

APPENDIX D

SAES-422

Format for Multistate Research Activity

Accomplishments Report

Project/Activity Number: NCERA 221

Project/Activity Title: Turfgrass and the Environment

Period Covered: 2014

Date of This Report: February 12, 2015

Annual Meeting Date(s): June 17-19, 2014

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Fig. 1. Attendees at the 2014 NCERA-221 annual meeting. Photo by Ross Higginbotham.

Brief summary of minutes of annual meeting:

The meeting was held at the W.H. Daniel Turfgrass Research Center on June 17-19, 2014. State reports were submitted and the status of existing projects was discussed. We discussed a number of potential projects for the future through a brainstorming session and a breakout session. Among the most likely to go forward were a regional study on Bermudagrass winter survival headed by Aaron Patton; a regional roadside turf project headed by Eric Watkins and Matt Cavanaugh at the University of Minnesota; and a study on growth potential of grasses headed by Bill Kreuser at the University of Nebraska. If you were not at the meeting and would like to be a part of either of these projects, contact Aaron, Bill, or Eric. Nick Christians gave the Historian report. A new NCERA221 website has been developed by Aaron Patton at <http://ncera221.blogspot.com>. This website will contain all information from the previous website that was hosted at the KSUTurf.org website. Sam Bauer and Paul Koch of the University of Minnesota presented information on the Great Lakes School of turf and the methods used to evaluate the program. The next meeting will be at Iowa State in 2015. Other updates were given including a publication from the Turfgrass Information File at Michigan State University, an NTEP update, an update from our NCERA administrator, and four research updates.

Additional information from the minutes at: <http://ncera221.blogspot.com/p/minutes.html>

Other documents including a TGIF Update, NTEP report, and the Historian Report are also available at this link (<http://ncera221.blogspot.com/p/minutes.html>).

Low-Input Turfgrasses

Accomplishments: Turfgrass managers are in need of low-input turfgrass species options. We have previously identified a number of species that do well as low-input, sustainable turf in the north central United States. The objective of this study was to evaluate multiple cultivars of turfgrass species with known adaptation to low-input environments in the North Central Region. Twenty-five turfgrass cultivars and selections, representing ten grass species, were evaluated at eight locations. Plots were established in late summer 2007, and after establishment were maintained at 7.6 cm without inputs of pesticides, fertilizer, or supplemental irrigation. Tall fescue, Chewings fescue, hard fescue, and colonial bentgrass performed well at most locations. Sheep fescue, tufted hairgrass, and prairie junegrass all performed adequately at some locations, and poorly at others. Texas bluegrass hybrids and the single Idaho bentgrass entry were not well adapted to most of the region.

Short-term Outcomes: Turfgrass managers can utilize low-input species identified by NCERA-221 efforts as replacements for higher-input turfgrasses such as perennial ryegrass (*Lolium perenne*) and Kentucky bluegrass (*Poa pratensis*) when typical inputs are either unavailable or undesirable.

Outputs: Watkins, E., D.S. Gardner, J.C. Stier, D.J. Soldat, R.A. St. John, N.E. Christians, A.D. Hathaway, K.L. Diesburg, S.R. Poppe, R.E. Gaussoin. 2014. Cultivar performance of low-input turfgrass species for the North Central United States. Applied Turfgrass Science. doi:10.2134/ATS-2013-0101-RS.

Activities: A new proposal focused on roadside grasses is being submitted to the Minnesota Department of Transportation.

Milestones: Identify potential sites for future roadside evaluation of low-input grasses.

Great Lakes School of Turfgrass Science Online

Accomplishments: Turfgrasses are a resource in our urban community environments and best management practices are aligned with environmental, economic & societal priorities. The Great Lakes School of Turfgrass Science is an effort of NCERA-221 members to provide participants with the science based principles needed to effectively manage turf for recreation, sport, aesthetics and environmental protection. This 12-week program is accessible live online on Wednesday evenings from 6 to 8 pm (Central Standard Time) or the option to view the recorded sessions. The course is directed by educators from the University of Minnesota-Twin Cities and the University of Wisconsin-Madison, with 12 turfgrass scientists and educators from eight Land-Grant Universities (all NCERA-221 members).

Short-term Outcomes: The online training was conducted successfully in the late-winter and spring 2014.

Outputs: 12 different 2-hour course training modules were created. With each module, a pre and post quiz and supplemental reading material was provided.

Activities: A new cohort of students is bring training in 2015.

Milestones: Complete a Journal of Extension manuscript on the program and its impact.

Current funded Joint Projects: Grants from current project team member activities:

Title	Authors	Agency	Years	Total Amt.
Systems approach to <i>Poa annua</i> control on putting greens	Z.J. Reicher, A.J. Patton, and B. Branham	United States Golf Association	2014-2015	\$36,766
Evaluation of Large Patch Resistance and Cold Hardiness in Experimental Zoysiagrasses Developed for the Transition Zone	J. Fry (KSU) and M Kennelly (KSU), and Patton, A.J.	United States Golf Association	2013-2017	\$120,059

Impacts:

1. Generated a greater public awareness of best management practices to responsibly implement supplementary irrigation and fertilization practices for the largest turf acreage, lawns.
2. Updated the suggested list of recommended species and cultivars for very low maintenance use areas in the North Central region which is helpful to state highway departments.
3. A growing degree day model was created and is accessible to those in MI, OH, IN, and IL to better time pesticide applications in order to reduce pesticide use.

Publications: 2012-2014 list at: <http://ncera221.blogspot.com/p/impact.html#joint>

2014 Joint Publications

1. Sousek, M.D., R.E. Gaussoin, A.J. Patton, D.V. Weisenberger, and Z.J. Reicher. 2014. Weed control and turf safety of single and sequential applications of herbicides over spring seedings. *Appl. Turfgrass Sci.* doi:10.2134/ATS-2013-0046-RS.
2. Thompson, C., J. Fry, M. Kennelly, M. Sousek, and Z Reicher. 2014. Seasonal Timing of Glyphosate Application Influences Control of *Poa trivialis*. Online. *Applied Turfgrass Science.* doi: 10.2134/ATS-2013-0044-BR.
3. Watkins, E., D.S. Gardner, J.C. Stier, D.J. Soldat, R.A. St. John, N.E. Christians, A.D. Hathaway, K.L. Diesburg, S.R. Poppe, R.E. Gaussoin. 2014. Cultivar performance of low-input turfgrass species for the North Central United States. *Applied Turfgrass Science.* doi:10.2134/ATS-2013-0101-RS.

Joint Publications not previously credited.

1. Kennelly, M. O'Mara, J., Rivard, C., Miller, G.L., and Smith, D. 2012. Introduction to abiotic disorders in plants. *The Plant Health Instructor.* Online publication. DOI: 10.1094/PHI-I-2012-10-229-01.
2. Xiong, X., K. Diesburg, and D. T. Lloyd. 2013. Application of glufosinate on dormant zoysiagrass (*Zoysia japonica*) turf. *HortScience.* 48: 785-789.

Authorization: http://nimss.umd.edu/lgu_v2/homepages/meet.cfm?trackID=13837