MAGCS Directors Column

Sand Trap Renovation

by Mike Nass

Every year there seems to be a different area of golf course that gets singled out for constructive criticism. Often times the same areas are singled out in general throughout the District. This year sand traps seemed to have been the most frequent topic of discussion.

After listening to complaints about the supposed lack of sand in our traps, I astutely determined something should be done to correct this situation. The first step was to accurately define the problem. There actually was more than enough sand in the traps, but its quality was poor. Over the past twenty years or so, through four superintendents, sand had been added regularly, with each superintendent probably using a different sand. The results were a product that made a reasonable roadbed but a so-so trap. The general appearance of these traps was somewhat dull and dirty. This added to the preception of no sand in the traps.

To add enough new sand to the existing traps to achieve our desired results would have left the traps overfilled. It was decided to remove all the old sand and replace it with new sand, improving the consistency of play and the general appearance.

We were going to attempt to do this for the green traps on all the holes, except the three that had been rebuilt two years ago. This amounted to twenty-eight traps.

To facilitate the removal of the old sand, we rented a Bobcat loader. This turned out work very well. It had sufficient power to move the sand and the maneuverability to work in a tight area.

The removal went smoothly, but a problem arose as what to do with all the old sand. Since we have a limited dump area, we decided to use the sand, contaminated with dirt, to construct target greens on our driving range. We were able to construct three good sized greens to which we will add simulated traps of crushed limestone next spring. The entire removal process took about four weeks using just two or three men.

As for the new sand, we are using a mason sand from Old Dutch. We are filling the traps to a depth of four to six inches. The wet weather has hindered our progress but as of Thanksgiving we had six traps that remained empty.

We are dumping the new sand inside the traps and leaving it to be spread later. The spreading will be done by an outside contractor using a swinger loading tractor. This same method has been used successfully at other courses in the area. Approximately three hundred tons of sand can be spread per day in this manner.

When the job is finished, I expect I will have used about one thousand tons of new sand. The total cost of the project is expected to be about $15,000 excluding in house labor.

It is hoped that with new sand and new target greens we will have eliminated two problems and will be ready to face new problems when and if they arise next year.

Turfgrass Research a Vital Need

The golf course industry is sitting on a time bomb.

The ticking may be a little difficult to hear, amongst all the talk of billion dollar purses, $40 million, 54-hole real estate developments and new golf balls that travel 100 yards and sing the national anthem, but it's ticking away.

Somewhere between now and the turn of the century, experts predict, the high cost of golf course maintenance and restrictions caused by water shortages will undoubtedly catch up with, and could severely cripple, the golf industry.

This is a bomb that will have to be diffused through turfgrass research — specifically, through the development of lower-maintenance grasses and those that require less water. And, recognizing the reality of that fact, that is what much of today's turfgrass research focuses on.

And there's little disagreement through out the industry that this is a problem whose time is quickly approaching.

"In the next 10 to 20 years, there are going to be water shortages," said William Bengeyfield, head of the USGA Green Section. "The first people to be cut off will be golf courses, parks and recreation areas."

James Prusa, associate director of the Golf Course Superintendents Association of America, wonders why turfgrass research for golf courses has taken a back seat in the past. "Turfgrass research is the poor boy of agricultural research," he explained. "And fundamentally, golf is responsible for turfgrass research. Golf brought turfgrass research to where it is today. All of the major funding comes through golf. No other sport, really, has put money into turfgrass research.

"But when an advance is made, in any field, it helps everyone."

Why is the general public so seemingly unconcerned about the problems?

"If there is a weakness in turfgrass research, it's due to the golfer and the clubs," stated Dr. Richard Hurley, research director for Lofts Seeds, Inc. of Bound Brook, N.J. "Every golfer loves to go into the pro shop and talk golf with the pro. The only time a member talks about turf is in generalities. Never does the average member start a discussion on turf.

"Really, unless you're in the industry, it's a boring subject."

