

**No-till HRS wheat response to nitrogen application methods, Juanita, 2008.**

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The objective of this study was to compare HRS wheat performance with nitrogen (N) applied as anhydrous ammonia through an Exactrix system compared to surface application of ammonium nitrate (AN). The field study was conducted by the NDSU Carrington Research Extension Center in cooperation with Kevin Black in a commercial wheat field near Juanita. Experimental design was a randomized complete block with four replications. Spring soil analysis of the trial area indicated 2.3% organic matter, 7.7 pH, 28 lb/A nitrate-N, and 7 ppm phosphorus. 'Howard' was direct-seeded into soybean stubble with 60 lb/A of 11-52-0 applied in-furrow on April 28. Anhydrous ammonia at 82 lb/A was applied with an Exactrix system during crop seeding. AN was broadcast on April 30 at N rates of 52, 82, and 112 lb/A. Wheat plant population was measured at the 1- to 2-leaf stage on May 23. The trial was harvested with a plot combine on August 19.

Plant lodging did not occur in the trial. Plant height generally increased with N compared to the untreated check (Table). Plant stand, test weight and seed size were generally similar among N treatments and the untreated check. All N treatments generally improved seed yield and protein compared to the untreated check. The equal and high rate of broadcast N generally improved yield and protein compared to the rate of Exactrix N.

Table. No-till wheat response to N application methods, Juanita, 2008.							
N application		Plant		Seed			
Method	Rate	Stand	Height	Yield	Test weight	number/lb	Protein
	lb N/ac	plt/A	cm	bu/A	lb/bu		%
Exactrix N	82	687929	78	45.2	60.2	14264.4	12.6
untreated check	0	636135	75	38.5	61.1	14210.7	11.3
broadcast N	52	628167	84	52.2	59.8	14540.9	13.0
broadcast N	82	614887	84	56.3	59.2	14367.5	13.9
broadcast N	112	737067	86	61.1	58.7	14952.3	14.3
Exactrix N	82	753004	84	50.8	59.1	13843.1	12.3
mean		676,198	82	10.1	59.7	14363	12.9
C.V. (%)		19.9	4.3	50.7	3.1	3.2	3.3
LSD (0.05)		NS	5	7.8	NS	NS	0.6