



A Good Soak

Deep irrigation and hand watering will mitigate disease occurrences

BY PETER BLAIS

Irrigation is similar to most of the better things in life. Like pizza, beer and key lime pie, water on golf greens is best enjoyed in moderation.

“The recipe for disaster is still the same — overwatering,” said Bud White, United States Golf Association (USGA) Green Section director for the Mid-Continent Region. “Overwatering is the most common cause for wet wilt, disease and algae.”

Superintendents should water deep and infrequently to promote optimum turf health and playability, White explained. As summer stress approaches, deep watering has to be balanced with syringing based on a particular facility’s green construction, irrigation-system quality, water quality and environmental conditions.

There are no hard-and-fast numbers or schedules that apply to every course, according to USGA Green Section Florida Region agronomist Todd Lowe. The idea is to provide what is needed for plant growth.

“It is easy to over irrigate, creating soft playing conditions and making the soil more

prone to compaction and the turf more prone to disease,” Lowe explained. “Pythium thrives in saturated soils, and turf loss can occur from extended soil saturation. Anaerobic soils can also occur and black layer develops. Even less irrigation is needed on nonoverseeded bermudagrass in winter because the grass isn’t growing.”

Irrigation schedules usually change, not only over the course of the year, but also from year to year, according to USGA Green Section Mid-Atlantic Region Senior Agronomist Keith Happ. Each year is different, and adjusting to changing conditions is critical.

Last spring, for example, Pennsylvania was under a drought watch requiring a voluntary cut in irrigation applications. Fortunately, if there is a good time to allow the soil to dry, it is springtime in the Mid-Atlantic.

“In June we had rains and cooler temperatures,” Happ says. “Those who held off on regular irrigation cycles during the early spring benefited. You can always apply more water, but you cannot take it away.”

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Turf managers walk a fine line between too much and too little watering. Simply using what their eyes tell them when they look at the putting surface is not enough. Some level of discoloration is acceptable, especially when weather patterns are taken into consideration. But superintendents need to poke holes through the surface and take subsurface measurements for moisture content.

Superintendents' first priority should be sufficient irrigation to maintain plant health, which may often mean holding off on using overhead irrigation cycles until absolutely necessary. Replacing irrigation-system watering with hand-held irrigation to specific areas is a good practice, particularly in the spring, Happ says.

Former First Lady Nancy Reagan's advice to those considering using drugs was "Just Say No." Superintendents should offer the same retort to golfers who pressure them to over irrigate to soften the soil to make it more receptive to golf shots.

Also, consider the limitations of the current irrigation system. If it is aged, inadequate or requires upgrades, do not push it beyond its capabilities, experts say. Focus on center lines of play first and make an attempt to maximize playing quality. Never risk saturating the main landing areas while attempting to irrigate the bordering areas of play.

"It all comes down to being too wet," Happ agrees, when discussing the surest recipe for disaster. "Control is the key. With the dynamic weather conditions we face in the Mid-Atlantic region, it is important to monitor weather patterns as much as possible.

"Even if the turf manager has a system that provides the opportunity to irrigate wall-to-wall, it does not mean the system should be used every day," Happ adds. "All too often, there is outside pressure to use a newly installed system when the best strategy is to drag a hose to those isolated areas of concern. We need to continue to educate golfers about when turf needs water. Mid-summer days of high heat and high humidity are not times to be throwing heavy irrigation cycles."

Very occasionally, however, a situation occurs where it is virtually impossible to over water. Superintendents often refer to this a "Black Saturday" or "Black Sunday," according to David Oatis, director of the Green Section's Northeast region.

This unfortunate recipe for disaster usually occurs in July or August in the Northeast, when weak grass roots and a prolonged period of high humidity/high temperature is followed by a sudden drop in humidity. The dry weather kicks off a high demand for moisture with plants losing water through the leaves faster than the impaired roots can absorb it through the ground. Plants begin wilting, often by mid-morning.

"We had one of those days last year on the first Saturday in August," Oatis recalled. "The first week of August was one of the hottest and most humid on record. Then Saturday was low-80s, high skies, real low humidity and good winds. The turf wilted uncontrollably. That is one of those rare days superintendents cannot keep up with wilt using a hose. They need to turn on the sprinkler heads and let them run.

"Usually if you have wilt, you should chase it with a hose and syringe very lightly," Oatis adds. "But that was a day when massive amounts of water were being pulled out of the turf and superintendents could not keep up with the plants' demand for water. Those are the days that kick off disease, and courses lose grass to drought stress and traffic on stressed turf. They do not happen very often, but they are tough, tough days. They always seem to happen on Saturday or Sunday afternoons, when the superintendent might not be on site."

Ultimately, there are no hard-and-fast rules. There are many ways to irrigate a green. "Irrigation philosophies are all over the map," said Chris Hartwiger, senior agronomist with the USGA Green Section's Southeast Region. "There are deep and infrequent guys, and there are daily-replacement guys. I've seen both work well. Ultimately, irrigation is an art." ■

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