



Minnesota Ag News – Chemical Use

Oats: Fall 2023



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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 2023, NASS collected data for the 2023 crop year, the one-year period beginning after the 2022 harvest and ending with the 2023 harvest, about chemical use and pest management practices used on oat 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 oat acres planted in Minnesota. Farmers applied nitrogen to 40 percent of planted acres at an average rate of 55 pounds per acre per year. Macronutrients phosphate and potash were applied at an average rate of 42 and 56 pounds per acre per year, respectively. The secondary macronutrient, sulfur, was applied to 14 percent of acres planted to oats.

Pesticide Use: Herbicide active ingredients were applied to 31 percent of the oat acres planted. Bromoxynil octanoate and MCPA, 2-ethylhexyl were the most widely used pesticide on oat acres, but 2, 4-D, dimeth. salt was the active ingredient with the greatest total amount applied. Fungicides were applied to 12 percent of oat acres planted in Minnesota.

Fertilizer Use on Oats – Minnesota and Program States: 2023

Active ingredient	Minnesota			Program states ¹		
	Planted acres treated	Yearly rate	Total applied	Planted acres treated	Yearly rate	Total applied
	(percent)	(lbs per acre)	(1,000 lbs)	(percent)	(lbs per acre)	(1,000 lbs)
Nitrogen	40	55	3,600	51	51	49,800
Phosphate	32	42	2,300	35	37	24,700
Potash	37	56	3,400	25	49	23,800
Sulfur	14	14	300	12	13	2,900

¹ The 17 program states surveyed about oats in the 2023 ARMS were California, Georgia, Idaho, Illinois, Iowa, Kansas, Michigan, Minnesota, Montana, Nebraska, New York, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, and Wisconsin.

Pesticide Use on Oats – Minnesota and Program States: 2023

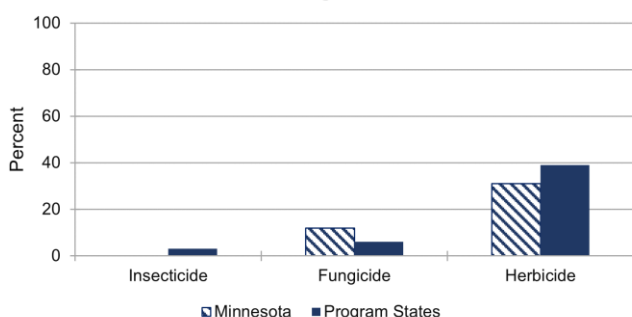
Active ingredient	Minnesota			Program states ¹		
	Planted acres treated	Yearly rate	Total applied	Planted acres treated	Yearly rate	Total applied
	(percent)	(lbs per acre)	(1,000 lbs)	(percent)	(lbs per acre)	(1,000 lbs)
Fungicide						
Fluxapyroxad	4	0.033	(Z)	1	0.034	(Z)
Propiconazole	4	0.063	(Z)	3	0.113	6
Pyraclostrobin	5	0.085	1	1	0.077	2
Total ²	12		3	6		14
Herbicide						
2, 4-D, 2-EHE	4	0.539	3	7	0.532	70
2, 4-D, dimeth. salt	8	0.515	7	9	0.655	118
Bromoxynil octanoate	9	0.300	5	3	0.251	15
MCPA, 2-ethylhexyl	9	0.343	5	4	0.346	24
MCPA, dimethyl. salt	5	0.411	3	4	0.382	31
Total ²	31		33	39		626
Insecticide						
Total ²	(D)		(D)	3		17

(Z) Less than half of the unit shown.

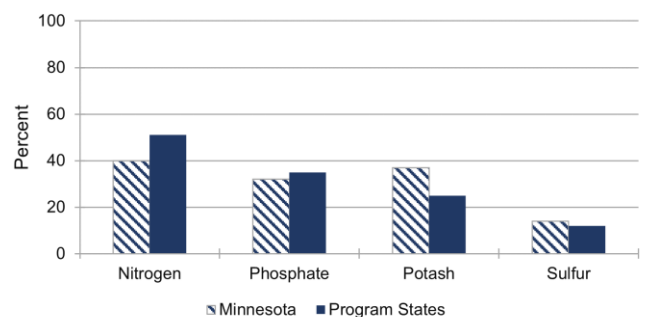
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² Total Fungicide, Herbicide, and Insecticide include pesticides not listed in the table.

Pesticides, Percent of Oat Planted Acres Treated
Minnesota and Program States: 2023



Fertilizers, Percent of Oat Planted Acres Treated
Minnesota and Program States: 2023



Crop rotation was the top pest management practice on Oats acreage in Minnesota.

Pest Management Practices on Oats – Minnesota and Program States: 2023

	Minnesota		Program states ¹	
	% of area planted	% of operations	% of area planted	% of operations
Avoidance				
Crop or plant variety chosen for specific pest resistance	24	33	16	17
Planting locations planned to avoid cross infestation of pests	11	9	9	10
Planting or harvesting dates adjusted	6	6	11	11
Rotated crops during past 3 years	76	78	67	71
Row spacing, plant density, or row directions adjusted	3	3	7	7
Monitoring				
Diagnostic laboratory services used for pest detection via soil or plant tissue analysis	1	1	1	1
Field mapping data used to assist decisions	5	2	5	4
Scouted -				
established process used	7	5	5	4
for pests due to a pest advisory warning	1	(Z)	2	1
for pests due to a pest development model	5	3	4	3
for pests or beneficial organisms-not scouted	22	28	25	32
for pests or beneficial organism by conducting general observations while performing routine tasks	27	34	35	39
for pests or beneficial organism by deliberately going to the crop acres or growing areas	51	38	40	29
Weather data used to assist decisions	22	12	27	22
Written or electronic records kept to track pest activity	27	25	15	12
Prevention				
Beneficial insect or vertebrate habitat maintained	1	2	8	7
Crop residues removed or burned down	5	2	6	8
Equipment and implements cleaned after field work to reduce spread of pests	59	58	41	36
Field edges, ditches, or fence lines chopped, sprayed, mowed, plowed, or burned	49	42	29	27
Field left fallow previous year to manage insects	0	0	2	2
Flamer used to kill weeds	(Z)	(Z)	(Z)	(Z)
No-till or minimum-till used	33	34	48	42
Plowed down crop residue using conventional tillage	18	20	24	27
Seed treated for insect or disease control after purchase	1	1	3	4
Water management practices used	2	(Z)	2	1
Suppression				
Beneficial organisms applied or released	0	0	(Z)	(Z)
Biological pesticides applied	0	0	(Z)	(Z)
Buffer strips or border rows maintained to isolate organic from non-organic crops	2	5	8	6
Floral lures, attractants, repellants, pheromone traps, or biological pest controls used	0	0	1	(Z)
Ground covers, mulches, or other physical barriers maintained	35	37	37	31
Pesticides with different mechanisms of action to keep pest from becoming resistant to pesticides	7	4	8	7
Scouting data compared to published information to assist decisions	9	4	7	5
Trap crop grown to manage insects	0	0	1	1

(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/.