

any of the other guys felt the melancholy that swept through me when I was alone and thought of these faculty members, now retired, and former students, some now in their 50's.

But once I was in Stinky's and saw the happy friendly faces of these guys I'd known forever, some who had worked for me and one who I had worked for, the feeling in the pit of my stomach went away. Sheer, unadulterated joy and holiday cheer took over.

The hot and humid and miserable weather made winter welcome, at least for now. Come February, it would be a different story. I'd seen the first snowflake fall before it was even light outside this morning. The barometer had been tumbling fast since midnight and the state was ready for a good, old-fashioned Wisconsin snow. Most were glad—it would mean a white Christmas.

By 11:00 o'clock, when we were meeting at Stinky's, the zinc colored sky hung low over the city and the snow was coming thicker by the hour. It was now an undulating blanket on the landscape, fresh and undisturbed. It was piling up on the spruce and pine branches, making them truly look like outdoor Christmas trees. It settled against the window panes at Stinky's, softening the red and green and yellow lights of the Christmas decorations inside.

Once or twice a year silent snow reminded me of Whittier's *Snowbound* that we had memorized in our one-room grade school:

*The sun that brief December day  
Rose cheerless over hills of gray.*

It's a grand old poem that brings back memories of snowstorms in southwest Wisconsin in my youth. Schools closed for days, but farmers went on, doing chores and enjoying the beauty of it since there was nothing they could do to change it.

Nowadays I wondered about the Sac and Fox and Kickapoo Indians who lived at various times on the land of our golf course hundreds of years ago. They must have been hardy, trying to stay warm in deerskin tepees or bark and reed wickiups. They were tough, living on venison and corn and nuts.

Here in town in 1995 there would be all sorts of griping about slippery roads and slow traffic and a dozen other urban hardships brought on by the snow that was falling. To me, living out a heavy snowstorm is a nice challenge

to resourcefulness and ingenuity, virtues in short supply and too rarely exercised these days.

I knocked the snow off my boots best I could before opening the door to the bar. Even then I could hear the Christmas music above the din of the crowd. Snow swirled inside when I opened the door, and a big cloud of steam, probably from the crowd and the kitchen, escaped as I went in. My glasses were fogged over almost instantly.

Even though I couldn't see for a second, I heard our gang—Bogey Calhoun hollering to me, "hey, Dogpatch Country Club, over here!" I heard Scottie Fennimore laughing at him, encouraging more wise cracks.

I wiped the condensation from the lenses and put my glasses back on. The first person I saw was Doc Love. Then Prof Worf and Bob Newman. The newly retired Koval was at the end of the big table, talking to Tom Morris.

"How," I wondered to myself, "can I be the last one here when I have the shortest distance to go?"

Being in Stinky's bar was almost like being at home. It was warm and comfortable and clean. Phoebe O'Malley had strings of Christmas lights everywhere. Pine boughs, too, fragrant and green. There were three Christmas trees that I could see—one each in the bar, the Rush room and the game room. Stinky came over, asked me if I wanted anything and said I could leave his present under the tree in the Rush room.

"No presents for you, Stinky," I said. "Maybe a stick or a brick or a piece of coal. But no presents. You haven't been that good this year!"

Stinky peered at me over the top of his glasses, feigning some modest anger. Then he smiled and said "Well, I'm not getting you anything either."

I moved over to our table in the middle of the controlled chaos and noise of another busy lunch crowd at Stinky's. I sat down next to Steady Eddie Middleton and Larry Strike. "What fun!" I thought to myself.

Love and Newman were arguing over some trivial intellectual tidbit that left the rest of us clueless as to what they were talking about. Worf was trying to brag about his summer fishing exploits, but the guys were more interested in talking about turf diseases. Koval was still wondering, and worrying too I thought, about what was involved in the initiation ceremony of our group.

Morris was perched in his usual catbird perch, waiting for his chance to make a little trouble. He reminded me of a guy who sat near the fire with a thimble of gasoline. When the flames died down, he'd splash a little gas and get the fire roaring again. If the conversation lagged for even a minute, he'd say something about Calhoun's slow greens or Middleton's deep bunker sand or Fennimore's weedy roughs, and the arguments were off to the races again. And he would only smile, moving his head from side to side, above the fracas and grinning as we went after each other. Somehow, we never got around to raking him over the coals!

Our orders came, by and by. We all passed on Stinky's stinky food and ordered more traditional fare—bowls of hot clam chowder, hot turkey sandwiches with mashed potatoes and gravy, and a few tasty Reuben sandwiches.

