

Turf & Grounds Field Day

At the University of Minnesota St. Paul Campus

By **LARRY VETTER**
MTGF Executive Director

The 7th Annual Turf & Grounds Field Day was held on July 27, 2006 on the University of Minnesota St. Paul Campus. Two separate educational tracts featured turf-related research and grounds activities.

Registration featuring networking opportunities and refreshments was from 7:45 to 8:45 in the Display and Garden area on campus. At 8:45 there was a brief "Welcome" by Larry Vetter, Dr. Beverly Durgan, Dean of Extension, and Dr. Brian Horgan, Turfgrass Specialist, University of Minnesota.

At 9:00 a.m. the attendees were invited to choose a tour, one featuring turfgrass research and the other featuring a variety of non-turf plant materials. The turf program attendees were divided into three groups that circulated between nine different stops featuring a variety of reports and demonstrations conducted by faculty and staff of the University. Dr. Don White discussed his ongoing creeping bluegrass research. Don has been breeding and selecting different cultivars of creeping bluegrass for a number of years and has had the product of this work planted on a number of sites.

Andrew Hollman presented the latest data on the "Low-Input Turfgrass Species Evaluation for Fairway Use" research being conducted by himself, Dr. Brian Horgan and Sam Bauer. As budgets are cut, environmental concerns and traffic on turf sites increase finding grasses that will maintain quality under lower management - higher use has become extremely important. Increasing restrictions on the use of fertilizers, pesticides and water are a concern to all turf managers. At the same time, facilities are experiencing increased use (traffic) on their sites. This combination poses major problems since most newer cultivars are being developed under high management conditions.

This project includes 20 turf species being evaluated under two heights of cut with clippings removed. Plots are mown three times per week at 1/2 inch and one inch and are fertilized with a total of one pound of nitrogen and potassium. Compaction treatments to simulate golf cart traffic are split into three levels: Control (no traffic), Medium - one pass Monday, Wednesday and Friday, and Heavy - two passes Monday, Wednesday and Friday.

The goal of this study is to establish one or two species that excel under low inputs, compaction and fairway heights of cut. The best performing species will move on to further trials and breeding efforts in the University of Minnesota Turfgrass Breeding Program.

The next stop was hosted by Brent Hulke and featured the "Perennial Ryegrass Breeding Program at the University of Minnesota." Since 2004, turfgrass breeders at the University of Minnesota have been testing previously underutilized perennial ryegrass lines that could be useful in improving the winter hardiness of perennial ryegrass. In this study, 300 of these lines were tested for winter hardiness and turf quality traits. This study involves field exposure as well as freezing tolerance tests in the lab. The most winter hardy lines will be included in future vari-

ety development efforts.

Another project has been started to improve the turf breeder's ability to select and integrate useful endophyte strains into grass varieties. A breeding method is being developed that will help study the interaction between specific endophyte strains and specific grass genotypes. If developed successfully, this will enable researchers to be able to select both the best grass genotypes and the best endophyte strains to include in a variety. This would greatly increase the value of these new varieties.

A new study was introduced this year which is being conducted by Dr. Joe McFadden on "Carbon Budgets of Turfgrass in Urban and Suburban Ecosystems." Joe reports that "vegetation is recognized as a possible mechanism of carbon storage sink - through photosynthesis because atmospheric CO₂ is converted into biomass. At the same time, decaying plant material and soils are a source of carbon dioxide that is released during decomposition." A recent study estimated that lawns cover

(Continued on Page 25)

163 Yard Par 3 eighth hole at the Refuge Golf Club in Oak Grove, Minnesota.



Herfort Norby Golf Course Architects, LLC
100 East Second Street, Suite 200, Chaska, MN 55318

Phone: 952-361-0644

Fax: 952-361-0645

E-mail: golfnorby@earthlink.net

Website: herfortnorby.com

Field Day—

(Continued from Page 24)

163,800 square kilometers of the continental U. S. This is three times larger than the area covered by any other single irrigated crop. The potential impacts of this research will: (1) Inform regional land use planning and management in minimizing carbon sources and maximizing sinks, and (2) Provide a data set for the future development of carbon exchange models that will allow carbon budget estimation over the Upper Midwest region.

