

DEAD TO PRICHTS

Don't be fooled. Identify the tell-tale signs of spring dead spot early on so it doesn't become a season-long scourge.

By Rob Thomas

It has been a long, cold winter. Spring has sprung, turf is exiting dormancy and golfers are chomping at the bit to play. Unfortunately, your course is dotted with unsightly blemishes – spring dead spot (SDS) has reared its ugly head.

Spring dead spot is most common in the transition zone where Bermudagrass is grown and subjected to periods of cold temperatures that induce plant dormancy, says Dr. Nathan R. Walker, professor of turfgrass IPM/turfgrass pathology at Okla-

homa State University. Depending on location in the United States, the causal agent is a soil-borne fungus known as, *Ophiosphaerella korrae*, *Ophiosphaerella herpotricha* or *Ophiosphaerella narmari*.

“For example, in the Southeast and Atlantic coast states, *O. korrae* tends to be more common, while in the plains, *O. herpotricha* is more common,” Walker says. “It is not uncommon to have regions where two or three of the species can all be found.”

Symptoms of SDS are fairly di-

agnostic – patches from 6 inches up to 18 inches, or even several feet in diameter are present at spring green-up, says Dr. S. Bruce Martin, Jr., professor of entomology, soils and plant sciences at Clemson University.

“Superintendents can probe the soil to examine roots and rhizomes in the affected patches; dark brown to black rotten roots, stolons and rhizomes will be observed, even without a hand lens,” Martin says.

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ments where Bermudagrass tends to go semi- to completely dormant, Martin says. In areas where winters are cold enough for Bermuda to go completely dormant, SDS tends to be more severe than in climates with warmer winters.

“Symptoms are prevalent in the spring, but infections actually occur the previous summer and fall and perhaps some infection occurs in the spring,” he says. “However, the summer and fall infections are probably the most

important as they weaken Bermuda as it is going into dormancy, and this weakened, infected grass is what is ultimately injured or killed by low-temperature stress.”

Different turf types are more susceptible to SDS, Walker adds. “It is important to remember the disease triangle here – host (grass), environment and pathogen – all are factors that determine the presence or absence of disease,” he says. “Like many diseases, when a plant is grown outside its region of adaptation

we see stress and disease. The damage SDS causes can range from low to very severe on different cultivars of common and interspecific hybrid Bermudagrasses. Generally speaking, cold tolerant Bermudagrasses are more tolerant and cold intolerant are more susceptible.

“So take Ultradwarf Bermudagrass, which is becoming more common in the northern region of the transition zone in Oklahoma, we will likely see more SDS on these grasses as they are grown

farther north,” Walker adds. “So within all the different types of Bermudagrasses there are differences, and these differences can be affected greatly by where and how the grass is grown.”

The highest maintained hybrid Bermuda grasses are generally the most susceptible, says Blake Garrett, agronomist at FarmLinks in Sylacauga, Ala. Hybrid Bermudagrasses, which tend to produce excessive thatch, are the most prone to spring dead spot. Conversely, Bermudagrass variet-

PHOTOS COURTESY DR. BRUCE MARTIN

WARNING: DON'T BE FOOLED

Superintendents can't be too quick in diagnosing a patch of dead turf as spring dead spot (SDS). It is often confused with pink snow mold because, according to Blake Garrett, agronomist at FarmLinks in Sylacauga, Ala., the two share some similar symptoms, such as bleaching of turf in sunken circular areas that occur after the disease has affected the turf. In addition, both appear after the turf is transitioning out of winter dormancy.

Going beyond the naked eye, any competent diagnostician should be able to differentiate the diseases easily through microscopy, says Dr. S. Bruce Martin, Jr., professor of entomology, soils and plant sciences at Clemson University. “Pink snow mold or microdochium patch produces abundant two-celled curved spores on infected leaves, while SDS has no spores typically associated with it, but abundant ectotrophic darkly pigmented fungal hyphae on roots, stolons and rhizomes,” he says.

“Look at roots, stolons and rhizomes with a good hand lens for the typical rotting associated with SDS,” Martin advises. “If they have a microscope, they can incubate foliage overnight in a refrigerator, which should allow growth of microdochium mycelia and spores, then observe through a microscope for the typical curved spores. Otherwise, send an



untreated sample to a diagnostic lab. An answer should be forthcoming quickly.”