By and by, Chuck was made to believe that whatever the price of initiation, it was going to be worth it. He was having a good time.

Bogey motioned for Phoebe to come over as we were finishing our meals and pushing the plates to the center of the table.

"Bring each of us our usual, Phoebe—a tall glass of cold winter ale and one of the special Honduran cigars Stinky keeps beneath the bar. Put it all on the tab."

*(Continued on page 33)*

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(Continued from page 31)

I saw Bogey motion to Phoebe again. She leaned over so he could whisper something to her. I knew what it was. So did everybody else. Except the unsuspecting Professor Koval.

I pushed my chair back, looked at each man individually and smiled. It was a fine moment as I saw the once young and now aging friends I'd known for so long. We had all worked hard this past summer and worried a lot. But now, finally, each man was relaxed and happy.

It was a Norman Rockwell Christmas scene. Or maybe Grandma Moses, with a family-like quality to it. More and more as the years have

gone by I have discovered that Christmas is a season that must be shared with others outside of your family, too. This was the perfect example.

Hard to believe, but the smell of the pine boughs and the cigar smoke and the plates of roast turkey from the kitchen was wonderful and familiar and friendly. How could the place be called "Stinky's"?

Koval was asked to stand for the induction and initiation ceremony. He looked around the table carefully with a little suspicion. Tom Morris babbled a few paragraphs about the group, our long history and great tradition. He had humbled Chuck—you could see it on

his face—and had led him up to the great climax of initiation.

"Here it is, Chuck, evidence that are now officially one of us, this august group." With that, Tom handed him the tab and took a long flavorful drag on his cigar. "You're in!"

The guys roared; Koval looked at the tab and said, "I'm not sure I want to join you characters!"

The Christmas music in the background reminded me to look out the window. It was still snowing, making it look more and more like Christmas.

And already, after such a good time, I knew it would be a happy holiday. For all of us, including our new member. ♣

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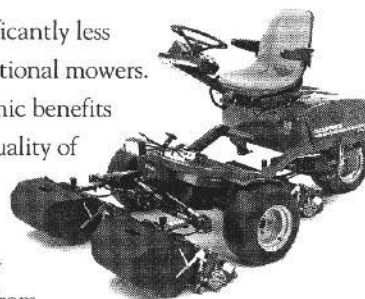
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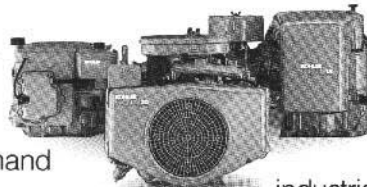
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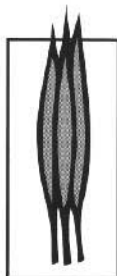


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# Autumn Goings On

By Tom Schwab, Manager  
O.J. Noer Turfgrass Research and Education Facility

The Wisconsin Turfgrass Association (WTA) held its fall fundraising golf outing on September 25. The day turned out to be slightly windy, partly cloudy but with a mild temperature. Holding the fund-raiser in late September has always been quite precarious but this year turned out perfect. The event was, to the pleasure of all, held at the University Ridge Golf Course. Jeff Parks had his course in stupendous condition. We met at the Noer Facility afterwards to disperse golf and door prizes and enjoy hors d'oeuvres and conversation.

The day was organized by Jeff Bottensek from Stevens Point CC, with help from Bruce Worzella from West Bend CC, Audra Anderson from the Noer Facility, professor emeritus Chuck Koval, and Ed Devinger from Reinders, among others. The 64 golfers achieved their goal of raising money for turfgrass research and having fun doing it. There were also forty-one hole sponsors that we'd especially like to thank. They are listed below. Together they raised \$7000 for turfgrass research in Wisconsin.

The number of turf studies keeps expanding at Noer. Henry Berg, Amy Sausen, and Brad Smith, three of Dr. Rossi's assistants, just installed a National Turfgrass Evaluation Program (NTEP) study for Kentucky bluegrass (Kbg) at 3" mowing height. This NTEP will be evaluating 110 different cultivars of Kbg. Many of the telephone questions that come into Noer ask about which cultivars of Kbg to use for different situations. We will now have local data on Kbg in addition to our NTEP trials we already have on fine fescues, tall fescues, perennial ryegrasses and bentgrass.

