

Overview of the Turfgrass Science Program

The Turfgrass Science Program at Purdue University made tremendous progress in 2003 and underwent many changes. We'd like to take this opportunity to update you on the progress of the program during 2003.

Recognitions

- Bob Shaw was presented the Agronomic Achievement Award in Fall of 2003 for his outstanding accomplishments in the turf industry.
- The Purdue University Turf Bowl team placed 2nd among over 60 teams in the GCSAA's Collegiate Turf Bowl at the International Golf Course Conference and Show in Atlanta.

William. H. Daniel Turfgrass Research and Diagnostic Center

- The teaching laboratory was used for 50 class meetings, 15 extension events, and 36 other education programs with over 6286 attendees. The Center is often used for meetings with the athletic department, faculty, staff, alumni and friends of Purdue. There were 28 of these meetings held at the Center in 2003.

Personnel Changes

- Beverly Bratton retired after over 10 years as secretary for the Turf Program and the MRTF.
- Jennifer Biehl joined the Turf Program replacing Bev as Executive Secretary for the Turf Program and the MRTF.
- Bret Rush took on additional duties in the School of Agriculture Development Office where he will focus on development for Turf, Agronomy and a number of other departments.
- Randy Hamilton finished his Ph.D. in turfgrass entomology with Dr. Tim Gibb and is now working in Salt Lake City in the area of GPS.
- Phil Harmon finished his Ph.D. with Rick Latin and accepted a position in the Plant Pathology Department at the University of Florida-Gainesville.
- Aaron Patton finished his Master's Degree with Zac Reicher and is now pursuing a Ph.D. with Zac.
- Lauren Shellenberger finished her Master's Degree with Rick Latin and is now pursuing a Ph.D. with Rick.
- Kristie Walker joined the Turf Science Program working on a Master's Degree with Cale Bigelow. She will be studying nitrogen fertilizer programs for Kentucky bluegrass, turf-type tall fescue and perennial ryegrass.

Turfgrass Undergraduate Education

- Over 70 students were majoring in Turfgrass Science at Purdue University. This represents about 40% of the undergraduate enrollment in the Department of Agronomy.
- Nineteen students graduated in May or Dec 2003.
- Six students majoring in Turfgrass Science earned scholarships administered by the Turf Program in 2003. Funds for these scholarships came from the turf industry.
- Cale Bigelow added a new laboratory section for the sophomore level Turfgrass Management course. This laboratory section covers many fundamental topics like turfgrass identification that were previously taught at the junior level. This will allow for more opportunities to cover management topics in the junior year and better-prepared student interns after the sophomore year.

Turfgrass Outreach/Extension

- Over 2500 turfgrass professionals attended on-going training programs presented by the Turfgrass Science Program in 2003. These programs included:
Midwest Turf Expo - Jan - Indianapolis
IN-IL Turfgrass Short Course - Feb - Willowbrook, IL
Midwest Regional Turf Field Day - July - West Lafayette
Turf and Ornamental Seminar - Nov - Lafayette
- A tremendous number of homeowners benefited from the turfgrass program in 2003, primarily by indirect contact with county extension educators and press releases in local newspapers, but also by direct contact through phone calls, email, Master Gardener training, and the World Wide Web page.

Turfgrass Agronomic Research

- In ongoing studies in cooperation with the National Turfgrass Evaluation Program (NTEP), we evaluated the turf performance of Kentucky bluegrass, tall fescue, creeping bentgrass, fine fescue, perennial ryegrass, bermudagrass and zoysiagrass cultivars for use in Indiana. Based on the outcome of these trials, we will be able to make cultivar recommendations to professional turf managers and homeowners.
- Dan Weisenberger and Zac Reicher conducted several weed control experiments in 2003. These experiments included pre- and postemergence control of annual grasses, postemergence control of broadleaf weeds, fall control of ground ivy in lawns and selective control of *Poa trivialis* and creeping bentgrass. Results of these experiments are used to make weed control recommendations for the turf industry.
- Dan Weisenberger and Zac Reicher maintained on-going research on Roundup Ready Creeping Bentgrass. Much of the earlier research evaluated cultivar performance, but we are now focused on management of this new technology.
- Zac Reicher, Ron Turco, and Jon Harbor finished an extensive water quality monitoring experiment on Purdue's new Kampen Course. This 5-year experiment examines how effective created wetlands are in filtering runoff from urban, commercial, and golf course areas. This study is supported by the United States Golf Association, Pete Dye, Inc, and Heritage Environmental.
- Cale Bigelow and Glenn Hardebeck initiated several studies focusing on nutrient management programs for home-lawns, golf course fairways and putting greens. Additionally several studies related to plant growth regulators for golf course fairway applications were also conducted. For putting greens a wetting agent trial was conducted. These studies should help us make better nutrient recommendations and management strategies for the various species cultivated as fine turf throughout Indiana.

Turfgrass Pathology

- The initial phase of our gray leaf spot project was completed in 2003. Results indicate that the surviving pathogen population is greatly diminished during midwestern winters. Cold winters will reduce the impact of over-wintering inoculum on summer time epidemics. The results help explain the sporadic nature of gray leaf spot outbreaks. They also help explain why the disease is more prevalent in southern Indiana, and has yet to be confirmed in northern Indiana. The pathogen also may be introduced from areas south of the Ohio River, but those events are not common and represent a greater threat to perennial ryegrass in the Ohio River Valley. This information will help superintendents make more informed decisions regarding gray leaf spot management. Perennial ryegrass fairways in the northern part of the state can be managed with fungicides. Those in southern Indiana also can be managed with fungicides, but re-grassing fairways with bermudagrass or creeping bentgrass also may be a consideration.
- The dollar spot survey is complete. The dollar spot pathogen (*Sclerotinia homoeocarpa*) was isolated from more than 50 golf course fairways from 2001 through 2003. Isolates were assayed for sensitivity to three fungicides (iprodione, propiconazole, and thiophanate-methyl) in culture

plates in the laboratory. Insensitivity to thiophanate-methyl and propiconazole was identified in several cases, indicating that resistance to those fungicides had evolved in the pathogen populations. The results will help superintendents manage dollar spot more effectively. In those cases where resistant strains had been identified, superintendents will avoid the suspect fungicides. For those locations where the pathogen remains sensitive, superintendents will be advised to maintain good resistance management practices.

Turfgrass Entomology

- During 2003, we continued to support the technical implementation of integrated pest management in schools (IPMIS) throughout the state. We continue to provide hands-on workshops as well as written technical information for this program 2004. We will focus on providing training that will assist the professional lawn and landscape industry to actively partner in this educational/extension program. We are working on the development of a model lawn care program for public schools, constructed in cooperation with members of the MRTF. We believe that being proactive on this politically charged issue will continue to be critical for the turfgrass industry in the next few years.
- Work regarding the behavior of adult Japanese beetles continued during 2003. This work is providing clues as to the behavior of Japanese beetle flight and dispersal.
- Use of remote sensing to detect and map Japanese beetle grub populations prior to irreversible turfgrass damage was initiated during 2001. Such technology may pave the way for application equipment with global positioning systems (GPS) capability to apply pesticides precisely where needed, reducing costs, human exposure to pesticides and potential negative effects on the environment. This work was completed in 2003.
- Chemical efficacy tests, financed by the chemical industry to evaluate and compare the effectiveness of new and existing insecticides for turfgrass insect pest control, were continued in 2003.