2007 WGCSA SPRING EDUCATIONAL AND BUSINESS MEETING

By Jim VanHerwynen, *Golf Course Superintendent, South Hills Golf and Country Club*

The Wisconsin Golf Course Superintendents Association held its annual Spring Business Meeting at the Ramada Plaza Hotel in Fond du Lac on Monday March 5, 2007. The event drew 93 registrants, including speakers, of which 87 attended. This was an outstanding turnout for the event.

The day began with Dr. Doug Soldat from the UW-Madison updating on the NR 151 rule. He reminded all of us that in less than one year this will take effect for all turf managers who maintain more than five acres of turf, and we should all understand the rule and be prepared. NR 151 is an administrative rule written by the Department of Natural Resources (DNR). The purpose of the rule is to protect water quality by reducing nutrient and sediment losses from agricultural areas, municipalities, large turfgrass areas, and transportation facilities. NR 151 states that by March 10, 2008 all turfgrass areas five acres or larger must be fertilized according to a site-specific nutrient application schedule based on appropriate soil tests. If your turfgrass area is less than five acres, the rule does not apply to you. Sod farms are also exempt from this rule. Turf managers who take care of more than five acres, which is almost all of us, will have to have a nutrient management plan at your facility. If you attended the meeting there is obviously much to discuss and questions that you may have regarding NR 151 and Dr. Soldat has graciously invited anyone with questions to contact him at (608) 263-3631 or email him at djsoldat@wisc.edu. He did inform me that he along with Dr. John Stier and Dr. Jason Kruse, Ph.D. UW-Extension agent for Winnebago County, will host training sessions within the next year with dates to be determined at a later date, so please stay tuned.

After a short break we were enlightened by a second speaker, Rusty Kapela, from the National Weather Service out of Milwaukee/Sullivan, which is the State of Wisconsin headquarters. Rusty, a member of NOAA, the National Oceanic and Atmospheric Administration, titled his talk Basic Concepts of Severe Weather/Storm Spotting. He showed numerous slides and some short videos of actual shelf clouds, wall clouds, funnel clouds, tornadoes and SLC'S (scary looking clouds). The shelf cloud as he stated is the leading edge of a storm and can be very large (miles in length). The wall clouds are much smaller and compact and are on the backside of the storm. A funnel cloud must have rotation to be considered a funnel cloud; otherwise, it is just a SLC. Tornadoes from a rotating funnel cloud are on the backside of a severe storm, hence, the calm before the storm. In other words if a severe storm with high winds and heavy rain has just passed it may not be over yet! SLC'S, he added, can be associated with shelf clouds and are usually no threat other than the fact that you most likely are going to experience a storm, which, may or may not be severe. He pointed out that all facilities should have a predetermined location for protection of a severe storm and we should all have a NOAA weather radio. He asked a very interesting question: if we put so much emphasis on having smoke detectors in our homes why would you not have a weather radio if you are responsible for the safety of your employees as well as the golfers on the course? He added, the reason we need trained spotters on the ground during severe weather is quite simply because Doppler radar has a horizontal beam that does not follow the curvature of the earth and it may miss a severe storm miles away from the radar source. How many of us have thought of that? Rusty did provide handouts at the meeting which had his email: rusty.kapela@noaa.gov and also the Milwaukee/Sullivan web site address: www.crh.noaa.gov/mkx or www.weather.gov/milwaukee if you have any questions or are interested in numerous links to all weather related topics.

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After lunch the association had its annual board of directors meeting. President Mike Lyons presented the agenda for the meeting and proceeded to announce the resignation of board members Randy Dupont and Eric Jason and thanked them for their commitment to the board. David Swift of Whistling Straits has the appointment of membership and directory committee, while Jim VanHerwynen has the appointment of golf and arrangements for the next two years. After review and approval of the reports from the officers, David Swift announced the 25 and 50 year, plaque recipients. They are as follows: 25 year recipients included in alphabetical order are Chad Ball, Conway Farms GC; Mike Drugan, Drugan's Castle Mound GC; Jon Hegge, Evansville GC; Ric Lange; Ray Shane, City of Madison and Gary Tanko, Sentry World GC. The 50 year recipients included: Ron Grunewald-retired and Michael Lees, Koshkonong Mounds CC. These individuals have proven that this is not only a fantastic career but also a great association to belong to and our hats are off to all of them - congratulations!

Jim VanHerwynen brought everyone up to speed on the upcoming calendar of events for the 2007 meeting schedule. He did advise everyone that if you do register for an event and do not show up you or your club will be billed for that event due to the fact the WGCSA does have to pick up the tab for these individuals because of the arrangements made with the hosting club. This year seems to be an exciting year indeed, and if the attendance at the spring business meeting is an indicator of the year to come you may be inclined to sign up early to reserve your spot.

