

season has tremendous implications, especially for energy budgets and fertilizer requirements. Howieson and Christians (2008) recently showed that fructan content (the major carbohydrate in bentgrass) of mowed greens was roughly half compared to rolled or non-mowed greens. This occurred because the mowed grass used the fructan to re-generate new leaves. Also, the faster growing grass will have more clippings removed. Over a single season, you might remove 3 lbs N per thousand square feet from a 0.125" putting green, but only 2 lbs from an area mown at 0.250".

In conclusion, I encourage you to think about ways to decrease putting green growth rate to conserve the plants energy reserves this season. Mow less, roll more. Use plant growth regulators on a regular and frequent basis (our growing degree system can help greatly). Raise the mowing height as high as possible. Do you have a standard to keep track of how fast your greens are growing? One bucket? Two buckets? This might be a good way to gauge how a management practice is affecting the growth of the greens, or keep track of the fluctuations over the season. Based on the numbers shown in Fig. 1, raising your mowing height from 0.120" to 0.140" will lead to a decrease in clippings of almost 0.1 g/m², similar to the effect of an application of Primo Maxx at the labeled rate -- food for thought. Good luck this season, and I hope to see you at Field Day on July 27!

Reference:

Howieson, M.J. And N.E. Christians. 2008. Carbohydrate metabolism and efficiency of photosystem II in mown creeping bentgrass (*Agrostis stolonifera* L.) HortScience. 43:525-528. 🌱

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Spring fertilization varies greatly on a number of factors. Cultural practices performed, soil amendments made, irrigation and drainage upgrades, fertilizers applied, and what happened last fall plays a significant role with this season's success. However, having a sound fertility program will provide you with your best chance of success for the upcoming season.

Typically, spring applications are applied after the early flush of shoot growth has occurred, but predicting spring weather can be a challenge when it comes to soil and air temperature, and precipitation. That's why choosing a fertilizer that performs in cool climates is so vital.



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Although fine-tuning a spring fertilization program varies on many factors, its importance will be felt all summer long and even into the fall. The benefit of using an all-weather, long-lasting performer such as UMAXX provides immediate benefits, as well as a positive long-term impact. UMAXX gives the freedom to apply as a nitrogen component in a blend or part of a soluble fertilizer program. UMAXX offers consistent performance regardless of temperature or application type.

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State Amateur Visits The Bull at Pinehurst Farms

By **David Brandenburg**, Golf Course Manager, Rolling Meadows Golf Course

The Wisconsin State Golf Association's 109th Wisconsin State Amateur will be held at The Bull at Pinehurst Farms in July 19-22. The 18 hole Jack Nicklaus Signature Course features 5 sets of tees with the back tees playing 7,354 yards, par 72, slope 147 with a rating of 76.3. The course opened in August 2003 to much acclaim and has won numerous awards and honors over the layouts short history.

Course owner David Bachman Jr. provided more than 400 acres to Nicklaus to build the golf course on a property that included hardwoods, wetlands, the Onion River and a 40 foot ravine.

The property had been part of the Pinehurst Farms for over 150 years and had only two family owners in its history. The Bull's website highlights the farms history and prominence in breeding and raising award winning purebred Holstein Cattle. Each of the 18 holes is named after a bull bred by Pinehurst Farms.

Patrick Shaw has been the Golf Course Superintendent caring for the Nicklaus design since 2007. Pat grew up in Oconomowoc and got in the golf business at age 12 as a caddy at Oconomowoc Country Club. Pats brothers Dan, Charlie and Jim also started in the golf business at Oconomowoc. For two years he moved into the clubhouse before joining the golf course maintenance staff at age 15 working for Harvey Miller Oconomowoc's long time superintendent.

Pat has never worked outside the golf industry and worked for his brother Jim for seven years at Chenequa Country Club. Shaw considers those years some of the best and considers it a much simpler time for the game and business of golf.

Pat is used to high profile operations from his time as the superintendent at Tuckaway Country Club where he hosted the Greater Milwaukee Open from 1987-1993.

Pat and Debbie Shaw have been married for 25 years and have three children. Andy is 22 and just graduated from Loyola and will be attending Graduate School for psychology and physical therapy. Haley is 18 and just graduated from Cedarburg High School and will be attending Carroll University to study elementary education and business. Abbey is 16 and a junior at Cedarburg High School.

