

The GRASS ROOTS

AN OFFICIAL PUBLICATION OF THE WISCONSIN GOLF COURSE SUPERINTENDENTS ASSOCIATION

VOL. XLIV
ISSUE 2
MARCH/APRIL 2015





Eliminate hydraulic leaks, Murphy's Law,
and "feedback" from members.

E-Cut™ Hybrid fairway and greens mowers.

With wires instead of hydraulic lines, these mowers virtually eliminate the possibility of a damaging hydraulic leak right before, say, the member-guest tournament. Plus they deliver a precise cut that'll leave even the pickiest players speechless. Contact your John Deere Golf rep for a demo—and discover all the other ways you can **Consider us part of your crew.**



J. W. TURF, INC.
14 N 937 US HWY 20
HAMPSHIRE, IL 60140
(847) 683-4653
www.jwturfinc.com

J. W. TURF, INC.
717 MAIN STREET
ALLENTON, WI 53002
(888) 959-8873
www.jwturfinc.com

TABLE OF CONTENTS

THE PRESIDENT'S MESSAGE
Professional Courtesy 4

WISCONSIN ENTOMOLOGY REPORT
What Impact Do Sub Zero Temperatures Have On Insects? ... 6

CHAPTER CONVERSATION
Association News 8

MISCELLANY
Where You Began 12

WISCONSIN PATHOLOGY REPORT
Spring Disease Checklist 14

MADTOWN MUSINGS
Own Worst Enemy 18

EYE ON THE CAPITAL
Your Summons 20

WGCSA
Successful Themed Based Seminars 22

STUDENT ARTICLE
How Does Sodium Affect Sand Based Putting Green Soils ... 26

MEMBER SPOTLIGHT
Heather Henning, Eric Eggman, Jon Hegge 30

TURFGRASS DIAGNOSTIC LAB
Spring Watchlist 36

BADGER STATE TURF CLIPPINGS 38

GCSAA
San Antonio Plays Host to GIS 40

WGCSA
Spring Business Meeting Recap 48

EDITORS NOTEBOOK
Hug Your Family And Kids. 50

EVENT SCHEDULE 10

ABOUT THE COVER

The Par 5 Third Hole at Fox Valley Golf Club Plays 509 Yards. Fox Valley hosted the 2014 WGCSA/WPGA Super Pro.

Trees are a design liability waiting to happen, they die and then what?

By American Society of Golf Course Architects Member Todd Quinto

This quote by Quinto was said at the spring business meeting during a discussion on tree placement and removal. If one or even a few trees make a hole what happens when they die?

Visit our Website at
www.wgcsa.com

THE GRASS ROOTS

is the bi-monthly publication of the Wisconsin Golf Course Superintendents Association. No part of the THE GRASS ROOTS may be used without the expressed written permission of the editor.

EDITOR

David A Brandenburg, CGCS
Rolling Meadows Golf Course
PO 314 Theresa, WI 53091
grassroots@wgcsa.com



2015 WGCSA OFFICERS AND DIRECTORS

Front Row: Jim Van Herwynen, Jon Canavan, Josh Lepine, Kevin Knudtson. Back Row: Brett Grams, Mike Bremmer, Scott Anthes, Chad Harrington, Randy Lusher, Jeff Barlow, Scott Bushman (Not pictured Joe Sell)

PRESIDENT

Jim Van Herwynen, CGCS
South Hills Golf & CC
1175 Fond du Lac Ave.
Fond du Lac, WI 54935
jimv@southhillsfdl.com

DIRECTORS

Scott Bushman
Fox Valley GC
PO Box 38
Kaukauna, WI 54130
scott@foxvalleygolfclub.com

VICE PRESIDENT

Jon Canavan
Milwaukee County Parks
9480 Watertown Plank Rd
Wauwatosa, WI 53226
jon.canavan@milwcnty.com

Mike Bremmer
Wisconsin Club
5835 N Shoreland Ave
Whitefish Bay, WI 53217
mikebremmer@hotmail.com

TREASURER

Josh Lepine, CGCS
Maple Bluff CC
500 Kensington Drive
Madison, WI 53147
josh@mbcc1899.com

Jeff Barlow CGCS
Waupaca CC
1330 Ware St.
Waupaca, WI 54981
jjbarlow@solarus.net

SECRETARY

Kevin Knudtson
Geneva National GC
2200 Petrie Rd.
Lake Geneva, WI 53121
kknudtson@gnresort.com

Scott Anthes
Brown County GC
897 Riverdale Dr
Oneida, WI 54155
anthes_sp@co.brown.wi.us

VENDOR LIAISON

Randy Lusher
BASF
5430 Washington Street
Downers Grove, IL 60515
randy.lusher@basf.com

PAST PRESIDENT

Chad Harrington
Autumn Ridge GC
335 Berge Street
Valders, WI 54245
autumnridgegc@gmail.com

Class C Representative

Joe Sell
Whistling Straits GC
1276 Meadowbrook Dr #1
Cleveland, WI, 53015
Email: jws227@gmail.com

CHAPTER MANAGER

Brett Grams
N9122 Virginia Dr.
Waupaca, WI 54981
bgrams@wgcsa.com

Professional Courtesy

By Jim Van Herynen, Certified Golf Course Superintendent, South Hills Golf and Country Club

The excitement is in the air as another golf season is upon us and it should be a great one as Mother Nature appeared to be kind to us during the winter months. I hope everyone had a chance to participate in the many educational offerings the last couple of months as there have been many. If not, ask yourself why you did not take advantage of them and I challenge you to participate in the coming months. I was fortunate to be able to attend the Golf Industry Show in San Antonio hosted by the GCSAA. The show per usual was filled with opportunities for education, networking and seeing a tremendous amount of supplies and equipment used in our industry. Above and beyond the GIS, locally we had more opportunities such as the Assistant Seminar held at Whispering Springs Golf Club, The Spring Business Meeting held at South Hills Golf and Country Club, a two day vendor sponsored trade show held in Waukesha along with other vendor sponsored offerings.

I personally attended all of the above and in doing so continued increasing my knowledge of turf related issues environmentally and agronomically, new trends and equipment in the industry and also the challenge we all face in the future with respect to governmental issues which we

all have to stay in tune with and take a proactive approach rather than a reactive approach. During the many hours spent with colleagues and peers I realized something that I think is of great importance.

After talking with numerous vendors in our association and in our industry I was shocked to hear of the lack of respect some of us give to many of our vendors. We all know that our time is very valuable and certain months it is more valuable than others. At times we cringe and shrug our shoulders when we get a call from a vendor to visit us. Many times a return call is never made or a time is set up and we are nowhere to be found. Quite honestly in my opinion that is unacceptable. I have made an effort to learn more about our actions by talking with these vendors and seeing where I fit in and my actions. We want to be perceived as professionals but yet at times we do not act like professionals. If you step back and think about it their time is as valuable as ours because they are making an effort to set up times, travel and stay on a schedule as much as we are. In conversations with many they understand we may not have a relationship or loyalty built up yet and a simple honest answer to their questions is all they need instead of playing the avoid-

ance game.

How many times have you been in a jam when you needed a product in a pinch or maybe a second set of trained eyes to look at something, or simply some advice? Let's face it with the advances of chemistry and new products being unveiled year after year it is hard to keep up with it all and sometimes we may need a reminder of what works best for your situation and shown the research which supports their recommendations. I do not, nor will I ever want a program written for me personally but some might and what not a better resource for this.

We all have the liberty to do business from whomever we choose and trust their expertise when looking for it. For those you do not choose for whatever reason a courtesy call or conversation is all it should take to let them aware of your situation I am confident they will understand once told. Remember this, all of the great educational offerings, golf venues, scholarships, research and hospitality the WGCSA has to offer throughout any given year is heavily supported by our vendors through our Industry Partners Program. Please support those who support you as we are all in this together. 

WGCSA MISSION STATEMENT

The Wisconsin Golf Course Superintendents Association is committed to serve each member by promoting the profession and enhancing the growth of the game of golf through education, communication and research.

WGCSA VISION STATEMENT

The Wisconsin Golf Course Superintendents Association is dedicated to increase the value provided to its members and to the profession by:

- Enhancing the professionalism of its members by strengthening our role as a leading golf organization in the state.
- Growing and recognizing the benefits of a diverse membership throughout Wisconsin.
- Educating and promoting our members as leaders in environmental stewardship.
- Offering affordable, high value educational programs at the forefront of technology and service.
- Being key to enjoyment and the economic success of the game of golf.



Coursewide Confidence.



For over 50 years golf course superintendents worldwide have put their trust in Aquatrols soil surfactants to optimize soil moisture, improve irrigation efficiency, and save water and energy. Our patented chemistries, Revolution and Dispatch, provide unique performance and playability advantages versus all other wetting agents.

Larry Lennert
Territory Manager
Greenfield, WI
llennert@aquatrols.com
(773) 620-2382

What Impact Do Sub-Zero Temperatures Have On Insects?

By Dr. R. Chris Williamson, Department of Entomology, University of Wisconsin-Madison

The past two winters have proven to be extremely cold in Wisconsin and the Great Lakes Region, temperatures have reached more than -20°F ambient temperature. Consequently, this occurrence frequently brings up questions regarding how such conditions will impact insects? Are they able to survive? Will it reduce their populations and potential damaging effects the upcoming growing season?

Insects are cold-blooded animals, their body temperature is comparable to that of their surroundings. In addition, insects are not affected by wind chill like we humans (warm-blooded animals). Insects do not maintain a core body temperature like birds and mammals. Most insects, depending on species, do not develop or function well at temperatures below 50°F. When temperatures fall below 50°F, their metabolic rate and body functions slow down dramatically. And, as temperatures drop to freezing (32°F), insects typically go into a dormant state or overwintering stage.

Some insect species are classified as being freeze tolerant, they survive sub-zero temperatures by avoiding freezing by a process



called supercooling. Supercooling is a process whereby an insect produces a chemical similar to antifreeze into their blood (hemolymph), this lowers the temperature water will freeze and helps keep their body fluids liquid. For most insects, survival of dehydrating or desiccating conditions is equally important to survival of low temperatures. At sub-zero temperatures, freeze avoiding insects are susceptible to desiccation and may lose water due to a vapor dispersal between their supercooled body fluids and ice in their surroundings. This process stops once body fluids are frozen, so is not a problem for freeze tolerant species. Prolonged exposures at lethal low temperatures can also produce lethal effects (including death) even if the insect does not freeze; during long-term exposure to low temperatures the organisms may finally die from the exhaustion of energy reserves.

Insects also have some ability to withstand cold weather by avoidance, one of the most common strategies is to bury themselves underground, beneath leaf litter, or to burrow under tree bark for protection and hibernate for the season. These protective maneuvers work fairly well most winters, allowing insect populations to remain relatively stable. Some insect species can tolerate freezing, these release proteins into their blood to help control where, when and how much ice forms. By controlling how their bodies freeze, insects can minimize damage to their tissues.

“The bottom line is that one must be prepared by proactively developing an appropriate Integrated Pest Management plan to maintain respective insect populations at an acceptable level.”

It is not uncommon for an insect to use more than one strategy for surviving winter weather. To this end, it is unlikely that cold and even sub-zero temperatures that have occurred will dramatically negatively impact insect populations. The bottom line is that one must be prepared by proactively developing an appropriate Integrated Pest Management plan to maintain respective insect populations at an acceptable level. 

An advertisement for Pumpstation Professionals. The background is a photograph of a golf course with a green and a white flag on a hole. The text is overlaid on the image. At the top, there are three blue curved lines. Below them, the company name 'Pumpstation Professionals' is written in a large, green, sans-serif font. Underneath the name, it says 'A Division of Midwest Well Services, Inc.' in a smaller, green font. A list of services follows: 'Customized Design', 'Complete Controls Service', 'Pump Station Retrofits', 'Expert Pump Service', and 'Well Drilling and Rehab'. Below the list, it says 'Serving Golf Courses & Irrigation Clients throughout the Midwest'. At the bottom, the phone number '800.383.7412' is written in a large, blue, bold font, and the website 'www.pumpstationpros.com' is written in a smaller, blue font below it.

SUPERIOR QUALITY-OF-CUT. SURPRISINGLY AFFORDABLE.

NEW LF510™



The new **Jacobsen LF510™** fairway mower offers **affordability from the start, simplified maintenance** and a reliable **Kubota diesel Tier 4 final engine** – making it easy to afford, use and maintain through its entire life. The LF510's clean and consistent quality-of-cut is provided by the new **TrueSet™ cutting units with Classic XP™ reels** that boast an **industry-leading 425-lbs. of holding power**. Mow your fairways without scalping your budget with the new Jacobsen LF510. See your local Jacobsen dealer for more information.



Contact your Burris representative.
Gary Huenerberg (608) 751-0074
Joe Baert (847) 417-4238
WWW.burrisequipment.com

JACOBSEN

1.888.922.TURF | www.jacobsen.com

Association News

By Brett Grams, Chapter Manager, Wisconsin Golf Course Superintendents Association

Spring greetings everyone! The 2015 golf season is now upon us. The WGC-SA board of directors has been busy with planning and preparing for the season ahead of us as well.

I wanted all of you to be aware of a unique board meeting that we had in early February. One of President Jim VanHeryn's goals was to get the entire board of directors up to speed and to make sure that new members and those that have been on the board for ten plus years new each other better. I wanted to help him and the board improving creativity and input as a collective group. I was able to help Jim organize a special board retreat meeting. I was fortunate to know of a local deer camp named Triple Seven located just north of Waupaca that was available for us to rent at very reasonable price. It

was a great place for the board to gather. The board's agenda consisted of a business meeting, and several discussions about future efforts and plans to help the association. You will learn more about these efforts in the coming months but rest assured that our leaders represent our diversified membership and are very focused at making our chapter relevant and serving of the association both in the present and the future. Many ideas were shared in a 24 hour period along with everyone getting to know each other better in a relaxed atmosphere. I hope the board enjoyed the event as much as I did and I hope we can do a meeting like this again in the future!

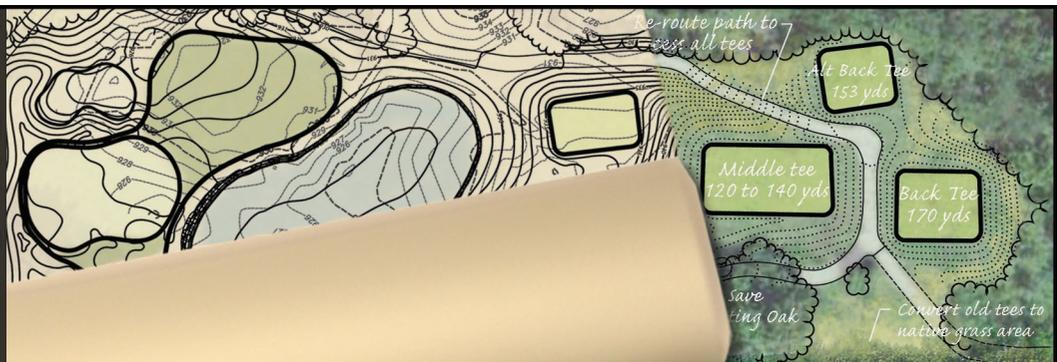
The board meeting created a short list of several important actions items I have been able to assist our leaders on. To improve the communication and to help

with clarification the WGCSA Board of Directors will be creating and approving a Standard Operations Procedures manual. This will be a thorough listing and description of each committee's responsibilities with details on who is responsible and deadlines. Currently we have created a few sections and I will be preparing the drafts and seeking input from the board throughout the year. When complete the board will then review a final version and adopt it as a reference and guideline going forward. The final version will be available for any of our members to reference as well on the member's side of our website.

Another recent development was also presented to us by the GCSAA. Have you heard about the GCSAA's Grass Roots Ambassadors Program? If not you soon will.

Design-BUILD

- ◆ Single-point responsibility
- ◆ Full project management
- ◆ Onsite problem solving
- ◆ Continual value engineering
- ◆ No lengthy bidding process
- ◆ Efficient field modifications
- ◆ Direct client participation
- ◆ Superb results



Chenequa Country Club, #3 Hartland, Wisconsin

LOHMANN COMPANIES
DESIGN, CONSTRUCTION & PROJECT MANAGEMENT

www.lohmanncompanies.com
MARENGO, ILLINOIS
815.923.3400



National Golf Graphics



National Golf Graphics is a strong supporter of the Wisconsin GCSA, Northern Great Lakes GCSA, WTA, Wee One Foundation and the Wisconsin PGA. I want to thank all of the golf course superintendents who have supported my company over the years and ask all superintendents to consider National Golf Graphics and other companies supporting our local organizations when making future purchases. Best of luck to everyone in 2015.

Peter Meyer

Flags

Embroidered, Screen Printed,
Digitally Printed and Plain

Manufactured in the USA



Custom Golf Course Signage and Markers

Tee, Directional, Informational and Entrance Signs
Tee Markers and Yardage Markers

Cast Bronze, Cast Aluminum, HDPE(routed plastic), Granite and Redwood

Advertising programs designed to fit your needs.



Polyester/Nylon Towels

Do not fade like Cotton Towels

- 15x18 Corner Grommet \$1.95 each
- 16x26 Tri-Fold \$3.45 each
- 15x24 (waffle texture) \$4.50 each



Staff Clothing

Shirts, Caps, Outerwear, Pants

100% Polyester Polos

Embroidered as low as \$10.65 each



Sprinkler Head Yardage Caps

Toro, Rain Bird, Hunter

Engraved and Painted in Madison, WI



Call Peter Meyer at 877-710-9363 or 608-222-9363

www.nationalgolfgraphics.com



golf industry show

Booth #4078

CHAPTER CONVERSATION

Mike Bremmer is our Government Relations Committee and he has been taking the lead on learning as much as he can about this program and how our association can help get Wisconsin fully represented in the program. If you are a Superintendent or Assistant Superintendent that wants to help with communications with your House of Representative please let Mike or myself know. Your service would be very valuable and I can assure you that you will gain a lot of insight as to potential issues our industry could face in the near future.

The board of directors is also in the researching and planning stages of learning about a WI Golf Course Maintenance Best Management Plan. These types of documents have varying names but other states have adopted these to help promote the responsible management of our states golf courses. They not only are valuable to the superintendents but also those that are passing legislation or concerned citizens that are often misinformed or are unsure about all the good things you do every day in providing quality golf course conditions. We have already reached out the research team at UW Madison and sought input, ideas, and are trying to identify the financial costs of creating this type of document. Dr. Koch, Dr. Soldat, and Dr. Williamson will need to help us if we move forward.

Help at UW Madison has been and

remains key to our success. As we celebrate our 85th anniversary as a chapter we also have 85 years of history of education, research, and help from the UW. We have some exciting research currently being conducted in Madison and this funding is helped by the PAR4 Research Auction. Currently the website is created and ready for review. Very soon the last of the golf packages will be uploaded and the actual auction will go live during Masters Week. Thanks to those of you who generously provided packages. I will report on our success in the future. These initiatives will keep me plenty

busy as we conduct our monthly meetings in 2015. The education committee is completing the last of the speakers for our events. I am also going to review the association's website options. It is hard to believe that our "new" website is now five years old. The 2015 Membership Handbook will also be completed as soon as I can renew the last of the members for the year. All of these important efforts will keep me busy BUT I always make time for any member's request. If I can ever be of any service to you or your team please let me know. I wish all of you a GREAT GOLF SEASON! 



WGCSA Board Members at the February Board Meeting Retreat.

2015 Event Schedule!

NEW DATE -Wednesday April 29th - Super Pro Outing with Wisconsin PGA, Abbey Springs Golf Club, Fontana

Tuesday May 19th - May Golf Meeting, Lawsonia Golf Club, Green Lake

Monday June 22nd - June Tournament Meeting at Autumn Ridge GC, Valders

Wednesday July 22nd - 9-Hole Golf or Foot Golf and Picnic, Rolling Meadows Golf Course, Fond du Lac

Tuesday July 28th - WTA Summer Field Day, OJ Noer Research Center, Verona

Tuesday August 18th - Joint Meeting with NGLGCSA, Sentry World Golf Club, Stevens Point,

Monday September 21 - Wee One Fundraiser, Pine Hills Country Club, Sheboygan

Monday October 5 - WTA Fundraiser - Blue Mound Golf and Country Club, Wauwatosa

November 7th OR 14th - Couples Dinner, Lombardi's Steakhouse, Appleton

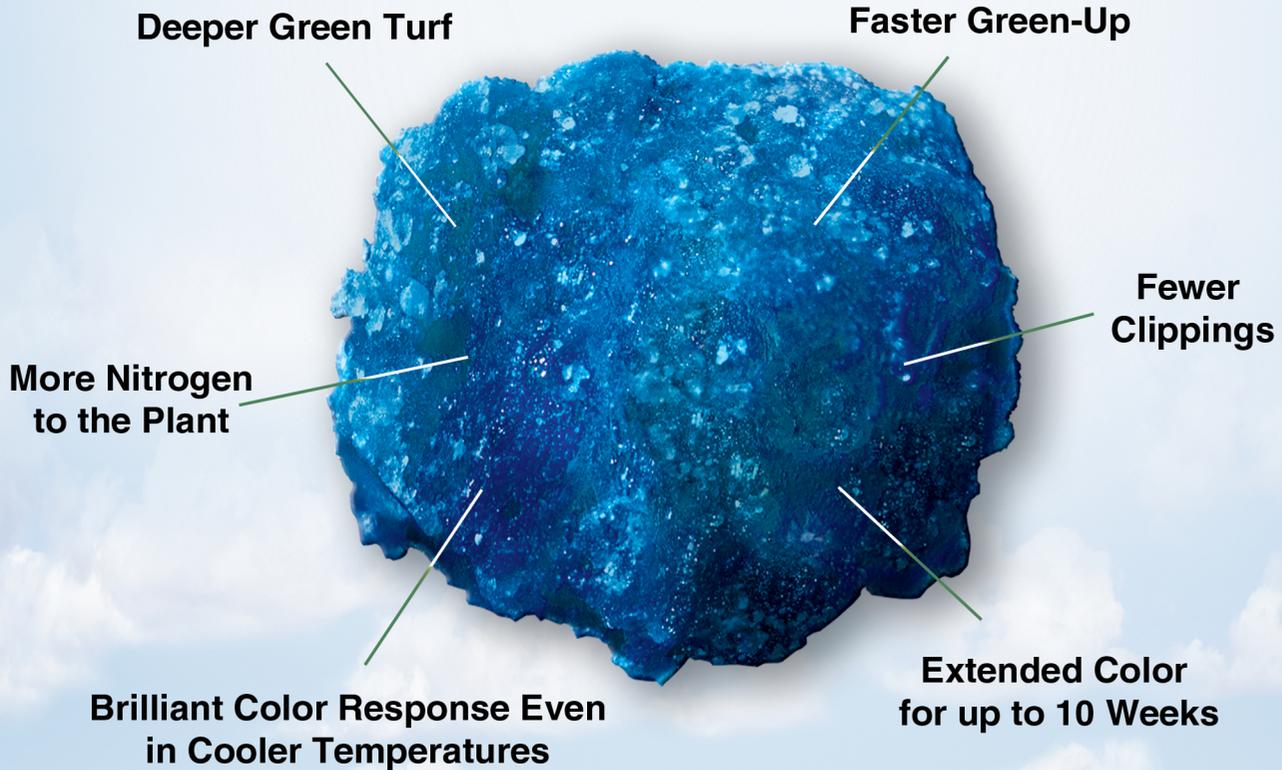
Wed & Thur December 2-3 - Golf Turf Symposium, American Club, Kohler

February 6-11, 2016 - Golf Industry Show, San Diego, CA

MESA[®]

Patented Controlled Release Nitrogen

A little bit of blue makes a whole lot of green



More brands.
Better performance.



Best of All Worlds™

www.LebanonTurf.com 1-800-233-0628

Where You Began

By Joe Sell, Assistant Golf Course Superintendent, Whistling Straits Golf Club

As turf industry professionals, we go through our daily lives usually in a routine of checks and balances. It is only when something disrupts that routine that we have to look back and find out what happened. So how far do you look back? Just far enough to find out where it went wrong, or a little bit further to see how it could have been prevented? These thoughts do not only have to apply to golf course maintenance, but that other thing you do when you're not at work, I'm not talking about sleeping. I mean life!

Most of us have an extremely busy season. For me, it's April through November... and well December...and I guess March too with snow melting and the rush to be ready for the new season and then you might as well count January and February. So when you think that you don't have much going on... do you stop and think about how, and more importantly who, got you there? Everyone wants to be on top, to make more money, to try new techniques or equipment. With that competitive drive we often take for granted where we began. I am no different. I still find myself (sometimes) making the same mistakes.

My name is Joe Sell and I'm an Assistant Superintendent at Whistling Straits Course. It wasn't until watching a friend and mentor battle cancer, all while continuing to help his students develop their career path, that I learned this life lesson – the lesson of appreciating the who and how. I was part of the last graduating class that Professor George Hamilton Ph. D at Penn State University taught. When he shared pictures of his life and shared his personal story he taught us to

“not forget about our home, family and faith” I listened.

What a reality check! There I was 22 years old with a 1 and a half year old little girl back home in Wisconsin. All my time was consumed with my education in golf course maintenance. Ever since I was 15 yrs old, I woke up excited about going to work, learning to drive equipment and be a part of team that worked tirelessly to produce the highest standards in golf course maintenance. After a while it became a routine that I devoted my life to, but not without a price.

“I find myself asking “how do you repay that debt?” As an assistant, I work with interns or staff interested in turf. I try and share my experiences and teach what I know to pay it forward. Success usually doesn't happen with just one person so what about the other thing in your life...”

Never regretting, but simply taking inventory, I didn't have the typical lifestyle of others in their early 20's. Often times weekend afternoons out on the lake with friends were cut short to help out at the golf course. If I didn't want to be late for the 4:30am start the next day, it meant not staying out all night. I knew the hard work I put into my career then would (hopefully) pay off someday, but not without help.

Some say, “It's not what you know,

but who you know.” In this industry it's nothing short of the truth. Without the early on mentoring, advice and long hours to keep me out of trouble, I wouldn't be where I am today. My former Superintendent Scott Schaller (North Shore Golf Club in Menasha, WI) provided me with every opportunity to succeed and like all good alumni, introduced me to the Penn State Turf Program. I am forever in debt to him for spending the time to work with me. I find myself asking “how do you repay that debt?” As an assistant, I work with interns or staff interested in turf. I try and share my experiences and teach what I know to pay it forward. Success usually doesn't happen with just one person so what about the other thing in your life...

Spouses, family, friends...they are all a part of your success. The continued support and understanding from them allow me to wake up, be excited about going to work, and work at that competitive edge. So the next time when you're busy blazing your own trail and your routine is disrupted, try and look back a little further and appreciate the who and how in your life. The ones that helped you get to where you are.

Don't take for granted your family and friends because, although they are unhappy you are going back to hand water, they understand. The hard work along the way won't change and neither will the reason you became a golf industry professional. I am thankful for all the support from Superintendent Chris Zugel and Whistling Straits. I can only strive to pay it forward. ✓





A young Joe Sell working on a irrigation leak early in his career.



Posing with the PGA Championship Wannamaker Trophy are Whistling Straits Superintendent Chris Zugel, Assistant Superintendent Joe Sell and former Assistant Superintendent Emily Kucksdorf.

Daconil Action™ Fungicide, A New Era in Turfgrass Management

The power of the active ingredient contained in Daconil® fungicide combined with a revolutionary Turf Protein Booster results in longer, more efficient, and broader spectrum turfgrass disease control.

- Boosts turfgrass natural defense proteins (PR proteins)
- Enhances overall plant health
- Increases tolerance to environmental stresses, like drought
- Suppresses activity of fungi, bacteria, viruses, and abiotic diseases

To learn more about Daconil Action, visit DaconilAction.com or contact:

Phil Spitz
Cell: 414-429-2015
phillip.spitz@syngenta.com



 **Daconil Action™**
Fungicide

 syngenta.

Spring Disease Checklist

By Dr. Paul Koch, Department of Pathology, University of Wisconsin - Madison

Most golf course superintendents are superb planners, which is important when it comes to disease. However the most important planning for effective disease management doesn't come on the fungicide calendar, it comes on all those other calendars we keep. Mowing, fertility, topdressing, aeration...all those things influence the turf's ability to fend off disease. Creating an effective spring disease checklist starts with making sure the turf is as healthy as possible.

Mowing. Mowing is one of the most basic parts of our jobs, but also one of the most stressful for the turf. It is common for many courses today to have mowing heights less than 0.125 because of the putting green speeds that can be obtained. Consistently mowing this low

keeps the turf in an energy-starved state, and research out of Rutgers University has shown that mowing at heights under 0.125 inches (using fixed heads) led to increases in anthracnose. However, additional research from Michigan State showed that putting green speed and quality could be maintained at heights of 0.125 and higher by alternating mowing with lightweight rolling. In addition, lightweight rolling also led to decreased levels of dollar spot. *The verdict: plan to keep mowing height as high as possible and maintain green speed using lightweight rolling when necessary.*

Fertility. Fertilizers have wide-ranging effects on everything from the plant's growth potential to turf color to soil pH...not to mention significant impacts

on disease activity. Too much nitrogen leads to more brown patch, Pythium blight, snow molds, etc. Too little nitrogen leads to more anthracnose, dollar spot, rust, etc. Research out of Rutgers found that deficient nitrogen was the largest contributor to anthracnose development (even more so than mowing height!), and that total annual nitrogen of 2.5 - 3.5 lbs per 1000 ft² was a good middle ground to suppress anthracnose (and presumably several other low nitrogen diseases) without encouraging the high nitrogen diseases. Fertilization can also influence soil pH, which can influence disease development, especially root-infecting diseases such as summer patch, necrotic ring spot, and take-all patch.

Sand.

It's so simple, that you're tempted to take it for granted.

It's so complex, that you can't.

ONLY use sands that are specifically manufactured, tested, and guaranteed to perform on your golf course.



WAUPACA

Waupaca Sand & Solutions

715-258-8566 - www.WaupacaSand.com

WISCONSIN PATHOLOGY REPORT

Research out of Rutgers observed lower rates of summer patch when using ammonium sulfate that lowered soil pH below 6.5. In addition, research out of Rutgers and Connecticut observed lower levels of take-all patch and summer patch, respectively, following applications of managanes to the turf. *The verdict: plan to apply at least 2.5 pounds of nitrogen per 1000 ft² to the putting surfaces and consider using acidifying fertilizers if soil pH is consistently above 6.5.*

Cultivation. Cultivation techniques such as topdressing, core aeration, verticutting, and related procedures not only improve turf surfaces but also play a role in reducing disease. Regular topdressing totaling 1000 - 2000 pounds per 1000 ft² per year dramatically reduced anthracnose in research from Rutgers, presumably due to the added space and cushioning provided to the turf crowns (**Figure 1**). They also found no increases in anthracnose severity following other minimally invasive cultivation tech-

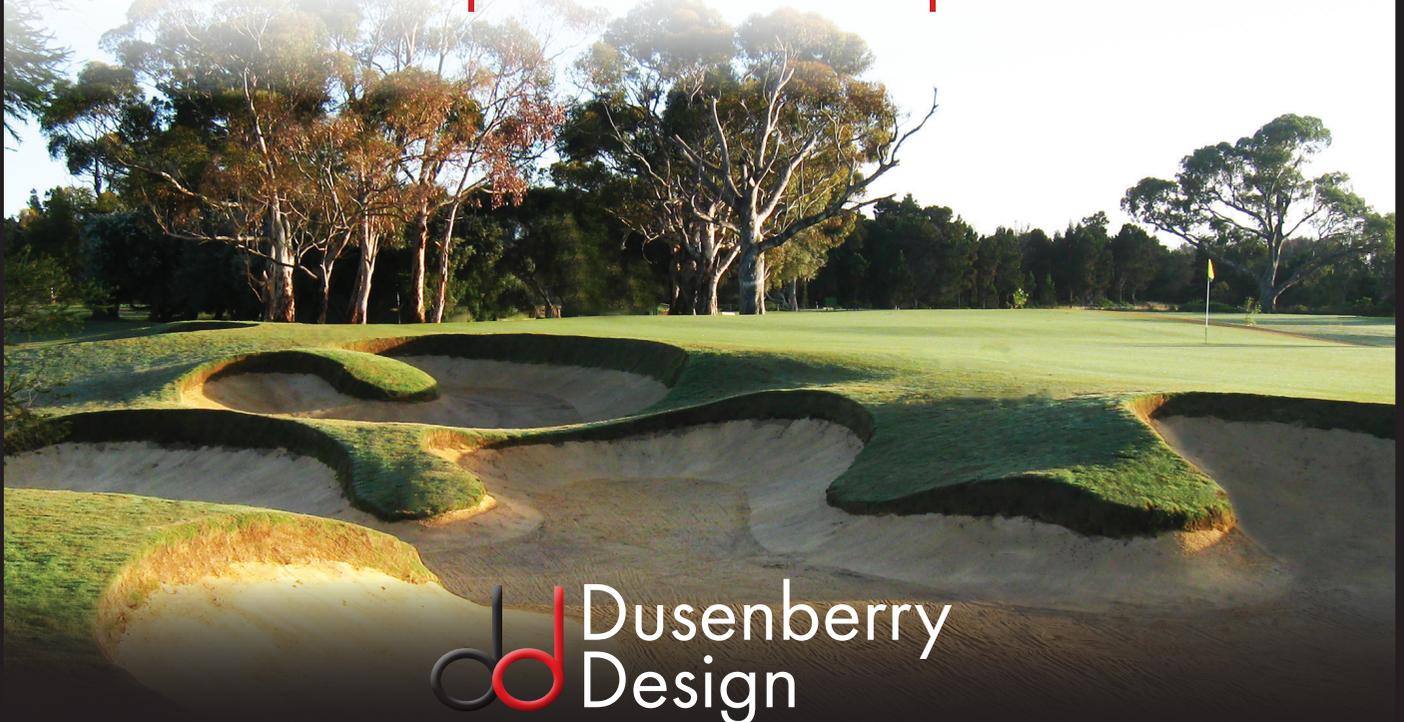
niques including spiking, slicing, etc. Core aeration has been found to reduce summer patch severity in research out of Connecticut, presumably to alleviation of soil compaction, while the thatch reduction associated with core aeration has been reported to reduce levels of necrotic ring spot and take-all patch. *The verdict: plan to topdress putting surfaces regularly throughout the growing season to total 1000 - 2000 pounds of sand per 1000 ft², core aerate during the spring and/or fall to manage thatch and organic matter, and regularly conduct minimally invasive cultivation practices during the summer to improve oxygen flow to the roots.*

Fungicides. Even the most effective cultural management plans won't provide complete disease control, and fungicides should be used at this point to supplement the cultural program. When possible, choose fungicides that will control multiple diseases to provide the broadest control using the fewest products. Try and institute a 'just in time' preventa-



tive application schedule that is based not on the calendar but on the current environmental conditions and the presence of disease in indicator areas (ie where disease occurs first, usually in low or enclosed areas). Because the superintendent often has so much on their plate, assigning one trusted and trained person to be the 'disease czar' and to scour indicator areas for disease can be effective in more accurately scheduling fungicide applications.

Renovation | Refinement | Restoration



 **Dusenberry
Design**

A Wisconsin Based Golf Course Architecture Firm

email: matt@dusenberrydesign.com ph: (262) 395-5294 www.dusenberrydesign.com

And of course, be sure to alternate amongst fungicide classes or tank-mix with multisite inhibitors such as chlorothalonil or fluazinam to reduce the risk of resistance development. Making sure to rotate between the Fungicide Resistance Action Committee (FRAC) codes found on the front of most fungicide labels can be an easy way to ensure you are rotating amongst chemical classes and not amongst products within the same chemical class (**Figure 2**). *The verdict: plan to spray using a 'just in time' preventative schedule aided by predictive models and/or disease scouting, use fungicides that control multiple diseases active at that time, and rotate amongst fungicide classes to limit resistance development.*

The overall verdict: develop your fungicide plan only AFTER you develop your cultural plan. The healthier the plant, the less disease you will see. ✓

SPRING DISEASE CHECKLIST

- *Keep mowing heights as high as possible and maintain green speed using lightweight rolling.*
- *Plan to apply at least 2.5 lbs. of nitrogen per 1000 ft² per year.*
- *Topdress on a regular basis using at least 1,000 lbs. of sand per 1000 ft² over the growing season.*
- *Use fungicides to supplement the cultural program, utilizing 'just-in-time' preventative applications and rotating amongst different chemistries to minimize resistance development.*

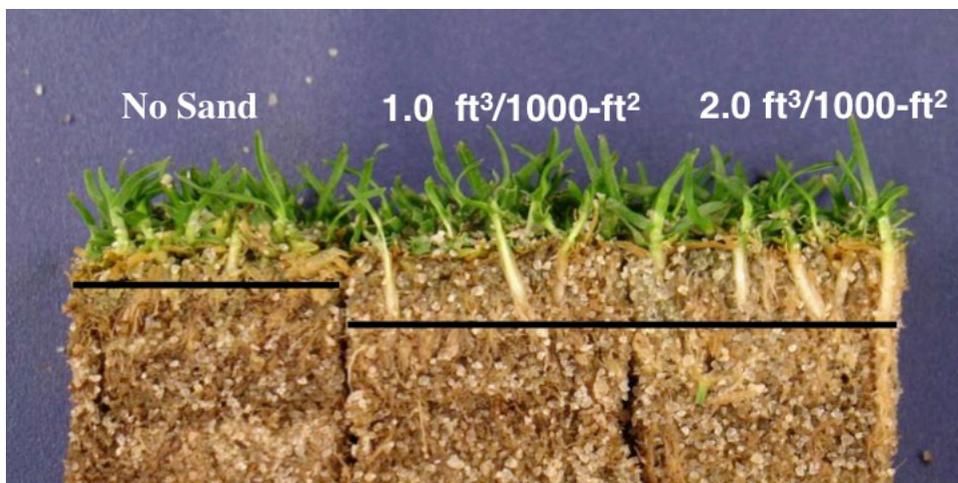


Figure 1: The impact of regular sand topdressing on the depth of the crown, which likely leads to healthier plants more capable of fending off anthracnose infection. Photo courtesy of John Inguatato (currently at the University of Connecticut) and Rutgers University.

Fungicide Resistance Action Committee (FRAC) Codes

Figure 2: Fungicide resistance action committee (FRAC) codes can be found on the front of most fungicide labels. Fungicides with the same code are in the same chemical family, so rotating amongst FRAC codes is the same thing as rotating amongst chemical families.



The Utility Vehicle You Asked For is Here



Introducing the new Toro Workman HDX Auto

No manual clutch, no shifting, and no sacrifices. The same reliability, quality and product features you have come to expect from Toro heavy-duty utility vehicles just got better. The days of slipping tires as you let out the clutch are gone. The days of training new operators on how to drive a manual transmission are gone. This dream machine climbs the most difficult terrain and maintains consistent speed over undulating fairways and hills.



- SpeedContr'l™ delivers precise ground speed during spraying and top dressing applications
- Two-speed transmission with high and low range
- Towing capacity of 3,500 lbs
- Kohler 28 hp liquid-cooled EFI gasoline engine
- Two-wheel and four-wheel drive options



Reinders

Solutions & Supplies for the Green Industry

COMMERCIAL EQUIPMENT SALES

Derek Kastenschmidt (414) 313-5260 • Mark Robel (414) 313-5296

Scott Neary (608) 220-6593 • Andy Brownlow (715) 892-2027

W227 N6225 Sussex Road, Sussex, WI (800) 782-3300

www.reinders.com



Count on it.

www.toro.com

Own Worst Enemy

By Jake Schneider, LMD Production Manager, The Bruce Company

What you are about to read should shock no reader of this magazine: golf course superintendents provide some pretty unbelievable course conditioning. Growing up in a non-golfing family, I can remember my amazement upon walking on and seeing the dense, flawless, and low-cut greens, tees, and fairways when I started at North Shore. Although I didn't necessarily appreciate their trespassing, I enjoyed watching pedestrians walking onto Blackhawk from one of the encircling streets or paths, crouching to get closer to the turf, and petting it in some form of disbelief. Like many things in life, I suspect that most of us (and far too many of your clientele) take these highly-manicured surfaces for granted, and the expectations from

everyone involved have skyrocketed in recent times.

“Don't hate me. In my humble opinion, those in golf maintenance industry have created this monster and are now their own worst enemy.”

Universally outstanding course conditions are a product of many things: improved plant genetics, technological advances in equipment of all kinds, the continuing development of high-quality plant protectants and growth regulators, and loads of real world and university research to synthesize all of the informa-

tion. This may be too broad of a statement, but today's average golfer will likely not play more than a handful of rounds on greens that measure less than 9' on the Stimpmeter. Yes, the dreaded "S" word. There are likely several courses in Wisconsin that have tees that roll faster and more smoothly than the greens that Jack and Arnie played on. It's safe to say that those guys played just fine and didn't expect perfectly smooth, 11' greens.

Now, back to those darned modern expectations; where did they come from? Were they a product of golfers' demands or were they a result of the aforementioned improvements that allowed superintendents to work their magic and achieve results that are now so commonly seen?

PENDELTON TURF SUPPLY

Ed Witkowski
414-640-6447
edward.witkowski@pendeltonturfsupply.com

Todd Fregien
414-640-2265
todd.fregien@pendeltonturfsupply.com

Clark Rowles
608-228-1782
clark.rowles@pendeltonturfsupply.com

805 Ela Avenue

Waterford, WI 53185

Phone: 262-534-3334

Fax: 262-534-2990



**FULL LINE OF TURF PRODUCTS
CHEMICALS • TEE & GREEN SUPPLIES
TIRES & TUBES • NEW PRODUCT INFORMATION**

**SATISFACTION
GUARANTEED**



**BASF
PROFESSIONAL
TURF**

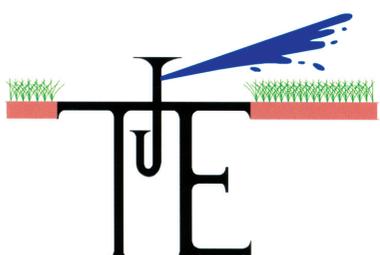




I don't have enough of a historical perspective within the industry to provide an answer, but I would speculate that it was some combination of the two scenarios with slightly more blame falling on...the superintendent. Don't hate me. In my humble opinion, those in golf maintenance industry have created this monster and are now their own worst enemy.

One example that constantly returns to my mind that might back up my finger pointing is our obsession with dollar spot. On several instances during the course of my time at Blackhawk, our unofficial threshold for dollar spot was exceeded on tees that were prone to infection. Chad and I weren't thrilled when this happened, but in many regards, I believe that getting some disease development means that you are doing it right especially from a budgetary perspective. I have to assume that golfers noticed the quarter-sized blemishes that resulted from the infections, but do you know how many complaints that I recall receiving? Approximately zero.

That's right; no golfer's game was adversely affected by a small outbreak of dollar spot on the tees. I have to say that my own golfing experiences are similar in that I don't ever remember a tee or few-and-far-in-between fairway shot being impacted one way or another by a dollar spot infection center, and I can say definitively that having superb golfing skills is not the reasoning for this. I'm not implying that the disease should be allowed to run rampant because the results would not be pretty (literally) and would impact the game. But, I'd like to think that we just might be able to get the pendulum swinging back toward some level of reasonableness by increasing our own tolerance levels for imperfection. Perhaps I've grown detached and slightly delusional in my landscape maintenance world, but first hand experiences tell me that it just might be possible. 



T. J. Emmerich Associates, Inc
Irrigation Consultants
W28620 Beverly Lane • Hartland, WI 53029
262-538-2776
Golf Course • Commercial • Master Planning
System Evaluations • GPS Services
Thomas J. Emmerich
Certified Irrigation Designer

PROGRO ^{solutions} ABSOLUTE CONFIDENCE

Servicing the professional golf, lawn care, landscape and sports turf markets

Proudly representing the following Brands...

Anderson's Fertilizers	Hydro Pak
Aquatrols	JRM
Armor Tech Products	KNOX Fertilizers
Arysta	Miltona
Barenbrug Seeds	NuFarm
BASF	Par Aide
Calcium Products	Pearl Valley Organix Fertilizers
EC Grow Fertilizers	POGO Soil Moisture Sensors
ENP Specialty Liquids	Precision Labs
FMC	SePro
Foliar Pak	Spectrum Technologies
Greenleaf Technologies	Standard Golf
Greens Groomer	Turf Screen
Holganix	

Brett Ziegler, Regional Agronomist

Chicago/Wisconsin
847.302.9673
brett@progro-solutions.com
@BZiggs4

Mike Werth, Regional Agronomist

Wisconsin/NW Illinois
608.214.7011
mike@progro-solutions.com
@werthashot

Business & Distribution Center
21969 N. Pepper Rd.
Barrington, IL 60010
224.655.7184

Main Office: 815.539.8169
www.progro-solutions.com

Your Summons

By Mike Bremmer, Golf Course Superintendent, Wisconsin Club

Editors Note: A new feature starts this month with Mike Bremmer giving members a update on government relations and what we can do to advocate for causes close to us.

Advocate - noun - a person who publicly supports or recommends a particular cause or policy.

ORIGIN - late Middle English: via Old French from medieval Latin *advocatia*, from *advocate* 'summon, call to one's aid'

The world is changing. Seems like an obvious statement seeing as how the news cites example after example of change nightly or we witness ourselves or others change in front of our eyes. Change is something that we as turf grass professionals witness on a daily, even perhaps hourly basis. We like to control change as much as we can on our properties and lives and sometimes go to great lengths to prevent things from changing. We feel a sense of pride when events change to our favor from our efforts or even when things go awry, at least can look back and say, "we tried".

Our industry is changing and we know it. How we do our job is under a higher powered microscope than ever before. While in our area, we may not be experiencing the scrutiny of what some countries or

counties of other states are, our own state has a history of setting trends.

On a federal front, the EPA is working to reduce confusion of the Clean Water Act. They are writing a new bill called Waters Of The United States (WOTUS) which will further define what bodies of water are covered under the Clean Water act. In Montgomery County, Maryland, a bill is being written to ban the application of nonessential pesticides to lawns with exceptions for noxious weed and invasive species control, agriculture and gardens, and golf courses. This is one of the first bills to prohibit pesticide applications to privately owned property. Pollinators are another issue which is being completely controlled by the White House at the moment. A special Pollinator Taskforce has been assembled to study and develop a plan to promote pollinator health. These items are rather eye opening and can be influenced by us if we so choose.

Thankfully, professional golf turf managers have the GCSAA working on their behalf with lawmakers in Washington. Chava McKeel is the associations Government Relations Specialist who is making headway on a number of fronts in our favor. Last summer, she rolled out the Grassroots Ambassador Program to help the GCSAA form critical relationships by pairing chapter members with state

Representatives. Any Class A, SM, or C member of the GCSAA can register to become a Grassroots Ambassador with a two year commitment to the position. If someone had interest, but felt they needed a refresher on Governmental Policy, the GCSAA provides training for all individuals entering the program.

The goal of the Ambassador program is simply a non partisan effort to educate our Representatives on how their bills effect golf courses. The GCSAA wants Superintendents to be the go to contact person if a Representative ever would have a question regarding golf. Involvement with your appointed Representative is simple. Meet with them twice a year when they are back in their local office either through town hall meetings or invitations to visit a golf course operation. After a meeting, share any information via a form on the GCSAA website and at local chapter meetings.

If being an Ambassador is not for you, there are other ways to be involved. One way would be to visit the Government Relations page of the GCSAA website. Any current news involving our industry can be found there along with action items where members can send a prewritten petition to their local Representative by simply filling out a little information and clicking send. Another way to be involved is communicating with your colleagues about bills or legislation which will impact our industry. Social media is another great outlet for the latest information. Take your pick of what you want to use and you will definitely find out the latest news.

Whatever you choose to do, please take the time to keep yourself current on issues within our industry. Take action when the opportunity arises. You will be surprised by how little time is involved to make a long term difference. While change is inevitable, we do have the opportunity to shape what decisions are being made and it is up to you to say how much you tried. 



John M. Turner
Sr. Sales Specialist - Golf
Bayer Environmental Science

Cell Phone: (630) 215-6110
Office: (630) 443-7807
Fax: (630) 443-7839
Email: john.turner@bayercropscience.com



CLESEN
PROTURF
SOLUTIONS

Steve Wasser
(920) 225-9658
swasser@clesenproturf.com

Matt Kinnard
(262) 720-0251
matt@clesenproturf.com

Rob Wasser
(262) 221-5524
rwasser@clesenproturf.com

clesenproturf.com

Successful, Theme-Based Seminars

By Joe Sell, Assistant Golf Course Superintendent, Whistling Straits Golf Club

On February 9th the Assistants Committee held the 7th annual assistant's seminar at Whispering Springs Golf Course in Fond du Lac, and they raised the bar at this event. Over the past several years the Assistants Committee has planned education seminars focused on one topic and this year, the topic was chemicals. This event drew around 75 attendees and was our largest attended event to date. These full-day seminars have been quite successful through the help of dedicated sponsors that support the growth and professional development of up-and-coming turf managers. The Assistants Committee keeps a continual focus on driving growth within our state chapter. One way we accomplish this is by keeping our events low-cost and open to non-members that work for a WGCSA member. These events offer continuing education credits and draw in members from all areas of the state. The committee achieved this and had an outstanding event with the help of: Helena Chemical, Horst

Distributing, JW Turf, Reinders, Pendelton Turf, Rain Bird and Waupaca Sand & Solutions.

Assistants arrived on a cool but sunny day at Whispering Springs at the event, "Chemicals! I know them." A wonderful continental breakfast and event registration with Brett Grams welcomed everyone to the day. The first session was a combination talk, "Sprayer Calibration and Maintenance." George Gerbers, Reinders Equipment technician, Rusty Boldrey, JW Turf Equipment technician, and Dave Kloss, Account Manager JW Turf were the speakers on this topic. George showed a video on Raven control operation and set up. He also covered tips on general maintenance for Toro sprayers. After a few great questions from the audience Dave Kloss shared a personal story from his day at Medinah and let's just say... it's important to be supervising your staff when loading sprayers, even if they are experienced. Dave and Rusty covered the calibration and functionality of John Deere

spray systems and also offered a few good apps that you can use on your smart phone to help with the math.

Dr. Doug Soldat, associate professor UW-Madison, was the presenter talking about the fate of pesticides after they are applied. He was excited to cover some of the things he typically speaks about to his students, one being how that affects chemical efficiency and uptake. He also spoke about the fate of pesticides and how the community perceives we are using them. He spoke about how these perceptions might influence and impact chemicals in our industry. An example he shared was in Ontario, Canada. They have strict guidelines on the use of pesticides. They have a no-use restriction on residential and school grounds. We, as turf managers, should find out and know our Environmental Impact Quotient (EIQ) and consider that information when developing our spray programs. Doug had a great presentation that lead nicely into our next topic.



Above: George Gerbers, Equipment Technician at Reinders presented information on sprayer calibration.

Above Right: Dave Kloss, Account Manager and Rusty Boldrey, Equipment Technician at JW Turf also discussed calibration and setup of sprayers.

Right: Dr. Doug Soldat discussed the fate of pesticides.

From Reservoir to Rotor... Rain Bird has you covered.



Lush fairways and manicured greens can also be highly water-efficient. Every Rain Bird product is a testament to that truth. From water-saving nozzles to highly efficient pumps to leading-edge Control Technology, Rain Bird products make the most of every drop, delivering superior results with less water. Keeping the world and your golf course beautiful. That's The Intelligent Use of Water.™

To learn more, contact your local sales rep today!

Dustin Peterson
NW IL/WI Sales Specialist
(309) 314-1937
dpeterson@rainbird.com

Kevin West
IL Sales Specialist
(708) 341-1687
kwest@rainbird.com

Rain Bird
Inside Customer Support
(888) 907-5535
rbiservices@rainbird.com

RAIN  BIRD®

“Pesticide Regulation and Legislation: a National Overview,” was presented by Chava McKeel, GCSAA Government Relations Director. Personally, I feel this is an area that is overlooked by many golf course superintendents. This was an eye opening experience for most in the room

and taught us what we have to look forward to and prepare for. She mentioned products like Methylbromide being no longer manufactured and Nema-cur being phased out. The Environmental Protection Agency (EPA) allowed an extension of use of Nema-cur but then went back and

changed the plan without anyone really being aware. If we are not proactive in our field about the perception and use of pesticides to both the community as well as the government, it won't be long before we are in the same situation as Ontario. Chava also covered the MSDS, which will be just SDS and in place by 2016 to have uniformity in how hazardous materials are labeled. She mentioned Responsible Industry for a Sound Environment (RISE) and the Waters of the United States Act (WOTUS). If you don't know much on either acronym, or just want an acronym to use for yourself, I would contact Chava Mckeel, she has one for everything! All joking aside, it was highly informative and we really appreciate her sharing her vast knowledge on the topic.

The staff at Whispering Springs did an outstanding job with our event, as they do every year, and provided us a full lunch buffet.

Lunch was followed by a panel discussion, “How to Build a Chemical Program within Your Budget and Needs,” moderated by myself. Prior to this event, I had not had the experience of acting as a moderator, so I prepared some questions for the panel beforehand to keep the discussion moving. As a committee we wanted to make sure there was diversity in this panel group to best cover the subject matter.

Tim Schmidt did an excellent job finding our panelists who were: Rod Johnson, Pine Hills CC, David Brandenburg, Rolling Meadows GC, Scott Bushman, Fox Valley GC and Bill Stein, Minocqua CC. We had a great dialog ranging from how these superintendents started their careers to how things have changed their focus on the topic of spraying and applying chemicals.

The panel covered factors that each of them consider when building a good spray program, whether it's money, club tournaments, brands of product or timing of disease control. Most importantly, they gave us great advice for developing Assistant Superintendents to consider when getting ready for that first big day on your own.



SEEDING THIS SPRING?

Mixing grass seed with Milorganite makes it easier to accurately spread the seed, especially those expensive small seeded species like bentgrass. The standard Milorganite to grass seed mixing ratio is 4:1 by weight.

Partnering with:



1-800-785-3301



1-800-279-2341

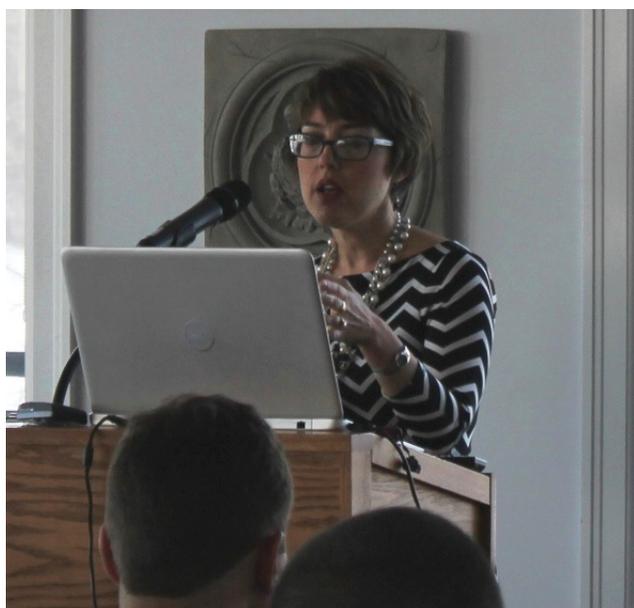
08-270 APR11

www.milorganite.com 1-800-287-9645

I would like to extend my sincere gratitude to all of the individuals that supported this seminar. Our speakers and sponsors make these events successful. We couldn't do it without those who volunteered their time, talent and resources to our chapter. I could not have organized this seminar without the help of the committee (Tim Schmidt, since he was the only other member at the time.) I'd also like to thank Brett Grams. This event fell in line with his busiest time of renewal and GIS planning and Brett still answered my phone calls and volunteered to run the registration. We are grateful for the continued support from the entire WGCSA Board of Directors as we drive growth for the Assistant Superintendents.

Lastly, I would like to welcome and introduce the two newest members of the Assistants Committee Kate Lifke and Luke McGhee. Kate has her BS in Horticulture and Natural Resources

from UW-Madison. She has interned at Erin Hills and The Legend at Brandybrook. Kate was the assistant at Oshkosh CC before taking her current role as Assistant Superintendent for Trappers Turn Golf Club in Wisconsin Dells. Luke is also a UW-Madison graduate with a major in Turf Management. I first met Luke when he volunteered for the green building project at Monona GC in Madison. He then was interning at Erin Hills and had worked for University Ridge GC. Luke did his last internship with Kohler at Blackwolf Run, graduating and taking a job as Assistant Superintendent for the Wisconsin Club. I look forward to working with these two great additions to the committee as we serve all Assistant Superintendents in the state. Thanks to everyone that was able to attend. Your attendance challenges us to bring you better events each year. We look forward to seeing you all at the next upcoming events.



Left: Chava McKeel, GCSAA Government Relations Director opened many eyes in the room with her information on pesticide regulation and legislation.

Below: The panel moderated by Joe Sell consisted of Scott Bushman, Fox Valley Golf Club, David Brandenburg, Rolling Meadows Golf Course, Bill Stein, Minoqua Country Club and Rod Johnson Pine Hills Country Club. The panel discussed everything from chemical and fertilizer programs to budgets and dealing with staff, golfers and management.



How Does Sodium Affect Sand-Based Putting Green Soils?

By Glen R O'Bear, Graduate Student, University of Nebraska-Lincoln

Editors Note: This submitted student article is eligible for the Monroe Miller Literary Scholarship awarded each year to the author of a selected article.

Glen O'bear is a Wisconsin native who grew up in Sheboygan. He completed a B.S. in the turfgrass program at UW-Madison, and M.S. degrees in Soil Science with Dr. Doug Soldat and Entomology with Dr. Chris Williamson. He is currently working on a Ph.D. at the University of Nebraska-Lincoln under Dr. Bill Kreuser, who is also a Wisconsin native and former M.S. student with Dr. Soldat.

Irrigating high-value turfgrass with water containing high concentrations of sodium can present significant agronomic challenges. Sodium promotes clay swelling and dispersion, resulting in a decrease in the hydraulic conductivity or rate of water flow through of the soil. However, our understanding of sodium hazard comes from research focused on soils with moderate to high clay contents. Many modern putting greens are constructed with high sand contents and contain less than 3% clay by weight (USGA,

2004). Therefore the findings of previous sodium hazard studies may not apply to sand-based root zones with low clay content. The percentage of sodium on soil cation exchange sites, referred to as the exchangeable sodium percentage (often abbreviated as ESP), provides a measure of sodium hazard in soil. The generally accepted exchangeable sodium percentage threshold of 15 for sodic soils (Richards, 1954) may over-estimate sodium hazard in sand-based putting greens.

In a study by Frenkel et al. (1978), increasing exchangeable sodium percentage had no effect on a soil containing 2.9% clay. In another study (Pupisky and Shainberg, 1979), increasing exchangeable sodium percentage actually resulted in an increased hydraulic conductivity of a soil with 3.1% clay. The authors suggested that sodium initially caused the clay to disperse, and then clay leached out of the profile as water continued to infiltrate. Lado and Ben-Hur (2010) concluded that the risk of effluent irrigation water with respect to hydraulic conductivity is low for sandy soils. While these studies have focused on sandy soils with relatively low clay contents, the soils were likely not representative of putting green root zones. The fastest conductivity reported by Frenkel et al. (1978) was 1 inch per hour, which is still substantially slower than that of putting green root zones (USGA, 2004).

Sand-based putting green root zones are often amended to increase nutrient and water holding capacity, and these amendments affect hydraulic conductivity depending on their incorporation rates and physical properties (Bigelow et al., 2004). The characteristics of different soil amendments could influence how sodium affects hydraulic conductivity for a given root zone mix. In the presence of sodium, clays with 2:1 minerals such as montmorillonite are more prone to swelling and dispersion than 1:1 clays like kaolinite, which do not shrink or swell. Some sand root zones are amended

with calcined clay (e.g., Profile), which is physically stable and not susceptible to swelling or dispersion. Since this amendment does not readily disperse, sand root zones amended with calcined clay should be unaffected by sodium with respect to hydraulic conductivity.

Sand root zones are also amended with organic materials such as sphagnum peat and peat humus. Organic matter dispersion could result in pore clogging and reduced infiltration rates (Lado and Ben-Hur, 2010). Organic matter can also enhance clay dispersion in sodic soils (Gupta et al., 1984; Goldberg et al., 1990). However, it is unclear whether sodium will reduce hydraulic conductivity of sand amended with peat materials, especially at relevant incorporation rates (10 to 20% by volume).

The objective of this research was to study the effects sodium on hydraulic conductivity of sandy soils. Specifically, this study was designed to evaluate how exchangeable Na⁺, soil clay content, and soil amendments used for construction affect the hydraulic conductivity of sand-based putting green root zones.

Methods

Calcareous sand (Waupaca Sand and Gravel, Waupaca, WI) was blended with three different amendments (**Table 1**) in a double-barrel rotating mixer and packed into metal sleeves (7.6 cm diam., 7.6 cm height). A non-amended sand was also included in the experiment. The clay content of root zone mixtures was measured using the hydrometer method (Bouyoucos, 1962). The packed metal sleeves were placed in 12-L plastic tubs and allowed to equilibrate for 48 h in a range of solutions of differing ratios of sodium chloride, calcium chloride, magnesium chloride, and potassium chloride (**Table 2**). Solution treatments 1 through 7 were designed to increase sodium saturation while keeping ratios of Ca²⁺ and Mg²⁺ constant. Each root zone mixture and saturating solution treatment combination was replicated three times.



YOUR STRONGEST SUPPLY LINK

Renova[®] CORON[®] Soaker[®]

For healthier, higher quality turf, Helena offers a full range of nutritional products and premium wetting agents. For more information, contact Shawn Hilliard at hilliards@helenachemical.com or (608) 516-4006.

HELENA
People...Products...Knowledge[®].

helenachemical.com | Always read and follow label directions. Helena, CORON, Soaker and People...Products...Knowledge... are registered trademarks of Helena Holding Company. Renova is a trademark of Valagro SpA. © 2015 Helena Holding Company.

After equilibration in the appropriate solutions, the soil columns were rinsed with two pore volumes of deionized water, and hydraulic conductivity was measured by the automated falling head permeameter method (Johnson et al., 2005).

Following the measurement of hydraulic conductivity, soils were oven-dried at 105 °C, homogenized, and then analyzed for base cation content by a pH 8.5 ammonium acetate extraction. Cation exchange capacity values were estimated by summation of base cations. A generalized linear model was used to determine whether exchangeable sodium percentage had a significant effect on hydraulic conductivity for each root zone mixture.

