2018 Wheat Disease Update

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2018 Problematic Wheat Diseases
Bacterial Leaf Streak

Fusarium Head Blight

Ergot

Discussed Right Now!

More Info During Hands-on
Bacterial Leaf Streak
Bacterial Leaf Streak in ND

Season Final, 2018

This survey is supported in part by the Crop Protection and Pest Management Program [grant no. 2017-70006-27144/accession 1013592] from the USDA National Institute of Food and Agriculture and the North Dakota Department of Agriculture.
Environmental conditions
• 60-86 F
• Strong thunderstorms at flag leaf (other wounding events)
• High humidity and dews for infection

Grass hosts
• Several varieties are susceptible
• Can also survive on grassy hosts (ie: smooth brome)

Pathogen
• *Xanthomonas translucens undulosa*
• Survives primarily on seed
• Can also survive and other grasses and residue
Bacterial Leaf Streak Management

- Resistant varieties
- Clean seed
- Foliar applications??
## Varietal Resistance

<table>
<thead>
<tr>
<th>Variety</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY Ingmar</td>
<td>6</td>
</tr>
<tr>
<td>SY Valda</td>
<td>8</td>
</tr>
<tr>
<td>Elgin</td>
<td>7</td>
</tr>
<tr>
<td>Linkert</td>
<td>7</td>
</tr>
<tr>
<td>Bolles</td>
<td>8</td>
</tr>
</tbody>
</table>
Bacterial Leaf Streak Management

- Resistant varieties
- Clean seed
- Foliar applications??
### 2018 Field Trial - Fargo

Variety – WB Mayville  
Other diseases detected  
DON levels below 0.5 ppm

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Timing</th>
<th>Bacterial Leaf Streak Severity</th>
<th>Leaf Rust Severity</th>
<th>Yield (bu/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-treated</td>
<td>-</td>
<td>6.3%</td>
<td>0.8%</td>
<td>70.6</td>
</tr>
<tr>
<td>Headline @ 6 oz</td>
<td>Flag Leaf</td>
<td>6.5%</td>
<td>0.2%</td>
<td>72.5</td>
</tr>
<tr>
<td>Prosaro @ 6.5 oz</td>
<td>Early-Flowering</td>
<td>6.2%</td>
<td>&lt;0.1%</td>
<td>72.9</td>
</tr>
</tbody>
</table>
Fusarium Head Blight
Scab Risk in North Dakota during 2018
Highest Levels of FHB in 2018?

- Conducive conditions
- Acreage increase in a susceptible variety
What is new with Fungicides for FHB Management?

Application window “opening up”

New fungicide available for 2019
Early-flowering
USWBSI Fungicide Trials
Miravis Ace

- Adepidyn + Propiconazole
- **Adepidyn** – FRAC 7
- **Succinate DeHydrogenase Inhibitor** (SDHI)
- “Heavy lifting” will be from Adepidyn
- Timing?
½ head to ¾ head

Flowering stages
HRSW–Two Locations–Two Varieties

<table>
<thead>
<tr>
<th>Treatment</th>
<th>DON Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-treated Control</td>
<td>1.49 a</td>
</tr>
<tr>
<td>Prosaro @ 6.5 oz @ Early Flowering</td>
<td>0.89 ab</td>
</tr>
<tr>
<td>Miravis Ace @ 13.7 oz @ Early Flowering</td>
<td>0.56 b</td>
</tr>
<tr>
<td>Miravis Ace @ 13.7 oz @ Half-head</td>
<td>1.16 ab</td>
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</table>
# Durum—Three Locations—Three Varieties

<table>
<thead>
<tr>
<th>Treatment</th>
<th>DON Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Treated Control</td>
<td>1.45</td>
</tr>
<tr>
<td>Miravis Ace @ 13.7 oz @ Half-head</td>
<td>1.19</td>
</tr>
<tr>
<td>Miravis Ace @ 13.7 oz @ Early Flowering</td>
<td>0.98</td>
</tr>
<tr>
<td>Prosaro @ 6.5 oz @ Early Flowering</td>
<td>1.31</td>
</tr>
<tr>
<td>Prosaro @ 6.5 oz @ 3-5 days after Early Flowering</td>
<td>0.73</td>
</tr>
</tbody>
</table>
Summary

• Top foliar disease in 2018 was bacterial leaf streak

• Preliminary results indicate Miravis Ace will be an effective FHB fungicide

• Still target early-flowering (Fks. 10.51) for Miravis Ace as half-head was inconsistent across environments