Controlling leaf diseases in seed corn in 2002

Gary P. Munkvold

Iowa State University, munkvold@iastate.edu

Follow this and additional works at: http://lib.dr.iastate.edu/cropnews

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

Recommended Citation

http://lib.dr.iastate.edu/cropnews/1719

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit https://crops.extension.iastate.edu/.
Controlling leaf diseases in seed corn in 2002

Abstract
The time is fast approaching when seed producers need to be looking for early symptoms of leaf diseases in seed corn. Eyespot (Aureobasidium zeae), common rust (Puccinia sorghi), gray leaf spot (Cercospora zeae-maydis), and northern leaf spot (Bipolaris zeicola, also known as Helminthosporium carbonum) are diseases that can cause losses in seed corn production and sometimes need to be controlled with a fungicide application. In addition, Northern leaf blight (Exserohilum turcicum) seems to be making a "comeback" in some areas.

Keywords
Plant Pathology

Disciplines
Agricultural Science | Agriculture | Plant Pathology

This article is available at Iowa State University Digital Repository: http://lib.dr.iastate.edu/cropnews/1719
Controlling leaf diseases in seed corn in 2002

The time is fast approaching when seed producers need to be looking for early symptoms of leaf diseases in seed corn. Eyespot (*Aureobasidium zeae*), common rust (*Puccinia sorghi*), gray leaf spot (*Cercospora zeae-maydis*), and northern leaf spot (*Bipolaris zeicola*, also known as *Helminthosporium carbonum*) are diseases that can cause losses in seed corn production and sometimes need to be controlled with a fungicide application. In addition, Northern leaf blight (*Exserohilum turcicum*) seems to be making a "comeback" in some areas.

The benefits of foliar fungicides on seed corn have been researched for a number of years at Iowa State University. Protecting susceptible inbreds with a fungicide has proven to be very profitable. Fungicide options have been changing; last year, Quadris (Syngenta Crop Protection) was first labeled for corn. This year, another new fungicide, Stratego (Bayer Corp.), is labeled (see June 17, 2002, ICM article). Quadris and Stratego, which both have active ingredients in the strobilurin family, offer some advantages over former standard, Tilt. Generally, Quadris, and Stratego provide superior disease control compared with Tilt and yield increases that are similar or better than those we have seen with Tilt. Three other fungicides may be used on seed corn; they differ in their type of activity (contact versus systemic), spectrum of disease control, and application requirements. The table provides some comparisons of the fungicides most commonly used on seed corn.

---

Fungicide-treated seed corn plots stay green and healthy longer than untreated plots.

For now, guidelines for foliar disease control are based on scouting, relative susceptibility of the seed parent inbred, and weather considerations. We are currently researching methods to predict gray leaf spot so that fungicide application decision-making can be improved. In general, the most profitable results have occurred when sprays are initiated before detasseling. However, most of these results were obtained before Quadris was available. Given the efficacy of Quadris and the label allowing post-silking applications, there are situations in which a single post-silking application of Quadris is the best choice, depending on the scouting results.

The following guidelines should be followed for the control of leaf diseases in seed corn:

1. Do not plant seed corn in a field where corn was the previous crop, unless absolutely
necessary.
2. Know the susceptibility of the inbreds you are growing because the more resistant inbreds rarely need a fungicide. The more susceptible the inbred, the more likely fungicide use will be profitable.

3. Scout fields early, when plants are approximately V6-V8. Observe at least 100 plants throughout the field. Record the average number of pustules or lesions per plant, disregarding the bottom three leaves.

4. Scout every 1-2 weeks, depending on weather and susceptibility. Interval should be shorter in wet, cool weather and on the most susceptible inbreds, longer in hot, dry weather and on more resistant inbreds.

5. When there is an average of 1-2 pustules or lesions per plant, and weather is favorable for disease (moderate temperatures and frequent rains or dews), begin spraying susceptible inbreds. Remember that fungicides are most effective when sprayed before infection takes place, so you must consider the weather forecast as well as previous weather.

6. Leave an unsprayed area for comparison. There is always a temptation to protect everything, but an unsprayed check provides valuable information on the effects of spraying.

7. Follow label instructions for rates and spray intervals. Because symptoms of infection for some diseases do not appear for 10-20 days, some infections that occurred before you sprayed may continue to appear after you spray (less likely with systemic fungicides).

8. Your decision to spray again should be based on the label instructions, weather, and disease development in unsprayed areas. With the systemic products available today, more than two applications would be unlikely.

9. If diseases have not appeared before tasseling, spraying is probably unnecessary.

Always check the label of any pesticide to confirm that it is registered for the intended use and to be sure that all label requirements are being fulfilled.

**Commonly used fungicides for controlling corn leaf diseases.**

<table>
<thead>
<tr>
<th>Active ingredient</th>
<th>Quadris</th>
<th>Stratego</th>
<th>Tilt</th>
<th>Penncozeb</th>
<th>Bravo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active ingredient</strong></td>
<td>Azoxystrobin</td>
<td>Trifloxystrobin and Propiconazole</td>
<td>Propiconazole</td>
<td>Mancozeb</td>
<td>Chlorothalonil</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Systemic</td>
<td>Systemic</td>
<td>Systemic</td>
<td>Contact</td>
<td>Contact</td>
</tr>
<tr>
<td><strong>Spectrum</strong></td>
<td>Rust, gray leaf, spot, northern leaf blight, northern leaf</td>
<td>Rust, gray leaf, spot, eyespot, northern leaf blight, northern leaf</td>
<td>Rust, gray leaf, spot, eyespot, northern leaf blight, northern leaf</td>
<td>Rust, gray leaf, spot, northern leaf blight, northern leaf blight, northern leaf spot</td>
<td></td>
</tr>
<tr>
<td>Spray interval</td>
<td>7-14 days</td>
<td>7-14 days</td>
<td>7-14 days</td>
<td>4-7 days</td>
<td>4-7 days</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Preharvest interval</td>
<td>7 days</td>
<td>Silking</td>
<td>30 days*</td>
<td>40 days</td>
<td>14 days</td>
</tr>
<tr>
<td>Feeding</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

*If Tilt is applied after silking, crop residue cannot be fed to livestock.

This article originally appeared on pages 117-118 of the IC-488(14) -- June 24, 2002 issue.

Source URL:

Links: