43	1.71	31
Dimethoate	13	1.7	0.38	0.68	100
Disulfoton	1	1.1	1.31	1.49	19
Ethoprop	8	1.0	3.83	3.88	331

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Fall Potatoes: Agricultural Chemical Applications,
States Surveyed, 1999 1/ (continued)

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Insecticides(cont.)					
Endosulfan	16	1.4	0.85	1.21	221
Esfenvalerate	16	1.4	0.04	0.05	9
Fonofos	1	1.3	1.68	2.35	30
Imidacloprid	34	1.2	0.12	0.15	55
Lambda-cyhalothrin	*	1.6	0.21	0.34	**
Malathion	*	1.0	0.66	0.66	2
Methamidophos	29	1.7	0.91	1.61	520
Methomyl	*	1.5	0.33	0.51	**
Methyl parathion	1	1.7	0.57	0.97	12
Oxamyl	2	1.2	0.62	0.76	13
Permethrin	8	1.3	0.13	0.17	15
Phorate	23	1.0	2.74	2.75	691
Phosmet	4	1.2	0.65	0.81	32
Piperonyl butoxide	2	1.9	0.43	0.82	22
Propargite	4	1.1	1.64	1.92	76
Pyrethrins	*	1.6	0.04	0.06	**
Spinosad	3	1.0	0.05	0.05	2
Fungicides:					
Azoxystrobin	24	2.5	0.10	0.26	69
Chlorothalonil	72	4.0	0.93	3.73	2,960
Copper ammonium	2	1.9	0.33	0.65	16
Copper hydroxide	13	1.6	0.56	0.94	134
Copper sulfate	2	1.0	1.10	1.14	25
Cymoxanil	13	1.7	0.11	0.20	29
Dimethomorph	1	1.3	0.18	0.23	3
Iprodione	7	1.0	0.97	1.05	87
Mancozeb	65	3.1	1.21	3.86	2,775
Maneb	5	2.5	1.23	3.19	190
Mefenoxam	20	1.5	0.11	0.17	37
Metalaxyl	12	1.4	0.22	0.31	40
Metiram	12	2.6	1.46	3.83	529
Propamocarb hydroch.	1	2.5	0.57	1.47	18
Sulfur	4	1.8	2.12	3.89	188
Triphenyltin hydrox.	18	2.1	0.14	0.29	58
Other Chemicals:					
Dichloropropene	5	1.0	171.99	173.45	10,425
Diquat	38	1.3	0.34	0.48	202
Endothall	3	1.0	0.79	0.86	23
Maleic hydrazide	6	1.0	0.97	0.98	62
Metam-sodium	22	1.0	121.43	121.98	29,327
Paraquat	1	1.0	0.32	0.32	5
Sulfuric acid	18	1.0	281.06	293.09	58,893

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for the 11 states surveyed were 1.11 million acres. States included are CO, ID, IN, ME, MI, MN, ND, OR, PA, WA and WI.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Fall Potatoes: Agricultural Chemical Applications,
Colorado, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
EPTC	47	1.0	3.44	3.64	133
Metolachlor	21	1.0	1.20	1.20	20
Metribuzin	73	1.0	0.21	0.22	12
Pendimethalin	9	1.0	1.15	1.15	8
Insecticides:					
Endosulfan	22	1.2	0.87	1.04	18
Esfenvalerate	23	1.0	0.04	0.04	**
Methamidophos	7	1.0	0.89	0.93	5
Permethrin	43	1.1	0.13	0.15	5
Fungicides:					
Chlorothalonil	76	2.0	0.97	1.95	115
Copper hydroxide	34	1.3	0.59	0.77	20
Cymoxanil	10	1.4	0.12	0.17	1
Dimethomorph	9	1.4	0.17	0.25	2
Mancozeb	88	2.2	1.28	2.89	196
Mefenoxam	25	1.3	0.11	0.15	3
Metalaxyl	16	1.0	0.19	0.19	2
Metiram	23	1.0	1.41	1.47	27
Triphenyltin hydrox.	77	1.8	0.17	0.31	18
Other Chemicals:					
Diquat	34	1.0	0.42	0.46	12
Sulfuric acid	54	1.0	329.50	329.50	13,702

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Colorado were 77,200 acres.

Fall Potatoes: Agricultural Chemical Applications,
Idaho, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
EPTC	41	1.0	3.44	3.70	597
Glyphosate	3	1.0	0.68	0.68	7
Metolachlor	11	1.0	2.25	2.25	95
Metribuzin	82	1.0	0.49	0.51	166
Pendimethalin	25	1.0	0.77	0.80	78
Rimsulfuron	16	1.1	0.02	0.02	1
Trifluralin	5	1.0	0.39	0.40	7
Insecticides:					
Aldicarb	6	1.0	2.36	2.36	58
Carbaryl	6	1.1	0.84	0.93	20
Carbofuran	11	1.1	1.56	1.82	76
Diazinon	*	1.0	2.68	2.68	8
Dimethoate	2	1.0	0.39	0.39	3
Disulfoton	1	1.0	2.06	2.06	12
Endosulfan	17	1.3	0.87	1.19	81
Esfenvalerate	6	1.0	0.02	0.03	1
Ethoprop	9	1.0	3.63	3.63	132
Fonofos	1	1.0	0.81	0.81	4
Imidacloprid	8	1.2	0.11	0.13	4
Methamidophos	28	1.9	0.91	1.76	195
Permethrin	5	1.6	0.11	0.19	4
Phorate	42	1.0	2.75	2.75	460
Fungicides:					
Azoxystrobin	10	1.4	0.07	0.10	4
Chlorothalonil	66	2.0	1.00	2.03	527
Copper ammonium	*	1.0	0.29	0.29	1
Copper hydroxide	9	1.4	0.64	0.95	35
Cymoxanil	6	1.3	0.11	0.15	3
Iprodione	3	1.0	1.03	1.03	13
Mancozeb	64	2.6	1.23	3.25	818
Maneb	4	1.3	1.23	1.70	30
Mefenoxam	13	1.3	0.11	0.16	8
Metalaxyl	7	1.7	0.23	0.42	12
Metiram	2	1.7	1.65	2.87	25
Triphenyltin hydrox.	7	1.4	0.11	0.16	4
Other Chemicals:					
Diquat	12	1.0	0.41	0.44	20
Maleic hydrazide	3	1.0	1.61	1.61	21
Metam-sodium	24	1.0	124.37	124.37	11,729
Sulfuric acid	36	1.0	278.82	287.34	40,992

* Area applied is less than one percent.
1/ Planted acres in 1999 for Idaho were 395,000 acres.

Fall Potatoes: Agricultural Chemical Applications,
Indiana, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Linuron	41	1.0	0.94	0.94	2
Metolachlor	63	1.0	1.91	1.91	6
Insecticides:					
Imidacloprid	45	1.0	0.13	0.13	**
Permethrin	53	2.3	0.15	0.35	1

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Indiana were 5,200 acres.

Fall Potatoes: Agricultural Chemical Applications,
Maine, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Linuron	8	1.0	0.51	0.53	3
Metribuzin	82	1.0	0.40	0.41	22
Rimsulfuron	8	1.1	0.02	0.02	**
Insecticides:					
Azinphos-methyl	3	1.3	0.29	0.40	1
Bt (Bacillus thur.)2/	*	3.3			
Carbaryl	1	2.7	0.77	2.10	2
Disulfoton	6	1.4	0.62	0.91	3
Endosulfan	4	1.1	0.59	0.67	2
Esfenvalerate	8	1.5	0.03	0.05	**
Imidacloprid	90	1.3	0.09	0.12	7
Methamidophos	19	1.7	0.61	1.08	13
Permethrin	8	1.5	0.10	0.16	1
Fungicides:					
Chlorothalonil	72	7.3	0.62	4.50	212
Copper hydroxide	30	2.1	0.37	0.80	16
Cymoxanil	3	2.7	0.12	0.32	1
Mancozeb	77	6.0	0.97	5.87	293
Maneb	5	6.4	0.95	6.14	18
Mefenoxam	19	1.9	0.12	0.23	3
Metalaxyl	4	2.1	0.20	0.41	1
Metiram	2	3.6	1.21	4.46	5
Triphenyltin hydrox.	26	2.2	0.12	0.26	4
Other Chemicals:					
Diquat	93	1.7	0.25	0.43	26
Endothall	3	1.0	0.48	0.48	1
Maleic hydrazide	16	1.0	1.29	1.29	14

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Maine were 65,000 acres.
2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

Fall Potatoes: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	4	1.0	1.02	1.02	2
Linuron	79	1.0	0.66	0.66	25
Metolachlor	80	1.0	1.69	1.71	66
Metribuzin	77	1.0	0.21	0.21	8
Rimsulfuron	17	1.0	0.02	0.02	**
Insecticides:					
Carbaryl	2	1.3	1.54	2.07	2
Cyfluthrin	29	1.3	0.02	0.03	**
Dimethoate	55	1.9	0.49	0.97	25
Endosulfan	*	1.3	0.98	1.36	**
Esfenvalerate	12	1.4	0.05	0.07	**
Imidacloprid	93	1.1	0.18	0.20	9
Methamidophos	7	1.2	0.90	1.12	4
Permethrin	11	1.0	0.14	0.15	1
Phorate	3	1.0	2.81	2.81	4
Phosmet	*	1.0	0.96	1.01	**
Fungicides:					
Azoxystrobin	53	1.4	0.10	0.14	4
Chlorothalonil	82	9.9	0.95	9.41	370
Copper hydroxide	1	2.0	0.43	0.89	1
Copper sulfate	1	1.0	0.56	0.62	**
Mancozeb	28	4.1	1.17	4.85	65
Mefenoxam	52	1.9	0.12	0.24	6
Metiram	44	3.9	1.20	4.75	101
Triphenyltin hydrox.	50	2.9	0.10	0.29	7
Other Chemicals:					
Diquat	84	1.6	0.27	0.44	18
Maleic hydrazide	56	1.0	0.58	0.59	16

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Michigan were 48,000 acres.

Fall Potatoes: Agricultural Chemical Applications,
Minnesota, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Metolachlor	21	1.0	1.99	1.99	29
Metribuzin	39	1.0	0.41	0.43	12
Pendimethalin	16	1.0	0.88	0.88	10
Sethoxydim	4	1.0	0.28	0.28	1
Insecticides:					
Azinphos-methyl	11	1.0	0.39	0.39	3
Cyfluthrin	9	1.6	0.03	0.05	**
Dimethoate	23	1.5	0.27	0.42	7
Endosulfan	17	1.1	0.89	1.01	12
Esfenvalerate	21	1.0	0.02	0.02	**
Imidacloprid	70	1.3	0.12	0.16	8
Fungicides:					
Azoxystrobin	27	2.1	0.10	0.22	4
Chlorothalonil	61	4.2	0.97	4.12	176
Cymoxanil	32	1.9	0.12	0.23	5
Dimethomorph	6	1.2	0.17	0.22	1
Mancozeb	66	5.1	1.28	6.53	300
Mefenoxam	11	1.5	0.12	0.18	1
Metalaxyl	11	2.0	0.23	0.48	4
Metiram	14	2.6	1.58	4.12	39
Triphenyltin hydrox.	28	2.7	0.17	0.46	9
Other Chemicals:					
Diquat	59	1.5	0.31	0.48	20

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Minnesota were 70,000 acres.

