

47th Annual Wisconsin Golf Turf Symposium

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

The new December date for the Wisconsin Golf Turf Symposium seemed to be a hit as attendance was up and attendees were able to concentrate without worry about golfers, blowing out irrigation systems or applying snow mold products.

For now the date will be two weeks after Thanksgiving. This year that was Dec 4 and 5th because Thanksgiving was as early as it ever could be. However next year Thanksgiving is as late the symposium will be Dec. 10 and 11.

The program got off to an exciting start with Monroe Miller presenting Charlie Wilson with the WGCSA Distinguished Service Award on behalf of the association. Please see the article on Mr. Wilson on page 22.



Dan Dinelli, Certified Golf Course Superintendent, North Shore CC, Glenview, IL

The Title for the 47th Annual Golf Turf Symposium was “What’s In Your Tank?” and there is no better Keynote Speaker than Dan Dinelli certified golf course superintendent at North Shore CC in Glenview IL. Dinelli is well known for doing

research on his golf course with a variety of products. His talk titled “What’s in Your Tank, Before Going Mainstream” gave attendees some insight into his programs, experiments and property.

After a wet 2011 and a dry 2012 Dan was able to get some defining results along with Dr. Derek Settle. At North Shore the goal is to have healthy but thin turf.

They have found Primo to provide a short but fat plant so they have experimented with Embark to provide a short and skinny plant. Mainly used for seedhead suppression Dan’s work is to see if it can be used all year.

There are two different formulations with the Turf and Ornamental (T&O) and the 2S which is the stronger of the two. To combat turf yellowing Dinelli suggests using an iron product two weeks before use and to read the label carefully because in a tank mix Embark can be neutralized by a non-chelated iron.

In Dan’s trials he has found that .125 ounce of primo and .5 ounce of Embark two weeks apart can give turf a droughty look that leads golfers to think the turf is firm and fast. He has noticed a quick rebound from high rates of Embark where the turf will go from “bad to green” in less than a week. He has seen no loss of root mass and the benefits have been reduced mowing, drought tolerance and reduced dollar spot.

Embark is absorbed foliarly so no water for 8 hours is important as well is nozzle selection. Flat fan with a fine spray have provided the best results. One negative is slow recovery from damage or traffic and it best to treat healthy turf after spring green up.

Poa Cure is a new weapon for your old poa problem. So far it is only a experimental in the United States but has shown safe control on many biotypes of bentgrass and many biotypes of poa just seem to melt away.

Xonerate is a newer product but is not tolerated by all bentgrasses so do your testing on small trials. Also do not apply over

80 degrees and the 4 ounce rate will smoke turf if sprayerpasses overlapped at all.

Dan then switched gears to new dollar spot technology with Emerald, Secure and some new products with broad spectrum control. As a alternative product Dew Cure can provide up to two weeks dew control to reduce leaf wetness and in turn dollar spot. Civitas provides plant health boosters that are not yet understood and mixed results overall.

Dinelli has tried microbiological products but storage issues and mixed results have left him searching for better results.

In conclusion Dan recommends turf managers experiment on their own courses and be sure to leave a control to help document results with photographs and even video.



Dr. Brandon Horvath, University of Tennessee

Next up Dr. Brandon Horvath presented “Dealing With The Stress Of Summer With Dollars And Sense In Mind: Creating A Fungicide Program”

Brandon has a connection to the Golf Turf Symposium and the O.J. Noer Foundation

as he received a Noer Foundation Grant to fund his masters work.

His first statement may have been the most important when he said for fungicide programs to have a chance to work soil and turf fertility and foundational management programs must be in place.

Bentgrass requires 3-4 pounds of nitrogen per year. Turf managers have a lot of choices for their fungicide programs and are often overwhelmed. Brandon recommends a good fungicide plan starts with no budget limit. If money was not an issue what product applications would you make? From there pare down your program until you reach your budget number.

With fungicide performance effected by rate, interval, timing, water volume and product degradation it is important to make an accurate application of the products you choose to use. Getting the product to the pathogen through uniform coverage is key to success.

