

Clark Talks Turf

■ TIMELY TURF ADVICE



→ Localized Dry Spots – A Sure Sign of Summer

Doug Karcher is an associate professor of turfgrass science at the University of Arkansas. Research on localized dry spots, wetting agents and putting green rootzone moisture distribution has been an emphasis of Karcher's research program. Doug shares his experience managing localized dry spots.

Q Let's start with a tough situation. Localized dry spots are just starting to show up now on the greens and the superintendent hasn't applied a wetting agent all season. What now? My experience has shown that many commonly used wetting agents, like Revolution, Cascade and TriCure (and several others), that are labeled for preventive management of localized dry spots are also effective for curative management of localized dry spots. If localized dry spots are starting to be a problem, apply a wetting agent now and it will help.

Q Is phytotoxicity a concern with summer application of wetting agents? Definitely. Precautions and common sense need to prevail when applying wetting agents in summer. Apply the wetting agent in 2 gallons of water per 1,000 square feet, water in the wetting agent immediately after application and apply the wetting agent in the early morning hours when temperatures are cooler.

Q What does your research show about preventive use of wetting agents? Preventive use of wetting

agents is an effective strategy. In Arkansas, we suggest the first wetting agent application be made in late April or early May and continue throughout the summer until cooler temperatures arrive in September. Each product has specific directions.

Q I know you've spent much time and effort trying to get a handle on soil moisture distribution within the putting green rootzone. What impact do wetting agents have on soil moisture distribution? Wetting agents are great at increasing the uniformity of soil moisture distribution both vertically and horizontally in the rootzone. The benefit of this is the interval between irrigations can be increased because the green is drying out more uniformly and there are fewer hot spots. Increasing the intervals leads to a drier playing surface, healthier turf and better conditions.

Q What causes local dry spots to develop? Sand particles are coated with organic acids. The organic acids have a hydrophobic end. The first time the rootzone dries out, the hydrophobic ends of all the organic acid molecules orient outward toward the pore spaces. This creates a hydrophobic area that we see as a localized dry spot. The sources of the organic acids are likely a combination of root exudates, basidiomycetes in the rootzone, organic compounds washed off the leaves and decomposition of thatch.

Q Are there products that will "strip" the organic acids off the sand particles? Products have been developed that make that claim, but to date I have not seen any research that fully supports it. The concept is good; the products need more development before I can recommend them. We're currently conducting research with such products.

Q How does soil moisture management increase or decrease the incidence of localized dry spots? The current hypothesis is that localized dry spots appear when the soil moisture falls below a critical threshold level. Keeping the soil moisture content of the rootzone above that critical level will prevent their appearance.

The threshold moisture level varies from course to course and in some cases, green to green. The critical soil moisture level depends on many factors including the particle size distribution of the sand in the rootzone, the age of the green and the organic matter content of the green.

Q Anything else that you want to share? Two observations that intrigue me but I can't explain: The first is that I consistently see fewer localized dry spots on research greens that are treated with Primo prior to the start of the dry weather of summer. The second is that greens that are underfertilized with nitrogen have more localized dry spots than greens that receive a sufficient amount of nitrogen. Explaining these will keep me busy for a while. ■

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