**Soybean Yield Response to Foliar Fungicide and Boron**

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**Objective**
Determine soybean yield response to foliar fungicide and foliar fungicide plus boron.

**Background**
A producer desired to assess the impact of fungicide alone or fungicide combined with boron on soybean production. He was given information by an industry retailer that adding foliar-applied boron would increase soybean yield. However, the producer was unaware if this was true. Furthermore, even if it were, they questioned whether the economic impact of applying boron would compensate the additional input cost of this micronutrient. Suggestions were made by the industry retailer that applying this micronutrient at the same time as a fungicide application could potentially enhance yield.

**Methods**
The experiment was a randomized complete block with three treatments and four replications. The first treatment was fungicide + boron. The second treatment was the control with no fungicide or boron. The third treatment was fungicide only. The treatments were applied at R3. The fungicide used was Revytek, manufactured by BASF was applied at the rate of 8 ounces per acre. Revytek has three modes of action, including Groups 3, 7, and 11. The foliar fungicide does not control Sudden Death Syndrome.

The soybean variety was Stewarts 2850XF, which has a good disease rating of 4 for Phytophthora Root Rot, 4 for White Mold, 5 for Sudden Death Syndrome, and 6 for Brown Stem Rot. Boron was applied as a 5% solution at the rate of 24 ounces per acre. The plots were 120 feet wide and field length. The field was scouted at R2, R5, and R7 for disease and insect pressure using leaf area affected by disease infection or insect defoliation, as well as general plant health as determined by leaf appearance. The center passes of the treatment strip plots were harvested for grain yield using a calibrated yield monitor with actual yield and moisture. The statistical analysis used was ANOVA. This study was conducted in the 2022 growing season.

**Results**
Brown spot was moderate at the bottom portion of the canopy at R2 with low Sudden Death Syndrome (SDS), 5% insect defoliation, and free of weeds at time of scouting. Brown spot, bacterial leaf blight, and SDS were all low to moderately present at R5 with 10% insect defoliation and weed free. Scouting at R7 indicated low to moderate infections of bacteria leaf blight, SDS, and 5% insect defoliation with limited weed pressure.
These ratings were based on subjective quantification. The LSD was 4.0 and so there was not a significant difference in yield with the different treatments in this study as compared to the control. See table below.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% Moisture</th>
<th>Yield (bushels/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>13.0</td>
<td>73 a</td>
</tr>
<tr>
<td>Fungicide</td>
<td>13.2</td>
<td>77 a</td>
</tr>
<tr>
<td>Fungicide + Boron</td>
<td>13.1</td>
<td>75 a</td>
</tr>
<tr>
<td>C.V. = 4.2%</td>
<td></td>
<td>LSD (0.1) 4.0</td>
</tr>
</tbody>
</table>

**Summary**
There was no significant difference in yield or grain moisture between any of the treatments. This result might suggest that neither the addition of fungicide or fungicide + boron had any effect on yield in the study as compared to the check across all applications of this trial. It should be mentioned that there was low disease pressure in the field, so the results could be different if there were higher levels of disease pressure. In this case, this would suggest that further studies would be recommended.

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