



Managing Spring Dead Spot Disease of Bermudagrass

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Oklahoma Cooperative Extension Fact Sheets
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Spring dead spot is a common and serious disease of bermudagrass. In Oklahoma, the disease is usually caused by the fungus *Ophiosphaerella herpotricha*. However, the fungi *Ophiosphaerella korrae* (formerly called *Leptosphaeria korrae*) and *Leptosphaeria narmari* recently have been identified as additional causal agents in the northeastern quarter of Oklahoma. *Gaeumannomyces graminis* also has been identified as a causal agent of this disease outside of Oklahoma.

Proper identification of the disease and its cause are the first steps in controlling any disease. To determine if turf has spring dead spot, read the information provided below and try to match the symptoms of the disease and time of year of occurrence with the problem found in the turfgrass. Positive identification of the disease can also be made by taking a sample of the problem turf to the local Oklahoma Cooperative Extension Service county office for submission to the OSU Plant Disease Diagnostic Laboratory at Stillwater. A fee is charged for processing samples. To collect a proper sample for diagnosis, select several turf plugs measuring 4 inches in diameter by 3 inches deep from the outer edge of the affected patches. The plugs need to contain both healthy and diseased turf. Take the samples to the local county Oklahoma Cooperative Extension Service Office for proper packing and shipment to the diagnostic laboratory.

Symptoms

In Oklahoma, spring dead spot disease symptoms usually appear in April and May as bermudagrass begins growing. At this time, diseased areas are identified as circular dead patches of bermudagrass ranging from 3 inches to several feet in diameter (Figure 1). The circular areas can overlap to envelop a much larger area. Weeds such as crabgrass may begin to grow in the dead areas. Damage by spring dead spot is often confused with that caused by white grubs. Turf killed by grubs usually can be lifted easily from the soil surface like a carpet. Also, injury from grubs will usually not always occur in near perfect circles like that caused by spring dead spot. Finally, check for the presence of grubs under the turf. Several grubs per square foot will be required to kill bermudagrass.

The causal fungus of spring dead spot attacks the roots, crowns, stolons, and rhizomes of susceptible bermudagrasses in the fall of the year and again in spring, even though symp-



Figure 1. Bermudagrass lawn with severe case of spring dead spot disease.

toms of infection cannot be seen from above. During these times, the fungus spreads radially through the soil, producing circular patches of infected grass. Infection in the fall is most devastating, since it is believed that the injury caused by the fungus at this time predisposes the bermudagrass to winter-kill. The dead plants do not greenup in spring, producing the symptoms of the disease. The dark hair-like filaments (runner hyphae) of the causal fungus occasionally can be seen on stolons, rhizomes, and roots in the spring of the year, both within and slightly outside the dead patches of grass.

Managing for Prevention and Recovery

Severity of spring dead spot can be reduced, though not necessarily cured, through proper turfgrass management. The rapid rate of spread of most bermudagrasses usually provides for complete recovery of the area if it is properly managed. Proper cultural practices not only aid in recovery of the affected areas, but also influence severity of the disease the following spring. Bermudagrass areas which are overfertilized in the fall as well as those having excessive thatch, poorly drained low spots, and highly compacted areas usually have the most severe symptoms.

Cleanup and Reestablishment

With no intervention, bermudagrass will often grow over the dead patches by late summer. However, recovery can be speeded up by raking debris from the patches which allows stolons growing in from the sides to root more easily. In very large patches, placing plugs of healthy turf into the dead areas can help speed up recovery. Maintain adequate fertility to speed recovery (see OSU Extension Fact Sheets HLA-6420, Lawn Management in Oklahoma). It is probably useless to dig out the dead areas and replace the soil in an attempt to rid the area of the fungus because it is widespread in the soil.

If one is re-establishing or renovating an entire area in bermudagrass and the turf was plagued by spring dead spot in the past, consider using the more resistant bermudagrass cultivars. The bermudagrasses Guymon, Midiron, Midlawn, Midfield, Mirage, and Sundevil are partially resistant (not immune) to the disease caused by *O. herpotricha*. Arizona Common, Cheyenne, Jackpot, NuMex Sahara, Oasis, Poco Verde, Primavera, Sonesta, Tifton 10, Tifway (Tifton 419), Tifgreen (Tifton 328), Tropica, Vamont, and Sunturf are the most susceptible cultivars. No bermudagrasses are immune to the disease. If the entire area is not re-established with a resistant variety, results may not be satisfactory. In partial re-establishment the different bermudagrasses present may produce a mosaic of different colors, textures, and densities that leads to a reduction in the visual and/or functional quality and uniformity of the site.

Core Aerification and Dethatching

Core aerification of compacted sites may help to reduce the severity of the disease by providing improved root growth and thus a more healthy turf. Dethatch if thatch, when measured during the summer period, exceeds 1/2 inch in thickness. An accurate measurement of thatch can usually not be achieved during the winter months when bermudagrass is brown and dormant. Dethatching is best performed in late winter, prior to the greenup of bermudagrass and prior to application of pre-emergent herbicides.

Grade and Drainage

When necessary, fill or tile low areas to aid in surface and subsurface drainage. A uniform 2% slope will usually aid in providing good surface drainage. If adding soil, use a soil similar in physical characteristics to the existing top soil to avoid creating layering problems.

Fertility

Adequate fertility is crucial to the development of a high quality stand of bermudagrass and recovery from spring dead spot. Severity of the disease also can be reduced by avoiding heavy, late-season fertilization with quick release sources of nitrogen such as urea or ammonium nitrate. Limit the last nitrogen application of the growing season for bermudagrass areas to approximately 1 lb of nitrogen per 1000 square feet. Make this application no later than the first week of September. Also, have the soil tested to ensure that potassium and phosphorus are not deficient. Using micronutrient sprays, such as those containing chelated iron, can improve color retention in late fall without the overstimulation of bermudagrass which may lead to more severe spring dead spot.

Maintain Healthy Turf

It is likely that any practices that weaken bermudagrass in the late fall or that reduce its winter hardiness may increase the severity of spring dead spot. Therefore, try to avoid any unnecessary management practices that may further predispose bermudagrass to this disease (see OSU Extension Fact Sheet HLA-6420, Lawn Management in Oklahoma).

Fungicidal Control

Although there are fungicides labeled for control of spring dead spot, control has been erratic for disease caused by *Ophiosphaerella herpotricha* (the usual causal agent in Oklahoma and Kansas). The Oklahoma Cooperative Extension Service currently does not suggest the use of fungicides for control of spring dead spot because most fungicides have not been effective in this region of the country.

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