

the Chicagoland Golf Course Superintendents Association. Ken Quandt, Superintendent of Glencoe G.C. and Co-Editor, wrote this. It probably is the best article on sand that I have read and explains the thought that must go into making this kind of a decision.

## SAND FOR TOPDRESSING

by  
Kenneth L. Quandt

The use of pure sand for topdressing is really nothing new. Greenskeepers on Scottish golf courses, which are some of the oldest golf courses in the world, have been topdressing with sand for probably well over 100 years with excellent results.

At the Glencoe Golf Club we have also had excellent results from the use of a pure sand for topdressing, but we haven't been at it quite as long as the Scotts. We started our program in the Spring of 1976 out of what might be termed pure desperation.

Due to a rather drawn out greens rebuilding program that began in 1963 and the use of several different soil mixes, we ended up with greens that are all very different from each other. Some are extremely hard, some are very soft and others are at various points in between. Because of this lack of uniformity, a golfer who had never played our course before didn't know how to play the greens. He didn't know if a green would hold his shot or if it would bounce 20 feet into the air.

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This lack of uniformity also hampered our maintenance operations because each green required too much specialized attention. Each one required different amounts of water, fertilizer, fungicide and aeration. Some of the hard greens were aerated several times per season in an attempt to soften them up. This required many man-hours of labor, messed up the greens, and irritated our golfers, but did not succeed in softening them. It did, however, succeed in planting a lot of Poa annua.

Several other methods were also tried to soften our greens and get them to water better. We tried wetting agents, heavy watering, deep aeration with a Sodmaster Subair, and the use of gypsum, just to name a few.

In 1975 our problems came to a head when several of our greens were severely damaged by disease and nematodes. It became apparent that our management practices were not working and that something had to be done.

Since we could not afford to rebuild all of our greens, we decided to try the sand topdressing method of greens management. We were, frankly, very skeptical but we did-

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n't feel as though we had very much to lose by trying it.

We felt that our first and most important task was finding the right sand. We were very convinced that the normal pit sands available in our area were not acceptable. What we really wanted was a fine, uniformly graded sand. In our quest for this sand, we contacted every sand supplier in the Chicago area and asked for prices and samples. Much to our dismay, we ended up with an office full of sand samples that all appeared very similar. We asked the suppliers for the specifications on the particle size and range of distribution, but, in most cases, we were unable to obtain them.

It was at that point that we decided to purchase our own set of testing sieves. Although they cost nearly \$200, they were well worth it. Using them, we found some very interesting facts about sand: (1) The particle size dis-



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tribution range of most sands is quite broad, ranging from very fine dust to small pea gravel. (2) The actual particle size distribution range of most sands bore little resemblance to what the suppliers claimed. (3) Samples of sand that were from the same supplier but obtained on different days had vastly different characteristics. (4) Some of the sands that had been approved by the USGA were of very poor quality.

Thanks to Mr. Ray Knapp at the Tuckaway Country Club in Milwaukee, we finally located a sand that we felt was right. This sand had a particle size distribution range between 0.1 mm and 0.5mm. (Madison recommends sand between 0.25 mm and 1.0 mm.) It was also very uniform from one sample to another. Unfortunately this was a special foundry sand that was only available from a supplier in Milwaukee and cost nearly \$10 per ton delivered to Glencoe.

We purchased a load of this sand, rolled up our sleeves, and started our topdressing program. However, because I tend to be a rather conservative little lad, we started on our two newest and worst greens.

These two greens were two years old and had been constructed with a 1-1-1 soil mix. (I thought that 1-1-1 meant one part sand, one part soil, and one part peat, but it seems as though the supplier who mixed this soil interpreted it to mean one part clay, one part pea gravel, and one part Sackrete.) These two greens had less than 50% turf cover, were hard as bricks, drained very poorly, would not take water and, in general, were a real mess.

Prior to our first application of sand in early April, 1976, the greens were aerated twice in the same day with a Ryan Greensaire using 5/8 inch spoons and all of the plugs were removed. Enough sand was then applied to fill up all of the holes. As it turned out, this was nearly 7 tons per 8,000 square foot green. We then waited about five weeks and began regular monthly topdressings of approximately seven cubic feet per 1,000 square feet.

We watched in amazement as these two greens improved daily. By the Fourth of July they had completely recovered and were, in fact, two of our best greens. They had tight healthy turf with very little Poa annua, they took water much better, they started to hold properly played shots, they puttied smooth and true, and they had lots of healthy white roots in the sand-filled aeration holes.

When I saw how rapidly these two greens were progressing, we began to expand the program to other greens and I began to see similar improvements in them. Finally, late in the summer, we put all of our greens on the program and continued with it until the grass quit growing in the fall.

We found, however, that we had to reduce the amount of sand that was applied each time because of excessive sand on the greens that did not drag



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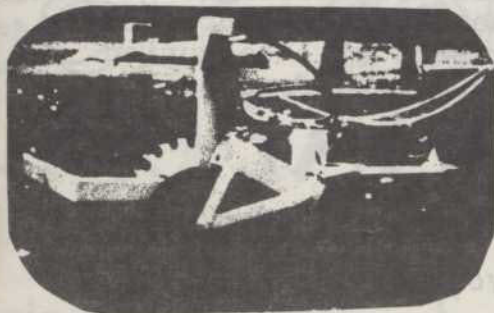
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in completely. After some experimentation, we found that 4 to 4½ cubic feet per 1,000 square feet was about the right amount to apply. At that rate, the sand dragged in completely and disappeared. After the green is watered that night and mowed the next morning, the golfer is not even aware that it has just been topdressed.

Early in the Spring of 1977, we picked up on our top-dressing program where we had left off last fall. We had made four applications by the Fourth of July and had built up a sand layer ½ inch to ¾ inch thick on all of our greens. Before the season is over, we plan to make at least five more applications.

This was also the first year that our greens were not aerated. (We do not plan to ever aerate again because of the noncompactability of the sand we are using.) As of the Fourth of July our greens were showing no signs of



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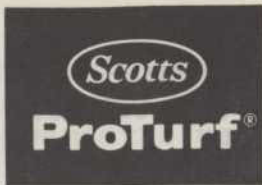
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compaction. Heavy traffic areas that have normally thinned out and needed additional aerations are still healthy and dense. There is absolutely no thatch layer in our greens and we have experienced no disease problems. In addition, the hard greens are starting to hold shots very well and all of the greens putt very true. Our golfers have certainly noticed the difference. Even the few die-hard gripers who play at our course have had nothing but compliments about our greens this year. (Don't worry, though, they have found plenty of other things to bitch about.)

While there may be some problems associated with this method of greens management at some point in the future, I am sure that they cannot be any more serious than the ones we faced using the old methods. I really do not, however, expect any major difficulties. As a matter of fact, I believe that topdressing with sand will provide even more benefits in the future than it already has. One of the major benefits I expect to derive from it is a reduction in *Poa annua*. This, I believe, will occur because no more *Poa annua* will be planted during aeration and topdressing procedures and any seed that is present will be buried deeper and deeper under layers of weedseed-free sand.

\* \* \* \* \*

### NOTES ON FUNGICIDE EFFECTIVENESS by Jim Latham

What is the pH of the water you use for spraying?