

SAND TOPDRESSING: SOMETHING OLD, SOMETHING NEW, MOSTLY BORROWED, NEVER BLUE

When I came to Ravisloe Country Club in 1981, I promised the membership to improve the thatchy, puffy, slow putting surfaces. The greens had been mowed at 3/16" and 2" to 2 1/2" of thatch had accumulated through the years. I had the opportunity to observe several superintendents in Wisconsin, who used a sand modification-topdressing program successfully while I was superintendent at Kenosha Country Club. I decided the sand program was the quickest way to achieve my goal.

The purpose of this report is to give an overview of the sand program as developed by the Wisconsin superintendents, the specifics of the program I am using at Ravisloe, the advantages and disadvantages as I see them, and a few comments.

In 1973, Dennis 'Skip' Willms, then superintendent of West Bend Country Club, decided to rebuild a problem green with sand. Both Skip and the Milwaukee Sewerage Commission searched for a sand that would meet J. H. Madison's recommendations and specifications for a suitable topdressing sand. Skip found a silica sand in Portage Wisconsin which had the desirable characteristics. The green was built and the sand used for construction was then used for topdressing. The results were outstanding. Skip decided to sand topdress the rest of his greens and fellow superintendent Wayne Otto from Ozaukee Country Club also started a sand program.

In 1975, the Lakeshore Sand and Stone Company found a sand within the desirable particle size range in a dune in Michigan. They started barging the sand to Milwaukee and the superintendents in the area started topdressing with Lakeshore sand. Most of the techniques used in my sand topdressing program were borrowed from the work and experimentation of the above mentioned Superintendents and others too numerous to mention.

Equipment used at Ravisloe for the sand topdressing program.

1. Lely type W ground driven spreader
2. (2) 3' x 5' coco mats
3. Mete-R-Matic model F-8 topdresser
4. Ryan Greensaire II with 5/8" tines
5. Cushman truckster (for pulling Lely and drag mats)
6. Jacobsen Greensking IV with extra set of cutting units used only for mowing off sand
7. Toro Greensmaster III with verticut units
8. Front end loader
9. Dump truck

The program was started at Ravisloe in March of 1981. The greens were aerified with the Ryan Greensaire II with 5/8" tine and the soil cores removed. The greens were then topdressed with Lakeshore sand applied with a Mete-R-Matic topdresser set at 3 1/2. This setting applied enough sand to fill the aerification holes without leaving too much sand on the surface of the green. The sand was allowed to dry, at which time the sand was dragged in with a flexible steel link type drag mat. The greens were then heavily irrigated and mowed two days later at 1/8".

Four weeks after the initial sand application, a program of light weekly or semiweekly sand topdressing was started. The light topdressing is applied with a Lely ground driven spreader pulled by a Cushman truckster. The spreader is equipped with a sand and salt kit, agitator, and a steel platform mounted on the front of

the spreader for a man to stand on. The feed ring is positioned in various setting holes, depending on the moisture content of the sand, in order to achieve even distribution. The feed ring opening is set at about 5 and the spreader is driven in various directions and patterns for even coverage.

The amount of sand applied is determined by monitoring growth and clipping removal. The more growth, the more sand applied; usually about 1/2 Lely hopper per green. Optimal growth is about 1/8 to 1/4 basket of clippings a mower per green on 6,000 ft. 2 greens.

Topdressing is accomplished with two men. One drives and loads the dump truck, loads the spreader, and rides on the spreader platform to make sure the sand keeps flowing. The other man drives the Cushman and helps load the spreader. Topdressing all twenty greens requires 2 1/2 to 3 hours.

After the light topdressing is applied, the sand is allowed to dry at which time the greens are dragged with the coco mats pulled behind a Cushman with smooth tires. The dry sand works in so well, it is difficult to tell the greens have been sanded. Usually after dragging, the greens are mowed with a special set of reels used only after topdressing. This mowing removes any grass blades or runners raised up during dragging and also cleans up any sand left on the greens.

