WHAT'S UP, DOC

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Introduction

The year of 1997 was an exciting one for me in my new position as turfgrass specialist at the University of Wisconsin-Madison. When I accepted the position in February 1997, I knew I would be entering a world-class academic institution with a well-organized, strongly supportive turfgrass industry. I certainly haven't been disappointed! Every day has brought new opportunities, in fact so many more than I feel I can fully grasp, making me reconsider the whole idea of cloning! I count myself fortunate to have Amy Sausen as an assistant, as she has been invaluable in overseeing the day-to-day management of the research plots and helping with extension activities ranging from answering extension calls to preparing reports.

Opportunities for the turfgrass program (some people call them challenges!) exist on three fronts: extension, teaching, and research. My appointment is 70% extension, 30% teaching, with research expected. To meet expectations on all three fronts, I prioritized in the following way: research→extension→teaching. This may seem a bit backward, but without a solid research foundation, our turfgrass program would have little to "extend". Recognition of an institution's academic and research programs are based largely on research (and subsequent publications), and the University of Wisconsin has long been noted for being one of the top research universities in the U.S. Furthermore, funding from research programs are needed to supply money to fund extension programs, as public funds for cooperative extension have continued to decline over the years.

RESEARCH

A number of research projects were underway when I began in April 1997. During the season, several additional projects were initiated to serve as a partial basis for extension programming. Most plots were developed at the O.J. Noer Center although one study was duplicated on a golf course. Grants were secured for all but two of the new projects, the turfgrass breeding project and the Low Input Sustainable Turf project (LIST). Both unfunded projects required relatively little money (less than $200) to implement. LIST is a multi-state (WI, MN, IA, NE, SD, MO, KS, IN, IL, MI, OH) cooperative effort to identify turf species, not necessarily grasses alone, which can be used to provide adequate turf cover without fertilization, irrigation, or pest management, and with only infrequent mowing. The remaining projects were funded by private companies.

Ongoing Research Projects

The most visible of the research projects I inherited were the National Turfgrass Evaluation Program (NTEP) trials. NTEP and other projects started before my arrival and which continued into 1997 included the following:

1. NTEP-Bentgrass Greens
2. NTEP-Bentgrass Fairway/Tees
3. NTEP-Fine fescues
4. NTEP-Perennial ryegrass
5. Plant growth regulator effects on Kentucky bluegrass turf
6. Evaluation of commercial products for thatch degradation
7. Salt tolerance of selected turfgrasses
8. Remedies for hydraulic leaks on turf
9. Kentucky bluegrass cultivar evaluation for fairways

All the studies were completed in autumn 1997 with the exception of the NTEP-Perennial ryegrass which will be concluded in autumn 1998. Proposals have been submitted to the NTEP to have the bentgrass greens, bentgrass fairways/tees, and fine fescue trials reinstated in autumn 1998 with new varieties.

New Research Projects started in 1997

1. **Supina bluegrass for golf course tee boxes**
   The objective is to determine the suitability of Supina bluegrass for tee boxes.

2. **Competition between annual bluegrass and Supina bluegrass for golf course turfs**
   The objective is to determine the effects of seeding rate, management practices, and traffic on the ability of Supina bluegrass to outcompete annual bluegrass at low mowing heights.

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3. **Seed mixtures for athletic fields in Wisconsin**
   The objective is to evaluate several mixtures and monostands of turfgrasses for athletic fields in Wisconsin.

4. **Microbial effects on thatch degradation and turfgrass growth via phytohormones**
   Plots were started at both the O.J. Noer Facility and University Ridge Golf Course. The objective is to evaluate the efficacy of a mix of two specific bacteria to control thatch naturally and for their ability to stimulate turfgrass growth through bacterially-produced phytohormones.

5. **Low Input Sustainable Turf**
   The objective is to evaluate 13 mixes/monostands of plant species (primarily fescues and legumes) to provide an acceptable turf stand with minimal maintenance.

