Response of Soybean to Insecticide and Fungicide Applications at R3 Growth Stage

Harold D. Watters, Ohio State University Extension, Field Specialist Agronomic Systems

Objective
To compare foliar application of fungicide, insecticide and fungicide plus insecticide at plant growth stage R3 to untreated on soybean yield.

Background
Crop Year: 2014
Location: Hodge Farms
County/Town: Miami/ Tipp City
Soil Type: Miami silt loam
Drainage: Pattern tiled
Previous Crop: Corn
Tillage: No-till
Soil Test: pH 5.8, OM 0.9%, CEC 9.6, P 20 ppm, K 99 ppm
Planting Date: May 28
Variety: Wellman W4333
Seeding Rate: 170,890 s/A
Harvest Date: October 27

Methods
The trial was established as a randomized complete block, in the grower’s field, consisting of four treatments, replicated four times. Foliar applications were applied at R3 reproductive growth stage (August 6), with a 60-foot wide sprayer in strips 800 feet long. Harvest and a yield check were made with a Gleaner combine from one 30 feet wide pass from each plot. Grain was weighed by grain cart, calibrated against the local grain elevator’s certified scales. Yield was calculated in bushels/acre at 13% moisture.

The following four treatments and rates of products were evaluated.
1) Untreated check
2) Insecticide: Warrior (Lambda-cyhalothrin) at 1.8 oz/A at R3
3) Fungicide: Quadris Top (Azoxystrobin + Difenonazole) at 12 oz/A at R3
4) Both the fungicide and insecticide at R3: Quadris Top plus Warrior

Results
An ANOVA (analysis of variance) was conducted to compare yield response to each treatment. Results are shown in Table 1.

Table 1. Soybean Yield following foliar applications at R3.

<table>
<thead>
<tr>
<th>Foliar treatment</th>
<th>Yield (bu/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated</td>
<td>61.7</td>
</tr>
<tr>
<td>Insecticide (Warrior)</td>
<td>64.0</td>
</tr>
<tr>
<td>Fungicide (Quadris Top)</td>
<td>63.9</td>
</tr>
<tr>
<td>Both insecticide &amp; fungicide</td>
<td>61.9</td>
</tr>
<tr>
<td>LSD (0.10)</td>
<td>NSD</td>
</tr>
</tbody>
</table>
Summary
There were no significant differences among the treatments (p = 0.5750) as shown in Table 1.

While some Bean leaf beetle feeding and a low level of soybean aphids were observed at R3, levels appeared similar across treatments. No late greening effects were noted at the end of September.

Acknowledgement
The author expresses appreciation to Steve Hodge for treatment planning discussions, on-farm applications and harvest, and to Robert Mullen for statistical assistance. Syngenta provided the Warrior and Quadris Top used in the trial. Financial assistance was provided by the Ohio Soybean Council.

For more information, contact:
Harold D. Watters
OSU Extension
1100 S. Detroit St.
Bellefontaine, Ohio 43311
Insert watters.35@osu.edu