

The Musser Foundation

The Musser Foundation is looking forward to the future. The need to plan for the future is now. Let me pitch the Musser group, but this time with a little background information.

The Foundation is into raising money to help students in the final year of their doctorate degree in turfgrass management or Agronomy. So what is the big deal? To my knowledge this is the only group helping these people. But more important is the need to get these people into the field. In the near future, we are going to need people to replace the Dr. Daniels, the Dr. Butlers and Ken Paynes. These people have already retired. The Musser group is doing something to replace these people.

Over the last fifteen years the group has built a nice little cash reserve. This has been accomplished by the help of many people. Frank Dobie, the President now of the Musser group has held a tournament at his club for fourteen years to raise money. Superintendent groups from Oregon, Maryland, Michigan and Minnesota have helped over the years.

Just this year the Midwest Golf Course Superintendents Association made a nice donation. The Nor Am Company has given the last couple of years. We are hoping to get more associations and companies to contribute. I must also mention the Tee to Green Company has been most generous over the years. Thanks, of course, to Bill Rose.

So what is the point to all this? If we are to continue to give scholarships like we have the last two years to the tune of two for \$6,000 and three for \$4,000, we are going to need help.

Remember those blue tags I keep asking you to send me from the Tee to Green group. Well, now is the time to go in your seed room and take those blue tags off the seed bags. You can send them or give them to Dudley Smith or me. You can find our addresses in the roster books.

Your help is needed and it is for the future of turfgrass. Our future.

Mike Bavier

P.S. Checks made to the Musser Foundation are acceptable, too.



Information, Please

by James M. Latham, Director

Great Lakes Region, USGA Green Section

American golf courses are better than ever and I can prove it. If not, why does our office get more inquiries about sand bunkers and bunker sands than anything other than new construction. It seems paradoxical that course conditions can remain high when maintenance programs continue to be hampered by pressure to reduce the use of pesticides, fertilizers and water. Evidently, golf course superintendents have responded to the pressures by working smarter than ever with the high quality products which are available.

The pressures are not going to let up, though. Pesticide posting laws are in force in some states now and some versions will follow in others. There are other potential legalities regarding pesticides which could hamper our means of communication with golfers. A recent GAO publication evaluating EPA performance listed the things that lawn service operators **CAN-NOT** say about the products they apply to lawns:

- Any statement implying that a pesticide is recommended or endorsed by any Federal Agency
- A true statement used in such a way that is false or may mislead a customer.
- Claims about the safety of a pesticide or its ingredients such as 'safe', 'nonpoisonous', 'harmless' or 'nontoxic' to humans or pets, **with** or **without** phrase "when used as directed."
- Non-numerical or comparative statements on product safety, such as 'contains all natural ingredients', 'among the least toxic chemicals known' and 'pollution approved.'
- "Approved by" any federal agency
- 'Low in Toxicity', 'will not harm beneficial insects', 'no health hazard' or 'ecologically compatible'.

Just remember that EPA considers no pesticide safe since all of them are supposed to kill or adversely affect the growth of something.

To follow these guidelines, how would you answer Mr. and Mrs. Golfer when they ask if the stuff being sprayed by the Man From Mars is safe? What will they do when you hand them a label or MSDS and stand mute? Will this satisfy their Right to Know?

We have some information on this through the publications by Watschke, Petrovic and Cohen, but we still do not have the whole story. For example, we don't know what becomes of pesticides after they are applied to turf and run their course of action. What are the products of their decomposition in soils? In sands? Under aerobic or anaerobic conditions and at what pH? Several years ago when Milwaukee began applying a

"Summer Parade"

Welcome Summer's great parade,
Soak up Sunshine — hide in Shade.
Yes! Good Ole Summertime is here,
Thoughts go out to cold Beer,
Beautiful Morning's, Breeze and Shade,
A little Mint in Your Lemonade.
Vacation time fever fills the air,
State Fair spirit everywhere.
How fortunate to be involved,
With Golfer's and the Summer Crowd.

