

Make dry spots vanish

Researchers tell superintendents what to use and what they can do to make the dry spots on their greens go away.

By JOHN C. FECH

It's just a few short weeks away from the annual statewide tournament and you're the host. Lots of details run through your mind as you prepare the golf course for play.

The last thing you need to worry about are localized dry spots on the greens. But, sure enough, the symptoms are showing up—foot printing, dark blue-green color development, and even some wilting and tissue loss. You try stepping up the irrigation cycles, but it doesn't help much. The spots are there.

Many causes

Localized dry spots (LDS) are symptoms with various causes. On native soil greens, many factors including thatch, compaction, poor irrigation coverage, and fungal mats can cause dry spots. On USGA specification or other high-sand-

content greens, hydrophobic (water repelling) soils are mainly responsible.

On both types, once a spot becomes noticeable, it's difficult to get it to perform normally again. As with pest control and other problems, proper diagnosis of the cause of the LDS is critical.

Research sheds some light on this problem on high-sand-content greens. The water-repelling capacity of a given soil is believed to be related to the buildup of an organic coating on the soil particles.

"The coating results from the natural microbial process of breakdown of roots, shoots and organic elements of the soil mixture such as peat moss," says Dr. Keith Karnok, professor of turfgrass science at the University of Georgia. When the coat-

ing becomes dry, its chemical nature repels water. Because high-sand-content greens hold water poorly to begin with, coatings further reduce moisture holding capacity and increase the rate of drying.

The symptoms of localized dry spots can be temporarily suppressed by using wetting agents, compounds which lower the surface tension of applied irrigation water. There are many products available in today's market. However, Karnok's research indicates that there are not significant performance differences among them. "Differences show up in cost, amount of product required and number of applications necessary to relieve symptoms," says Karnok.

Superintendents, on the other hand, may have favorite products. "Superintendents have to feel comfortable with whatever product they use. It has to be compatible with whatever else they may be applying to the green at the time such as fungicides or fertilizers," says Charlie Hadwick, superintendent at the Country Club of Lincoln, Neb. "The bigger concern is potential phytotoxicity to the green." To reduce risk to valuable turf, Charlie tests new products on the practice green.



Localized dry spot symptoms: blue-green turf color, wilting.

PHOTO COURTESY DR. PAUL REKE



Expression of mushrooms in localized dry spots, something you might not expect.

PAUL VERMUELEN, USGA

Hadwick believes the coating issue is at the core of debate over controlling dry spots. "It affects so many things—USGA sand greens versus native soil mixes, high rates of wetting agents being effective, and possible relationship to fairy ring—sort of a problem cousin to localized dry spots." As evidenced by the expression of mushrooms in spots, the coating causes odd symptoms. "Whoever would expect mushrooms to show up in a dry spot?" asks Hadwick.

Soil modification through aeration and topdressing is another approach. Also, Kamok has seen positive results with the use of PSA diatomaceous earth soil amendment products.

Dr. David Minner, associate professor of turfgrass science at Iowa State University, has conducted several field studies to assess the optimum procedures and materials to incorporate.

"There is a negative stigma surrounding these products, kind of skepticism based

Be persistent or you'll have a hard time getting rid of localized dry spots.

on the notion of using kitty litter on your green," says Minner. Even so, he's encouraged by the results of his studies. One product in particular, Profile, has demonstrated dramatic differences. He encourages superintendents to try it for themselves.

"Break open a bag and see for yourself," says Minner. "After coring a green, backfill the holes with Profile in a 10 by 10 ft. area where dry spot is a problem. The treated area should show up if its helping your dry spot problem."

Minner reports that some calcined clays are dusty and can break down into finer materials that may severely reduce water infiltration on sand greens. Profile is differ-

ent than calcined clays of the past in that the dust particles are removed and the material is heated to a higher temperature creating a porous ceramic material.

"It appears that coring and topdressing dry spots with Profile will allow water to quickly enter, and remain in the dry spot sand," adds Minner.

The best approach to dealing with localized dry spots is to be persistent. "You've got to stay on top of them," adds Hadwick. "Hand water during the heat of the day, and put the water where it's dry, not where it's wet. Use light repeated applications. Let it soak in. Rewater. Otherwise the water just runs downhill, and you haven't got enough on the dry spots, and you've got too much everywhere else." □

—The author is an extension educator with the University of Nebraska



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