Results and Discussion

Saturating the sand columns in the different solutions described in Table 2 created a range of exchangeable sodium percentage in each soil. Only two of the four root zones were affected by sodium, despite having exchangeable sodium percentage levels above the generally accepted threshold of 15 (Fig. 1). Neither the sand/sphagnum peat nor the sand/Profile blends were affected by increasing exchangeable sodium percentage. These blended soils met the USGA particle size recommendations for putting green construction and contained only 0.7% clay. The findings from

this study suggest that sodium does not negatively affect putting green soils with low clay content, including those constructed to the recommendations of the USGA.

The hydraulic conductivity of the non-amended sand actually increased as exchangeable sodium increased. Increasing the exchangeable sodium percentage may have initially dispersed the small amount of clay (0.5%) that was present, allowing the clay to easily migrate downwards through the soil and leach out with the drainage water. Other authors have reported similar findings (Pupisky and Shainberg, 1979), and have suggested that plugging of pores in sandy soils is unlikely in soils with low clay contents (Lado and Ben-Hur, 2010).

The hydraulic conductivity of the sand/loam soil blend decreased with increasing exchangeable sodium percentage, which agrees with our general understanding of sodium behavior in soils. This soil contained 4.8% clay, and did not meet USGA particle size recommendations. This treatment was included in the study as a positive control. The fact that we did observe a decrease in hydraulic conductivity with increasing exchangeable sodium shows that our method of soaking the soils in different solutions and measuring hydraulic conductivity was working correctly.

Table 1. Characteristics of blended sand root zones.

Root zone description	Blend ratio by volume	Bulk density g cm ⁻³	Estimated CEC cmol _c kg soil ⁻¹	Clay content % by weight
Non-amended sand †	1:0	1.71	1.5	0.5
Sand/sphagnum peat‡	4:1	1.48	2.5	0.7
Sand/Profile §	4:1	1.51	2.3	0.7
Sand/loam #	4:1	1.71	3.0	4.8

† Waupaca Sand and Gravel, Waupaca, WI.

‡ Sun Gro Horticulture, Agawam, MA.

§ Profile Products, LLC, Buffalo Grove, IL.

Bt horizon of Dresden silt loam (fine-loamy over sandy or sandy skeletal, mixed, active, mesic Mollic Hapludalfs).

Table 2. Saturating solution mixtures of NaCl, CaCl₂, MgCl₂, and KCl.

Treatment no. †	Na ⁺	Ca ²⁺	Mg ²⁺	K ⁺	SAR †
	----- mmol _c L ⁻¹ -----				
1	0	30	5	2	0
2	7	25	3	1	2
3	12	21	3	1	3
4	23	12	1	1	9
5	35	2	0	0	35
6	37	0	0	0	∞ ‡
7	185	0	0	0	∞

† Sodium adsorption ratio = $[Na^+] / ([Ca^{2+}] + [Mg^{2+}]/2)^{1/2}$; values in mmol_c L⁻¹.

‡ Solution contains no Ca²⁺ or Mg²⁺; SAR = ∞.

STUDENT ARTICLE

The findings from this positive control also strengthen our conclusions. Under identical experimental conditions, we observed that increasing exchangeable sodium does not reduce hydraulic conductivity in soils with low clay contents.

The vast majority of sodium hazard studies are focused on short time scales. In golf course putting greens, it is unclear how long-term factors such as organic matter accumulation would affect clay dispersion and leaching over a timescale of months to years. The addition of organic matter to sand root zones can decrease hydraulic conductivity by a factor of 10 to 100 (Weseling et al., 2009). On the other hand, clay dispersion and leaching during heavy rainfall events could result in a decrease in soil clay content over time, potentially

increasing hydraulic conductivity.

Interpretations of water quality parameters do not often take soil properties into account. As such, recommendations for the hazard level of certain water quality parameters may under- or overestimate risk. By linking soils properties to water quality parameters, more accurate recommendations can be made to the end-user, potentially saving time, money, and valuable resources. The results of this research suggest that the evaluation of sodium hazard of irrigation waters needs to account for clay content in the soil. In the case of sand-based golf course putting green root zones, which often have very low clay contents, increasing exchangeable sodium percentage well above the standard sodicity threshold of 15 had no effect

on hydraulic conductivity. The findings from this study suggest that the application of soil amendments for remediation of sodic soils (e.g., gypsum) would only be warranted for sodic soils with higher clay contents, and will not provide significant infiltration benefits to sand-based golf course putting greens.

Acknowledgement

Another version of this article was published in the journal *Soil Science*. This research was funded by the United States Golf Association and the Wisconsin Turfgrass Association. We would like to thank Rob Johnson from Waupaca Sand and Gravel for donating the soils and amendments used in this study. We also thank Dr. Norm Hummel for donating physical analyses of the soils in this study.

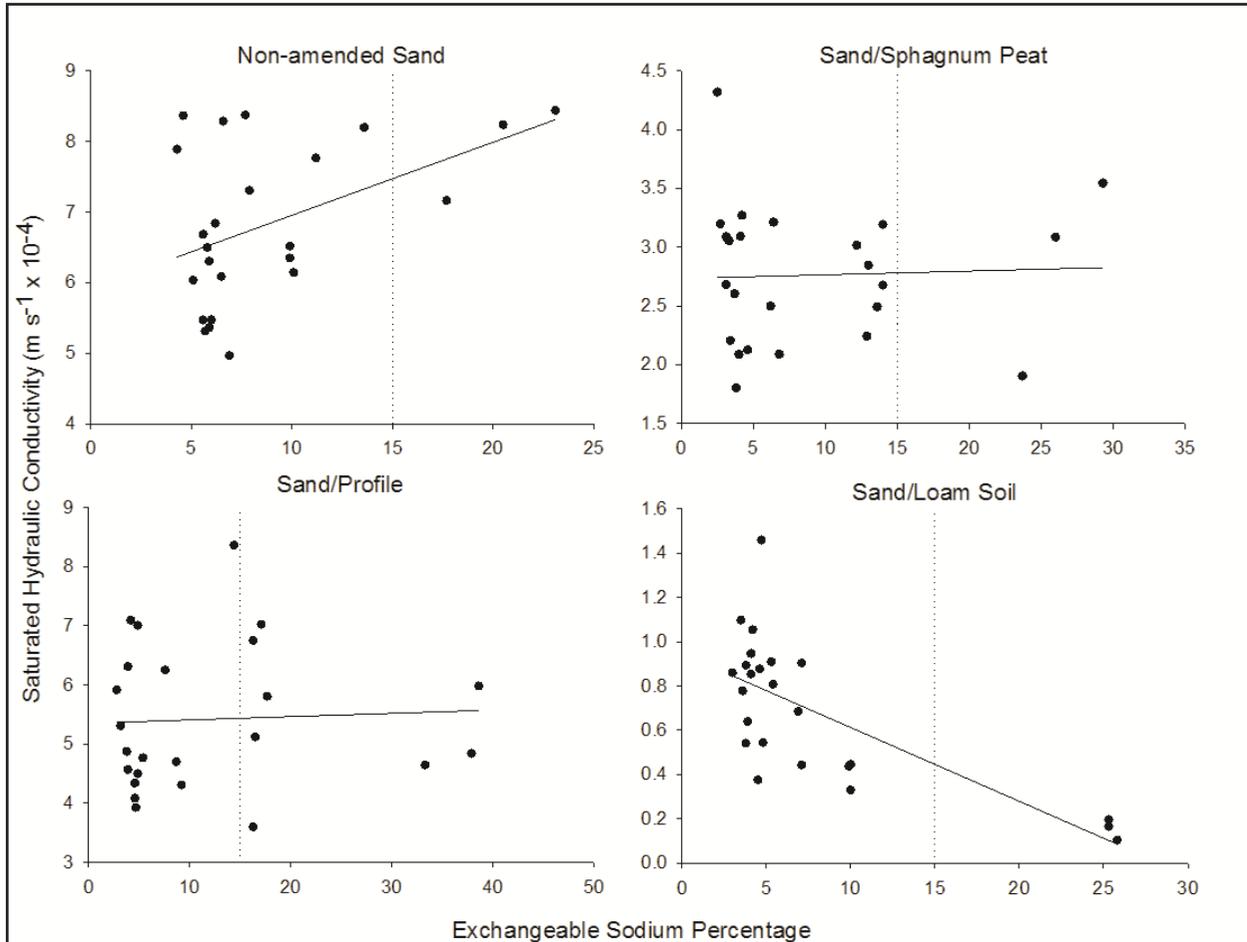


Figure 1. Saturated hydraulic conductivity of four root zones as affected by increasing exchangeable sodium percentage. Dotted lines indicate the generally accepted exchangeable sodium percentage threshold of 15 for soil sodicity problems.

STUDENT ARTICLE

References

Bigelow, C. A., D. C. Bowman, and D. K. Cassel. 2004. Physical properties of three sand size classes amended with inorganic materials or sphagnum peat moss for putting green rootzones. *Crop Sci.* 44:900-907.

Bouyoucos, G. J. 1962. Hydrometer method improved for making particle size analyses of soils. *Agron. J.* 54:464-465.

Frenkel, H., J. Goertzen, and J. Rhoades. 1978. Effects of clay type and content, exchangeable sodium percentage, and electrolyte concentration on clay dispersion and soil hydraulic conductivity. *Soil Sci. Soc. Am. J.* 42:32-39.

Goldberg, S., B. Kapoor, and J. Rhoades. 1990. Effect of aluminum and iron ox-

ides and organic matter on flocculation and dispersion of arid zone soils. *Soil Sci.* 150:588-593.

Gupta, R., D. Bhumbra, and I. Abrol. 1984. Effect of sodicity, pH, organic matter, and calcium carbonate on the dispersion behavior of soils. *Soil Sci.* 137:245-251.

Johnson, D., F. Arriaga, and B. Lowery. 2005. Automation of a falling head permeameter for rapid determination of hydraulic conductivity of multiple samples. *Soil Sci. Soc. Am. J.* 69:828-833.

Lado, M., and M. Ben-Hur. 2010. Effects of irrigation with different effluents on saturated hydraulic conductivity of arid and semiarid soils. *Soil Sci. Soc. Am. J.* 74:23-32.

Pupisky, H., and I. Shainberg. 1979. Salt effects on the hydraulic conductivity of a

sandy soil. *Soil Sci. Soc. Am. J.* 43:429-433.

Richards, L. A. 1954. Diagnosis and improvement of saline and alkali soils. *Agric. Handb.* 60. U.S. Gov. Print. Office, Washington, DC.

U.S. Golf Association (USGA) Green Section Staff. 2004. USGA recommendations for a method of putting green construction. Available at <http://www.usga.org/Content.aspx?id=26124> (verified 3 Mar. 2014). United States Golf Assoc., Far Hills, NJ.

Wesseling, J., C. Stoof, C. Ritsema, K. Oostindie, and L. Dekker. 2009. The effect of soil texture and organic amendment on the hydrological behaviour of coarse-textured soils. *Soil Use Manage.* 25:274-283. ✓



For All Your Rain Bird, Baroness and Yamaha Golf Car Needs.



BARONESS
QUALITY ON DEMAND

RAIN BIRD

 **YAMAHA**

Yamaha Golf and Utility 952-890-5541 800-352-2779 Fax: 952-890-2914
Paul Eckholm 952-463-5499 peckholm@yamahagu.com
Tom Bjornberg 612-718-8491 tbjornberg@yamahagu.com
Greg Stoeger 920-629-9114 gstoeger@yamahagu.com

Heather Henning, Eric Eggman, Jon Hegge

By Josh Lepine, Certified Golf Course Superintendent, Maple Bluff Country Club

Name: **Heather Henning**

Company Position: **Assistant Golf Course Superintendent at Racine Country Club**

Years as WGCSA member: **4**

Membership Classification: **C**

18 holes with Heather Henning:

1. How did you get started in the turfgrass industry? My first summer out on the golf course was between my junior and senior year of high school. It was the first real job I ever had. I had told my parents that I wanted to work outside and be physically active. I never had a golf course specifically in mind and had never even been out on a golf course but a woman at the job center said that she knew that there was a golf course in town looking for people. I had so much fun and it was all so new and fascinating to me that I asked if I could come back the next summer and work. The more I learned the more I felt that this is what I wanted to do for a living. At the time in college I didn't know if that was going to be possible for me but I knew that I didn't want to give up on it.

2. What is the most rewarding part of your career? I have been able to start an internship program here at Racine Country Club. I enjoy working with young people who are as excited to learn as I was when I was their age. I had a truly great mentor, and strive to pay it forward by teaching others who have the commitment that it takes to succeed.

3. What would you consider to be your greatest career challenge? The greatest challenge that I have faced has been my gender. This industry is very male dominated.

4. Which three adjectives describes you the best? Determined, Level-headed, Patient

5. Tell us about your family: My parents grew up in the Racine area and raised my brother and me here in Racine. I met Curt while I was in College and we have been married for 10 years. My brother is in the military and currently stationed at Fort Leonard Wood MO. I have 2 nieces and 2 nephews that I miss, and try to see as often as I can.

6. Any pets? My yellow lab Zoey

7. What drives/motivates you every day? I strive to be my very best every day. I want to be a good example to everyone on the staff, especially the interns (they keep me on my toes, another reason I like having them around)

8. Who do you admire? I admire my parents. They taught me to work hard and that I can do anything. They have been through a lot in their life and I have persevered and never lost faith.

9. Who is the person in history you'd most like to meet? Jesus



Top: Heather and her husband Curt at Busch Gardens in Tampa

Bottom: Zoey who spends time helping with maintenance at Racine CC.

MEMBER SPOTLIGHT

10. What's a fun fact that people don't know about you? I like to think that I'm really funny.

11. What do you do in your spare time, favorite hobbies? My husband Curt and I love to go fishing and hunting. This is something that I started doing when I met him. It came natural to me seeing as I enjoy the outdoors so much already.

12. If you could go anywhere in the world on vacation, where would you go? Australia/ New Zealand

13. What is the one thing you would like to learn/accomplish someday? Learn enough Spanish to converse with my crew better.

14. What is your favorite turf management related tool or technique? The most valuable piece of turf equipment that I have used has to be the 300 gal Toro Sprayer.

15. Favorites:

TV Show: Big Bang Theory

Movie: All of the Hobbit and Lord of the Rings trilogy.
They were my favorite books growing up.

Food: Anything sweet. I have a terrible sweet tooth.

Sports Teams: Green Bay Packers

16. Do you golf? Handicap? Best shot or golf story? I do not golf much but I love to go out and try. My husband and I are currently working on getting me to the point where I feel at least comfortable golfing with other people. Right now I only play with him or my parents.

17. Top Bucket List items? Honestly, I have never thought much about a Bucket List. I am very satisfied with my life and career and hope to be able to remain on my current path.

18. If you could provide one piece of professional advice, what would it be? This would apply to anyone trying to do anything. Never give up. If there is something out there in life that you want don't let other people tell you that it is not possible. I had people tell me that it wasn't realistic for me to have a career in the golf course industry for any number of reasons. I never gave up. I worked hard. I paid attention to everything that was going on around me and absorbed as much knowledge as I possibly could. The Superintendents that I have worked with noticed that in me and helped me get better and to move on and up in my career.

