

New Tools for Old Challenges - 2011 Symposium

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

After 46 years you would wonder if the Golf Turf Symposium would run out of ideas. The two day fall educational event is unique in how it uses the full time period to dissect a single topic. This years topic "New Tools For Old Challenges" looked at long time problems and the new tools for dealing with them.

Before I get into the education it is important to thank our somewhat nameless sponsor. Milorganites sponsorship of the event goes back to 1966 when Charlie Wilson, Jim Latham and Bob Welch of Milorganite approached Charles Shiley, Les and Ron Verhaalen and John Stampfl of the WGCSA to solicit their ideas on the conference format.

The day and half format was devised to help attract participants from not only Wisconsin but all over the Midwest. Still today as back then all of the speakers expenses are paid by Milorganite while the attendees pay for the facility and meals cost while allowing the WGCSA to donate any profits to the O.J. Noer Research Foundation.

Milorganites sponsorship of the event by paying all speakers costs has allowed the committee to bring in experts from not only all over the United States but also Canada and England.

The speakers at the first symposium included turf experts Dr. James Beard, Dr. Bill Daniel, Dr. Jim Love, Dr. Marv Ferguson, James Holmes, architect Pete Dye, Milwaukee County horticulturist John Voight, equipment distributor Bob Hornung, Milorganite spokespeople Charlie Wilson and James Latham along with superintendents Frank Musbach, Frank Ranney, John Stampfl, Charles Shiley and Bill Sell.

If you get a chance be sure to thank current Milorganite staff Shelly Mazurek and Jamie Staufenbeil who serve on the committee with Dr. Doug Soldat, Bob Vavrek, Chad Harrington, Dustin Riley, Brett Grams and Dave Brandenburg.

This year the committee was looking for feedback on moving back to the Milwaukee area and the time frame the symposium is held each year. If you were not able to attend this year be sure to let one of the committee members know your thoughts on when and where the symposium is held along with and topic ideas you may have.

The day started out with Keynote Speaker Brian Horgan from the University of Minnesota speaking on "*Resisting Stress with Technology: Water Conservation for Golf Courses*". Dr. Horgan started with the explanation even though water tends to be plentiful for most of us in the Midwest it is a dominate topic in the golf industry as more and more areas are facing shortages or scrutiny.



Dr. Brian Horgan from the University of Minnesota gave the keynote address.

Regardless of what we think of our water use or the importance of golf, many outsiders see turfgrass as unnatural plant community that is not sustainable on its own.

United States golf facilities cover 2.2 million acres and of that 1.5 million acres is maintained turf and 1.2 million acres is irrigated regularly. However those golf facility acres account for only one-half of one percent of the 408 billion gallons withdrawn annually and just one and one half percent of the 137 billion gallons applied as irrigation nationwide.

Even though our water use is low in terms of other industries our use can be seen as discretionary and not necessary so we are in no position to waste the water we do use and we have many reasons to improve our efficiency.

So we know we should improve our irrigation efficiency but how do we do that without a new system? Brian had some new ideas and tools for improving our water use.

While keeping turf drier it is important to keep an eye on stress before it becomes a problem and polarized glasses allow you to see changes in the turf before the naked eye can. There are special purple polarized glasses you can buy for that purpose but they are not to be worn long term or your eyes hurt but the polarized lenses used for fishing work the same way. It allows you to see stressed turf before it goes totally off color. The other tools are soil probes and moisture probes for tracking soil moisture. The moisture probes allow for a actual number to be assigned rather than the judgment feel of an experienced hand.



Dr. Doug Soldat discusses predictor models and the new turf website with Jacob Schneider.

Brian explained using the feel method is the “Art of Greenskeeping” but not scientific. Scientific methods require numbers and regulators in Washington also require numbers. He suggested basing watering not on a calendar but the previously mentioned tools and watering at 80% of Evapotranspiration Rate (E.T.). He also encouraged superintendents to find their distribution uniformity and set sprinklers by the amount of water we want to apply not the number of minutes the water should run.

Unfortunately irrigation systems are the limiting factor in water conservation. ET rate alone does not guarantee success but it is a starting point to be used with studying your



Dr. Jim Kerns speaks on control strategies for emerging diseases.

property. In looking to the future tools that measure the Normalized Difference Vegetation Index (NDVI) will see stress 12 to 24 hours before the naked eye. These units can be pulled behind a cart over the course and will change the way we maintain quality turf.

Dr. Jim Kerns was next with his talk titled “*Emerging Diseases and New Control Strategies*”. He explained that summer patch, anthracnose and dollar spot continue to be the main turf problems through the Midwest but some new diseases are coming onto the scene.