Fall Potatoes: Agricultural Chemical Applications,
North Dakota, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Metolachlor	21	1.0	1.61	1.61	41
Metribuzin	42	1.0	0.52	0.57	29
Pendimethalin	11	1.0	1.07	1.07	14
Rimsulfuron	25	1.0	0.02	0.02	**
Sethoxydim	6	1.0	0.23	0.23	2
Insecticides:					
Azinphos-methyl	19	1.0	0.48	0.51	12
Cyfluthrin	8	1.2	0.03	0.04	**
Dimethoate	24	2.2	0.27	0.62	18
Endosulfan	15	1.6	0.61	1.02	18
Esfenvalerate	19	1.0	0.01	0.01	**
Imidacloprid	68	1.1	0.09	0.10	8
Phorate	8	1.0	2.83	2.83	28
Spinosad	20	1.0	0.04	0.04	1
Fungicides:					
Azoxystrobin	49	3.1	0.10	0.32	19
Chlorothalonil	82	6.2	0.90	5.65	559
Cymoxanil	34	2.0	0.10	0.21	9
Mancozeb	57	3.1	1.34	4.19	286
Mefenoxam	20	1.1	0.16	0.19	4
Triphenyltin hydrox.	24	2.8	0.14	0.40	11
Other Chemicals:					
Diquat	41	1.1	0.35	0.40	20

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for North Dakota were 121,000 acres.

Fall Potatoes: Agricultural Chemical Applications,
Oregon, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
EPTC	36	1.0	4.01	4.07	81
Glyphosate	10	1.0	0.29	0.29	2
Metolachlor	14	1.0	1.75	1.75	13
Metribuzin	46	1.0	0.41	0.43	11
Pendimethalin	35	1.0	0.73	0.73	14
Rimsulfuron	21	1.1	0.02	0.02	**
Trifluralin	32	1.0	0.43	0.43	8
Insecticides:					
Aldicarb	5	1.0	2.56	2.56	7
Carbofuran	31	1.0	2.96	3.00	53
Endosulfan	35	1.0	0.97	0.97	19
Ethoprop	5	1.0	3.52	3.52	10
Imidacloprid	35	1.1	0.07	0.09	2
Methamidophos	34	1.3	0.90	1.19	22
Phorate	28	1.0	2.47	2.47	39
Propargite	11	1.2	1.76	2.18	14
Fungicides:					
Azoxystrobin	39	3.2	0.10	0.34	7
Chlorothalonil	70	2.9	1.15	3.36	131
Copper hydroxide	15	1.2	0.69	0.89	7
Cymoxanil	8	2.1	0.10	0.21	1
Iprodione	27	1.0	0.96	0.96	15
Mancozeb	82	2.5	1.06	2.76	126
Mefenoxam	44	2.1	0.10	0.21	5
Metalaxyl	18	1.5	0.13	0.21	2
Triphenyltin hydrox.	8	1.1	0.12	0.14	1
Other Chemicals:					
Dichloropropene	35	1.0	180.77	180.77	3,494
Diquat	37	1.0	0.48	0.48	10
Maleic hydrazide	6	1.0	1.87	1.87	6
Metam-sodium	55	1.0	123.67	123.67	3,841

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Oregon were 56,000 acres.

Fall Potatoes: Agricultural Chemical Applications, Pennsylvania, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
EPTC	*	1.0	4.12	4.12	**
Glyphosate	24	1.0	1.05	1.05	4
Linuron	7	1.0	0.76	0.76	1
Metolachlor	80	1.0	1.76	1.80	21
Metribuzin	89	1.0	0.55	0.56	7
Pendimethalin	16	1.0	0.81	0.81	2
Insecticides:					
Azinphos-methyl	16	1.0	0.64	0.65	2
Carbaryl	6	1.2	1.04	1.34	1
Diazinon	7	1.0	1.92	1.93	2
Dimethoate	17	2.0	0.43	0.89	2
Endosulfan	12	2.7	1.02	2.83	5
Esfenvalerate	4	1.6	0.04	0.06	**
Ethoprop	16	1.0	5.40	5.40	13
Imidacloprid	81	1.1	0.18	0.21	2
Methamidophos	33	1.5	0.59	0.92	4
Methomyl	*	2.8	0.50	1.39	**
Methyl parathion	31	2.5	0.51	1.32	6
Oxamyl	11	2.8	1.40	3.91	6
Permethrin	7	1.3	0.13	0.17	**
Phorate	6	2.3	1.55	3.60	3
Fungicides:					
Chlorothalonil	49	4.7	1.38	6.49	46
Copper hydroxide	18	1.8	0.59	1.08	3
Mancozeb	69	5.7	1.20	6.94	69
Mefenoxam	9	1.0	0.09	0.09	**
Metalaxyl	29	1.8	0.26	0.48	2
Other Chemicals:					
Diquat	44	1.3	0.25	0.33	2

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Pennsylvania were 14,500 acres.

Fall Potatoes: Agricultural Chemical Applications, Washington, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
EPTC	40	1.0	3.29	3.41	231
Metolachlor	3	1.0	1.65	1.65	8
Metribuzin	82	1.2	0.37	0.44	61
Pendimethalin	26	1.0	0.69	0.69	31
Trifluralin	27	1.0	0.58	0.58	27
Insecticides:					
Aldicarb	14	1.0	2.94	3.10	76
Azinphos-methyl	15	1.1	0.35	0.39	10
Carbaryl	2	1.2	1.03	1.24	3
Carbofuran	22	1.6	1.07	1.74	65
Dimethoate	9	2.2	0.47	1.04	17
Esfenvalerate	16	1.0	0.04	0.04	1
Ethoprop	20	1.0	4.75	4.75	158
Imidacloprid	4	1.0	0.14	0.14	1
Methamidophos	80	1.7	0.96	1.73	236
Permethrin	7	1.2	0.12	0.16	2
Phorate	31	1.0	2.88	2.89	154
Propargite	19	1.1	1.62	1.89	60
Fungicides:					
Azoxystrobin	20	2.3	0.11	0.27	9
Chlorothalonil	69	2.5	1.06	2.76	322
Copper ammonium	10	2.2	0.36	0.79	14
Copper hydroxide	19	1.3	0.54	0.75	24
Cymoxanil	9	1.8	0.13	0.23	4
Iprodione	32	1.1	0.96	1.08	59
Mancozeb	66	2.2	1.34	3.02	337
Mefenoxam	19	1.2	0.10	0.12	4
Metalaxyl	14	1.5	0.19	0.30	7
Metiram	37	2.4	1.61	4.01	251
Triphenyltin hydrox.	7	1.2	0.10	0.13	2
Other Chemicals:					
Dichloropropene	22	1.0	163.61	165.79	6,335
Diquat	35	1.1	0.41	0.47	28
Metam-sodium	64	1.0	118.43	119.63	12,916

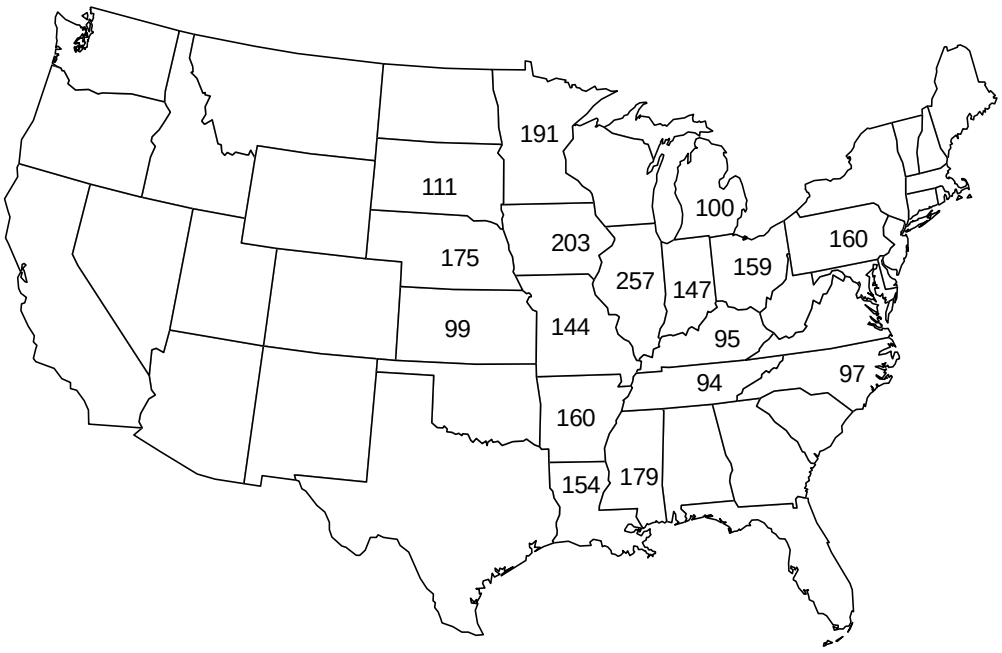
1/ Planted acres in 1999 for Washington were 170,000 acres.

Fall Potatoes: Agricultural Chemical Applications, Wisconsin, 1999 1/

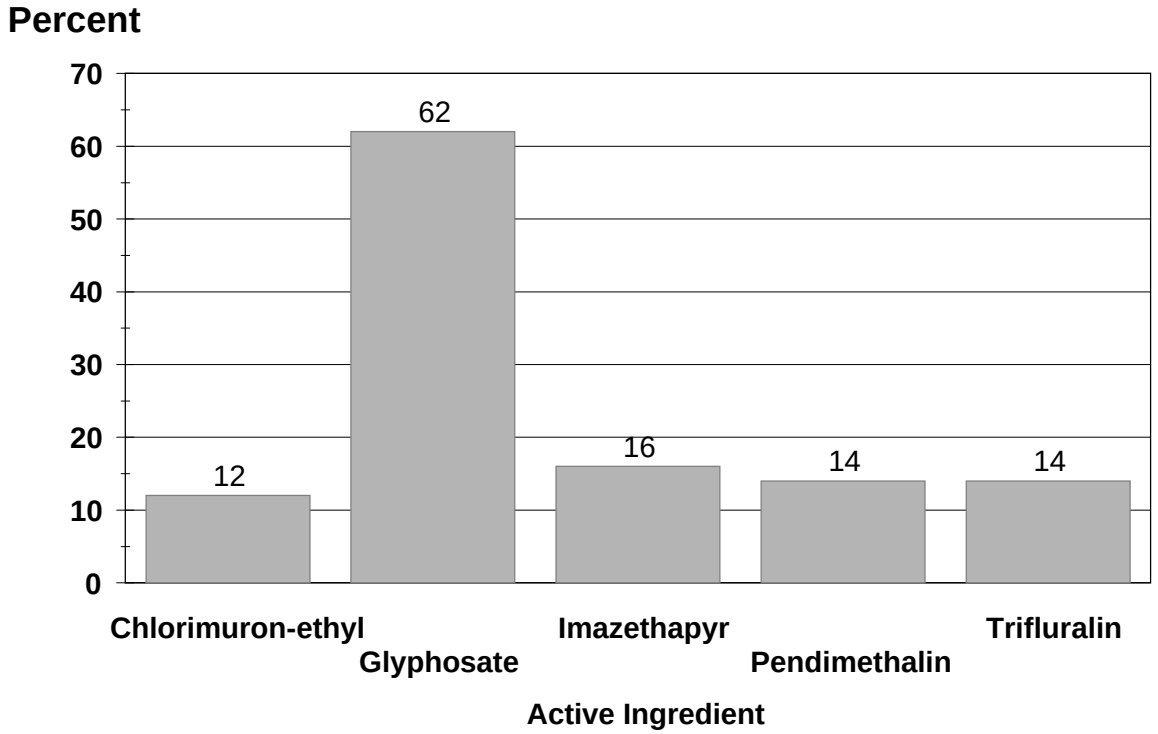
Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	5	1.0	0.81	0.81	3
Linuron	2	1.0	0.74	0.74	1
Metolachlor	17	1.0	1.13	1.13	16
Metribuzin	91	1.1	0.41	0.48	37
Pendimethalin	26	1.0	0.92	0.92	21
Rimsulfuron	41	1.0	0.02	0.02	1
Sethoxydim	20	1.0	0.32	0.32	5
Insecticides:					
Azinphos-methyl	11	1.0	0.58	0.61	6
Diazinon	11	1.0	0.47	0.49	5
Dimethoate	56	1.5	0.38	0.56	27
Endosulfan	43	1.7	0.83	1.43	53
Esfenvalerate	75	2.0	0.05	0.10	6
Imidacloprid	74	1.2	0.17	0.22	14
Methamidophos	18	1.0	0.98	0.98	15
Oxamyl	19	1.0	0.31	0.33	5
Permethrin	5	1.4	0.16	0.23	1
Phosmet	39	1.2	0.63	0.81	27
Piperonyl butoxide	30	1.8	0.39	0.72	18
Pyrethrins	8	1.6	0.01	0.02	**
Fungicides:					
Azoxystrobin	83	2.9	0.11	0.31	22
Chlorothalonil	95	6.8	0.89	6.13	501
Copper hydroxide	12	3.0	0.44	1.34	14
Copper sulfate	25	1.0	1.17	1.17	25
Cymoxanil	30	1.4	0.13	0.19	5
Mancozeb	61	4.4	1.17	5.26	278
Mefenoxam	29	1.4	0.07	0.10	3
Metalaxyl	13	1.2	0.19	0.24	3
Metiram	10	4.2	1.36	5.79	49
Triphenyltin hydrox.	12	1.7	0.12	0.21	2
Other Chemicals:					
Diquat	82	1.7	0.38	0.65	46
Endothall	9	1.0	0.61	0.62	5

