Spring wheat response to preplant nitrogen, Wishek, 2007 (G. Endres, T. Indergaard and D. Franzen).

The objective of this NDSU field study was to examine spring wheat performance with several dry nitrogen rates and sources. Experimental design was a randomized complete block with four replications. Soil analysis from June 5 sampling indicated 6.0 pH, 4.3% organic matter, 94 lb/A nitrate-N and 8 ppm phosphorus. Illinois Soil N Test levels were 259 ppm at 0-6 inch depth and 194 ppm at 6-12 inch depth. Preplant urea and an experimental Georgia-Pacific granular N (43-0-0) were applied at 30, 60 and 90 lb nitrogen/A on April 24. 'Glenn' HRS wheat was direct seeded on 2006 wheat ground at 1.25 million PLS/A on April 24. Rainfall totaling 0.95 inches was received on May 4. The trial was harvested with a plot combine on August 13.

Seed yield tended to increase with increasing N, while 60 lb/A of the Georgia-Pacific N resulted in greater yield compared to the untreated check (Table). Protein improved with all N treatments compared to the untreated check except 30 lb/A urea.

Table. Spring wheat response to preplant N, Wishek, 2007.

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/1000	%
untreated check		76	3	25.9	61.9	29.70	15.1
urea	30	82	2	29.8	61.6	30.27	15.4
urea	60	78	3	30.9	61.5	30.04	15.8
urea	90	83	2	31.9	61.0	29.90	16.1
GP dry	30	79	3	30.3	61.8	31.07	15.5
GP dry	60	82	3	37.4	61.5	30.75	15.9
GP dry	90	82	3	31.6	61.7	30.50	16.0
mean		80	3	31.1	61.6	30.32	15.7
C.V. (%)		4.6	28.7	12.0	0.7	2.7	1.4
LSD (0.05)		NS	NS	5.6	NS	NS	0.3