



# WISCONSIN TURFGRASS NEWS

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WINTER 1999

## Well Rooted in Research

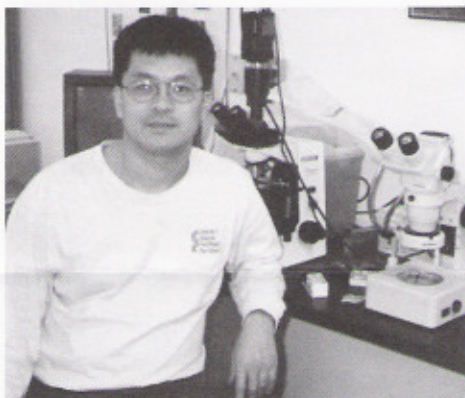
By Tom Schwab

*O.J. Noer Turfgrass Research and Education Facility  
University of Wisconsin-Madison*

The University of Wisconsin-Madison turf program became one person more complete by filling the key position of turfgrass plant pathologist. Dr. Geunhwa Jung was offered the position in October and will start his duties in February 2000. His qualifications and abilities stood out from the other candidates during their two-day interviews in front of university and industry representatives. He has a very strong research background that will benefit Wisconsin's turf industry combined with a friendly sincere demeanor that will let you get to know him quickly.

40% of his appointment will be outreach and extension. He will be traveling the state extensively to get to know you and the problems that most plague your operations. You will see him at EXPO, Summer Field Day, turf school, and other workshops. You will also be reading about his work in this newsletter, the Grass Roots, WSTMA Newsletter, extension publications, and more.

Research will make up the other 60% of his appointment. Initially he will become familiar with turfgrass disease distribution (dynamics of important fungal population) throughout Wisconsin using morphological traits and molecular marker technology. By the utilization of this information the development of PCR (Polymerase Chain Reaction) marker-based disease diagnosis kits will be another task. Next he will investigate the genetics of disease resistance in important turfgrasses in the state which will eventually help breed disease resistant cultivars environmentally adapted



**Dr. Geunhwa Jung is a welcome addition to the U.W.-Madison Turf Team.**

to Wisconsin. He will also collaborate with Dr. Michael Casler on breeding disease resistant cultivars of bentgrasses and possibly other species. He will also be doing coordination with Jeff Gregos at the Noer Facility in the Turf Disease Diagnostic Lab and in the field conducting trials of plant disease management products and techniques.

His scholastic background is impressive. He received his undergraduate degree back in his home of South Korea from the Chungnam National University in the department of horticulture. Next he traveled to the United States to attend the University of Nebraska in Lincoln where he received both a Masters and Ph.D. in horticulture. To tell you what a small world we live in, Geunhwa mentioned that while in Lincoln he shared his graduate school office with Tom Salaiz, who was the first manager of the OJ Noer Facility from 1991-1993. They still keep in touch today.

The tools and subjects that Geunhwa worked on while studying in Lincoln sound pretty technical. While there he worked on interspecific hybridization between two dry bean species, construction of a genetic map and location of quantitative trait loci for common bacterial blight (*Xanthomonas campestris* pv. *phaseoli*), web blight (*Thanatephorus cucumeris*), and rust (*Uromyces appendiculatus* var. *appendiculatus*) diseases, and plant architectural trait using random amplified polymorphic DNA markers in common beans. After receiving his Ph.D. he moved to Madison to take a postdoctoral research assistant position at the UW. For the past four years, Geunhwa has been working with Dr. Jim Nienhuis in the Department of Horticulture on plant breeding and genetics using molecular markers on numerous vegetable crops. In Wisconsin bacterial brown spot (*Pseudomonas syringae* *syringae*) and white mold (*Sclerotinia sclerotiorum*) which are important diseases for the production of snap bean were studied for additional disease experiences. This scientific experience should allow Geunhwa to do some cutting edge turf work in Wisconsin that will benefit our industry in the long run.