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Wisconsin were 86,000 acres.

Soybeans: Number of Usable Reports, 1999



Soybeans - Percent of Acres Treated
Top 5 Active Ingredients for 1999



Surveyed States: AR, IL, IN, IA, KS, KY, LA, MI, MN, MS, MO, NE, NC, OH, PA, SD and TN

Soybeans: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Planted Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	1,000 Acres	Percent	Mil. Lbs	Percent	Mil. Lbs	Percent	Mil. Lbs
AR	3,450	17	17.3	43	78.0	40	90.0
IL	10,600	7	16.2	14	64.1	28	304.0
IN	5,600	28	33.6	36	105.3	36	219.8
IA	10,800	7	23.5	17	103.5	22	173.7
KS	2,850	22	14.9	22	19.4	15	7.6
KY	1,200	17	4.8	25	18.3	26	24.2
LA	1,020	5	1.4	14	7.2	11	6.8
MI	1,950	31	9.5	45	27.7	65	109.5
MN	7,000	13	18.7	13	29.5	13	54.5
MS	1,950	10	4.2	15	14.1	22	23.9
MO	5,400	15	11.7	23	54.8	23	87.3
NE	4,300	25	17.8	25	31.7	16	17.0
NC	1,400	54	15.8	71	53.9	71	85.0
OH	4,600	21	14.4	35	81.6	47	205.6
PA	370	37	2.8	41	7.5	43	10.0
SD	4,100	47	41.3	47	88.3	19	21.3
TN	1,250	34	7.1	46	25.9	48	38.4
Total	67,840	18	255.0	26	810.8	28	1,478.6

Soybeans: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Arkansas:	3,450					
Nitrogen		17	1.0	27	29	17.3
Phosphate		43	1.0	51	52	78.0
Potash		40	1.0	64	66	90.0
Illinois:	10,600					
Nitrogen		7	1.1	18	20	16.2
Phosphate		14	1.0	45	45	64.1
Potash		28	1.0	102	103	304.0
Indiana:	5,600					
Nitrogen		28	1.0	21	21	33.6
Phosphate		36	1.0	52	53	105.3
Potash		36	1.0	107	110	219.8
Iowa:	10,800					
Nitrogen		7	1.1	27	30	23.5
Phosphate		17	1.0	55	55	103.5
Potash		22	1.0	72	72	173.7

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Soybeans: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999 (continued)

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Kansas:	2,850					
Nitrogen		22	1.0	22	23	14.9
Phosphate		22	1.0	30	30	19.4
Potash		15	1.0	18	18	7.6
Kentucky:	1,200					
Nitrogen		17	1.0	23	23	4.8
Phosphate		25	1.0	60	61	18.3
Potash		26	1.0	78	79	24.2
Louisiana:	1,020					
Nitrogen		5	1.0	25	25	1.4
Phosphate		14	1.0	52	52	7.2
Potash		11	1.0	60	60	6.8
Michigan:	1,950					
Nitrogen		31	1.0	16	16	9.5
Phosphate		45	1.0	32	32	27.7
Potash		65	1.0	83	87	109.5
Minnesota:	7,000					
Nitrogen		13	1.0	20	20	18.7
Phosphate		13	1.0	33	33	29.5
Potash		13	1.0	58	58	54.5
Mississippi:	1,950					
Nitrogen		10	1.0	22	22	4.2
Phosphate		15	1.0	48	48	14.1
Potash		22	1.0	56	56	23.9
Missouri:	5,400					
Nitrogen		15	1.0	15	15	11.7
Phosphate		23	1.0	45	45	54.8
Potash		23	1.0	70	70	87.3
Nebraska:	4,300					
Nitrogen		25	1.1	15	17	17.8
Phosphate		25	1.0	29	29	31.7
Potash		16	1.0	23	24	17.0
North Carolina:	1,400					
Nitrogen		54	1.0	21	21	15.8
Phosphate		71	1.0	55	55	53.9
Potash		71	1.0	85	85	85.0
Ohio:	4,600					
Nitrogen		21	1.0	15	15	14.4
Phosphate		35	1.0	50	51	81.6
Potash		47	1.0	94	94	205.6
Pennsylvania:	370					
Nitrogen		37	1.0	20	21	2.8
Phosphate		41	1.0	48	50	7.5
Potash		43	1.0	62	62	10.0

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Soybeans: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999 (continued)

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
South Dakota:	4,100					
Nitrogen		47	1.0	20	21	41.3
Phosphate		47	1.0	45	45	88.3
Potash		19	1.0	27	27	21.3
Tennessee:	1,250					
Nitrogen		34	1.0	17	17	7.1
Phosphate		46	1.0	45	45	25.9
Potash		48	1.0	64	64	38.4
Total:	67,840					
Nitrogen		18	1.0	20	21	255.0
Phosphate		26	1.0	46	46	810.8
Potash		28	1.0	78	78	1,478.6

Soybeans: Active Ingredients Applied and Publication Status
By States Surveyed, 1999

Active Ingredient	ALL	States Surveyed: AR	IA	IL	IN	KS	KY
Herbicides:							
2,4-D	P		P	P	P	*	*
2,4-DB	P	*		*		*	*
Acetamide	*	*	*				
Acetochlor	*						
Acifluorfen	P	P	P	P	*	*	*
Alachlor	P	*	*	*		*	
Atrazine	P			*	*		
Bentazon	P	P	*	P	*	*	*
Bromoxynil	*						
Chlorimuron-ethyl	P	P	P	P	P	P	P
Clethodim	P	P	P	P	P	*	*
Clomazone	P	*	*	P	*		*
Cloransulam-methyl	P		P	P	P	*	*
Dicamba	*						
Diclofop-methyl	*						
Dimethenamid	P		*	*		*	
Ethalfluralin	P		*				
Fenoxaprop	P		P	P	*	*	P
Fluazifop-P-butyl	P	*	P	P	*	*	P
Flumetsulam	P	*	*	*	*	*	
Flumiclorac-Pentyl	P		*	*			
Fomesafen	P	P	P	P	P	*	P
Glyphosate	P	P	P	P	P	P	P
Imazamox	P		*	P	*		
Imazaquin	P	P	*	P	P	*	P
Imazethapyr	P		P	P	P	P	P
Lactofen	P		P	*	*	*	*
Linuron	P						
MCPA	*						*
Metolachlor	P	P	*	*	P	*	*
Metribuzin	P	P	*	P	P	*	*
Norflurazon	*	*					
Paraquat	P			*	*		P
Pendimethalin	P	P	P	P	P	P	P
Quizalofop-ethyl	P	*	*	*	*	*	
Sethoxydim	P	P	P	P	P	*	*	*
Simazine	*			*	*		
Sulfentrazone	P	*	P	P	P	*	*
Sulfosate	P		*	*	*		P
Thifensulfuron	P	*	P	P	P	P	P
Tralkoxydim	*		*				
Tribenuron-methyl	P	*					
Trifluralin	P	P	P	P	*	P	

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Soybeans: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed					
	LA	MI	MN	MO	MS	NC
Herbicides:						
2,4-D	P	P	*	*	P	
2,4-DB	*			*	*	*
Acetamide	*					
Acetochlor	*					
Acifluorfen	P	*	*	P	P	*
Alachlor	*	*	*	*	*	
Atrazine			*			
Bentazon	P	P	P	P	P	*
Chlorimuron-ethyl	P	*	*	P	P	*
Clethodim	P	*		P	P	
Clomazone	P	*	*		P	
Cloransulam-methyl	*	*	*	P	P	*
Dicamba	*					*
Dimethenamid	*	*	*	*		
Ethalfluralin			*			
Fenoxaprop	*	*	P	P	*	
Fluazifop-P-butyl	P	*	P	P	P	*
Flumetsulam	*	*	*		P	*
Flumiclorac-Pentyl		*		*		
Fomesafen	P	*	P	P	P	*
Glyphosate	P	P	P	P	P	P
Imazamox		*	P	*		
Imazaquin	P	P		P	P	*
Imazethapyr	*	P	P	P		
Lactofen		*	P	P	*	
Linuron		P	*			
Metolachlor	P	P	*	*	P	P
Metribuzin	P	P	P	P	P	*
Norflurazon					*	
Paraquat	P			*	P	P
Pendimethalin	P	P	P	P	P	P
Quizalofop-ethyl	*	*	*		P	
Sethoxydim	*	*	P	*	P	*
Sulfentrazone	P			P	*	*
Sulfosate	*			*	*	
Thifensulfuron		P	P	*		*
Tribenuron-methyl						*
Trifluralin	P	*	P	P	P	*

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Soybeans: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed				
	NE	OH	PA	SD	TN
Herbicides:					
2,4-D	*	P	*	*	
2,4-DB					*
Acetamide	*				
Acifluorfen	P	*		*	P
Alachlor	P	P	*		
Atrazine	*		*		
Bentazon	*	*		P	P
Bromoxynil	*				
Chlorimuron-ethyl	P	P	P	P	P
Clethodim	*	P	*	*	P
Clomazone	P	*			*
Cloransulam-methyl	*	P		*	
Diclofop-methyl					*
Dimethenamid	*	*			
Ethalfluralin				*	
Fenoxaprop	*	P	*	*	*
Fluazifop-P-butyl	*	P	*	*	P
Flumetsulam	*	P	P	*	*
Flumiclorac-Pentyl	*			*	
Fomesafen	*	*	*	*	P
Glyphosate	P	P	P	P	P
Imazamox	*	P		*	
Imazaquin	P	P	P	*	*
Imazethapyr	P	P	P	P	*
Lactofen	*	*		*	*
Linuron		*	P		
Metolachlor	*	P	P	*	*
Metribuzin	P	P	*	*	*
Paraquat		*	*		*
Pendimethalin	P	P	P	P	P
Quizalofop-ethyl		P	P	*	
Sethoxydim	*	P		*	*
Sulfentrazone	*	*	P		
Sulfosate	*		*	P	
Thifensulfuron	*	P	P	*	*
Tribenuron-methyl				*	*
Trifluralin	P	*		P	P