Three or four times a year, a Mete-R-Matic is used to apply sand around the perimeter of the green where the triplex greens mower makes the circle cut. For this operation, the Mete-R-Matic is set between 1/2 and 3/4. This practice, along with mowing circles only two or three times a week, help eliminate wear and scalping caused by triplex mowing.

Other management practices used on the greens at Ravisloe are double vertical mowing before topdressing followed by dragging and regular mowing. This is done three or four times a year in the spring and early summer. The greens received 1/2 pound of nitrogen in 1981, (Milorganite applied in October), and 1/2 pound of nitrogen this spring (Scotts 22-0-16). Urea and ferrous sulfate are applied with fungicide sprays to keep the color reasonable. Aqua Gro wetting agent is applied at 2 to 10 ounce rates, the heavier rates applied in the rain. The greens are irrigated every three or four days with Rainbird 808 sprinklers in a center sod cup valve. The duration of irrigation varies from 1/2 hour to 2 hours depending on conditions. A normal disease control program is followed with fungicides applied at seven to fourteen day intervals.

The greens were aerified again the fall of 1981 using the same procedure of core removal and topdressing. The amount of sand applied was reduced to a 2 1/2 setting on the Mete-R-Matic, because the lower mowing height reduces the amount of sand which can fill the stem area. The source of sand was switched to Old Dutch sand due to better test results (more sand in the fine range than the medium range) and because the cost was less than half that of Lakeshore sand due to lower shipping costs. Also during the fall aerification, the greens were seeded with a mixture of Penncross and Penneagle bent.

The light frequent topdressing program was continued in 1982. The amount of sand applied has been reduced due to the slower growth experienced this year. The greens will be aerified and seeded one more time next spring. After that, the greens should not need aerification again, or at least, less frequently.

Advantage of sand topdressing:

1. Putts roll true and smooth.
2. The greens can be kept short and fast without

scalping or wilting.

3. Grain is eliminated.
4. Thatch is buried.
5. Spike marks are not a problem, even on wet days.
6. Well hit shots hold even if the greens are dry.
7. Greens do not get puffy.
8. Greens need less frequent irrigation.
9. Sand is clean and easy to apply. It goes on wet and cleans up without a mess as with topdressing containing soil and peat.
10. Topdressing with the Lely spreader is quick.
11. Greens firm faster in the spring, allowing earlier play.
12. The greens can be mowed at 1/8" on the first mowing in the spring.
13. Sand is a reliable, clean, and uniform material.
14. All 20 greens are uniform regardless of type of grass, or former soil condition.

Disadvantages of sand topdressing:

1. The program involves more work than a conventional program.
2. The wear and tear on greens mower reels is greatly increased.
3. Sand flies up when the ball hits the green.
4. The initial heavy applications of sand following aerification are inconvenient.
5. Precise application of chemicals is more critical.
6. More equipment is needed.
7. The sand has a tendency to be dragged or washed off of hill or steep inclines.

Observations:

Over a period of a year and a half, 1/2 to 3/4 inches of sand has accumulated. Most of the roots still penetrate into the soil or are in the sand channels created through

aerification. Some of the thatch under the sand still has a tendency to swell in the heat and humidity and cause some scalping. Sometime in the future, the turf roots will have to survive in a total sand medium, at which time, fertility, micro-nutrient availability, and moisture will become more critical. Localized dry spots have not been a problem due to the use of wetting agents.

I feel the addition of soil or peat to the sand is a waste of time and money. The soil and peat only make cleanup a messy operation. One of the main reasons for going on the sand program in the first place was to reduce organic matter and thatch. So why add organic matter to the topdressing?

The three aspects of sand topdressing I found most amazing are first, how fast the greens respond and become fast and true. Secondly, the fact that the sand has dramatically reduced the irrigation requirements for the greens and thirdly, how much I needed to learn about reel mowers, bedknife angles, roller leveling, and keeping a uniform cut.

David Ward
Ravisloe Country Club

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