

Soybean response to sulfur, Wishek, 2018.

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A field trial was conducted at the CREC Tri-county off-station crop research site near Wishek with support from the ND Soybean Council to evaluate soybean response to soil- and foliar-applied sulfur fertilizer. Experimental design was a randomized complete block with four replications. Previous crop was soybean in 2017. Spring 2018 soil test indicated 19 ppm P (Olsen), 318 ppm K, 4.5% organic matter, 4.8 pH (0-6" depth), and 0.31 mmho/cm soluble salts (0-6" depth). Preplant fertilizer treatments were applied on May 25. Proseed '30-20 RR2Y' was seeded in 14-inch rows on May 25. Foliar S was applied on July 18 to R2-stage soybean with a hand-boom sprayer with 8001 flat-fan nozzles delivering 14 gpa at 35 psi. Rainfall totaled 13.7 inches during May through September (NDAWN). Seed was harvested with a plot combine on September 26.

Trial plant density averaged 130,000 plants/acre on June 21 at the V2 growth stage. Seed yield, test weight, seed count, and seed oil and protein content were statistically similar among treatments including the untreated and fertilizer (11-52-0) checks (Table).

Table.								
Treatment				Seed				
Number	Product ^a	Product rate/acre	Application method/timing	Yield	Test weight	Number /lb	Oil	Protein
				bu/A	lb/bu		%	%
1	untreated check	x	x	53.5	54.7	2930	18.9	35.9
2	11-52-0	42.5 lb	Preplant broadcast	56.1	54.6	2980	18.8	35.9
3	MES15 - 10 lb S	67 lb		54.3	55.0	2950	18.9	35.7
4	MES15 - 20 lb S	134 lb		52.9	55.1	2880	18.7	36.1
5	MAX-IN S	64 fl oz	R2	53.1	54.8	2950	18.8	35.7
mean				54.0	54.8	2940	18.8	35.9
CV (%)				11.5	0.7	4.6	1.5	1.9
LSD (0.05)				NS	NS	NS	NS	NS

^aAll treatments included seed with rhizobia bacteria inoculant.