

**Nitrogen Fertilizer Utilization by Winter Wheat at Minot**

Planting	Applied Nitrogen*			Heading Date	NDVI	Plant Height	Test Weight	Grain Protein	Grain Yield
	E Spg	Jointing	Flowering						
----- Pounds per acre -----				June	0-1	inches	lb/bu	%	bu/A
0	0	0	0	6	0.55	21	57.5	14.7	32.5
50	0	0	0	7	0.55	20	57.5	16.0	27.3
0	50	0	0	6	0.60	22	56.4	15.5	30.4
0	0	50	0	5	0.53	21	56.5	15.8	30.5
100	0	0	0	5	0.55	21	58.0	16.1	32.6
0	100	0	0	5	0.55	21	56.9	16.5	28.8
0	0	100	0	7	0.59	21	56.3	16.1	23.4
50	50	0	0	5	0.61	21	58.1	15.6	35.5
0	50	50	0	6	0.59	20	56.6	16.3	25.9
50	0	50	0	6	0.58	21	55.7	15.7	23.4
0	0	0	25	6	0.56	21	55.9	15.6	23.3
50	0	0	25	6	0.57	20	57.6	16.1	25.3
0	50	0	25	6	0.55	21	55.0	16.2	23.5
50	50	0	25	5	0.59	22	55.9	16.5	28.8
100	0	0	25	6	0.65	22	54.9	15.7	26.8
0	100	0	25	6	0.62	22	55.8	16.1	28.3
C.V.%				20	11.2	6.6	2.5	3.0	16.2
LSD 0.05				NS	NS	NS	2.0	0.7	6.4

\*Applied N = actual pounds of N applied in a mid-row band at planting or surface applied as urea in the Spring. E Spg = May 7, Jointing = May 29, Flowering = June 14.

Residual soil N = 50 lbs/A.

NS = no statistical difference between fertilizer treatments.

Planting Date: Sept. 21, 2017

Planting Rate: 1.3 million PLS/A

Variety: Decade

Harvest Date: July 24

Previous Crop: Spring Wheat

Soil Type: Williams loam

**Summary:** The trial sustained extreme early season drought which affected overall growing conditions. Nitrogen fertilizer rates and application timing had no effect on heading date, NDVI (plant greenness) rating, or plant height. There were statistical differences between fertilizer treatments for test weight, grain protein and grain yields, however, specific trends relating to application timing and the quantity of nitrogen applied were not observed in this trial. Additional trials will need to be conducted in order to quantify meaningful economic nitrogen fertility management strategies for winter wheat production.