

Great Education With A New Format

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

The WTA Turfgrass Research Day brought a new format to the Winter Expo. Outside of a couple of us hayseeds not knowing where to park in the big city moving the educational session to The Pyle Center on the University of Wisconsin Campus was well received and packed full of great education.

The event was available in person or from the comfort of your office or home via a webinar link.

Dr. Doug Soldat was the master of ceremonies and opened with the explanation that the change from a traditional trade show was to refocus on what is going on at UW Madison. Over time the event had moved away from the important and groundbreaking work the staff and grad students were doing. The new format allowed the staff to recognise their students while educating all of us.

Scholarship winners were recognized with the following students and awards.

The WGCSA supported J.R. Love Scholarship went to Jens Arneson who has the double major of Scandinavian Studies and Turf Management. Jens was able double his internship value when he traveled to Norway to intern for Bioforsk.

The Spring Valley Scholarship was awarded to Adam Wepfer who has interned at Erin Hills and with the USGA Green Section.

The Charles O Newlin Scholarship was awarded to Pat Reuteman who interned at Ridgewood Country Club in New Jersey.

The WTA James Huggett Scholarship was

awarded to Bryan Fenney who interned at Erin Hills.

The WTA Scholarship was awarded to Jarvis Weber who interned at Rochester Golf and Country Club along with Somerby Golf Club in a unique intern trade program the two courses have.



Brad Debels a Soil Science PhD student discusses "Radiometric Sensing as a Turfgrass Evapotranspiration Measurement Tool"

Brad is working on finding a more accurate evapotranspiration rate in turf to allow turf manager to calculate their irrigation needs.

With 90 to 95% of water taken up by the

plant used for cooling a simple temperature gun reading may give a accurate E.T. calculation. Current reading use solar radiation, humidity, wind and air temperatures.



Sabrina Ruis a Soil Science PhD student discusses "Understanding the Dynamics of Carbon Storage in Turfgrass Systems"

Turf is becoming a important part of the landscape as farmland and natural areas are converted to subdivisions, parks and recreation fields. When native areas are converted to turf there is a dip in Carbon uptake at establishment but than a increasing amount of carbon is taken in for 30 to 40 years when the area reaches a "steady state".

Irrigated turf with the clippings returned resulted in the greatest carbon storage but also the most lost in decomposition. This ties into nitrogen amounts and leaching rates.

Leaching occurs in the form of rain wash and soils that are just full of carbon and nitrogen so they just cannot take up any more so the majority of the rest is leached away.

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Glen Obear a MS Student in Soil Science and Entomology under the Wayne R Kussow Fellowship presented three talks. 1- "Iron Layering in Sand Based Putting Greens." 2-"Algae and Bicarbonate: is There a Connection". and 3- "Do Fungicides Provide Control of White Grubs?"

During a internship in Hawaii in 2008 the course Glenn was at saw thin areas of turf in low areas. During aerification it was clear these areas had darker soil and black layer impeding drainage and turf health. While investigating the problem it

was found a impermeable iron layer had developed at the sand/gravel layer interface.

Glen's work has focused on why the layer develops and where the iron is coming from and why it does not show up on greens without the gravel layer.

The problem has been seen in Wisconsin and so far the only solution has been to drill and fill the areas hoping to go deep enough to hit the gravel layer.

Glen's second talk looked at which comes first the Algae or the Bicarbonate film and which causes the other? Research is showing that on pure sand or a healthy stand of turf high bicarbonate is not a problem but when algae filaments clog macro pores at the surface the bicarbonate builds up on the Algae.

Glen put on his entomologist hat and explained that Japanese Beetles like short cut turf with moisture and plenty of sunlight but are rarely found on putting greens? Could it be the fungicide applications deter or kill the grubs?

In work with chlorothalonil and propiconazole in the 3rd instar there was no difference but in the 2nd instar a high rate of Banner Max did result in noticeable larvae mortality. Work will continue next year on 1st instar grubs. It could be the fungicides but it could just as well be the abrasiveness of the sand in putting greens coupled with temperatures or moisture levels.



Dr Doug Soldat presented "Trends in Bentgrass Fertility and Organic and Reduced Risk Turf Management."

Dr. Soldat discussed how historically high fertilizer prices have led most turf managers to look at ways to reduce costs and in turf fertilizer applications. Doug explained in agriculture increased fertility levels can relate to crop yield increases. Or so much N-P-K equals so much crop. In turf it is not that easy so Doug has done work to hone in the minimal amount of Phosphorus and Potassium needed for healthy turf saving courses money while still providing good turf.

Dr. Soldat's second talk focused on organic lawn care and how the desire for perfection is a hindrance to going organic in turf. He also discussed the regulations and terminology involved in organic lawn care.