Due to the cost of applications it is important to get an accurate diagnosis and often there is no disease pathogen present. At that point managers must look at nutrient

analysis from soil and tissue, drainage, layering and black layer because soil problems are a common cause of turf decline.

Brandon recommended superintendents understand the mode of action of their turf fungicides and whether the product is a contact, localized penetrant, systemic penetrant or a combination of products with different modes of action. Dr. Horvath gave two take home messages. First it is difficult to get recovery so early or preventative programs are important for success. He added when turf gets damaged during the stress of summer it can get better but never good until fall.

The second take home message is the name of the product is not important, but the mode of action is very important. The first two applications are also important so use good products.

Our very own Dr. Doug Soldat of the University of Wisconsin Madison took the floor with a talk titled "Wetting Agents and Water Chemistry".

2012 offered a unique year for moisture management and the opportunity for widespread dry spot problems. Doug of-

fered that often moisture problems develop while the grass is still green and by the time dry spots show it may be too late for the turf to recover. Moisture probes are the best way to track moisture content.



Dr. Doug Soldat,
University of Wisconsin - Madison

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In golf turf, greens are the key playing surface and are often built with a high percentage of sand to provide smooth conditions. Sand has little surface area so it is easy to coat with hydrophobic particles to reduce water penetration.

Surfactants are used to reduce the surface tension of the water. For example a drop of water on a piece of was paper will just sit there but add a wetting agent to the water drop and it spreads out. Products differ by chemistry, application rate, soil mobility and decomposition.

Doug recommended an article in the July 20, 2012 *Green Section Record* by Dr. Stanley Kostka and the late Stanley Zon-tek titled "Understanding The Different Wetting Agent Chemistries" as a guide to the different types of products and how they work.

Along with soil moisture probes water drop tests can be used at different depths in the soil profile to see how long it takes for water to infiltrate the soil. For most turf soil moisture uniformity is the goal more than dry or wet turf. Surfactants reduce moisture more effectively on soils with a lower organic content.

Surfactant users need to follow the label for how much water to apply when watering the product in and how to tank mix wetting agents with other turf protectant products.

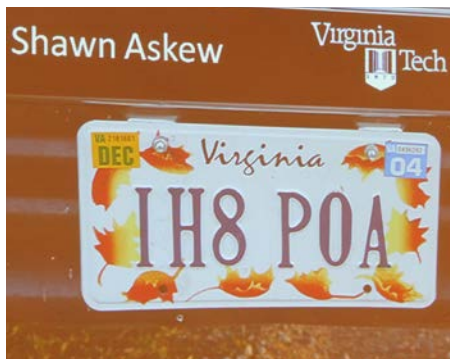
Dr. Soldat discussed algae and crusts on dead turf that can be difficult to control. Blue green algae occur naturally from the soil and prefer high pH and sunlight. Control can be increased by reducing the surface pH below 6 and frequent top-dressings. Ammonium sulfate and ammonium thiosulfate reduce surface pH but may consume oxygen and cause black layer so using a sulphur burner or acid injection system may be a better route.

Finishing off the first day we welcomed Dr. Shawn Askew from Virginia Tech with a discussion titled "30 Herbicides". He started with cultural weed control is the best method and for long term control healthy turf kills more weeds than herbicides.

Dr. Askew covered many of the different organic and synthesized products available for varied weed control. Even though new products are available there are still weeds that cannot be controlled

effectively without using a non-selective product. As plants adapt to new weather conditions and weather patterns change Wisconsin will begin to see more hard to control weeds on a regular basis.

Besides the typical grassy weeds and



Dr. Shawn Askew has a hateful relationship with poa annua!

broadleaves Shawn has a hate relationship with poa annua.

In the March 1921 *Green Section Record* Dr. Piper and Dr. Oakly had an article on Poa Annua and the fight to keep it out of putting greens. It was a problem then and according to Shawn it is just a "bad grass".

New to the battle to fight poa annua the experimental product Poa Cure or Methiozolin developed at the Moghu Research Center in Daejeon Korea is showing promise.