PENDELTON TURF SUPPLY

Ed Witkowski
414-640-6447
edward.witkowski@pendeltonturfsupply.com

Todd Fregien
414-640-2265
todd.fregien@pendeltonturfsupply.com

Clark Rowles
608-228-1782
clark.rowles@pendeltonturfsupply.com



**FULL LINE OF TURF PRODUCTS
CHEMICALS • TEE & GREEN SUPPLIES
TIRES & TUBES • NEW PRODUCT INFORMATION**

**SATISFACTION
GUARANTEED**

805 Ela Avenue
Waterford, WI 53185
Phone: 262-534-3334
Fax: 262-534-2990



MEMBER SPOTLIGHT

Name: **Eric Eggman**
Company Position: **Golf Course Superintendent at Rhinelander Country Club**
Years as WGCSA member: **23**
Membership Classification: **A**

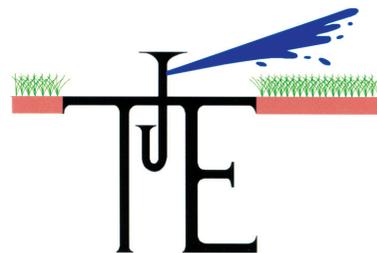
18 holes with Eric Eggman

- 1. How did you get started in the turfgrass industry?** I started as a night waterman in high school at RCC and worked for some lawn care operators through college.
- 2. What is the most rewarding part of your career?** The relationships with my coworkers, colleagues, and the members is number one. You just can't put a price on friendship and respect.
- 3. What would you consider to be your greatest career challenge?** My first year back at RCC as Superintendent half of each green was dead from ice and traffic damage. It was myself and a crew of three. We worked extremely hard that year and set in place practices that have been successful for us in the years since.
- 4. Which three adjectives describe you the best?** I'm detail orientated, opinionated, and I like to talk, so if we go out for breakfast we might have lunch too!
- 5. Tell us about your family.** My wife Lisa and I will celebrate our tenth wedding anniversary this October. We don't have children but we do love on our thirteen nieces and nephews as often as we can. We also have an eleven year old Golden Retriever Maddie, and a six year old lab mix, Elaine. They are of course are the smartest, cutest, and best dogs in the world!
- 6. What drives/motivates you every day?** At work I've always been motivated to do things better, faster, and more cost effective.
- 7. Who is the person in history you'd most like to meet?** My Great Great Grandfather served with the Union during the Civil War. He joined when he was 16 in January of 1864. We have the double barreled musket he carried in the war, his hand written discharge papers, and some of his Grand Old Army medals. I also have a note book that he, his son, his grandson, and my father have written in. It's pretty cool.
- 8. What do you do in your spare time, favorite hobbies?** Lisa and I are on the pontoon a lot in the summer. In the winter I volunteer coach for the Hodag alpine ski and snowboard team. I also try to get out west to ski some powder every couple of years. I have completed two half marathons and would like to do some more.
- 9. If you could go anywhere in the world on vacation, where would you go?** A tour of Italy and Greece. One of my nephews is stationed in Italy with the Air Force.



Top: Pontooning the Rhinelander Chain of Lakes.

Bottom: Eric at the summit at Park City Utah.



T. J. Emmerich Associates, Inc

Irrigation Consultants

W28620 Beverly Lane • Hartland, WI 53029

262-538-2776

Golf Course • Commercial • Master Planning
System Evaluations • GPS Services

Thomas J. Emmerich
Certified Irrigation Designer

MEMBER SPOTLIGHT

10. What is the one thing you would like to learn/accomplish someday? I have very rudimentary guitar skills. I'd like to get better.

11. What is your favorite turf management related tool or technique? Radio controlled irrigation

12. Favorites:

TV Show: Seinfeld

Movie: Dumb and Dumber

Food: popcorn and chocolate malt

Sports Teams: Badgers - Packers

13. Current book: A Brief History of Time - Steven Hawking

14. Do you golf? Handicap? Best shot or golf story? I don't golf much. If I do golf, it's to spend time with my buddies, not to compete. If I had a handicap it would be pretty high.

15. Top Bucket List items? Helicopter skiing in British Columbia. Climbing El Cap.

16. If you could provide one piece of professional advice, what would it be? Hire a good crew and train them well. It pays off right away.



At the Journeys Half Marathon in Eagle River

Prevail[®]
better. smarter. responsible.

**you will love it...
...and so will your bottom line.**

saves money

eco-friendly



When you choose Prevail[®], you'll achieve superior results *and* capitalize on cost advantage savings by using 20-30% less fertilizer than conventional products. Prevail appeals to a vast new audience that cares about the environment and the footprint they leave behind for future generations. With Prevail[®] you're using high quality products that will provide dependable results, and your customers will love knowing they're utilizing better products to manage their greenspace areas.

But we've just scratched the surface here, to get the full story on why your turf and your bottom line will love Prevail[®], contact Spring Valley[®]. We'll show you how these revolutionary new products work.

Available from **Reinders** 800-782-3300



Moving beyond conventional...
...for a better planet



MEMBER SPOTLIGHT

Name: **Jon Hegge**

Company Position: **Golf Course Superintendent at Evansville Golf Club**

Years as WGCSA member: **33**

Membership Classification: **A**

18 holes with Jon Hegge

1. How did you get started in the turfgrass industry? While living at the Alpha Gamma Rho house my first year at the UW, Pat Norton got me interested in the golf business.

2. What is the most rewarding part of your career? Hearing people you don't know saying good things about the golf course you work at. Also being able to stay at the same course for your entire career. (29 years in my case)

3. What would you consider to be your greatest career challenge? Finding young employees and new workers who only think you mow grass on a golf course.

4. Which three adjectives describe you the best? Tolerant, calm and down to earth.

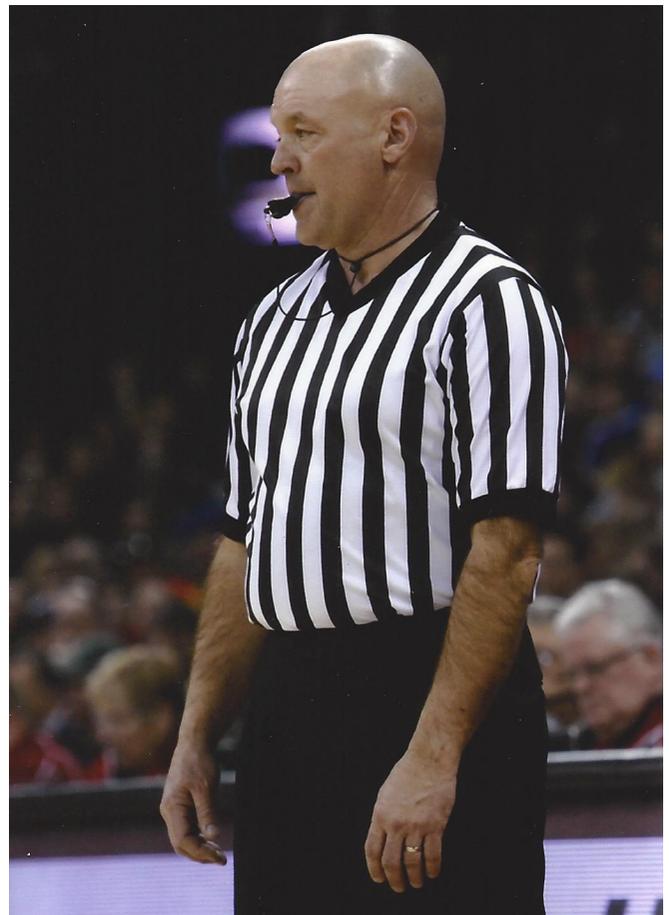
5. Tell us about your family. My wife Laura and I have been married 35 years in August. 3 daughters (two married, one engaged) 4 grandchildren. It is nice that our whole family lives within 15 miles.

6. Any pets? I guess you could call us hobby farmers. We have 6 Arab horses, 10 mini horses, 12 fainting goats, dogs and many barn cats. My youngest daughter showed Arabs before she was married and now her daughter will hopefully continue when she is older. All the grandkids like to spend time at Nana and Papa's farm. I spend a lot of time taking care of our "babies". Thank goodness for the Bobcat.

7. What drives/motivates you every day? To give you golfers the best possible conditions every day of the season.

8. Who do you admire? First my wife Laura, she works two jobs (Senior Research Specialist for the Wisconsin Alzheimer's Institute and Researcher for a startup biotech company). She went back to school three different times and still finds time to get things done with me around home. She is my best teammate. Second would be my dad and late mom. They taught me to work hard and speak when you have something important to say.

9. Who is the person in history you'd most like to meet? The person who invented electronic and chip timing for cross country. It is a lifesaver.



Top: Jon and Laura Hegge along with grandchildren Jude, Liam, Anika, Eastyn at Copper Falls State Park.

Bottom: Jon at the WIAA Division 3 Boys Championship in 2014.

MEMBER SPOTLIGHT

10. What's a fun fact that people don't know about you? I love to cook. Always looking for new recipes to try.

11. What do you do in your spare time, favorite hobbies? My second job is officiating sporting events. I have been a WIAA official in basketball, cross country and track for 39 years. Small college Basketball and college Track for 6 years. I have been lucky to have worked 9 WIAA State Tournaments in these sports. Presently, I am the Meet Referee for the WIAA State Track Meet. There is nothing like being in front of 12-14,000 screaming fans at the Kohl Center or UW-LaCrosse. I am lucky my wife lets me do 4-5 basketball or 4 track meets a week. Also, I officiate basketball sweat leagues and summer tournaments. It is a great way to stay in shape and get paid for it.

12. If you could go anywhere in the world on vacation, where would you go? We like the northern Wisconsin area of Bayfield and Mellin. Our family enjoys the ice caves, lighthouse tours and Copper Falls. (It is like you are out west.)

13. What is the one thing you would like to learn/accomplish someday? To swim better and enjoy the water more.

14. What is your favorite turf management related tool or tech-

nique? Atom bunker edger and hover mower. You can get your bunkers looking great in a short period of time.

15. Favorites:

TV Show: Pawn Stars and American Pickers. (You never know when your some of your junk might be worth something.)

Movie: Caddyshack (I am from the era when we were called greenskeepers.)

Food: Thick boneless pork chop

Sports Teams: Badgers, Brewers, Packers and finally the Bucks.

16. Do you golf? Handicap? Best shot or golf story? I don't get to golf much. Planning to be on a league team this year.

17. Top Bucket List items? Bought an above ground pool for the grandkids last fall. Need to build a deck and patio around it before summer.

18. If you could provide one piece of professional advice, what would it be? Stop and smell the roses. Too often we don't appreciate our work on the course because we are too busy. Take time and enjoy it like our golfers do. 

Jon on the far right at the State Track Meet in 2014 where he served as meet referee.



Wisconsin Chapter
GCSAA
GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

Spring Watchlist

By **Bruce Schweiger**, Turfgrass Diagnostic Lab Manager, O.J. Noer Turfgrass Research and Education Facility

The GIS is over and now comes the mad panic to get courses open. Whenever the GIS is in late February it seem that opening of courses comes way to fast. As I sit here there is promise that the weather could turn. Time will tell. (OK I hate to admit this but I was a day late sending this to Dave and the Weather did turn and courses are not only melted off but opened, Spring has Sprung. On the cautious side remember March comes in like a Lamb but goes out like a Lion, we will see.

As the snow melted here at the Noer we are left with Vole damage and I think the rabbits were a little hungry. Yes at the Noer our problems are the same as yours.

As spring weather turns many of you will start the GDD day watch and the soil temperature watch. Whether you are looking to control Poa seedhead, Necrotic Ring Spot (NRS), Summer Patch (SP) or Take-all-patch (TAP), monitoring weather is your best tools. (Once again since I was tardy I would like to make a comment for those already tracking GDD days I caution you that last week here at the Noer it was upper 50's and 60's but the ground was either frozen or water logged with just above freezing water, the plant did not gain much in actual heating degrees.) Remember however the range is 200-500, 200-300 optimum with second application 21 days later.

As spring progresses we need to be reminded that our Summer Vascular Diseases (Necrotic Ring Spot, Summer Patch and Take-all-patch) all infect in the spring when the turfgrass is growing well. Due to Mother Nature's way of growing good turf in the spring with or without our help we do not see the signs of these diseases at that time, not like dollar spot. The signs come later in the year once these diseases have done their damage. All three of these diseases infect in the cooler more damp part of the growing season. This is why we need to keep these diseases in mind early and due to past history plan our programs accordingly.

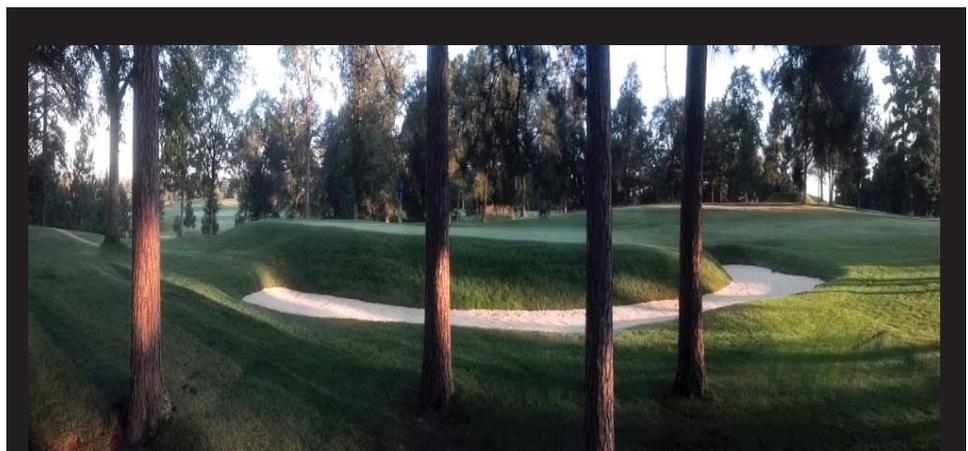
Once summer rolls around and we have disease issues from these three diseases there is not much we can do to correct the problem, so in this case prevention is key. The Key cultural control is controlling the water on your turf. In the spring being on the dry side is a great IPM Management tool for discouraging the development of these diseases.

Necrotic Ring Spot (*Ophiosphaerella korrae*) infects the plan when the soil temperatures are around 45-55F. During this period if we have Mother Nature delivering too much rainfall we may be set up for a problem later. It is also important to keep irrigation cycle as limited as possible and when we do try to water deeply. If you have had a problem with NRS in the past and the weather is not cooperating and good fungicide program making two applications 24 days apart may be needed.



Top: Vole damage was common this spring.

Bottom: Rabbits and mice can girdle and strip the bark off of trees and shrubs.



HERFORD □ NORBY
Golf Course Architects

Phone: 952.361.0644 Fax: 952.361.0645
e-mail: knorby@herfortnorbygolf.com web: www.herfortnorby.com

TURFGRASS DIAGNOSTIC LAB

Take-all-patch (*Gaeumannomyces graminis* var *avenae*) can infect bentgrass areas when the soils temperatures warm to 55-65F. Again if the soils are wet or you have low wet spots on your fairways you may consider and good fungicide program. Once again when we see the damage the fungus will be in a dormant stage and we cannot spray it like dollar spot and see it recover. If you are unfortunate enough to have poa Anna on your fairways you will notice this disease does not harm "Poa".

Once the signs appear we need to keep the plants as unstressed as possible. With the xylem being blocked with fungal growth the bentgrass plants will not be able to transpire and will wilt and die. The management tools always tell you to syringe these areas to cool them off and prevent bentgrass from dying. If this is your plan of action you may want to over seed the diseased area and use the syringes to help germinate the new seed. Since the TAP fungus is dormant it will not affect the new seedlings until the soil temperature fall back into the cooler range. Once the seed had germinated it will fill in the voids and soon the fairways will be solid once again. You will then have to evaluate how bad the issue was and make a decision as whether to preventatively treat the fairways in the fall or spring for the next summer period.

Summer Patch (*Magnaporthe poae*) SP, it the third of our great vascular diseases and it is moist active as the soil warm to 65-70F. It performed just like the previous two and infects early and show sign and symptoms after the fungus has gone dormant. Many of the same cultural practice apply to SP, as the others, avoid wet condition, good aeration program, good nutrition and keep the plant as healthy as possible.