Geunhwa sure seems like he'll be a dedicated hard working addition to the turf program. I asked him what he liked to do in his free time and he gave me a funny look like he meant to say, "what free time." Then he mentioned that he

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## Well Rooted in Research

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really enjoys the quality time when he can get out fishing with his nine-year-old son. He also likes bicycling with his family. He married his college sweetheart from Chungnam and they also have a three-year-old daughter. He's a hard working person, a good family man, and he enjoys the outdoors when possible. He is going to fit in real well with the people of the turf industry in Wisconsin who also tend to abide to these values. You'll see him at EXPO. If you would like to say hi to him earlier, you may reach him at 608-262-6044 or gjung@facstaff.wisc.edu. He is interested in seeing your part of the state and hearing about your local turf health concerns.

## Message from the WSTMA

By Rich Riggs

Wisconsin Sports Turf Managers Association President

The WSTMA continues to grow. We are now over 100 members and growing. If you are a member please let us know how we can serve your needs. If you are not a member and you are interested in joining, please contact the O.J. Noer Facility at 608-845-6536 for membership information and applications.

By the time you read this newsletter your sports field should have all the fall maintenance practices completed and are on the road to recovery. Hopefully your fields played safe this past season.

It is time to plan to attend the Turfgrass & Greenscape EXPO. The EXPO will be January 11th & 12th, 2000 at the Marriott Madison West. Some of the talks will feature dealing with drought, high sand modification of native soil fields, fertilizing, species selection, and much more. EXPO is also

a good place to talk with fellow sports turf managers to learn valuable practices that they have had success using.

The national STMA meeting is also held in January (12th - 16th) and will be in St. Louis, Missouri. This will be as close of a location as it's going to be for sometime. I have attended several of the National Conferences. I always come away with information that helps me do my job better. It is well worth attending.

We will be adding four new members to the WSTMA Board of Directors for 2000. Watch for the ballots and be sure to vote. Remember this is your organization and we need your input.

I hope all your fields are performing to your expectations and I look forward to seeing you at the Turfgrass & Greenscape EXPO and/or the national STMA conference.

## Ask the Expert

By Dr. John Stier

Department of Horticulture, University of Wisconsin-Madison

**Q: How will the dry autumn this year affect turf survival during the winter?**

**A:** The wording of the question is really a composite of the questions I've had this fall ranging from "Should I turn on the irrigation system again?" to "Will the *Poa annua* on my golf course survive the winter?" As you know we have seen relatively little rainfall across much of the state this autumn. Some areas such as the southeast also suffered from drought during the summer. The lack of moisture in some cases slowed turf recovery, as it is water in the plant which causes leaf expansion. Where water was adequate but not overly abundant, the turf can be expected to be hardier than normal as slightly dry conditions result in more "fluid" cell membranes and organs, plus higher carbohydrate levels because leaf growth was diminished due to lower water potential. The carbohydrates are used for respiration during the winter and for initiating new leaf tissue

in the early spring. For the many turf managers who either kept on or restarted their irrigation systems this fall, the extra work should prove beneficial. This is because many of those situations were on sand based soils which don't hold water well and are prone to winter desiccation, especially if there is a lack of snow or other protective cover. Plants that have an extensive deep root system going into winter should be fine. Plants that don't have a good root system, perhaps *Poa annua* in a dry site, may not survive the winter due to desiccation. Since turf roots will continue growing until the soil freezes (although at a slow rate), such turf will benefit from an irrigation cycle or precipitation before the soil freezes.

