

# Green Section Record

## REGIONAL UPDATE

November 15, 2019



*Annual deep sand injections have improved the porosity and performance of this 14-year-old bermudagrass green with more than 7 inches of organic matter.*

## EXTENDING THE PERFORMANCE OF MATURE PUTTING GREENS

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A common question heard by USGA agronomists is how to extend the longevity of mature putting greens.

Maintaining good drainage characteristics and soil porosity are the most critical factors in extending the life of a putting green. Drainage affects the rate of moving water through the soil profile, while soil porosity impacts the balance of water-holding pores and air-filled pores. If challenges exist with either drainage or soil porosity, oxygen levels in the rootzone will be low which can result in turf stress during stressful weather. Organic matter accumulation can reduce porosity and limit drainage over time. The removal of organic matter and dilution with frequent sand topdressing is a necessity. If an organic matter layer builds over the years, maintaining soil porosity and reducing organic matter with standard core aeration becomes more difficult.

To maintain a high level of performance from older putting greens – even those that are approaching 15 or 20 years in age – some superintendents employ supplemental aeration practices that utilize high-pressure air, water and sand injections. Sand injections are especially effective because large amounts of sand are delivered deeper into the soil than would be possible with solid-tine or core aeration. For even deeper soil modification into a putting green, there is a deep-drilling method that removes organic matter from the profile, leaving channels that can be backfilled with sand. These practices are not a substitute for standard core aeration, rather they should be treated as supplements. They will be most effective when performed each year if organic matter depths exceed 6 inches.

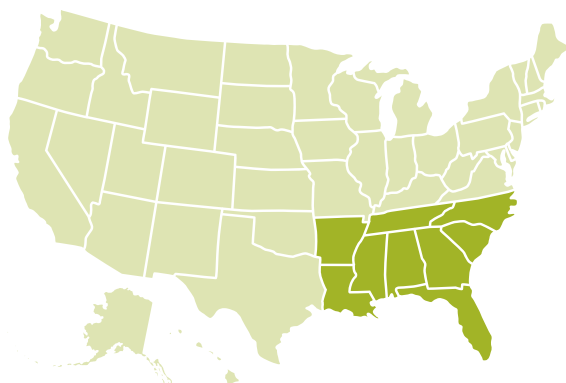
Keeping putting green drainage lines operational is extremely important in the Southeast, where many golf courses experience heavy rainfall events. Greens that don't drain risk catastrophic loss of turfgrass. Mapping and maintaining putting green drainage outlets ensures that water is draining effectively. If a putting green drainage system appears to be compromised, there are companies that can use video technology to identify blockages, allowing these issues to be repaired.

Turfgrass, like all plants, must have adequate sunlight, water and temperatures conducive for growth. Of course, there are other supplemental requirements that help to maintain turf health and improve the performance of putting greens – e.g., applying wetting agents, fertilizer, fungicides and properly sized topdressing sand. However, if putting greens have poor drainage and low oxygen levels in the rootzone, no product in the world can be applied to overcome these critical issues and deliver high-quality playing surfaces. Extra attention as a green matures can help improve its day-to-day performance and extend its longevity.



For information on the USGA's Course Consulting Service Contact the Green Section Staff.

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