Shawn has had good luck using Trimmit and Cutless with proper nitrogen treatments and regular use. The problem is if you stop using those products the poa will return fast. Poa Cure has shown to be a longer lasting product.

A guesstimate on pricing when it becomes available in the United States is \$2,500 per acre per year on greens. It has shown to be safe on turf except during heat or with water saturated soils. Although it may be a little pricey when compared to the full cost of other poa control products and reduced turf quality it may well be worth it to members and owners. Shawn is starting research on ball roll; not necessarily ball speed but uniformity of roll as a selling point for pure bentgrass greens.

After a great breakfast Wednesday started with a return of Dr. Brandon Horvath

and his talk titled 'Fungicides First: What Are The Secondary Effects?'

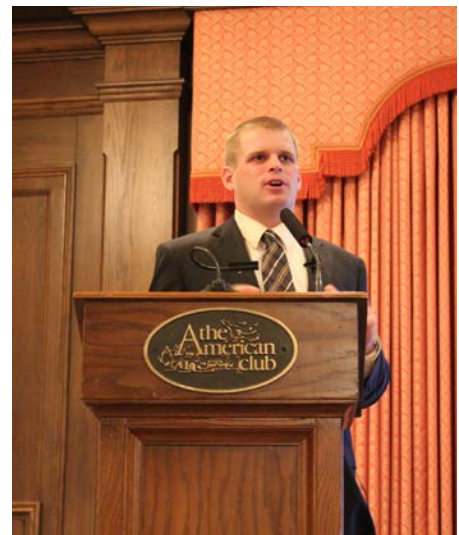
Strobilurin fungicides are a naturally product derived from strobilurus tenacellus mushrooms. Over 70,000 molecules were tested and 556 patents have been developed from the fungi which has shown to keep other fungi out.

In turf there are a lot of "strobi" choices with Heritage, Insignia, Compass and Disarm to name a few and it is a low rate, broad spectrum, reduced risk fungicide with extended residual efficacy. What else can this product do for turf as far as plant health benefits?

In corn and wheat it has shown to green the plants and produce a better yield. In turf it is believed to enhance stress tolerance, increase root length, heat tolerance and enhanced recovery from stress.

So the question is does a slight increase in plant health result in greater visual quality in turf? In 2009 research in absence of disease the turfgrass treatments showed no greater visual quality.

DMI research showed the treated plots had a darker green color and the slight turf regulation reduced scalping but no great increase in quality ratings alone. They are great products when mixed with Daconil Ultrex to control anthracnose and dollar spot but caution should be used when mixing with growth regulators.



Mr. Bill Kreuser, PhD Candidate, Cornell University

Wisconsin raised Bill Kreuser took over with his talk on "Plant Health Products". A recent explosion of products and claims of success from vendors and users have left turf managers wondering which product works and why.

Stress on turf from temperature, water, nutrient levels, UV and high light along with biotic stress from people, traffic and mowing lead to oxidative stress and damage from free radical oxygens. Oxidative stress triggers stress hormones in the plant.

Cytokins from sea weed extracts help reduce oxidative stress and promote bud formation, delay senescence, increase Co2 exchange and provide higher chlorophyll levels.

With the diverse number of products with many modes of action it is hard to tell what really works. If the goal is to reduce or prevent oxidative stress how is that done? Turf managers must ask "What is in that jug?"

Civitas was a product used to lubricate food processing equipment and has shown good and bad results. It has shown to induce systemic disease resistance in plants and increases fungicide efficacy. It primes the plant defense pathway and research on Civitas with low rates of Emerald showed great dollar spot

control through a synergistic effect.

That is the good but the bad is Civitas alone can show phytotoxicity, chlorosis and reduced density and chlorophyll. In trials the pigment added to Civitas not just colors the turf but truly eliminates the side effects.

Kreuser discussed how the harmonizer absorbs different light frequencies to reduce high light stress. There is more research to be done to understand how the products work together to enhance plant health.

It was clear Bill knows his products and research and I look forward to him finding his answers on these different products.