As an athletic family Pat offered one oddity as all three kids tore an ACL and Abbey tore two. So the family has had someone in rehab for what seems like 8



Hole 6, 193 yard par 3



Hole 9, 453 yard par 4

years! Debbie works as a Para-educator at Thorson Grade School.

When he is not working Pat enjoys time with the family whether it is watching an event or just sitting on the patio relaxing. He volunteers for the Cedarburg Soccer Club helping to maintain 27 acres of fields and

doing committee work. Last winter he started refereeing basketball after a 15 year break.

I asked Pat what challenges being the superintendent at the Bull offers. At 418 acres of varied terrain getting around The Bull can be a challenge for the staff as they try to perform maintenance. The layouts bunkering, steep slopes and the river provide an atmosphere for quite a bit of hand labor.

Pat stated the he Onion River has a mind of its own and brings its own challenges with 8 bridge crossings that create bottlenecks when trying to traverse the golf course.

Shaw enjoys the natural piece of property Nicklaus left as the course flows through wetlands, woods and natural areas along with the Onion River. He also enjoys working with the maintenance staff as they are hard working and fun to be around. Pat gives the staff the credit for the courses condition and states they make his job easier and more enjoyable. More than once on my visit Pat expressed golf course maintenance staffs make superintendents look good.

To enter the 72 hole stroke play State Amateur players need have a USGA index of 9.4 or under to qualify at one of 9 qualifying tournaments or be one of the approximately 36 exempt players based on past championships and amateur play. This year qualifying sites include District 1 - Maple Grove CC, West Salem and Wild Ridge GC, Eau Claire District 2 - Lake Arrowhead GC (Lakes), Nekoosa, District 3 - Rivermoor GC, Waterford, District 4 - Edelweiss Chalet CC, New Glarus, District 5 - Branch River CC Cato , District 6 - Deertrak GC, Oconomowoc, Wanaki GC, Menomonee Falls and Oakwood Park GC, Franklin. Players must qualify in the district of their home course unless providing a good reason why they cannot do so.

180 players make the field with a cut after 36 holes for the low 70 players and ties. 4 days of 18 hole play will challenge the states best players and award the true State Amateur Championship the Sinnissippi Cup. The Sinnissippi cup gets its name because the first

amateur in 1901 was played at the Sinnissippi Country Club which is now the Janesville Country Club.

Players not only compete for the Sinnissippi Cup but any WSGA member golf club with three qualifiers can compete for the Yule Cup. The Yule Cup is given to the winning three man team after the first 36 holes of play.

Past winners of the State Amateur include US Open Winner Andy North, and PGA Tour players Steve Stricker, JP Hayes and Mark Wilson. Last year at Merrill Hills Country Club in Waukesha, Tyler Obermueller who plays out of River Falls Golf Club in River Falls won by one shot with a 4 over par 288. Tyler won by one shot over Andrew Dekeuster, Meadowbrook CC, and Miles McConnell of Odana Hills.

Both the Wisconsin State Open and State Amateur are open for spectators at no charge. It is a great way to see some of the best golfers Wisconsin has to offer playing the best golf courses Wisconsin has to offer. I hope to see you there. 🌿

MEMBER 9 -

1. **What was your first vehicle?** 1964 Chevy - Biscayne (4 door - 3 speed on the column) It was passed down from my brothers.
2. **Favorite piece of golf course equipment?** Fairway mower, nothing better than putting on a pair of headphones and kicking back to mow grass for three or four hours.
3. **18 hole Handicap?** 14
4. **What is your current vehicle?** 2000 GMC Sierra with 226,000 miles.
5. **Favorite TV shows?** Two and a Half Men & Big Bang Theory, NCIS
6. **Favorite professional sports team?** Green Bay Packers - Is there any other professional team? Really we are in Wisconsin!
7. **Favorite main course meal?** A good roast and mashed potatoes. Keep the veggies.
8. **Pets?** Had a cat for 10 years (stray from Chenequa Country Club) and a yellow lab for 12 years. In our case the dog had it better than we did.
9. **Favorite thing about working in the golf industry?** Sunrise - getting out early in the mornings and seeing all the wildlife, sunrise and just the solitude of nature. Sure beats a concrete jungle.



