

Dollar Spot

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Dollar spot is caused by a fungal pathogen (*Sclerotinia homoeocarpa*) that blights leaf tissues without killing 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 cause serious damage to playing surfaces.

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 turf diseases. 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 considerably damage 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, page 2). Characteristic symptoms on individual plants include distinct lesions on leaf blades (Figure 6, page 2) 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 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



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Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

mowing and core aeration. The pathogen is a natural part of the turf microbial community, so long-distance spread is not a serious concern.

Disease Control Options

Genetic Resistance

All modern creeping bentgrass cultivars are susceptible to dollar spot, but there are significant differences in their susceptibility. Great progress has been made in developing and releasing creeping bentgrass cultivars with excellent dollar spot resistance. Complete listings of creeping bentgrass cultivars are available on the NTEP website: www.ntep.org.

Cultural Control Options

Because dollar spot is more severe on nitrogen-deficient turf, an adequate nitrogen fertility program will delay disease outbreaks in spring, reduce outbreak severity, improve fungicide performance, and hasten 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 preferable. Avoid irrigating during early evening hours.

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. No biological treatment will provide standalone dollar spot control. The best we can expect is that biological treatments will reduce disease pressure to the extent that the performance of synthetic fungicides will be improved.

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. 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.

Table 1. Characteristics of fungicides effective against dollar spot.

Fungicide	Trade Name ¹	Inhibitor ²	Phytomobility
DMI Class			
metconazole	Tourney®	SS	acropetal penetrant
myclobutanil	Eagle®	SS	acropetal penetrant
propiconazole	Banner Maxx®	SS	acropetal penetrant
tebuconazole	Torque®	SS	acropetal penetrant
triadimefon	Bayleton®	SS	acropetal penetrant
triticonazole	Trinity®	SS	acropetal penetrant
Dicarboximide Class			
iprodione	Chipco 26GT®	SS	localized penetrant
Benzimidazole Class			
thiophanate-methyl	Cleary 3336®	SS	acropetal penetrant
SDHI Class			
boscalid	Emerald®	SS	acropetal penetrant
fluxapyroxad	Xzemplar	SS	acropetal penetrant
penfthopyrad	Velista®	SS	acropetal penetrant
Multisite/Contact Fungicides			
chlorothalonil	Daconil®	MS	contact
fluazinam	Secure®	MS	contact

¹ Trade names given by basic manufacturers.

² SS=site specific. MS=multisite.



Figure 7

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.

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-W, *Turfgrass Management: Fertilizing Established Cool-season Lawns*, available from the Purdue Turfgrass Management Program website (turf.purdue.edu) or Education Store (www.edustore.purdue.edu).

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

Find Out More

Find more publications in the *Turfgrass Disease Profiles* series by visiting the Purdue Extension Education Store, www.edustore.purdue.edu, or Purdue Turfgrass Science, turf.purdue.edu.

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