Dr. Askew returned to discuss "Spray Technology and New Regulations." Shawn jumped right in with good news on a EPA "pet project" to define spray drift. Proposed changes includes vague language open to different interpretation such as "could harm". which could be any negative effect to humans, beneficial insects, fish, birds and other wildlife.

New product labels are including language on increased nozzle requirements and droplet size. Some of the droplet size requirements could reduce product coverage and efficacy. Air induction (AI) and drift guard air induction (DGAI) may be a solution. to proposed



**Dr. Shawn Akew,
Virginia Tech**

regulations. Sprayer technology is changing rapidly in agriculture and coming soon to golf with GPS driven sprayers and spreaders.

Fungicide failure can be traced to a large droplet size reducing coverage but AI nozzles produce a large droplet with less drift but rather than bounce off the turf leaves it explodes on contact and spreads because the droplet is infused with air bubbles.

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For contact fungicides water rates are 1 gal per thousand square feet while for systemic fungicides water rates of 2 gallons per thousand are needed while root fungicide products need 2 -5 gallons per thousand.

Herbicides are taken up differently than fungicides so low water rates of .5 gallons per thousand square feet for systemic products and 1 gallon for contact and root products.

Nozzle material can make a big difference with brass nozzles only lasting 15 to 30 hours spray time while stainless steel up to 200 hours. Ceramic nozzles cost the most but can last several years. It is important to regularly test each nozzle not just one or two.

Adjuvants can help with application quality with spreaders that reduce surface tension and allow water to stay on plant and stickers that reduce evaporation of droplets before the product can enter the plant.

For poa control in relatively clean turf stands Dr. Askew recommends hand dabbing with poa cure or velocity rather than just round up. Round up will kill surrounding turf for sure while the other products may only set it back.

Finishing the morning session was Dr. Chris Williamson with his talk "Factors That Affect Insecticide Performance". Insects are affected by biotic and abiotic factors along with chemical controls we may apply for them.

For good control of any insect it is important to understand the biology of the pest. Life cycle and the vulnerable life stage guide product application times. It is also important to know the behavior and habits of the target pest.

Once you know when to apply and where



**The Afternoon Panel Discussion Included
Steven Schmidt, Butte des Morts CC, Colin Seaberg, Ozaukee CC
and Scott Verdun, Kenosha Country Club**

to apply you need to examine other factors. Water quality tops the list for insecticide products as it effects mix uniformity because of suspended solids and debris in the water. Water pH and hardness should be tested as each water source is unique and may even change during the season.

Water pH should be 6-8 for most insecticide applications or rapid degrading of the product can occur.

Cold water has less effect than high temperatures which could cause hydrolysis.


Product incompatibility may or may not be listed on the label and due to temperatures, pH, hardness and fertilizer that mixes easily one day or tank may have problems the next.

Dr. Williamson offered that product age can reduce efficacy and products should be used in the same year when possible or at least use all open products the same year.

After a great lunch the panel of Steven Schmidt, Butte des Morts CC, Colin Seaberg, Ozaukee CC and Scott Verdun, Kenosha Country Club. The group started with their general ideas on programs. Steve looks back over a three year period and what has worked for him given the weather. Scott is making plans for improved plant health on fairways and dollar spot control. Colin shared a copy of his program and prefers to start early with low rates. Staff communication on what is going on is key to his success. Other topics discussed were brand name versus post patent, moss control, check plots, spray volume,

GPS, crabgrass control and what they are doing to promote plant health for greens.

They provided some great information for the group before USGA Agronomist Bob Vavrek followed tradition with the "Roundup" discussion on all the speakers and their take home messages.

The 47th Annual Wisconsin Golf Turf Symposium was a huge success with education second to none for the attendees. Thank you to Milorganite our "silent sponsor" without whom this would not be possible. Next years session will be Dec. 10 and 11 at The American Club. We hope to see you there to take advantage of this benefit. 

