Early Season Fungicide Applications
Controlling Dollar Spot

● Dollar spot (*Sclerotinia homeocarpa*) is becoming an increasingly troublesome disease to control.

● Several key factors and changes in golf course management have influenced the severity and frequency of this disease and play a significant role in expectations associated with fungicidal control.

● High humidity within the turf canopy, temperatures between 59°F and 86°F, low nitrogen, and dry soils tend to increase turfgrass susceptibility to dollar spot.
Nitrogen Fertility Effect on Dollar Spot Incidence

From: Golembiewski and Danneberger, 1996
Controlling Dollar Spot

- Dollar spot is best controlled when making preventive fungicide applications. The keys to disease control are as follows:

  1. Use proper fungicide rates and apply at appropriate intervals.
  2. Remove dew and guttation water during peak dollar spot activity.
  3. Maintain adequate nitrogen fertility, particularly in the spring and early summer.
  4. Maintain sufficient water carrier in the spray to achieve thorough plant coverage.
  5. Use a nozzle that produces a medium to coarse droplet to help insure proper coverage of the fungicide.
Controlling Dollar Spot

- Recent research has shown that early spring applications of Banner MAXX® fungicide or the combination of Banner MAXX and Daconil Ultrex® fungicide can reduce the severity of dollar spot later in the season.

- Research conducted at Ohio State University for several years has investigated fungicide applications in the fall and spring. The best application timing appears to be in the spring after the second “true mowing” of the turf when winter damage has been mowed off and the turf is actively growing. This is around mid-April in Ohio.

- Timing seems to be best just before dollar spot occurs or just as it begins in the spring. It is suggested to leave check plots to compare efficacy.
Dollar Spot Severity Influence by Early Season Fungicide Applications


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Data taken 68 days after application

Applications made April 13, 2006
## Efficacy of Fungicides for Control of Dollar Spot in a Mixed Creeping Bentgrass/\textit{Poa annua} Soil Based Green, 2008

<table>
<thead>
<tr>
<th></th>
<th>June 9 75 DAA</th>
<th>June 17 83 DAA</th>
<th>July 7 103 DAA</th>
<th>July 14 110 DAA</th>
<th>July 28 124 DAA</th>
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<tr>
<td><strong>Check</strong></td>
<td>6.3</td>
<td>8.0</td>
<td>15.3</td>
<td>39.6</td>
<td>26.7</td>
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<tr>
<td><strong>March 26</strong></td>
<td>6.0</td>
<td>8.0</td>
<td>12.6</td>
<td>33</td>
<td>17.0</td>
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<tr>
<td><strong>April 29</strong></td>
<td>0.60</td>
<td>2.0</td>
<td>4.0</td>
<td>10</td>
<td>10.7</td>
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<tr>
<td><strong>June 2</strong></td>
<td>4.0</td>
<td>1.0</td>
<td>17.3</td>
<td>28.6</td>
<td>35.7</td>
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</tbody>
</table>

Banner MAXX® 1.0 oz/1000 sq. ft + Daconil Ultrex® 3.2 oz/1000 sq.ft. applied once on either 3/26, 4/29, or 6/2.

Dr. Paul Vincelli, Univ. of KY

Dollar spot first detected around May 7

Research to determine efficacy of single treatment application on dollar spot development.

Data is average number of dollar spot infection centers/plot.

April 29 application tended to show the greatest reduction of dollar spot incidence.

**Data supports best application timing is around time of initial disease appearance which is often around the time of the second mowing when turf is actively growing.**
Early Season Preventive Applications for Delay of Dollar Spot Symptoms

Dollar spot infection centers

Rating Date

8/18/2008 (95 DAT) 8/26/2008

Check Concert® 4 oz/M Emerald® 0.18 oz/M

Treatments applied May 15th
Location: University of Wisconsin
Snow Mold
Snow Mold Solution Recommendations

- On wet greens and tees that need immediate attention:
  - Apply Heritage® G fungicide at 4 to 7 pounds per 1,000 sq ft.
  - This application is especially useful for areas where heavy sprayers will cause rutting.

- For greens where sprayers are allowed:
  - Spray 5.5 to 6.0 fl oz of Instrata® fungicide per 1,000 sq ft.
  - Alternatively, Headway® fungicide can be sprayed at 3.0 fl oz per 1,000 sq ft for excellent disease control.

- For fairways:
  - Spray 4.0 to 4.5 fl oz of Concert®/Concert II fungicide per 1,000 sq ft.
  - This early season application can serve two purposes—knock down active snow mold and prevent the colonization of leaf tissue by the dollar spot fungus.
History of Brown Ring Patch

- Brown ring patch (also called Waitea patch) is an emerging disease that affects annual bluegrass. The causal pathogen is *Waitea circinata var. circinata*, which is a member of the *Rhizoctonia* group of plant pathogens.

- Symptoms begin as yellow rings from a few inches to a foot in diameter and turn brown and necrotic over time.

- Symptoms typically appear when air temperatures approach 65-85°F in spring or early summer.
Brown Ring Spot
A link to *Poa annua* seedhead suppression?

- PGR applications for *Poa annua* seedhead suppression usually occur early spring to early summer, just prior to the onset of brown ring patch.

- Anecdotal reports of enhanced disease severity with the use of plant growth regulators have surfaced over several locations.

- Managing brown ring patch while utilizing plant growth regulators has generated many questions about how to use the two simultaneously.
Management Tips

- Management of brown ring patch
  - Fungicide Applications
    - Preventive Timing: In conjunction with second application of Primo MAXX®/Proxy® plant growth regulators (~third or forth week of April)
    - Depending on climate and spring warm-up, applications may occur between as early as April 15, but as late as June 15
    - Manage *Poa annua* seedheads as necessary using Primo MAXX and Proxy
  - Fertility
    - Applications of water-soluble nitrogen (up to a 0.5 lbs/1000 sq ft with fungicide application have shown to improve disease control (Wong, 2008)
Fungicides Labeled for Control of Brown Ring Patch

- Banner MAXX® II
- Heritage® WG and Heritage TL
- Medallion®
- Headway®
- Contact your Distributor or Syngenta Representative for recommendations
### Curative Control of Brown Ring Patch

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Disease Severity*</th>
<th>Cost per acre</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>April 25th</td>
<td>May 2nd</td>
</tr>
<tr>
<td>Check</td>
<td>5.3a</td>
<td>6.0ab</td>
</tr>
<tr>
<td>Banner Maxx® 2.0 fl oz</td>
<td>2.5bc</td>
<td>1.4c</td>
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<tr>
<td>Instrata® 6.0 fl oz</td>
<td>2.3bcd</td>
<td>1.0cd</td>
</tr>
<tr>
<td>Medallion® 0.33 oz + Banner Maxx 1.0 fl oz</td>
<td>1.5cd</td>
<td>0.0e</td>
</tr>
<tr>
<td>Headway® 2.0 fl oz</td>
<td>0.8d</td>
<td>0.0e</td>
</tr>
<tr>
<td>Prostar® 2.2 oz + Triton® Flo 0.55 fl oz</td>
<td>2.0bcd</td>
<td>0.0e</td>
</tr>
<tr>
<td>Endorse® 4.0 oz + Banner Maxx 1.0 fl oz</td>
<td>0.8d</td>
<td>0.0e</td>
</tr>
</tbody>
</table>

*Disease severity was evaluated on a 0 to 10 scale, with 0 = no disease, 5 = 50% of the plot affected by disease and 10 = 100% of the plot affected by disease.

University of California, Riverside, 2008.
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