**Q: Do you have any information on the new Kentucky bluegrass varieties, which are capable of being mowed at low heights?**

**A:** Recently a number of new Kentucky bluegrass cultivars have been

released which are aggressive and capable of being mowed as low as 1/2 inch. These varieties should perform reasonably well for fairways, tees, and medium to high input athletic fields. Some of the newest varieties include Absolute, Award, Blue Chip, Blue Moon, Fairfax, NuGlade, Rambo, Rugby II, and Total Eclipse. Early users of these varieties have commented on their slow establishment (compared to creeping bentgrass) but have been pleased with their performance. I have been quite impressed with the variety trials I have seen. Current National Turfgrass Evaluation Program (NTEP) data show several "older" varieties perform similarly well at 0.5 to 1.0 inch mowing heights: America, Limousine, and Princeton 105. In order to keep the turf dense and actively growing, these cultivars will require adequate fertility, irrigation, and consistent mowing (e.g., two to three day intervals).

# Challenge in the Rockies

By Eric D. Counselman  
Badger Turf & Grounds Club President

Irrigation systems have been used for hundreds of years to enhance the quality of a wide variety of crops. Even with the many advancements in irrigation systems made over the years, none of them can overcome the power of shifting soil. The effect of shifting soil intensifies the maintenance requirements of an irrigation system. An irrigation system failure at the wrong time can cause plant stress, and quite possibly death.

This past summer I had the opportunity to intern at a premier golf course in the Colorado Rockies. The Broadmoor Resort and Golf Club in Colorado Springs is a high maintenance golf course that has had to deal with shifting soil, or land movements, on a day to day basis. The land movements often disrupt the irrigation system and prevent the grass from getting water. The need for irrigation water on grass grown at 1/8 inch is essential. In the heat of the summer, one day without irrigation can cost thousands of dollars in damage to a golf course. These



This land shift made the cart path and surrounding area slump.

The turf was resodded after a land shift just to be reshifted again.



Irrigation technician Pat Brey stands next to another shift.



A chain saw was used to repair this 12-inch mainline after a land shift.

damages are sometimes inevitable when dealing with the powers of Mother Nature at The Broadmoor.

The land movement at The Broadmoor is defined as being somewhere between a seasonal creep and a small landslide. A seasonal creep is the movement within the depth of soil affected by seasonal changes in soil moisture and/or soil temperature, and a landslide is simply a land slippage of material along recognizably smooth surfaces. When an irrigation system is pulled and twisted by land movements, the result is broken pipes, malfunctioning heads, and sheered wires. These problems leave the golf course superintendent scrambling to repair the problem in the midst of other daily function and chores.

Soil type, soil moisture, type of bedrock, and the degree of the slope can influence the instability of an area of land. As a soil saturates, two things happen: the pore-water

pressures increase such that the down slope driving force exceeds the resisting strength of the soil, and secondly, the extra weight of the water in the soil increases the driving force. Many land movements are associated with layers of clay in the soil profile. Clay has a plate-like shape and swells when saturated with water. A clay layer over smooth bedrock causes a very slippery surface. The land movement at The Broadmoor is noticeably associated with the amount of rainfall; the land will slip more as the soil moisture increases.

The Broadmoor staff tries to combat the land movement with a variety of controls. Managers try to drain the soil as quickly and efficiently as they can. They have also looked into the idea of inserting steel 'I-beams' down through the soil and into the bedrock, only to realize that the cost is prohibitive. One solution that they have found to help, is the use of Driscopipe.

Driscopipe is a very durable pipe that is used by petroleum companies to transport petroleum products. Driscopipe is able to expand, twist and stretch without breaking. The Driscopipe is able to withstand substantially more abuse than regular PVC, however it cannot stop the land movement, and irrigation heads are still disrupted.

Head Superintendent Fred Dickman (CGCS), Superintendent Rob McKinney, and Irrigation Technicians John Green and Pat Brey continually search for better solutions to help reduce the damage caused by the land movements. I feel fortunate to have experience some of the challenges presented to the managers of The Broadmoor. Learning to innovate and keep an irrigation system running under any circumstances will help me become a better superintendent in the future.

