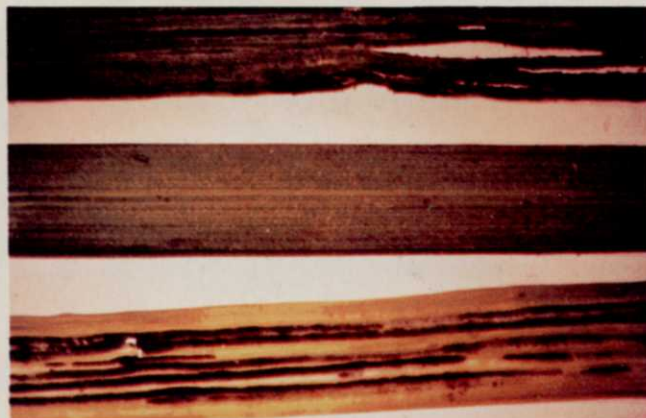


# LANDSCAPE MANAGERS QUIETLY INCORPORATE TURF DISEASE GAINS

By BRUCE F. SHANK



Fusarium Blight



Stipe Smut



Pythium Blight

Advances in turf disease control have taken place so slowly that progress made by landscape managers and golf course superintendents has gone unnoticed. This progress is as much adaptation of cultural practices and new turfgrasses as it is the release of new fungicides.

Disease control is without a doubt one of the most complicated areas of landscape management. Even the pathologists don't totally agree with each other. Rather than seeking simple solutions, landscape managers have evaluated entire maintenance programs to reduce disease incidence. They are more careful about excess nitrogen, mowing heights, irrigation schedules, and turfgrasses used. Disease-prone turfgrasses have been slowly replaced by renovation or overseeding with resistant turfgrasses. The use of turfgrass mixtures over monocultures alone has solved many disease problems.

Thatch control, improved drainage, and well-timed irrigation added to other maintenance practices discourage disease. Fusarium Blight and Pythium Blight have been reduced significantly by changes in cultural practices. The severity of other diseases has been

reduced also.

"Fungicidal control still represents the most common and effective means of producing a rapid solution, especially on golf courses," says Phil Larsen, professor of plant pathology, Ohio State University." Once the symptoms of turf disease appear, it is often impossible to provide short-term remedies required by resorting strictly to cultural practices and reestablishment with disease resistant turf cultivars."

## Diseases

*Weeds Trees & Turf* asked a number of turf pathologists to comment on the severity of turfgrass diseases. We asked them to separate serious, long term diseases from less critical, short-term ones.

B.G. Joyner, director of Chemlawn's Plant Diagnostic Laboratories, Worthington, OH, identified the following as long-term diseases of cool-season turf: Fusarium Blight, Stripe Smut, Pythium Blight, Helminthosporium Melting-Out, Yellow Patch, and Fairy Ring. Short-term diseases selected by Joyner are Rhizoctonia Brown Patch, Dollar Spot, Helminthosporium Leaf Spot, Powdery Mildew, Red Thread, Rust, Snow

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Molds and White Patch.

Larsen ranks Dollar Spot, Pythium Blight and Brown Patch as serious on bentgrass and Red Thread and Pythium Blight as serious on perennial ryegrass and fine fescue. He sees Fusarium as the major Kentucky bluegrass disease with Leaf Spot and Melting Out as other major problems on bluegrass. Larsen points out his results are for the North Central United States.

There are 14 diseases of consequence in cool-season turf. If you think you have a disease problem, you can consider these diseases first and chances are you'll find the disease organism. It is very unlikely you'll be confronted with an odd-ball disease like C-15 Toronto bentgrass decline, unless of course you have Toronto bent in the Chicago area.

We could write pages on how to identify a particular turf disease. Instead, contact local extension or your fungicide distributor for exact identification. Manufacturers have excellent charts showing disease symptoms.

The serious warm-season diseases, according to Joyner, are Centipede Decline, Fairy Ring, Brown Patch, Nigrospora Stolon Rot, Pythium Blight, St. Augustine Decline, and Spring Dead Spot. Nematodes are related to diseases in warm-season turf.