Matt Schmitz, director of government regulations and environmental committee and also chair on the by-laws committee, spoke briefly on the Day on The Hill, which was held in Madison on February 14, 2007. He noted that attendance was down a little from two years ago but it was a very successful day to voice the opinion of our industry. He invited everyone to participate the next time, which the date is yet to be determined. Matt then brought up the by – laws change. The GCSAA has changed the terminology of their "Class B" Superintendent classification from "Class B" to "Superintendent Member". As a chapter member of the GCSAA we need to make the terminology change as well. Currently we classify any golf course superintendent with less than (3) years experience and currently serving in such a capacity as a "Class B" Superintendent. Upon approval, which was accomplished, all references of "Class B" in the WGCSA by-laws and any related material would be changed to "Superintendent Member" in order to conform with the GCSAA change.

Rod Johnson spoke briefly on the Wee One Foundation. The foundation, a tribute to Wayne Otto, started a few years ago as an idea to aid families in the golf course industry who face financial burdens with respect to medical needs. Since its inception the foundation has raised and gifted over $110,000 to nine families in three states. As Rod pointed out one never knows if you or someone you know in the industry may need assistance and it is comforting to know there is an increasing number of individuals who share the commitment to help others in a time of need and we should all consider becoming a part of this wonderful foundation. Rod did have flyers at the spring business meeting but if you would like more information it can be obtained at www.weeone.org.

As you can clearly tell the spring business meeting was well attended, and an educational experience for all. I hope all of you consider participating in the wonderful events planned in 2007. A calendar of events is included in this issue of *The Grass Roots* and also can be viewed at the association website at www.wgcsa.com.

Timing of Fungicide Applications for Root-Infecting Fungi

By Paul Koch, *Turfgrass Diagnostic Lab, Department of Plant Pathology University of Wisconsin-Madison*

For anyone who attended the 2006 Wisconsin Golf Turf Symposium in Kohler, one overarching theme should have been evident throughout every person's presentation: turfgrass roots are relatively poorly understood. This is evident whether we're talking about root physiology, fertility, or diseases. For varying reasons, much more research has gone into the above ground aspects of turf than the below ground, and nowhere is this more evident than with diseases.

Until as recently as 20 years ago, necrotic ring spot (*Ophiosphaerella korrae*) and summer patch (*Magnaporthe korrae*) were grouped in with other pathogens in a disease known as *Fusarium* blight (Davis and Dernoeden, 1991). We now know that each of those pathogens is in fact its own disease, causing similar symptoms on the same hosts but in different environmental conditions. Take-all patch (*Gaeumannomyces graminis var avenae*) was first reported as a patch disease of turfgrass in 1931 in Holland, and was at the time referred to as Ophiobolus patch because the current classification of the causal agent was *Ophiobolus graminis*. It was re-classified as G. graminis in 1952, but was not commonly referred to as take-all patch until 1981 (Smiley 1993). As you can see, compared to many of the leaf and crown-infecting fungi, the root-infecting fungi have been recognized as pathogens for a relatively brief time.

Due to this relatively brief period of recognition, scientific research into the nature and control of root diseases has been lacking. Very valuable research has been and is currently being conducted with regard to root diseases, but to date our level of understanding lags far behind that of many above-ground diseases. This lack of understanding of root diseases has left turfgrass pathologists poorly equipped to give recommendations to turfgrass managers on how best to control these pathogens. With ever-increasing demands being put on the turf, root mass has continued to decrease and smaller levels of root infection have caused symptoms to the above-ground portion of the plant.

The obvious answer to many of the root disease infections is to alter cultural practices to optimize root health. This would allow the plant to withstand a minor to sometimes moderate infection because there are a greater number of roots to offset those colonized by the pathogen. Those practices include proper mowing height, proper irrigation, excellent surface and subsurface drainage, proper fertility, pH kept below 6.5, and limited thatch development (Couch, 1995). But golfer demands, as well as environmental conditions difficult to alter (e.g. wet soils), sometimes make it impossible to fully manage these diseases with cultural practices alone.

In those cases, it may be beneficial to supplement proper cultural practices with a fungicide program to limit development of the pathogen. But the timing of these applications are critical to success, because once you see symptoms of the root-infecting pathogens it is often too late to implement a fungicide program.

The take-all patch fungus actively attacks creeping bentgrass roots when the root zone is moist and soil temperatures in the top two inches are between 50 and 65°F. Once soil temperatures get above 65°F or

below 50°F, the fungus begins to go into dormancy and does not cause any further infection, but also is not susceptible to fungicide applications. Soil temperatures in the top two inches of the soil profile correspond well with daily air temperatures, meaning that when air temperatures are consistently in the 55-65°F it can be assumed that soil temperatures are close to that range as well.

According to the National Weather Service website, average daily high temperatures on the first of April in Madison are 50°F and on April 30th they are 63°. The average daily high temperature on October 1st then falls back to 66°F, with the average on October 31st being 52°F. Using this data, while assuming an average spring and fall and also leaving a small amount of lag time for the soil temperatures to warm to that of the air temperatures, fungicide applications spaced three to four weeks apart targeting take-all patch could be made in April or early May and again in October (see Table 1). These fungicides should be watered in to locate the fungicide near the point of infection, which usually requires approximately 1/4 inch of water. This by no means guarantees that you will not see any take-all patch infections, since fungicide efficacy against root diseases has many variables that can affect its performance.

