

# AGRICULTURAL CHEMICAL USAGE 2004



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The agricultural chemical use estimates in this report refer to on-farm use of commercial fertilizers and pesticides on the targeted crops for the 2004 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. This survey was last conducted in 2000.

## Winter Wheat: Fertilizer and Pesticide Use by State, 2004 Percent of Acres Treated and Total Applied, Program States

State	Planted Acreage 1,000 Acres	Percent of Acres Treated with Fertilizer and Total Applied						Percent of Acres Treated with Pesticides and Total Applied							
		Nitrogen		Phosphate		Potash		Herbicide		Insecticide		Fungicide		Other	
		%	Mil. lbs.	%	Mil. lbs.	%	Mil. lbs.	%	1,000 lbs.	%	1,000 lbs.	%	1,000 lbs.	%	1,000 lbs.
CO 1/	2,300	59	51.2	31	15.8	5	2.7	54	908						
ID 1/	750	89	89.2	62	18.5	31	6.1	94	380	1	2				
IL 1/	920	98	103.2	85	74.2	77	92.3	35	41			9	11		
KS 1/	10,000	90	788.6	62	281.8	6	23.4	38	1,138						
MI	660	97	73.5	71	27.5	77	38.4	50	94			11	11		
MO1/	1,050	97	125.9	84	52.9	86	70.0	35	109	8	9				
MT 1/	1,900	92	83.0	83	47.3	21	3.9	95	2,533						
NE 1/	1,850	73	76.4	42	24.3	3	1.2	51	537						
OH 1/	920	100	91.6	95	65.8	90	69.5	29	96						
OK 1/	6,200	92	571.0	62	147.8	13	22.0	34	267	24	511				
OR 1/	820	96	64.7	11	5.3	6	2.5	98	694	3	7	3	5		
SD 1/	1,650	77	105.8	58	44.6	7	5.1	66	646			13	21		
TX	6,300	64	347.7	35	116.6	9	9.6	19	810	7	189				
WA 1/	1,800	97	161.2	24	11.6	3	1.4	88	1,007			4	17		
Total	1/37,120	84	2,733.0	55	934.0	16	348.1	45	9,260	7	745	2	98		

1/ Insufficient reports to publish data for one or more pesticide classes.

## Other Spring Wheat: Fertilizer and Pesticide Use by State, 2004 Percent of Acres Treated and Total Applied, Program States

State	Planted Acreage 1,000 Acres	Percent of Acres Treated with Fertilizer and Total Applied						Percent of Acres Treated with Pesticides and Total Applied							
		Nitrogen		Phosphate		Potash		Herbicide		Insecticide		Fungicide		Other	
		%	Mil. lbs.	%	Mil. lbs.	%	Mil. lbs.	%	1,000 lbs.	%	1,000 lbs.	%	1,000 lbs.	%	1,000 lbs.
ID	500	93	56.1	63	12.7	23	4.4	92	288	4	6				
MN	1,700	98	180.1	91	75.5	54	34.8	99	1,054	10	28	46	84		
MT 1/	3,000	79	134.6	69	72.6	13	9.0	95	1,652						
ND 1/	6,200	98	691.9	86	269.0	27	39.9	97	3,452			28	190		
OR	180	91	9.7	28	1.7	9	0.5	95	133	4	1	9	2		
SD 1/	1,600	92	132.5	68	53.2	19	8.5	89	702			14	26		
WA	530	100	45.4	67	7.4	9	2.1	99	364	4	8	3	2		
Total	13,710	93	1,250.3	79	492.1	25	99.2	96	7,645	2	52	20	304		

1/ Insufficient reports to publish data for one or more pesticide classes.

## Durum Wheat: Fertilizer and Pesticide Use by State, 2004 Percent of Acres Treated and Total Applied, Program States

State	Planted Acreage 1,000 Acres	Percent of Acres Treated with Fertilizer and Total Applied						Percent of Acres Treated with Pesticides and Total Applied							
		Nitrogen		Phosphate		Potash		Herbicide		Insecticide		Fungicide		Other	
		%	Mil. lbs.	%	Mil. lbs.	%	Mil. lbs.	%	1,000 lbs.	%	1,000 lbs.	%	1,000 lbs.	%	1,000 lbs.
MT	570	96	32.5	84	11.8	10	0.6	99	508						
ND 1/	1,750	95	115.3	70	35.1	6	1.1	99	1,216						
Total	1/ 2,320	95	147.8	73	46.9	7	1.7	99	1,724						

1/ Insufficient reports to publish data for one or more pesticide classes.

