

## John and Flora Berbee Wisconsin Distinguished Graduate Fellowship in Turfgrass Research

By Tom Schwab, O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

The fourth Distinguished Graduate Fellowship in Turfgrass Research was named in honor of, and presented to Dr. John and Flora Berbee on Thursday, June 21, 2007, at the Blackhawk Country Club, in Madison. A small group of friends, family, and colleagues were in attendance to congratulate Dr. and Mrs. Berbee and share in the celebration of two renowned lives and careers. This fellowship joins the Wayne R. Kussow, Robert C. Newman, and Terry and Kathleen Kurth Fellowships, to perpetually provide funds to conduct important turfgrass research at the University of Wisconsin-Madison.

Dr. Berbee distinguished himself in the Department of Plant Pathology at the UW-Madison after he received his doctorate in the 1950's from Madison. He received his undergraduate and master's degrees from the University of Toronto and Yale, respectively. Professor Berbee helped develop and teach a forestry course in Madison to present management options for the control of forest diseases and insects. He also served on many graduate committees in the areas of forestry pathology, virology and mycology.

Flora Berbee likewise distinguished herself as a botanist and plant tissue culture technician at Yale University after receiving her undergraduate and master's degrees from Western Michigan University and the University of Michigan. At the UW-Madison, Flora taught zoology laboratory sections and worked on the problem of oak wilt in the

Department of Plant Pathology. Early in their careers, the Berbees moved to Nigeria, Africa for nearly three years on a USAID assignment where John taught most of the botanical courses to the first graduating class at the University of Ife.

The Berbees raised three children, Mary Lee, Peter, and James at their home in Madison where they still reside. They officially retired from the Department of Plant Pathology in 1987 and currently enjoy an active life with friends, family, and colleagues who all were so proud to see such an honor bestowed on them at this celebration. ■



Dr. John and Flora Berbee are honored in the establishment of the new Wisconsin Distinguished Graduate Fellowship in Turfgrass Pathology.



John and Flora with their family.

# WTA Returns to Blackwolf

By Tom Schwab, O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

Blackwolf Run will once again play host to the 2007 "Golf Fundraiser for the Fellowship". Superintendent Mike Lee has invited us back for another wonderful round of golf at the Blackwolf Run Meadow Valley Course on Thursday October 11th. Your registration helps support the Distinguished Graduate Fellowship in Turfgrass Research program at the University of Wisconsin-Madison, the program that continually gives back to you, the turf professionals.

Several studies that have been funded by the turfgrass fellowships include a comparison between turfgrass and rain gardens to manage urban runoff, assessment of different inorganic amendments to improve putting green construction mixtures, and soil test selection and calibration for turf in Wisconsin. These three studies are the first in a lifetime of learning from a program that started just seven years ago with the Wayne R. Kussow Fellowship. Since then, three more Fellowships have been funded to provide a perpetual source of funding for turfgrass science. The most recent fellowship was inaugurated in June to study turf disease management and can be read about on the front page of the newsletter.

The fundraiser is not all about research though. It is also about fun and getting out with friends to enjoy a round of golf near the end of the season. The traditional door prize table adds to the enjoyment, and almost everyone takes home a prize, some worth more than the cost of registration. The host courses for the fundraiser have been top



notch which likewise adds to the enjoyment and is why the event has sold out for the last six years.

The Meadow Valley Course will likely be another sellout as it offers an exciting challenge to the amateur golfer and a dramatic dare to the more inclined. The course is described to have an opening nine, set on gently rolling terrain reminiscent of a Scottish links course, and the concluding nine to show influences of glacial carving of the land, with deep ravines bordering a river valley. It is one of the few courses in the nation to achieve a five stars rating in the Golf Digest "Places to Play" guidebook (3rd edition, 1998-99). Meadow Valley was ranked 34th in the United States on GOLF Magazine's list of the "Top 100 You Can Play" (May 1998). Its Valley "nine" comprised half of the routing for the record-setting 1998 U.S. Women's Open conducted by the USGA at Blackwolf Run. Hole #18



(played as the ninth hole of the U.S. Women's Open) was named one of the "500 Best Holes in the World" by GOLF Magazine (Jan. 2000).

A special lodging rate will be offered at The American Club for participants interested in accommodations: Standard rooms for \$250 single/double occupancy. Please call 1-800-344-2838 to make a reservation.

I hope you are able to join your colleagues for this wonderful event. It is truly an outstanding course and the funds raised strengthen your industry with important research that we can all use. The registration form is included with your newsletter. You may contact Audra at 608-845-6536 or [ajander2@wisc.edu](mailto:ajander2@wisc.edu) if you have questions. Whether it's your first WTA "Fundraiser for the Fellowship" or you've attended many, we hope you won't miss this one. You owe it to yourself after such a busy summer. ■

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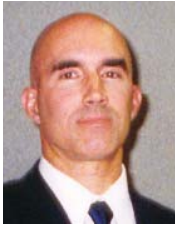
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## PRESIDENT'S MESSAGE

# Stepping Up

By Rich Riggs, WTA President



As I write this message we are approaching the end of June. This summer has been very challenging for all of us in the green industry. We are dealing with the new storm water issues on some of our projects, shorter time lines, and of course the weather. But it is nothing we can't deal with. In the green industry we have always had our challenges and we always will.

What I admire most about our industry is how we handle adversity. We are problem solvers and we share knowledge with any colleague that needs help. If one of our peers needs assistance we line up to help them and that is very impressive in today's me-first world.