# Turfgrass and Greenscape EXPO for the Best in Education

By Tom Schwab

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

Ring in the New Millennium with some of the best turfgrass education available in the Midwest. The Wisconsin Turfgrass and Greenscape EXPO is just weeks away. Registration materials were sent out in early December and are also included in this newsletter. The dates are January 11th and 12th, 2000. The site will again be the Madison Marriott West because of the first class accommodations that receive positive remarks from attendees year after year. It's easy to find just south of Middleton on highway 12/18.

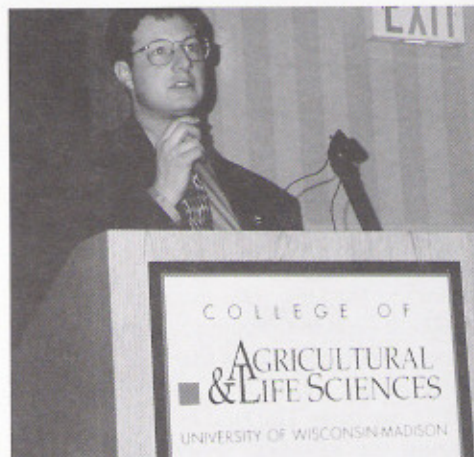
This comprehensive turfgrass educational conference has information for anyone that works with golf turf, athletic fields, sod production, landscaping, grounds maintenance, and lawn care. There are specific talks for your particular turf interest and others that are more general in scope. There are often so many good talks that it is hard to decide which ones to attend. The presentations are divided between three categories - Golf, Lawn and Landscape, and Grounds and Sports Turf. You may attend any of the talks that are of interest to you whether they are in your profession or not.

EXPO talks are not the only form of education at the conference. Many people come for the trade show, which annually boasts over sixty exhibits. Any equipment, product, service, supply or advice that you would ever need for your business is on display at this massive show. The exhibitors have a vast array of knowledge to help you do your jobs better and more efficiently.

You may also become more involved in your association at EXPO. The Wisconsin Turfgrass Association, the Wisconsin Sod Producers Association, and the Wisconsin Sports Turf Managers Association conduct annual meetings here. You can also meet with turfgrass researchers from Madison and other universities along with other experts from around the country to ask questions about their specialties or to see if they can tailor research for your specific needs. Meeting with friends, both old and new, is another enjoyable part of EXPO. Everyone is more relaxed at this time of year, and sharing of ideas between friends

and making new friends always take place. This is especially done during lunch breaks and during Wisconsinizing. Wisconsinizing involves hors d'oeuvres and drinks in the trade show area from 4:30 to 6:00 on the first day of the show.

I hope you can join your peers and start the New Year out right by attending EXPO 2000 on January 11th and 12th. Contact Audra Anderson, WTA administrative secretary, by phone 608-845-6536, fax 608-845-8162, or email [ajander2@facstaff.wisc.edu](mailto:ajander2@facstaff.wisc.edu) if you have any questions about the enclosed registration form and schedule. There will be new and valuable information for you to explore, whether this is your first Wisconsin Turfgrass and Greenscape EXPO or you've attended all sixteen.



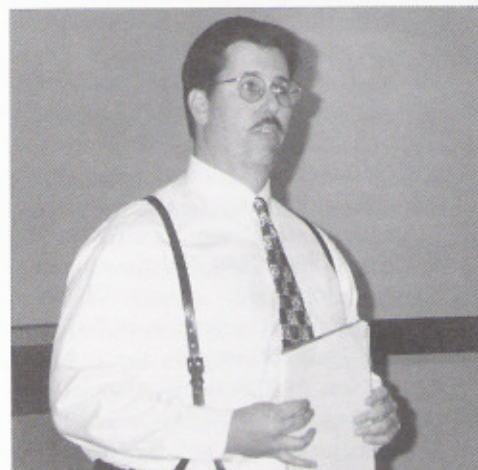
U.W.-Madison professors will be presenting their 1999 research data to help you make management decisions for 2000.



Get answers to your technical questions during the trade show.