## Survey Procedures

The data for this report were obtained from the 2004 Agricultural Resources Management Study (ARMS). Data for durum wheat, other spring wheat, winter wheat, peanuts, and soybeans were collected during the months of August through December of 2004. Large screening samples were drawn from the NASS List Sampling Frame. 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 sub-population of operations identified as producing the crop of interest, a sub-sample 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.

This report contains chemical usage information on winter wheat, other spring wheat, and durum wheat. Agricultural chemical usage for all of the other targeted crops are available from our office and are contained in the national release located on the Internet at [www.usda.gov/nass](http://www.usda.gov/nass).

## TERMS AND DEFINITIONS

Agricultural chemicals refer to ingredients in both fertilizer and pesticide products. Fertilizer in this report refers to applications of the primary nutrients, nitrogen, phosphate, and potash.

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 nematocides are included as insecticides while soil fumigants, growth regulators, defoliants, and desiccants are included as other chemicals.

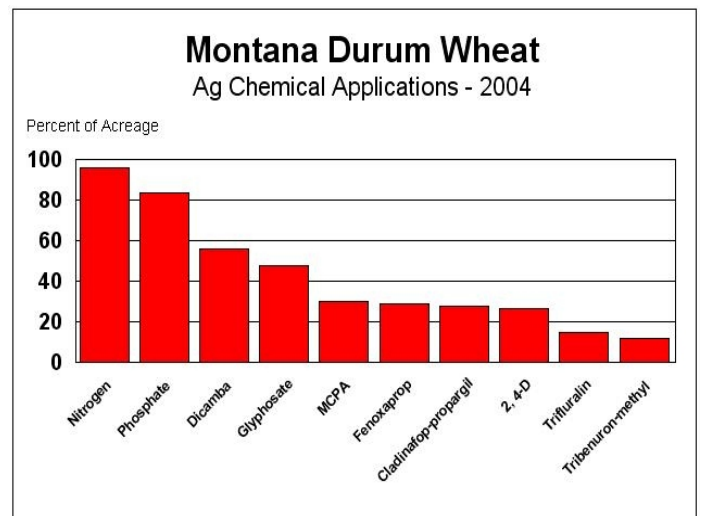
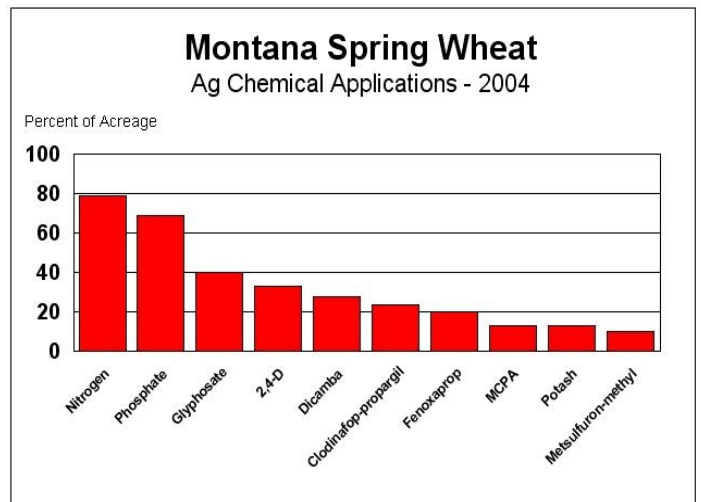
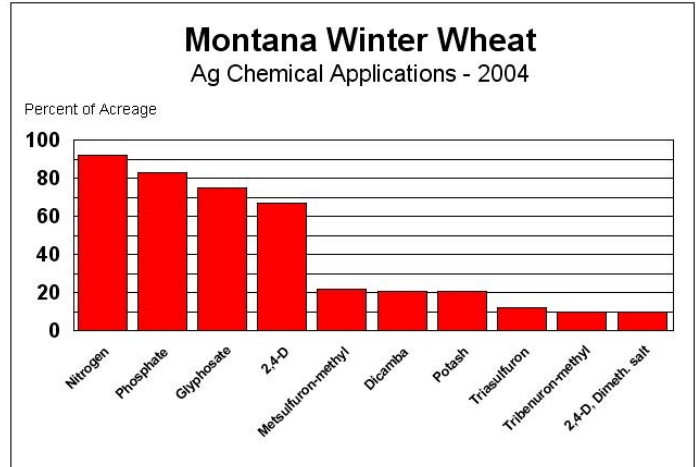
Active ingredient is the specific chemical which kills or controls the target pests. Usage data, that are reported by pesticide product, are converted to an amount of active ingredient. Some active ingredients have more than one way of being converted. For example in this report, copper compounds are expressed in their metallic copper equivalent, and others such as 2,4-D and glyphosate are expressed in their acid equivalent.