6. **Turfgrass breeding**
   This project is spearheaded by Dr. Mike Casler, UW-Agronomy department. In 1997, over 100 unique ecotypes of fine fescue and annual bluegrass were collected from approximately seven golf courses and several cemeteries in Wisconsin.

Additional studies

A Hatch grant was submitted in autumn 1997 to request funding for research on cold stress physiology and management on turfgrasses in Wisconsin. Approximately $100,000 was awarded to fund a graduate student over a four year period. Potential graduate students are currently being sought and interviewed for the position. Funding for the project will become available beginning October 1998.

An interdisciplinary grant "Selection and production of turfgrass germplasm for resistance to snow mold" was submitted to the University of Wisconsin in autumn 1997 to secure funding for snow mold and breeding research. As of January 1998 the reviews were not yet completed.

Research Publications

Three research abstracts, my dissertation, and one U.S. patent were published in 1997. Research abstracts covered topics including statistical analysis of qualitative turfgrass ratings, the effect of mowing height on Supina bluegrass, and the interaction of nitrogen and trinexapac-ethyl on turfgrass photosynthesis in reduced light conditions. My dissertation, "The effects of plant growth regulators on Kentucky bluegrass (Poa pratensis L.) and Supina bluegrass (P. supina Schrad.) in reduced light conditions" was completed in January 1997 and is available through University Microfilms (Ann Arbor, MI). One U.S. patent was issued on April 8, 1997, which described a method to grow turfgrass indoors for athletic fields and golf domes. These publications contribute to recognition of the UW turf program and the Wisconsin turfgrass industry.

Research Presentations

The English Perspective: In July, I was invited to give a research presentation to golf course superintendents at the Bioseed/Probiotics Conference at the Foxhills Country Club in Woking, England (a London

suburb). The presentation focused on the development and use of Supina bluegrass as a golf course turf. Subsequently, I visited several golf courses, all private, around London and southern England.

While the superintendents were a delightfully witty and wise bunch, English golf courses exist in a different world. Sometime it would be wonderful to have a superintendent from England give a presentation at Turf Expo. Clubhouses at many courses had a long history, including some which were fully modernized, renovated stone castle from the Middle Ages. Turf management budgets, however, all seemed to be tight. One course I visited employed two full time staff, and no seasonal help, yet they had 18 holes and were open virtually 12 months a year! Very little fertilization or watering is performed on English golf courses, this certainly keeps mowing requirements down!

Many fairways were planted to fine fescues, and it was not uncommon to see fine fescues used on putting greens. One fine rainy day (actually, most of the week was warm and sunny) we spent at Wimbledon with the superintendent, Eddie Seaward, my second opportunity to do so (my first was in 1993, shortly after Eddie began at Wimbledon). On this trip, I did finally got a chance to see Stonehenge (albeit at 60 mph!).

The American perspective: In October I presented a paper at the American Society of Agronomy meetings in Anaheim, CA. The paper was entitled "Nitrogen and trinexapac-ethyl effects on photosynthesis of Supina bluegrass and Kentucky bluegrass in reduced light conditions." I co-authored two other papers presented at the same conference.

Between Amy Sausen and myself, four research projects were discussed at the WTA field day. The projects included NTEP bentgrass-greens, NTEP perennial ryegrass, Kentucky bluegrass cultivar evaluation for fairways, and athletic field management.

EXTENSION

Extension Activities

This past year provided an inexhaustible wealth of extension opportunities. Since my arrival in April, our marquee event was the WTA Field Day at the O.J. Noer Turfgrass and Research Educational Facility. We plan to make next year's field day even better! We also provided a homeowner field day this year for about 70 homeowners. Site visits were made to 29 golf courses, sod farms, and athletic fields. Five site visits were made to Lambeau Field to discuss management of the new sand based SportGrass system. Service was also provided for the assessment of Camp Randall as the UW Athletic Department decides whether to replace the current artificial turf surface with natural grass or a new artificial turf (they are currently leaning towards artificial turf).

Help was provided to the City of Menasha Parks Department to develop a first-rate plan to properly manage the turf areas while cutting pesticide use in half.