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Imagine a Fungicide Program Without Chlorothalonil

By Dr. Jim Kerns, Department of Plant Pathology, University of Wisconsin - Madison

During this age of increasing regulations and governmental oversight, it is not difficult to imagine that chlorothalonil's fate is up in the air. Do not be alarmed the EPA has not banned chlorothalonil or even mentioned a ban, but eventually chlorothalonil may be more restricted or even removed from the market. What would your fungicide programs look like? Would the thresholds for disease change? You are probably wondering why I even make these statements and there are two reasons: chlorothalonil is a likely carcinogen (2) and chlorothalonil has a high environmental impact quotient field use rating (1). What do these two statements mean?

Likely a carcinogen means there is adequate data demonstrating carcinogenic potential in humans. However, it is not considered a probable carcinogen because there is either no human data demonstrating tumor development (just strong evidence in animals) or the chemical is associated with tumor development in humans (1). The environmental impact quotient (EIQ) is a method developed by the Cornell IMP program to measure the environmental impact of pesticides (2). Basically a value is calculated for each pesticide based on the toxicological, chemical and physical properties of pesticides. The equation incorporates data such as fish toxicity, dermal toxicity, soil half-life, soil loss potential and many other factors. If this is of interest to you, I encourage you to visit the following website for more information: <http://www.nysipm.cornell.edu/publications/eiq/>.

To determine a field use EIQ value, golf course superintendents would use the following equation: $EIQ \times \% \text{ active ingredient} \times \text{Rate}$. Although there are other chemicals on the list that have higher EIQ values, they may contain less active ingredient and/or have lower use rates (1). Therefore their field use EIQ value could be lower. Keep in mind that all this information is public and was originally developed for fruits and vegetables. Why do I mention that? In an article or two ago, I talked about exposure to pesticides and how golfer exposure is minimal. However, the turfgrass market does not drive pesticide sales. Thus if chlorothalonil is discontinued in traditional ag-markets, it will also be removed from the turfgrass market. While I do think this is a long way off (partly because fungicide resistance is so widespread in fruit crops), it is still something to keep in the back of your mind.

This is something I frequently think about, especially when I consider a research project. Our goal is to gather enough information about the diseases affecting turfgrasses in Wisconsin, so if chemicals are removed or rendered ineffective we have information to develop new control strategies. This thought is the reason why we are developing a dollar spot forecasting model, examining the basic biology of the dollar spot pathosystem, investigating the relationship between temperatures and appressorial development in the anthracnose pathogen and evaluating alternative timings/programs of fungicide applications for many turf diseases.

Since a lot of the research we do is supported by the golf course superintendents of Wisconsin, I thought this would a good opportunity to justify and explain the research projects we are doing.

Dollar spot Forecasting:

Many of you have heard or read about our dollar spot forecasting model. To summarize briefly, we are correlating environmental conditions to dollar spot development in the field. We used statistical methods to develop an equation that predicts the likelihood of dollar spot development and using the equation helps forecast fungicide applications. Understandably dollar spot is not a major problem for most golf course superintendents because fungicides applied on a cal-

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endar basis have been very successful thus far. However, imagine if chlorothalonil was not an option, what would you use and when? Chlorothalonil is extremely effective especially when tank mixed with a systemic fungicide, but losing that old buddy may make dollar spot control more difficult.

Not only does the dollar spot model help schedule fungicide applications more accurately, it provides insight into a mysterious pathosystem. While the model promises to answer some key epidemiological questions about the pathosystem, it also opened Pandora's box on the many other questions that require attention. I know you are probably thinking, who cares—just tell me what to do to control the disease. Without the fundamental knowledge of the disease cycle, developing novel disease control strategies are impossible. There is a reason why the only options to maintain acceptable levels of dollar spot control are fungicides. We will continue working out the kinks on our model this summer and if you want an update, I encourage you to attend the WTA Summer Field Day on July 27th!

Basic Biology of the Dollar spot Pathosystem:

If you are wondering what pathosystem means, it refers to the entirety of the disease cycle. In other words, we are examining the biology of fungus, epidemiology of the disease and the interaction between the fungus and turfgrass plants. Our research has shown that the dollar spot fungus does not thrive on bare soil. The fungus requires some sort of debris to grow. This information tells us that the fungus is either a good saprophyte or responds to volatiles released from dead tissue (necrotrophic pathogen). Understanding that the dollar spot fungus needs plant tissue, dead or alive, leads us to think that the fungus maybe seed borne as well.