A ring of salmon- or pink-colored growth is present on the outer edge of pink snow mold patches when the disease is actively developing, Garrett adds. The infected leaves within the patches are usually collapsed and matted down upon themselves.

“Fungicides are effective for control of pink snow mold,” he says, if that's what the issue turns out to be. “In the case of pink snow mold, apply fungicides before snow cover to prevent disease development. Mapping and spot-treatment of areas where pink snow mold is most severe can significantly reduce fungicide expenditures. In regions where prolonged snow cover does not occur, apply fungicides when symptoms of microdochium patch are first observed.”

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ies with improved cold tolerance are more resistant to SDS. Guymon, Midlawn, Midfield, Midiron, Yukon, Mirage and Sundevil have been shown to have improved resistance to SDS, whereas Arizona Common, Cheyenne, Jackpot, NuMex Sahara, Oasis, Poco Verde, Primavera, Princess, Sonesta, Shanghai, Tifton 10, Tifway, Tifgreen, Tropica, Vamont and Sunturf are all susceptible to SDS.

Based upon its name, one might believe SDS is a season pathenogen, but Garrett says that's not the case... and can present problems for years.

“Initial signs and symptoms are visible in the spring, but once the affected Bermudagrass roots and stolons are severely rotted, patches are sunken, generally well defined and circular,” he says. “Severely damaged areas may have symptoms that last well into the summer [and] the turf may not recover before fall dormancy.

“They may enlarge over three to four years, often developing into rings and then disappear,” Garrett adds. “These spots usually reoccur in the same location over several years if disease-management practices are

not put into place.”

Unfortunately, the likeliness of SDS appearing is fairly high if conditions are favorable for disease. “It is difficult to avoid the disease, but management practices such as selecting a resistant cultivar, not conducting activities that delay dormancy or spread the fungus can reduce the severity of the disease and likely slow the spread of the disease,” Walker says.

Superintendents should be vigilant for early warning signs, Martin says. “Perhaps the appearance of the dull or bleached turf in a patch pattern in fall; however applying a fungicide for control once symptoms appear will be less effective typically than earlier applications, but still may be helpful in late fall, especially on putting greens,” he says.

Too late... the disease has been spotted. What now?

“If symptoms occur in a particular spring, then they are more likely to recur the following year if not controlled,” Martin says. “Most of my work has been on putting greens where

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the tolerance of the disease is very low. On fairways, a superintendent frequently will opt not to bother with fungicides because control can be expensive and incomplete. This all depends on the budget and tolerance of the damage.

“Preventive approaches with fungicides usually include two applications of fungicides with known efficacy,” he adds. “These have included Rubigan (being phased out), Torque, Banner Maxx and Eagle, primarily. Heritage has worked in some cases but not well in other cases, with the same inconsistent results from thiophanate methyl. However, rotations or tank mixes with t-methyl and Torque have shown improved efficacy over Torque alone, in my trials on putting greens.”

Patience and smart agronomic practices are factors in winning the war against SDS, Garrett says.

“Spring dead spot can be managed with a multi-pronged approach, implemented over a period of several years,” he says. “Management practices that improve the cold-hardiness of Bermudagrass are therefore very effective for SDS management.

“Preventative fungicide applications are an option in high-value areas or where cultural practices alone do not provide adequate control. Of the fungicides that are labeled for spring dead spot, fenarimol (Rubigan) is most effective,” Garrett adds. “The timing of fungicide applications does not appear to be critical, as long as they are made in the fall before soil temperatures dip below 60 degrees (F).

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—Blake Garrett, FarmLinks

For best results, applications should be made at higher water volumes or watered-in with 0.25 inches of irrigation immediately after application in two gallons H₂O/1000 ft².”

Walker points to timing. “Depending on the situation, it is best to avoid practices that can spread the fungus while soil temperatures are cool or delay normal cool temperature-induced plant dormancy,” he says. “There are

several studies where different fertilizer nutrients or formulations of the nutrient when used decreased the severity of the disease. Excessive nitrogen fertilization can increase the severity of the disease. Lastly, one can use fall applications of fungicides to suppress the disease.”

Once diagnosed properly – in-house or via a lab – sound agronomic practices are always the best course. GCI

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