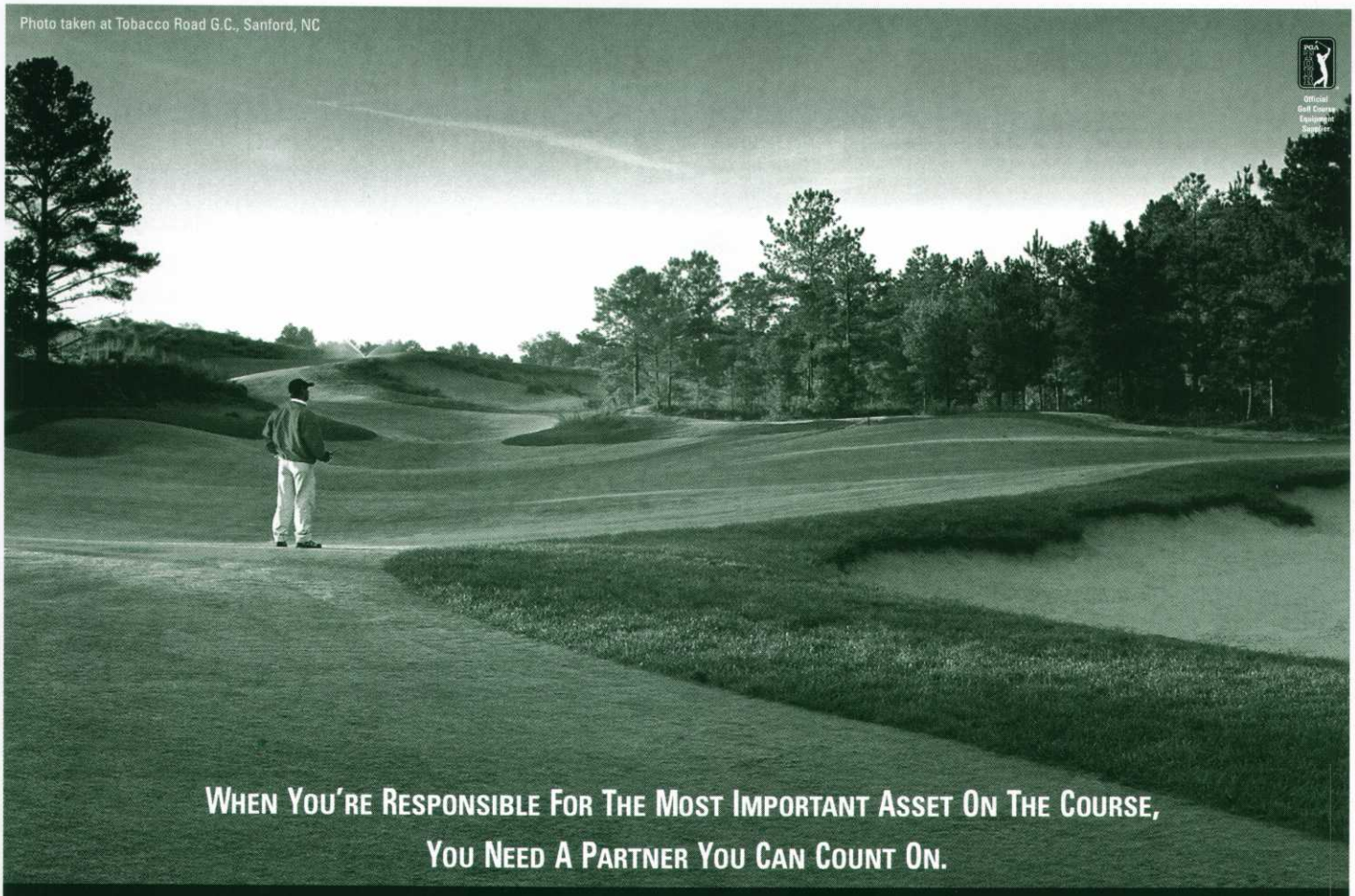

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HOLE NOTES

Official Publication
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Editor
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PRESIDENT'S MESSAGE

One Thing For Sure in This Business Is That Nothing's For Sure Except Mother Nature's Yearly Challenges

By Robert Panuska

As I type this monthly report, we have just received a multi-billion dollar rain. In terms of the golf course this means a return to our "normal" level of staffing and maintenance. The soil temperature has finally warmed enough to germinate newly planted seed and of course, poa. We will begin to settle into some type of routine, if there is such a thing. My hope is that all of you have made it through this spring and been able to "survive" the challenges of lost turf, pumphouse renovations and irrigation issues. One thing for sure in this business is that nothing is for sure except the challenges that Mother Nature throws our way every year.

