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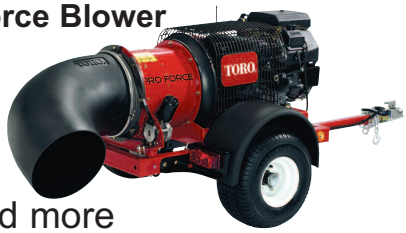

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University of Minnesota Research Update: 2004-2005

By DR. BRIAN HORGAN
Turfgrass Extension Specialist, University of Minnesota

I've come to realize that there is no "normal" year when you work in the turf industry. The past three winters are proof of that. Well, at the University, there doesn't seem to be any sense of normality from year to year either. The University just announced wide-spread changes, from colleges being closed or merged, to the creation of a new honors college and school of design. Our college, the College of Agriculture, Food and Environmental Sciences, will merge with the College of Natural Resources if the Board of Regents approves President Bruinink's Strategic Positioning Plan. We aren't quite sure what this will mean for the turf program as within these two colleges, there are 20 individual departments and it has been suggested that that number will be reduced significantly. This planning process to make the University of Minnesota a top public research institution has been ongoing for the past year. Implementation of the strategies will start Jan. 1, 2006.

Strategic Positioning Plan

Prior to the Strategic Positioning Plan becoming public, a blow to the turf program occurred. We were told that all of our planning for a building at the TROE Center was null. This is very unfortunate as we made sure that all our "i's" were dotted and "t's" were crossed when proposing the TROE Center concept within the University. This included having the Board of Regents agree to the concept. Many of you took this personally as you have spent countless days in meetings discussing how to make the turf program the best it can be. I took this personally as I have spent the last four years selling this idea to many of you.

Standing back and considering the ramifications of not completing the TROE Center, I cannot help but think that your trust in the University is wavering at this point. I cannot blame you if you have these feelings. You have supported the turf program both monetarily and through in-kind gifts of products and services. I have calculated that the turf industry in Minnesota has contributed in excess of $750,000 to achieve what we have today – an excellent field research facility.

Many of the projects that were written about last year and published in Hole Notes are ongoing. These projects includes:

NTEP Trials

We have been very successful at obtaining all the cool-season NTEP trials including bentgrass greens and fairway, fine fescue, perennials, ryegrass and

(Continued on Page 17)

National Turfgrass Evaluation Program
Perennial Ryegrass Trial

University of Minnesota Turfgrass Research Program Update

By Brian Horgan, Ph.D. and Eric Watkins
University of Minnesota
Department of Horticultural Science

The University of Minnesota Turfgrass Science program has had another successful year. Our research program has conducted research in three primary areas: (1) Environmental Protection, (2) Production and Management of Turfgrasses and (3) Turfgrass Breeding and Genetics. At the end of this article, we have listed peer-reviewed scientific publications from 2010 and also a list of current research projects that are being funded at our research center. As you can see, our team of students and researchers has been very successful in conducting important research that will benefit turfgrass professionals in both the short-term and the long-term.

When interacting with stakeholders, we often are asked how the University of Minnesota financial situation affects our research and education program. Unfortunately, the declining financial resources available within the University are beginning to impact our program; in the past, the college was able to help support our field facility manager position, which is no longer the case. In the near future, we expect to see severe reductions, or even elimination, of funds dedicated towards personnel that help keep the TROE Center operational. Fortunately, the turfgrass science program has been well-supported by the turf and grounds industry in Minnesota. When we talk to colleagues throughout the country, we realize how fortunate we are to have a great relationship with industry partners such as MGCSA and MTGF. The funding we receive from these organizations has allowed us to successfully compete for a number of large grants *(see list at end of this article)*.

Typically, industry groups, such as the MGCSA and MTGF, can support research in one of two ways. The first model supports research by funding the infrastructure necessary for longer-term, impactful research projects. The second model supports specific research projects but does not provide funding for critical infrastructure and personnel. One advantage to the project-specific funding model is industry professionals can quickly use the research results. For instance, a trial that evaluates a series of plant growth regulators for use on annual bluegrass would provide research results within a short time frame and lead to changes in turf management.

For these types of research projects, we are endowing a graduate student fellowship and are happy to report that we have commitments for $240,000 (goal is $400,000). We appreciate the MGCSA's support of this fellowship.

The first model allows us to confidently present research proposals to outside funding agencies because we know that the infrastructure and personnel costs associated with maintaining our facility are in place. Most funding agencies want to fund graduate student research and related supplies and are not interested in funding infrastructure or long-term research personnel. This model provides industry a significant return on investment since a graduate student costs our program approximately $40,000/yr (same amount granted by MTGF to our program in 2011).

In summary, our program relies on general funding for infrastructure and personnel (TROE Center and people to run it). This allows us to invest in long-term research projects that will have implications for turf management throughout the region and country for decades to come. At the same time, a fully-funded research center allows us to perform readily-applied research. It is our desire that MTGF and the allied organization, such as the MGCSA, will continue to support the TROE Center and the personnel necessary for the continuation of a nationally recognized, impactful turfgrass research program.

