



WATER, WATER... ANYWHERE?

Golf course superintendents in the Northeast or Southeast may not be overly concerned about a water shortage following the recent golf season. Ask Bethpage Black's Craig Currier or Merion's Matt Shaffer, who both dealt with excessive rains as they prepared for major events this season.

Water will soon, if it's not already, become as valuable as oil to our industry. Where do golf course superintendents turn when one of the most precious asset of a golf course becomes so regulated? We make it our job to use the growing number of technologies available to help us water responsibly.

Mike Huck, principal of Irrigation & Turfgrass Services of Dana Point, Calif., explains, "It all centers on a properly functioning irrigation system first, and controlling the amount of water used second."

While this is a great starting point, economic pressures don't allow all golf courses to invest in state-of-the-art irrigation systems. Mike suggests superintendents conduct a uniformity audit and data interpretation. This test evaluates the general performance of the irrigation system and pinpoints shortcomings. Once the system functions well, the next step is to reduce and monitor water use.

Tom Brodeur of the TPC of Boston implemented a moisture-monitoring sequence of measuring points within each putting surface to determine water volumes and irrigation needs. The system evaluates putting surface performance and consistency.

A 30-inch probe – a Field Scout soil-moisture meter – is inserted 3 inches into the soil to gather moisture data. Each green profile is reviewed and nine measuring points across the surface are determined for water content measuring. Next, the points are numbered and entered into a data file.

During advance and tournament week Brodeur's team checks the points throughout each day to establish a benchmark point of volumetric water content.

The goal is to avoid over-watering and inconsistencies on the playing surfaces. Once a baseline is formed and a "number" reached, water management begins. Checking the points daily, a water team can apply water only where needed to meet the prescribed moisture level. Water may be added only to several positions on the green or to none at all if water volume meets the determined number.

Staff can be easily trained to determine points and take measurements. This increases uniform water management and avoids oversaturation.

Brodeur uses this method as part of his regular maintenance practices to save money, water and labor expenses, and to assist in cultural practices, disease monitoring and to provide improved playing conditions.

Russ Myers, CGCS, of Southern Hills Country Club in Tulsa, Okla., hosted the U.S. Amateur Championship during hot, dry August.

Watering effectively to avoid subsurface saturation was vital to delivering top-level playing conditions. Russ' solution was to use a similar monitoring system but with individual hand-held units, HydroSense and Spectrum Technologies, which are distributed by Precision Turf.

He gave watering personnel the units and provided them with the "number" for soil water volume, establishing a breakpoint as to whether to water or not.

His goal was to identify potential wilting, avoid watering during the hottest part of the day and leave no question as to what's wet and dry within the soil. Russ believes everyone has a different take on what's

moist or dry when they're feeling the soil. The hand-held units take the guesswork away from his irrigation staff.

The measurement within the soil is at 4 inches deep – the length of the probe. Each morning his preevent watering team checked the greens' stress points for the number. If the reading was below the established point they watered only enough to bring moisture content up to previously established points. This method eliminated the wilting potential during the day and allowed playing conditions and agronomics to remain uniform.

Myers says he has eliminated wet turf, reduced disease concerns and provided firm and consistent playing conditions while keeping irrigation use to a minimum.

Matt Shaffer at Merion Golf Club in Ardmore, Pa., has never been afraid of not watering. He's the industry's leader in not irrigating turf. Matt has installed UgMO wireless sensors within the soil profiles of Merion's greens. These devices send internal information to a central computer for regular monitoring. Shaffer says his water usage is down, the sensors provide an accurate soil water content and they eliminate guesswork when watering daily.

Proper water management provided firm playing conditions for the Walker Cup matches, despite the rains. By understanding proper soil water volumes, Matt was able to restore playing consistency quickly and provided the needed challenge for play.

As water quality diminishes and reclaimed water use increases, establishing effective management of salinity, sodium and bicarbonates becomes vital for turf health.

Shaffer is now evaluating use of these devices for fairways and teeing grounds. **GCI**