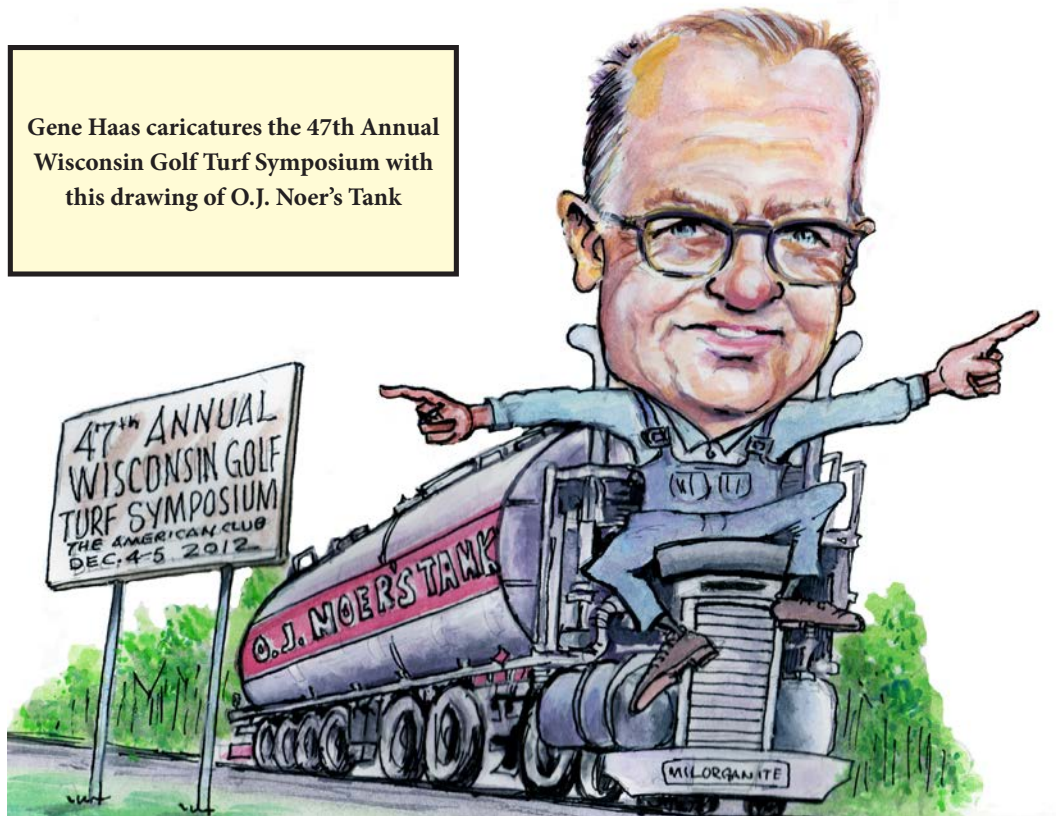


**Dr. Chris Williamson,
University of Wisconsin Madison**



**USGA Agronomist Bob Vavrek closes
the Wisconsin Golf Turf Symposium
with Roundup.**

Gene Haas caricatures the 47th Annual Wisconsin Golf Turf Symposium with this drawing of O.J. Noer's Tank



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TUESDAY MARCH 4, 2013 8:30 - 4:00

Agenda

- **Stress Guard Formulation Technology & Plant Health Benefits:** Dr. Robert Golembiewski, Green Solutions Specialist, Bayer Environmental Sciences
- **Understanding the Types of Winterkill and Potential Preventative Solutions:** Dr. Kevin Frank, Michigan State University
- **Reestablishment Practices Following the Kill:** Dr. Kevin Frank, Michigan State University
- **Trends in Fertility:** Dr. Doug Soldat, University of Wisconsin Madison
- **The Impact of Winter Covers on Turf Health and Disease Development:** Dr. Paul Koch, University of Wisconsin Madison.

Monday Night:

4:30 Annual Meeting and Election
 6:30 - 10:00 Hospitality Room
 Best Western Midway Hotel
 2901 Hummingbird Lane
 Wausau, WI 54401

Advanced registration - Members \$55,
 Non-Members \$65

Register By February 20, 2013 at
NGLTURF.ORG

