Managing Wheat Head Scab With Fungicide

Dr. Pierce Paul and Mr. Dennis Mills

Department of Plant Pathology
The Ohio State University/OARDC
# Most Effective Fungicides

<table>
<thead>
<tr>
<th>Product</th>
<th>Active Ingredient(s)</th>
<th>Rate/A (fl. oz)</th>
<th>Head scab Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caramba</td>
<td>Metconazole 8.6%</td>
<td>10.0 to 17.0</td>
<td>Good</td>
</tr>
<tr>
<td>Folicur 3.6 F</td>
<td>Tebuconazole 38.7%</td>
<td>4.0</td>
<td>Fair</td>
</tr>
<tr>
<td>Proline 480 SC</td>
<td>Prothioconazole 41%</td>
<td>5.0 to 5.7</td>
<td>Good</td>
</tr>
<tr>
<td>PropiMax 3.6 EC</td>
<td>Propiconazole 41.8%</td>
<td>4.0</td>
<td>Poor</td>
</tr>
<tr>
<td>Tilt 3.6 EC</td>
<td>Propiconazole 41.8%</td>
<td>4.0</td>
<td>Poor</td>
</tr>
<tr>
<td>Proline/Folicur 3+3</td>
<td>Prothioconazole + Tebuconazole</td>
<td>10.0</td>
<td>Good</td>
</tr>
</tbody>
</table>
Average percent scab (FHB) and vomitoxin (DON) reduction compared to the check.
Average percent scab (FHB) and vomitoxin (DON) reduction compared to Folicur
High variability in Fungicide Efficacy

Tebuconazole (Folicur)

Average: 40%

Scab

Vomitoxin

Average: 23%

2008 Wheat Day NW Ohio
High variability in Fungicide Efficacy

Possible reasons of high variability

- Local weather conditions
  - Affect disease development and DON contamination
  - Affect fungicide efficacy

- Local fungal population
  - Fungicide sensitivity
  - Aggressiveness
  - DON producing ability

- TIMING: poor application timing reduces efficacy
Timing is extremely important

Correct time to apply

Flowering or Anthesis

FRESH anthers seen sticking out of florets

Late (less effective)

Anthers may still be seen sticking out of florets well after flowering is complete

http://www.knowledgerush.com/wiki_image/6/6c/WheatFlower1.jpg
Use The Scab Risk tool as a Guide when Making Fungicide Application Decisions

http://www.wheatscab.psu.edu
Fusarium head blight or head scab is caused by the fungus *Fusarium graminearum*. The disease causes tremendous losses by reducing grain yield and quality in many wheat production regions east of the Rocky Mountains.

The goal of this experimental predictive system is to help growers assess the risk of Fusarium head blight in their region. Major outbreaks of Fusarium head blight are associated with specific weather patterns prior to flowering of the wheat crop. Researchers at Penn State University, Ohio State University, Purdue University, North Dakota State University, and South Dakota State University have worked together to develop models that predict the risk probability of an epidemic with greater than 10% severity based on observed weather patterns.

You can customize the forecast for your region and production practices by clicking on the wheat scab “Risk map tool” from the menu above.
**Step 1: Choose Flowering Date**

Use the calendar at the left to select the flowering date for your fields. The flowering date is in dark blue; the previous 7 days are in light blue.

**Step 2: Select Model**

Use the **choose model** button to customize the risk model for your wheat type and production practices.

**Step 3: Zoom in to view risk map**

Click on a state to zoom in and view risk maps.

Click on a **weather station** for station-based risk information.

Click the **full extent** button to zoom out to the US map and navigate to another state.
Summary

- Fungicides (triazoles) do reduce FHB and DON but results vary from one product to another.
- Proline, Caramba, and Proline+Folicur gave consistently better results than Folicur alone.
- DON may still exceed threshold levels in fungicide treated fields.
- For best results, apply fungicides AT THE RIGHT TIME, AT FLOWERING
- INTEGRATED MANAGEMENT!!

2008 Wheat Day NW Ohio
Ohio Field Crop Disease

http://www.oardc.ohio-state.edu/ohiofieldcropdisease
http://corn.osu.edu/

DEPARTMENT OF PLANT PATHOLOGY

Dr. Anne E. Dorrance
Dr. Pierce Paul
Dr. Landon H. Rhodes
Dennis R. Mills

Pierce A. Paul, Ph.D.
Assistant Professor
Department of Plant Pathology
Ohio Agricultural Research and Development Center
115 Selby Hall
1680 Madison Avenue
Wooster, OH 44691-4096
Phone 330-263-3842
Fax 330-263-3841
E-mail paul.661@osu.edu