Audra Anderson, WTA administrative secretary, will make your registration run smoothly.



Dave Mellor gave attention-grabbing information about managing Miller Park at EXPO 99. This year's roster of speakers will be equally as enlightening.

# 1999 In Review: The Bug Perspective

By Dr. R. Chris Williamson

University of Wisconsin-Madison, Department of Entomology

Many people have been telling me that there weren't any bug problems in Wisconsin until I arrived. That may be the case. Nonetheless during the 1999 growing season I observed several turfgrass insect "pests." These pests included white grubs (i.e., both Japanese beetle, May/June beetle, and black turfgrass ataenius grubs), black cutworms, sod webworms, and even a few reported cases of chinch bugs in home lawns.

As for the white grubs, as a whole, Japanese beetles dominated the scene where white grubs were present. There were heavy infestations of Japanese beetle grubs in Rock, Walworth, and Eau Claire counties. The populations that I observed were the highest that I have ever seen in my career in the turfgrass industry. Why is this? Japanese beetles are relatively new to Wisconsin (< 3 years). Typically when an insect "pest" is initially introduced into an area, its populations tend to escalate or surge above an arbitrary threshold or level. After a period of time (i.e., 3 - 5 years), their populations begin to decline as natural predators help control or maintain balance. Consequently, the counties that currently have Japanese beetles appear to be in a "transitional stage" whereby the grub populations are at or near their highest or peak. However, in other locations in the state where the beetles have not yet invaded, it is merely a matter of time before they show their presence. Thus, I predict that Japanese beetle infestations will only increase across the state over the next 3 - 5 years. As they begin to move into other un-infested areas, it is important to continue to observe or monitor the turf for the presence of grubs by "pulling back" and looking in the root zone for the grubs. Also, continue to monitor ornamental plant materials for adult Japanese beetles. The adults tend to aggregate in direct sunlight on the upper canopy of susceptible plant material such as lindens, roses, grapes, sugar maples, and even geraniums.

Black turfgrass ataenius (BTA) is another white grub species that caused a few superintendents problems this year. BTA is somewhat different from Japanese beetles and May/June beetles

in that it has two generations per year whereby most white grub species have only one generation per year. However, control strategies for most white grub species is similar. Basically, there are two options: preventative or curative control. Preventative control is analogous with an insurance policy, whereby the control product is applied before the actual pest is observed, thus protecting the turf before damage occurs. Curative control is a "reactive" approach whereby a control agent is applied after the pest is present or has caused damage. There are control products available for each approach, however there are specific products that perform better preventatively and curatively, respectively. For more detailed information and control recommendations, see the November/December 1999 issue of *The Grass Roots*.

Black cutworms were a problem for many golf course superintendents in 1999. Several superintendents reported having two damaging populations (i.e., one in late-June and another in early-mid August). Although this turfgrass insect pest is relatively easy to control with insecticides, understanding their biology or behavior can reduce inputs (i.e., control product and labor). Simply making treatment applications late in the afternoon and withholding irrigation for 24 hours can both increase the control and minimize the exposure to golfers and employees. Also, it is important to discard clippings from the putting greens a minimum of 30 feet from the putting green surface to minimize any black cutworm larvae from moving back onto the greens. In addition, it is advantageous to treat the peripheral area (25 - 30 feet) surrounding putting greens with the control product that the green is treated with to further minimize the reservoir populations of black cutworms.

There were only a few isolated reports of sod webworms on golf courses on home lawns this year. However, many people mistake sod webworms for black cutworms. Nonetheless, although the feeding damage exhibited by sod webworms is similar in some ways to black cutworms, the behavior is

quite different. Sod webworm adults randomly drop their eggs similarly to what a military plane would do when dropping bombs. The larvae are considerably smaller than black cutworm larvae and, unlike black cutworms, they will feed during the daylight. As for their control, use the same approach as for black cutworms.

