

Soybean Response to Special Foliar Inputs, Carrington, 2009

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A field trial was conducted at the NDSU Carrington Research Extension Center to examine the impact of foliar inputs on soybean seed yield and quality. Experimental design was a randomized complete block with four replications. The previous crop was spring wheat. The irrigated, conventional-till trial was established on a Heimdal-Emrick loam soil with 83 lb/A (0-24") nitrate-N, 20 ppm P, 183 ppm K, 20 lb/A (0-24") Cl (low), 80 lb/A (0-24") S, 1.4 ppm B, 1.5 ppm Zn, 18.4 ppm Fe, 4.1 ppm Mn, 0.66 ppm Cu, 562 ppm Mg, 3095 ppm Ca, 0% carbonate, 0.29 mmho/cm (0-6") and 0.33 mmho/cm (6-24") soluble salts, 20.8 meq CEC, 3.8% organic matter and 7.5 pH. Inoculated Dairyland Seeds 'DSR0401' was planted in 30-inch rows on May 21. POST foliar treatments were applied with a CO₂-pressurized hand-boom sprayer delivering 17 gal/A at 35 psi with 8001 flat-fan nozzles. V3 growth stage treatments were applied on July 6 and R2-3 stage treatments were applied on July 28. Rainfall during June through September totaled 7.3 inches, plus 4.5 inches was applied by center pivot. The trial was harvested with a plot combine on October 13.

'GreenSeeker' readings taken on August 11 indicated no difference among treatments for green plant color (table). Visually inspections on August 24 (R5 stage), September 4 (R6 stage), and September 18 (R7 stage) indicated similar foliage color among treatments. Soybean plant height and maturity, and seed yield and quality were similar among treatments including the untreated check.

No.	Company	Treatment				Plant			Seed yield bu/A	Test weight lb/bu	Seeds/ lb	Oil %	Protein %	
		Name ¹	Rate	Unit	Timing	Green color ² NDVI	PM Jday	Ht in						
1	x	untreated check	x	x	x	0.91	270	32	51.2	57.2	2735	19.1	37.6	
2	Winfield Solutions	AGM 07027	32	fl oz/a	V3	0.91	270	32	50.9	57.0	2636	19.0	37.7	
3		AGM 05001	32	fl oz/a	V3	0.91	270	31	54.2	56.9	2706	19.0	37.8	
4		AGM 05001	32	fl oz/a	V3	0.91	270	32	48.7	56.9	2698	19.0	37.5	
5		AGM 08005	3.2	fl oz/a	V3	0.91	270	31	54.5	56.7	2626	19.1	37.3	
6		AGM 09030	64	fl oz/a	V3	0.91	270	31	51.4	56.9	2645	19.0	37.5	
7		AGM 09013	8	fl oz/a	V3	0.91	270	31	50.0	56.7	2618	18.9	37.6	
8		Nortrace	6-0-0-9Zn	32	fl oz/a	V3	0.91	270	32	49.7	56.7	2724	19.0	37.3
9		TJ Technologies	Sufl/Can/Soy Mix	48	fl oz/a	V3	0.91	270	25	49.8	56.7	2674	19.0	37.4
10	EMD Crop BioScience	LCO Foliar	4	fl oz/a	V3	0.91	270	32	48.1	56.5	2636	18.9	37.5	
11	BASF	Headline	6	fl oz/a	R2-3	0.91	269	32	51.0	56.8	2657	19.0	37.3	
12		NIS	0.3	%v/v	R2-3	0.91	270	32	51.2	56.7	2633	19.1	37.5	
13	Helena	CoRon	64	fl oz/a	R2-3	0.91	269	32	54.3	56.9	2657	19.1	37.5	
14	Agro-Culture Liquid	Micro500	32	fl oz/a	R2-3	0.91	270	31	55.1	56.6	2603	19.1	37.4	
15		Sufl/Can/Soy Mix	48	fl oz/a	V3	0.91	270	31	52.6	56.8	2643	19.0	37.2	
		LCO Foliar	4	fl oz/a	V3									
		Headline	6	fl oz/a	R2-3									
		NIS	0.3	%v/v	R2-3									
		CoRon	64	fl oz/a	R2-3									
Mean						0.91	270	31	51.5	56.8	2659	19.0	37.5	
C.V. (%)						0.51	0.25	12	7.9	0.6	2.6	0.8	0.7	
LSD (0.05)						NS			NS					

¹NIS = Induce.