



Minnesota Ag News – Chemical Use

Spring Wheat – Fall 2022

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Cooperating with the Minnesota Department of Agriculture

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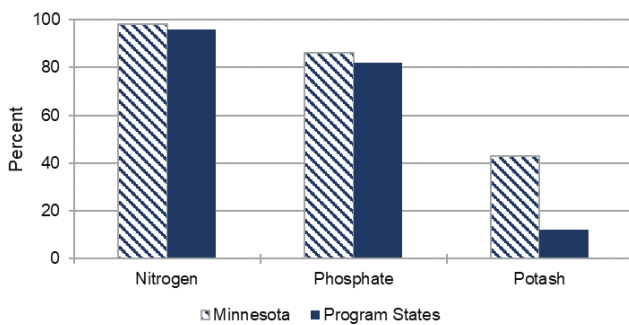
The National Agricultural Statistics Service (NASS) Agricultural Chemical Use Program is the U.S. Department of Agriculture's official source of statistics about on-farm and post-harvest fertilizer and pesticide use and pest management practices.

In the fall of 2022, NASS collected data for the 2022 crop year, the one-year period beginning after the 2021 harvest and ending with the 2022 harvest, about chemical use and pest management practices used on spring wheat production. The data was collected as part of the Agricultural Resource Management Survey (ARMS) and the results are presented here.

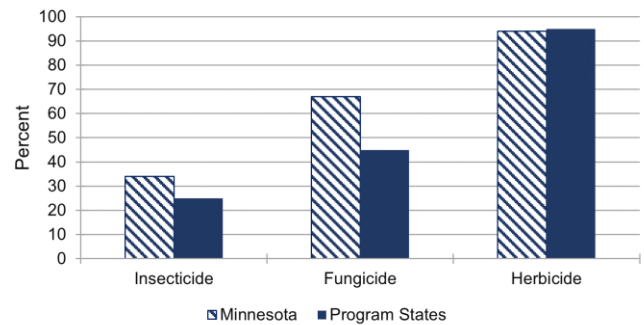
Fertilizer Use: Of the three primary macronutrients, nitrogen was the most widely used on spring wheat acres planted in Minnesota. Farmers applied nitrogen to 98 percent of planted acres at an average rate of 122 pounds per acre per year. Macronutrients phosphate and potash were applied at an average rate of 46 and 35 pounds per acre per year, respectively.

Pesticide Use: Herbicide active ingredients were applied to 94 percent of the spring wheat acres planted. Bromoxynil Octanoate was the most widely used pesticide on spring wheat acres, but MCPA, 2-Ethylhexyl was the active ingredient with the greatest total amount applied. Fungicides and insecticides were applied to 67 and 34 percent of spring wheat acres planted in Minnesota, respectively.

Fertilizers, Spring Wheat Planted Acres Treated
Minnesota and Program States: 2022



Pesticides, Spring Wheat Planted Acres Treated
Minnesota and Program States: 2022



Pesticide Use on Spring Wheat – Minnesota and Program States: 2022

Active ingredient	Minnesota			Program states ¹		
	Planted acres treated ²	Yearly rate	Total applied	Planted acres treated ²	Yearly rate	Total applied
	(percent)	(lbs per acre)	(1,000 lbs)	(percent)	(lbs per acre)	(1,000 lbs)
Fungicide						
Propiconazole	47	0.083	49	22	0.083	193
Prothioconazole	46	0.108	62	17	0.095	173
Tebuconazole	50	0.115	71	21	0.107	239
Total ³	67		190	45		811
Herbicide						
Bromoxynil Heptan	28	0.092	32	17	0.100	185
Bromoxynil Octanoate	57	0.140	100	45	0.158	774
Clopyralid	(D)	(D)	(D)	3	0.093	25
Clopyralid Mono Salt	12	0.086	13	26	0.092	263
Fenoxaprop-P-Ethyl	(D)	(D)	(D)	7	0.032	24
Fluroxypyr 1-MHE	31	0.093	36	48	0.095	492
MCPA, 2-Ethylhexyl	27	0.370	126	18	0.302	596
Methanone	51	0.030	19	32	0.029	100
Pinoxaden	25	0.071	22	17	0.052	94
Thiencarbazone-Methyl	27	0.005	2	16	0.004	8
Thifensulfuron	(D)	(D)	(D)	10	0.010	11
Tribenuron-Methyl	(D)	(D)	(D)	10	0.008	9
Total ³	94		606	95		9,096
Insecticide						
Lambda-Cyhalothrin	31	0.028	11	21	0.025	55
Total ³	34		13	25		71

(D) Withheld to avoid disclosing data for individual operations.

