

Overview of the Turfgrass Science Program

The Turfgrass Science Program at Purdue University made tremendous progress in 2000 and underwent many changes. We'd like to take this opportunity to update you on the progress of the program during 2001.

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 30 class meetings, 13 extension events, and 7 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 2001.

Personnel Changes

- Clark Throssell left the Turf Program in January to become Director of Research for the Golf Course Superintendent's Association of America.
- Aaron Patton joined the Turf Program in May working on his Masters degree. Aaron joined us from Iowa State University is conducting research on seeded zoysia and bermudagrass under the direction of Zac Reicher.
- Lauren Brownback started her graduate research in the area of plant pathology in May 2001, under the direction of Rick Latin. Her research project involves an analysis of the sensitivity of isolates of *Sclerotinia homoeocarpa* (dollar spot pathogen) to three fungicides.
- Margaret Olek began her graduate studies towards a M.S. degree in plant pathology under the direction of Rick Latin in August 2001. She will investigate differences in dollar spot susceptibility among cultivars of creeping bentgrass.

Turfgrass Undergraduate Education

- Over 75 students were majoring in Turfgrass Science at Purdue University. This represents about 40% of the undergraduate enrollment in the Department of Agronomy.
- 26 students graduated in May or Dec 2001, 19 with a B.S. degree in Turfgrass Science, 7 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. Placement of all graduating students was 100%.
- Eight students majoring in Turfgrass Science earned scholarships administered by the Turf Program in 2001. 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 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.
- Also in cooperation with the National Turfgrass Evaluation Program (NTEP), we evaluated the performance of bermudagrass for golf course fairways in Evansville, IN. This study was established in June 1997 and will continue until 2001.
- Dan Weisenberger and Zac Reicher conducted several weed control experiments in 2001. 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 fertilizer evaluations, cultural control of red thread, and a number of establishment studies including developing fairway renovation strategies, 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.
- Eric Kohler conducted several experiments aimed at understanding how to better control ground ivy. His research is investigating whether differences exist among ground ivy populations that make it difficult to control and trying to determine better herbicide control strategies.

Turfgrass Outreach/ Extension

- Over 2500 turfgrass professionals attended on-going training programs presented by the Turfgrass Science Program in 2000. 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>. The home page continued to be extremely popular, with over 20,000 "hits" in 2001. The "Turf Tips" was especially popular in that it provides timely turf maintenance advice every 2 weeks during the growing season.
- A tremendous number of homeowners benefited from the turfgrass program in 2001, 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 clippings. 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. 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 survey will continue in 2001.
- The Turfgrass Disease Profiles were completed in 2001. 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 2000, we initiated the adoption of a voluntary integrated pest management in schools (IPMIS) programs throughout the state. We are thrilled that as of this date, over 90% of our public schools have adopted our policy. This means safer schools and better management and prevention of pests. We hope to continue efforts in this area during 2002 to provide a catalyst for professional lawn and landscape care to actively partner in this educational/extension program. We will continue to provide technical training through a series of workshops to be held throughout the state and also to assist where possible via our newly established IPM technical resource center. We believe that to be proactive in 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 2001. 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.

- 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 2001.