Dr. James Watson, vice president of The Toro Co. puts at least some of the blame on the turf industry. "We talk to ourselves and tell each other how important it (turfgrass research) is," he explained. "But we don't talk to our public. The average golfer has very little understanding of what goes into the maintenance of a golf green. As long as the grass is green and he shoots a low score, he's happy."

Like most things these days, money is the bottom line. And that money is going to have to come from a great many sources; private donations, commercial manufacturers and golf clubs themselves.

If there is a champion of the cause, it's the USGA's Green Sectio. Not only does the Green Section have the means to raise the most money, it also has the expertise to see that it's spent in a worthwhile manner.

In 1983, there was $233,000 divied out by the Green Section to various turfgrass projects throughout the world. Last year, the figure reached $386,000, and there will be even more alloted this year.

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That money comes from the USGA's Capital Campaign Fund project, which hopes to come up with $10 million over the next three to four years. About $2.5 million of that will go toward turfgrass research.

Besides raising money, the Green Section also serves as an organizer for the country's turfgrass projects. In fact, some may argue that it's most important function is to serve as a sort of clearinghouse to assure that efforts are not duplicated.

"The USGA took a giant step in launching this project. It certainly is the largest organized effort, and it also is nationally organized," Watson said.

To raise some of the funds, the Green Section has asked the GCSAA members at the clubs across the nation to approach their greens committee and ask for pledges of $2 per member to be donated toward research projects.

"Research is a very slow process," Prusa said. "It's going to take a truly joint effort. For once, we've got a centralized effort."

"There have been two entites responsible for the high level of golf course maintenance today," said Bengeyfield. "One is the golf course superintendent. He's the guy who's developed the new machinery — then the commercial suppliers picked it up. He's given us the greatest golf turf in the world. And the other is the Green Section."

There is also a lot of worthwhile research being conducted by private industry and in colleges and universities. Before the Green Section's recent research project was organized, most of the breakthroughs in turfgrass were made at the university level from small grants from the USGA and others in the private sector.

"The money was dispersed in small amounts to many different areas," Dr. Watson explained. "That was a very necessary stage of development for turfgrass research, because it got a lot of people interested."

Many of the major advances, especially in the development of new cultivars, have come from the universities like Penn Sate and Rutgers. Today, there are schools all over the U.S. with excellent turfgrass programs.

"You've got about 35 or 40 universities that have some type of turfgrass program," said Hurley, who himself earned a Ph.D from Rutgers University in Turfgrass Breeding. "Of those, 10 have fairly large programs in research. Another 10 have strong teaching programs. Some universities go in different directions. For instance, Michigan State has a strong teaching program to develop golf course superintendents."

Many schools also have shorter two-year programs for those already working in the industry.

The schools frequently benefit from their discoveries through royalties. Hurley explained that his own firm pays Rutgers University a six-figure amount each year, based on royalties on every pound of seed sold.

So the picture is not totally bleak — there is reason for optimism. "I think our goal of a 50 percent reduction in water use is realistic and attainable," said Dr. Watson. "In fact we can take a large step just by putting into practice the technology that's available to us now."

We're a lot closer than is generally believed," Bengeyfield added.

Bengeyfield cited the potential use of Zoysia grass, a strain

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(Turfgrass Research cont'd.)
that has "tremendous potential" once some of the problems are solved — namely, the difficulty the grass has of propagating from seed, and the fact that it's slow to grow and cover spots over. It also has difficulty in cold weather climates. On the bright side, the grass, which was brought here from Southeast Asia, has a low water/nitrogen requirement, and since it doesn't grow very fast, requires less maintenance.

Hurley explained another exciting discovery which could make a difference. "We've found a fungus which lives in the tissues of certain grasses that produces its own protection from insects," he remarked. "It produces an alkaloid toxic to insects. Now, can we develop a bentgrass variety for use in putting greens? That would be a significant discovery."

"There are direct applications of turfgrass research," Prusa stated, "that could have a direct bearing on agriculture's ability to improve on the production of food and fiber."

"There is a possibility that we can discover something that might go a long way toward feeding the world."

"Of course, there's never enough being done," Bengeyfield said. "We can always do more if it's properly coordinated and directed. You can give anyone money and they'll spend it on something. But will it be important?

