

Soybean Response to 10-34-0 Placement and Rates, Carrington, 2008

Gregory Endres and Paul Hendrickson

A field study was conducted at the NDSU Carrington Research Extension Center to examine the performance of soybean with 10-34-0 placement and rates applied at planting. Experimental design was a randomized complete block with four replications. The previous crop was spring wheat. The direct-seeded trial was established on a Heimdal Emrick loam soil with 121 lbs./A (0-24") nitrate-N (high), 17 ppm P (high), 337 ppm K, 58 lbs./A (0-24") S, 0.1% carbonate, 0.21 mmho/cm (0-6") and 0.33 mmho/cm (6-24") soluble salts, and 5.6 pH. Dairyland Seeds 'DSR0401' was planted in 30-inch rows at 180,000 seeds/A on May 21. The trial was harvested with a plot combine on October 16.

In-furrow application of 10-34-0 extended plant emergence by 10-11 days compared to the untreated checks (Table). Plant density and seed yield were adversely affected by in-furrow application, while seed size was larger compared to the untreated checks. Soybean emergence, plant stand, and seed yield and quality generally were similar among 2x2 and mid-row 10-34-0 placement and rates compared to the untreated checks.

Table. Soybean response to fertilizer placement and rates.

Treatment	Plant emergence date Jday	Plant density plt/A	Yield bu/A	Test weight lb/bu	Seeds/lb	Protein %	Oil %
untreated check	155	192235	33.1	56.6	3500	35.9	17.9
untreated check	156	182939	34.6	56.5	3504	35.5	18.0
untreated check	155	187255	30.6	56.5	3615	36.2	17.8
mid-row 4 gal/A 10-34-0	156	186923	33.2	56.4	3575	36.0	17.7
mid-row 8 gal/A 10-34-0	156	193895	33.2	56.6	3517	35.6	18.0
2x2 4 gal/A 10-34-0	156	188583	33.5	56.7	3524	36.1	17.9
2x2 8 gal/A 10-34-0	156	195223	30.3	56.5	3573	36.4	17.4
in-furrow 4 gal/A 10-34-0	166	33201	24.5	57.1	3405	34.9	18.1
in-furrow 8 gal/A 10-34-0	166	20585	18.9	57.3	3314	35.3	17.7
mean	157	165725	30.8	56.6	3518	35.8	17.8
C.V. (%)	0.4	7.0	9.7	0.8	3.0	1.9	1.6
LSD (0.05)	1	16,562	4.3	NS	151	NS	NS