This same attitude is practiced by the WTA. A year ago the University and the turf industry were in need of a replacement for Dr. Wayne Kussow who recently retired. The UW was in a period of cutting back on faculty positions. The WTA stepped up and funded the soil position for one year, which is the only way the UW could have hired Dr. Doug Soldat to replace Dr. Kussow.

This same scenario is again playing out to hire a replacement for Dr. Geunhwa Jung who moved to the University of Massachusetts. Once again the WTA stepped forward to fund the position for one year to quickly find his replacement.

Another important thing the WTA does is bring good education to its members. Coming very soon is Summer Field Day, on July 26th at the O.J. Noer Turfgrass Research Facility. This year's event will be the biggest ever, when the WTA combines their annual show with those of Turfgrass Producers International and the Midwest Sod Council. More on Field Day is included in the newsletter. Make plans to attend and visit with friends from Wisconsin and around the world.

The other big educational event is the Turfgrass and Greenscape EXPO in January. The agenda has been finalized and it's better than ever. The dates are January 9th and 10th, 2008. Make room on your calendar to attend this event.

Let's make this year's events some of the best in the Midwest and get people talking about the green industry of Wisconsin. Have a great summer and I hope to see you soon. ■

## The Big Show Will Be Like No Other

By Tom Schwab, O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

This summer's turfgrass field day at the OJ Noer Facility in Verona on Thursday, July 26 will be like no other. It is the first ever joint field day sponsored by three different turf organizations for one common purpose - to learn the latest research and techniques to produce healthy, beautiful turfgrass.

The excitement is upon us for the combined TPI-WTA-MSC Field Day which is expected to draw nearly 1,000 attendees. The three large groups hosting the event include Turfgrass Producers International and the Midwest Sod Council, which encompass sod growers from around the Midwest and the world, and the Wisconsin Turfgrass Association, which gathers members from Wisconsin's lawn care, sports field, golf course, sod production,

and landscaping industries. This special event includes 15 acres of trade show with equipment demonstrations, abundant turfgrass research presentations, delicious Wisconsin breakfast and lunch, fireworks, family friendly games, and more. The Noer Facility is greener than ever with the addition of 20 acres of turfgrass that were added for this special event.

The combined field day is something entirely new, and you won't want to miss it. Mark your calendars now to attend. The registration forms were mailed in May and June but if you missed getting one call the WTA office at 608-845-6536 or download one from the website [www.wisconsinturfgrassassociation.org](http://www.wisconsinturfgrassassociation.org). The schedule follows:



The crowds will give all the trade show equipment thorough inspections and demonstrations.

### • Wednesday, July 25

4:00 pm - 7:00 pm  
4:00 pm - 9:30 pm  
5:00 pm - 7:00 pm  
Dusk

Registration at the Noer Facility  
Family Night and Trade Show  
Dinner (additional fee)  
Fireworks

### • Thursday, July 26

7:00 am - 2:00 pm  
8:00 am - 10:00 am  
8:00 am - 4:00 pm

Registration at the Noer Facility  
Breakfast (Included)  
TPI-WTA-MSC Field Day with Trade Show and Turf Research Tours throughout the day  
Lunch (Included)

11:00 am - 2:00 pm

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There will be lots of demonstrations and large crowds at this year's show.

The official TPI-WTA-MSC Field Day with trade show and turf research tours takes place on Thursday, July 26, and it starts off with a wonderful Wisconsin breakfast. On the previous evening, July 25, the sod producers will sponsor Family Night, which includes an extra trade show. It is oriented for families and includes games, fireworks, and other activities, and WTA members may also attend. But just to clarify, the TPI-WTA-MSC Field Day is mainly on Thursday. The research tour, on Thursday, includes these talks:

- Sod for urban runoff control
- Biosolids for turfgrass establishment
- Nitrogen and 'Primo' for putting greens
- Selective control of tall fescue in bluegrass
- Nitrogen carrier evaluation for greens
- 'Certainty' as a PGR for fairways
- Carbon sequestration by grasses
- Breeding better tall fescue
- Fertilizing velvet bentgrass
- DNA fingerprinting of Kentucky bluegrasses
- Rain gardens: A solution for urban water?
- Dollar spot control
- 'Velocity' and 'Tenacity' for bluegrass sod
- Mesotrione as a preemergent at seeding
- Kentucky bluegrass patch diseases
- Kentucky bluegrass varieties for fairways
- Do turfgrasses merit listing as invasives?
- Low input sustainable turf
- White grub management

There will be more turf experts than ever at this year's show, who can answer any turf question you may have. This year's field day coincides with a meeting of 12 neighboring states of university turfgrass researchers who will gather at the Noer Facility the same day. Some of them are giving talks during the research tours. If our UW turf researchers can't answer all your questions, someone from one of the other 12 Midwest state universities will. There is so much going on at this year's show. If you can only attend one meeting this summer, make this the one. ■



The research tours will feature the latest findings from your UW-Madison turf team and other turf experts from around the country.



Kirk Hunter and Rusty Stachlewitz, respectively the executive directors of Turfgrass Producers International and the Midwest Sod Council are co-hosting this year's summer field day with the WTA.