Next on the agenda was "Technology to Improve Water Use Efficiency" presented by Aaron Johnsen. This work is being done by Aaron, Dr. Horgan and Van Cline of the Toro Company. A new technology used in agriculture to determine drought stress involves shining red and infrared light on the plant canopy and using reflective meters to measure the light reflected off the canopy. The data collected provides an indicator of a stress imposed on the plant. The goal of this research is to evaluate the use of reflectance meters to predict drought stress in a bentgrass fairway. The objec-

tive is to develop a reliable method of detecting drought stress prior to visual symptoms appearing. This technology could be of great use to turfgrass managers because it will provide the ability to use a wilt-based irrigation strategy more effectively and with confidence.

"Understanding Nutrient and Pesticide Loss with Runoff from Fairway Turf" was hosted by Dr. Pam Rice, USDA-ARS. This work is being done by Drs. Rice and Horgan. We are all aware of the environmental issues concerning fertilizers and pesticides in surface water. This experiment was designed to measure the quantity of these materials transported with runoff from fairway turf and to evaluate the ability of turf management practices to reduce the transport of applied chemicals with runoff. Both chemical application strategies and cultural practices were evaluated. The overall goal is to identify management practices that maximize fertilizer and pesticide retention at the site of application. Results of this research will provide information that will allow for informed decisions on best management practices that are both environmentally responsible and provide quality turf. This is an ongoing study that will

provide updated data at next year's turf and grounds field day.

"Selecting for Improved Kentucky Bluegrass Cultivars" was presented by Dr. Nancy Ehlke. This work is being conducted by Drs. Ehlke, Watkins, Wyse and Vellekson. While Kentucky bluegrass is apomictic which makes breeding new varieties very difficult, there are certain plants that are capable of sexual reproduction. When these plants are used as females, from 0 - 17% of the seed produced on the plant may be a hybrid and potentially have different characteristics from the mother plant. These progeny are evaluated for improved traits such as disease resistance, seed production potential, overall turf quality, color, leaf texture and growth habit to determine if the progeny are distinctly better than the original parental sources.

The University of Minnesota recently initiated a hybrid breeding program that should be able to produce high quality cultivars of Kentucky bluegrass with better turf quality and disease resistance with high seed yields in northern Minnesota. These new cultivars will benefit both the turf and seed producers in the state.

(Continued on Page 26)

SERVING THE GOLF INDUSTRY



GLENN REHBEIN COMPANIES, with over 45 years of experience, provides building, design and renovation services for Minnesota's elite golf courses. We focus on the details and pride ourselves on growing only top quality sod. Our comprehensive lines of Bluegrass, Blue-Fescue, Bentgrass and specialized Netlon Turf Systems will keep your course looking great all season long.

PROVIDING UNIQUE PRODUCTS & SERVICES

EXCAVATING | UNDERGROUND UTILITIES | ENGINEERING | SURVEYING
ENVIRONMENTAL REMEDIATION | TURF PRODUCTION | GOLF COURSES
ATHLETIC FIELDS | STORM WATER MANAGEMENT



8651 Naples Street N.E., Blaine, MN 55449
office: 763.784.0657 • www.rehbein.com

Field Day—

(Continued from Page 25)

The next stop featured "Pesticides for Turf: Updated 2006" and "Pesticides for Home, Nursery and Landscapes: Updates 2006" presented by Dr. Vera Krischik. Recently several commonly used insecticides for the control of insects on landscape plants were removed from sale. EPA is phasing out the use of chlorinated hydrocarbons, organophosphates and carbamates due to safety concerns. Insecticides that have lost their registration for turf include bendiocarb, chlorpyrifos (only for nursery production, golf courses and road medians), diazinon and endosulfan. In addition to these, the following also have their registration for trees and shrubs: dimethoate and lindane. Dr. Krischik handed out guides containing various insects along with recommended insecticides recommended for their control, indicating their targets, active ingredients and trade names.