* * * *

Special thanks to Jeff Vinkemeier, Glencoe Country Club; Jack MacKenzie, CGCS, North Oaks Golf Club, and John Steiner, CGCS, White Bear Yacht Club, for hosting our first three meetings of the year. I would also like to recognize the affiliate members who have "stepped up to the plate" in support of our association by sponsoring our monthly meetings. Please refer to the list in this issue of *Hole Notes* and "thank" those vendors who provided their special support. The dollars raised from this program will be used to support scholarships, research and special activities that promote education and involvement in our association.

* * * *

This is the 2nd Annual University of Minnesota TROE Center Update issue of *Hole Notes*. As you read through the many articles in this issue, you begin to realize that OUR "field of dreams" has come true for turf research in Minnesota. Many thanks to Dr. Brian Horgan and all who have contributed to this special issue. None of these projects would have been possible without the support of the MGCSA. As the saying goes "build it and they will come" so we built it (the TROE Center) and the research projects came and they continue to come. New areas are being developed and expanded and new funding partners are sponsoring new projects again this year. Please be sure to mark your calendars for this summer's TROE Center Field Day scheduled for Thursday July 29th. As you can tell by reading the research articles, there is something for everyone.

* * * *

As we go about our busy schedules this season, let us not forget to take some time to thank those around us who help make our jobs and lives easier. We all know how easy it is to get caught up in the "heat of the battle" and lose sight of what is really important.

Until next month,
Rob

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Inside This Issue Of Hole Notes

ADVERTISERS

UPCOMING EVENTS

July 29
U OF M FIELD DAY
U OF M St. Paul Campus
Hosts: Dr. Brian Horgan and Larry Vetter

Monday, August 16
STODOLA SCRAMBLE
Somerset Country Club
Mendota Heights, Minn.
Host Superintendent: James Bade

Monday, September 13
MGCSA CHAMPIONSHIP
Edina Country Club
Edina, Minn.
Host Superintendent: Mike Kelly

Monday, October 11
FALL MIXER
The Crossings at Montevideo
Montevideo, Minn.
Host Superintendent: Terry Negen

2005

January 5, 6, 7
MINNESOTA GREEN EXPO
Minneapolis Convention Center
Minneapolis, Minn.

Turfgrass Breeding and Genetics Research Program

By Dr. Eric Watkins
Turfgrass Breeding and Genetics
University of Minnesota

My goal is to expand the University of Minnesota turfgrass breeding program to include most of the major cool-season turfgrass species. Our climate provides a unique opportunity to develop turfgrass varieties that are tolerant of severe winters and the diseases associated with our environment.

Tall fescue is considered to be the most drought tolerant cool-season turfgrass. Turf-type tall fescue is currently a popular turfgrass in many parts of the United States; however, it is not commonly used in many areas in the northern United States due to its poor winter-hardiness. Research at the University of Wisconsin has suggested that the species has the potential to succeed in colder environments, especially when seeded in the spring. The University of Minnesota turfgrass breeding program will aim to develop turf-type tall fescue cultivars that can be seeded in the fall and thrive in our climate. In the coming months, we will be using controlled-freezing methods in order to quickly assess the cold tolerance of currently-available tall fescue germplasm. A successful controlled freezing test would help to accelerate the tall fescue breeding program.

The fine fescues (strong and slender creeping red fescue, hard fescue, sheeps fescue, Chewings fescue, blue fescue) can be effectively used in many low and medium-maintenance situations. Some of these species are already important components of many turf areas in the state. We will continue to evaluate these species and plan on beginning a fine fescue germplasm improvement program in the near future. The breeding program will also investigate the potential of native grass species for use as turf. The initial phase of this project will involve the collection of germplasm from native stands. Native grass species should be adapted to our climate and may be able to fill specific needs for the turfgrass industry of the state. In the next couple of years, we will evaluate velvet bentgrass and colonial bentgrass for use on golf greens and fairways. These species perform quite well in certain parts of the country; if currently available cultivars show promise in our trials, we will initiate breeding programs in one or both of these species.