# MEET THE UW-MADISON TURF PROGRAM GRADUATE STUDENT New Directions in the Management of May/June Beetles

By P. J. Liesch, Department of Entomology, University of Wisconsin-Madison

My name is P. J. Liesch, and I am one of the newest additions to the UW-Madison Entomology Department. Growing up in rural Wisconsin, I have always had a love of the outdoors and have planned on going into field biology for quite some time. During the past two summers, I had been exposed to field biology while working as an undergraduate student hourly under Dr. Chris Williamson of the UW-Madison Entomology Department. I recently graduated at the top of my class from the University of Wisconsin-Parkside in May with a B.S. in Biological Sciences and began working on my Master's Degree as a research assistant in Dr. Williamson's laboratory at the beginning of June.

While my current research project deals with the management of pests on Christmas tree farms in northern Wisconsin, many aspects of my research can be applied to the turfgrass industry as well. I'm studying the May/June Beetle (*Phyllophaga anxia*), which is a white grub that is a serious pest of crops such as cranberries, ornamentals, Christmas trees, and turfgrass. The larvae of *P. anxia* are a nuisance which causes both aesthetic and economic damage by feeding upon the root systems of various plants. In some cases, damage to the root systems can be great enough to result in plant death.

My current research with *P. anxia* focuses on new directions in the management of that pest as part of an Integrated Pest Management (IPM) program. My latest research is a green-



house study to test the efficacy of various treatments on known numbers of *P. anxia* grubs. I'm going to be looking at chemical treatments as well as biological controls as part of my IPM strategy. The biological controls being investigated include parasitic nematodes and an entomopathogenic (insect-harming) virus. While the efficacy of these biological controls against *P. anxia* is not yet fully known, these treatment options hold a lot of promise as they may be able to provide excel-

lent control while posing less risk to nearby plants such as ornamentals or turfgrasses and the environment in general.

Once the greenhouse studies have been completed and I have a better understanding of the efficacy of the treatments, my next step will be to utilize those treatments in field studies with endemic populations of *P. anxia*. The knowledge gained from this research may be able to provide crucial insight into the management of *P. anxia* in a wide variety of conditions, including for turfgrass.

In addition to my research project on *P. anxia*, I frequently assist Dr. Williamson in the field with various turf studies at the O. J. Noer Turfgrass Research Facility and various golf courses in the Madison area. I'm looking forward to meeting and interacting with members of the turfgrass industry in Wisconsin over the next few years so that together, we can discover new directions in the management of pests. ■

## Living More Comfortably With NR 151

By Dr. Wayne R. Kussow, Emeritus Professor, Department of Soil Science, University of Wisconsin-Madison

### Question #1: How often will I need to update my NR 151 nutrient management plan?

**Answer:** NR 151 specifies that nutrient management plans be based on soil tests performed in the past 5 years. This says to me that we're looking at a 5 year interval for plan updates. However, this 5 year span brings up a potential concern. What might happen if you implement a plan that calls for no application of phosphorus and you don't take any soil samples for 5 years? What are the chances of loss of turf quality because of soil P levels becoming insufficient? I can help you answer these questions by drawing upon past research to construct the table shown on right.

Especially note that these are annual soil P and K draw-down rates per pound/M of N applied. The reason for these units is the fundamental fact that nutrient uptake by turfgrass is regulated by

Table 1. Annual changes in soil test P and K per pound of N applied per M (1,000 ft<sup>2</sup>).

Nutrient	Clippings removed	Clippings returned
Soil test P change: ppm P /lb N applied	- 0.6	- 0.4
Soil test K change: ppm K/lb N applied	- 14	- 9

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the amount of N applied. Also note the two scenarios represented in the table - clippings removed and clippings returned. The clipping returned numbers reflect what I've observed to be the influences of nutrient recycling on P and K draw-down. They apply to lawns, fairways and athletic fields. The values for clippings removed apply to golf putting greens.

To illustrate how you can use the numbers in Table 1, let's assume your concern is what's going to happen to the soil test P on your putting greens if you don't apply any fertilizer P for 5 years. At an annual N rate of 3.5 lb/M the amount of P draw-down will be  $(-0.6 \text{ ppm/lb N})(3.5 \text{ lb N})(5 \text{ years})$ , which equals -10.5 ppm soil test P. If your initial soil test P was 96 ppm (very high), after 5 years it will be around 86 ppm and still very high. On the other hand, if your initial soil test P was just into the optimum range at 23 ppm, you'd be running low on P after 2 years if no fertilizer P was applied. That's when you'd want to update your nutrient management plan - not after 5 years. Moral of the story - you can't wait 5 years to re-test your soils if the current levels of P and K are at the lower end of the optimum range.

**Question #2: I'm going to establish new turf. How much P and K can I apply and not elevate my soil tests to excessive (very high) levels?**

**Answer:** Here again past research helps me come up with a reasonable answer that resides in the data shown in the table below.

Table 2. Rates of phosphate and potash required to increase soil test P and K by 1.0 ppm.

	Sand tees and greens	Native soil, push-up greens
1b P <sub>2</sub> O <sub>5</sub> /M	0.13	0.25
1b K <sub>2</sub> O/M	0.26	0.50
1b P <sub>2</sub> O <sub>5</sub> /acre	5.7	10.9
1b K <sub>2</sub> O/acre	11.3	21.8

Note the higher values for native soil than sand-based tees and greens. This reflects the fact that native soils have much higher P and K adsorption capacities that increase the amounts of P and K that have to be applied to bring about a unit increase in their soil tests.