Approximately 150 phone calls were received from turfgrass professionals, county extension agents, and homeowners. About half the calls were from homeowners, with a large percentage of the remaining calls concerning high school and municipal athletic fields. Approximately 15 weed samples were identified in 1997, most of them sent from county extension agents. Amy Sausen continued to coordinate the turf hotline, a phone based system designed to provide up to date information on current turf issues (diseases, management practices, etc.): in 1998, additional information will be placed on a web page which is currently under construction.

A one day in-service was provided for county extension agents, in which Dr. Kussow also participated. Participation in the hour-long weekly ETNs (electronic teleconferencing network) was a major avenue for providing turf information to county extension agents throughout Wisconsin.

Extension presentations

One television and fourteen radio programs were conducted in 1997, with Amy Sausen responsible for all but two of the programs. In June, an overview of the O.J. Noer Facility was presented to the Bascom Hill Society. In August, I gave two presentations for the UW-Extension Trial Garden and Plant Health Field Day at Boerner Botanical Gardens in Milwaukee. Between Amy Sausen and myself, four presentations were provided at the WTA Field Day and two day-long presentations were given at the Homeowner Field Day in August. In September, I gave an introduction/future plans presentation at the monthly Wisconsin Golf Course Superintendents Association meeting held at Rolling Meadows GC. In December, I gave two invited presentations for the North Central Turfgrass Conference in St. Charles, IL, at Pheasant Run Golf and Country Club.

Extension publications

Twelve extension/industry publications were produced after I arrived in 1997, including three articles in The Grass Roots, one in Wisconsin Crop Manager, one in the Wisconsin Turfgrass News, seven in the WTA Field Day booklet. Prior to my arrival, Amy Sausen coauthored an extension publication entitled "Lawn Fertilization" with Dr. Kussow and Sherry Combs.

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ACADEMIC

On the academic front, the introductory turf class (Hort 261) was taught during autumn semester to 19 students, which is a typical number for this class. This three credit course consists of two hours of lecture each week plus a three hour lab. I gave one guest lecture in the weed science course for the agronomy department.

New Course

Enrollment in turf programs throughout the U.S. have recently skyrocketed. From 1992 to 1997, students earning a B.S. degree in turf management from Michigan State University increased over 200%, rising from approximately twenty students to eighty in those five years, with similar numbers being posted at Penn State University and other universities. Part of the reason is these universities have such successful programs is their ability to offer several turf courses. In December 1997, I proposed a new course, Advanced Turfgrass Management and Physiology (Hort 375), which will be offered in alternate years beginning autumn 1998. The new course will examine the interaction between environmental stresses and management practices. Certain lectures will be devoted to topics such as pesticide fate, turfgrass breeding, and the application of biotechnology in turf. In addition to the traditional lecture format, students will be given a special assignment. For the assignment, students will each be given a "turf situation", e.g., golf course, for which they have to develop a budget (including seasonal hires, chemicals, equipment purchases, etc.) and management practices (mowing, fertilizing, pest control, topdressing, etc.).

This new course will bring the total of dedicated turf courses taught at the University of Wisconsin to three: two in horticulture and one in the soils department taught by Dr. Kussow. Eventually, I would like to add a pest management course (diseases, weeds, and insects), but implementing this will be contingent upon hire of a faculty member in the department of plant pathology and the cooperation of the entomology department.

Badger Turf and Grounds Club

Co-advising of the Badger Turf and Grounds Club is also being performed in cooperation with Dr. Wayne Kussow. In 1998, plans are to help the club revitalize their web site, increase club participation, and enhance their revenue generating abilities so more club members can attend conferences such as the GCSAA national conference.

Farewells

One last note: Emily Buelow, a former graduate student in the horticulture department, completed the requirements for her M.S. degree in August. Emily immediately accepted a position as instructor for the two year turf program at North Carolina State University and has been doing a fine job. Her success, as well as the undergraduates who entered the workforce in 1997, is yet another way of helping to increase the visibility of the UW turf program.