Soybean response to selected inputs, Carrington, 2006. (Gregory Endres and Blaine Schatz) A field study was conducted at the NDSU Carrington Research Extension Center to examine the performance of selected inputs to on soybean seed yield and quality. Experimental design was a randomized complete block with four replications. The 2005 previous crop was wheat. The dryland, conventional-till trial was established on a Heimdal loam soil with 148 lb/A (0-24") nitrate-N, 7 ppm P205, 125 ppm K2O, 24 lb/A (0-24") Cl, 258 lb/A (0-24") S, 1.1 ppm B, 0.4 ppm Zn, 3.3 ppm MN, 0.61 ppm Cu, 714 ppm Mg, 3332 ppm Ca, 0.6% carbonate, 0.35 mmho/cm (0-6") soluble salts, 3.1% organic matter and 8.2 pH. The preplant incorporated fertilizer treatment was applied on May 22. 'Quickroots' and 'SeedProd' were applied to seed just prior to planting. Inoculated 'RG200RR' soybean was planted in 30-inch rows on May 23. In-furrow treatments were applied with water at a rate of 5 gal/A. See table for treatment descriptions. POST treatments were applied with a CO2-pressurized hand-boom sprayer delivering 17 gal/A at 32 psi with 8002 flat-fan nozzles. The V3 growth stage treatments were applied on June 23 and R2-3 growth stage treatments were applied on July 13. Hail occurred on August 12 at the R6 growth stage causing minor foliage damage. May through August rainfall totaled 7.8 inches compared to the long-term average of 10.4 inches. The trial was harvested with a plot combine on September 12.

Soybean stand was similar among soil- and seed-applied treatments (Table). Soybean plant development, seed yield, seed count, and oil % were similar among treatments. Test weight was similar among all treatments compared to the untreated except the sugar treatment resulted in reduced test weight. Seed protein was reduced with the combination of treatments (no. 20) compared to the untreated check.

Table.													
		Treatment				Plant			Seed	Test	Seeds/		
No.	Company	Name	Rate	Unit	Timing	Stand	Height	Maturity	yield	weight	lb	Oil	Protein
						no./A	inches	Jday	bu/A	lb/bu		%	%
1	x	untreated check	x	x	x	147746	22	245	26.2	58.0	3311	18.7	38.3
2	TJ Technologies, Inc.	Quickroots	7	g/200k seed	seed	155382	21	245	27.1	58.1	3211	18.7	38.6
3	Midwest Ag Products	SeedProd	1.6	oz/100 lb seed	seed								
	Midwest Ag Products	CropProd	6.4	fl oz/a	R2-3	158702	20	245	25.1	57.8	3228	18.6	38.9
4	AgGrowth Products	BTN+	2	gal/a	furrow	152062	22	244	24.5	58.0	3386	18.7	37.8
5		BTN+	4	gal/a	furrow	125501	21	245	27.2	57.7	3233	18.7	37.8
6		BTN+	2	gal/a	furrow								
	AgGrowth Products	T1	2.5	gal/a	R2-3	149406	20	245	24.2	58.2	3290	18.5	38.6
7		T1	2.5	gal/a	R2-3	x	22	245	27.9	57.9	3241	18.5	38.5
8	Stoller Enterprises	X-tra Power	32	fl oz/a	furrow								
	Stoller Enterprises	BioForge	16	fl oz/a	R2-3	151398	21	244	26.8	57.9	3316	18.9	37.7
9	Stoller Enterprises	Golden Harvest Plus GA	32	fl oz/a	furrow	141437	20	245	25.9	58.0	3184	18.6	39.2
10	x	P,K,Zn,Cu,Mg,Fe fertilizer blend	125	lb/a	PPI	x	21	244	27.8	58.0	3266	18.5	38.7
11	National Stimulants, LLC	NBS	12.8	fl oz/a	V3	x	21	245	24.7	58.2	3377	18.7	38.1
12	Helena	CoRon	10	gal/a	R2-3	x	21	244	23.7	58.2	3280	18.7	38.1
13	NWC, Inc.	9.5-0-0-4+10Zn	32	fl oz/a	V3	x	20	244	24.0	58.2	3232	18.5	39.0
14	Agriliance, LLC	MAX-IN	32	fl oz/a	V3		20	245	26.0	58.0	3251	18.6	37.9
15		MAX-IN	32	fl oz/a	R2-3	x	20	245	27.1	57.8	3241	18.5	38.9
16	BASF	Headline	3	fl oz/a	V3								
		NIS	0.25	% v/v	V3								
		Headline	6	fl oz/a	R2-3								
		NIS	0.25	%v/v	R2-3	x	22	245	27.5	57.9	3199	18.7	38.0
17		Headline	6	fl oz/a	R2-3								
		NIS	0.25	%v/v	R2-3	x	22	245	28.7	57.8	3240	18.7	37.9
18	TJ Technologies, Inc.	Sufl/Can/Soy Mix	48	fl oz/a	R2-3	x	21	244	26.5	58.0	3290	18.6	38.5
19	GroLand, Inc.	MegaGro	2	fl oz/a	furrow	142765	21	245	26.4	57.9	3215	18.5	38.2
20		X-tra Power	32	fl oz/a	furrow								
		9.5-0-0-4+10Zn	32	fl oz/a	V3								
		BioForge	16	fl oz/a	R2-3								
		Headline	6	fl oz/a	R2-3								
		NIS	0.25	%v/v	R2-3								
		CoRon	10	gal/a	R2-3	142765	21	244	27.0	58.1	3321	18.9	37.3
21		sugar	1	lb/a	R2-3	x	22	244	26.8	57.4	3270	18.7	37.8
Mean						146716	21	244	26.2	58.0	3265.8	18.7	38.3
C.V. (%)						10.6	7.2	0.2	9.6	0.5	3.8	1.2	1.9
LSD (0.05)						NS	NS	NS	NS	0.4	NS	NS	1.0