To make use of the numbers in Table 2, you need to have soil test results prior to turf establishment. Let's assume you've done this for the root zone mix you'll be using for putting green construction and the soil test P is 4.7 ppm. According to the current tables in NR 151, the optimum soil test P range starts at 20 ppm, signifying that you need to elevate your soil test P by  $(20 \text{ ppm} - 4.7 \text{ ppm})$ , or 15.3 ppm. According to the table above, you need to apply 0.13 lb P<sub>2</sub>O<sub>5</sub>/M to increase your soil test P by 1.0 ppm.

Therefore, the least amount of P you want to apply is  $(0.13 \text{ lb P}_2\text{O}_5/\text{M/ppm P})(15.3 \text{ ppm P})$ , which equals 2 lb P<sub>2</sub>O<sub>5</sub>/M. To be on the safe side, I'd increase this rate of P by about 25 %, but

don't go wild and double it. Dr. Doug Soldat's M.S. thesis research clearly showed that over applying P during putting green establishment results in leaching of as much as 25% of the P applied. If you then direct the drainage water from the green into a holding pond, rest assured you'll be brewing up some pea soup.

**Question #3: My soil test levels of P and K are in their optimum ranges. How do I keep them there?**

**Answer:** What you're referring to are the so-called maintenance rates of P and K. These you can obtain two different ways. One approach is to use the numbers in the following table derived from our research. Once again, take note of the fact that the rates of phosphate and potash required are per pound of N applied. Keep in mind that your N rate determines how much P and K the turfgrass is removing and needs to be replaced. Also note that the factors for calculating the rates of phosphate and potash are the same whether you want the rates in lb/M or lb/acre. In the first case the N rate you use is lb/M and in the second case is lb/acre.

Table 3. Rates of phosphate and potash needed to maintain existing levels of soil test P and K.

	Sand greens	Native soil
1b P <sub>2</sub> O <sub>5</sub> /lb N/M	0.25	0.10
1b K <sub>2</sub> O/lb N/M	0.70	0.48
1b P <sub>2</sub> O <sub>5</sub> /lb N/acre	0.25	0.10
1b K <sub>2</sub> O/lb N/acre	0.70	0.48

For a quick example of how to apply the numbers in this table, let's take the case of a fairway annually receiving 130 lb N/acre. Your maintenance phosphate rate =  $(0.10 \text{ lb P}_2\text{O}_5/\text{lb N})(130 \text{ lb N}) = 13 \text{ lb P}_2\text{O}_5/\text{acre/year}$  and the maintenance potash =  $(0.48 \text{ lb K}_2\text{O}/\text{lb N})(130 \text{ lb N}) = 63 \text{ lb K}_2\text{O}/\text{acre/year}$ .

The alternative to using the data in Table 3 and calculating the maintenance rates of phosphate and potash is to refer to NR 151 and find the tables with the rates of P and K recommended when soil tests are optimum. These are maintenance rates of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O. What you'll find is that these rates are almost identical to those you'd calculate using the data in Table 3. Is this a coincidence? No. I successfully argued for maintenance fertilization of intensively trafficked turf where clippings might be removed and then generated the rates found in the NR 151 tables using conversion factors such as those listed in Table 3.

Hopefully the information presented here may someday be of use to you. Before closing, I need to alert you to the fact that the soil test interpretations found in NR 151 and used by the state's soil testing labs are forever subject to change. Those changes will be made as additional research data become available and as there are advances in our understanding of the response of turfgrass to differences in soil test levels of nutrients. In fact, the soil test interpretations currently in use will be modified in the coming months and will appear in the final draft of NR 151. ■

# It's Official!

By Tom Schwab, O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

The UW-Madison officially hired Paul Koch, on June 25th, 2007, for the positions of Turfgrass Diagnostic Lab Manager and Assistant Researcher. Paul has been ably running the lab for two years while pursuing his master's degree in the Department of Plant Pathology. He received his master's degree this spring and applied for the position when it was posted this summer. The turf industry is in good hands with Paul running the lab because of all the great experience he obtained as a student.

Paul started working in the lab under Dr. Geunhwa Jung while working on his master's degree in Plant Pathology. His previous position in the lab was assistant manager where he learned his craft under former manager Steve Abler. Paul took over all the research technician and diagnostic duties of the lab in 2006, when Steve moved to a new career.

The duties of this position are wide-ranging. First and foremost, Paul diagnoses all the turf samples sent to the lab making it a priority to get a rapid response back to the clients. Second, Paul is running a large plant disease research program to find what fungicide products, rates, and management practices maintain the best health of different turfgrasses. Thirdly, he participates in numerous extension and outreach education activities. You may have seen him speak at the Wisconsin Turf Symposium, Winter Turfgrass EXPO, Turf School, superintendent monthly meetings, or any number of other speaking engagements.

