

Soybean response to selected plant establishment and foliar inputs, Wishek, 2015.

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A field trial was conducted at the CREC Tri-county off-station crop research site near Wishek to examine the response of soybean to seed inoculation and fungicide, sulfur fertilizer, and special foliar inputs. Experimental design was a randomized complete block with four replications. Spring 2014 soil test indicated 65 lb nitrate N/acre, 23 ppm P (Olsen), 3.5% organic matter, and 5.4 and 6.5 pH and 0.26 and 0.32 mmho/cm soluble salts (0-6" and 6-24" depths). Previous crop was spring wheat in 2014 and soybean in 2013. Dairyland Seed 'DSR0404' Roundup Ready soybean was planted in 14-inch rows on May 29. Seed was harvested with a plot combine on October 6.

Plant emergence date was similar among treatments (June 9). Plant stand among treatments was similar to the untreated check (183,600 plants/acre) (Table). Plant and pod height measured on October 6 was similar among treatments. Seed yield was statistically similar but generally tended to increase with all treatments compared to the untreated check. Yield with double inoculation (treatment #5) tended to be greater versus granular or liquid inoculation. Seed size tended to be larger with multiple inputs (treatment #10) compared to other treatments and the untreated check. Seed oil and protein were similar among treatments.

Table.											
Treatment				Plant		Pod height (Oct 6) ^a	Seed				
Number	Product	Product rate/acre	Application method/timing	Stand (June 23) plt/A	Height (Oct 6) cm		Yield bu/A	Test weight lb/bu	Number /lb	Oil %	Protein %
1	untreated check	x	x	183,550	40	7	22.4	56.8	3240	15.7	36.3
2	MES15	67 lb	Preplant broadcast	167,190	41	6	22.7	56.9	3296	15.8	35.6
3	Rhizo Flo granular inoculant	6.5 lb	in-furrow	182,840	42	6	24.5	57.1	3208	16.1	35.8
4	Optimize liquid inoculant	2.8 fl oz/100 lb seed	seed	205,611	37	8	22.2	56.9	3311	15.3	36.9
5	Rhizo Flo and Optimize	same as above	in-furrow and seed	219,130	43	12	25.4	57.1	3268	15.4	36.8
6	Apron Maxx RTA	5 fl oz/100 lb seed	seed	167,190	42	7	26.8	57.0	3184	15.9	35.8
7	Ascend	4.5 fl oz	R4	175,731	40	8	23.8	57.3	3224	15.9	36.0
8	Priaxor + NIS	4 fl oz + 0.25%	R4	184,981	39	9	24.8	56.8	3202	15.9	35.7
9	MAX-IN Ultra ZMB	32 fl oz	R4	182,840	41	9	23.7	57.0	3276	15.6	36.3
10	MES15 + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + NIS + MAX-IN Ultra	same as above	Preplant broadcast + in-furrow + seed/ R4	192,090	39	8	23.9	56.8	3089	15.6	36.1
mean				186,110	40	8	24.0	57.0	3230	15.7	36.1
CV (%)				11.3	8.3	33.3	15.7	0.6	4.1	2.3	2.1
LSD (0.05)				30,590	NS	NS	NS	NS	NS	NS	NS

^aDistance from soil to base of pod.