Late Season Foliar Treatments on Soybean Yield and Profit

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

Background
Crop Year: 2014
Location: Delta, OH
County: Fulton County
Soil Type: Hoytville clay loam
Drainage: 25’ Systematic, perpendicular
Previous Crop: Corn
Tillage: Conventional
Planting Date: May 8, 2014
Fertilizer: applied according to Tri-State’s in corn
Seeding Rate: 185,000 seeds/acre, 15” rows
Herbicide: Authority pre-emerge, glyphosate post
Harvest Date: October 16, 2014
July-August Rainfall: 2.59”

Methods
This study included four treatments arranged in a randomized complete block design with three replications. Treatment plots were planted 100 feet wide by 2,500 feet long (field length). Treatments were planted with a 1790 JD Planter after light spring tillage. Seed used was Pioneer 35T66 in all treatments. Harvest (yield) measurements were made by harvesting the center 70’ within each treatment using a JD 9660 commercial combine. Yield measurements were taken with an Insight Ag Leader monitor and shrunk to 13% moisture.

Treatments
1) 6 oz/ac Aproach fungicide at R2 growth stage
2) 6 oz/ac Aproach fungicide plus 6 oz/ac Asana insecticide at R2
3) 6 oz/ac Aproach fungicide plus 1 pt/100 gal Non-Ionic Surfactant (NIS) at R2
4) Untreated check (no fungicide, insecticide or surfactant application)
Results

Table 1. Mean Yield (bu/ac) in Response to Foliar Fungicide & Insecticide applications on soybean

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield (bu/ac)</th>
<th>**Gross Revenue/Ac</th>
<th>***Cost per acre</th>
<th>Net Revenue/Ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aproach fungicide*</td>
<td>60.5 a</td>
<td>$605</td>
<td>$22</td>
<td>$583</td>
</tr>
<tr>
<td>Aproach fungicide plus Asana insecticide</td>
<td>60.6 a</td>
<td>$606</td>
<td>$29</td>
<td>$577</td>
</tr>
<tr>
<td>Aproach fungicide plus NIS</td>
<td>60.2 a</td>
<td>$602</td>
<td>$22.50</td>
<td>$579.50</td>
</tr>
<tr>
<td>Untreated check</td>
<td>57.0 b</td>
<td>$570</td>
<td>-</td>
<td>$570</td>
</tr>
</tbody>
</table>

LSD 1.79; CV 1.5; P value ≤ 0.05

Yes, significant difference between untreated check and treatments.

*Only two replications of this treatment were available for harvest.

** Based on $10.00/bu marketing price

***Based on $15/ac fungicide, $4/ac insecticide, $.50/ac NIS and $7/ac custom application

Summary

The research was found to show a statistically significant difference in grain yield among the untreated check and all treatments of at least +3.2 bushels per acre. While there was no statistical difference among the top three treatments, an economic analysis shows a slight advantage to the fungicide treatment this year. Pesticide application should be made based on economic thresholds established from research. Further data in the form of multi-year replications will add to the validity of these results.

Acknowledgement

The author expresses appreciation to L & L Farms as the cooperating farmer. Thanks also to DuPont Pioneer for product used in the plot and the Ohio Soybean Council for providing funding to conduct this research.

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