Brown Ring Patch caused by *Rhizotonia circinata* causes arching rings with orange or bronze colors.

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To diagnose it take a plug and put it in a container with moist paper towel and you will see mycelium in 24 to 48 hours. Control is nearly the same as brown patch. Preventative control can be obtained with a single application and turf managers should concentrate in areas where the disease has been in previous years. Curative control may take multiple applications.

Mad Tiller disease is a mainly aesthetic problem that may be caused by a pathogen but none has been found to date. It affects creeping bentgrass, annual blue and perennial rye during overcast or wet periods. So far research has not shown it to be related to bacterial wilt, fungus or growth regulators.

Bacterial wilt was almost to epidemic proportions on Toronto Bentgrass in the 1970's and was caused by *Xanthomonas translucens* pv. *graminis*. It has been a occasional problem on poa annua through the years. The turf turns blue green in color and the infected plants show shriveled leaf tips and

sensation on the new website <http://turf.wisc.edu/> with all the tools a turf manager could want to hone their skills.

Growing degree day trackers allow us to scout for insect or weed problems and apply the correct products at the perfect time. The Wisconsin irrigation scheduler page shows the previous days E.T. rate to help decide when and at what rate to apply water. An important part of watering based on E.T. is to find out how much water you actually apply by doing distribution uniformity tests.

Of course uniformity does not take into account soils or slopes. More information on tracking your irrigation distribution uniformity can be found in Dr. Soldat's article "What's Your Irrigation Distribution Uniformity?" in the Sept/October issue of *The Grass Roots*.

Dr. Soldat expressed the three main tools in turf irrigation are a soil probe, wetting agents and using E.T. based irrigation.

Doug passed the slide projector over to Jim who presented his research on disease predictor models and how to use a combination of air temperature and relative humidity or just relative humidity to predict when diseases will occur to a threshold level to require treatment. He also discussed the turf disease management decision aid that offers treatments by class, product, efficiency and resistance that will soon be on the Wisconsin website.

The disease models can allow golf courses to reduce applications by one to three per year when compared to following a calendar schedule of applications.

Mark Grundman from Jacklin Seed Company finished up Tuesday sessions with the talk "Native and Natural Areas and Their Care". With attempts to reduce mowing costs many courses have added natural areas or planted native plant areas over the past ten years. The goal is to provide a aesthetically pleasing area that the customers can still find golf balls in.

A turf manager has to know what type of turf they have or want to have and plan maintenance from that point.

The fine fescues have been good options but they are not a no maintenance grass but rather a delayed maintenance grass. After establishment water has to be reduced and fertilizer applications should be based on nutrient tests. The thick turf can be a great spot for insect problems so scout regularly and be prepared to use insecticides as needed.

Natural areas do develop a matt layer from the amount of organic matter that lays on top of the soil. If it is not removed this layer will choke out the grasses allowing for weeds to take over. The matt needs to be removed on a regular basis by mowing and raking or burning. To remove the matt a fast burn is recommended to reduce the amount



Mark Grundman discusses the challenges of native and natural areas.

plants rapidly wilt and dieback.

On the treatment side of diseases new control strategies include products that enhance plant immune responses through systemic acquired resistance (SAR) or induced systemic resistance (ISR). Dr. Kerns also went over a number of new fungicides that have or will enter the market soon providing better results.

After Dr. Kerns solo effort he tag teamed with Dr. Doug Soldat to discuss their work on predictor models and other technology for turf problems. Dr. Soldat started with a pre-

of damage to desirable species in a natural area that could allow weeds to fill in bare areas. However a area where the soil has not been disturbed a slow burn can encourage germination of the native seeds in the soil.

Other tips Mark had were to buy native seeds by bulk seed numbers not weight and what rates to use for common plantings. He also discussed weed control with phragmites or common reed grass, thistle, teasel and quack grass.

After breakfast on Wednesday Josh Lepine from the Legend at Bristlecone started the day with *"Competitively Bidding Your Maintenance Plan"*. Josh's talk was a informative for everyone in attendance as he has honed his planning and purchasing processes to a science.

The benefits of competitive bidding:

- Provides the best possible goods or services.
- Demonstrates to club officials you are a cost conscience manager.
- Prevents favoritism.
- Cost savings allow the club to more with less.
- Ethical approach to businesslike decision making regarding purchases.
- Your system can be a selling point when interviewing for a new position.

The downside of competitive bidding:

- No direct vendor - customer loyalty.
- How do you reward a good salesman?
- Time commitment for paperwork and adding new vendors to database.
- Cheaper is not always better. Need to research products and the provider.
- Must have a detailed maintenance plan.

