



# Dollar Spot of Turfgrass

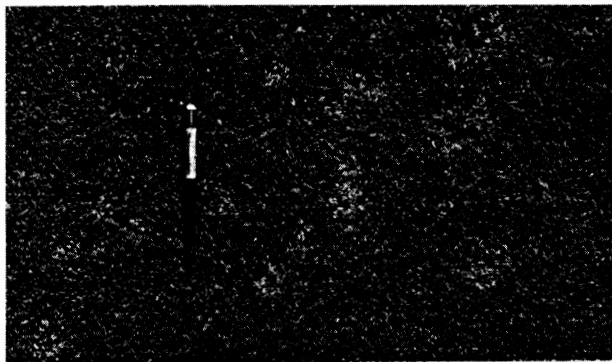
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Dollar spot is a common disease that occurs on most cultivated turfgrass species (bentgrass, bermudagrass, bluegrass, fescue, ryegrass, and zoysiagrass) throughout Oklahoma. However, this disease is most severe on turfgrass in residential lawns maintained under a low nitrogen fertility program and on bentgrass golf greens. In Oklahoma, dollar spot is most prevalent in late spring and early fall when high humidity and cool nights favor dew formation.

## Symptoms

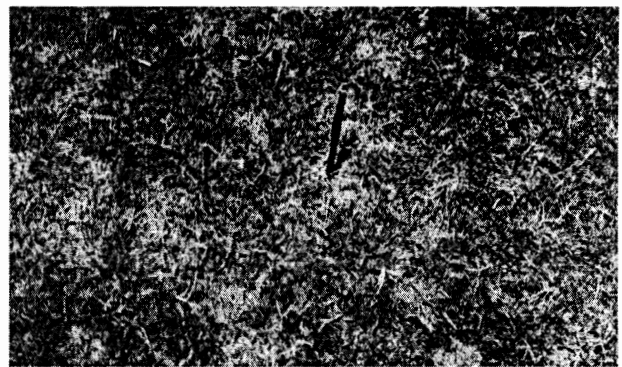
The overall symptom development for dollar spot varies with turfgrass species and mowing practices. On closely mowed turfgrass, such as bentgrass golf greens, the characteristic symptoms of dollar spot are small, circular, straw-colored, sunken spots that rarely exceed two to three inches in diameter (Figure 1). If the disease becomes severe, individual spots may coalesce forming larger, irregular patches of blighted turfgrass. Residential lawns and other taller turfgrasses may exhibit irregularly shaped, bleached patches of blighted grass ranging from four to six inches or more in diameter (Figure 2). Patches may coalesce to cover large areas.

Individual infected leaves develop a lesion (spot) that is first chlorotic (pale green or yellow), then water-soaked, and finally a bleached straw color. Dollar spot lesions are characteristically bounded by a tan to reddish brown margin (Figure 3). These lesions usually enlarge to extend across the entire leaf. Dieback from leaf tips is also common. Individual leaf blades may have a single lesion, have many small lesions,



**Figure 1.** On closely mowed bentgrass, the symptoms of dollar spot are small, circular, straw-colored, sunken spots.

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**Figure 2.** On bermudagrass, dollar spot appears as circular, straw-colored patches of blighted turfgrass.

or be entirely blighted. Leaf symptoms may be confused with those caused by *Pythium* blight and *Rhizoctonia* brown patch.

In the early morning when dew is present on grass blades and the pathogen is active, a white, cottony growth of fungal strands (mycelia) may be seen on diseased turf (Figure 4). These fungal strands can be confused with those produced by *Pythium* and *Rhizoctonia*. The mycelia disappear as the leaves dry.