¹ The 6 program states surveyed about Spring Wheat in the 2022 ARMS were Idaho, Minnesota, Montana, North Dakota, South Dakota, and Washington.

² Acres with multiple nutrients are counted in each category.

³ Total Fungicide, Herbicide, and Insecticide includes pesticides that are not listed in this table.

Fertilizer Use on Spring Wheat – Minnesota and Program States: 2022

Active ingredient	Minnesota			Program states ¹		
	Planted acres treated ²	Yearly rate	Total applied	Planted acres treated ²	Yearly rate	Total applied
	(percent)	(lbs per acre)	(1,000 lbs)	(percent)	(lbs per acre)	(1,000 lbs)
Nitrogen	98	122	148,800	96	80	836,700
Phosphate	86	46	49,600	82	34	299,900
Potash	43	35	18,800	12	19	24,500
Sulfur	(D)	(D)	(D)	31	11	35,500

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² Acres with multiple nutrients are counted in each category.

Pest Management Practices on Spring Wheat – Minnesota and Program States: 2022

	Minnesota		Program states ¹	
	% of area planted	% of operations	% of area planted	% of operations
Avoidance				
Crop or plant variety chosen for specific pest resistance	35	20	35	35
Planting locations planned to avoid cross infestation of pests	41	21	19	18
Planting or harvesting dates adjusted	4	2	17	15
Rotated crops during past 3 years	90	84	73	72
Row spacing, plant density, or row directions adjusted	1	1	16	14
Monitoring				
Diagnostic laboratory services used for pest detection via soil or plant tissue analysis	15	12	4	5
Field mapping data used to assist decisions	31	19	16	17
Scouted -				
established process used	29	19	16	15
for pests due to a pest advisory warning	21	11	13	10
for pests due to a pest development model	18	11	7	6
for pests or beneficial organisms-not scouted	2	4	1	3
for pests or beneficial organisms by conducting general observations while performing routine tasks	12	22	21	21
for pests or beneficial organisms by deliberately going to the crop acres or growing areas	86	74	78	76
Weather data used to assist decisions	55	54	65	61
Written or electronic records kept to track pest activity	53	40	46	41
Prevention				
Beneficial insect or vertebrate habitat maintained	18	14	12	11
Crop residues removed or burned down	3	4	2	3
Equipment and implements cleaned after field work to reduce spread of pests	82	57	69	64
Field edges, ditches, or fence lines chopped, sprayed, mowed, plowed, or burned	64	58	36	38
Field left fallow previous year to manage insects	0	0	7	8
Flamer used to kill weeds	0	0	1	(Z)
No-till or minimum-till used	32	30	70	64
Plowed down crop residue using conventional tillage	37	32	15	18
Seed treated for insect or disease control after purchase	53	26	37	32
Water management practices used	0	0	(Z)	(Z)
Suppression				
Beneficial organisms applied or released	0	0	2	2
Biological pesticides applied	0	0	1	(Z)
Buffer strips or border rows maintained to isolate organic from non-organic crops	0	0	4	3
Floral lures, attractants, repellants, pheromone traps, or biological pest controls used	0	0	0	0
Ground covers, mulches, or other physical barriers maintained	44	48	46	48
Pesticides with different mechanisms of action to keep pest from becoming resistant to pesticides	17	9	39	32
Scouting data compared to published information to assist decisions	41	27	21	18
Trap crop grown to manage insects	0	0	(Z)	(Z)

(Z) Less than half of the unit shown.

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More information and data for the USDA NASS Chemical Use Program can be found at:

https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Chemical_Use/.