I am also working with Dr. Nancy Ehlke (Department of Agronomy and Plant Genetics) on perennial ryegrass and Kentucky bluegrass germplasm improvement programs. A number of Kentucky bluegrass lines that we are working on with Rutgers University have performed very well in preliminary trials. This collaboration should result in varieties that not only perform well as turfgrass, but can be grown for seed production by grass seed producers in northern Minnesota.

Although developing new turfgrass varieties can be a slow process, the potential rewards are worth the effort. We will work to ensure that, in the coming years, Minnesota's turfgrass managers are provided with new grass varieties that thrive in our climate.

Biography: Dr. Eric Watkins
Turfgrass Breeding and Genetics
University of Minnesota

I was raised near Sunburg, Minnesota, and graduated from Kerkhoven-Murdock-Sunburg high school in 1994. In the fall of that year, I enrolled at the University of Minnesota in the Department of Agronomy and Plant Genetics. While at the University, I worked for Dr. Nancy Ehlke's turfgrass and forage breeding program. This experience led to me to pursue graduate study in turfgrass breeding and genetics. In July 1998, after completing my undergraduate degree, I began my graduate study at Rutgers University in New Brunswick, New Jersey. I worked under Dr. William Meyer in the Rutgers turfgrass breeding program. While at Rutgers I was involved in many aspects of turfgrass breeding and genetics. I was heavily involved in turf-type tall fescue breeding, especially the development of germplasm with resistance to brown patch disease. My Ph.D. thesis focused on tufted hairgrass, a species native to many parts of the Northern Hemisphere, which shows promise as a low-maintenance cool-season turfgrass. I completed my graduate degree at Rutgers in January, and have been at the University of Minnesota since the beginning of February.

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Creeping Bluegrass Research Program

By Dr. Don White
University of Minnesota

We continue, with our limited resources, to make slow progress on the creeping bluegrass improvement project. We continue to try to track some of the effects of the light intensity by cold interaction in the vernalization process of new materials. This can be a critical step in preparing materials for seed increase. Two plantings of 580 individual plants each of 10 advanced selections were established in OR for a seed trial and increase. Seed was harvested from 35 plots in Minnesota for increase & production data. A seed harvester utilizing a rotary brush for research plots was designed and built to facilitate seed harvest from small plots.

Two plantings of 576 plants of 10 advanced selections for seed increase trials were planted in Oregon. 44 seed production plots were established for seed increase here in Minnesota at the Horticulture Research Center. A 350 entry space planting trial that included, 3500 plants, was established and seed harvested from 256 entries for 2004planting, 25 crosses were executed in the greenhouse along with 30 open pollinated collections among parents.

We continue, with our limited resources, to make slow progress on the creeping bluegrass improvement project.

Overseeding experiments on the University soccer field were initiated. Three experiments with overseeding fairways and tees were initiated (30 treatments 3 reps). Experiments on the effects of competition on performance were conducted. Investigation into control of bentgrass in Poa Annua revealed that Poast resulted in complete control with no phytotoxicity in the creeping bluegrass. Fusilade, and Assure resulted in complete control but unacceptable levels of phytotoxicy were observed. Both exhibited plant growth regulator effects on Poa. annua. Research was completed on the use of ISSR (Inter Simple Sequence Repeats) PCR for generating polymorphic loci for genetic research in P.annua. This will allow us to differentiate between different lines in the breeding project. We continued to cooperate with several other projects on and off campus.

