

Soybean response to selected inputs, Carrington, 2007

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A field study was conducted at the NDSU Carrington Research Extension Center to examine the performance of selected 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 37 lb/A (0-24") nitrate-N, 12 ppm P₂₀₅, 149 ppm K₂O, 24 lb/A (0-24") Cl, 114 lb/A (0-24") S, 0.9 ppm B, 8.3 ppm Zn, 2.9 ppm Mn, 0.54 ppm Cu, 496 ppm Mg, 2467 ppm Ca, 0.0% carbonate, 0.24 mmho/cm (0-6") and 0.34 mmho/cm (6-24") soluble salts, 3.1% organic matter and 7.6 pH. 'SeedProd' and 'N-Hibit' were applied to seed just prior to planting. Inoculated NuTech 'NT-0090 RR' soybean was planted in 7-inch rows at 175,000 pls/A on May 28. See table for treatment descriptions. POST treatments were applied with a CO₂-pressurized hand-boom sprayer delivering 14 gal/A at 30 psi with 8001 flat-fan nozzles. The V3 growth stage treatments were applied on July 2, R1 growth stage treatments were applied on July 9, and R2 growth stage treatments were applied on July 20. The sequential sugar treatment (number 15) was applied eight times at 4 to 10 day intervals, starting July 13 at R1 growth stage and ending August 31 at R6 growth stage. The trial was harvested with a plot combine on October 22.

Soybean stand was higher with SeedProd compared to the untreated check, while stands with other seed-applied treatments were less than the untreated check (Table). Soybean plant maturity and height, and seed quality were similar among treatments including the untreated check. Seed yield was similar among treatments, except with the sequentially-applied sugar (treatment 15) that yielded less than the untreated check.

Table. Soybean response to selected inputs, Carrington, 2007.

No.	Company	Name	Treatment			Stand plts/A	Plant Height inches	PM Jday	Seed Yield bu/A	Test Weight lb/bu	Seeds/ lb	Oil %	Protein %
			Rate	Unit	Timing								
1	x	untreated check	x	x	x	180000	36	265	58.0	57.9	3441	18.3	31.6
2	Midwest Ag Products	SeedProd	1.6	oz/100 lb seed	seed	196360	36	265	60.5	57.7	3398	18.2	32.1
	Midwest Ag Products	CropProd	10	fl oz/a	R2								
3	Eden Bioscience	N-Hibit	0.33	oz/A	seed	170040	35	265	56.6	57.9	3402	18.2	32.1
	Eden Bioscience	ProAct	0.5	oz/A	R1								
4	Helena	Zinc	5	lb/A	furrow	177150	37	265	58.5	57.8	3355	18.3	31.8
5	TJ Technologies	Sufl/Can/Soy Mix	48	fl oz/A	R2	x	36	265	60.6	57.6	3383	18.4	31.6
6	National Stimulants	NBS	12.8	fl oz/A	V3	x	35	265	58.5	57.7	3328	18.3	31.9
7		sugar	1	lb/A	V3	x	37	265	60.2	57.6	3289	18.5	31.9
		sugar	1	lb/A	R2								
8	Nortrace	6-0-0-9Zn	32.0	fl oz/A	V3	x	36	264	58.0	57.8	3405	18.5	31.7
9	WinField	MAX-IN	32	fl oz/A	V3	x	37	264	59.9	57.5	3359	18.3	31.6
		MAX-IN	32	fl oz/A	R2								
10	WinField	MAX-IN MnNF	32	fl oz/A	V3	x	37	265	60.1	57.8	3342	18.4	31.8
		MAX-IN MnNF	32	fl oz/A	R2								
11	BASF	Headline	3	fl oz/A	V3	x	38	266	59.7	57.9	3261	18.1	31.9
		NIS	0.25	% v/v	V3								
		Headline	6	fl oz/A	R2								
		NIS	0.25	%v/v	R2								
12	BASF	Headline	6	fl oz/A	R2	x	37	266	59.4	57.9	3289	18.2	32.1
		NIS	0.25	%v/v	R2								
13	Helena	CoRon	64	fl oz/A	R1	x	36	265	58.7	57.7	3399	18.3	31.8
14	Midwest Ag Products	SeedProd	1.6	oz/100 lb seed	seed	150120	38	266	58.1	57.6	3315	18.2	32.1
	Nortrace	6-0-0-9Zn	32.0	fl oz/A	V3								
	Helena	CoRon	64	fl oz/A	R1								
	BASF	Headline	6	fl oz/A	R2								
		NIS	0.25	%v/v	R2								
	Midwest Ag Products	CropProd	10	fl oz/A	R2								
15		sugar	1	lb/A	R1 to R6	x	35	265	53.7	57.7	3399	18.2	32.2
Mean						174730	36	265	58.7	57.7	3359	18.3	31.9
C.V. (%)						10.5	4.7	0.3	4.4	0.5	2.5	1.1	1.6
LSD (0.05)						8970	NS	NS	3.7	NS	NS	NS	NS