A tradename is the actual product name given to a specific formulation of a pesticide product. A formulation contains a specific concentration of the active ingredient, carrier materials, and other ingredients such as emulsifiers and wetting agents. Some formulations as in the case of pre-mixes, can contain more than one active ingredient.

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

Area applied represents the percent of crop acres receiving one or more applications of a specific ingredient. 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.

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



**Barley: Fertilizer Primary Nutrient Application, Montana, 2003 1/**

Primary Nutrient	Area Applied	Applications	Rate Per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		Million Lbs.
Nitrogen	92	1.3	33	44	44.2
Phosphate	88	1.0	30	31	30.2
Potash	52	1.0	16	17	9.7

1/ Montana planted area for 2003 barley was 1.1 million acres.

**Barley: Agricultural Chemical Applications, Montana, 2003 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	36	1.2	0.35	0.45	177
Acetic acid	7	1.0	0.29	0.32	24
Bromoxynil	15	1.0	0.31	0.31	53
Butoxy. ester	14	1.0	0.37	0.40	61
Clopyralid	3	1.0	0.08	0.08	3
Dicamba	12	1.5	0.05	0.08	11
Fenoxaprop	3	1.0	0.06	0.06	2
Fluroxypyr	3	1.0	0.08	0.08	3
Fluroxypyr 1-methylh	3	1.1	0.07	0.09	3
Glyphosate	45	1.6	0.38	0.62	307
Imazamethabenz	5	1.0	0.35	0.35	19
MCPA	20	1.0	0.36	0.37	83
Metsulfuron-methyl	11	1.0	0.002	0.002	2/
Thifensulfuron	9	1.0	0.007	0.007	1
Tralkoxydim	12	1.0	0.13	0.13	18
Triallate	13	1.0	1.26	1.26	177
Triasulfuron	10	1.0	0.009	0.009	1
Tribenuron-methyl	15	1.0	0.005	0.006	1

1/ Planted acres for Montana in 2003 were 1.1 million acres. 2/ Total applied is less than 500 lbs.

**Barley: Agricultural Chemical Applications, Program States, 2003 1/**

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	Number	Pounds per Acre		1,000 lbs
Insecticides:					
Carbofuron	2/	1.4	0.11	0.16	3
Disulfoton	2/	1.0	0.69	0.69	7
Lambda-cyhalothrin	2/	1.0	0.02	0.02	3/
Methyl parathion	2/	1.0	0.25	0.27	9
Fungicides:					
Propiconazole	2/	1.0	0.07	0.08	11
Pyraclostrobin	2/	1.0	0.05	0.05	1
Tebuconazole	2/	1.0	0.08	0.08	11
Other					
Ethephon	2/	1.0	0.28	0.28	12

1/ Planted acres in 2003 for the 11 Program States were 4.9 million acres. States included are CA, ID, MN, MT, ND, PA, SD, UT, WA, WI, and WY. 2/ Area applied is less than 0.5 percent. 3/ Total applied is less than 500 lbs.

