

Evaluation of Imidacloprid Seed Treatment on Yield of Modified Relay Intercrop Soybeans

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Objective

To evaluate yield response of Modified Relay Intercrop soybean yield to the use of Imidacloprid insecticide seed treatment versus a control.

Background

Crop Year:	2010	Soybean Planting Date:	June 19, 2010
Location:	OSU Unger Farm	Soybean Variety:	Pioneer 93Y20
County/Town:	Crawford	Row width:	10 inches
Soil Type:	Blount	Insecticide:	Asana @ 8ounces, (15 gals/ac) on August, 26, 2010, soybeans @ R5
Drainage:	Systematic	Fertilizer:	For wheat and soybeans, 93- 46 -60
Previous Crop:	Wheat	Soybean Seeding Rate:	220,000 seeds/acre
Tillage:	No – tillage	Soybean Harvest Date:	Oct. 18, 2010
Soil Test:	pH 6.8, P 23 ppm, K 124 ppm		

Methods

Cooper soft red winter wheat was planted Oct.6. 2009 in 10 inch rows with a Great Plains drill at a rate of 1.75 million seeds per acre. Wheat yield over the soybean plot area was 61 bushels/acre. Soybeans were planted June 19, 2010 at a rate of 220,000 seeds per acre in 10 inch rows with the same drill used to plant wheat (minus coulter cart). The 20 foot drill was split with treated seed in one side bin and untreated seed on the other bin.

This study used a randomized complete block design with two treatments replicated 5 times to compare Imidacloprid insecticide treated soybeans to untreated soybeans over yield. A small plot combine was used to harvest plots on October 18, 2010. Plot size was 5 by 30 feet.

Treatments

- 1) Imidacloprid treated soybean seed
- 2) Control – untreated soybeans

Results

Table 1. Moisture and Yield of MRI Soybeans in Cooper Wheat

Treatment	Ave. Moisture	Ave. Yield (bu/A)
Imidacloprid	11.7	35.0
Control	11.5	30.6
LSD (P=0.05)		NS
CV(%)		25.2

Summary

This study was conducted at OSU Unger Farm in north central Ohio where modified relay intercropping is practiced. A perceived problem of intercrop soybeans has been bean leaf beetle, Japanese beetle or grasshopper feeding on soybeans when the wheat has been combined within a week. Soybeans are etiolated and very spindly after combine harvest. This is due to the competition with wheat for light. As such, it has been observed in previous studies that intercrop soybeans receiving a foliar insecticide treatment soon after wheat harvest yield better than the control. Therefore, to determine if a soybean seed insecticide treatment on intercrop soybeans would offer a similar benefit, Imidacloprid treated soybeans and a control were planted June 19, 2010 and wheat was harvested on June 30, 2010.

There was nearly a 5 bushel per acre difference seen in this study, but the yields were not significantly different. Although using insecticide seed treatment for insect control seems promising, additional research is necessary to fully determine if seed treatment do actually protect or enhance yield.

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