--continued

Soybeans: Active Ingredients Applied and Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	ALL	States Surveyed: AR	IA	IL	IN	KS	KY
Insecticides:							
Acephate	*						
Bt (Bacillus thur.)	*						
Carbaryl	*						
Carbofuran	*						*
Chlorpyrifos	*	*		*			
Diflubenzuron	P						
Dimethoate	P						
Esfenvalerate	P						*
Lambda-cyhalothrin	P		*				
Methomyl	*		*				
Methyl parathion	P						
Permethrin	P					*	*
Phorate	*						
Spinosad	*						
Thiodicarb	P						
Other Chemicals:							
Gibberellic acid	*		*				
IBA	*		*				

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P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Soybeans: Active Ingredient Publication Status
By States Surveyed, 1999 (continued)

Active Ingredient	States Surveyed: LA	MI	MN	MO	MS	NC
Insecticides:						
Acephate				*		
Bt (Bacillus thur.)	*			*		
Carbofuran				*		
Chlorpyrifos						
Diflubenzuron	*			*		
Esfenvalerate	*				*	
Lambda-cyhalothrin	*					
Methomyl					*	
Methyl parathion	P			P		
Phorate	*					
Spinosad				*		
Thiodicarb	P			P	*	
Fungicides:						
Benomyl	*					
Mefenoxam		*				
PCNB		*				
Thiophanate-methyl	*					

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P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Soybeans: Active Ingredient Publication Status
By States Surveyed, 1999

Active Ingredient	States Surveyed				
	NE	OH	PA	SD	TN
Insecticides:					
Carbaryl					*
Dimethoate			P		
Lambda-cyhalothrin					*
Methyl parathion	*				
Permethrin	*	*	*		

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Soybeans: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State	Planted Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide 1/		Fungicide 2/		Other Chemical 2/	
	1,000 Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
AR	3,450	94	3,670	9	17				
IL	10,600	96	10,290	*	20				
IN	5,600	89	5,750						
IA	10,800	99	11,995						
KS	2,850	97	3,273	*	1				
KY 2/	1,200	94	1,037						
LA	1,020	94	1,123	53	229				
MI	1,950	97	2,342						
MN	7,000	97	6,203						
MS	1,950	99	2,967	9	78				
MO	5,400	97	5,556						
NE	4,300	96	4,758	1	10				
NC	1,400	88	1,283	3	3				
OH	4,600	99	4,705	*	3				
PA	370	99	429	11	20				
SD	4,100	98	3,943						
TN	1,250	98	1,405	2	19				
Total	67,840	96	70,729	2	400				

* Amount represents less than 1 percent.
1/ Total Applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
2/ Insufficient reports to publish data for one or more of the pesticide classes, for one or more of the States surveyed.

Soybeans: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	5	1.0	0.46	0.46	1,521
2,4-DB	*	1.0	0.06	0.06	20
Acifluorfen	3	1.0	0.22	0.24	495
Alachlor	2	1.0	1.70	1.71	1,769
Atrazine	*	1.0	1.13	1.13	177
Bentazon	4	1.0	0.73	0.75	1,855
Chlorimuron-ethyl	12	1.1	0.02	0.02	130
Clethodim	5	1.0	0.11	0.12	368
Clomazone	1	1.0	0.65	0.65	598
Cloransulam-methyl	5	1.0	0.02	0.02	55
Dimethenamid	*	1.0	0.94	0.94	280
Ethalfluralin	*	1.0	1.04	1.04	93
Fenoxaprop	4	1.0	0.14	0.14	364
Fluazifop-P-butyl	4	1.0	0.06	0.06	157
Flumetsulam	2	1.0	0.05	0.05	64
Flumiclorac-Pentyl	*	1.0	0.04	0.04	16
Fomesafen	4	1.0	0.25	0.25	741
Glyphosate	62	1.3	0.69	0.92	38,477
Imazamox	3	1.0	0.03	0.03	71
Imazaquin	5	1.0	0.08	0.09	288
Imazethapyr	16	1.0	0.04	0.04	451
Lactofen	2	1.0	0.07	0.07	87
Linuron	*	1.0	0.42	0.42	44
Metolachlor	4	1.0	1.51	1.51	3,633
Metribuzin	5	1.0	0.23	0.23	794
Paraquat	1	1.0	0.37	0.37	270
Pendimethalin	14	1.0	0.85	0.92	8,725
Quizalofop-ethyl	1	1.0	0.06	0.06	44
Sethoxydim	3	1.0	0.21	0.21	453
Sulfentrazone	4	1.0	0.12	0.12	298
Sulfosate	*	1.0	1.00	1.00	567
Thifensulfuron	5	1.0	0.002	0.002	6
Tribenuron-methyl	*	1.0	0.007	0.007	**
Trifluralin	14	1.0	0.82	0.83	7,651
Insecticides:					
Diflubenzuron	*	1.0	0.06	0.06	6
Dimethoate	*	1.0	0.50	0.50	20
Esfenvalerate	*	1.0	0.03	0.03	**
Lambda-cyhalothrin	*	1.0	0.02	0.02	8
Methyl parathion	*	1.1	0.46	0.51	198
Permethrin	*	1.0	0.12	0.12	8
Thiodicarb	*	1.0	0.41	0.42	78

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for the 17 states surveyed were 67.8 million acres. States included are AR, IL, IN, IA, KS, KY, LA, MI, MN, MS, MO, NE, NC, OH, PA, SD and TN.

Soybeans: Agricultural Chemical Applications,
Arkansas, 1999 1/

Agricultural Chemical	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Acifluorfen	10	1.0	0.27	0.29	103
Bentazon	9	1.0	0.53	0.57	180
Chlorimuron-ethyl	23	1.1	0.006	0.007	5
Clethodim	8	1.6	0.10	0.17	46
Fomesafen	5	1.1	0.16	0.17	28
Glyphosate	50	1.5	0.67	1.05	1,811
Imazaquin	9	1.0	0.07	0.08	22
Metolachlor	8	1.0	1.76	1.76	483
Metribuzin	3	1.0	0.19	0.19	19
Pendimethalin	9	1.5	0.93	1.40	412
Sethoxydim	3	1.0	0.19	0.19	18
Trifluralin	22	1.0	0.63	0.64	487

1/ Planted acres in 1999 for Arkansas were 3.45 million acres.

Soybeans: Agricultural Chemical Applications,
Illinois, 1999 1/

Agricultural Chemical	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	10	1.0	0.46	0.46	471
Acifluorfen	3	1.0	0.18	0.18	56
Bentazon	2	1.0	0.93	0.93	195
Chlorimuron-ethyl	19	1.1	0.01	0.02	35
Clethodim	5	1.0	0.13	0.13	71
Clomazone	4	1.0	0.65	0.65	248
Cloransulam-methyl	6	1.0	0.02	0.02	10
Fenoxaprop	3	1.0	0.17	0.17	56
Fluazifop-P-butyl	3	1.0	0.06	0.06	19
Fomesafen	4	1.0	0.31	0.31	135
Glyphosate	58	1.3	0.67	0.88	5,398
Imazamox	6	1.0	0.03	0.03	20
Imazaquin	3	1.0	0.09	0.09	28
Imazethapyr	16	1.4	0.03	0.04	65
Metribuzin	4	1.0	0.14	0.14	54
Pendimethalin	17	1.1	0.96	1.07	1,940
Sethoxydim	7	1.0	0.20	0.20	160
Sulfentrazone	9	1.0	0.10	0.10	101
Thifensulfuron	10	1.0	0.002	0.002	2
Trifluralin	6	1.1	0.96	1.07	727

1/ Planted acres in 1999 for Illinois were 10.6 million acres.

Soybeans: Agricultural Chemical Applications,
Indiana, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	8	1.0	0.39	0.39	179
Chlorimuron-ethyl	11	1.0	0.01	0.01	9
Clethodim	1	1.3	0.24	0.33	26
Cloransulam-methyl	2	1.0	0.008	0.008	1
Glyphosate	76	1.4	0.73	1.04	4,414
Imazaquin	7	1.0	0.07	0.07	29
Imazethapyr	10	1.0	0.05	0.05	29
Metolachlor	2	1.0	1.95	1.95	217
Metribuzin	3	1.0	0.26	0.26	47
Pendimethalin	8	1.0	0.81	0.81	376
Sulfentrazone	7	1.0	0.09	0.09	34
Thifensulfuron	3	1.0	0.003	0.003	1

1/ Planted acres in 1999 for Indiana were 5.60 million acres.

Soybeans: Agricultural Chemical Applications,
Iowa, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	1.0	0.49	0.49	321
Acifluorfen	2	1.0	0.16	0.17	45
Chlorimuron-ethyl	4	1.4	0.01	0.02	8
Clethodim	4	1.0	0.08	0.08	34
Cloransulam-methyl	6	1.0	0.01	0.01	9
Fenoxaprop	6	1.0	0.14	0.14	87
Fluazifop-P-butyl	6	1.0	0.05	0.05	29
Fomesafen	7	1.0	0.26	0.27	196
Glyphosate	58	1.3	0.69	0.92	5,756
Imazethapyr	29	1.0	0.05	0.05	160
Lactofen	3	1.0	0.07	0.07	24
Pendimethalin	17	1.0	0.98	1.00	1,830
Sethoxydim	3	1.0	0.29	0.30	95
Sulfentrazone	2	1.0	0.12	0.12	30
Thifensulfuron	5	1.0	0.002	0.002	1
Trifluralin	25	1.0	0.91	0.92	2,462

1/ Planted acres in 1999 for Iowa were 10.8 million acres.

Soybeans: Agricultural Chemical Applications,
Kansas, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Chlorimuron-ethyl	14	1.0	0.02	0.02	7
Glyphosate	67	1.3	0.66	0.86	1,642
Imazethapyr	6	1.0	0.02	0.02	3
Pendimethalin	12	1.0	0.91	0.91	314
Thifensulfuron	8	1.0	0.002	0.002	**
Trifluralin	18	1.0	0.50	0.50	252

1/ Planted acres in 1999 for Kansas were 2.85 million acres.
** Total applied is less than 1,000 lbs.

Soybeans: Agricultural Chemical Applications,
Kentucky, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Chlorimuron-ethyl	9	1.6	0.01	0.02	3
Fenoxaprop	15	1.0	0.18	0.18	31
Fluazifop-P-butyl	15	1.0	0.06	0.06	11
Fomesafen	7	1.0	0.33	0.33	29
Glyphosate	78	1.1	0.75	0.84	784
Imazaquin	6	1.0	0.08	0.08	5
Imazethapyr	9	1.0	0.06	0.06	6
Paraquat	6	1.0	0.25	0.25	17
Pendimethalin	7	1.0	0.74	0.74	60
Sulfosate	3	1.0	0.64	0.64	21
Thifensulfuron	7	1.0	0.002	0.002	**

1/ Planted acres in 1999 for Kentucky were 1.20 million acres.
** Total applied is less than 1,000 lbs.

Soybeans: Agricultural Chemical Applications,
Louisiana, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	6	1.0	0.44	0.44	28
Acifluorfen	9	1.0	0.25	0.27	25
Bentazon	5	1.0	0.67	0.67	34
Chlorimuron-ethyl	12	1.1	0.02	0.02	2
Clethodim	5	1.2	0.15	0.18	10
Clomazone	4	1.0	0.82	0.82	36
Fluazifop-P-butyl	5	1.0	0.09	0.09	5
Fomesafen	8	1.1	0.23	0.27	21
Glyphosate	63	1.5	0.65	0.99	639
Imazaquin	22	1.0	0.07	0.07	16
Metolachlor	6	1.0	1.26	1.26	80
Metribuzin	6	1.0	0.36	0.38	24
Paraquat	5	1.0	0.33	0.33	18
Pendimethalin	5	1.0	0.89	0.89	42
Sulfentrazone	4	1.0	0.13	0.13	5
Trifluralin	9	1.0	0.96	0.98	89
Insecticides:					
Methyl parathion	32	1.0	0.46	0.50	162
Thiodicarb	14	1.0	0.39	0.40	59

1/ Planted acres in 1999 for Louisiana were 1.02 million acres.

