

# 2004 Turf and Grounds Field Day Recap

By Larry Vetter, Executive Director  
Minnesota Turf & Grounds Foundation

The fifth annual Turf and Grounds Field Day was held on Thursday, July 29th on the St. Paul Campus of the University of Minnesota. The Minnesota Turf & Grounds Foundation is pleased to be able to sponsor this event in conjunction with the University of Minnesota.

While the forecast was rather dire until the last minute, Mother Nature cooperated beautifully and the event was graced with tremendous weather.

The day began with refreshments at the registration area, which was in the Display and Trial Gardens area on the St. Paul Campus. The total attendance continues to be disappointing but those who did attend were amazed at the expansion and quality of the work being conducted at the TROE Center. Approximately forty attendees indicated that they were affiliated with a golf course currently having an

MGCSA member.

Following registration, the day began with a Welcome by Larry Vetter, Dr. Thomas Michaels, the Head of the Horticultural Sciences Department and Dr. Brian Horgan, Turfgrass Extension Specialist. During the Welcome, Rob Panuska, MGCSA President, presented a \$25,000.00 check to Dr. Michaels in support of turf activities at the University of Minnesota. All involved both in the turf industry and the University are extremely appreciative of MGCSA's continuing support of this important work.

At the conclusion of the official welcome, attendees boarded wagons for the trip to the TROE Center site. The balance of the morning included nine stops at various research and demonstration projects on the TROE Center. Attendees circulated between these stops. The researchers

involved with each project described the work being done at the various stops.

At the first stop Pam Rice, USDA/ARS explained her work involving pesticide and nutrient loss with runoff. She also evaluated how management practices may mitigate these losses. This research is part of a multi-state cooperative initiative to improve the current understanding of pesticide and nutrient runoff from fairway turf. The two objectives of the study are 1) pesticide and nutrient transport with runoff from fairway turf as affected by regional variability, turf species variability, and test plot size, and 2) to

evaluate the ability of turf management practices to mitigate pesticide and nutrient loss with rainfall and snowmelt runoff.

Nancy Ehlke explained various aspects of the turf breeding program at the University of Minnesota at Stop 2. Current activities are concentrated primarily with perennial ryegrass and Kentucky bluegrass varieties. "There is a large team effort to develop improved cultivars of perennial ryegrass with improved winter hardiness, turf quality, disease resistance and herbicide tolerance. Developing elite turf-type perennial ryegrass varieties would expand Minnesota's turf grass options, extend the range of adaptation and improve persistence in the turf environment. Breeding activities have been conducted cooperatively with Rutgers University to improve the level of turf quality and disease resistance in our perennial ryegrass populations."

"The highly apomictic nature of Kentucky bluegrass has limited the development of new cultivars that are different from existing cultivars. Recently, a hybrid breeding program was initiated at the University of Minnesota. Hybrid breeding programs have been very successful in producing the newer, high quality cultivars of Kentucky bluegrass. With the implementation of the hybrid breeding program, the University of Minnesota should be able to produce high quality cultivars of Kentucky bluegrass in the future."

Carl Rosen discussed research underway involving the evaluation of the effects of foliar iron formulations at Stop 3. "Maintaining dark green leaves is a key aspect of turfgrass management. A rich green color is esthetically important, as well as an indicator of turf health and quality. Color is affected by many factors, including nitrogen fertility, disease symptoms and iron deficiency. Iron (Fe) is required in only small amounts, but is important because of its essential role in chlorophyll synthesis. This project is a continuation of a study initiated last year to evaluate the effectiveness of different spray formulations to increase foliar Fe uptake and improve turfgrass color on golf course greens."

(Continued on Page 25)

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## Field Days –

(Continued from Page 11)

**Stop 4 featured work being done by Brian Horgan** involving the use of fine fescues and colonial bentgrasses for golf course fairways. This project, funded by GCSAA, has as its "objectives to 1) determine the best cultivars and combination(s) of fine fescues and colonial bentgrass for use as a fairway turf, and 2) evaluate the effect of organic versus water-soluble fertilizer on turf quality and fine fescue/colonial bentgrass competition." A number of characteristics are being evaluated, including turf quality, percent living ground cover, disease occurrence, weed encroachment, spring greenup, divot recovery and golf ball lie. The varieties used in the study were selected based on top performance in NTEP trials and ancillary studies conducted by UW-Madison on golf courses and the O. J. Noer facility between 1992 and 2002.