Chinch bugs are rarely a problem on golf course turf. The reason is that chinch bugs prefer dry or drought stressed turf, and golf courses are typically irrigated. Thus, they are not usually problems. However, in home lawns or any turf that is not irrigated or that is under drought type conditions, chinch bugs can be a problem. Because chinch bugs simply suck the plant juices out of the turfgrass plant, it is quite difficult to differentiate between drought damage and chinch bug damage. One of the best ways to distinguish between the two is to use the "flotation" sampling method. Simply cut the bottom out of a coffee can, insert it into the turf, add water into the can until it is approximately 2/3's full. Next, start looking for chinch bugs as they begin floating to the surface (i.e., if they are present).

In looking back on the 1999 growing season, my perspective is that it was another typical growing season with many of the same pest problems. It is my goal and mission to help all turfgrass managers minimize pest problems by developing control strategies that will reduce pesticide input while maintaining pest populations.

## *The Wisconsin Turfgrass News*

is the official publication of the Wisconsin Turfgrass Association, edited by Tom Schwab. O. J. Noer Turfgrass Research and Education Facility

# Do It Right the First Time!

By Jeffrey S. Gregos

TDDL, Department of Plant Pathology  
University of Wisconsin-Madison

For three years now the members of the Turf Disease Diagnostic Lab (TDDL) have been investigating the effects that establishment method and annual core aeration have on the disease development of Kentucky bluegrass (KBG) turfs. The experiment contains 14 different turfgrass stands. Most of these are 100% KBG blends with the others being KBG in a mixture with perennial ryegrass and/or fine fescue. Thirteen of the turf stands were established from sod and one was established from seed. Each of these were planted on both tilled and untilled soil.

Prior to the establishment of this experiment the top four inches of topsoil was removed. The subsurface was compacted to simulate new construction and then the topsoil that had been removed was shredded and returned to the site.

Each of the above turfgrass stands was planted on both tilled and untilled soil to make 28 different treatments (14 on tilled and 14 on untilled soil). The treatments were split again with half being aerified and half not being aerified. Throughout the study several measurements and ratings have been taken: color, quality, thatch thickness, average and maximum rooting depth, and disease incidence.

Over the first two years of the study only leaf spot or melting-out had developed on the study and both turfgrass variety and aeration had an effect on the development of this disease.

Interestingly, aeration had a significant effect on this disease which originates in the foliage. A theory has been developed by the researcher and should be explored in the future. That belief is that you are burying the spores from the previous outbreak of the disease by leaving the cores on the surface after aeration. This reduces the amount of inoculum present to initiate new incidences of the disease. As you may or may not know, the spores from this disease can be found in the thatch layer and on the soil surface during non-favorable weather conditions. During rainy weather or an irrigation event these spores are splashed up from the ground to the leaf surface where they are able to germinate and incite disease. But this part of the life cycle is unable to occur if the spores are buried. Thus the disease is avoided.

Other diseases of importance in KBG stands are necrotic ring spot (NRS) and summer patch. NRS has not developed in the study so far. We did have summer patch develop this year on several treatments. Data showed that summer patch symptoms were more prevalent in the treatments that were not aerified and also not tilled. This study supports what has also been proven in other studies, that aeration can greatly reduce the symptoms of patch diseases. Additionally, this study has shown that establishment methods can help reduce these patch diseases, with the tilled plots having significantly fewer symptoms.

Not only has this study shown that you can reduce disease with establishment methods and an annual aeration, it has also shown that aeration has an effect on rooting depth. With an aeration in late summer it was found that spring rooting depths could be increased. This can be of vital importance during summer stress periods. Additionally, shallow rooting depth can amplify the symptoms of the patch diseases and decrease drought tolerance.