Dr. Rossi and Amy Sausen also have installed a study of different products that claim to reduce or eliminate thatch. Fifteen different products

will be included in the three year study. Rossi and Sausen will be reporting on the validity of the claims in future research reports.

Dr. Kussow just established a plot area to investigate another new product. This product is a catalyst activated water that claims to accelerate seed germination. Preliminary observations look favorable. Turf managers are always looking for better ways to do their jobs and Dr. Kussow will report if this new product can benefit them.

Dr. Koval, who doesn't know the meaning of retirement, is still setting up trials. Koval and his assistant J.D. Baker manually infested 400 cutworm larvae into one of the plots. They gave the larvae time to get established then applied different treatments to control them. The treatments compared low rates of synthetic pyrethroids and insecticidal soaps against a standard insecticide, which in this case was Dursban. The results will be reported in the 1995 Wisconsin Turf Research Report that will be handed out at EXPO 1996.

The Noer Turf research group has been doing many experiments away from the station also. Dr. Rossi's assistants Henry Berg and Amy Sausen have been setting up research on plant growth regulators and/or seeding rates at Blackhawk, West Bend, Ozaukee, Greenwood Hills, and Gateway golf courses. Dr. Meyer's assistant Catherine Smejkal has been setting up an organic fertilizer study at Blackwolf Run and will be doing snowmold studies at Gateway and University Ridge golf courses.

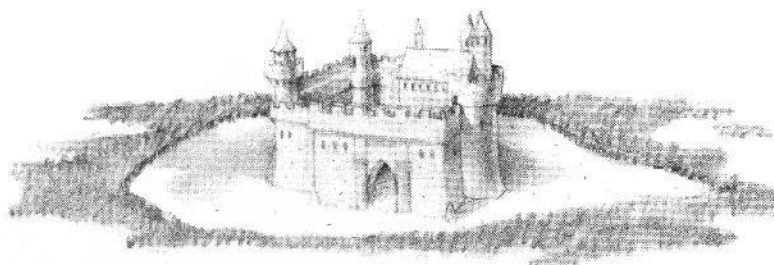
Other than the research, the routine fall maintenance around Noer has been similar to your golf courses. The weakened and diseased general lawn areas have been aerified and overseeded. The three putting green studies have been getting heavy topdressing and were aerified. Most everything got a late summer fertilizing. Some

small reconstruction projects were done. The Turf Group has been meeting regularly and making plans for next year. They've also been meeting with the University to again discuss  
*(Continued on page 37)*

The advertisement features a large graphic of a plus sign. To the left of the plus sign is a large number '4' with 'fl. oz./1000<sup>2</sup> ft' written below it. To the right of the plus sign is a jug of 'chiteco 26019 Flo FUNGICIDE'. Below the plus sign is another large number '4' with 'oz./1000<sup>2</sup> ft' written below it. To the right of this second '4' is a bag of 'chiteco Alette WDG FUNGICIDE'. Below the graphic is the text: 'Outstanding, longlasting control of dollar spot, brown patch, pythium and more.' At the bottom, it says 'RHONE POULENC AG COMPANY P.O. Box 12014, 2 T. W. Alexander Drive Research Triangle Park, NC 27709 919 / 549-2000'.

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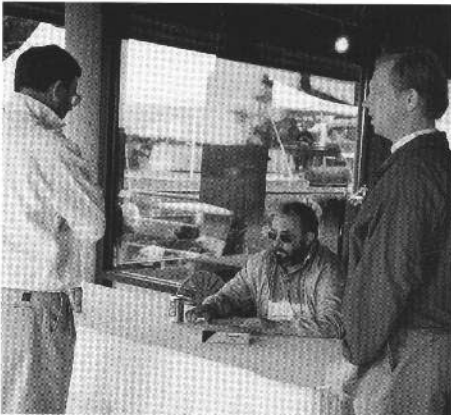


(Continued from page 35)

acquiring more land. I also met with my peers at our UW Agricultural Research Station fall conference. There was good news for the Noer Facility. With all the budget cuts that are happening at the University, Noer actually got a slight budget increase!

Plans for EXPO 96 are in full swing. The planning committee of Chris Wendorf from Olds Seed Company, Paul Huggett from Long Island Sod Farm, and Dr. Rossi, Audra Anderson and Tom Schwab from the Noer Turfgrass Group have been planning EXPO 96 since last March. EXPO 96 has been expanded to three days starting at 1:00 p.m. on Tuesday January 9 and going through Thursday January 11th.