The research we are doing definitively demonstrates that this fungus is not a good soil dweller, which leads us to wonder why the organism is so ubiquitous. Currently we are working on developing an assay to determine if the dollar spot fungus harbors itself on turfgrass seed.

The other questions we churned up, still focus on survival of the

fungus. Therefore we intend to determine where the fungus survives the winter months. We plan to examine plant tissue, soil, and thatch in order to figure out where the fungus overwinters. To help us answer this question we are attempting to develop a medium that selects for *Sclerotinia homoeocarpa*. Again why is this important? If the organism is seed-borne than

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seed treatments may significantly limit dollar spot development. If it overwinters in plants than we can investigate other means for novel control practices.

Although there are cultivars on the market with significant levels of dollar spot resistance, the rationale behind the resistance is not well understood. The cultivars Declaration and Memorial demonstrate good dollar spot resistance and that resistance seems to be correlated to increased production and size of trichomes (hairs). We plan to expand on this initial research using molecular tools and the vast experience of my colleague Andrew Bent. A new student will be joining my program this fall to investigate the genetics of the interaction between the dollar spot fungus and plants. We will use a model plant system to

find genes that could be candidates for dollar spot resistance. Then we can screen existing cultivars to see if they have similar genes. If they do not, then we can work with breeders to develop screens for future cultivars. Resistant cultivars could be a valuable tool to combat turfgrass diseases, especially dollar spot.

Anthracnose epidemiology:

Anthracnose is a scary disease because it can wipe out annual bluegrass and creeping bentgrass under the right conditions. The disease is very difficult to control because the pathogen is an extremely good saprophyte. The fungus does not mind living in the soil or on organic materials for extended periods of time. However once turfgrass plants become stressed, the organism seems to initiate an infection. Fungicide appli-

cations may be more appropriately timed if we understood the conditions that favor pathogen infection. This is important because the god of the anthracnose, Dr. Bruce Clarke, recommends a tank mixture of chlorothalonil (Daconil) and fosetyl-Al (Signature), but he recommends starting applications before anthracnose typically develops. Currently anthracnose applications should be considered when nighttime temperatures stay above 68oF for an extended period.

We know the anthracnose pathogen produces appressoria (penetration structures), but the research only examined penetration and infection under a single temperature. The study was phenomenal since it developed the methods to investigate the infective process for the turfgrass anthrac-

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nose pathogen. Now we can expand on this research to see how temperature affects the infection process. We plan to see how temperature influences the development of the penetration structure (appressorium) on creeping bentgrass and annual bluegrass plants. Having this information will help us recommend more accurate fungicide timings for anthracnose. We could also couple this information with all the recommendations that Dr. Clarke has developed from his experiments on cultural and chemical practices.

Alternative Fungicide Timings and Programs for Turfgrass Diseases:

We are constantly looking at alternative timings and programs for controlling turfgrass diseases. Some of the timings and programs we are currently examining may sound a little absurd, but again we trying to


develop control strategies that minimize pesticide applications. We have expanded on our early-season dollar spot research to obtain season long control of dollar spot. Paul Koch's PhD project is investigating the feasibility of coupling snow mold and dollar spot applications into 4 or 5 applications a year. Both of these projects are yielding some very interesting results! In the future, we plan on using EIQ field use ratings to develop fungicide programs that obtain adequate disease suppression. Along with this experiment, we plan to elucidate the effects of pesticide applications on microbial populations in the soil.

All this information will be necessary to develop strategies to control turf diseases in Wisconsin effectively with minimal inputs. Chlorothalonil may not be removed for many years, but at least we will have

more information to help the turfgrass managers in Wisconsin and throughout the Upper Midwest. The next time you see a presentation from anyone in the turf group at UW-Madison regarding diseases, keep this question in mind, "Could you manage diseases without chlorothalonil?" This is what we think about as researchers and why we search for fundamental knowledge so feverishly!

References:

1. J. Kovach*, C. Petzoldt, J. Degni**, and J. Tette, IPM Program, Cornell University, New York State Agricultural Experiment Station Geneva, New York 14456. <http://www.nysipm.cornell.edu/publications/eiq/>.

