Soybean Fungicide and Inoculant Evaluation

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Objective

To evaluate the effectiveness of Apron/Rival fungicide seed treatment and three soybean inoculants.

Background

Cooperator:	Defiance Ag Research	Herbicide:	PRE: Canopy XL (3.8 oz/A),
Nearest Town:	Ney		Lexone DF (4.0 oz/A),
Soil Type:	Roselm silty clay		2,4-D LV4 (0.75 pt/A),
	Paulding clay		AMS, COC, Citric acid
Drainage:	Surface		POST: Select (5 oz/A), 28% N, COC
Tillage:	No-till	Variety:	DeKalb 289
Previous Crop:	Corn	Seed Trt.:	Apron XL (0.25 oz/bu)
Planting Date:	May 20, 1998		Rival (2.4 oz/bu)
Planting Rate:	182,400 seeds/A		Hi-Stick (1.75 oz/bu)
Row Width:	7.5 inches		Hi-Stick NT (1.75 oz/bu)
			RhizoStick (0.2 lb/bu)

Methods

A three-year study (1998-2000) was initiated to compare one fungicide treatment against no fungicide treatment for control of early-season seedling blights such as Phytophthora and Rhizoctonia. The fungicide study included a comparison of three soybean inoculants. Experimental design was a split plot experiment. Fungicide treatments were randomly applied to whole plots with four replications, and inoculant treatments were randomly applied to the split plots resulting in eight replications of inoculum levels. Split plots were 30 ft. by 660 ft. in size.

All fungicide treatments were commercially applied at a local co-op. All inoculant treatments were applied in the field in the drill seed box just prior to planting and after all no-inoculant treatments were drilled. The seed box was vacuumed following each treatment to eliminate residual inoculant between treatments.

Plots were harvested on October 1, 1998, with a JD 9600 combine with an Ag Leader 3000 yield monitor equipped with a Global Positioning System. Harvest data were collected from the center 25 feet of each subplot. The yield monitor was calibrated, and scale weights were used to verify accuracy.

Results

Table 1. Soybean Fungicide Yield Data.

Fungicide	Yield (bu/A)	Treatment Cost ($/A)
Apron/Rival Fungicide	62.1	4.05
No Fungicide	61.9	

F = 0.01 No significant differences between treatment means at P = 0.05 CV = 4.3%

Table 2. Soybean Inoculant Yield Data.

Inoculant	Yield (bu/A)	Treatment Cost ($/A)
HiStick NT	62.9	4.32
HiStick	62.2	2.65
RhizoStick	60.3	2.13
No Inoculant	62.4	

F = 0.52 No significant differences among treatment means at P = 0.05 CV = 7.1%

Analysis of variance was conducted by SAS PROC MIXED which detected no significant differences between the fungicide treatment levels and among the inoculant treatments at a probability level of P = 0.05. There were also no significant interaction effects on yield due to fungicide and inoculant combinations.

Summary and Notes

The spring of 1998 was relatively dry following the planting date in this study. Therefore, early season blight pressure was not heavy. Yields did not significantly respond to the protection of the fungicide. The 1998 growing season came with timely rainfall during both vegetative and reproductive stages of development. Yields did not significantly respond to the additional soybean inoculants. These results are the first of three years of data that will be collected.

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