The list of speakers includes pro-



Jeff Bottensek, organizer of golf fundraiser, working hard at the registration table.

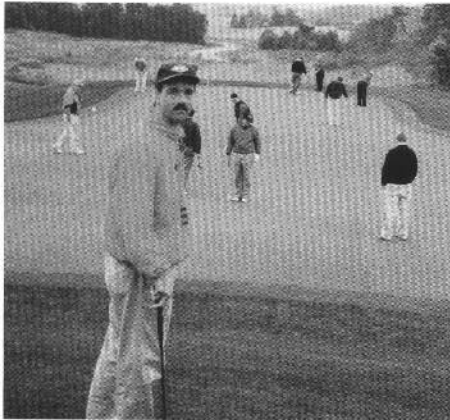


What are you doing out there in the rough Dan?

fessors from the universities of Iowa State, Ohio State, Rutgers, Kentucky, Maine and Wisconsin along with representatives from the green industry, related organizations and from our own turfgrass association. There will be talks and workshops for everyone in the green industry.

The trade show has been nothing short of spectacular. Last year's floor space was sold out and this year we have reserved one-third again as much space. We fully plan to sell out again this year. Pre-registration packets for the exciting and informational Wisconsin Turfgrass and Greenspace EXPO will be mailed in November.

The Wisconsin Turfgrass Association would like to thank all the golf fund-raiser hole sponsors that graciously donated to the event.



WTA president Wayne Horman heads out to practice putting.



Ed Devinger never misses the fundraiser. This year he brought his son Andy.

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Badger Backer Jerry Kershasky is also a big backer of turf research. I won't say what kind of golfer he is.



# The Summer of 1995; Caught in the Turfgrass Technology Trap

By Dr. Frank S. Rossi  
Department of Horticulture  
University of Wisconsin-Madison

*Good grass is conditioned by two factors—climate and soil...the latter can be modified, while the former must be accepted.*(Turf for Golf Courses, by Piper and Oakley. 1923)

**Perspective.** Our editor has defined perspective as, "a high point or crest in time where we can look back to measure progress and look forward with optimism". The quote from Piper and Oakley is an example of looking back to measure progress based on a fundamental philosophy of the early 1920's. Seventy years later, the American Society of Agronomy in 1992, published the TURFGRASS MONOGRAPH summarizing the latest research and philosophy of modern turf management. The first line of the book quotes the poet Goethe;

*one must obey nature's laws even while he denies them; he is forced to produce with her aid, even when he imagines he is able to work against her.*

It seems that the more things change, the more they remain the same. The ironic connection between the quoted philosophies is that while the demand for high quality turf has increased and the number of tools (technologies) have increased, we are still subject to the laws of nature. Once again our editor has warned that, "without perspective our past becomes a broken record of steps forward and back, repeating the same mistakes, telling the same tale." What have we learned from the Summer of 1995?

If you were responsible for providing a high quality turf this year, you could not avoid feeling helpless at times as the weather shattered records held for 100 years. In my mind, we were clearly able to see the limits of our influence, i.e. **the limits of technology**. Therefore, when we rely on technology to overcome our limitations, we are caught in the trap.

**Technology in Our Lives.** It is impossible to deny the role that technology has played in the advancement

of turf management. The conditions we are able to provide today would not be attainable without technological advances. Yet, I believe we have paid a price. I believe we've been trapped!

Let me use an example from our daily lives. I remember when I was a child, I had a bank account for the money I earned mowing lawns. I had a bank book that I could only use at the bank that had my money. If I wanted to withdraw money, I had to have my bank book, know the hours the bank was open, figure out how I would get there, remember my identification, make sure I had enough money in my account, etc.

These days it would be even more complicated with having to coordinate schedules with my wife and children to allow me to get to the bank before I went on a trip. Withdrawing money would be burdensome. However, the development of technology in the form of automatic teller machines (ATM) has alleviated the burden of having to know all the above information (heck, I don't even have to have enough money in my account to withdraw some).

**Technology vs. Knowledge?** Let's apply the ATM example to turf. For years superintendents have relied on pesticides to eliminate pest problems. If we had a problem with a disease or insect, we didn't concern ourselves with the biology or ecology of the organism, we sprayed it! We use technology to make our lives easier. Once again, I believe we have been trapped.

I fear that technology has alleviated the burden of understanding the dynamic nature and ecology of our biological systems. Our management systems are increasingly technology based rather than knowledge based—energy intensive instead of knowledge intensive!