Soybeans: Agricultural Chemical Applications,
Michigan, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	9	1.0	0.46	0.46	84
Bentazon	2	1.2	0.64	0.79	32
Glyphosate	68	1.3	0.78	1.08	1,421
Imazaquin	11	1.0	0.06	0.06	14
Imazethapyr	22	1.0	0.04	0.04	19
Linuron	1	1.0	0.39	0.39	9
Metolachlor	10	1.0	1.75	1.75	332
Metribuzin	5	1.0	0.31	0.31	28
Pendimethalin	13	1.0	0.99	0.99	257
Thifensulfuron	7	1.0	0.003	0.003	**

1/ Planted acres in 1999 for Michigan were 1.95 million acres.
** Total applied is less than 1,000 lbs.

Soybeans: Agricultural Chemical Applications,
Minnesota, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bentazon	7	1.0	0.47	0.47	227
Fenoxaprop	12	1.0	0.12	0.12	97
Fluazifop-P-butyl	12	1.0	0.04	0.04	35
Fomesafen	9	1.0	0.20	0.20	130
Glyphosate	48	1.3	0.62	0.81	2,721
Imazamox	14	1.0	0.03	0.03	32
Imazethapyr	26	1.0	0.04	0.04	67
Lactofen	4	1.0	0.07	0.07	21
Metribuzin	1	1.0	0.19	0.19	15
Pendimethalin	10	1.0	1.31	1.34	949
Sethoxydim	2	1.0	0.26	0.26	28
Thifensulfuron	5	1.0	0.001	0.001	**
Trifluralin	29	1.0	0.78	0.78	1,570

1/ Planted acres in 1999 for Minnesota were 7.00 million acres.
** Total applied is less than 1,000 lbs.

Soybeans: Agricultural Chemical Applications,
Mississippi, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	7	1.0	0.45	0.45	59
Acifluorfen	16	1.2	0.24	0.29	88
Bentazon	7	1.0	0.61	0.61	86
Chlorimuron-ethyl	24	1.0	0.02	0.02	7
Clethodim	6	1.0	0.18	0.18	22
Clomazone	5	1.0	0.79	0.79	77
Cloransulam-methyl	9	1.0	0.01	0.01	3
Fluazifop-P-butyl	4	1.2	0.12	0.16	11
Flumetsulam	17	1.0	0.03	0.04	12
Fomesafen	9	1.0	0.25	0.25	43
Glyphosate	55	1.7	0.70	1.24	1,321
Imazaquin	23	1.1	0.08	0.09	39
Metolachlor	15	1.0	1.34	1.34	380
Metribuzin	17	1.0	0.33	0.34	110
Paraquat	8	1.0	0.31	0.31	47
Pendimethalin	13	1.2	0.70	0.87	215
Quizalofop-ethyl	7	1.0	0.04	0.04	6
Sethoxydim	5	1.0	0.26	0.26	28
Trifluralin	22	1.0	0.90	0.90	381
Insecticides:					
Methyl parathion	2	1.4	0.47	0.66	30
Thiodicarb	2	1.0	0.52	0.52	18

1/ Planted acres in 1999 for Mississippi were 1.95 million acres.

Soybeans: Agricultural Chemical Applications,
Missouri, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Acifluorfen	8	1.0	0.25	0.25	104
Bentazon	3	1.0	0.55	0.55	86
Chlorimuron-ethyl	17	1.0	0.03	0.03	29
Clethodim	7	1.0	0.13	0.13	47
Cloransulam-methyl	5	1.0	0.02	0.02	5
Fenoxaprop	3	1.0	0.13	0.13	19
Fluazifop-P-butyl	3	1.0	0.05	0.05	8
Fomesafen	4	1.0	0.27	0.27	56
Glyphosate	63	1.3	0.73	0.96	3,234
Imazaquin	13	1.1	0.09	0.10	74
Imazethapyr	6	1.0	0.04	0.04	11
Lactofen	2	1.0	0.12	0.12	11
Metribuzin	15	1.0	0.27	0.27	214
Pendimethalin	12	1.2	0.72	0.90	608
Sulfentrazone	4	1.0	0.19	0.19	36
Trifluralin	14	1.0	1.00	1.00	751

1/ Planted acres in 1999 for Missouri were 5.40 million acres.

Soybeans: Agricultural Chemical Applications,
Nebraska, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Acifluorfen	2	1.0	0.19	0.19	16
Alachlor	6	1.0	1.40	1.40	346
Chlorimuron-ethyl	2	1.0	0.01	0.01	1
Clomazone	2	1.0	0.56	0.56	47
Glyphosate	70	1.1	0.72	0.85	2,559
Imazaquin	2	1.0	0.06	0.06	4
Imazethapyr	26	1.0	0.05	0.05	51
Metribuzin	7	1.0	0.18	0.18	51
Pendimethalin	29	1.1	0.72	0.79	974
Trifluralin	11	1.0	0.67	0.67	326

1/ Planted acres in 1999 for Nebraska were 4.30 million acres.

Soybeans: Agricultural Chemical Applications,
North Carolina, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	77	1.3	0.67	0.92	995
Metolachlor	5	1.0	1.55	1.55	113
Paraquat	9	1.0	0.53	0.53	65
Pendimethalin	2	1.0	0.80	0.80	18

1/ Planted acres in 1999 for North Carolina were 1.40 million acres.

Soybeans: Agricultural Chemical Applications,
Ohio, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	9	1.0	0.57	0.58	236
Alachlor	5	1.0	2.06	2.06	480
Chlorimuron-ethyl	20	1.0	0.02	0.02	19
Clethodim	2	1.0	0.10	0.10	10
Cloransulam-methyl	14	1.0	0.02	0.02	10
Fenoxaprop	3	1.0	0.13	0.13	15
Fluazifop-P-butyl	3	1.0	0.04	0.04	5
Flumetsulam	4	1.0	0.05	0.05	8
Glyphosate	64	1.1	0.70	0.79	2,338
Imazamox	3	1.0	0.03	0.03	5
Imazaquin	9	1.0	0.09	0.09	39
Imazethapyr	8	1.0	0.03	0.03	11
Metolachlor	11	1.0	1.74	1.74	863
Metribuzin	17	1.0	0.20	0.20	154
Pendimethalin	6	1.0	0.72	0.72	191
Quizalofop-ethyl	2	1.0	0.06	0.06	6
Sethoxydim	8	1.0	0.17	0.17	60
Thifensulfuron	14	1.0	0.003	0.003	2

1/ Planted acres in 1999 for Ohio were 4.60 million acres.

Soybeans: Agricultural Chemical Applications,
Pennsylvania, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Chlorimuron-ethyl	10	1.0	0.02	0.02	1
Flumetsulam	8	1.0	0.05	0.05	2
Glyphosate	81	1.0	0.90	0.97	289
Imazaquin	4	1.0	0.10	0.10	1
Imazethapyr	9	1.0	0.02	0.02	1
Linuron	*	1.0	0.47	0.47	2
Metolachlor	10	1.0	1.88	1.92	74
Pendimethalin	7	1.0	0.90	0.90	23
Quizalofop-ethyl	5	1.0	0.02	0.02	**
Sulfentrazone	3	1.0	0.15	0.15	2
Thifensulfuron	6	1.0	0.003	0.003	**
Insecticides:					
Dimethoate	11	1.0	0.50	0.50	20

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Pennsylvania were 370,000 acres.

Soybeans: Agricultural Chemical Applications,
South Dakota, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Bentazon	16	1.0	0.93	0.93	593
Chlorimuron-ethyl	14	1.0	0.003	0.003	2
Glyphosate	55	1.2	0.71	0.92	2,069
Imazethapyr	33	1.0	0.02	0.02	27
Pendimethalin	26	1.0	0.43	0.44	470
Sulfosate	5	1.0	0.72	0.72	160
Trifluralin	18	1.0	0.65	0.65	490

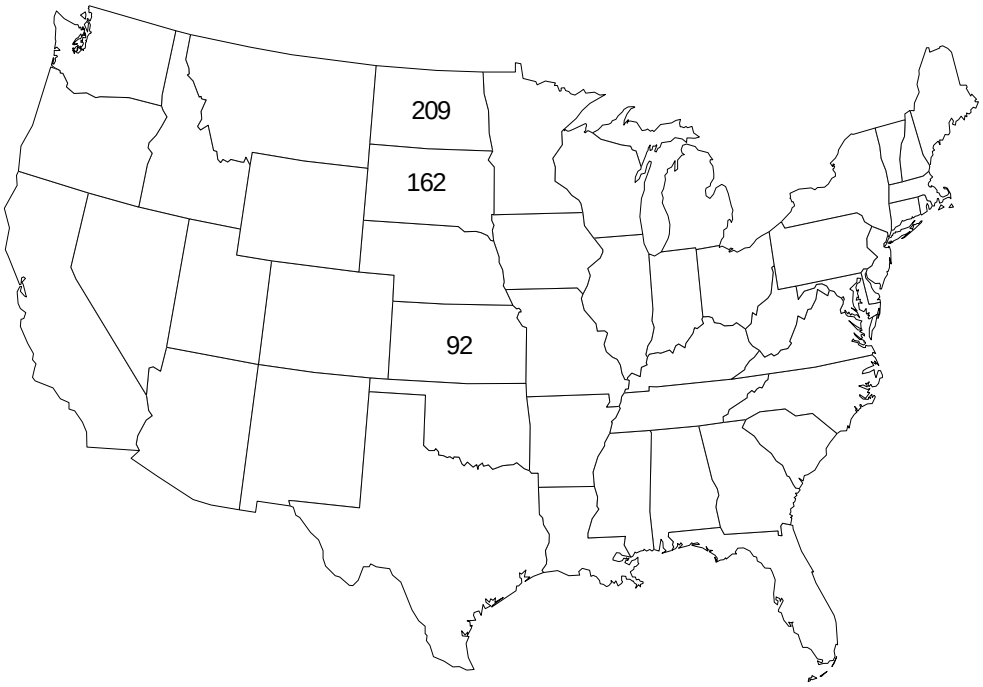
1/ Planted acres in 1999 for South Dakota were 4.10 million acres.

