Before & After the Harvest: Diseases of Sod

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There are over 100 diseases that affect North Carolina turfgrasses. Fortunately, there are only about 18 turfgrass diseases that develop year after year. Following is a list of the most common diseases that affect North Carolina turfgrasses.

<table>
<thead>
<tr>
<th>Disease Type</th>
<th>Disease Name</th>
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<tbody>
<tr>
<td>Algae</td>
<td>Large Patch</td>
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<tr>
<td>Anthracnose</td>
<td>Leaf Spot</td>
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<tr>
<td>Brown Blight</td>
<td>Melting Out</td>
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<td>Brown Patch</td>
<td>Microdochium Patch</td>
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<td>Copper Spot</td>
<td>Net Blotch</td>
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<td>Damping Off</td>
<td>Pink Snow Mold</td>
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<td>Dollar Spot</td>
<td>Powdery Mildew</td>
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<td>Fairy Ring</td>
<td>Pythium Blight</td>
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<td>Gray Leaf Spot</td>
<td>Pythium Root Dysfunction</td>
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<tr>
<td>Gray Snow Mold</td>
<td>Pythium Root Bop</td>
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</tbody>
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**Disease Management NEW!**

The disease management decision aid returns a list of active ingredients (Als), ranked according to efficacy.
Turfgrasses are Susceptible to Disease when STRESSED.
Immature turf is more susceptible to these destructive diseases!
Management of Summer Diseases in Tall Fescue

- Do not exceed recommended seeding rates
- Avoid excessive rates of quickly-available nitrogen during summer (>0.25 lb. N/1000 ft²)
- Mow regularly at 3” to 3.5” to keep canopy open and dry
- If irrigating, do so between midnight and 6 AM to reduce leaf wetness periods
- Provide good soil drainage and aeration
Brown Patch (*Rhizoctonia solani*)
Conditions Favoring Disease

- Extended periods of hot/humid weather
- Most severe when daily low/high is above 70/90 respectively
- 10-12 hours continuous leaf wetness
- Poor water management
- Excessive nitrogen
- Perfect recipe ... repeating afternoon thunderstorms after dry spell
Brown Patch Resistance in Tall Fescue Cultivars
1996 NTEP Trial, Lexington KY

% Brown Patch
Gray Leaf Spot (Pyricularia grisea)
GRAY LEAF SPOT
Conditions Favoring Disease

- Most devastating first year of establishment
- Temperatures between 70 and 95 F
- 14 hours of continuous leaf wetness
- Excessive nitrogen
- Heavy rains will promote rapid spread of spores due to splashing effect ... as will mowing
Pythium blight (Pythium aphanidermatum)
Conditions Favoring Disease

- Low temperatures above 65°F
- 12-14 or more hours of leaf wetness or high relative humidity
- High nitrogen levels
- Poor surface or subsurface drainage
- High soil pH (above 7.0)
‘Helminthosporium’ leaf spot caused by *Bipolaris cynodontis*
The most common leaf spot fungus in bermudagrass
Conditions Favoring Leaf Spot

- most active during cool (60-65°F)/wet weather
- slowly growing turf
  - due to weather/improper management
- shade
- poor air movement
- deficient or excessive nitrogen
- excessive thatch
- extended periods of leaf wetness
- drought stress
- low mowing heights
Chemical Control of Leaf Spots

- Prevention is key
- Monitor frequently during conducive weather
- Applications most effective during early stages of disease development
- Contact fungicides
  - mancozeb (Fore & others)
  - chlorothalonil (Daconil & others)
Large patch attacks in the spring or fall when growth is slow.
Centipede grass is most susceptible to large patch.
Large patch is the most severe disease of zoysiagrass
Large patch rarely causes long-term damage to bermudagrass.
Conditions Favoring Large Patch Development

- Infection occurs when soil temperatures are below 70°F
- Saturated thatch/soil
- Excessive nitrogen in fall and spring
- Excessive thatch accumulation
- Low mowing heights
Controlling Large Patch with Fungicides

• Preventative applications most effective

• Initiate in fall when soil temperatures decline below 70°F

• One properly timed application will provide good control in most landscape situations

• In severe cases, repeat applications on 4 to 6 week intervals may be necessary

• Curative applications help to reduce further spread, but recovery will be slow
Gray leaf spot of St. Augustine grass.
Gray leaf spot is most severe in St. Augustinegrass that is growing slowly or is mowed infrequently.
Conditions Favoring Gray Leaf Spot

- 75°F to 95°F
- Extended periods of leaf wetness
- Most severe in newly established plantings
- High mowing heights and/or infrequent mowing
- Slowly growing turf
- Turf stressed by nutrient deficiency, drought, or traffic
NC State Turf Diagnostics Lab
A misdiagnosis of a turfgrass problem can cost thousands of dollars. This is why accurate identification of a turfgrass disease is critical when making treatment decisions both in your short-term and long-term management plans.

The NC State Turf Diagnostics Lab provides accurate disease identification within 24 hours of sample arrival for commercial samples and within 2-3 days for residential samples.

Upon diagnosing the problem, we alert you of our findings immediately.
Questions?