**Margin of Error.** While we have become accustomed to managing our golf courses with a multitude of technology available, from new bentgrasses to new pesticides to new equip-

ment, very little could help this past summer. No matter how much energy was exerted, the grass still suffered. Still, many superintendents were able to sustain adequate quality through the season. Having reflected on the season, my gut reaction is that there were critical periods where decisions were made to force the turf to produce high functional quality, particularly with regard to ball roll, that stressed the turf beyond recovery.

The decision I am referring to in many cases centered around lowering the height of cut and aggressive top-dressing on mixed annual bluegrass and bentgrass greens. During any other season, the turf would have recovered from a few days of this type of stress. In other words, it would have forgiven you. But this year the stress was outside of the allowable margin of error and the result was severe turf loss. From then on, no amount of technology (sophisticated irrigation systems, pesticides, equipment, etc.) seemed to help. Simply, the margin of





error was narrowed under the extreme weather conditions.

Let me be clear: each superintendent has a different margin of error based on several factors including root zone material, amount of annual bluegrass, traffic, irrigation system, labor, etc. Specifically, I believe that what we experienced for the most part was the result of severe and irreversible heat stress, especially to the annual bluegrass. The operative word is irreversible. By that I mean, research has indicated that biotypes of annual bluegrass, when stressed to a certain point, will not recover.

**Forgetting Piper and Oakley.** The most blatant example of forcing technology to solve our problems in turf is the continued attempt to grow bentgrass in the southeastern US during the summer. As a matter of fact, we have several golf courses in Wisconsin that have been designed in such a way that micro environmental conditions are similar to those in the southeast. We even have a new term for it—Dead Air Greens!

It is interesting to observe the unending pursuit of turf managers to work against the idea that climate will ultimately determine adaptation. For example, a fungicide combination was reported on at the GCSAA conference as a means of reducing the problems associated with summer bentgrass decline. The Alliette + Fore combination when applied every 14 days resulted in improved turf quality in an experiment conducted over a growing season. While it was suspected that this combination had an effect on the pathogens that were loosely associated with the decline, it wasn't until the second year that the fungicide combination was shown to not have an effect on the pathogens. Of course by the time this information was reported, the testimonials had been released, other researchers reported enhanced quality and now we've got Alliette + Fore brochures, hats and jackets. Technology is amazing, especially when we don't have a clue why it works! Could it be that we are no longer going to be forced to accept climate as a limiting factor?

**What's Next?** Technological advances are not restricted to chemicals; there have been biological advances with the development of improved bentgrass cultivars for use on golf courses. The latest and most impressive of these have been selections from the Penn State breeding

program known as the A and G series. Specifically A-4, is without question the most upright, dense and fine-leaved cultivar I have ever seen. In our trials at the Noer Facility, it has scored at the top in color and aesthetic quality.

Having said this, I was no less amazed to see the advertising begin. The inside front cover of a recent issue of *Golf Course Management* was promoting bentgrass selections from the Tee-2-Green company with the note that new bentgrasses would be available soon that should "be mowed at an eighth of an inch or less". I suspect this recommendation might be related to the aggressiveness and high shoot density that might result in a puffy surface if allowed to elongate. Still, who has a mower that can mow consistently below an eighth of an inch. I've heard superintendents complain that they can't get perfectly round rollers, which of course would influence mowing quality at heights below an eighth inch. What about bed knife thickness?

I guess we will need even more new technology to deal with the technology that is developed. I guess some would call this progress.

**Research is Partly to Blame.** As a former colleague of the esteemed turfgrass pathologist at Michigan State University, Dr. Joe Vargas, I am beginning to realize what Joe preached about folklore. However, while I know he meant testimonials and anecdotal information professed by the masses, sometimes I wonder if all of us as researchers shouldn't share some of the blame for promoting the technology trap.

I know I have conducted many weed control and plant growth regulator studies and have made recommendations based on limited data. It is clear now that the summer bentgrass decline debacle is a result of recommendations made before more data was available.

As researchers, we often evaluate the technology for its ability to kill the weed, control the disease, regulate growth and then it is added to the technology toolbox available to turf managers. The problem with single factor research where all factors are held constant, except for one, and we measure turf quality, we might be enhancing quality but worsening another factor.

