



CHARTER

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## TO SAND OR NOT TO SAND — IS THAT THE QUESTION?

By Virgil Robinson

Sand topdressing of putting green surfaces has gotten more and more attention in the Washington metropolitan area and across the nation over the past few years. For those who might be contemplating this course of putting green maintenance, I would like to explain the circumstances that led Burning Tree Club to straight sand topdressing and to share with you a few techniques that have been used and some personal observations that have been made.

On coming to Burning Tree as superintendent in early 1977, I was aware of a history of difficult to manage greens. Over the 55 years of the club's existence many topdressing materials had been used, various aerification practices and frequencies had been performed and from time to time greens had been rebuilt using the best materials and knowledge available at that particular time.

After a horrendous "summer of 77" as I have come to call the ordeal experienced that year, I decided some questions had to be answered and drastic action taken. Pride and self-preservation are very strong motivating factors.

In probing and observing the greens throughout that first summer several observations were made:

1. There were many different layers identifiable with different topdressing materials used over the years. This was not surprising and not unlike conditions found on other golf courses of this vintage.
2. Reddish and greenish looking materials were found in some layers and in old aerifier holes and by rubbing between the thumb and forefinger had characteristics which closely resembled the "slick" feeling of silt and clay. These materials, I am personally convinced, were calcined clay chips which were used as topdressing in prior years and which eventually broke down into individual clay particles.

3. Puddles of water disappeared more quickly from our asphalt parking lot than from our greens. The soil analysis taken later and the previously mentioned clay layers would help explain this situation.

4. A 1/16" sand layer existed about 5/8" below the green's surface. If the root system reached this layer, none penetrated it. In some previous year a one time shot of sand had been applied as a topdressing.

5. Bandane 15G had been used in several previous years for preemergent crabgrass control. Knowing the phytotoxicity of this pesticide on putting green turf and also its half-life, I felt this was contributing substantially to our turf problem and would continue for several years.

Before recommending to the Board of Governors a program of major green's renovation and maintenance practices, I decided to get a particle size analysis and physical measurements of a soil sample from several of the greens. This test was performed through the USGA Soil Testing Laboratory at Texas A&M University.

This testing procedure confirmed in the laboratory what I was seeing and experiencing in the field. Although the sand fraction of the sample was satisfactory, silt and clay made up 26% of the sample and gravel was in the 7% range. These values should have been no more than 8% and 3% respec-

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## President's Message

Our May Superintendent/Pro meeting gives us the opportunity to spend the day with our area golf professionals; an opportunity to reunite with old acquaintances and to gain new ones.

Much has been said about the Golf Professional and Superintendent's working relationship. We can both do our jobs without the aid of each other, but it sure is much easier when we work together. Show me a club that the golf pro and superintendent cooperate and coordinate their schedules with each other and it will show us a successful operation and a happy membership. They must be honest, objective and respect each other's professional ability and club position to be a successful team.

Plan to spend tuesday, May 13 with your golf professional in beautiful Harford County.

Looking forward to seeing you.



Ron

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tively. Although the per cent of total pore space fell within acceptable parameters, the capillary pore space was exceedingly high making up 44% of the 49% total. Needless to say, the infiltration rate was less than .1" of water per hour and water retention at 40 cm tension was much too high at 33%.

Armed with this type of information and with the "summer of 77" immediately behind us, the Board readily agreed with me that three of our very worst greens should be rebuilt according to USGA specifications. The remaining greens would be on a wait and see basis using good aerification practices and straight sand topdressing.

After testing several sands that were available, I settled on one meeting USGA specifications supplied by a local topdressing firm. The cost was a couple of dollars more per ton than what could be purchased from a nearby quarry but I was assured of consistency and long term supply.

In the spring of 1978 we embarked on our sand topdressing and modification program for greens. Using a Ryan Greensaire II equipped with 5/7" tines, we double aerified all greens in April and again in September removing all cores with a specially adapted bucket which caught 90% of the cores. The remaining cores were blown off with a small leaf blower. The greens were immediately "backfilled" or topdressed with as much sand as could be put on and dragged in without smothering the turf. A setting of approximately 2½ was used on the Sodmaster Mete-R-Matic topdressing machine. About three days later, after some "green" started showing through, we topdressed again with a #1 setting on the Mete-R-Matic and dragged this into any aerification holes which might have settled or not been filled.

A couple of notes of caution are in order at this point. (1) After applying the heavy topdressing of sand, it must be allowed to dry completely (powder dry) or it will have to be dragged so much that extensive turf damage will occur from abrasion. (2) The grass has to be growing vigorously to "grow thru" this type of heavy topdressing. I would not recommend this action in late fall after turf growth has slowed.

Six "light" topdressings were made on about three week intervals between the heavy April and September applications. These were applied with a WFR Lely spreader equipped with an agitator, a mass output ring, and turf tires and pulled by a Cushman Truckster. This operation takes one man 3½ hours to complete 19 greens. Another man either waters or drags in the light sand application. Approximately 3/4 of a standard Lely hopper of sand is used per 6000 square feet of green and by use of the above mentioned agitator, wet (not saturated) sand can be applied.

The procedure used in 1979 was essentially the same as that performed in 1978 with the following exceptions:

1. Only the clean-up lap area around each green (five laps of the greensaire) was double aerified.
2. Only one application of sand was applied in April and September using a setting of 1¼ on the topdressing machine. There was no change in the six light applications.
3. ½" tines were used in place of the 5/8" tines.