## Causal Agent and Disease Cycle

*Sclerotinia homoeocarpa* is the name that has been used for the fungus that causes dollar spot. However, recent studies have shown that the fungus most likely belongs in either the genus *Lanzia* or *Moellerodiscus*. The dollar spot fungus survives unfavorable periods as dormant mycelia in infected plants or as tiny black resistant structures called stromata on infected plant surfaces. The fungus does not produce spores. Therefore, spread of this fungus is restricted to movement of infected leaf debris by equipment, people, animals, water, or wind. Prolonged periods of high humidity or dew in the turfgrass canopy are required for fungal growth and turfgrass infection. When weather favors growth of the fungus, mycelia from within infected tissue or from stromata grow on the surface of leaf blades. When the aerial mycelia contact a moist healthy leaf surface, they penetrate the leaf to cause infection. When adequate moisture is present, prolific growth of the fungus occurs and infection centers enlarge.

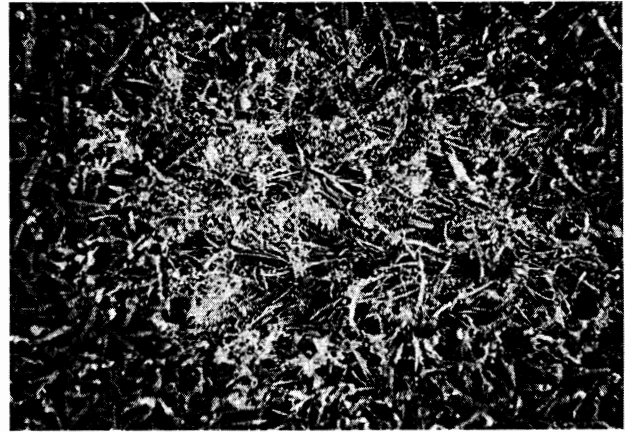


**Figure 3. Straw-colored dollar spot lesions with tan to reddish brown margin.**

The dollar spot fungus can be active from late spring through late fall. Favorable environmental conditions for disease include humid weather with warm days and cool nights that result in heavy dews. A temperature range of 60°F to nearly 90°F is favorable for dollar spot development, with greatest activity for infection occurring between 70°F and 90°F. Dollar spot development is most severe in Oklahoma in late spring (May) and early fall (September) when high humidity and cool nights favor dew formation. Turfgrass grown under low nitrogen fertility is prone to dollar spot development. Also, drought-stressed turfgrass is more susceptible to severe disease infection than turfgrass growing where adequate soil moisture is present. Therefore, severe outbreaks of dollar spot can occur during seasons of low rainfall, if humidity and dew formation are high.

## Disease Management

**Cultural Management:** Maintain moderate to high nitrogen fertility during periods favorable for dollar spot development. For warm-season turfgrasses (bermuda and zoysia), a total of five pounds actual nitrogen (N) per 1,000 square feet per year should be applied as five one-pound N per 1,000 square feet split applications in May, June, July, August, and September. Do not apply nitrogen after September 15, as this increases turfgrass susceptibility to winter injury and spring dead spot disease development. An additional one to three



**Figure 4. Cottony mycelia of dollar spot fungus.**

pounds N per 1,000 square feet per year may be needed on high maintenance areas. For cool-season turfgrasses (bent, blue, fescue, and rye), four pounds N per 1,000 square feet per year should be applied as one pound N per 1,000 square feet applications in March, May, September, and November. When water is required, apply a sufficient amount for deep penetration, and then water as infrequently as possible without causing moisture stress between waterings. Avoid frequent applications of small amounts of water. Do not water in the late afternoon or evening, for this prolongs periods of leaf wetness at night. Promote good air circulation over the turf by pruning or removing trees or shrubs and removing other barriers to air movement. Mow the turfgrass regularly at recommended heights.

**Chemical Management:** If nitrogen fertility levels are properly managed, the use of fungicides for dollar spot control in residential lawns is normally not necessary. However, many effective fungicides are available for dollar spot management if needed. Chemical control is most effective if different fungicides are alternated and applied in the early spring and fall before disease development, or when the disease is first evident. Fungicides should be used in conjunction with good turfgrass cultural management practices. For suggested fungicides, rates, and application timings, refer to the current OSU Extension Agent's Handbook of Insect, Plant Disease, and Weed Control.

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