

ELM CREEK'S SAND TOPDRESSING PROGRAM



by

MICHAEL KLATTE CGCS
ELM CREEK GOLF CLUB

I started a sand topdressing program five years ago at Elm Creek to try and alleviate a number of problems with our greens. These greens had become heavily thatched and shallow rooted which led to a number of problems in disease and insect control. I wanted deeper and stronger roots and more control of our thatch. With some knowledge of the characteristics of Penncross creeping bent and its very vigorous growth habit, I realized that complete control of thatch and graininess would be next to impossible. Due to over-watering and heavy traffic our soil structure was next to non-existent. Sand had to be incorporated into the root zone region. Sand would also help break up and decompose most of the thatch layer. The characteristics of the sand particle itself with its "sandpaper" abrasiveness would start the reaction desired. The sand would take up space in the thatch fibers and marry into it to benefit one another. The fibers are destroyed by the cutting action of the sand and decompose into organic matter, and blend in with the firm structure created by the sand particles. This, in theory, becomes the perfect soil mix. This then was the assumption I would go with. This logic became the basis of why I started this program. Putting this theory into practice is another thing and one that must be taken with the utmost care. In my particular case I had no other choice; it was either sink or swim.

The first thing I did was to contact Dr. George Blake of the University of Minnesota, an agronomist in soil science. He highly recommended a very fine sand particle which could be purchased through the Arsenal Sand Pit in New Brighton. The sand size was from .25 to 1.0 millimeters and the pH read out is at 7.2 which has been the best pH reading of all the sand pits in this area. It was washed sand free of silt and clay.

The second thing was how much and how often during the season one must apply sand to greens. There is not a hard and fast rule that applies here. The first year I applied about six applications to 1/8 inch depth per application. The greens with a lot of Poa in them turn yellow in spots and become shallow rooted. I was going to lose what grass I had on these greens. I decided to slow down and apply three to four applications and spread out the intervals between applications. This has worked out the best for me. It allowed time for the grass to get caught up. I wanted the sand particles to have time to work down into the thatch layer and open up spaces for better root movement into this substance. This would also allow for better infiltration of irrigation water and surface drainage.

I have found through experience that this sand program has cut my fungicide applications in half. It has almost eliminated a need for insecticides and my watering has been cut in half. The sand has broken through the thatch layer enough to allow a faster rate of infiltration into the soil root zone. Since most of my roots are living in the thatch layer I feel this program of spreading out the intervals of applications of sand has proved positive. I don't want to destroy my present root zone structure by an over judicious supply of sand toppings. I also feel it is not correct to bury this living substance which keeps the top growth alive. The whole idea is to help open it up. This will give you a better Cation Exchange Capacity for nutrients and a better breakdown of nitrogen with the larger population of micro-organism in the organic substance.

Once you go too heavy with sand, like I did a few years back, a whole new set of

rules for cultural management must apply. You lose a lot of nutrients like potassium, Magnesium and iron through leeching. The roots get pulled away from the original soil and shallow rooting follows. The pesticides, if used at normal rates, become phytotoxic to the plants, because sandy soils have very little buffering capacity compared to mineral soils. So you are looking at more fertilization and more frequent but light application of water.

The present cultural practices have been one of less applications of fertilizer, about 3 pounds N per season balanced with a like amount of potassium. I supplement my nitrogen with frequent applications of iron sulfate. I watch for any signs of disease and use a curative program for the most part. I had quite a bit of dollar spot last season due primarily to the shortage of nitrogen. I found some reprieve from Bayleton which did an excellent job of stopping the disease.

