

## **Overview of the Turfgrass Science Program**

The Turfgrass Science Program at Purdue University made tremendous progress in 2002 and underwent many changes. We'd like to take this opportunity to update you on the progress of the program during 2002.

### **William. H. Daniel Turfgrass Research and Diagnostic Center**

- Improvements at the Daniel Center included installing automatic irrigation and seeding another acre of research plots, improving the parking area north of the educational facility, and regrassing another acre of plots.
- The teaching laboratory was used for 46 class meetings, 17 extension events, and 22 other education programs with over 4579 attendees. The Center is often used for meetings with faculty, staff, alumni and friends of Purdue. There were 17 of these meetings held at the Center in 2002.

### **Personnel Changes**

- Cale Bigelow joined the Turf Program in Sept with primary responsibilities in teaching. Cale will also be undertaking primarily soils-based research in turf and will have minor extension responsibilities.
- Kim Ralston-Hooper finished her Master's Degree on the use of dithiopyr in turfgrass seeding and renovation. After a 3-month internship with Dow AgroSciences, Kim has started her PhD working on pesticide risk assessment for the turf industry.
- Eric Kohler completed his Ph.D. on ground ivy biology. He currently is working as a Post Doc for the Turf program.

### **Turfgrass Undergraduate Education**

- Over 90 students were majoring in Turfgrass Science at Purdue University. This represents about 40% of the undergraduate enrollment in the Department of Agronomy.
- Ten students graduated in May or Dec 2002, nine with a B.S. degree in Turfgrass Science, and one with an Associate degree in Turfgrass Management. Most of the Associate degrees were awarded to students who already held or were receiving a Bachelor's degree in another field.
- Seven students majoring in Turfgrass Science earned scholarships administered by the Turf Program in 2002. Funds for these scholarships came from the turf industry.

### **Turfgrass Research Program**

- 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 2002. These experiments included pre- and postemergence control of annual grasses, postemergence control of broadleaf weeds and selective control of *Poa trivialis* in creeping bentgrass fairways. Results of these experiments are used to make weed control recommendations for the turf industry.
- Glenn Hardebeck and Zac Reicher continued a number of turfgrass management studies including cultural control of red thread, understanding seeded zoysia and bermudagrass, and evaluating herbicide safety on seedlings.
- Zac Reicher, Ron Turco, and Jon Harbor continued 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.
- Aaron Patton finished up the final work on his MS research, trying to establish methods for seeding zoysiagrass and bermudagrass in IN.

#### **Turfgrass Outreach/ Extension**

- Over 2500 turfgrass professionals attended on-going training programs presented by the Turfgrass Science Program in 2002. 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
- Dan Weisenberger continued to develop and refine the World Wide Web home page for the Turfgrass Science Program at <http://www.agry.purdue.edu/turf>.
- A tremendous number of homeowners benefited from the turfgrass program in 2002, 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 Pathology**

- Research continues on the over-winter survival of the gray leaf spot pathogen. Results show that the pathogen is capable of surviving locally in infested perennial ryegrass residue. Spore trap data indicate that the pathogen was active at very low levels during the early weeks of summer in 2000 and 2001. In 2000, pathogen activity increased throughout the summer and peaked with disease outbreaks in early September. In 2001, pathogen activity was limited during the heat of the summer and no gray leaf spot symptoms were observed in our research plots. Similar trends occurred in 2002, although the disease was widespread through southern IN. Studies

continue to determine factors that contribute to summer time disease outbreaks.

- Results of our 2001 dollar spot survey show that isolates of *S. homoeocarpa* (dollar spot pathogen) from seventeen golf courses in Indiana differed in their sensitivity to propiconazole (Banner Maxx), thiophanate-methyl (e.g. Cleary 3336), and iprodione (e.g. Chipco 26GT). We found that isolates on 6 golf courses were insensitive to propiconazole and 4 insensitive to thiophanate-methyl. These fungicides will not be useful against the 'resistant' isolates, and superintendents must use other products to adequately control the disease. The 2002 survey included more than 50 isolates. The results of the fungicide sensitivity assays provided superintendents with assessments of how each of the three fungicides is expected to perform against dollar spot isolates on their golf course.
- The Turfgrass Disease Profiles were completed in 2002. These are web-based publications that address the identification and control of 16 common turfgrass diseases in the Midwest. Color images are included to help with symptom identification and specific control recommendations are listed for each disease. The profiles can be accessed at either of the following two URLs : <http://www.btny.purdue.edu/Pubs/> or <http://www.agry.purdue.edu/turf/>

## **Turfgrass Entomology**

- During 2002, 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 2003. 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 2002. 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 will continue into 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 2002