The first two exceptions were basically to appease the golfer. In the previous year good putting surfaces after aerification required from 10 days to 2 weeks healing time. In 1979 this was effected in 4-7 days. In the third exception noted above, because the roots had massed to such an extent in the previous year's sand filled aerifier holes, the larger diameter tine would remove only about 75% of the cores from their punched holes. Changing to ½" tines solved this problem.

Some cause and effect relationships I think (notice I qualify this statement) I am seeing are the following:

- A. A much stronger, healthier root system in the aerifier holes. I do not see many roots, if any, going through the sand layer, which now measures about 5/8", and the soil interface. Because of this and because I want to remove as much residual pesticide in the soil as possible, I can not quit aerifying and removing cores in the foreseeable future. Although some sand is being removed that was applied over the last two years, it will be several years before the soil is completely replaced. To that end some sand must be sacrificed.
- B. In times of slow growth and/or low nitrogen levels, a pimped effect is quite evident where the turf is healthier and greener in the sand filled aerifier holes. This I feel must be accepted until more soil can be changed out.
- C. The greens seem to lose color more quickly than normal. Possibly the nitrogen reserve is not there in the sand indicating a need for spoonfeeding this major element.
- D. The greens definitely putt turer since the sand is burying the thatch causing less footprinting. With the straight sand topdressing on light, frequent intervals, grain is virtually eliminated.
- E. The excessive wear on greensmower bedknives and reels, on topdressing equipment and on the Lely spreader is a fact one must be prepared to live with and work around. Spring loaded or gravity drop sprinkler heads located around greens must be flushed after topdressing to insure their proper functioning.
- F. The abrasive action of the sand on the turfgrass plant can be severe in the area of the clean-up lap. This can be minimized by use of a walk behind greensmower and/or by skipping the clean-up lap every other day.
- G. Although the winters have not been severe since the sand topdressing has been applied, I did not see any winterkill on the greens in the winter of 1978-1979. I would expect this to continue to be the case since the sand would allow excess water to drain from the greens.
- H. During periods of excessive rainfall, if surface drainage comes to the front of the green, you can experience bubbles of water raising the turf on the aprons. The water goes into the green through the sand filled aerifier holes, hits the less permeable soil layer and precedes to the front of the green and apron. Here a water bubble can form which must be drained prior to mowing or driving over the area.
- I. A side benefit of the light topdressings with the Lely spreader is the fact that you are also topdressing the

collars and aprons of the greens. Besides smoothing these areas, it also increases the vigor and quality of the turf-grass plant.

- J. Since I am a "frequent but light" irrigation proponent, I have not noticed any excessive demands of the green's turf for water. I would think if one's irrigation program were "heavy and infrequent" a wilting situation could develop between waterings.

The qualifying statements I made earlier on cause and effect relationships are just that. Although the pros and cons of straight sand concept are still being debated, one fact is universally accepted — once on a sand topdressing program there is no reverting to other topdressings.

I believe the jury is still out on possible long term effects of this type of putting green maintenance. There are questions unanswered which only time and research can reveal.

If turf cover on greens can be maintained with conventional topdressings and procedures, I would not recommend changing until more data is accumulated and analyzed. If your soil situation, however, is such that the only other solution is to rebuild, then what do you have to lose?

I suppose the acid test of any such program is to ask yourself if you would follow the same course of action if you could start over. Concerning straight sand topdressing at Burning Tree Club, I would have to answer with an emphatic and unqualified, "Absolutely".

## **Chairmen's Functions and Responsibilities**

### **Past President — Employment Chairman**

Upon hearing of a vacant superintendent's position, will acquire all information needed from the club, to prepare a letter notifying all class A, B, and D members of the employment opportunity.

### **Vice President**

Assist the President and to operate the Association in the event that the President cannot. Also serving as procurer of meeting places for 1980-81.

### **Secretary**

Keep the minutes of membership and board meeting, and to handle correspondence to and from the Board of Directors. The Secretary's address is also the official address of the Association.

### **Treasurer**

Bill, disburse, receive and bank all official funds of the Association. The Treasurer also prepares monthly, quarterly, and annual financial statements, and files all necessary tax forms. He must be bonded. Responsible for annual audit.

### **Education Chairman**

Will make every effort to have interesting, knowledgeable speakers present at monthly meetings of the Association. He will organize, promote and help conduct the annual Turfgrass Conference, in conjunction with the Maryland Turfgrass Council.

### **Golf Chairman**

During the golfing season, the golf chairman will arrange with the host superintendent and golf professional, the golfing activities and tournament that will be held at monthly membership meetings. The golf chairman will arrange and conduct

the annual Supt.-Pro Tournament, the Match Play Tournament, Challenge Match with Philadelphia and our annual Memorial Tournament in October. All tournaments, monthly and annual, will be open to all members of the Association.

### **Finance Chairman**

Will monitor the finances of the Association and to inform the board when and if finances are at issue. The Finance Chairman is also responsible for the preparation of the annual Association budget.

### **Social and Benevolence Chairman**

Responsible for organizing and promoting the social affairs of the Association, such as the picnic and Ladies Night. He will send cards and or flowers on appropriate occasions to any member, or immediate family; purchase bonds for babies and handle our in house self insurance program.

### **Membership Chairman**

Responsible for the distribution, reviewing and verification of all membership applications before presenting them to the Board of Directors. He will have on hand at all times, applications for the local and national associations. He will answer questions at monthly meetings pertaining to by-laws and membership standings. Membership roster.

### **Editorial and Publicity Chairman**

In charge of outside publicity for the Association. The chairman will also assist the Newsletter editor in articles for the Newsletter.

### **Newsletter Editor**

Compiles, edits, prints and dispenses our monthly Newsletter. He is also responsible for the expenses of the Newsletter.