This report is not intended to be an all conclusive study of my sand program. Each green takes to the sand mix a little differently. Some need more applications than others depending upon the growth habit and proneness to thatching that a few greens have shown over others. Like anything else in this profession, I have to be constantly watching for changes in the growth habits and needs of the plant. Only time will tell how successful this program will be. I may want to go with more applications of sand on some of the more thatchy greens which tend to be the ones with the most organic clay content and have more water holding capacity. Elm Creek is a heavily wooded golf course with deciduous trees crowding most of my greens. There seems to be a distinct difference in growth habits of my Penncross greens with the more open greens compared with the ones near trees. There is more vigorous growth and puffiness with the open greens. The roots from the trees have competed for moisture and nutrients. Firming up the more open greens has been a major problem. The major problem has been this different reaction of Penncross in different locations on the golf course. This problem really doesn't have anything to do with sand. From a player's standpoint the crowded greens



**GET A NEW
1000 SERIES FORD
TRACTOR WITH...**

10³/₄%
**ANNUAL
PERCENTAGE
RATE**
48 month fixed-rate financing
through Ford Motor Credit Company.*

Buy any new Ford 1000 Series tractor and take delivery between now and June 30, 1983 and we can help arrange financing through Ford Motor Credit Company or other participating financial institutions for qualified buyers for up to four full years at the low fixed rate of

10³/₄% ANNUAL PERCENTAGE RATE. New related implements are also eligible when financed with your new Ford tractor.

A qualifying down payment or trade-in is required. Certain restrictions apply. *Physical damage and credit life insurance not included.*

*Or other participating financial institutions.

OR CHOOSE A CASH DISCOUNT!

Factory incentive allowances now make it possible for us to offer a cash discount on the purchase of

any 1000 Series tractor, in lieu of special financing. The choice is yours!

HURRY! OFFER EXPIRES JUNE 30!

These are limited time offers, so stop in soon for all the details and restrictions!

LONG LAKE FORD TRACTOR
HIGHWAY 12
LONG LAKE, MINN. 55356
612/475-2281



roll the ball better and generally look better. In general, sand has deepened the roots on all my greens whether vigorously thatched or not, but there is a difference in putting quality where less speed is found on the more thatchy greens. These greens will need more sand and aerification in the future. Only time will tell if I will achieve uniform putting quality on all my greens.

If there is anything I have learned from my experience with sand it has been to appreciate and respect the different characteristics of each green. I will have to treat the open greens differently than the wooded ones; keeping in mind a uniform consistency for putting. I am really looking for ease in management and development of faster, smoother greens. With the elimination of less thatch a subtle change in cultural management of watering, fertilizing and pest control will happen. The high sand content will bring on new changes, especially in fertilizing with an emphasis on more frequent applications. I won't want to fertilize too much because of the nature of Penncross greens.

In closing, it is important to realize that the first priority in green management is to provide a smooth, reasonably fast playing surface for the golfer. I feel sand will provide this quality.

EDITOR'S CORNER



by

BOOTS FULLER
EDITORIAL CHAIRMAN - M.G.C.S.A.

By now most of us are pretty well into the golf maintenance scene in spite of the weather. The Mankato area has been drenched during the first half of May. There are more days we can't be on the course than there are days we can be. Fortunately, we were able to continue on our U.S.G.A. program of aerification and heavy topdressing and overseeding on our greens and tees, largely due to some efficient efforts of our crew; certainly not due to any help we got from the weather.

As most of your know by now, we fertilize very infrequently and then, very lightly. We will be putting down our tenth fertilizer application by Memorial Day weekend. Then we apply one light feeding during the summer, followed by one feeding in late season. We plan to put down a total seasonal feeding of approximately 2 1/4 lbs. per 1000 sq. ft. and this will be for both greens and tees.

We have also altered our fairway mowing patterns this season. Contouring our mowing patterns has given new design and depth to our otherwise straight line holes. In an effort to cut compaction on our approach areas to our greens, we are triplex mowing a rather substantial area

RAIN BIRD®



RAIN BIRD®

SURROUNDS YOU WITH
QUALITY
IRRIGATION EQUIPMENT

SINCE 1933

"THE CHOICE OF PROFESSIONALS"

- * NEW INSTALLATIONS
- * CONVERSIONS
- * UPDATING EQUIPMENT

RAIN BIRD®



RAIN BIRD

FOR ALL YOUR IRRIGATION NEEDS

612-545-2276

P & H WAREHOUSE SALES

9865 10th AVE. NO.

PLYMOUTH, MINNESOTA 55441