Wow after a winter of repairing equipment, shoveling or plowing snow, apply salt, GIS, WTA Winter Conference I guess the spring gets kind of crazy. We all love it and can never wait for it to start! (One more time, IT STARTED!) Have a great spring and keep



Turfgrass Diagnostic Lab
O. J. Noer Turfgrass Research & Education Facility
 2502 Highway M,
 Verona, WI 53593-9537
www.tdl.wisc.edu
 E-mail: bschweiger@wisc.edu
 Phone: 608-845-2535
 Fax: 845-8162

thinking ahead and it will be another great year.

If you have not sign-up for the Rust Program please do. All I need from you is your name address, email and I will put you on our list. This summer when the rust starts infecting our turf I will send out a reminder and ask you to take a sample and send to me at the TDL. This is the last year of Dr. Koch's project and we would like to receive over 700 samples, please help us.

WTA Fall Golf Outing Monday October 5th, Blue Mound Golf and Country Club.



When you use the best, it shows.

With a portfolio of products unmatched in the industry, Syngenta is a necessity for every great business. From herbicides to fungicides to growth regulators, we have everything you need to maintain healthy turf.

Contact Phil Spitz to learn more about Syngenta products.
 Cell: 414-429-2015 phillip.spitz@syngenta.com

syngenta.

www.greencastonline.com

©2011 Syngenta Crop Protection, LLC, 410 Swing Road, Greensboro, NC 27409. Important: Always read and follow label instructions before buying or using Syngenta products. The label contains important conditions of sale, including limitations of remedy and warranty. Meridian®, Renew®, and Tenacity® are not currently registered for use in all states. Please check with your state or local extension service prior to buying or using these products. Scimitar® GC is a Restricted Use Pesticide. AWARD®, Barricade®, Barricade® Concentrator®, Dacconi ULTREx®, Dacconi Weather Stick®, Dacconi Zr®, Departure®, Falcide®, Headway®, Heritage®, Inratrat®, Medallion®, Meridian®, Monument®, Penant MAGNUM®, Primo MAXX®, Princep® Liquid, Renew®, Reward®, Scimitar® GC, Subdue MAXX®, Tenacity®, Trimm®, and the Syngenta logo are trademarks of a Syngenta Group Company.

News and Notes From WGCSA Members

By **Matt Kinnard**, Clesen PROturf Solutions

Career Moves

Mike Upthegrove recently moved a little farther south to Beloit and began working for the Oliphant Company as the golf course superintendent at Beloit Country Club. Most recently, Mike was the superintendent at Watertown Country Club, where he held the title since 2006. He received several college degrees including an Associates in Culinary Arts from Schoolcraft College in Novie, Michigan in 2000, a Bachelors in Business Management from UW-Parkside in 2003 and a Bachelors in Soil Science from the University of Wisconsin in 2004.

Mike got his start in golf simply because where he grew up there wasn't much else to do... just a lot of farms and factories. His first job on a golf course was in 1991 at Bird Creek Golf Club in Port Austin, MI. He then worked at Wawashkamo Golf Club on Mackinac Island, Cordillera Golf Club in Vail, CO, Geneva National Golf Club, and Whistling Straits from 2002-2006. It must be in his blood because his brother was a golf course superintendent and his Dad was the President of the local club where he grew up. Congratulations Mike!

There were some changes at Whispering Springs Golf Course in Fond du Lac over the winter. **Matt Schmitz**, the superintendent there since 2008, decided to leave the golf industry. Matt was a great superintendent and will be missed within our profession. Good luck with your new endeavors Matt!

Brandon Nebl has taken the reigns as superintendent now at Whispering Springs. Brandon had a brief leave of absence from the golf world but is getting back in the swing of things. He attended the Mundus Institute in Phoenix, AZ in 1999 to study Turfgrass Management. When he came back to Wisconsin he took a job at Lawsonia Golf Links as the Assistant Superintendent. His first job as a superintendent was at Mayville Golf Club from 2008-2011. A little of his free time is spent golfing but most of it is dedicated to his wife, Tonia, and their three sons, Maxwell, Benson and Lincoln all between the ages of five and ten. Congratu-

lations Brandon!

Chad Grimm promoted **Chris Nicholas** to Assistant Superintendent over the winter at Blackhawk Country Club in Madison. Chris' introduction to turf didn't come via the usual path. His grandparents happened to be friends of Jim and Nancy Love and when Jim heard Chris was looking for a job he got Chris in contact with Monroe Miller. For a while it was just a job for Chris, but it slowly grew on him and before he knew it, coming to work was really enjoyable. His only job on a golf course has been at Blackhawk but he certainly worked his way up through the ranks. With that said, golf runs in Chris' family. He only recently found out that two of his great great grandfathers were both golf pros in Lake Forest, IL and his great grandpa was the City of Madison Parks Director and had a hand in all of the city courses.

In his free time, Chris is all about computers, all the time. So if you need something programmed or fixed, he's your guy. Congratulations Chris!

There have also been a couple changes at Lake Windsor Golf Course in Windsor, WI. **Kenton Rhoades** left the course as Superintendent and started his own construction company called K Rhoades Company. The company, started in the summer of 2014, specializes in golf course renovation and construction work. Kenton worked as the superintendent at Prairie Woods Golf Club, in Avalon from 2001-2007, when he took the job at Lake Windsor. With that experience, he understands the challenges other superintendents face and enjoys working with them to improve their facilities. Congratulations on your new business Kenton! **Mike Shuman** has replaced Kenton as the Superintendent at Lake Windsor Golf Course. Mike doesn't have any formal training in turfgrass management but said he was raised with a shovel and fed small doses of growth regulators throughout his childhood.

He does have a degree in diesel mechanics from Pikes Peak College and has been in

the golf industry for 20 years, mainly in golf course construction. Before Lake Windsor he worked as the Assistant Superintendent at Bishops Bay Country Club in Middleton. When Mike is not at the course he enjoys silver smithing, lapidary (gem cutting) and selling his wares. Congratulations Mike!

I also have some news within our own company to share. Over the winter, PROturf Solutions and Arthur Clesen, Inc had been working on a plan to become partners and merge the two companies. We are happy to announce that was completed in February to form the new Clesen PROturf Solutions.

In addition, **Rob Wasser** and **Steve Wasser** joined our team. The brothers both have a long history in Wisconsin turf distribution and service and are excited to be a part of our growing team. Also, last fall **Dan Carmichael** joined our company. For any of you athletic field managers, lawn care, landscape, or snow and ice removal folks, Dan is your guy to contact regarding those specialties. He has over 20 years of experience in our industry and is an excellent source of knowledge. Finally, in addition to some sales responsibilities and ownership, I am now the Director of Sales for Clesen PROturf Solutions and Arthur Clesen, Inc. It has certainly been a fun ride for me and I look forward to meeting more of you in the future and again working with all my friends in the industry this season and for many more to come.

With that said, this is my final article as the author of the Badger State Turf Clippings. It has most definitely been a pleasure sharing, with all of you, the changes your friends and colleagues have experienced over the last several years. I must also say thank you to all that have been willing to share the positive things that have happened in their lives with me. Without your help and contributions to this article it would not be possible. Thank you again!

Please call or email me with any significant news or happenings around the state so we can spread the good news. I can be reached at matt@clesenproturf.com or (262) 720-0251 

WILL THE MOWER WITH THE MOST POWER IN ITS CLASS PLEASE RAISE YOUR ARM

NEW AR722T™

Nothing is more powerful than the all-new seven-gang AR722T™ contour rotary mower from Jacobsen. With a massive 65.2 horsepower Kubota® turbo-charged diesel engine, the AR722T powers its ultra-productive 124-inch width-of-cut without slowing down. The AR722T glides over ground contours and climbs hills with ease – thanks to the exclusive SureTrac™ four-wheel drive traction and weight transfer control. See for yourself why the powerful and productive Jacobsen AR722T contour mower is at the head of its class – call your local Jacobsen dealer today.

JACOBSEN®

1.888.922.TURF | www.jacobsen.com



Horst Distributing, Inc.
444 N. Madion ST.
Chilton, WI 53014-0110
www.horstdistributing.com
gmortimer@horstdistributing.com

San Antonio Plays Host To GIS

By David Brandenburg, Golf Course Manager, Rolling Meadows Golf Course, Fond du Lac

San Antonio was a great venue for the Golf Industry Show and I hope it stays in the rotation of shows. The city has plenty to offer and despite the construction around the conference center it was easy to get around.

I was surprised 4 weeks out all the association approved hotels were taken so I ended up about a mile away as the crow flies but right on the river walk. Getting to the conference center I had the option of taking the meandering river walk or the street route past churches, parks and of course the Alamo.

Regardless of which route I took I had a hard time walking anywhere quickly due to having to stop at the countless historic features and signs on the buildings and the bridges explaining its significance in history.

I didn't take any paid seminars but the free seminars and classes offered plenty of education to take back home and make the trip worth the investment. As usual I was surprised by the lack of attendance in some of the seminars or the opening session. I realize the opening session and the

awards can get a little long and it usually runs over into the opening of the trade show floor but it was worth the wait for those who listened to Old Tom Morris Award winner Dan Jenkins and the other speakers.

Not everything in San Antonio was perfect and we learned right away the weather in TX can be fickle. Snow and ice in Dallas on Sunday delayed or even cancelled some members trips to the show and again on the way home ice in Dallas provided some a few extra days in the Lone Star State.

Monday and Tuesday struggled to get above 40 degrees before it warmed up nicely on Wednesday. I am sure a few attendees were buying jackets and long sleeve shirts to stay warm. The final day of the golf tournament was miserable with reported ice forming on clubs and flag poles.

A small inconvenience was the trade show floor was in one section but had a skinny section right in the middle making it difficult to walk the show floor in any kind of order. It was a minor inconvenience and by the time we return a new

addition will be open providing a different space.

The only thing that left a bad taste in my hungry mouth was the location of the Tuesday nights Opening Reception in the Tower Of The Americas. The reception was supposed to be 750 feet in the air at the top of the tower. Not wanting to be first in line I decided to walk over 5 minutes after the start time to find the line so long for the elevators I could not see the front of it.

After 30 minutes in line I decided it was not worth the wait so headed out. Those that did make it up said the tower was crowded and the only goal was to get back down the elevator.

On the positive side it was good so many attendees wanted to attend the reception and next year a ballroom will work just great.

Rather than bore you with details of my trip I will just highlight the week with pictures.

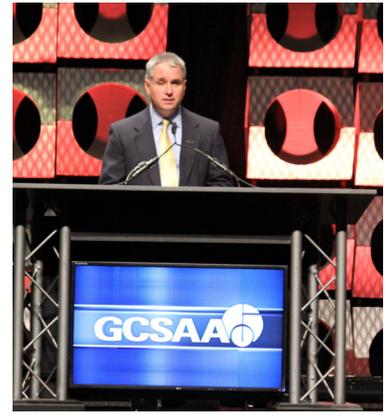
In 2016 the show heads back to the San Diego Convention Center. The GIS is back to its Feb. 6-11 time frame in 2016. I hope to see you there.



Left: CBS and Golf Channel personality David Feherty brought down the house at the closing ceremony. The former pro golfer who put down his clubs in 1997 discussed his childhood in Northern Ireland and his new life as a American Citizen. He gave humorous tales of lawn care, the tour, TV golf and the trials he has overcome.



Above: GCSAA 2014 President Keith Ihms, CGCS (left), and David Plaster, North American sales manager, John Deere Golf (second from right), present the Turf Bowl's top prize to Penn State students (left to right) Alexander Bonini, Kyle Patterson, Bill Ellinger and Chris Marra and their advisor, Dr. Ben McGraw (far right). Teams from Penn State also took 3rd and 9th place. This year 252 students on 69 teams from 33 colleges and universities participated in the competition.

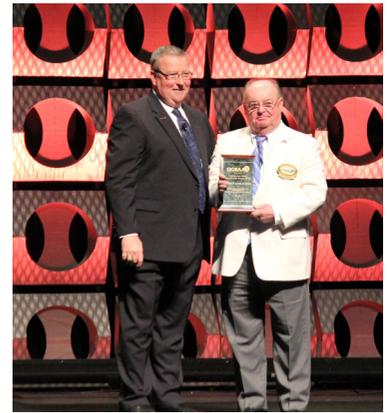


Top Left: Dan Jenkins receives the Old Tom Morris Award from GCSAA President Keith Ihms.

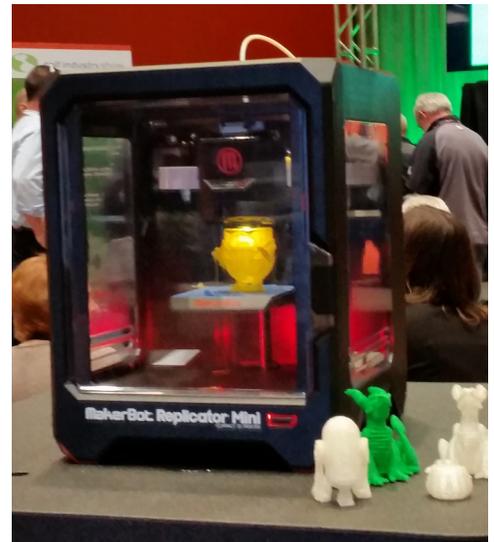
Top Right: Paul L Carter, CGCS, Bare Trace in Harrison Bay, TN Receives the Presidents Award for Environmental Stewardship.



Bottom Left: Cal Roth Sr. Vice President of Agronomy for the PGA Tour receives a Colonel John Morley Distinguished Service award from President Ihms.



Bottom Right: Melvin B Lucas Jr. CGCS Retired and GCSAA President in 1980 receives a Colonel John Morley Distinguished Service Award from President Ihms.



Left: A camera just does not show the enormity of the 175,000 square foot trade show floor.

Above: The Test Drive Technology Center had a 3-D printer on hand. It is probable golf courses can print some of their own parts in the near future.



2015 WI Hospitality Gathering

2/25/15 - Hard Rock Cafe - San Antonio, TX

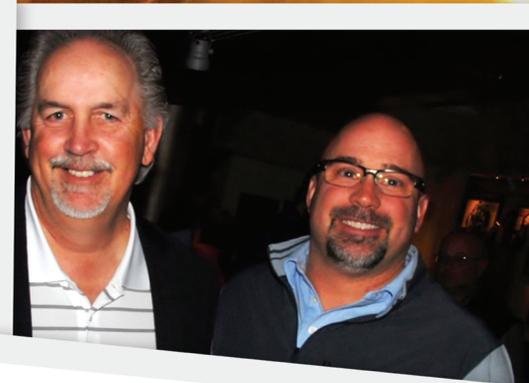
Hole In One Plus Sponsor

Reinders

Hole In One Sponsor

Syngenta





Birdie Sponsors
Clesen Proturf - Irrigation Protective Services
Rain Bird - BASF - National Golf Grapics
DHD Turf & Tree - Horst Distributing
Burris - JW Turf



Par Sponsors
Bayer - TJ Emmerich - Premier Golf & Utility
Lohmann Golf - Aquatrols - Milorganite- Watertronics
Pro Gro Solutions - Yamaha Golf & Utility - Precision Labs





On the show floor going clockwise

David Smith is recognized for 25 years as a Certified Golf Course Superintendent.