Developing Irrigation Conservation Strategies Using Soil Moisture Sensors and ET

By Jon Sass, University of Minnesota
Dr. Brian Horgan, University of Minnesota
and Van Cline, The Toro Company

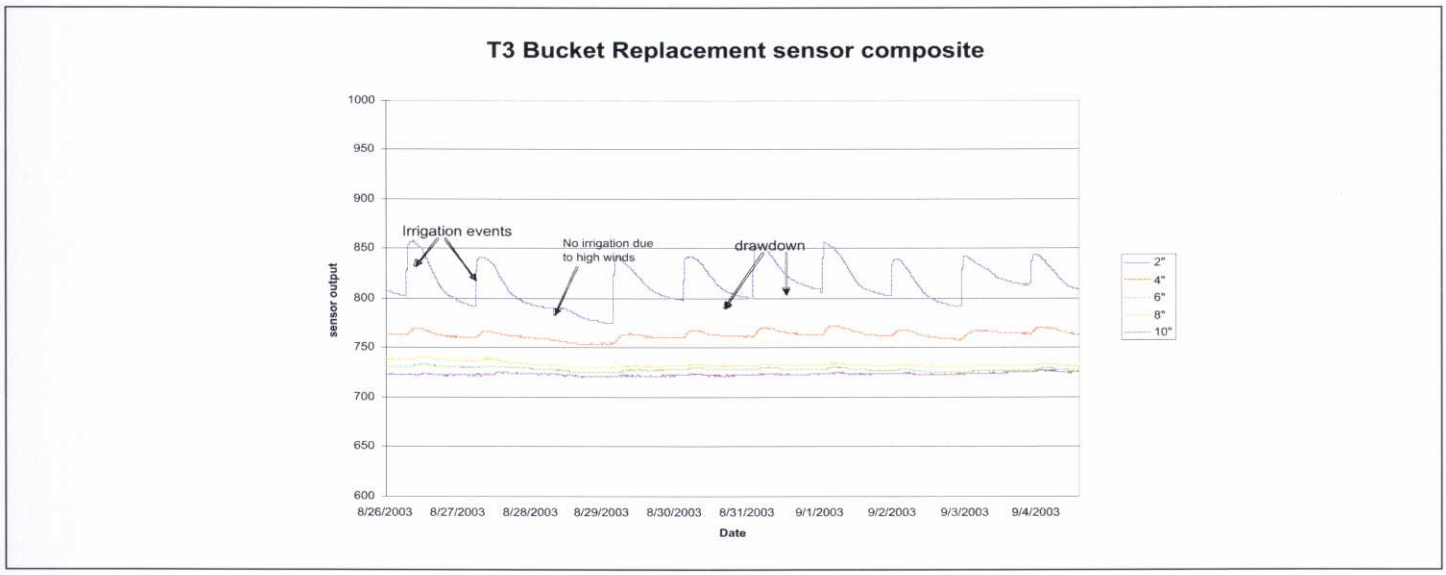
During the summer of 2003, experiments were conducted on a sand based putting green using irrigation treatments to assess the performance of soil moisture sensors in an effort to identify irrigation practices which conserve water while maintaining or enhancing bentgrass turf quality. This project is also evaluating FAO 56, the latest world standard in evapotranspiration (ET) estimation, as an aid in accurate irrigation scheduling for highly maintained turf.

Initial results show that the Decagon ECH2O sensors used in the study are extremely sensitive in responding to changes in soil moisture; irrigation and rain events, along with daily drawdown in response to evapotranspirational loss, are very well pronounced, as shown in the accompanying graph.

One surprising result is the near total lack of soil wetting at depths below 4" under a daily irrigation scheme.

The FAO 56 ET estimating code using climate information from the weather station on campus also shows great promise, accurately predicting ET loss and aiding in the scheduling of irrigation volume. Deficit irrigation is also being investigated as a possible tool in turf irrigation water conservation.

These two technologies, used either independently or together, represent the probable future of irrigation management and can lead to huge savings in water usage in irrigating turfgrasses while maintaining high turf quality. Research is continuing in 2004.



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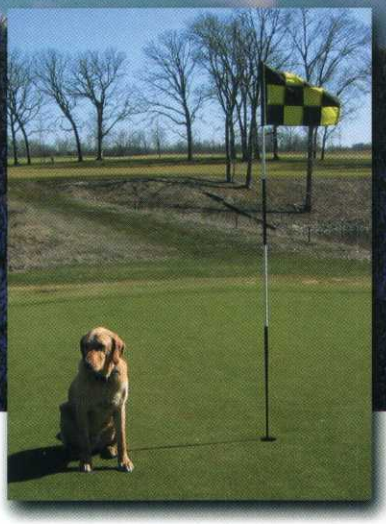

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