The last stop on the turf tour was "Mowing and Dew Removal to Minimize Dollar Spot Disease on Creeping

Bentgrass" presented by Dr. Brian Horgan. The study has been conducted by Dr. Horgan and Alex Ellram. "Dollar spot disease on bentgrass can be greatly reduced by mowing and other cultural practices which reduce leaf wetness duration." Three different mowing times, different methods of dew removal and frequency have been studied for the past two plus years. The severity of dollar spot was also studied in laboratory experiments. Results indicate that dew removal reduced the incidence of dollar spot on field test plots when mowed at 0400 h when compared to those plots mowed at 2200 h and 1000 h. Dollar spot incidence was also lower when dew was removed daily than when dew was removed on alternate days. Disruption of leaf moisture at a time that minimized uninterrupted leaf wetness duration appeared to be the most effective in reducing dollar spot incidence and severity.

The grounds trac began at the Display and Trial Gardens and was hosted by Manager Karyn Vidmar. She discussed the purpose and history of the garden as well as the most recent design change and construction techniques. Faculty and staff

involve students in all aspects of Garden development and use. The Garden has been designed and installed by students through assignments associated with graduate and undergraduate classes, and individualized directed studies.

Horticulture work-study and other students maintain the garden during the growing season and students aid in the development of the management plan for the Garden. Sixteen courses within the Department of Horticultural Science are associated with the Garden.

The next stop on the grounds trac was hosted by Dr. James Calkins. During a walking tour of campus, site survey and analysis were discussed as they relate to a number of factors in the development process. The ultimate goal for any landscape should be sustainability. Sustainable landscapes are functional, maintainable, environmentally sound, cost effective and visually pleasing. As part of this tour, Dr. Calkins pointed out some of the unique plant materials on campus including a number of very interesting shrubs and trees.

(Continued on Page 28)



syngenta

Help spring start on time.

Snow mold can push back your season opening. No one wants that. That is why you want new Instrata™ fungicide, the foremost protection against every major snow mold. Powered by three active ingredients for multiple modes of action, it keeps the greens and other areas of your course ready for play, right on schedule.



Contact Todd Loecke at 515-710-8797 to learn more.

syngentaprofessionalproducts.com

Important: Always read and follow label instructions before buying or using this product.
©2006 Syngenta. Syngenta Professional Products, Greensboro, NC 27419.
Instrata™ and the Syngenta logo are trademarks of a Syngenta Group Company.

Field Day—

(Continued from Page 26)

The last stop on the grounds tour was hosted by Dr. Jeff Gillman. Elms for the Twin Cities was the primary focus of this session.

Dr. Gillman presented data on sixteen different elm selections that he is studying with reference to Dutch Elm Disease resistance. A number of characteristics of these selections were discussed, including DED resistance, growth rate, hardiness, insect resistance, form, maintenance requirements, storm breakage and their adaptation to boulevard use.

Overall there was a great deal of timely information presented for all turf and grounds professionals. There are many companies that support this research,

either with direct cash contributions or in-kind donations. Those companies deserve consideration when members are making their buying decisions for their turf and grounds activities. While space does not allow listing all of these supporting ven-

tor companies in this article, a complete list can be found on the MTGF web site which is www.mtgf.org under "Field Day."

Also, the MTGF is sponsoring a Pesticide Recertification Workshop and a Power Limited

Technician Workshop this fall.

Complete information on these workshops can also be found on this web site. In addition, complete information on the Minnesota Green Expo can be found at www.minnesotagreenexpo.com. I look forward to seeing many of you at one or more of these events.

The MTGF is sponsoring a Pesticide Recertification Workshop and a Power Limited Technician Workshop this fall.



Aaron Johnsen was a featured speaker at the Turf & Grounds Field Day.



Charlie Miller, Goodrich Golf Course, was one of many grounds staff volunteers during the U.S. Amateur at Hazeltine National Golf Club in late August. Hazeltine's neighbor, the Chaska Town Course, was also utilized for qualifying rounds. All matches were played at Hazeltine.

PHOTO BY GREG BRODD

Everything You Need To Keep Your Course Beautiful.



**Fertilizer • Seed • GC Accessories • Fungicides
Herbicides • Insecticides • Irrigation Parts**

Jamie Olsen
612.366.5858
Eastern Minnesota

LESCO®

Ryan Popp
612.328.1429
Minneapolis/St. Paul

Bob Simondet
612.366.3031
Western Minnesota

LESCO is a registered trademark of LESCO Technologies LLC.