"We have to all work together and work toward positive answers that will be meaningful to the game of golf."

Credit: The Wedge, Jan./Feb., 1985

Effect of Nitrogen Fertilization on Earthworm and Microarthropod Populations in Kentucky Bluegrass Turf

by D. A. Potter, B. L. Bridges and F. C. Gordon, 1985
Agronomy Journal, Vol. 77, Number 3, pages 367-372

Turfgrass is a complex system consisting of the roots, stems and leaves of grass plants together with a tightly intermingled layer of dead and living roots, stems and organic debris commonly called thatch. This habitat supports a diverse assemblage of invertebrates, including earthworms, nematodes, millipedes, oribatid mites and collembola. These are important to plant litter decomposition. They aid in the decomposition process by fragmenting and conditioning plant debris before further breakdown by microorganisms. They also disseminate bacteria and fungi, enrich the soil with their excreta and help to pull down and mix organic matter into the soil. A Kenblue Kentucky bluegrass turf treated with varying rates of ammonium nitrate fertilizer was maintained for study. Increasing the rate of nitrogen fertilization produced a decline in soil and thatch pH and in exchangeable calcium and potassium and caused an increase in thatch development. A decrease in earthworm density and biomass was noted as annual fertilizer rates increased. Collembola were more abundant at an intermediate fertilizer rate. Acaridae were unaffected by nitrogen fertilization. Cryptostigmata were found to be the most abundant arthropod decomposers in the turf.

The Fate of Diazinon Applied to Thatched Turf

by B. E. Branham and D. J. Wehner, 1985
Agronomy Journal, Vol. 77, No. 1, pages 101-104

The plant-thatch-soil continum has a major effect on the rate of dissipation of pesticides applied to turfgrass stands. Thatch is defined as a tightly intermingled layer of dead and living stems and roots that develop between the zone of green vegetation and the soil surface. In order to maximize the efficacy of pesticides aimed at controlling soil-borne insects, it is important to understand how soil properties and the presence of thatch affect the rate and avenues by which pesticide dissipation occurs. Diazinon is widely used to control turfgrass insect pests. A Kentucky bluegrass turf with and without thatch was used to study loss of Diazinon by volatilization, leaching and degradation. Only seven percent of the Diazinon remained after three weeks. Between thirty-two and forty-seven percent remained in either turf with thatch irrigated every four days or in turf without thatch. Most of the Diazinon (96 percent) remained in the top 10 millimeters (0.4 inch) of the turf profile regardless of whether this was thatch or soil. Where thatch is present, reduced control of insects is due to both a failure of the insecticide to move through the thatch and an increased rate of degradation.

In Your Garden

For the Spice of Your Life

by James A. Fizzell
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Want to add a little spice to your life? Want to add a little flavor to things? Then, try a window-sill herb garden. Salads, soups, stews, and sauces can all be spiced up with herbs grown on your window sill. In addition, many herbs make nice foliage plants as well.

For the beginner, start with easily grown types such as parsley, chives, and sweet marjoram for mild tastes; and rosemary, sage and thyme for the strong pungent taste.

Parsley makes a nice garnish for salads, soups, stews, potatoes and meats. Chives are good for soups, salads and homemade potato chip dips.

Rosemary is good in both sprig and leaf form. It is used with meats, sauces and soups. A prime flavor in turkey stuffings is sage. It also goes well with pork chops. Finally, thyme, the last member of the beginner window sill garden, goes well in soups, omelets and gravy.

To grow herbs, get good quality seed. Plant in seed flats and transplant; or, plant directly into pots and thin out excess seedlings as needed. Keep soil moist but not wet, cautions Fizzell.

Once the herbs are growing, they will do best in a sunny south window, with 65-72 °F. temperatures, and a soil allowed to dry slightly between waterings. Fertilize about every six weeks with a weak, water soluble fertilizer solution. Harvest the herbs at periodic intervals to keep the plants healthy. Harvest the older leaves first.

Growing your own herbs can be very rewarding, producing attractive foliage plants, and adding flavor to your food and spice to your life.