



MTC Turf News

THE MARYLAND TURFGRASS COUNCIL MAGAZINE

COVER STORY

Turfgrass Diseases: DOLLAR SPOT

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All photos by the author

Signs and Symptoms

The pathogen produces mycelium that grows on the turfgrass leaves, stems, and thatch which is visible on the canopy after prolonged leaf wetness durations (Figure 1). Initial symptoms of the disease under golf course management are the formation of 1-3-inch discolorated spots, approximately the size of a silver dollar. The spots are usually circular or oblong in shape and have a brownish-tan color (Figure 2). On higher-cut (2-3 inches high) turfgrasses, such as athletic fields or home lawns, the infected areas can expand to 6 inches or more, and the grass blades will have tan lesions with brown borders. These lesions resemble kangaroo shapes which make dollar spot lesions distinguishable from other diseases such as brown patch and Pythium blight (Figure 3). As the disease progresses, the patches merge to form larger areas of damage. The affected turfgrass may appear thin and matted, and the leaves may turn yellow and other. In severe cases, the turfgrass may die and eventually leave bare soil behind.

Favorable Environment

The pathogen is most active when the temperatures are between 60°F and 80°F (15°C and 30°C) and the relative humidity is high (above 90%). However, some other diseases such as brown patch, grey leaf spot, and Pythium are more active in mid-summer when the temperatures are higher. In Maryland, dollar spot occurs between late March/early April to October with the disease being most prevalent in the spring and fall. It is worth noting that under favorable environmental conditions, the disease may appear 12 months out of the year in Maryland. Warm days and cool nights that result in dew formation on the turfgrass canopy provide the most favorable environment for dollar spot outbreaks.

Disease Management

Resistant Cultivars

New turfgrass cultivars have better dollar spot tolerance levels. For instance, creeping bentgrass cultivars Chikita, Celtic, Invictus, Pippa, and IMPZL have shown promising dollar spot tolerance. More information about improved cultivars is available on the National Turfgrass Evaluation Program (NTEP) website at www.ntep.org.

Cultural Management

Cultural practices are an important component of an integrated pest management program for dollar spot disease. The following cultural practices can help prevent or reduce the severity of the disease:

- Proper Irrigation:** Proper irrigation is critical for preventing dollar spot disease. Irrigation should be timed to avoid prolonged periods of leaf wetness, which promote the growth of the pathogen. Early morning irrigation is preferable to evening irrigation because it allows the turfgrass to dry out during the day.
- Fertility Management:** Proper fertility can help prevent dollar spot disease by promoting healthy turfgrass growth. Turfgrass should be fertilized according to soil test results to ensure the appropriate amounts of phosphorus and potassium. Applying nitrogen fertilizer in late spring/early summer reduces the dollar spot severity. Nitrogen applications in multiple, small applications has better results in disease management rather than single, high rates. This will promote steady growth and reduce the risk of dollar spot outbreaks. Please refer to Maryland nutrient management guidelines as outlined in the University of Maryland Turfgrass Technical Updates for more information.
- Mowing Practices:** Proper mowing can help prevent dollar spot disease by promoting healthy turfgrass growth. Turfgrass should be mowed at the appropriate height for the species and maintained at a consistent height. Mowers with sharp blades will reduce the tearing of the turfgrass blades, thereby promoting healthy growth.
- Rolling, Topdressing, and Dethatching:** Researchers at Michigan State University note that daily light-weight rolling (4 to 5 times per week) can significantly reduce the severity of dollar spot on putting greens. An additional research study revealed that sand topdressing was more consistent at reducing dollar spot in golf course fairways compared to rolling. Regular dethatching can also reduce the disease severity which will allow extended fungicide application intervals. It is important to note that other factors such as weather conditions and fungicide efficacy can change the impact of these cultural practices.
- Thatch Management:** Excessive thatch accumulation, which adversely affects air exchange, water infiltration and fertilizer utilization, can create an environment conducive to dollar spot disease development. Thatch should be managed through core aeration and topdressing to encourage the breakdown of thatch and promote healthy soil structure.
- Soil Management:** Reducing soil compaction is critical for preventing dollar spot disease. Soil compaction should be reduced through core aeration, and drainage should be improved in areas where water tends to accumulate.

FIGURE 1: Mycelium of the pathogen on golf course bermudagrass turfgrass.

FIGURE 2: The initial symptom of dollar spot disease on golf course bermudagrass turfgrass.

FIGURE 3: Dollar spot lesion in perennial ryegrass on higher mown turfgrass.

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