Soybeans: Agricultural Chemical Applications,
Tennessee, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Acifluorfen	6	1.0	0.28	0.28	22
Bentazon	6	1.0	0.56	0.56	40
Chlorimuron-ethyl	12	1.0	0.009	0.01	1
Clethodim	14	1.0	0.17	0.17	30
Fluazifop-P-butyl	7	1.0	0.11	0.11	9
Fomesafen	6	1.0	0.28	0.28	22
Glyphosate	88	1.6	0.61	0.98	1,086
Pendimethalin	4	1.0	0.93	0.93	46
Trifluralin	5	1.0	0.98	0.98	59

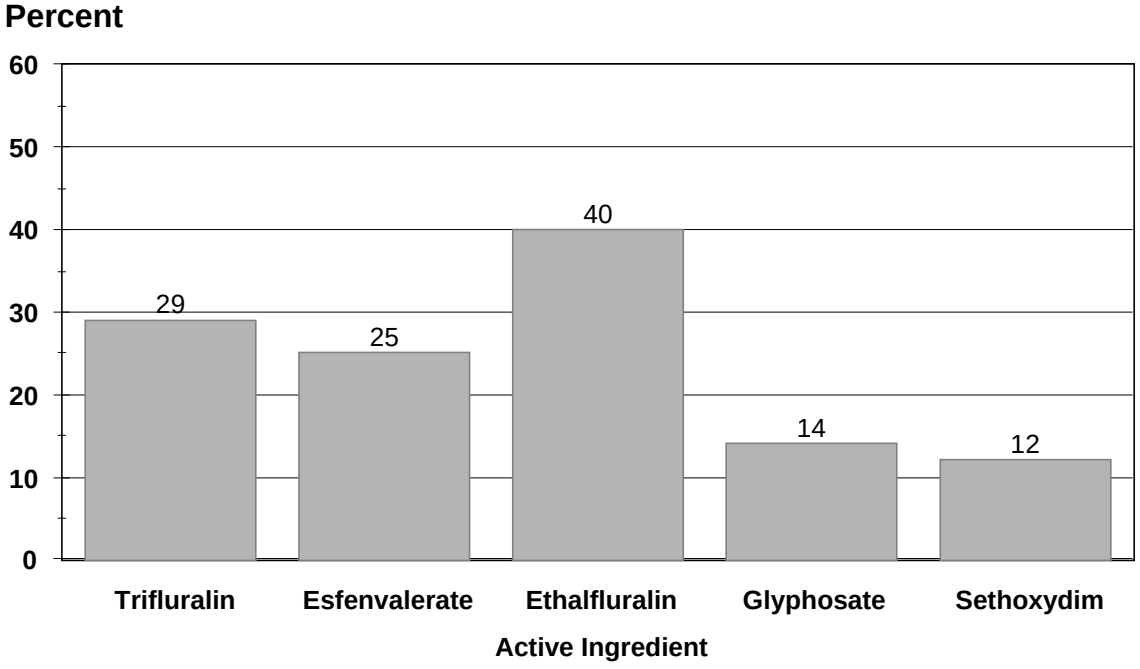
1/ Planted acres in 1999 for Tennessee were 1.25 million acres.

Sunflower: Number of Usable Reports, 1999



Sunflower: Percent of Acres Treated

Top 5 Active Ingredients for 1999



Surveyed states are KS, ND and SD

Sunflower, All: Fertilizer Use by State, 1999
Percent of Acres Treated and Total Amount Applied

State	Planted Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	1,000 Acres	Percent	Mil. Lbs	Percent	Mil. Lbs	Percent	Mil. Lbs
KS 1/	280	92	15.8	69	4.4		
ND 1/	1,700	96	116.9	40	16.4		
SD 1/	920	78	41.3	41	12.4		
Total	2,900	90	174.0	43	33.2	8	1.5

1/ Insufficient reports to publish data for one or more of the fertilizer primary nutrients.

Sunflower, All: Fertilizer Primary Nutrient Applications,
States Surveyed and Total, 1999

Primary Nutrient	Planted Acreage	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Kansas:	280					
Nitrogen		92	1.3	45	61	15.8
Phosphate		69	1.0	23	23	4.4
Potash 1/						
North Dakota:	1,700					
Nitrogen		96	1.3	54	71	116.9
Phosphate		40	1.0	24	24	16.4
Potash 1/						
South Dakota:	920					
Nitrogen		78	1.4	40	58	41.3
Phosphate		41	1.0	33	33	12.4
Potash 1/						
Total:	2,900					
Nitrogen		90	1.3	49	67	174.0
Phosphate		43	1.0	27	27	33.2
Potash		8	1.0	7	7	1.5

1/ Insufficient reports to publish data for one or more of the fertilizer primary nutrients.

Sunflower, All: Active Ingredients Applied and Publication Status
By States Surveyed, 1999

Active Ingredient	States Surveyed: ALL	KS	ND	SD
Herbicides:				
2,4-D	*	*		
Alachlor	*			*
Dicamba	*	*		*
EPTC	*		*	
Ethalfluralin	P	*	P	P
Glyphosate	P	P	P	P
Imazamethabenz	P		P	*
Metolachlor	*	*		
Paraquat	*		*	*
Pendimethalin	P	P	P	P
Quizalofop-ethyl	P		*	*
Sethoxydim	P	*	P	P
Sulfentrazone	P	*	*	*
Sulfosate	*			*
Thifensulfuron	*		*	*
Tribenuron-methyl	*		*	*
Trifluralin	P	P	P	P
Insecticides:				
Bt (Bacillus thur.)	*			*
Carbofuran	P	*	*	*
Chlorpyrifos	*	*		
Cyfluthrin	P	P		*
Endosulfan	*	*		
Esfenvalerate	P	P	P	P
Ethyl parathion	P			P
Lambda-cyhalothrin	P	P	P	*
Methyl parathion	P	P	*	P

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Sunflower, All: Pesticide, Total Acreage,
Percent of Area Receiving Applications and Total Applied,
States Surveyed and Total, 1999

State	Planted Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemical	
	1,000 Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
KS	280	82	221	56	67				
ND	1,700	99	1,801	22	12				
SD	920	93	801	46	41				
Total	2,900	95	2,823	33	120				

Sunflower, All: Agricultural Chemical Applications,
States Surveyed, 1999 1/

Agricultural Chemical	Area Applied	Appli-cations	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Ethalfluralin	40	1.0	1.10	1.10	1,288
Glyphosate	14	1.1	0.53	0.59	237
Imazamethabenz	8	1.0	0.15	0.15	33
Pendimethalin	11	1.0	1.03	1.04	334
Quizalofop-ethyl	*	1.0	0.04	0.04	**
Sethoxydim	12	1.0	0.24	0.24	82
Sulfentrazone	6	1.0	0.16	0.16	27
Trifluralin	29	1.0	0.91	0.91	764
Insecticides:					
Carbofuran	*	1.0	0.29	0.29	7
Cyfluthrin	*	1.0	0.04	0.04	**
Esfenvalerate	25	1.0	0.02	0.02	18
Ethyl parathion	1	1.0	0.28	0.28	8
Lambda-cyhalothrin	2	1.0	0.03	0.03	1
Methyl parathion	6	1.1	0.36	0.39	70

* Area applied is less than one percent.
** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for the 3 states surveyed were 2.90 million acres. States included are KS, ND and SD.

Sunflower, All: Agricultural Chemical Applications,
Kansas, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Glyphosate	21	1.3	0.56	0.76	45
Pendimethalin	38	1.0	1.07	1.09	116
Trifluralin	14	1.0	0.79	0.79	31
Insecticides:					
Cyfluthrin	2	1.0	0.04	0.04	**
Esfenvalerate	32	1.0	0.03	0.03	3
Lambda-cyhalothrin	5	1.0	0.02	0.02	**
Methyl Parathion	49	1.1	0.31	0.34	46

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for Kansas were 280,000 acres.

Sunflower, All: Agricultural Chemical Applications,
North Dakota, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Ethalfluralin	61	1.0	1.11	1.12	1,158
Glyphosate	9	1.0	0.59	0.62	90
Imazamethabenz	13	1.0	0.15	0.15	32
Pendimethalin	8	1.0	0.78	0.78	103
Sethoxydim	12	1.0	0.19	0.19	37
Trifluralin	22	1.0	0.89	0.89	335
Insecticides:					
Esfenvalerate	20	1.1	0.02	0.02	8
Lambda-cyhalothrin	1	1.0	0.03	0.03	**

** Total applied is less than 1,000 lbs.
1/ Planted acres in 1999 for North Dakota were 1.70 million acres.

Sunflower, All: Agricultural Chemical Applications,
South Dakota, 1999 1/

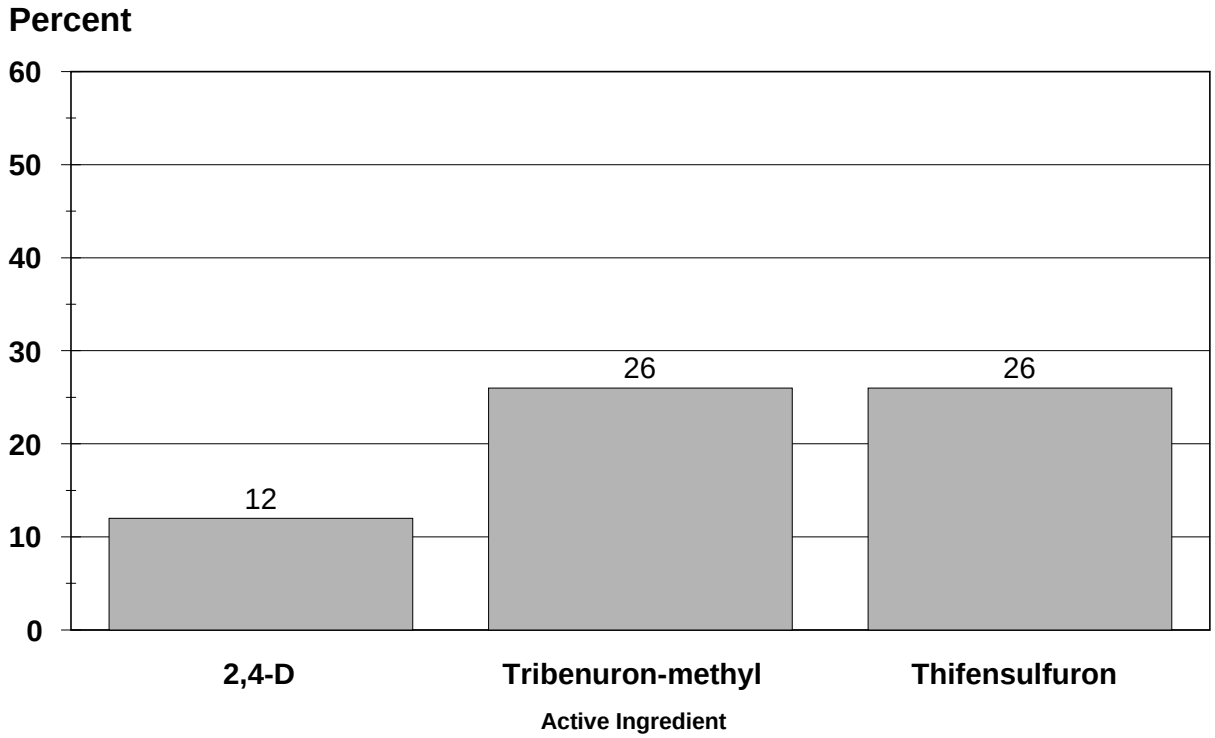
Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
Ethalfluralin	14	1.0	0.99	0.99	128
Glyphosate	22	1.0	0.49	0.51	102
Pendimethalin	9	1.0	1.32	1.32	115
Sethoxydim	12	1.0	0.28	0.28	30
Trifluralin	46	1.0	0.93	0.93	398
Insecticides:					
Esfenvalerate	33	1.0	0.02	0.02	7
Ethyl parathion	3	1.0	0.28	0.28	8
Methyl parathion	4	1.0	0.55	0.55	20

1/ Planted acres in 1999 for South Dakota were 920,000 acres.