We hope that MGCSA members will be able to join us for the 2011 Turf and Grounds Field which will be held on Thursday, September 15 on the St. Paul campus. Details will be provided later this summer at www.mtgf.org.

Peer-Reviewed Publications in 2010

Bierman, P.M., B.P. Horgan, C.J. Rosen, A.B. Hollman and P.H. Pagliari. 2010. Phosphorus runoff from turfgrass as affected by phosphorus fertilization and clipping management. J. Environ. Qual. 39:282-292.

Clark, M.D., and E. Watkins. 2010. Seed production characteristics of prairie junegrass germplasm accessions. Crop Science 50:1057-1065.

Kerns, J.P., P.L. Koch, D. Cook, B.P. Horgan and F.P. Wong. 2010. First report of brown patch caused by Waitea circinata var. circinata on Poa annua in Wisconsin and Minnesota. Plant Disease. Vol. 94, No. 9:1165.

Clark, M.D., and E. Watkins. 2010. Turfgrass characteristics of prairie junegrass germplasm accessions. Crop Science 50:2092-2102.

Rice, P.J., B.P. Horgan, C.Hapeman and L. McConnell. 2010. In Press. Effectiveness of management practices to mitigate off-site movement and ecological risk of pesticides transported with runoff from agriculture and turf systems. In Pesticides. In-Tech. Vienna, Austria. ISBN 978-953-7619-X-X.

Hoffman, L., M. DaCosta, J.S. Ebdon, and E. Watkins. 2010. Physiological changes during cold acclimation of perennial ryegrass accessions differing in freeze tolerance. Crop Science 50:1037-1047.

Jiang, Y., E. Watkins, S. Liu, X. Yu, and N. Luo. 2010. Antioxidative responses and candidate gene expression in prairie junegrass under drought stress. Journal of the American Society of Horticultural Science 135: 303-309.

Rice, P.J., B.P. Horgan and J.L. Rittenhouse. 2010. Pesticide transport with runoff from creeping bentgrass turf: relationship of pesticide properties to mass transport. Envrion. Tox. and Chem. Vol. 29, No. 6:1209-1214.

Rice, P.J., B.P. Horgan and J.L. Rittenhouse. 2010. Evaluation of core cultivation practices to reduce ecological risk of pesticides in runoff from Agrostis palustris. Environ. Tox. and Chem. Vol. 29, No. 6:1215-1223.

Watkins, E., A.B. Hollman and B.P. Horgan. 2010. Evaluation of alternative turfgrass species for low-input golf course fairways. Hort. Sci. 45(1):113-118.

Watkins, E, S. Fei, D. Gardner, J. Stier, S. Bughrara, D. Li, C. Bigelow, L. Schliecher, B. Horgan and K. Diesburg. 2011. Low-input turfgrass species for the north central United States. Online. Applied Turfgrass Science doi:10.1094/ATS-2011-0126-02-RS.

Funded Research Ongoing Projects (does not include projects completed before 2010)

Developing alternative sod mixtures for salt and drought affected sites. 2010-2013. Local Road Research Board (MnDOT). $176,516.

Alternative turfgrass species as a pest management strategy. USDA/CSREES Pest Management Alternative Program. Watkins, E., C. Yue, B.P. Horgan, J. Kerns and M. Meyer. 2009-2012. $179,494.

Genetic improvement of prairie junegrass. 2006-2012. United States Golf Association. Eric Watkins and Nancy Ehlke. $50,000.

Mineralization rates of soils using the ISNT to predict nitrate leaching. 2010-2012. United States Golf Association. Brian Horgan and Dave Gardner. $38,150.

Reducing P runoff from turf; an education and outreach approach. 2011. Minnesota Pollution Control Agency. Brian Horgan and Carl Rosen. $30,000.

Watkins, E, and N. Ehlke. 2009-2011. Expanding the potential of native turfgrass seed production. Minnesota Turf Seed Council. $20,000.

Horgan, B.P. and E. Watkins. 2009-2011. Determination best mixture and blend of cool-season grasses when exposed to acute drought. National Turfgrass Evaluation Program. $15,000.

National Turfgrass Evaluation Program: Tall fescue. 2006-2011. NTEP. Eric Watkins and Brian Horgan. $12,500.

National Turfgrass Evaluation Program: Bentgrass putting green. 2008-2013. Eric Watkins and Brian Horgan. $12,000.

National Turfgrass Evaluation Program: Fine fescue wear tolerance. 2008-2013. Eric Watkins and Brian Horgan. $12,000.

Alternative species for low input greens. 2008-2011. Brian Horgan, Eric Watkins, and Andrew Hollman.

Through the years, Thank yo

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