Paul works very well with the rest of the UW turf team and with the turf industry. He will be a great asset to Wisconsin's turf industry for many years into the future. On a side note, the UW has advertised for a replacement for Dr. Jung, who moved



to the University of Massachusetts last winter. This new professor will work with Paul to provide the latest research and service in the area of turfgrass diseases. I feel the potential candidates will look at Paul and the operation of the turf lab when deciding if they want to come to the UW. They will see a nicely run lab and a friendly knowledgeable manager who will encourage them to come here. That is one more reason why we're glad the UW made the decision to make Paul's hire official. ■

## New Data on Pesticide Hazards: Perception vs. Reality

By Dr. John Stier, Department of Horticulture, University of Wisconsin-Madison

Public fear of pesticides continues to pervade aspects of the agricultural and turf industries. While it's impossible to prove a negative, i.e., that a product cannot cause harm, unfortunately that is often what people seem to demand. A new scientifically reviewed paper, published in the journal *Crop Protection*, offers an overview of the best information to come out in recent years assessing the perceived risks of pesticides. The article is titled, "The benefits of pesticides to mankind and the environment" and it was published earlier this year. It can be found on-line at: <http://pested.unl.edu/pesticide/UserFiles/File/PesticideBenefitsToMankindEnvironArticle.pdf>.

The paper describes the positive impact that pesticides have on our society and the environment. It is based on a scientific review of over 100 articles. Some of the articles include data published previously on perception of various risks by different groups. Fears involving pesticides, it turns out, do not necessarily reflect data. A 1990 study cited in the article ranked 30 hazards based on annual deaths. Pesticides ranked 28 and were

less hazardous than food additives which ranked 27. Smoking and alcohol were ranked 1 and 2 while home appliances and swimming were in the middle. However, women voters ranked pesticides at 9 while college students ranked them 4th.

A number of actual benefits resulting from pesticide usage are well described. These include controlling pests and disease vectors and are further described into primary and secondary benefits. From a social standpoint, the use of herbicides is less expensive than other types of weed control, improves aesthetic values, and can have positive environmental benefits such as reduced soil disturbance and less fossil fuel usage. Anyone who claims weeds don't need to be controlled hasn't kept pace with regulations on noxious and invasive weeds which are proliferating throughout the U.S. The authors describe control of water hyacinth in the U.S., though similar situations exist in urban landscapes with weeds such as garlic mustard, wild parsnip, and others. The paper also goes on to discuss obvious benefits in food production quantity and quality. ■

# New Herbicides Offer Turf Managers Better Options

By Dr. John Stier, Department of Horticulture, University of Wisconsin-Madison

After a long dry spell of few new products, a number of new herbicides are being released for the turf market. All have a history of use in agricultural crops. Many of them are developed for application at ultra-low rates and have negligible side effects on humans and/or the environment. Some are classified as “reduced risk” pesticides by the Environmental Protection Agency. Even more exciting is the ability to target specific grassy weeds and/or to be used at unique times during turf management.

Quinclorac, sold as Drive<sup>®</sup>, has been available for a couple of years as a post-emergent crabgrass control that is safe to use on our common lawn and sports turf grasses. Last year a new product containing quinclorac and broadleaf herbicides was marketed as Q-4<sup>®</sup>. We’ve had excellent success with both products.

Certainty<sup>®</sup> herbicide was made available to the professional turf market last year. The active ingredient is sulfosulfuron. While labeled for a variety of broadleaf weeds, Certainty also is effective against nutsedge. For sports turf managers who are combating quackgrass and rogue tall fescue plants in their Kentucky bluegrass fields, Certainty has shown excellent control of both species though two or more applications may be required. We have been testing the timing of Certainty applications for best control of both species and will have more information available at Field Day this year. It is not intended for use on perennial ryegrass. Certainty is characteristic of many of the new types of products, active at extremely low use rates of around 1 oz per acre. It is sold as a water dispersible granule

which makes it easy to work with, and a non-ionic surfactant is required. It has both pre and post-emergent activity. Be sure to stop by the Certainty projects at Field Day on July 26.

Mesotrione herbicide will be labeled this year as Tenacity<sup>®</sup>. This is another low-use rate herbicide with good control of numerous broadleaf species and crabgrass. We will have several projects on display at Field Day. One project will showcase the ability of Tenacity to remove creeping bentgrass selectively from Kentucky bluegrass. Another project will show its ability to be used as a pre-emergent herbicide at time of seeding. This is an important option for turf managers as currently siduron is the only option for pre-emergent control at time of seeding.

Velocity<sup>®</sup> herbicide, based on the active ingredient bispyribac-sodium, has been available for golf courses and sod farms for a couple of years. While it controls a number of weeds, it appears to be especially useful for post-emergent control of annual bluegrass (*Poa annua*). Unfortunately it is not yet labeled for Kentucky bluegrass turf as some varieties may be damaged by it. We are still collecting information on its suitability for Kentucky bluegrass and it is possible it may sometime be labeled for Kentucky bluegrass/sports turf once sufficient data are available.

Be sure to stop by and see all of these and other exciting projects at the Wisconsin Turfgrass Association Field Day on July 26 at the O.J. Noer Turfgrass Research and Educational Facility. Tours start at 9 am. Contact Audra at the Noer Facility, 608-845-6536 or [ajander2@wisc.edu](mailto:ajander2@wisc.edu), if you need registration information. ■

## A TDL Midsummer Review

By Paul Koch, Turfgrass Diagnostic Lab, University of Wisconsin-Madison

Would you believe that it’s the end of June, and we still don’t have any dollar spot at the O.J. Noer Turfgrass Research and Education Facility? Nor do we have any brown patch, or anthracnose, or even much in the way of fairy ring. As far as our fungicide research trials go, it has definitely been a slow year so far. And if disease pressure doesn’t increase in the next couple of weeks, my talk at the Wisconsin Turfgrass Association’s Summer Field Day may end up as us staring at each other for 10 minutes before the horn blows and you move to the next topic. Don’t get me wrong, that’s a good thing as far as the state’s turfgrass industry is concerned, but I know it is only a matter of time before the Wisconsin summer turns hot and humid and conditions are ripe for disease development.