## Trade Names, Common Names, and Classes

The following is a list of common names of active ingredients with the associated class and trade name. The classes are herbicides (H), insecticides (I), fungicides (F). This list is provided as an aid in reviewing pesticide data. Pre-mixes are not listed. The list is not complete and NASS does not mean to imply use of any specific trade name.

Class	Common Name	Trade Name
H	2,4-D	Agasco, Amine, Barrage, Class, Clean Crop Low Vol, Curtail, Ded-Weed Sulv, Envy, Grazon P+D, Hi-Dep, Landmaster, LV 6, Riverside, RT Master, Salvo, Tiller, Turret, Unison, Weed Rhap, Weedar, Weedmaster, Weedone
H	2,4-D, Dimeth. salt	Banvel + 2,4-D, Riverdale Triplet Selective, Saber, Savage, Weedar
H	2,4-DP, Dimeth. salt	Amine
H	Acetic acid	Agasco, Esteron, Double Up B+D, LV 4 2,4-D Ester, LV 400 2,4-D Weed Killer, Maestro D, Outlaw, Salvan, Starane + Salvo, Weedone
H	Bromoxynil	Agasco, Bromox/MCPA, Bronate, Buctril, Buctril + Atrazine, Rhino
H	Bromoxynil octanoate	Bronate Advanced, Connect, Double Up B+D, Maestro D, WildCard Xtra
H	Butoxy. ester 2,4-D	2,4-D/Weedone LV6
H	Carfentrazone-ethyl	AIM, Affinity, Avalanche
H	Chlorsulfuron	Finesse, Glean
H	Clodinafop-propargil	Discover
H	Clopyralid	Curtail, Stinger, WideMatch
H	Dicamba	Banvel, Banvel + 2,4-D, Clarity, Fallow Master, Oracle Dicamba, Outlaw, Rave, Weedmaster
H	Dicamba, Sodium Salt	Dicamba
H	Fenoxaprop	Cheyenne, Fusion, Puma, Silverado, Tiller
H	Flucarbazone-sodium	Everest
F	Fludioxonil	Maxim
H	Glyphosate	Accord, Backdraft, Bronco, Buccaneer, Clear-Out, Cornerstone, Credit, Extreme, FallowMaster, FieldMaster, GlyStar, Gly-Flo, Glyphos, Glyphomax, Glyphosate, Honcho, Landmaster, Mad Dog Glyphosate, Mirage, Protocol, Ranger, Rattler, Roundup, RTMaster
H	Glyphosate diam.salt	Sequence, Touchdown
H	Imazamethabenz	Assert
H	Imazamox	Beyond, Raptor
I	Lambda-cyhalothrin	Karate, Warrior
H	MCPA	Bromox, Bronate, Cheyenne, Chiptox MCPA, Class MCPA, Curtail, Dagger, MCP Ester, MCPAmine, Rhino, Rhonox, Starane + Sword, Sword, Weed Rhap, Weedone MCPA Ester, WildCard
H	MCPA, dimethyl.salt	MCPA Amine
H	Metribuzin	Axiom, Boundary, Canopy, Domain, Lexone, Sencor, Turbo
H	Metsulfuron-methyl	Ally, Canvas, Finesse, Valuron
H	Picloram	Grazon P + D, Tordon
H	Fluroxypyr	Starane
H	Fluroxypyr 1-methyl	Starane + Sword, Starane + Salvo, WideMatch
F	Propiconazole	Artisan Peanut, Bravo, Bumper, PropiMax, Quilt Stratego, Tilt
H	Sulfentrazone	Authority, Blanket, Canopy, Command Xtra, Gauntlet, Spartan
H	Sulfosate	Touchdown
H	Sulfosulfuron	Maverick
H	Thifensulfuron	Ally Extra, Canvas, Harmony, Pinnacle, Synchrony, X-TRA (Cheyenne)
H	Tralkoxydim	Achieve
H	Triallate	Buckle, Far-Go
H	Triasulfuron	Amber, Rave
H	Tribenuron-methyl	Ally Extra, Canvas, Express, Harmony, X-TRA (Cheyenne)
H	Trifluralin	Buckle, Freedom, Treflan, Tri-4, Trifluralin, Trilin, Trust