Winter Wheat: Number of Usable Reports, 1999

INDIANA

Winter Wheat: Percent of Acres Treated
Top 3 Active Ingredients for 1999
INDIANA



Winter Wheat: Fertilizer Use for Indiana, 1999
Percent of Acres Treated and Total Amount Applied

State	Planted Acreage	Percent of Acres Treated and Total Applied					
		Nitrogen		Phosphate		Potash	
	1,000 Acres	Percent	Mil. Lbs	Percent	Mil. Lbs	Percent	Mil. Lbs
IN	550	97	46.3	91	31.6	90	39.0

Winter Wheat: Fertilizer Primary Nutrient Applications,
Indiana, 1999

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	1,000 Acres	Percent	Number	Pounds per Acre		Mil. Lbs
Indiana:	550					
Nitrogen	97	1.8	46	87		46.3
Phosphate	91	1.0	61	63		31.6
Potash	90	1.0	75	79		39.0

Winter Wheat: Active Ingredient Publication Status
By States Surveyed, 1999

Active Ingredient	IN
Herbicides:	
2,4-D	P
Atrazine	*
Dicamba	*
MCPA	*
Thifensulfuron	P
Tribenuron-methyl	P
Insecticides:	
Lambda-cyhalothrin	*
Fungicides:	
Propiconazole	*

P Usage data are published for this active ingredient.
* Usage data are not published for this active ingredient.

Winter Wheat: Pesticide, Total Acreage, Percent of Area Receiving Applications and Total Applied, Indiana, 1999

State	Planted Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other Chemical	
	1,000 Acres	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs	Percent	1,000 Lbs
IN 2/	550	39	28						

2/ Insufficient reports to publish data for one or more of the pesticide classes.

Winter Wheat: Agricultural Chemical Applications, Indiana, 1999 1/

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Herbicides:					
2,4-D	12	1.0	0.27	0.27	18
Thifensulfuron	26	1.0	0.02	0.02	2
Tribenuron-methyl	26	1.0	0.008	0.008	1

1/ Harvested acres in 1999 for Indiana were 550,000 acres.

Survey Procedures: The data for this report were obtained from the 1999 Agricultural Resources Management Survey (ARMS). Data for corn, upland cotton, peanuts, fall potatoes, soybeans, sunflowers, and winter wheat were collected during the months of August through December of 1999. Large screening samples were drawn from the NASS List Sampling Frame. This extensive sampling frame covers all types of farms and accounts for approximately 82% of all land in farms in the U.S. The screening samples were selected in such a way as to insure that all farms on the list had a possibility of being selected. Farms that were more likely to be producers of crops of interest were more likely to be in the screening sample. The sampled farms were screened to determine the presence of all the crops of interest. From this subpopulation of operations identified as producing the crop of interest, a subsample of farms was selected in such a way as to insure that each identified producer had an opportunity to be selected. In general, larger farms were more likely to be selected than smaller farms.

Once a farm producing a particular crop of interest was selected, one field containing this crop was randomly selected from all the fields on the farm producing that crop. The operator of the sampled field was personally interviewed to obtain information on chemical applications made to the selected field.

Estimation Procedures: The chemical applications data, reported by product name or trade name, are reviewed within State and across States for reasonableness and consistency. This review compares reported data with manufacturer's recommendations and with data from other farm operators using the same product. Following this review, product information is converted to an active ingredient level. The chemical usage estimates in this publication consist of survey estimates of those active ingredients.

Estimates of the total amount of active ingredient applied are based on the acreage estimates (except cotton and peanuts) published in the annual NASS report "**Crop Production - 1999 Summary**" [Cr Pr 2-1(00)] for corn, soybeans, sunflowers, winter wheat, and potatoes. The estimates of peanut acreage were revised and published in the monthly NASS report "**Crop Production**" [Cr Pr 2-2(4-00)a] released on April 11, 2000. The estimates of cotton acreage were revised and published in the monthly NASS report "**Crop Production**" [Cr Pr 2-2(5-00)] released on May 12, 2000.

The estimates for total amount applied will not be revised even if there are subsequent revisions to acreage for a given crop.

Detailed data within a table may not multiply across or add down due to independent rounding of the published values.

Reliability: The surveys were designed so that the estimates are statistically representative of chemical use on the targeted crops in the surveyed states. The reliability of these survey results is affected by sampling variability and non-sampling errors.

The results of this survey are subject to sampling variability. Sampling variability is a measure of how the estimates would differ if other samples had been drawn. The sampling variability expressed as a percent of the estimate is called the coefficient of variation (cv). Sampling variability of the estimates differed considerably by chemical and crop. Variability for estimates of acres treated will be higher than the variability for estimates of application rates.

This is because application rates have a narrower range of responses, are recommended by the manufacturer of the product, and are generally followed. In general, the more often the chemical was applied, the smaller the sampling variability. For example, estimates of use of a commonly used product, such as atrazine, will exhibit less variability than a more rarely used product. For more commonly used chemicals, cv's will range from 5-30 percent at the U.S. level and 5-75 percent at the state or regional level. Some rarer items could have cv's above 100 percent. These items have insufficient data for publication and these instances are noted with an asterisk (*).

Non-sampling errors occur during a survey process, and unlike sampling variability, are difficult to measure. They may be caused by interviewers failing to follow instructions, poorly worded questions, non-response, problematic survey procedures, or data handling mistakes between collection and publication. In these surveys, all survey procedures and analyses were carried out in a consistent and orderly manner to minimize the occurrence of these types of errors.

Terms and Definitions

Active ingredient: The active ingredient is the specific chemical which kills or controls the target pests. Usage data are reported by pesticide product and are converted to an amount of active ingredient. A single method of conversion has been chosen for active ingredients having more than one way of being converted. For example in this report, copper compounds are expressed in their metallic copper equivalent, and others such as 2,4-D and glyphosate are expressed in their acid equivalent.

Agricultural chemicals: Refers to the active ingredients in fertilizers and pesticides.

Application Rates: Refer to the average number of pounds of a fertilizer primary nutrient or pesticide active ingredient applied to an acre of land. Rate per acre is the average number of pounds applied in one application. Rate per crop year is the average number of pounds applied counting multiple applications. Number of applications is the average number of times a treated acre receives a specific agricultural chemical.

Area applied: Represents the percentage of crop acres receiving one or more applications of a specific agricultural chemical. This report does not contain acre treatments. However, acre treatments can be calculated by multiplying the acres planted by the percent of area applied and the average number of applications.

Common name: An officially recognized name for an active ingredient. This report shows active ingredient by common name.

Crop year: Refers to the period immediately following harvest for the previous crop through harvest of the current crop.

Fertilizer: Refers to applications of the primary nutrients, nitrogen, phosphate, and potash.

Pesticides: As defined by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 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.

The four classes of pesticides presented in this report and the pests targeted are: herbicides - weeds, insecticides - insects, fungicides - fungi, and other chemicals - other forms of life. Miticides and nematicides are included as insecticides while soil fumigants, growth regulators, defoliants, and desiccants are included as other chemicals.

Trade name: A trademark 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.

Trade Name, Common Name, and Pesticide Class

The following is a list of the common name, associated class and trade name of active ingredients in this publication. The classes are herbicides (H), insecticides (I), fungicides (F), and other chemicals (O). This list is provided as an aid in reviewing pesticide data. Pre-mixes are not cataloged. The list is not complete for all pesticides used on field crops and NASS does not mean to imply the use of any specific trade name.

Class	Common Name	Trade Name
H,O	2,4-D	several
H	2,4-DB	Butoxone, Butyrac
H	3Pyridinecarboxylic acid	Cadre
I	Abamectin	Agri-Mek, Avid, Zephyr
I	Acephate	Orthene, Payload
H	Acetamide	Axiom
H	Acetochlor	Harness, Topnotch
H	Acifluorfen	Blazer, Tackle
H	Alachlor	Lasso
I	Aldicarb	Temik
H	Ametryn	Evik
I	Amitraz	Ovasyn
O	Arsenic acid	Dessicant
H	Atrazine	AAtrex, Atrazine
I	Azadirachtin	Align, Neemix, Margosan-o
I	Azinphos-methyl	Guthion
F	Azoxystrobin	Abound, Quadris
O	Bacillus cereus	Mep-Plus
F	Bas Copper Zinc Sulfate	Coposil
F	Basic copper sulfate	Top Cop, Tri-Basic
I	Beauveria bassiana	Mycotrol
H	Benefin	Balan
F	Benomyl	Benlate
H	Bentazon	Basagran, Pledge
I	Bifenthrin	Brigade, Capture, Talstar
H	Bromacil	Hyvar
H	Bromoxynil	Brominal, Buctril
I	Bt (Bacillus thuringiensis)	several
I	Buprofezin	Applaud
H	Butylate	Genate, Sutan
O	Cacodylic acid	Bolls-Eye, Cotton-Aide
F	Captan	Captan
I,O	Carbaryl	Savit, Sevin
I	Carbofuran	Furadan
F	Carboxin	Vitavax
H	Carfentrazone-ethyl	Aim
I	Chlorethoxyfos	Fortress
I	Chlorfenapyr	Alert, Pirate
H	Chlorimuron-ethyl	Classic
O	Chloropicrin	several
F	Chlorothalonil	Bravo, Daconil
I	Chlorpyrifos	Lorsban, Dursban
H	Clethodim	Select
H	Clomazone	Command
H	Clopyralid	Reclaim, Stinger
H	Cloransulam-methyl	FirstRate

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Class	Common Name	Trade Name
F	Copper ammonium	Copper-Count-N
F	Copper hydroxide	several
F	Copper resinate	Tenn-Cop
F	Copper sulfate	Copper sulfate
I	Cryolite	Kryocide
H	Cyanazine	Bladex, Conquest, Cycle, Extrazine
O	Cyclanilide	Finish
I	Cyfluthrin	Baythroid
F	Cymoxanil	Curzate
I	Cypermethrin	Ammo, Cymbush
O	Cytokinins	Burst, Promalin, Triggrr
H	DCPA	Dacthal
I	Deltamethrin	Decis
I	Diazinon	several
H	Dicamba	Banvel
H	Dicamba, Dimethlamine salt	Distinct
H	Dicamba, Potassium salt	Marksman
O	Dichloropropene	Telone
H	Diclofop-methyl	Hoelon
F	Dicloran	Allisan, Botran
I	Dicofol	Kelthane
I	Dicrotophos	Bidrin
I	Diflubenzuron	Dimilin, Micromite, Vengeance
H	Diflufenzopyr-sodium	Distinct
H	Dimethenamid	Frontier, Guardsman
O	Dimethipin	Harvade
I	Dimethoate	several
F	Dimethomorph	Acrobat
H,O	Diquat	Diquat
I	Disulfoton	Di-Syston
H	Diuron	Direx, Karmex
H	DSMA	DSMA
I	Endosulfan	Thiodan
O	Endothall	Accelerate, Des-I-Cate
H	EPTC	Eptam, Eradicane, Genep
I	Esfenvalerate	Asana
H	Ethalfluralin	Curbit, Sonalan
O	Ethephon	Cerone, Ethrel, Prep
I	Ethion	Ethion
I	Ethoprop	Holdem, Mocap
I	Ethyl parathion	several
F	Etridiazole	Terraclor
H	Fenoxaprop	several
I	Fenpropathrin	Danitol
I	Fipronil	Regent
H	Fluazifop-P-butyl	Fusilade
H	Flumetsulam	Broadstrike
H	Flumiclorac-Pentyl	Resource
H	Fluometuron	Cotoran, Meturon
F	Flutolanil	Moncut, Prostar
H	Fomesafen	Reflex
I	Fonofos	Dyfonate
O	GABA	Auxigro
O	Garlic oil	Envirepel, Nutripel
O	Gibberellic acid	GibGro, ProGibb, ProVide
H	Glufosinate-ammonium	Ignite
H,O	Glyphosate	Ranger, Rattler, Rodeo, Roundup

