PURDUE UNIVERSITY

PURDUE EXTENSION

BP-105-W

Turfgrass Disease Profiles

Dollar Spot

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Dollar spot is caused by a fungal pathogen (*Sclerotinia homoeocarpa*) that blights leaf tissues but does not affect turfgrass roots or crowns. The disease is a common concern on golf course turf, especially creeping bentgrass and annual bluegrass greens, tees, and fairways, where it can result in poor turf quality and appearance.

Dollar spot is rare on sports turf and professional landscapes. Outbreaks may occur in residential lawn turf and can reduce the lawn's aesthetic quality and contribute to an overall decline in turf vigor.

Dollar spot is one of the most readily identifiable diseases on golf course turf. Characteristic symptoms on creeping bentgrass include small (up to 1 inch in diameter), round, tan-colored spots (Figure 1). The spots often occur in clusters and can cause considerable damage to playing surfaces if not appropriately managed (Figure 2). Figure 3 shows a research site where various treatments were applied to control dollar spot (green rectangles). The brown turf surrounding the treated areas shows severe dollar spot damage.

In the early morning hours after a long dew period, the dollar spot pathogen will produce an abundance of mycelia on affected plant parts (Figures 4, 5). Characteristic symptoms on individual plants include distinct lesions on leaf blades (Figure 6) with straw-colored centers and red-brown margins. Leaf spot symptoms are more readily observed on taller mown turf species such as Kentucky bluegrass and perennial ryegrass.

The dollar spot pathogen survives in the turf environment as mycelium in infested turf debris. The pathogen becomes active with rising temperatures in the spring. Mycelial growth and infection occur during extended

Figure 1

Figure 2

Figure 3

dew periods (longer than 8 hours) over a broad range of temperatures (55˚-80˚F). On golf course fairways and putting greens, dollar spot severity is increased significantly in nitrogen-deficient turf. On residential turf, dollar spot usually accompanies the normal depletion of nitrogen nutrition in late spring or early summer.

The pathogen produces no spores; spread occurs through radial growth from individual infection centers and by the movement of infected and infested leaf blades, usually through turf maintenance operations such as mowing and core aeration.

Figure 4

Figure 5

Figure 6

Disease Control Options

Genetic Resistance

All modern creeping bentgrass cultivars are susceptible to dollar spot, but there are significant differences in their susceptibility. Based on cultivar evaluations published by the National Turfgrass Evaluation Program and by reports in Biological and Cultural Tests for Control of Plant Diseases, cultivars may be categorized into three susceptibility groups. In the most susceptible group are cultivars such as Crenshaw® and Backspin®. Among the least susceptible groups are Declaration®, L-93®, Pennlinks®, and Penncross®. More complete listings of creeping bentgrass cultivars are available on the NTEP Web site: www.ntep.org.

Cultural Control Options

Because dollar spot is more severe on nitrogen-deficient turf, an adequate nitrogen fertility program will result in a delay in disease outbreaks in spring, a reduction of outbreak severity, improved fungicide performance, and more rapid turf recovery.

Proper irrigation scheduling also may contribute to dollar spot control. Since the duration of the dew period is proportional to the extent of infection, any irrigation practice that prolongs the dew period will contribute to serious disease outbreaks. Nighttime and early morning irrigation are preferred. Irrigation during the late afternoon and early evening hours should be avoided.

Biological Control

There are a number of biological control applications that reportedly contribute to reducing dollar spot severity. Some professional turf managers have had success with various biological control applications while others have experienced disappointment.

The mixed results should not be unexpected because the microbiology of the turfgrass environment is extremely complex. It is likely that all factors contributing to turfgrass growth and development influence the efficacy of biological control applications. Consequently, the extent to which biological applications contribute to disease control may be determined only after on-site experimentation by individual turf managers.

Fungicide Application

Various fungicides registered for use on turfgrass perform well against dollar spot on well-managed turf. Repeated applications are almost always required on stands of creeping bentgrass and annual bluegrass. The contact fungicides usually require applications at 7-14 day intervals. Local penetrant fungicides and acropetal penetrant fungicides may be effective for 14-21 and 14-28 days, respectively, depending on the application rate, disease pressure, and overall vigor of the turf. Table 1 provides a list of common fungicides for dollar spot control.

Fungicides that contain site-specific (SS) inhibitors have a high resistance risk. Avoid repeated applications of fungicides within the same class and always consult the resistance management guidelines on fungicide labels. Regardless of the product, fungicide performance will improve when combined with turf management practices that reduce disease pressure.

Figure 7

Dollar Spot Control for Residential Lawns

In residential turf, dollar spot outbreaks may occur during summer when the benefits of fall-applied nitrogen have been expended and turf is growing slowly. Disease will be suppressed with supplemental fertilizer applications (0.2 pound of nitrogen per 1,000 square feet) in midsummer. Regular mowing to a height of 2-3 inches will hasten turf recovery. Specific recommendations for residential lawn fertilizing are provided in Purdue Extension publication AY-22, *Fertilizing Established Lawns*, available from the Purdue Turfgrass Management Program Web site: www.agry.purdue.edu/turf/publicat.htm.

Fungicide application is rarely necessary for dollar spot control in residential lawns. If a homeowner prefers quick control provided by effective fungicides, then a professional lawn service should be hired for the application.

Table 1. *Characteristics of fungicides effective against dollar spot*

Fungicide	Trade name[1]	Inhibitor[2]	Phyto-mobility
DMI class			
fenarimol	Rubigan®	SS	acropetal penetrant
metaconazole	Tourney®	SS	acropetal penetrant
myclobutanil	Eagle®	SS	acropetal penetrant
propiconazole	Banner Maxx®	SS	acropetal penetrant
triadimefon	Bayleton®	SS	acropetal penetrant
triticonazole	Trinity®	SS	acropetal penetrant
Dicarboximide class			
iprodioone	Chipco 26GT®	SS	localized penetrant
vinclozolin	Curalan®	SS	localized penetrant
Benzimidazole class			
thiophanate-methyl	Cleary 3336®	SS	acropetal penetrant
Carboximide class			
boscalid	Emerald®	SS	acropetal penetrant
Benzonitrile class			
chlorothalonil	Daconil®	MS	contact

[1] Trade names given by basic manufacturers.
[2] SS = site specific. MS = multi-site.

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12/09