The above concern makes our Putting Green Management System study, funded by the WGCSA and WTA so valuable. We are looking at a combination of several factors that can provide a desired outcome—ball roll. We then evaluate those factors as a system for their influence on things such as rooting, leaching, canopy density, diseases, etc. This type of research conducted over 3 to 5 to 10 years will help us avoid the trap.

**Avoiding the Trap.** The question remains in my mind regarding whether we need more technology (tools) or whether we must do a better job of determining how to integrate these technologies? How many hammers do you need? Shouldn't a good toolbox have a screwdriver, ruler, saw, crowbar, knife, etc.? In essence, could we avoid being trapped by technology by knowing more about our tools and their impact on our growing systems?

Avoiding the trap will require open-mindedness with a skepticism that seems to be prevalent amongst our superintendents in Wisconsin—keep it up! Also, commitment to continuing education and supporting long-term research will help us to integrate technologies, not just diversify. It is my firm belief that the only way we will reduce our reliance on energy intensive technology is by increasing our amount of biological information. If the summer of 1995 taught us anything, we need a more knowledge intensive and less technology intensive system of turf management to avoid the trap... ♣

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## Some Like It Hot and Some Like It Cold

By Steve Millett, Director  
Plant Disease Diagnostic Lab  
University of Wisconsin-Madison

Sooner or later a plant pathologist will start talking about the tripartite nature of plant disease (so here I go). The three sides of the triangle all need to be there for a plant disease to occur. The three sides of the triangle are the susceptible host, a hungry pathogen and a favorable environment. As our seasons change so does the list of evil pathogens that turfgrasses must battle. Some pathogens like it hot (e.g. pythium blight, summer patch and brown patch) and some pathogens like it cold (e.g. snow molds). This clearly illustrates that there is a turfgrass disease for every season.

There was a wide range of turfgrass disease samples that came into the UW-Madison Turfgrass Disease Diagnostic Lab from August 1 to October 10, 1995 (see table 1). *Poa annua* decline (PAD) was common throughout the state of Wisconsin in the month of August. To let you know that Wisconsin wasn't the only state which suffered, Dr. Randy Kane, a turf pathologist in the Chicago area, believes that their *Poa* losses were of historic proportions. I am not sure how our losses stack up with past ones, but it is safe to say that they were big. The high summer temperatures played a vital role in this phenomenon. PAD is believed to be caused by a combination of high soil temperatures and minor parasites/pathogens that feed on the weakened *Poa annua* root system. The roots of *Poa annua* start to die at elevated soil temperatures and the root losses decrease the foliage's ability to cool itself through transpiration. When this happens the canopy temperatures can exceed air temperatures and the entire sprig can die out.

High nematode populations were associated with one case of PAD. The other PAD sites were not assayed for presence of parasitic nematodes because nemas were assumed to be of minor significance in Wisconsin. However, this summer did mimic the hot weather of the southeastern U.S. where nematodes are of major concern. Dr. Ann MacGuidwin, nematologist in our department, did the assaying for the nematodes and Dr. Doug Maxwell used this case as a learning tool for our *Introduction to Plant Pathology* course.

Nematodes are important parasites of turfgrasses and they hold the distinction of being the only animals to cause turfgrass disorders. Nematodes are microscopic round worms ranging in size from 1/50 to 1/8 of an inch long. They must feed on living plants to complete their life cycle and are thus called obligate parasites. They damage turf by puncturing root cells with a needle-like structure called a stylet. This stylet allows nemas to feed on the root cell contents. Some scientists estimate that nematodes are the most abundant multicellular animal in the world! Fortunately for turfgrass managers very few are parasites of turfgrasses (less than 1% of all nemas). However, plant parasitic nematodes may have combined with other stresses to cause severe *Poa*

*annua* and bentgrass losses this past summer. If you had significant PAD this summer it might be wise to submit a soil sample for a nematode assay in the spring. If you are interested in submitting a sample, please give me a call for the correct way to take a soil sample.

Rhizoctonia blight was also a major problem this summer. There were a few cases where the atypical symptoms of tufting confused many superintendents and me, too. Instead of the usual brown patch with a smoke ring, tufts of off-white to brown mycelia were present in blighted areas. This tufting was probably a result of the high temperatures and high humidity that seemed to shorten the application intervals of fungicides.

Anthracnose basal rot of bentgrass was also diagnosed for the first time in Wisconsin. Dr. Houston Couch calls this disease a senectopathic disorder or a "biotically incited disease that can only develop after plant tissue is in advanced senescence." (1). After seeing the damage caused by this

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