**Jon Sass, a University of Minnesota graduate student presented "Remote sensing of turfgrass for improved irrigation efficiency" at Stop 5.** "Currently, most irrigation decisions are based upon prior experience with a site, weather conditions and visual observations. Although

most turfgrass managers make some site specific changes to irrigation, large areas are generally treated similarly. If a manager had information about a plant's internal water status on smaller scale and/or the soil moisture status, he/she could make irrigation decisions based on the plants' needs, thereby saving both natural and financial resources."

**"Two separate projects have been initiated to evaluate various technologies to conserve irrigation water;** 1) use of a spectrometer and 2) the use of soil moisture sensors. These two technologies, used 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."

**Dr. Eric Watkins, the newest faculty addition in the University's turf program discussed his work with turfgrass germplasm evaluation via the NTEP trials at Stop 6.** "The National Turfgrass Evaluation Program (NTEP) coordinates a nation-wide variety testing program. The goal of NTEP is to evaluate turfgrass germplasm in a wide range of environments. Currently, the University of Minnesota is conducting three NTEP trials: Kentucky bluegrass, bentgrass for use on fairways and bentgrass for use on

greens. This fall, we will also be planting a low-input perennial ryegrass NTEP trial." In addition, a 2003 planting of fine fescues will provide data that will be available in the winter of 2005. An additional Kentucky bluegrass trial was seeded on the St. Paul campus in June of this year and more variety trials are planned for the future.

"The 2000 planting of Kentucky bluegrass has been maintained at a two inch height of cut with three pounds of nitrogen per thousand square feet per year. The bentgrass trials were seeded in September 2003 at the TROE center. Data is currently being collected on both the greens and fairway studies and the first year of data will be available this winter."

"The University of Minnesota will continue to be one of the leaders in creeping bluegrass (*Poa annua reptans*) development. The germplasm collection that has been assembled at Minnesota is extensive and should contain the traits necessary for the development of improved creeping bluegrass varieties." Eric presented tables indicating the varieties currently in test in the fine fescue and both bentgrass studies.

**Stop 7 featured Rod Venterea** discussing work underway assessing  
(Continued on Page 29)



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## Field Days—

(Continued from Page 25)

nitrogen losses during grow-in of a golf putting green under two irrigation treatments. "The effects of irrigation intensity on nitrate and phosphate leaching and on the emission of environmentally harmful nitrogen trace gases are important considerations when evaluating irrigation practices. We measured nitrate and phosphate leaching during the grow-in of a USGA putting green with the use of lysimeters installed underneath the sand/peat layer."

"One of the two irrigation treatments followed general local irrigation practices for grow-ins, i.e. irrigation at a fixed daily rate of about three eighths of an inch applied in seven increments per day. In the other treatment, we irrigated to replace only as much moisture as was lost via evapotranspiration (ET) on the previous day. We hypothesized that this amount of water would be sufficient even for the turf establishment period. After two months of grow-in, from the end of August until the end of October, there were no differences in appearance of the

newly established turf between the irrigation treatments."

**Vera Krischik hosted Stop 8 addressing timing insecticides for tree and turf insects.** While there was no specific project to point toward, Vera moderated a question and answer session with each group. She also went through a list of the most common insect problems being encountered and outlined various identification and control methods and concerns. Included in the Field Day booklet were a number of excellent photographs of various insects as well as monitoring methods, suggest spray schedules, insecticides and useful websites for further information.

**Stop 9 featured Mary Meyer discussing little bluestem research.** After presenting the range of adaptation of little bluestem, she listed several varieties that have been released since the 1960's. Included in the presentation were topics addressing seeding date and establishment data, field identification and a planting of thirty five populations established in 1996 and 1997 of collections made from parks, nature preserves, railroad right of ways and other natural areas throughout Minnesota. Plants continue to be evaluat-

ed for a number of characteristics and work will continue to identify other new ornamental forms of little bluestem. A list of references were provided for additional information.

**At the conclusion of the formal presentations lunch was served at the TROE Center site.** As with any large event, there is a huge amount of work involved in order to present this annual Field Day. Brian Horgan and the rest of the Turf Working Group at the University, along with students, staff and other faculty all make a contribution so that professionals in the Green Industry have this learning and networking opportunity. Those who attended this year were amazed at the amount of progress that has been made over the last twelve months at the TROE Center. By this time next year, there will be even more to see and evaluate. It would be great if the attendance increases significantly for next year's event. Thanks again for the continued support of MGCSA and MGCSA members. Through your generous support great progress is being made toward developing a world-class turf program at the University of Minnesota.

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