

Foliar Fungicide, Insecticide and Combination Treatments on Soybean Yield

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Objective

To evaluate the effect of foliar fungicide, insecticide or combination treatments on soybean yield and profitability

Background

Crop Year: 2016

County: Fulton

Location: Delta, OH

Drainage: Systematic

Previous Crop: Corn

Variety: Pioneer 27T91

Population: 165,000 seeds per acre

Planting Date: May 25, 2016

Harvest Date: October 25, 2016

Herbicide: 6 oz/ac Envive (Pre-emerge) 22 oz/ac

Roundup, 5.3 oz/ac Assure (Post)

Soil Type: Hoytville clay loam

Tillage: Conventional

Soil Test (grid avg): pH 6.7

P 44 ppm (Bray-P1)

K 268 ppm

CEC 16.1 meq/100g

OM 4.6%

Starter Fertilizer: applied in corn year with VRT

Rainfall (May-Aug): 14.0"

Methods

This trial was designed with four pesticide treatments replicated three times in a randomized complete block design. Plots were planted in 15 inch rows, 40 feet wide by 2,500 feet long. The trial was planted, sprayed and harvested with commercial farm equipment. Insect pressure was measured by sweep net sampling on July 13, 2 days prior to treatment. Disease pressure was evaluated by examining 10 randomly selected plants for disease symptoms, repeated at three locations per plot for a total of 30 plants examined. Both the insect and disease pressures were under economic thresholds for the crop and pests. Pesticide treatments were applied at the R2 growth stage on July 15. Yields and moistures were obtained by using a calibrated yield monitor. Yields were adjusted to 13% moisture. Rainfall data were obtained from the nearest CoCoRaHS/NWS station.

Treatments:

1. 6 oz/ac Aproach fungicide plus 1pt/100 gallons NIS
2. 6 oz/ac Aproach fungicide plus 6 oz/ac Asana insecticide
3. 6 oz/ac Aproach fungicide
4. Untreated (Check)



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Results

6a. Foliar Fungicide, Insecticide and Combination Treatments on Soybean Yield

Treatment	Moisture (%)	Dry Yield (bu/ac)	Cost* (\$/ac)	Return Minus Cost* (\$/ac)
Approach + NIS	9.7	73.6 a**	\$23	\$640
Approach + Asana	9.6	73.8 a	\$26	\$638
Approach	10.0	73.2 a	\$22	\$637
Untreated	9.5	73.0 a	-	\$657
LSD (P<0.05, CV 1.47)		2.16		

*Based on \$9/bu soybean price, \$15/ac fungicide, \$4/ac insecticide, \$0.5/ac NIS and \$7/ac application

** Yields with similar letter designations indicate there was no statistically significant difference.

Discussion

There were no significant differences in yield among any treatments. Based on the standardized costs listed, the maximum economic return of \$657 was achieved with the untreated check.

Foliar fungicide and insecticide treatment on soybeans should be based on active field scouting and an integrated pest management (IPM) approach where treatment is applied at threshold levels of the disease or insect pest. Disease and insect pressure observed in this study did not warrant foliar treatments at this site, this year. Further replications of this study in future years will add to the validity of these results.

Acknowledgement

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