2. Office of Pesticide Programs. Chemicals Evaluated for Carcinogenic Potential; USEPA: Washington, DC, 2002. 



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The Long Spring

By David Brandenburg, Golf Course Manager Rolling Meadows Golf Course

What a wild ride so far! Spring came early and fast followed by dry, then wet, then cold but the one constant was the wind. Even though we are ahead in Growing Degree Days it seems as though some plants are way ahead and some are way behind. I know for us in Fond du Lac killing Dandelions and clover with our normal methods has not worked that well in part due to the cold nights.

Many courses were able to open early and receive some much needed bonus income from happy golfers. We had carts the first day we opened which has never happened before in red clay country.

For many golf courses the turf went from dormant to dry in a hurry in mid to late March. Conversations on Noernet centered around turning on irrigation systems with frost in the ground and who is watering what. The soil moisture maps do not start until April so I have included April 11 and May 16. Nothing surprising in the maps as the north and west seemed to miss some of the spring rains and snows.

Congratulations to Dr. John Stier, Professor and Department Chair of the Department of Horticulture, University of Wisconsin - Madison who was selected to receive the 2010 Robert G.F. and Hazel T. Spitze Land Grant Faculty Award for Excellence.

The award was given in recognition of Dr. Stier's breadth of teaching achievements, relevance of research and impact of research and service.

The award was presented to John at the College of Agricultural and Life Sciences on April 28th. Congratulations Dr. Stier!

Check out your Wisconsin Golfer Magazine this month and see the article about Trygve Ekern, Golf Course Superintendent at Yahara Hills Golf Club in Madison. The article is not about Trygve's skills as a superintendent caring for the 36 hole course but as a player. Trygve has won the club championship at Yahara the past 7 years and is Madison's Mid-Amateur Champion two years running.

As with many of us in the turf business Ekern finds it challenging

to play enough golf to stay competitive while sharing time between work and home with his wife Bridget and son Anders. From the results he must be playing once in awhile!

Congratulations Trygve and good luck this season!

Wisconsin courses fared well in Golfweeks 2010 Best Courses lists. Whistling Straits in Sheboygan has stayed at number 3 on the modern courses list (1960 to present) while the River Course at Blackwolf Run in Kohler was number 39.

On the classic list Milwaukee Country Club in River Hills was ranked 44 while the Links Course at the Golf Courses of Lawsonia was 57.

Golfweek also listed the top public courses in Wisconsin. The list included the above courses along with the Irish Course at Whistling Straits, Erin Hills (Hartford), The Bull at Pinehurst Farms (Sheboygan Falls), University Ridge (Verona), the Meadow Valleys Course at Blackwolf Run, Troy Burne Golf Club (Hudson) and the Player Course at Geneva National Golf Club (Lake Geneva).

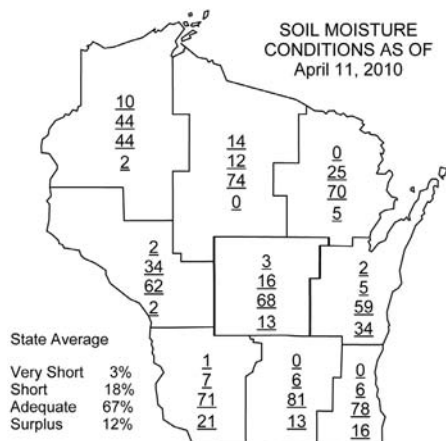
The badger state is becoming a golf destination for golfers of all levels and that is something we can be proud of.

Editors Note: The following was contributed by Tom Emmerich.

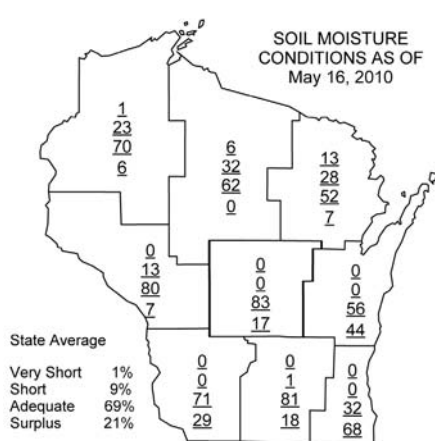
The golf irrigation industry lost a true pioneer and friend with the passing of Ken Holthaus.

Ken, who was employed with Midwest Irrigation in East Dubuque, Illinois for the past 45 years passed away on February 1st.

Ken was an important component of a growing golf irrigation



Source: USDA, NASS, Wisconsin Field Office



Source: USDA, NASS, Wisconsin Field Office