**Cool Season Diseases  
Severe, Long-Term**

- Fusarium on Kentucky Bluegrass
- Stripe Smut on Kentucky Bluegrass
- Helminthosporium Leaf Spot on Kentucky Bluegrass
- Dollar Spot on Kentucky Bluegrass and Creeping Bentgrass
- Rhizoctonia Brown Patch on Kentucky Bluegrass, Perennial Ryegrass, and Creeping Bentgrass
- Pythium Blight on Perennial Ryegrass and Fine Fescue
- Red Thread on Perennial Ryegrass and Fine Fescue
- Yellow Patch
- Fairy Ring on Creeping Bentgrass

**Less Severe, Short Term**

- Powdery Mildew on Kentucky Bluegrass and Fine Fescue
- Snow Molds on Common Grasses
- Rust on Kentucky Bluegrass and Creeping Bentgrass
- White Patch on Tall Fescue

Short term, warm-season diseases include Dollar Spot, Gray Leaf Spot, Helminthosporium diseases, and Rust.

Brown Patch and Pythium are effectively controlled with fungicides in the South. More information is needed on the other diseases says Joyner. The only control for St. Augustine Decline is resistant varieties of St. Augustine.

**Cultural Practices**

"There is no doubt preferred cultural management procedures can reduce the need for fungicide applications to control some of the diseases," Cornell turf pathologist Dick Smiley says. "But management and use considerations do not always enable idealistic procedures to be used. For example, if red thread on perennial ryegrass is a problem primarily because the turf is deficient in nitrogen, the solution is straight forward. Either a fertilizer or a fungicide can be applied to solve the problem. However, overstimulation with nitrogen may increase the tendency for severe Pythium outbreaks. Or, if red thread is a problem because the soil and air temperatures are low, the control approaches are narrowed to fungicides."

The logic can be complicated to solve a disease problem. Landscape managers have chosen in many cases to eliminate disease-encouraging conditions where possible to reduce the complexity of a disease problem. Then, if weather or use conditions force a disease problem, the solution is less complicated.

Alteration of cultural practices can reduce disease incidence and the need for fungicide applications. Larsen recommends thatch removal, aerification and adequate but not excessive fertilization to encourage good plant health which enables the plant to resist disease under normal conditions. "Providing proper air movement and soil drainage to reduce atmospheric moisture and surface water are very effective in suppressing disease severity for summer diseases such as Pythium blight, brown patch and dollar spot."

"Turf should be watered thoroughly to promote good plant

**Warm Season Diseases  
Severe, Long-Term**

- Centipede Decline
- Rhizoctonia Brown Patch
- Nigrospora Stolon Rot
- Pythium Blight
- St. Augustine Decline
- Spring Dead Spot

**Less Severe, Short Term**

- Dollar Spot
- Gray Leaf Mold
- Helminthosporium Diseases
- Rust

growth but the timing should be such that it will not cause free water to collect on leaf surfaces for prolonged periods which would promote fungal growth," Larsen says.

"In instances where there are chronic disease problems over a period of years and good cultural practices do not provide satisfactory results, I believe establishment of disease-resistant cultivars is a practical, long-term, cost effective solution. Unfortunately, we do not have disease resistant cultivars available for all disease problems."

Joyner points out renovation may be needed for reasons other than disease. It also solves excessive thatch, large damaged or dead areas, poor or compacted soils, drainage problems, and other problems related to less advanced turfgrasses.

Whereas a maintenance contractor may occasionally work with a disease problem, golf course superintendents would find it hard to imagine a course without some disease problems. Cultural practices, disease resistant turfgrass cultivars, and new fungicides have made the greatest impact on disease control.

Extended effective life of fungicides and blending different fungicides are providing longer control of a wider range of diseases.

Except for the occasional fluke, landscape managers have a good handle on turf diseases. They have wisely put to use new fungicides and new improved turfgrass cultivars, in addition to improving cultural practices. The complicated problem has been solved to a great degree.

**WTT**