

# On-farm Soybean Seed Treatment Trials

## RFR-A1321

Seed treatments offer vital protection to germinating seeds and developing seedlings from fungi, insects, and nematodes. Also, legumes, such as soybeans, require the appropriate rhizobium bacteria in the soil for nitrogen fixation to occur. Treating the seed with an inoculum insures the crop can take advantage of this nitrogen fixation.

### Seed Protectants

#### Methods

Trials 1 through 3 compared insecticide-fungicide seed treatment Cruiser Maxx® with an untreated control. Trial 4 compared the use of nematicide seed treatment Votivo® with an untreated control. Treatments in all trials were replicated three or more times. See Table 1 for details on these trials.

#### Results

In two of three trials, soybeans treated with Cruiser Maxx® had a statistically greater grain yield than the untreated control (Table 2). This may have been the result of the fungicide, the insecticide, or the combination that caused a yield increase. Usually, a fungicide seed treatment is less likely to result in a yield increase as soybean planting date is delayed. In both trials, the planting date was late, but an unusually wet May and a cool early June may have been favorable for seedling diseases and resulted in a benefit from the seed treatment. There was no significant effect on grain yield with soybeans planted with seed treated with Votivo® compared with soybeans planted with untreated seed in Trial 4 (Table 2). This may indicate nematodes that feed on soybean roots were not abundant in the field.

**Table 1. Variety, row spacing, planting date, planting population, and previous crop in seed treatment trials in soybeans.**

Exp. No.	Trial	County	Variety	Row spacing (in.)	Planting date	Planting population (seeds/A)	Previous crop
130202	1	Buena Vista	FC26R229 SCN	30	6/24/13	138,500	Corn
130314	2	Monona	Renze 2889RR	30	6/2/13	139,000	Corn
130315	3	Monona	Renze 2889RR	30	5/13/13	139,000	Corn
130515	4	Story	FC 26R229	30	6/13/13	150,000	Corn

**Table 2. Yield from soybean seed treatment trials.**

Exp. No.	Trial	Treatment	Yield (bu/A)			
			Treatment	Control	Response	P-value
130202	1	Cruiser Maxx®	40.7	39.7	1.0	0.73
130314	2	Cruiser Maxx®	48.5	47.6	0.9	0.05
130315	3	Cruiser Maxx®	49.0	46.3	2.7	0.01
130515	4	Votivo®	48.6	50.9	-2.3	0.23

## Seed Inoculants

### Methods

Two trials conducted in Monona County compared soybeans treated with GraphEx® Inoculant with untreated seed. Treatments in all trials were replicated three or more times. See Table 3 for details.

### Results

There was no significant effect of the inoculant seed treatment on soybean grain yield in either trial (Table 4). Most research has indicated that grain yield increases are seldom seen when soybean seed is treated with an inoculant unless the field has not been planted to soybeans for at least five years. These fields have been in a corn-soybean rotation history for many years, so the results of these trials support the earlier research.

**Table 3. Variety, row spacing, planting date, planting population, previous crop, and tillage practices in seed inoculant trials in soybeans.**

Exp. No.	Trial	County	Variety	Row spacing (in.)	Planting date	Planting population (seeds/A)	Previous crop	Tillage practices
130316	1	Monona	Renze 2889RR	30	5/13/13	139,000	Corn	No-till
130327	2	Monona	Renze 28889RR	30	6/2/13	139,000	Corn	No-till

**Table 4. Yield from seed inoculant trials in soybeans.**

Exp. No.	Trial	Treatment	Yield (bu/A)			
			Treatment	Control	Response	P-value
130316	1	GraphEx® Inoculant	58.6	58.3	0.5	0.47
130327	2	GraphEx® Inoculant	58.4	57.7	0.7	0.39