Disease	Active Infection Period	Active Soil Infection Temperatures	Symptoms Expressed	Fungicide Application Timing in Spring	Fungicide Application Timing in Fall
Take-all Patch	Spring and Fall	50-65°F	Summer	April/May	Sept/Oct
Necrotic Ring Spot	Spring and Fall	50-65°F	Summer	April/May	Sept/Oct
Summer Patch	Summer	65°F and up	Summer	May	None

Table 1: Summary of active infection periods for root-infecting diseases and fungicide application timing. Timing is based on weather data for Madison, WI.

Figure 1: Weeks of slow to moderate root colonization likely preceded this outbreak of summer patch on Kentucky bluegrass.

Necrotic ring spot is similar in many ways to take-all patch, with the main difference being the host species: take-all patch attacks mainly creeping bentgrass and necrotic ring spot attacks mainly bluegrasses and fescues. But the timing of infection is nearly exactly the same as take-all patch, with active infection happening in the spring and fall of the year and symptoms becoming present in the hotter and drier conditions of summer. For this reason, the same dates listed above for take-all patch can be used as a starting point for necrotic ring spot fungicide applications.

Summer patch, in contrast to necrotic ring spot and take-all patch, does not become active until soil temperatures reach 65°F and is most active on annual and Kentucky bluegrass when soil temperatures reach 82-86°F (Couch, 1995). In cases of severe summer patch outbreaks, there is often a small but steady infection of summer patch throughout the late spring and early summer that leads to a symptom-causing explosion of fungal growth when conditions turn very hot and humid later in the summer (Figure 1). For this reason, it is recommended that areas susceptible to summer patch infection be treated preventatively with two fungicide applications 3-4 weeks apart once soil temperatures reach 60°F. This should provide ample root protection for the majority of the summer, but a third application may be necessary if hot and humid conditions persist into the fall. Using the National Weather Service data from above for Madison, thought should be given to the initial preventative application in southern Wisconsin in early May.

If comparatively little is known about the intricate biology of root-infecting fungi, even less is known about which fungicides show efficacy against them. What works well in one university research trial may not work well in another, and what works for one golf course superintendent has not always worked for his or her neighbor. The reason behind this variation likely lies with varying environmental conditions such as pH, antagonistic microbial populations, and soil composition. The Turfgrass Diagnostic Lab recommends any of the following for controlling root-infecting diseases: azoxystrobin, pyraclostrobin, myclobutanil, propiconazole, and thiophanate-methyl.

All of the fungicides recommended above should be applied at full label rate and watered lightly into the root zone to locate the fungicide near the point of infection. Since all these fungicides are acropetal penetrants (with the exception of pyraclostrobin, which is a localized penetrant), they will be taken in through the roots and transported upwards in the plant and provide at least some protection to the turfgrass leaf tissue.

Applying fungicides will not guarantee you a summer free of root diseases. But proper fungicide application timing, coupled with proper cultural practices, will at least give you a fighting chance.

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New EXPO Format Is a Hit

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

The new year brought a different format to the Wisconsin Turfgrass and Greenscape EXPO, which was welcomed by attendees and trade show exhibitors alike. The biggest change was seen at the trade show with booths going to table top displays only. In past years, the trade show included mowers, sprayers, tractors and every other piece of iron you could imagine. Everyone agreed that more business, networking, and learning took place with the new table top format. The educational sections likewise benefited by being conveniently located adjacent to the trade show, thus no long walks were made between the trade show and talks.

The trade show/networking room was packed during the opening session.

All the breakout session rooms were likewise full.

The education and roster of speakers were excellent, as in previous years. Two educational tracks were offered, one for golf turf education and the other for sports and landscape turf. Speakers included Dr. John Sorochan from the University of Tennessee, and Dr. Lane Tredway from the University of North Carolina who presented information on rolling putting greens, managing sports turf wear, and use of new fungicides for summer turf stress and disease control. Mike Andresen and Abby McNeal, president and vice-president of the national Sports Turf Managers Association, gave informative presentations in the sports turf section.

More excellent presenters shared an additional wealth of information with attendees. Jason Dettman-Kruse from UW Extension and Doug DeVries from Reid Municipal Golf Course gave a progress report on the new DNR NR151 nonpoint source pollution regulations. Drs. Richard Wolkowski and Doug Soldat, from the UW-Madison, talked about using compost and biosolids in turf management. Doug also presented the latest developments in turfgrass fertility.

Paul Koch and Eric Koeritz from the Turf Diagnostics Lab and Department of Horticulture gave updates on their latest research at the UW-Madison, as did professors Stier, Williamson, and Kussow. Bob Vavrek from the USGA gave an informative 2006 review of golf turf management in the upper Midwest, and Melissa Gugliotti from Syngenta informed everyone how best to manage weeds and other problems in small ponds. Adrian Barta and Jane Cummings from WDATCP and DNR talked about Wisconsin's response to the imminent emerald ash borer crisis. Lukas Dant from Syngenta talked about using sprayer nozzles to maximize pesticide performance. To finish off the education, Mike Maddox from the UW Extension presented ideas to manage woody plant stresses in the landscape.

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