Despite the low disease pressure so far this year on the big foliar diseases (i.e. dollar spot, brown patch, pythium), the TDL has received a number of samples affected by a range of pathogens. First and foremost this spring and summer has been the widespread damage due to the root-infecting diseases take-all patch (*Gaeumannomyces graminis* var *avenae*) and necrotic ring spot (*Ophiosphaerella korrae*). Take-all patch is a root-rotting disease of creeping bentgrass, and has caused sig-

nificant damage to golf courses young and old throughout Wisconsin. Necrotic ring spot is similar to take-all patch, but it infects primarily Kentucky bluegrass, and has wreaked havoc on many recently sodded lawns in newly built subdivisions. Both diseases are frustrating for a couple reasons, one being that they attack below the surface of the soil. This puts the disease out of sight (and often out of mind until it’s too late), and also makes control of the pathogen with fungicides more difficult. Another frustrating aspect of these diseases is that once we see the symptoms, it is too late to do anything to affect the pathogens. Both pathogens are most active at soil temperatures of 55-70°F, and once temperatures rise above that they become dormant and unresponsive to fungicides. The damage to the plant’s root system has already been done, but we don’t see the symptoms of the disease until the hotter and drier conditions of summer stress the plants. Unfortunately, at this point all that can be done is more frequent irrigation and light fertilizer applications to help the plant survive until more extensive work can be done in the fall.

*Continued on page 9*



Near the beginning of June several samples were submitted that were infected with the leaf spot fungus *Bipolaris sorokiniana* (Figure 1). We have seen significant damage on older golf courses around the Midwest from this disease in the past two summers. This summer's activity was mainly limited to small reddish spots affecting isolated patches of putting green bentgrass. High rates of a contact fungicide tank-mixed with a penetrant fungicide such as iprodione or propiconazole have proved to be the most effective control of the leaf spot.

As conditions continue to dry out and heat up, anthracnose (*Colletotrichum cereale*) will continue to be a headache for many golf course superintendents again this year. And to prove it's not only annual bluegrass that is affected by anthracnose, a recently submitted sample from a creeping bentgrass putting green showed significant anthracnose basal rot infection (Figure 2). Anthracnose basal rot is considered more serious than foliar anthracnose because of its ability to actually infect the crown area of the plant, significantly hampering the plant's ability to recover. Limiting cultural practices that cause significant stresses on the plants will help the plant naturally fend off anthracnose infection, but fungicides specifically targeting anthracnose may be needed for control in certain situations.

Despite all these fungal infections of turfgrass, most of the samples submitted to the TDL have been diagnosed with abiotic



**Figure 1:** These thick-walled spores are produced by *Bipolaris sorokiniana*, the causal agent of *Bipolaris* leaf spot. Symptoms include small, reddish-colored spots that cause the greatest damage on older vegetative clones of creeping bentgrass.



**Figure 2:** The black lesions affecting this creeping bentgrass plant are caused by the disease anthracnose basal rot. This disease can cause significant damage to the plant, and recovery time is much slower in comparison to foliar anthracnose.

issues such as drought, soil compaction, or traffic stress. This spring and summer has been dry and exceptionally windy for much of the state, resulting in larger water requirements for turf and more drought stress symptoms. Home lawns sodded within the past two years have had an especially difficult time this year. Consider that perfectly healthy sod is often laid on top of largely clay soils that were compacted by a bulldozer, and it's actually surprising more sod does not die within the first six months of establishment.

Considering the first half of the summer has already come and gone, it won't be long until our attention turns to the

upcoming fall. That means work crews will be shrinking, leaves will be changing, Badger football will return on Saturdays, and we could actually be watching baseball in Milwaukee come October. Now that I've gotten way ahead of myself, and jinxed the Brewers in the process, it's time to come back to the present. There will be heat waves to handle, dollar spot and brown patch will run rampant, and it will seem like everywhere else is getting rain except here. I hope everyone's turf stays green in the process, and we'll see you at Field Day on July 26th. ■

## Nutrient Management Requirements for Sod and Turf

By Sara Walling, Nutrient Management Specialist, Wisconsin Department of Agriculture, Trade and Consumer Protection

Recent changes in Wisconsin's nutrient management rules and standards will have an impact on sod growers, turf managers and golf course superintendents. The Wisconsin Department of Agriculture, Trade and Consumer Protection recently revised ATCP 50, the department's nutrient management rule. These changes will have direct impact for sod growers.

In addition, the Wisconsin Department of Natural Resources has a nutrient management performance standard for lawn and garden areas that will go into effect March 10, 2008. To support this performance standard, a team of experts created an interim turf nutrient management technical standard called WDNR

Technical Standard #1100. The interim standard guides golf course superintendents, managers of cemeteries, park systems, and athletic field complexes on how to comply with the nutrient management performance standard.

