Foliar Fungicide Study on Soybean

Daren S. Mueller  
*Iowa State University*, dsmuelle@iastate.edu

Kenneth T. Pecinovsky  
*Iowa State University*, kennethp@iastate.edu

Follow this and additional works at: [http://lib.dr.iastate.edu/farms_reports](http://lib.dr.iastate.edu/farms_reports)

Part of the Agricultural Science Commons, Agriculture Commons, and the Plant Pathology Commons

**Recommended Citation**

[http://lib.dr.iastate.edu/farms_reports/241](http://lib.dr.iastate.edu/farms_reports/241)

This report is brought to you for free and open access by Iowa State University Digital Repository. It has been accepted for inclusion in Iowa State Research Farm Progress Reports by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Foliar Fungicide Study on Soybean

Abstract
The study was designed to document the efficacy of fungicides in disease control and yield protection at various application timings and frequencies on soybeans.

Keywords
RFR A10101, Plant Pathology and Microbiology

Disciplines
Agricultural Science | Agriculture | Plant Pathology

This northeast research and demonstration farm is available at Iowa State University Digital Repository: http://lib.dr.iastate.edu/farms_reports/241
Foliar Fungicide Study on Soybean

RFR-A10101

Daren Mueller, extension specialist
Department of Plant Pathology
Ken Pecinovsky, farm superintendent

Introduction
The study was designed to document the efficacy of fungicides in disease control and yield protection at various application timings and frequencies on soybeans.

Materials and Methods
Kruger 201 RR/SCN soybeans were planted at 188,000 seeds/acre in 30 in. rows on May 10, 2010. Three different fungicides were applied at R1, R3 and R5 growth stages on July 12, August 4, and August 17, respectively. Fungicides were applied once and at multiple times. Soybeans were harvested on October 1 and yields were adjusted to 13 percent moisture.

Results and Discussion
All fungicide treatments reduced foliar disease symptoms (Table 1). Both Cercospora leaf blight and Septoria leaf blight (brown spot) were significantly controlled by the application of fungicides, regardless of timing or frequency.

Yields were protected by the use of fungicides in this trial. All treatments exceeded the untreated control (UTC) (67.5 bu/ac) even though three treatments (Headline at R1, Headline at R3, and Quadris at R3) were not significantly different from the control. Plots treated with BAS703 02F had the highest yields.

There were no differences between fungicides applied at different or multiple timings or frequencies. This means there was no economic advantage in spraying fungicides twice in a season.

These data show what can be expected in a season when foliar disease levels are high (brown spot > 10%). The hot and wet conditions were perfect for the fungal pathogens to thrive, especially in the lower canopy where the relative humidity was higher, and reduce yields. Foliar fungicides, in such conditions, can effectively protect yields from the losses that fungal foliar pathogens can cause.

Acknowledgements
Thanks to BASF for funding this study and the Kruger Seed Company.

Table 1. The effect of fungicides on soybean yield and foliar disease control.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate (oz/ac)</th>
<th>Timing</th>
<th>Cercospora leaf blight severitya</th>
<th>Brown spot severitya</th>
<th>Moisture</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTCa</td>
<td>...</td>
<td>...</td>
<td>2.9</td>
<td>14.2</td>
<td>11.6</td>
<td>67.5</td>
</tr>
<tr>
<td>Headline</td>
<td>6</td>
<td>R1</td>
<td>1.3</td>
<td>1.3</td>
<td>11.7</td>
<td>70.1</td>
</tr>
<tr>
<td>Headline</td>
<td>6</td>
<td>R3</td>
<td>0.1</td>
<td>3.7</td>
<td>11.4</td>
<td>70.1</td>
</tr>
<tr>
<td>BAS703 02F</td>
<td>4.5</td>
<td>R1</td>
<td>0.4</td>
<td>1.5</td>
<td>11.6</td>
<td>74.3</td>
</tr>
<tr>
<td>BAS703 02F</td>
<td>4.5</td>
<td>R3</td>
<td>2.7</td>
<td>11.8</td>
<td>73.4</td>
<td></td>
</tr>
<tr>
<td>Headline (2X)</td>
<td>6 + 6</td>
<td>R1 + R3</td>
<td>0.2</td>
<td>0.8</td>
<td>11.3</td>
<td>72.2</td>
</tr>
<tr>
<td>Headline (2X)</td>
<td>6 + 6</td>
<td>R3 + R5</td>
<td>0.0</td>
<td>2.8</td>
<td>11.4</td>
<td>72.4</td>
</tr>
<tr>
<td>BAS703 02F (2X)</td>
<td>4.5 + 4.5</td>
<td>R1 + R3</td>
<td>1.0</td>
<td>1.3</td>
<td>11.7</td>
<td>72.9</td>
</tr>
<tr>
<td>BAS703 02F (2X)</td>
<td>4.5 + 4.5</td>
<td>R3 + R5</td>
<td>0.2</td>
<td>3.4</td>
<td>11.6</td>
<td>74.0</td>
</tr>
<tr>
<td>Quadris</td>
<td>6</td>
<td>R3</td>
<td>0.4</td>
<td>7.9</td>
<td>11.6</td>
<td>70.4</td>
</tr>
<tr>
<td>Quadris (2X)</td>
<td>6 + 6</td>
<td>R1 + R3</td>
<td>0.3</td>
<td>2.2</td>
<td>11.6</td>
<td>71.7</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td>1.0</td>
<td>3.5</td>
<td>n.s.</td>
<td>4.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

aDisease was assessed on 10 leaves in the lower and 10 leaves in the upper canopy.

UTC = untreated control of no fungicide application.