



Forty Years of Turfgrass Research, Teaching and Extension !

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Perspective

As a young scientist with an interest in history, I attended the 1995 American Society of Agronomy (ASA) meetings in St. Louis, MO with unusual excitement. This year marked the 40th anniversary of the Turfgrass Division of the Society. The uniqueness of this event is that normally at the ASA meetings we present and discuss current research. I often return feeling energized to continue the pursuit of new knowledge to develop solutions to problems faced by the turf manager in Wisconsin. The 40th anniversary celebration gave us a chance to reflect on the knowledge and practices accumulated to date and reflect on where we are heading.

The resident historian for the turfgrass division is Dr. Jim Beard. Dr. Beard represents a key figure in the progress of turfgrass as an academic discipline. The turfgrass industry existed in full force before formal turfgrass research programs were a major contributor. Yet, it wasn't until the publication of Beard's "Turfgrass: Science

and Culture" that the discipline was viewed as science as well as art. The celebration included an afternoon symposium, followed by an informal reception, then concluded with a discussion lead by Dr. Beard. The discussion consisted of Dr. Beard probing the history of the turfgrass industry and the academy of turfgrass science.

I thoroughly enjoyed the affair, primarily because I feel strongly that to truly make progress, we must first look back over the ground we have traveled. As I gaze this month, I'll give a short review of the 40th anniversary celebration followed by some of the interesting research papers that were presented.

The Celebration Symposium

Throughout the year, each member of the turfgrass division received surveys from individuals responsible for summarizing the 40 years of activity in research teaching and extension. In most cases, the presenters simply reported on how many years were spent conducting various turfgrass research projects, teaching programs and extension activities. In addition, Dr. Beard presented a talk on the early years.

The Wisconsin connection in the early years was mentioned regularly. The first comprehensive publication on

the nature and control of turfgrass diseases from the University of Wisconsin-Madison's Department of Plant Pathology scientists Drs. Monteith and Dahl. The Jacobsen Company, Milorganite, and of course O.J. Noer were prominent in the discussions. A little trivia fact I learned was that the company name for Toro was derived from "two row". The Toro company manufactured the first two row tractor.

The symposium concluded with a flamboyant computerized presentation from Dr. Al Turgeon. In addition to being the moderator for the symposium, Al was responsible for outlining a "Vision for the Future". I've known Al since I was a teenager and I can tell you honestly, he was in rare form. He challenged some of our current ways of doing things (he called them paradigms). Do we need turf conferences or can't we use the internet to disseminate information in the future? Do we need to sit in a classroom at a college or will the college come to us via satellite or fiber optic interactive video technology?

A Chat with Jim Latham

With any conference I attend, I usually gather as much information from the informal chats I have with my colleagues as I do sitting in the formal program. This year my favorite chat

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was with our very own James Maston Latham. We were wandering into the reception area and began a discussion on his latest project, the history of the Green Section.

With great fervor Jim described the "soap opera" like situations that marked the early years of the Green Section as they went through reorganization under various leaders. Back then, as is true today, the Green Section had the regular duty of justifying their existence. Sometimes, it appeared as though it would be disbanded.

Chatting with Jim is like traveling back in time to the days of Noer, Wilson, and Mascaro. Jim refers to these men when you ask him about a current turf problem or what his opinion is on something. He'll say, "I remember when O.J. Noer used to say.....".

The Research

This year there were over 120 research papers presented. Interestingly, in 1955, the first year of the turfgrass division with Dr. Jim Watson as chair, there were 15 papers. As I look over my report from last year's meeting, I would have to say that in comparison the research presented this year was of higher quality.

Weeds

Two studies reported used weed biology to predict optimum timing of herbicide applications. The first was a project from Purdue University, that included some data that we collected in Wisconsin. The researchers have been investigating the use of growing degree days (GDD) as a way to schedule spring applications of herbicides for dandelion control. The results indicated that ester formulations of 2,4-D could be sprayed earlier in the spring (approximately 100 base 50 growing degree days) for effective control than the amine formulations that worked best after 225 GDD. The work was conducted in Indiana, Kentucky and Wisconsin to verify the model. Of course, by the time we start spraying in the spring, the treatments are all applied in Kentucky.

