

Golf Course and Turfgrass Management: Evolution from an Art to a Science

Advances in the science of turfgrass management have greatly improved golf course conditions; however, the art of greenkeeping still has an important role in course presentation and golfer enjoyment

BY JOHN H. FOY



Kyle Sweet, CGCS, The Sanctuary Golf Club on Sanibel Island, Fla., emphasizes that it is important to get out of the office, change your routine, and spend some time on a fairway unit, mow a few greens, or use the paint gun to mark the course.

In James B. Beard's book, *Turf Management for Golf Courses*, it is reported that the first greenkeeper positions in Scotland were established by the end of the 1700s. Trial-and-error experiences of early greenkeepers were the foundation of the art of golf turf culture. The first scientific papers

related to turfgrass research were published in the late 1800s, but it was not until the 1920s when the USGA created the Green Section that the development of scientific information relating to golf course turf began to occur. In the article [Maintenance Changes from Art to Art and Science](#),

published in the April 1952 issue of *Goldom* magazine, Hank Miller, superintendent at Briergate Golf Club in Deerfield, Illinois, wrote about the evolution of course management during his career and how science was playing an increasing role. If one takes a moment to contemplate the tremen-

Seeing the course from the perspective of a golfer makes it possible to prioritize what needs to be done to enhance the playing experience for everyone.

dous advances that have been made in science and technology in every aspect of life over the past 60 years, it is certainly easy to understand why art has become a less recognized component in modern-day course management.

Advances made in the science of turfgrass management have played a primary role in the ability to provide improved course conditions so golfers can better enjoy the game. A solid scientific foundation and continued research are also essential to analyze current issues — such as golf's use of water and the conservation of resources — so that courses can be managed in a sustainable manner into the future. The emerging field of precision turfgrass management uses a combination of technologies to measure and collect information on soil moisture, soil salinity, soil firmness, topography, and turfgrass stress. These data are used to determine where site-specific applications of basic inputs and cultural practices are needed to accurately address factors impacting turf health.

It was not that long ago that the Stimpmeter was the only tool used to objectively measure putting green speeds and quantify the type of conditioning and quality being provided. There is no denying that the Stimpmeter contributed to an overemphasis on fast green speeds. However, regular testing of green speeds is recommended to help maintain consistency in the conditioning of putting surfaces, which enhances the playing experience for all golfers, regardless of skill level. Maintaining consistency in the firmness of putting greens is another important aspect of conditioning. Previously, this was a very subjective evaluation based on watching how golf shots reacted after hitting the putting

green and/or how the putting greens felt underfoot. The USGA TruFirm is a recently introduced tool that provides an objective measurement of firmness and, in turn, a means of achieving greater consistency in playing conditions. Surface firmness is primarily affected by soil-moisture content; thus, accurately measuring this factor with a soil moisture meter will help further increase consistency. Along with improving playability, soil moisture meters can help conserve water, save money, and maintain healthier turf. The USGA TruFirm and soil moisture meters are a couple of good examples of how science and technology are helping improve course conditions and enhancing the playing experience for golfers.

The science of turfgrass management has and will continue to evolve. The way in which golf courses are managed today is substantially different from years past. Yet, for modern-day golf course superintendents, the job is certainly not any easier. Maintaining appropriate and quality playing conditions for the enjoyment of golfers is still their primary responsibility. However, for turf managers, more and more time is being consumed by administrative duties managing the paperwork associated with personnel, budgeting, and compliance with local, state, and federal regulations. Less time is available to be out on the golf course observing and monitoring the results of the maintenance programs and practices being conducted. Trial-and-error experience was the basis for the art of golf course turf culture of early greenkeepers and there is still no substitute for experience. Also, man cannot control the weather, and every golf course has multiple microclimates that must be managed. Thus, adjusting and fine-tuning management programs

is an ongoing proposition that requires a certain degree of feeling, or art, to grow healthy grass and maintain quality playing conditions.

While it is much easier said than done, in today's fast-paced and high-tech world it is important to take the time to stay connected with the golf course and nature. Time spent on the course should go beyond a quick ride through the property and making observations from a distance. Take the time to occasionally cut a couple of new hole locations, mow a putting green, or spend a few minutes back on a tee, fairway, or rough mower. Another good option would be to walk a couple of holes with a few clubs and a ball or two and hit some shots. Or, better yet, actually play the golf course. It can be difficult for superintendents to play their own course because they see all of the work and problems that must be addressed. However, seeing the course from the perspective of a golfer makes it possible to prioritize what needs to be done to enhance the playing experience for everyone.

Taking full advantage of the advances that have been made in the science of turfgrass and golf course management is absolutely critical to meet golfer demands and expectations in a sustainable and environmentally sensitive manner. Science and technology are helping to better measure and quantify different aspects of course conditions, which, in turn, improves consistency and enhances the playing experience. However, there are uncontrollable factors that directly affect golf course conditioning and presentation. Thus, the art of greenkeeping will always play a critical role in course management.

[JOHN FOY](#) is director of the USGA Green Section's Florida Region.