--continued

Class	Common Name	Trade Name
O	Gossyplure	Checkmate, NoMate, Stirrup
H	Halosulfuron	Battalion, Permit
I	Helicoverpa zea NPV	Gemstar
O	Hydrogen peroxide	Tsunami 100
O	IBA	PGR IV
H	Imazamethabenz	Assert
H	Imazamox	Raptor
H	Imazapyr	Lightning, Topsite
H	Imazaquin	Scepter
H	Imazethapyr	Pursuit
I	Imidacloprid	Admire
F	Iprodione	Rovral
H	Isoxaflutole	Balance
O	L-Glutamic acid	Auxigro
H	Lactofen	Cobra
I	Lambda-cyhalothrin	Karate, Saber, Warrior
H	Linuron	Linex, Lorox
I	Malathion	several
O	Maleic hydrazide	Royal MH-30, Super Sprout Stop
F	Mancozeb	several
F	Maneb	several
H	MCPA	several
F	Mefenoxam	Ridomil Gold
O	Mepiquat chloride	Pix, Ponnax
F	Metalaxyl	Ridomil
O	Metam-sodium	Vapam
I	Methamidophos	Monitor
I	Methomyl	Lannate
I	Methoxychlor	several
O	Methyl isothiocyanate	Vorlex
I	Methyl parathion	several
F	Metiram	Polyram
H	Metolachlor	Dual
H	Metribuzin	Axiom, Lexone, Sencor
I	Mevinphos	Phosdrin
O	Monocarbamide dihydrogensulfat	Enquik, Wilthin
H	MSMA	several
I	Naled	Dibrom
H	Napropamide	Devrinol
H	Nicosulfuron	Accent
H	Norflurazon	Evital, Solicam, Zorial
I	Oxamyl	Vydate
I	Oxydemeton-methyl	Metasystox-R
H	Oxyfluorfen	Goal
H,O	Paraquat	Cyclone, Gramoxone, Starfire
F	PCNB	Terraclor
O	Pelargonic Acid	Thinnex Blossom Thinner
H	Pendimethalin	Prowl
I	Permethrin	Ambush, Pounce
I	Petroleum distillate	several
I	Phorate	Thimet
I	Phosmet	Imidan
I	Phosphamidon	phosphamidon
I	Piperonyl butoxide	Butacide, Incite, PBO-8
O	Potassium gibberellate	Early Harvest
I	Potassium salts	M-Pede, Safer Insecticidal Soap

--continued

Class	Common Name	Trade Name
H	Primisulfuron	Beacon
I	Profenofos	Curacron
H	Prometryn	Caparol, Cotton-Pro
H	Propachlor	Ramrod
F	Propamocarb hydrochlorida	Tattoo
I	Propargite	Comite, Omite
F	Propiconazole	Banner, Orbit, Tilt
H	Prosulfuron	Peak
I	Pyrethrins	several
H	Pyridate	Tough
H	Pyridinecarboxylic acid	Cadre
I	Pyriproxyfen	Knack
H	Pyrithiobac-sodium	Staple
H	Quinclorac	Facet
H	Quizalofop-ethyl	Assure
H	Rimsulfuron	Basis
I	Rotenone	Rotenone
H	Sethoxydim	Poast
H	Simazine	Princep, Simazine
O	Sodium chlorate	several
I	Spinosad	SpinTor, Success, Tracer
H	Sulfentrazone	Authority, Canopy
H	Sulfosate	Touchdown
I,F	Sulfur	several
O	Sulfuric acid	sulfuric acid
F	Tebuconazole	Folicur, Lynx
I	Tebupirimphos	Aztec
I	Tefluthrin	Force
I	Terbufos	Counter
O	Thidiazuron	Dropp
H	Thifensulfuron	Pinnacle
I	Thiodicarb	Larvin
F	Thiophanate-methyl	Topsin
H	Tralkoxydim	Achieve
I	Tralomethrin	Scout
H	Tribenuron-methyl	Express
O	Tribufos	Def, Folex
H	Trifluralin	Treflan, Trific, Trilin
F	Triphenyltin hydroxide	several
H	Vernolate	Vernam
I	Zeta-cypermethrin	Fury, Mustang

7

C FERTILIZER and NUTRIENT APPLICATIONS--- SELECTED FIELD C

1. Were commercial FERTILIZERS applied to this field for the 1999 corn crop? . . . . . YES = 1 — CODE 0801 — EDIT TABLE 0201
2. [*If COMMERCIAL fertilizer applied, continue, else go to item 5.*]
3. How many trips were made across this field to apply commercial fertilizer for the 1999 crop (*include applications made by airplanes and commercial applicators*)? . . — NUMBER 0802
4. Now I need to record information for each application.

CHECK LIST

INCLUDE	EXCLUDE
☐ Custom applied fertilizers	☐ Micronutrients
☐ Fertilizer applied in the fall of 1998 and those applied earlier if this field was fallow in 1998	☐ Unprocessed manure
☐ Commercially prepared manure	☐ Fertilizer applied to previous crops in this field

T-TYPE	TABLE
2	001

LINE 99	OFFICE USE LINES IN TABLE	0213

LINE	2 → → → MATERIALS USED [*Enter percentage analysis or actual pounds of plant nutrients applied per acre.*] [*Show Common Fertilizers in Respondent Booklet.*]			3 What quantity was applied per acre? [*Leave this column blank if actual nutrients were reported.*]	4 [*Enter material code.*] 1 Pounds 12 Gallons 19 Pounds of actual nutrients	5 When was this applied? 1 Before seeding . (fall) 2 Before seeding (spring) 3 At seeding 4 After seeding	6 How was this applied? 1 Broadcast, ground without incorporation 2 Broadcast, ground with incorporation 3 Broadcast, by air 4 In seed furrow 5 In irrigation water 6 Chisel, injected or knifed in 7 Banded/Sidedressed in or over row 8 Foliar or directed spray 9 Spot treatments	7 How many acres were treated in this application? ACRES
	N Nitrogen	P_2O_5 Phosphate	K_2O Potash					
01	0205	0206	0207	0208	0209	0210	0211	0212 •__
02	0205	0206	0207	0208	0209	0210	0211	0212 •__
03	0205	0206	0207	0208	0209	0210	0211	0212 •__
04	0205	0206	0207	0208	0209	0210	0211	0212 •__
05	0205	0206	0207	0208	0209	0210	0211	0212 •__
06	0205	0206	0207	0208	0209	0210	0211	0212 •__
07	0205	0206	0207	0208	0209	0210	0211	0212 •__
08	0205	0206	0207	0208	0209	0210	0211	0212 •__

T-TYPE	TABLE	LINE
0	000	00

10

D PESTICIDE APPLICATIONS--- SELECTED FIELD D

1. Including both custom applications and applications made by this operation, let's list all the chemicals used on this field for the 1999 corn crop.

Were any herbicides, insecticides, fungicides or other chemicals used on the corn field for the 1999 crop?. . . . . YES = 1

CODE	EDIT TABLE
0830	0301

[*Probe for applications made in the fall of 1998 (and those made earlier if this field was fallow).*]
[*If none, go to Section* E.]

CHECK LIST

INCLUDE		EXCLUDE
☐ Defoliants	☐ Insecticides	☐ Fertilizers reported earlier
☐ Fungicides	☐ All other pesticides	☐ Seed treatments
☐ Herbicides		

LINE	T-TYPE 3 OFFICE USE LINES IN TABLE	TABLE 001 0319
99		

NOTES	LINE	2 What products were applied to this field? [*Show product codes from Respondent Booklet.*]	3 Was this product bought in liquid or dry form? [*Enter L or D.*]	4 Was this part of a tank mix? [*If tank mix, enter line number of first product in mix.*]	5 When was this applied? 1 BEFORE planting 3 AT planting 4 AFTER planting 5 Defoliation prior to harvest	6 How much was applied per acre per application? OR	7 What was the total amount applied per application in this field?	8 [*Enter unit code.*] 1 Pounds 12 Gallons 13 Quarts 14 Pints 15 Ounces 30 Grams
	01	0305		0306	0307	0308 .	0309 .	0310
	02	0305		0306	0307	0308 .	0309 .	0310
	03	0305		0306	0307	0308 .	0309 .	0310
	04	0305		0306	0307	0308 .	0309 .	0310
	05	0305		0306	0307	0308 .	0309 .	0310
	06	0305		0306	0307	0308 .	0309 .	0310
	07	0305		0306	0307	0308 .	0309 .	0310
	08	0305		0306	0307	0308 .	0309 .	0310
	09	0305		0306	0307	0308 .	0309 .	0310
	10	0305		0306	0307	0308 .	0309 .	0310
	11	0305		0306	0307	0308 .	0309 .	0310
	12	0305		0306	0307	0308 .	0309 .	0310
	13	0305		0306	0307	0308 .	0309 .	0310
	14	0305		0306	0307	0308 .	0309 .	0310

2. [*For pesticides not listed in Respondent Booklet, specify* --]

LINE	Pesticide Type (*Herbicide, Insecticide Fungicide, etc.*)	EPA No. or Tradename and Formulation	Form Purchased (Liquid or Dry)	Where Purchased [*Ask only if EPA No. cannot be reported.*]

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D PESTICIDE APPLICATIONS--- SELECTED FIELD D

APPLICATION CODES for column 9	
1 Broadcast, ground without incorporation	6 Chisel/injected or knifed in
2 Broadcast, ground with incorporation	7 Banded in or over row
3 Broadcast, by air (*Aerial application*)	8 Foliar or directed spray
4 In seed furrow	9 Spot treatment
5 In Irrigation water	

↓

LINE	9 How was this product applied? [*Enter code from above.*]	10 How many acres in this field were treated with this product? ACRES	11 What was the number of times applied? NUMBER	12 What was the PRIMARY target pest for this application? [*Show Target Pest codes from Respondent Booklet.*]	13 This year, was the problem of this pest-- 1 worse than normal? 3 normal? 5 less than normal? 7 unknown? 9 not applicable?	14 Were these applications made by-- 1 Operator, Partner, Family member? 2 Custom applicator? 3 Employee / Other?
01	0311	0312 .___	0313	0314	0315	0316
02	0311	0312 .___	0313	0314	0315	0316
03	0311	0312 .___	0313	0314	0315	0316
04	0311	0312 .___	0313	0314	0315	0316
05	0311	0312 .___	0313	0314	0315	0316
06	0311	0312 .___	0313	0314	0315	0316
07	0311	0312 .___	0313	0314	0315	0316
08	0311	0312 .___	0313	0314	0315	0316
09	0311	0312 .___	0313	0314	0315	0316
10	0311	0312 .___	0313	0314	0315	0316
11	0311	0312 .___	0313	0314	0315	0316
12	0311	0312 .___	0313	0314	0315	0316
13	0311	0312 .___	0313	0314	0315	0316
14	0311	0312 .___	0313	0314	0315	0316

T-TYPE	TABLE	LINE
O	OOO	OO

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Report Features

Released May 17, 2000 by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, U.S. Department of Agriculture. For information on "Agricultural Chemical Usage" call (202) 720-6146, office hours 7:30 a.m. to 4:00 p.m. ET.

The next "Agricultural Chemical Usage" report will be released July 19, 2000. This report will cover agricultural chemical use for the 1999 crop year for fruits and nuts in major states.

Listed below are persons within the National Agricultural Statistics Service to contact for additional information.

Jorge Garcia-Pratts, Environmental Statistician	(202) 720-7492
Norman Bennett, Head, Environmental and Demographics Section	(202) 720-0684
Linda Hutton, Chief, Environmental, Economics and Demographics Branch	(202) 720-6146

Listed below is the contact within the Economic Research Service for additional information.

Merritt Padgitt, Data and Survey Coordinator Resource Economic Division	(202) 694-5620

The next "Agricultural Chemical Usage" report for field crops will be released in May 2001. This report will cover agricultural chemical use for the 2000 crop year for corn, cotton, potatoes, rice, soybeans, sugar beets, and winter wheat in major states.

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