You can learn more about this by visiting the Wisconsin Department of Agriculture, Trade and Consumer Protection booth at the upcoming WTA Summer Field Day on July 26th. We'll answer all your questions on ATCP 50 and the interim turf nutrient management technical standard, and explain how they might impact you. If you can't make the field day, watch this newsletter for future information. ■

# China: A Land in Transition with a Rapidly Growing Turfgrass Industry

By Dr. Doug Soldat, Department of Soil Science, University of Wisconsin-Madison

During the last week in June, I had the opportunity to attend the 2nd International Turfgrass Conference on Turfgrass Science & Management for Sports Fields in Beijing, the capital of China. The conference was sponsored by the International Society for Horticultural Science and organized by Beijing Forestry University. The conference brought together turfgrass researchers from Australia, China, Greece, Iran, Ireland, Italy, Korea, New Zealand, United Kingdom, and the United States. Although the group was diverse, we shared the common goal of exchanging information on improving the science and management of sports fields.

Beijing, a city of roughly 16 million people, was selected for the conference site because it will host the 2008 Olympic Games. Beijing is a city in transition; modern highrises replacing old buildings; cars replacing rickshaws, urban areas replacing agricultural land. These changes are happening all across China, but are especially evident in Beijing in preparation for the upcoming Olympic Games. Beijing experiences hot, wet summers and cold, dry winters. Daytime temperatures were consistently in the mid 90s during my stay, with night temperatures dropping to the mid 70s.

Dr. Liebao Han, Director of the Turfgrass Institute at Beijing Forestry University, opened the conference with a presentation entitled "History, Reality, and Prospect of Turfgrass in China." Dr. Han noted that the 1950s marked the beginning of turfgrass research in China. Incidentally, the first research was conducted on a North American native turfgrass, buffalograss. Turfgrass research in China continued at a leisurely pace until the late 1980s when an increase in the amount of research occurred in preparation for the 11th Asian Games. This was the first large-scale international sporting event to be held in the People's Republic of China. The Chinese dominated the games, collecting nearly as many medals as the second and third place countries combined (Republic of Korea and Japan, respectively). China will host the next Asian Games in 2010.



Yiwei Jiang, an assistant professor of turfgrass physiology at Purdue University, walks along the Great Wall (1595).



Researchers gather on the zoysia of Fengtai Field

Although the turfgrass industry is still small by American standards, it is growing as rapidly as anywhere else in the world. Only 300 golf courses exist in China - 40 of which are located in Beijing (Wisconsin has over 450 golf courses), but new golf courses are being constructed "every day" in Dr. Han's words. This is happening despite a governmental moratorium on golf course construction. Apparently, the moratorium isn't taken

too seriously. China is also home to only 3,000 sports fields - but this number is also increasing rapidly. Synthetic fields haven't taken off, and are currently confined to high schools in urban areas where natural grass surfaces are rare. In fact, turfgrass in urban China only covers 2 million acres; roughly double the amount found in Wisconsin's urban areas. This is a relatively small amount considering China is about the same size

as the US, with 5 times as many people. However, the Chinese are incorporating more and more green spaces into their urban areas to mitigate pollution and minimize dust storms.

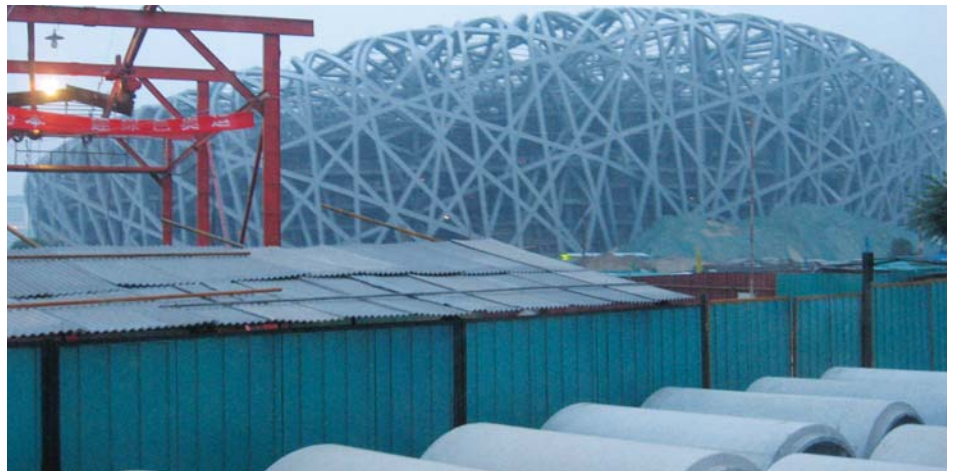
Chinese education in turfgrass management is another fast-growing aspect of the industry. The first university level turfgrass class was offered in China in 1983 and the first Master's degree was awarded in 1987. Six years later, the first Ph.D. was awarded to a student studying turfgrass. Since those days, turfgrass education has grown exponentially. Currently, over 2,000 Masters and Ph.D. degrees have been awarded in China and that number continues to grow. Twenty-four Chinese universities now offer courses in turfgrass science and 10,000 students have earned a BS degree, with over 3,000 students currently enrolled in a turfgrass program. That's 10 current turfgrass students for every golf course in the country; I imagine the internships can be quite competitive. The number of students being educated is a good indication that continued growth is anticipated in the turfgrass industry.

Dr. Han noted that no governmental regulations exist with regard to fertilizer, pesticide, or water use for turfgrass areas. However, the Chinese Turfgrass Society has begun developing a set of pesticide regulations for turfgrass areas. Like many American turfgrass industry groups, the Chinese Turfgrass Society has chosen to lead the way on environmental stewardship. When asked about the major problems with growing turfgrass in China, Dr. Han mentioned that diseases were a major concern in the North, and insects were the primary concern in the South. Sound familiar? A series of keynote speakers followed Dr. Han's presentation. The speakers were experts on sports turf management from around the world. I will attempt to summarize many of those presentations in a future article.