One thing that was not reduced by establishment method or aeration was thatch thickness. Turf quality and color ratings showed some differences though. These differences were usually the result of the individual blends or because of weeds or disease presence. Because this trial is being treated as a home lawn with consumer brand weed-and-feed products being used, many of the weeds are not being controlled as well as if commercial products were used. Crabgrass became a problem for the first time this year also. This will require the addition of a pre-emergent herbicide next year.

So far this study has proven the importance of establishment methods and aeration on the prevention of disease and improvement of rooting in Kentucky bluegrass turfs. The following years should provide us with more data to support the current findings.



# Happy Holidays!

# CALENDAR OF EVENTS

Jan 11	WNA Winter Workshop	Radisson Inn, Madison West
<b>Jan 11,12</b>	<b>Turfgrass and Greenscape EXPO 2000</b>	<b>Marriott Madison West</b>
Jan 12-16	STMA National Convention	Saint Louis
Jan 18-20	Wisconsin Fertilizer Aglime and Pest Conference	Dane County Expo Center
Jan 19-21	Mid-Am Trade Show	Navy Pier, Chicago
Jan 26,27	WLF Garden Center Symposium	Country Inn, Waukesha
Feb 1	Spring Valley Turf Fair	Country Inn, Pewaukee
Feb 10-12	TPI Midwinter Conference & Exposition	San Antonio, TX
Feb 16-20	GCSAA Conference and Show	New Orleans
Feb 21-25	School of Turfgrass Management	West Madison Ag Research Station
Feb 27-29	WLF State Convention	Ostoff Resort, Elkhart Lake
March 1	WI Turf Equip Sports/Grounds Seminar	Sheraton, Madison
Feb 29	WI Turf Equip Sports/Grounds Seminar	Days Inn/ La Crosse
March 2	WI Turf Equip Sports/Grounds Seminar	Holiday Inn/ Waukesha
March 2	Pesticide Applicator Training (Turf & Landscape)	Milwaukee
March 6	WGCSA Business & Education Meeting	Marriott, Fond du Lac
March 12,13	NGLGCSA Annual Turf Symposium	Midway Motor Lodge, Wausau
March 13-17	Regional Turfgrass EXPOs	Milwaukee, Fond du Lac, Eau Claire & tentatively Racine
March 27	Pesticide Applicator Training (Turf & Landscape)	Arlington
March 29	Pesticide Applicator Training (Turf & Landscape)	Green Bay
March 30	Pesticide Applicator Training (Turf & Landscape)	Chippewa Falls
March 31	Pesticide Applicator Training (Turf & Landscape)	Milwaukee
March 7,8,9	Reinders Service School	Olympia Resort, Oconomowoc
<b>Aug 8</b>	<b>WTA Summer Field Day</b>	<b>O.J. Noer Facility, Verona</b>

*WTA Members — If you have an important date you'd like to share with other members, call 608-845-6895 or Fax 608-845-8162 and let us include it in the next calendar.*

## Abbreviations and Telephone Numbers

GCSAA	Golf Course Superintendents Association of America .....	800-472-7878
Mid-Am	Mid-Am Trade Show 1999 .....	847-526-2010
NGLGCSA	Northern Great Lakes Golf Course Superintendents Association.....	800-785-3301 ext. 4013
PAT	Pesticide Applicator Training.....	608-263-6358
Reinders Service School .....		800-782-3300
School of Turfgrass Management and Regional Turf EXPOs.....		608-262-1624
Spring Valley Turf Fair .....		800-635-2123
STMA	Sports Turf Manager Association .....	800-323-3875
TPI	Turf Producer International .....	800-405-8873
WGCSA	Wisconsin Golf Course Superintendents Association .....	414-786-4303
Wisconsin Turf Equipment Sports Field/Grounds Management Seminar .....		800-443-1840
WLF	Wisconsin Landscape Federation .....	414-529-4705
WNA	Wisconsin Nursery Association .....	414-529-4705
WSTMA	Wisconsin Sports Turf Manager Association.....	608-845-6536
WTA	Wisconsin Turfgrass Association.....	608-845-6536

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