

Spring wheat response to preplant nitrogen, Wishek, 2008.

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The objective of this trial was to examine spring wheat performance with several urea rates, as an addition to a database to revise NDSU wheat N recommendations. Experimental design was a randomized complete block with four replications. The field trial was located at the Tri County off-station trial site near Wishek. Soil analysis from April 29, 2008 sampling indicated 6.3 pH, 2.4% organic matter, 41 lb/A nitrate-N and 3 ppm phosphorus. Illinois Soil N Test levels were 240 ppm at 0-6 inch depth and 196 ppm at 6-12 inch soil depth. Urea and NutriSphere-coated urea were preplant applied on April 29. 'Faller' HRS wheat was direct seeded on 2007 soybean ground at 1.25 million PLS/A on April 29. Rainfall totaling 0.58 inches (NDAWN) was received on May 1-2. The trial was harvested with a plot combine on August 18.

Plant height and lodging, seed yield, test weight, and seed count were similar among treatments (Table). Seed yield and size tended to increase with N treatments compared to the untreated check. Protein improved with all N treatments compared to the untreated check.

N application		Plant		Wheat seed			
Treatment	Rate	Height	Lodge	Yield	Test weight	Kernel weight	Protein
	lb N/ac	cm	0-9	bu/A	lb/bu	g/250	%
untreated check	x	67	2	24.3	59.1	8.1	12.9
urea	30	68	3	28.8	58.5	7.7	14.3
urea	60	68	2	25.2	57.7	7.5	14.6
urea	90	66	3	29.3	57.8	7.7	15.6
urea	120	61	3	28.1	57.7	7.7	15.9
NurtiSphere-coated urea	30	68	2	27.9	58.2	7.6	14.4
NurtiSphere-coated urea	60	65	3	25.7	57.8	7.5	15.3
NurtiSphere-coated urea	90	68	3	28.6	57.9	7.6	15.7
mean		66	3	27.2	58.1	7.70	14.8
C.V. (%)		6.4	19.1	11.5	1.5	3.6	6.7
LSD (0.05)		NS	NS	NS	NS	NS	1.5