Management of Southern and Northern Corn Leaf Blights with Fungicides

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Fungal Diseases of Sweet Corn

- Common Rust
- Southern Corn Rust
- Southern Corn Leaf Blight
- Northern Corn Leaf Blight
- Northern Corn Leaf Spot
Common Corn Rust

• Caused by *Puccinia sorghi*
• Considered to be a “cool temperature” disease
• Favored by temperatures of 16 to 25°C
• Most commonly observed in spring season
• Most aggressive on newly expanding leaf tissue
• Varietal resistance is available
Southern Corn Rust

• Caused by *Puccinia polysora*
• Considered to be a “warm to hot temperature” disease
• Favored by temperatures of 23 to 33 C
• Most commonly observed in fall or late spring season
• Aggressive on both newly expanded and older leaf tissue
• Varietal resistance is available but not common
Southern Corn Leaf Blight

- Caused by *Bipolaris maydis*
- Considered to be a “warm to hot temperature” disease
- Favored by temperatures of 20 to 32 C
- Most commonly observed in fall or late spring season
- Aggressive on both newly expanded and older leaf tissue
- Varietal resistance is available but not common
Northern Corn Leaf Blight

- Caused by *Exserohilum turcicum*
- Considered to be a “cool to moderate temperature” disease
- Favored by temperatures of 18 to 27 C
- Most commonly observed during the spring season
- Aggressive on older leaf tissue
- Varietal resistance is available
Northern Corn Leaf Spot

- Caused by *Bipolaris zeicola*
- Considered to be a “cool to moderate temperature” disease
- Favored by temperatures of 18 to 27 C
- Most commonly observed during mid winter, during transition from fall to spring season
- Aggressive on young, expanding leaf tissue
- Varietal resistance is available
Sweet Corn Foliar Fungicides

• Broad Spectrum Protectants
  • Triazoles (DMIs)
  • Carboxamides (SDHIs)
  • Strobilurins (QoIs)
• Potassium Phosphite
Broad Spectrum Protectants (Multi-site FRAC Group M)

• Sulfur (M2) – Somewhat active against rusts, but also offers mite suppression. Do not use during hot weather, or following oils. Short PHI (1 day).

• Mancozeb (M3) – Active against both rusts and leaf blights. May offer some Mn nutrition. 7-day PHI.

• Chlorothalonil (M5) – Active against both rusts and leaf blights. 7-day PHI.
Triazoles
(Demethylation Inhibitors – FRAC grp 3)

• Propiconazole
• Tebuconazole
• Metconazole
• Prothioconazole

• In general, the most efficacious group against foliar blights
• Typically have a longer pre-harvest interval (7 to 14 days)
• Protectant, translaminar and curative properties
• Read labels for plant-back and re-entry restrictions, particularly for tebuconazole.
Strobilurins
(Quinone Outside Inhibitors – FRAC grp 11)

- Azoxystrobin
- Pyraclostrobin
- Picoxystrobin
- Trifloxystrobin
- Fluoxastrobin

- In general, the most efficacious group against both common and southern rusts
- Also very effective against foliar blights
- Typically have a short pre-harvest interval (7 days)
- Protectant, translaminar and curative properties
- Read labels for use and rotational restrictions
Carboxamides
(FRAC grp 7)

- Penthiopyrad
- Benзовindiflupyr
- Fluxapyroxad
- Pydiflumetofen

- Strengths vary from compound to compound
- Most are used only in pre-mixtures due to the threat of insensitivity
- Typically have a short pre-harvest interval (7 days)
- Protectant, translaminar and curative properties
- Read labels for use and rotational restrictions
Pre-mixtures
(Multiple FRAC Groups)

• Most are very efficacious against both rusts and foliar blights
• Typically have a longer pre-harvest interval (7-14 days)
• Protectant, translaminar and curative properties
• May offer longer residual activity than solo compounds
• Read labels for use and rotational restrictions
## Pre-Mixtures

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Active Ingredients</th>
<th>FRAC Grp</th>
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<tbody>
<tr>
<td>Elatus</td>
<td>Benzovindiflupyr &amp; Azoxystrobin</td>
<td>7 &amp; 11</td>
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<tr>
<td>Evito T</td>
<td>Fluoxastrobin &amp; Tebuconazole</td>
<td>3 &amp; 11</td>
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<tr>
<td>Headline Amp</td>
<td>Pyraclostrobin &amp; Metconazole</td>
<td>3 &amp; 11</td>
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<tr>
<td>Miravis Neo</td>
<td>Pydiflumetofen &amp; Aoxystrobin &amp; Propiconazole</td>
<td>3 &amp; 7 &amp; 11</td>
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<tr>
<td>Priaxor</td>
<td>Pyraclostrobin &amp; Fluxapyroxad</td>
<td>7 &amp; 11</td>
</tr>
<tr>
<td>Prosaro</td>
<td>Tebuconazole &amp; Prothioconazole</td>
<td>3 &amp; 3</td>
</tr>
<tr>
<td>Quilt</td>
<td>Azoxystrobin &amp; propiconazole</td>
<td>3 &amp; 11</td>
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<tr>
<td>Quilt XCEL</td>
<td>Azoxystrobin &amp; propiconazole</td>
<td>3 &amp; 11</td>
</tr>
<tr>
<td>Stratego YLD</td>
<td>Trifloxystrobin &amp; Prothioconazole</td>
<td>3 &amp; 11</td>
</tr>
<tr>
<td>Trivapro</td>
<td>Benzovindiflupyr &amp; Azoxystrobin &amp; Propiconazole</td>
<td>3 &amp; 7 &amp; 11</td>
</tr>
<tr>
<td>Miravis Neo</td>
<td>Pydiflumetofen &amp; Aoxystrobin &amp; Propiconazole</td>
<td>3 &amp; 7 &amp; 11</td>
</tr>
<tr>
<td>Unicorn</td>
<td>Sulfur &amp; Tebuconazole</td>
<td>M2 &amp; 3</td>
</tr>
<tr>
<td>Viathon</td>
<td>Tebuconazole &amp; Potassium Phosphite</td>
<td>3 &amp; 33</td>
</tr>
</tbody>
</table>
Management Strategies

- Start clean in a field free of corn debris
- Be aware of your surroundings
- Scout early and thoroughly
- Read the Ext. Newsletters (Chris Miller and Gene McAvoy)
- Use available host-plant resistance
- Use a spreader-sticker
- When possible, spray by ground (particularly at mature whorl stage)
- Be aware of PHIs, Re-entries, and Plant-Backs
- Alternate chemistries (modes-of-action)
- Stay ahead of the disease
- “An ounce of prevention is worth a pound of cure”
Tar Spot

- Caused by *Phyllachora maydis*
- First reported in FL during 2016
- Lesions appear as small black, raised spots
- Fish eye symptoms occasionally observed
- Appears in late spring, primarily on field corn
- Notify us if observed
Thank You!

QUESTIONS?