Lepine bids pond treatment services, seed, flowers, filters, uniforms, chemicals and fertilizers along with anything else that will ensure he is saving his club funds whenever possible. By using historical data he has a good idea what products he will need but his plans allow him to be flexible if new needs surface during the season. For most products he still buys as needed, but he has the price from his offseason work to eliminate having to call around and get pricing in season.

In his 12 years of experience he estimates he saves 20% on services and supplies by using competitive bidding.

Ty McClellan, USGA Agronomist for the Mid-Continent Region presented *"The ABC's of Core Aeration"* and lead with the fact we cannot take shortcuts in organic matter management.

Ty presented information on research he was involved with as a student at Kansas State and the University of



Above: Josh Lepine presents his purchasing strategies.
Below: Ty McClellan discusses core aeration procedures.



Nebraska along with current research and his work as a USGA agronomist. Infiltration on putting greens reduces over time due to thatch and matt layers along with a finer topdressing being used in comparison to the original construction mix.

Organic matter percentage has been a hot topic recently and it is a difficult number to compare. How and when samples are taken along with the lab used influence organic matter percentage results. Ty recommended there is no magic number or goal but encouraged turf professionals to monitor the results over years and watch for changes.



TOP: PJ Liesch presents new trends in insect management.

Below: Dr. Bruce Branham discusses poa annua control.

Bottom: Session chair, speaker and panel moderator Bob Vavrek.



The key is to take samples the same depth at the same time of year and use the same lab. If your results show increasing organic matter accumulation Ty recommended removal through thatching and core aeration or dilution through topdressing. Superintendents also need to be aware as greens age and the original soil is buried through topdressing the entire 3 or 4" sample will become all thatch and matt causing the overall percentage of OM to increase.

Recent research has shown that no products are available to statistically reduce organic matter in turfgrass. McClellan then discussed the recent "rumors" regarding core aeration not effecting organic matter content. The truth is, although core aeration alone may have little affect on total organic matter it is effective in replacing thatch and layers in the profile.

Solid tine aeration is a option but cannot be relied on exclusively because of surface tension problems.

Next up was PJ Liesch, Associate Researcher in the Entomology Department at University of Wisconsin-Madison with a talk titled "*New Trends in Insect Pest Management Tools*". PJ gave a excellent recap of the older insecticides and how they were developed and why some are still effective today along with the new products out and to come in the next couple years.

Liesch explained how "group numbers" given to pesticides with the same mode of action are an important tool to avoid resistance. To avoid resistance from pests, group numbers need to be rotated even if two different chemicals are in the same group.

The new products being developed tend to have reduced human toxicity while being pest specific rather than broad spectrum in control.

Some of the older products such as the organophosphates were found by research for military nerve gases. Dylox is one that is still on the market for a good low cost curative grub control. Pyrethroids were developed in the 1960's and originated from chrysanthemum flowers and are a common short lived household insecticide today.

The biologicals such as *Bacillus thuringiensis* which was discovered in Japan in 1901 and first registered in the United States in 1961 are very specific in target and short lived.

Spinosyns are derived from a soil microorganism first found by a scientist at a Caribbean abandoned rum factory. Despite the fact that scientist has crazy ideas of vacation the class is showing promise as a broad spectrum product with low human toxicity.

With PJ's insight into the new products to come insect management may become a little easier over the next few years.

Dr. Bruce Branham was the last speaker of the day discussing every turf managers nemesis with his presentation "*Poa Annua Control...New Options Explored and Options Revisited*". Bruce began with the two main problems of poa control; there is a large seedbank in the soil and poa annua goes from a annual grass to a perennial grass over time making it harder to get rid of.

The other challenge is the conversion process with old and new products can get superintendents fired. Branham covered the old and new use of Prograss, Velocity, Primo, Tenacity, TGR and Cutless along with the benefits and challenges of each. Research on a new product Xonerate that should be labeled in 2012 show it controls poa with marginal safety on Kentucky-Bluegrass and has synergistic properties with Tenacity. As with the old products users need to use care with the new products and even then damage can occur to the desired species.

After lunch the panel continued the discussion on poa annua control. Mike Lee Manager of Golf Maintenance for the Kohler Company started with their process to fumigate 36 holes of greens and fairways over two years to reduce winter kill of poa annua and provide better playing conditions.

Chris Tritabaugh Golf Course Superintendent at Northland Country Club in Duluth MN continued with his 5 year project to reduce fairway thatch by turning off the water and reducing nitrogen applications. The course right on Lake Superior had 4-5" of thatch built up on the fairways.