The second study involved developing a model for predicting crabgrass germination based on soil temperature. Dr. Michael Fidanza of Agr-Evo conducted the work under the tutelage of Dr. Pete Dernoeden. Last year I reported his work on predicting brown patch severity based on modeling. The research on crabgrass was conducted over a three year period and it was shown that the germination first occurred when soil temperatures were between 50° and 55°F for seven days

and the major flush of germination occurred between 66° and 68°F. These events coincided with between 300 and 600 base 54 GDD.

While this may not seem vital to the golf course superintendent in Wisconsin, it demonstrates the new direction pest management research is heading, i.e. trying to understand more fully the biological components of pest development that will allow for altered management practices or alternative to chemical controls.

Diseases

Several papers were presented in the disease area—a couple on dollar spot and one on the Alliette + Fore combination. The dollar spot work was conducted at University of Kentucky(UK) and the other at Ohio State University (OSU). The UK research evaluated the recovery potential of bentgrass infected with dollar spot. They determined that no creeping bentgrass cultivars could both resist infection or recover completely without fungicides over a three year period. In speaking with the researcher after the talk, he mentioned the devastating effect dollar spot has on Crenshaw creeping bentgrass, similar to what we observe in our plots at the Noer Facility.

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The second dollar spot study, conducted at OSU, used ecological survey techniques to prove the existence of demethylation inhibitor (DMI) resistant dollar spot. The research utilized six golf courses. Three had used DMI fungicides regularly and reported reduced control, three others never used DMI fungicides. Simply, the course that used DMI fungicide required substantially higher rates to produce the same level of control achieved at the non-DMI courses. This study confirms that chronic use of DMI fungicides will lead to population shifts that favor dollar spot strains that are resistant.

The paper concerned with the Alliette + Fore combination was reported by researchers at North Carolina State University. The project intended to explain the "effectiveness" of the fungicide combination to control summer bentgrass decline by correlating it to a nutritional response to the elements that are present in the combination. They concluded, based on tissue testing, that the effect of the fungicides could be correlated to an increased phosphorus and manganese concentration in the tissue. In

other words, plots with high levels of P and Mn in their leaves had higher quality and supposedly less decline. I am still opposed in principle to this fungicide combination, primarily because I believe it masks problems that are cultural and not pathogenic. Furthermore, there has not been good evidence that the combination works substantially better than Fore applied alone. Finally, while many have reported improved quality with the combination, Dr. Kussow and Dr. Meyer's research on the nutritional aspects of disease management may serve to answer some of these questions for Wisconsin. Stay tuned.

Leaves

For all of us who deal with leaf management year in and year out, a five year study from Michigan State University provides some insight. The researchers mulched "ankle deep" maple and oak leaves into plots once per year for five years and found no detrimental effect on turf quality, thatch thickness, thatch organic content or on soil chemical tests. It can be concluded that mulching leaves through the turf canopy is a viable option for leaf management.

The UW-Madison Presence

Over my three years in Wisconsin, I have enjoyed many moments of joy for the program. A successful EXPO or Field Day always ranks at the top of my list. Still, one of my greatest thrills was seeing Dr. Kussow's student Chris Kerkman and later my student Emily Buelow presenting their research at the meeting. Also, Dr. Kussow and myself presented our own work.

This year seemed like a coming out party for the Noer Facility and for turfgrass research in Wisconsin. Our program is beginning to mature as grad students help us to investigate problems on a more basic level. The Noer Facility provides the springboard and environment for conducting the type of work that will continue to attract national funding and the brightest students into turf. As an industry you should be proud to have been the major reason this is happening. Share the research report with your clientele this year to tell them of the exciting things their dollars go to support and know that it is the shared commitment of everyone that makes our growth so exciting. 🌱

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