To have success with organic turf a premium is placed on proper soil selection and preparation, grass selection, proper mowing and fertilization. Organic fertilizer programs can cost a little more while organic pest control can be very expensive and less than effective.

Topsoil is a problem for many home lawns where owners are left with a compacted mess of soil not suitable for growing quality plants. To produce a healthy lawn, turf should be cored twice a year and have 1/4" of compost applied in spring and fall.



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Premium Kentucky Bluegrass and Ryegrasses are not good choices for organic or low maintenance lawns. Fine Fescue will work. The faster the germination the less weeds the plots will have.

The key to healthy low maintenance turf is good soils, compost, irrigation when needed and a sharp mower.



Yunlong Wang MS Student in Plant Pathology presented research on "Temperatures Effects on Appressorial Formation of Colletotrichum Cereale."

Turfgrass anthracnose is a devastating disease of poa annua and creeping bentgrass and it seems intense putting green management has increased the incidence and severity of the disease. Wang is doing work to track the effects of temperature on the fungi on both detached and attached leaves at different temperatures.

The development was similar on the live and detached plants with a 12 hour delay on the live plants. Overall the results so far suggest the colletotrichum cereale infects the host well prior to the onset of symptoms.



Dr. Paul Koch was also called to double duty with talks on "Effect of Snow Cover on The Duration of Microdochium Patch Control Provided by Iprodione and Chlorothalonil" along with "Effect of Temperature and Mowing on The Persistence of Iprodione and Chlorothalonil on Golf Course Turfgrass."

toms.

Snow mold is a unique disease because turf managers often only have one chance to treat for it as winter re-treatments are hard to apply due to temperature and snow cover or wet conditions. Paul wanted to see how long products last to suppress snow mold and how degradation from light would change that. The research used plots with and without snow so they would shovel snow from the no snow plots onto

the snow plots to ensure coverage through winter. So far snow or no snow had no effect although snow melts and rain did reduce coverage.

Dr. Koch's second talk was to explain why we see disease breakthrough each year even on treated turf.

The research focused on the depletion of fungicides and fungicide persistence at different temperatures by using growth chambers. Overall warmer temperatures equalled faster breakdown so re-application intervals may need to be shorter. Also the grass plant may be growing faster and the leaves with the turf care products are being mowed off.



Dr. James Kerns presented "Getting the Most Out of Your Fungicide Program."

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Dr. Kerns discussed the many factors that determine performance including rate, interval, timing, water volume along with degradation from light, biological factors, metabolic transformations.

To improve your results be sure to identify the pathogen, use the best product and the right time and put the fungicide where the pathogen is.



PJ Liesch presented two talks with the first titled "Controlling Black Cutworm: Some Products Work, Others Just Don't" and "Which Caterpillars are Chewing On Your Turf and What is Chewing on Them"

PJ offered reasons on why some applications fail and urged attendees to rotate products and classes of chemicals and to be aware of timing and re-treatment intervals. Consider using products with good residual control.

Liesch's second talk focused on using black cutworms as bait at night to see what other insects fed on them and may be natural predators. More work will be done next year.



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Dr Chris Williamson presented "A year of Chaos and a Glimps Into the Future"

With the variety in weather we have had the past few years Dr. Williamson asked what is a normal year. The challenges for insect control are many as the turf is a complex ecosystem of good and bad bugs.

Seldom to two insects occur or are treated at the same time and most insecticides are not effective on multiple pests. Timing is important and product formulations can make a huge difference on control levels.

Despite the warm start to the year the cold May and dry conditions seemed to slow insects down. Chris offered that ants seemed to balloon after the rains returned.

Understanding the life cycle, application timing, product selection and getting the product to the pest are keys to future success.



Mark Garrison a PhD Student at the Nelson Institute for Environmental Studies discussed "Nitrous Oxide Emissions and Nitrate Leaching from Synthetic and Alternative Turfgrass Management Programs"

Marks work is showing how Nitrous Oxide escapes into the atmosphere where it depletes the ozone layer. Work with synthetic and organic fertilizers have shown the organic products do not reduce N₂O emissions.

Garrison's nitrate work involved comparing seeded and sodded plots to see which reduced leaching. Both practices increased nitrate leaching during establishment even if nitrogen was not applied due to the soil being disturbed. Leaching decreased in year 2 but by year 10 will increase again if extra nitrogen is applied beyond what is needed.



Joslyn Mink a MS candidate at the Nelson Institute discussed "Do Native Plant Mixtures Reduce Invasions Along Roadsides In Wisconsin?"

Joslyn has worked with the DOT to see if forbs and grasses along with Eurasian plants can stop or reduce weed outbreaks along state highways. So far they have not due to plant selection and site management.

The WTA Turfgrass Research Day was full of education for the attendees in person or though the webinar. The varied speakers had a message for almost everyone. It should be an event that can only grow due to the hard work of the staff and the skill of the researchers. 