



*A light rate of topdressing material applied every two to three weeks throughout the season is a very effective way to modify a root zone. The topdressing is worked into the putting surface with a brush or dragmat.*

# A Successful Topdressing Program Requires Consistency, Commitment, and Communication

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**O**NE MIGHT ASSUME that the practice of making light, frequent applications of topdressing to greens is a relatively recent technique that was developed to maintain modern sand-based greens. The practice of topdressing greens with sand, a sand/peat mix, or a soil/compost,

however, is about as old as the game itself. Historians record a quote (“mair saund, Honeyman”) from Old Tom Morris, who is considered to be the first formal greenkeeper at the Old Course in St. Andrews, Scotland. The interpretation of the quote is “more sand, Honeyman,” which was a request made by

Old Tom Morris to his assistant, Honeyman, to apply more sand to the greens.

Today, the maintenance programs at nearly all of the elite golf courses include topdressing greens frequently throughout the season with either straight sand or a sand/organic material. Superintendents at



these courses customarily make a light application of topdressing every two to three weeks from early spring through fall, trying to match the amount and frequency of sand with the growth rate of turf.

On the other hand, there are some excellent courses that still provide consistent, high-quality putting surfaces with little more than an occasional topdressing to fill open holes after core cultivation. Similarly, the standard practice at many courses that have modest operating budgets and limited labor for maintenance is to do little more than mechanically break up the cores after aerification, drag the greens, and remove the organic debris. Yes, some of these courses have high-quality greens, too.

What, if any, topdressing program is right for you? Each superintendent must make that decision based on the condition of the greens, the available resources, and the golfers' expectations. To aid in the decision-making process, this article reviews the advantages and potential pitfalls of the program.

### Advantages

The most basic benefit of topdressing greens is to provide a smoother, more consistent putting surface. Topdressing continually fills in ball marks and other minor imperfections in the playing surface. In fact, relatively heavy topdressing applications are

routinely used to smooth and level the surface of new seeded greens during grow-in and on new sodded greens.

One of the overlooked benefits of topdressing greens is the improvement of playing consistency among greens on an older course that has been renovated and possesses a variety of greens built from different construction materials. From the golfer's perspective, this helps minimize the "hard green / soft green" effect associated with new construction projects.

The primary reason for building a high-sand-content green is to provide a compaction-resistant and well-drained growing medium that is suited to accommodating heavy traffic under a variety of climatic conditions. Timely applications of topdressing also help prevent an undesirable accumulation of thatch in the root zone that can limit drainage and root growth. Sand topdressing does not actually prevent organic matter accumulation; instead, it dilutes the thatch as it accumulates and prevents the development of a dense layer. Topdressing is also an important practice on older greens that already have a thick thatch layer. The combination of core cultivation and topdressing is the most effective way of correcting the adverse effects of excessive organic matter in the root zone. Removing the cores and filling the holes with sand removes thatch and modifies the upper soil profile. Coring followed by heavy topdress-

ing, along with a light/frequent topdressing schedule, is the standard way to build a new, more desirable growing medium above an old native soil profile. A high-sand-content root zone is the necessary compromise associated with the increased play at most courses and the golfers' demands for faster, more consistent playing surfaces, which can be very difficult to provide on older native soil greens.

Finally, a relatively heavy topdressing application also can be used to provide a degree of protection from desiccation during an open winter. The cover of sand is applied during late fall or early winter after the greens are treated for snow mold.

### Disadvantages

Unlike some other maintenance practices, topdressing is not a program to be tried for a year or two and then discontinued. A one-year trial of frequent, light topdressing deposits a discrete sand layer in the upper soil profile that will become covered with thatch within a few years unless the program is continued. Layers in the upper root zone can limit root growth and slow the movement of water through the green. Alternating layers of sand and organic matter are often associated with the development of black layer during wet weather or when greens are irrigated frequently for prolonged periods of time.



*Heavy topdressing after core cultivation is an effective way to modify the upper soil profile of a poorly constructed green.*





*Black layer may occur where layers have developed in the profile. Layers slow the movement of water through the green and limit root growth.*

The cost of topdressing equipment and the cost of high-quality sand can be concerns at a course that has a modest operating budget. A light sand application over 18 average-sized greens and a practice putting green usually requires between 10 and 20 tons of topdressing. Shipping costs can double or triple the costs for high-quality topdressing. Some type of storage structure for stockpiles of topdressing is also highly recommended. A waterproof floor and a structure with rigid walls and a roof, instead of a parking lot and a tarp or sheet of plastic, is an excellent investment. Spreaders, brushes, dragmats, labor, and the interruption of play must also be considered in the cost of the program.

The amount of time required to topdress 19 greens depends on the available equipment, labor, and the weather. Even when equipment and labor are not concerns, the combination of moist topdressing applied to wet or dew-covered greens and humid or rainy weather can transform a simple maintenance operation into a several-day ordeal for the crew and the golfers. Hours or days may be needed before wet sand dries and can be worked into the putting surface. Consequently, superintendents strive to apply dry sand to a relatively dry green, which usually interferes with the use of the course.

Unlike many private clubs, most public courses do not have the luxury of half a day without play to set aside for maintenance of

the course. It can be nearly impossible to work a topdressing application into the maintenance program every 2 to 3 weeks at a busy course. A number of heavily played public courses, though, have managed to maintain routine topdressing applications throughout the season by blocking out an hour or two of tee times at regular intervals.

Although the long-term effects of topdressing are positive, there can be temporary, but significant, injury to the grass blades if sand is brushed into the surface when the turf is under stress or if coarse, angular sand is used. And damage to the turf is usually minor compared to the wear and tear on reels and bedknives that occurs when recently sanded greens are mowed. Superintendents who utilize thinner tournament bedknives expect to wear out a set of bedknives after every two or three topdressing applications. Some courses use an old set of dull reels to mow greens for a day or two after topdressing, until the sand on the surface disappears into the turf. Not all courses have this luxury; furthermore, mowing a sanded green with a dull mower can take its toll on turf quality as well. The amount of injury to the turf caused by this practice has not been well documented.

Plant pathologists and soil scientists have raised other questions regarding topdressing applications, too. Does an upper soil profile composed of sharp, angular sand particles have an adverse effect on roots when the surface shifts under foot traffic or when

heavy maintenance equipment is used? How much more fertilizer is required to maintain high-quality turf that, once growing in a soil base, now is growing almost entirely in the layer of topdressing near the surface?

There is general agreement that the best combination of moisture-holding capacity and drainage is achieved when a medium (0.5mm to 0.25mm) sand is used for topdressing. What are the consequences, if any, of changing to a coarser or finer material, or from a sand/peat mix to a straight sand? What is an objective, reproducible definition of a "finer" sand, and when does changing topdressing materials produce a perched water table effect in the root zone?

The bottom line — topdressing greens is a practice that is here to stay. The popularity of golf and the expectations for higher quality and consistent putting surfaces mean that more play will be crowded onto older courses. Reconstruction, renovation, and new greens will require topdressing during grow-in and for general maintenance of the playing surface afterwards. A considerable amount of research will be required to separate the legitimate concerns associated with topdressing from the old wives' tales. The next step is to define maintenance practices that minimize the documented adverse effects of topdressing. Through sound research and, perhaps, the development of new equipment, the challenging task of this practice can be made easier for all golf course superintendents.