Jeff Johnson, Golf Course Superintendent at The Minikahda Club in Minneapolis MN where in recent years they have redone the bunkers, removed 400 trees and brought greens out to original sizes while returning the design back to its original intention.

Both Chris and Jeff have used the Greenway Golf program or variations of it to try to reduce poa numbers with success on some holes but not on all holes.

The staff at Blackwolf run is using Velocity and Cutless in different areas to keep poa out or to reduce numbers in the few areas that were not fumigated.

All three panelist stressed education and communication with the members or management is needed in any project or changes that will change the way the course plays. For Chris he was able to use his "honeymoon" period to implement his firm and fast philosophy. By having time to prove his methods will lead to better playing conditions overall the golfers have accepted the changes as worthwhile.

In following with tradition USGA Green Section Agronomist Bob Vavrek finished out this years event with the "Roundup". Bob highlighted the take home messages from each speaker much as I have hoped to do in this review.

The Wisconsin Golf Turf Symposium is a key educational tool for golf course superintendents. If you have never attended or have not attended recently it is really worth the time and cost. The topics are looked at in-depth and without advertisement for one product or the other.

Thank you to the symposium committee, the WGCSA and all the speakers for taking time to travel and educate us.

Thanks most of all to our sponsor Milorganite who picks up all the speaker costs so we can provide this education at a acceptable price. Their 46 years of support is appreciated and allows the profits from the Symposium to go to the O.J. Noer Foundation in the name of the WGCSA.



The Symposium Panel - Chris Tritabaugh, Mike Lee and Jeff Johnson

WISCONSIN GOLF TURF SYMPOSIUM

First*	1966	Winter Injury (Bulletin No. 5)
Second	1967	The Physical Nature of Soils
Third	1968	POA ANNUA
Fourth	1969	Satisfying the Golfer
Fifth	1970	The Chemical Nature of Soil
Sixth	1971	Where are We Going in Golf Course Management?
Seventh	1972	Recycling Golf Course Wastes
Eighth*	1973	Thatch
Ninth	1974	Water Movement in Soils
Tenth	1975	A New Deal for an Old Course
Eleventh	1976	Living with POA ANNUA Species
Twelfth	1977	Keeping Your Head on Straight
Thirteenth	1978	Fast Grass
Fourteenth	1979	Research
Fifteenth*	1980	Sand - On and In Golf Greens
Sixteenth*	1981	Management Requirements for Sand Greens and Sand Top-Dressed Greens
Seventeenth	1982	Getting to the Roots of the Matter
Eighteenth*	1983	The Facts and Fallacies of POA ANNUA Management
Nineteenth	1984	Directions in Golf Course Management
Twentieth	1985	Grooming - The State of The Art - New Problems for New Times
Twenty-first	1986	The Micronutrients - Who Needs Them?
Twenty-second	1987	Impressions - A Memorable Golf Course (First to Lasting)
Twenty-third	1988	Water Management - A Cultural Practice for all Conditions
Twenty-fourth	1989	Optimizing Pest Management - Strategies to Maximize Results
Twenty-fifth	1990	Bentgrasses - New Old Right or Wrong
Twenty-sixth	1991	Traffic - How much can you bare?
Twenty-seventh	1992	The Green and Tee Complex - Renovating the Surrounds
Twenty-eighth	1993	Winterkill - The Causes And Solutions?
Twenty-ninth	1994	Golf In The Year 2010 The Game, The Job, The Challenge
Thirtieth	1995	Earth, Soil, H2O
Thirty-first	1996	You Can't See The Trees For The Turf
Thirty-second	1997	"If You Build It They Will Come" Putting Green Construction
Thirty-third	1998	"What You Seed Is What You Get" Putting Green Establishment
Thirty-fourth	1999	Showtime! Developing the Playing Surface
Thirty-fifth	2000	The Ins and Outs of Bunkers
Thirty-sixth	2001	Emerging Problems and Pests
Thirty-seventh	2002	Doing More With Less - Resource, Time and Money Management
Thirty-eighth	2003	POA - Twenty Years Later
Thirty-ninth	2004	Soils - Managing the Pressures
Fortieth	2005	Grasses - So Many Choices, It's a Pain in the Grass
Forty-first	2006	Getting Down to the Roots
Forty-second	2007	Why Close At All?
Forty-third	2008	All Water is NOT Created Equal
Forty-fourth	2009	Fewer Dollars Requires More Sense
Forty-fifth	2010	Golf In The Year 2010 - Did We Predict The Future?
*Proceedings		