Kenneth R. Zanzig

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(Information Please cont'd.)

digested sludge to farmland a consulting engineer subjected some of the treated soil to delicate testing for nonmetallic compounds. He found none of the toxic organics he anticipated, but did see the presence of some "unidentified compounds" which **Might Be Harmful**. The bottom line was a recommendation that application be suspended until further tests were conducted to identify the material and determine its toxicity. Of course, he would do the testing (at a tidy fee) for a few years.

Charlatans abound whenever an emotional issue arises which deals with unknown, potentially hazardous materials. These folks are usually better speakers and writers than knowledgeable scientists and do not have to prove anything. When faced with data from University research, they simply say that it is tainted by the influence of the antienvironmental agrichemical combined. Period.

To cope with this kind of reaction and to provide factual information for those truly interested in environmental issues, the USGA Executive Committee has charged the Research Committee, now headed by Dr. Mike Kenna, with another national level research program. The 3-year project will develop information to help us:

- Understand the effect of turfgrass pest management and fertilization on water quality and the environment,
- Evaluate alternative pest control measures in Integrated Turf Management Systems, and
- Determine the human, biological and environmental factors that golf courses influence.

The proposed budget for 1991 is almost a million dollars, with similar amounts planned for 1992 and 1993.

The intriguing thing about this project is that it seeks the unvarnished truth. If our present practices are faulty, golf will have to clean up its act and if not we will have full confidence in any statement we make to Mr. and Mrs. Golfer or anyone else. In addition to information gathering, a manual will be developed by USGA and GCSAA staffs to provide consistent information on integrated turfgrass management practices that ensure environmental quality, to be updated as field tested research results become available. The program is not meant to cast doubt on recent research efforts, but rather to expand the scope of research and involve all areas of the country.

In the meantime, how are we to cope with accumulated grass clippings, tree trimmings and the like? Will manure spreaders (for clipping dispersal in roughs) become standard equipment on golf courses?

Now that mudholes and swamps have been upgraded to protected wetlands, what shall we call the mosquitos?

We will need more and more information to stay current with questions already asked and those which are to come. It comes from research programs on state, regional and national levels which must be supported by **all** individuals in golf as well as organizations.

Local-level research is necessary to help us cope with problems unique to specific areas as well as those which can be useful to a general audience. These programs need and deserve the support of golf and golf course superintendents associations within their sphere of influence. National level funding is more difficult since we expect some sugar daddy to kick in enough

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for all of us. Perhaps this is the time for everyone to become involved on a more personal basis.

The USGA Associates Program is a way to support this research as well as other programs benefitting golf. Membership is affordable to anyone, beginning at only \$25. The Associates are for everyone in golf, superintendents, agronomists, sales people and researchers as well as golfers. After all, our livelihood depends on the viability of golf as an industry. The alternative is akin to those good ole days of weed pickers in bib overalls or something equally depressing.

Micronutrients

A Critical Component in Plant Development

Why micronutrients? Because they are the key to triggering most growth activity in plants. Without micronutrients as a "sparkplug," the enzyme system in plants would simply be an inert mass of protein.

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Once soil begins to support plant life, the top foot begins to accumulate micronutrients in a slow, steady manner. How does this occur? Accumulation is a result of a certain process:

First, plants grow and produce extensive root systems that extract both micro- and macronutrients from a depth of several feet, depending upon the kind of plant.

Second, extracted nutrients are routed to shoots and some are retained in the roots as storage.

Third, the growth cycle is completed and plant residues are returned to the soil (minus harvested portions).

RELATIVE CONCENTRATION IN PLANTS

| Nutrient | Compared to Mo |
|------------|----------------|
| Molybdenum | 1 |
| Copper | 100 |
| Zinc | 300 |
| Manganese | 1,000 |
| Iron | 2,000 |
| Boron | 2,000 |
| Chlorine | 3,000 |
| Sulfur | 30,000 |
| Phosphorus | 60,000 |
| Magnesium | 80,000 |
| Calcium | 125,000 |
| Potassium | 250,000 |
| Nitrogen | 1,000,000 |
| Oxygen | 30,000,000 |
| Carbon | 40,000,000 |
| Hydrogen | 60,000,000 |

Fourth, crop residues are converted to inorganic salts from organic matter and ionization makes micronutrient cations subject to adsorption on the soil exchange complex where they are immobile. This is the reason that recently leveled fields may have micronutrient deficiencies.

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