Seth Brogen, Mike Werth and Brian Milam

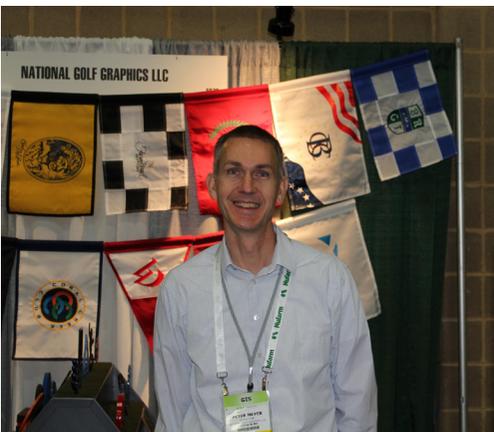
Jeremy Dahl, Matt Kregel and Mark Robel

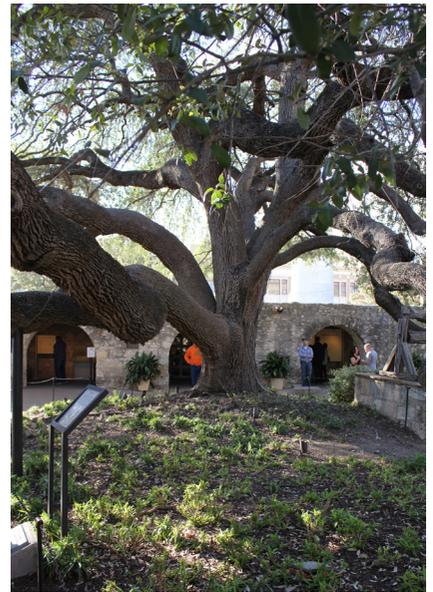
Hector Valazquez from Hector's Shop attended his first GIS. Hector provides valuable tips for equipment technicians.

Todd Quinto and Bob Lohmann spoke about their recent work at the AS-GCA session.

Peter Meyer from National Golf Graphics

Jaime Staufenbeil, Dr. George Snyder, and Tisa Overman working the Milorganite Booth.





Around San Antonio going clockwise

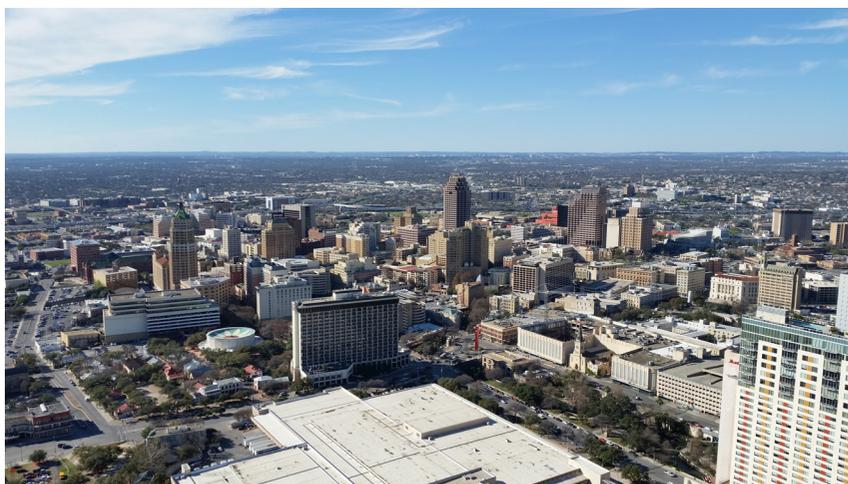
The Alamo is just a few blocks from the conference center and is a symbol of Texas Liberty. Construction began on the original mission on the site in 1724. In the early 1800's the Spanish military stationed a calvary unit at the mission and the soldiers referred to it as the Alamo the Spanish word for cottonwood in honor of their hometown. In early 1836 two-hundred Texians and Tejanos soldiers defended the Alamo against General Santa Anna's army of 1,500-2,000. The Alamo fell on March 6th and all Texan soldiers were killed. The fall of the Alamo and Santa Anna's brutality rallied the citizens and on April 21 the Texian army of new recruits cried "Remember The Alamo!" as they defeated Santa Anna's army in 18 minutes.

The Live Oak Tree is located on the Alamo grounds and was transplanted in 1912 by Walter Whall a retired English seaman who wanted to prove large trees could be moved. The trunk is 12' in circumference and the main branches are over 50' long. The tree was 40 years old when moved in 1912.

One of many historic churches, Saint Marks Episcopal Church was finished in 1875. General Robert E. Lee was a active member before he was called away for the Civil War.

The view from the Towers Of the Americas. The conference center is the white flat roof in the foreground.

The Tower of The Americas is a 750' observation tower located at HemisFair Park and was built for the 1968 Worlds Fair.





Products On The Trade Show Floor Going Clockwise

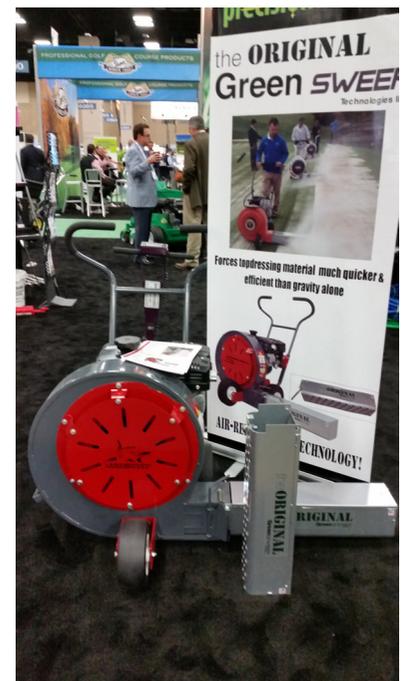
Jim Moore, USGA Green Section Education Director and Craig Nelson, Nelson Aerial discussed the use of drones at the Technology Center. Jim is a drone hobbyist while Craig is a professional photographer/videographer. Jim expressed a drone will be very valuable to a golf course for scouting turf problems before they are visible at ground level.

Capillary concrete and similar products to eliminate bunker washouts and sand contamination were popular booths.

Pat Sisk's brainchild The Green Sweep was on display.

The Samsung SDI lithium ion batteries could be a game changer for electric cart and equipment fleets.

Smithco has designed a pull behind fairway roller that folds up for transport.





Greener longer.

Green Lawnger®

Turf Colorants

For a quick and easy solution for natural-looking, year-round green turf, add **Green Lawnger®** brand turf colorants to your management program. **Green Lawnger** brand turf colorants restore natural-looking green color to dormant or discolored turf, and resists breakdown from UV light for long-lasting results.

betterturf.basf.us



The Chemical Company

Spring Business Meeting Recap

By **Kevin Knudtson**, Golf Course Superintendent, Geneva National Golf Club &
David Brandenburg, Golf Course Manager, Rolling Meadows Golf Course

South Hills Country Club was host to the 2015 Spring Business and Educational Meeting. The topic "It's All About The Trees, The Trees, The Trees" was a timely topic given so many of us have either been affected by either imprecisely damaged evergreen trees or the Emerald Ash Borer.

The meeting started with USGA Agronomist Bob Vavrek giving a year in review along with "Midwest Putting Greens, A 25 Year Perspective."

He started with the wisdom "Some things change for the better, Some things change for the worse and Some things never change."

He discussed Bacterial Wilt and whether or not it is a primary or secondary problem. There is not a consensus among researchers. He also compared it to C-15 the disease that hit courses with Toronto Creeping Bent. C-15 much like Bacterial Wilt was considered a rich mans disease because it only affected high end courses which would normally have lower mowing heights.

In Bob's 25 years mowing heights on greens have gone from a range of .156 to .125 with stimpmeter speeds of 8-10' to today's heights of .110-.090 with speeds of 10-12'

He also discussed our old friend Poa Annuua, the funds we spend to get rid of it or breed it and the fact it is still around.. Until it dies that is.

Other 25 year observations from Bob were:

- Winter Kill - has not changed
- Rolling - Rare in 1990 but standard practice today.
- Spiking and Venting - Comes and goes
- Tissue Testing - Was the rage, now not so much
- Soil Amendments - Peat still the standard but others such as Profile are still around

Bob finished with a warning testimonials and un-researched claims are still around and need to be heard cautiously. Also water issues with quality and availability will come our way in the near future.

Next up was the esteemed panel of Rod Johnson, Pine Hills, Mike Bremmer, The Wisconsin Club, Jerry Kershasky, Reinders and Todd Quinto, Lohmann Golf Designs to discuss "How What and Whys of Tree Removal/Planning".

Moderator Bob Vavrek led the group in a good discussion on the agronomic and design positives and negatives of trees. A couple take home messages were:

- Purchasing and planting a tree equals the least amount a tree will ever cost you.
- Bentgrass needs sun especially in spring and fall.
- Don't plant a tree to remember someone, plant a tree to make a hole better.
- As a general rule golfers love classic designs but do not appreciate the removal of trees.
- Sunseeker is a great program to help show committees and members why trees have to go.

To end the educational program Ben Parsons from FISTA

(Forest Industry Safety & Training Alliance) spoke on "Proper Chain Saw Safety, Tree Pruning and Felling Techniques". Ben gave some great information on safety and felling tips based on his years of experience.

After a hearty lunch association business was the topic at hand. President Van Herwynen thanked the board for their volunteerism and our vendors for their support. He explained the board was working on a set of Standard Operating Procedures to ease the transition to new board members along with BMP (Best Management Practices) for the green industry.

Mike Bremmer spoke on environmental and governmental concerns and regulations we need to be aware of. Mike has a column on the topic on page 20 of this issue.

Brian Bonlander, West Bend Country Club and Brandon Nebl, Whispering Springs Golf Club conducted the internal audit and confirmed the books were in order. ✓



Monroe Miller presents Tyler Gerritts the Monroe Miller Literary Award / Scholarship. Tyler penned the article "ABandon'ing Augusta?" in the November December issue of The Grass Roots.

The article highlighted the differences between the immaculately groomed Augusta National Golf Club and the native dry look at Bandon Dunes.

25 Year Members

Randy Dupont, North Hills Country Club

Randy was born and raised in Hartford, WI. He and his wife Lisa, and their two children still make Hartford their home.

As a kid growing up Randy spent many days at the Hartford Golf Club. In the late 60's, the Club started building an additional 9 holes on an adjacent farm field. He became intrigued watching the golf course take shape. It was during the construction process that he got his first taste of golf course maintenance. Picking rocks, and lots of them.

Randy received his BBA in Finance from UW-Whitewater in 1980 and later studied Turf Grass Management through the University of Wisconsin-Extension. After working at Hartford Golf Club for seven years as an Assistant, he moved on to North Hills CC in 1987 and worked for Bob Musbach for 3 years and was Chad Ball's Assistant there for 5 years. In 1995 Randy was promoted to his present position of Golf Course Superintendent.

In his spare time Randy enjoys attending concerts and Brewer games. He also enjoys playing golf, especially in the annual North Hills vs. Pine Hills match where there is never a dull moment.

Jim Kassera, Hastings Country Club

Jim was born in Eau Claire Wisconsin. Growing up he lived in Colby, WI and Abbotsford, WI. but spent most of his youth in River Falls, WI.

It was the comradery of the staff that inspired Jim to pursue his career. Jim was an assistant at Interlachen Country Club in Edina, MN when he joined the WGCSA. In 1994, he for a superintendent position at Willingers Golf Club in Northfield, MN. The year 2000 Jim was the grow-in superintendent/construction superintendent at the Legends Club in Prior Lake, MN. In 2002, he accepted the superintendent position at Hastings Country Club which is his current position.

Jim has a wife Marca and a dog Nor-

man. In Jim's spare time he loves to fly fish and enjoys rock tumbling.

Brian M. Zimmerman, Cleveland Metroparks

As Chief Executive Officer of Cleveland Metroparks, Brian Zimmerman is responsible for the overall management of nearly 23,000 acres including 18 park reservations, eight golf courses, Cleveland Metroparks Zoo, hundreds of miles of parkways and trails, and more than 940 employees that serve approximately 40 million visitors annually.

Zimmerman, 42, was selected in January 2010 as the sixth head of Cleveland Metroparks in its 97-year history. He previously served as chief of operations for the Milwaukee County Parks, Recreation and Culture department.

A Wisconsin native, Zimmerman grew up near Madison and attended the University of Wisconsin-Madison, where he earned a bachelor of science degree in agricultural science-soils. His agricultural knowledge and love of the outdoors led to work in turf management for several prestigious golf courses in Michigan.

In addition to his role with the Me-

troparks, Zimmerman serves on the Destination Cleveland Board of Trustees, Cleveland Neighborhood Progress Board, the Flats Forward Board of Directors, St. Edward High School Board of Trustees and various committees at St. Ambrose Catholic Church in Brunswick, Ohio. Zimmerman was named a "2014 Newsmaker" by Crain's Cleveland Business, Inside Business magazine named him to its "Power 100" list, and in 2011, he was named a recipient of Crain's Cleveland Business "40 Under 40" Award.

Zimmerman enjoys golf, traveling, especially to see Big 10 college football games, and spending time with his family, including wife Jill, son Carter and their Weimaraner, Eli, at their home in Strongsville. He is also an avid sports fan and enjoys hiking and boating.

Cleveland Metroparks is a separate political subdivision of the state of Ohio. It is governed by a three-member board of volunteer Park Commissioners who are appointed by the presiding judge of the Cuyahoga County Probate Court. Cleveland Metroparks was established in 1917 and is dedicated to conservation, education and recreation.



Randy Dupont, North Hills Country Club was on hand to receive his 25 year plaque from membership chairman Kevin Knudtson.

Hug Your Family and Friends

By David Brandenburg, Editor, The Grass Roots

It was with sadness the word spread that Emily Lyons daughter of WGCSA Member Mike Lyons was killed in a snowmobile accident near Minocqua on March 1st.

Emily was 19 years old, a graduate of Beaver Dam High School and a student at UW-La Crosse majoring in Biology.

Our condolences go out to Mike and the entire Lyons family as we are reminded life can be short and we should take time to appreciate the blessings we have.

The WGCSA Website has been a busy place so be sure to visit regularly to check out the current news and event schedule.

Dr. Paul Koch's research proposal "Plant uptake of propiconazole applied as a snow mold fungicide and the impact of application timing on snow mold control" has received funding by the GCSAA and Environmental Institute for Golf through the Chapter Cooperative Research Program.

WGCSA will co-fund the program. Congratulations Dr. Koch.

On the next page you can see some pictures from Reinders 22nd Green Industry Conference at the Waukesha Expo Center. The company is beginning its 150th anniversary celebration.

Over 35 seminars covered something for everyone in the green industry. Dr. Joe Vargas of Michigan State University has spoke at every Reinders Show and this year spoke on the issue of Pesticide Use. Congratulations to the Reinders group as you begin your Sesquicentennial anniversary.

So far spring has been mild with some great days for golf and some days to stay inside. Hopefully as we move into may we will have more of the great days for golf.

With the lack of snow and deep frost courses will test their irrigation blowout skills. Here in clay country I am more worried about frost heave breaks.

I hear most courses came out healthy although the turf was brown and desiccated.

Good luck to your and your staffs as we enter late spring. May your grass be green and slow growing and do not forget to hug those important to you. 



This drawing of WGCSA President Jim Van Herwynen was submitted by retired WSGA Executive Director Gene Haas. Gene submitted the following:

"I'm enclosing a drawing I made of Jim Van Herwynen the "NEW" President of the WGCSA. Jim has been an asset to the WGCSA and I'm sure he will carry on the tradition of all those who have served in the past."

EDITOR'S NOTEBOOK



Above: The talented panel from the Spring Business and Education Meeting included Jerry Kershasky, Reinders, Mike Bremmer, Wisconsin Club, Rod Johnson, Pine Hills Country Club and Todd Quinto, Lohmann Golf Design.

Right from Top to Bottom:
The Reinders show floor was the place to be.

Dr. Jim Kerns visited from North Carolina State to educate us.

Old meets new with a vintage Toro Tractor on display in comparison to the new Toro Rotary Dale Marach is showing a potential customer.

Below: USGA Agronomist Bob Vavrek makes a point at the WGCSA Spring Business and Education Meeting





“I’ll make dollar spot pay.”



“Even the best turf can fall victim to disease. But with **Honor® Intrinsic™ brand fungicide**, I won’t go down easily. On top of unsurpassed disease control, research shows that **Honor Intrinsic’s plant health benefits** give me a better root system so I can stand up to stresses like drought and moisture events, extreme temperatures, and aerification—better than ever.”

Intrinsic brand fungicides don’t just fight disease; they give turf the resilience to endure stress. Find out more by contacting Randy Lusher, 630.810.1832, randy.lusher@basf.com.



The Chemical Company