

Spring wheat response to preplant-applied liquid nitrogen sources, Carrington, 2006 (G. Endres and D. Franzen).

The objective of this study was to examine spring wheat performance to two sources of liquid nitrogen. Experimental design was a randomized complete block with four replications. The field study was conducted by the NDSU Carrington Research Extension Center on a Heimdahl-Emrich loam soil. Spring soil analysis indicated 3.4% organic matter, 6.8 pH, 44 lb/A nitrate-N and 15 ppm phosphorus. Illinois Soil N Test levels were 281 ppm at 0-6 inch depth and 188 ppm at 6-12 inch depth. Urea-ammonium nitrate, Nitramin (Georgia-Pacific 30-0-0 urea-polymer), or 50/50% combinations were preplant-applied using stream nozzles at 45, 90, 135 and 180 lb nitrogen/A on April 26. The N was incorporated twice at a one-inch depth using a culti-harrow on April 27. Rainfall totaling 0.47 inches was received on April 27-28. 'Alsen' HRS wheat was direct-seeded into wheat stubble at 1.5 million seeds/A on April 27. The trial was harvested with a plot combine on August 1.

No differences in plant height, yield, test weight or kernel weight occurred with N treatments compared to the untreated check (Table). Protein increased with 90, 135, and 180 lb/acre N with all three N formulations, and with 45 lb/acre of UAN compared to the untreated check.

Table. Spring wheat response to preplant-applied liquid nitrogen sources, Carrington, 2006.

Treatment	Wheat				
	Plant height inches	Yield bu/A	Test weight lb/bu	Kernel weight seeds/lb	Protein %
untreated check	28.0	41.6	58.5	11405	15.5
45 N UAN	29.0	44.4	57.4	11043	16.4
90 N UAN	27.5	42.7	58.0	10792	16.3
135 N UAN	28.9	46.5	57.8	10458	16.5
180 N UAN	28.0	40.3	57.4	10807	16.6
45 N Nitramin	28.3	45.2	57.9	11011	16.0
90 N Nitramin	28.9	47.2	58.0	10945	16.2
135 N Nitramin	28.3	44.9	57.5	11385	16.4
180 N Nitramin	28.4	42.7	57.5	10781	16.5
45 N mix	27.1	43.4	58.6	10992	15.6
90 N mix	27.6	42.9	57.9	10682	16.2
135 N mix	27.8	42.6	58.2	11024	16.5
180 N mix	27.6	41.8	57.2	10524	16.4
mean	28.1	43.5	57.8	10911	16.2
C.V. (%)	4.8	8.9	1.4	4.7	2.6
LSD (0.05)	NS	NS	NS	NS	0.6