On the final day of the conference, the attendees toured several sports fields and a sod farm. The first stop was the Tianjin Olympic Center Stadium, about a 2.5 hour trip southwest of Beijing (with no traffic). This stadium will be the site of many Olympic soccer games. Tall fescue was chosen for the field. Because of the



A group of sports turf researchers examine the tall fescue at an the Olympic Stadium in Tianjin.



A bus-eye view of the Beijing National Stadium.

microclimate effects that were caused by the 60,000 seats, disease pressure was high and the tall fescue was struggling to survive in the hot, stagnant air. Just outside the stadium, however, an open field tall fescue practice field looked beautiful, in marked contrast to the same species inside the stadium.

The next stop was the Tianjin Honggang Sod Farm which has 250 acres of sod, primarily tall fescue grown on netting. The sod sells for \$1 per square meter, roughly \$100 per thousand square feet. We then boarded the bus and headed back to Beijing to visit the Fengtai Softball Field, another 2008 Olympic site. This was a smaller, more open stadium with a seating capacity of 13,000. The field was renovated in 2006 for the upcoming games, and was grassed with zoysia. The final stop on the tour was a drive-by of the Beijing National Stadium, or "The Bird's Nest." The nickname comes from the distinct appearance of the stadium; the design will also function to increase air circulation creating a more comfortable environment for the fans

(and for the turf!). Unfortunately, the National Stadium was still in the midst of construction and we were not permitted to enter the construction site.

At the end of the week I was ready to make the trip home. I enjoyed visiting China and was glad to have the opportunity to visit some historic sites like the Great Wall and the Forbidden City (former palace to Chinese emperors). But most of all, the trip was an excellent opportunity to meet turfgrass researchers from all over the world, and learn about the turfgrass management challenges they face that are frequently similar to those that we face here in Wisconsin. It is a good feeling to know that the turfgrass community is a close-knit group, and I enjoy conducting research that can have a positive impact down the street or in a place halfway across the world, with a 13-hour time difference. Stay tuned for an upcoming article that will highlight some of the scientific talks from the conference. Who knows, maybe the next solution to a persistent turfgrass problem will come from China! ■

# CALENDAR OF EVENTS

July 9	WGCSA Monthly Meeting (Tournament) .....	The Club at Strawberry Creek, Bristol
July 23-26	TPI Summer Convention and Field Day .....	Marriott Madison West
<b>July 26</b>	<b>TPI/ WTA/ MSC Summer Field Day .....</b>	<b>OJ Noer Facility, Verona</b>
Aug 7	NGLGCSA Monthly Meeting .....	The Four Seasons Resort, Pembine
Aug 10,11	WNA Summer Field Day .....	Northern Christmas Trees & Nursery, Merrilan
Aug 20	WGCSA Monthly Meeting (Member/Guest) .....	Brynwood CC, Milwaukee
Sept 24	Wee One Foundation Golf Outing .....	Pine Hills CC, Sheboygan
Oct 2	NGLGCSA Monthly Meeting .....	Northwoods GC, Rhinelander
Oct 5,6	WGCSA (Dinner Dance) .....	Minocqua CC, Minocqua
<b>Oct 11</b>	<b>WTA Golf Fundraiser for the Fellowship .....</b>	<b>Blackwolf Run, Meadow Valleys Course</b>
Oct 24	Green Industry Conference .....	Louisville, KY
Nov 28,29	Wisconsin Golf Turf Symposium .....	American Club, Kohler
Dec 11	WGCSA/GCSAA Seminar .....	TBA
<b>Jan 9,10</b>	<b>WI Turfgrass and Greenscape EXPO .....</b>	<b>Marriott Madison West</b>
Jan 16-18	Mid-Am .....	Chicago, IL
Jan 15-19	STMA Conference .....	Phoenix, AZ
Jan 31-Feb 2	Golf Industry Show .....	Orlando, FL

WTA Members — If you have an important date you'd like to share with other members, call 608-845-6895, fax 608-845-8162, or email [tgschwab@wisc.edu](mailto:tgschwab@wisc.edu) to include it in the next calendar.

## Contact Telephone Numbers

GIC	Green Industry Conference.....	<a href="http://www.landcarenetwork.org">www.landcarenetwork.org</a>
GIS	Golf Industry Show .....	800-472-7878
Mid Am	Mid Am Trade Show .....	<a href="http://www.midam.org">www.midam.org</a>
MSC	Midwest Sod Council Summer Field Day .....	630-685-2318
NGLGCSA	Northern Great Lakes Golf Course Superintendents Assoc. ....	715-542-2373
STMA	Sports Turf Managers Association Conference.....	800-323-3875
Symposium	WI Golf Turf Symposium .....	414-786-4303
TPI	Turf Producers International Field Day .....	800-405-8873
Wee One	Wee One Foundation Golf Outing .....	920-386-9006
WGCSA	Wisconsin Golf Course Superintendents Association .....	414-786-4303
WNA	Wisconsin Nursery Association Winter Workshop .....	414-529-4705
WSTMA	Wisconsin Sports Turf Manager Association .....	608-845-6895
<b>WTA</b>	<b>Wisconsin Turfgrass Association .....</b>	<b>608-845-6536</b>