

EDUCATION RECAP

Charles Anfield, CGCS, *Heritage Bluffs Golf Course*

ITF Winter Education Days



A "full house" greeted Dr. Jim Kerns, Pathologist from the University of Wisconsin on a chilly Tuesday December 14, at the Midwest Golf House to discuss the "hot topic" of "2010: The Year of Challenges".

What made 2010 so difficult? To start with, we had record heat in May, June, July and August. Temperatures averaged +3° above normal during the day and +5° at night. To the layman, it may not sound like a big deal but those average temperatures pushed the turf beyond its survival thresholds. In addition, those temperatures went on for prolonged periods of time and there was little recovery time. This was O.K for the bentgrass which has a higher tolerance but became a problem for its weaker cousin *Poa annua*.

To complicate matters the early persistent rains in May and June influenced root growth to be shorter than "normal".

Then came the summer isolated thunderstorms and tornados. These storms sometimes dumped 3-5 inches of rain over night. Some courses got hit, other got missed. Eventually it seems like every course got hit. All the negative factors fell into place: heat, humidity, rain, short roots, *Poa annua*....you know the rest of the story.

So most courses did what they could. Mowing heights were raised and mowing frequencies were reduced. Many courses suspended normal cultural activities like fertilizer applications, rolling and top dressing.

Dr. Kerns then showed some slides of some of the pythium outbreaks he observed during the course of the summer. Everyone in the room cringed at the slides of dead greens and fairways except Dr. Settle who seemed to get quite excited. It must be a pathologist thing. Dr. Kerns called pythium the "scourge" of turfgrass diseases. He said many people were

fooled by the various signs and symptoms. Disease pressure was high and there was a lot of misdiagnosing of the disease.

Typically pythium appears in small or large patches. It has "greasy" water soaked leaf appearance. It can be first be found in low lying drainage areas. Pythium likes temperatures between 86-95° with night temperatures over 70°. It grows well when humidity is greater than 90% for longer than 12 hours. The water holding ability of soil is a large factor. Silt and clay hold the most water and the disease first attacks these areas. Sand based turf that drains well is less likely to be infected.

Water management became very important. Most courses tried to keep turf on the "dry side" or close to daily E.T.'s to be able absorb a potential thunderstorm. Dr. Kerns recommended watering early in morning, limiting nitrogen applications and making preventative fungicide applications.

For preventative pythium control Dr. Kerns recommended Segway @

.9 oz/m and Subdue Maxx @ 1.0 oz/m. He like Stellar because of its cost and recommended Banol for a good for "knockdown" fungicide. He said the phosphites programs seemed to work well but there was some failure due to high disease pressure. The phosphate programs worked best with .5 oz/m of Subdue during times of high pressure.

Dr. Kerns went over the history of bacterial wilt which is still a controversial subject. Bacterial wilt first came to everyone's attention during a severe epidemic of 'Toronto' creeping bent in the 1970's. It tends to be an occasional problem in *Poa annua*



Dr. Jim Kerns kicked off the day with an unscheduled review of 2010 and wrapped up his talk taking questions on snow mold and its control.

greens in the northern U.S. There was a report in 2009 of a bacterial disease in Charlotte N.C. It has a chlorotic appearance and leaves are etiolated (grows longer). It is first detected in stress areas, like the cleanup lap. There are not many chemicals to control bacterial disease. There was a lot of misdiagnosis of bacterial wilt in the summer of 2010.

Fairy ring was another "nagging" disease observed all throughout the Midwest. It requires preventative applications. DMI fungicides seem to work best; they have a long length of control. They must be watered in and applied when soil temperatures are between 60-70°. The key is to be preventative. Prostar or a combination with Prostar seems to work the best as a curative product.

Rust was a minor problem this summer, but mostly appeared on Kentucky bluegrass.

Dr. Kerns left us with one more piece of wisdom about snow mold fungus. Without the long lasting effects of PCNB applications, be prepared to spray again in the spring for pink snow mold. The systemics most people are using are only good for 30-40 days under snow cover. The good news is that research shows the disease may be less severe this winter because of the extremely dry fall.

Tom Mead: Golf Course Consultant came up next and made his presentation of "Sustainability is it. What is it?"

Sustainability is a very timely and bandied about word these days and there are many definitions for it. Tom's definition of sustainability is: exploiting the natural resources without destroying an area. He says we need to consume less and use local materials. His vision of sustainability is that it is that one size does not fit all and it is more of a journey and not so much a destination.

Tom cited that the game, our current economics and "the spirit of game" are compatible with environmental issues. The game will grow if it is more affordable.

Tom thinks that many of the current maintenance practices are not compatible with environment and/or building a player base. Many current maintenance practices are not sustainable, too expensive and not good for the game.



Mr. Tom Mead defined sustainability for the group and preached the best way to start is by installing test plots at your facility to reduce inputs.

The future of the game for our grandchildren may be compromised. We all need to be proactive with our "eco friendly" maintenance practices or get "dragged" into the future. Tom believes we will all end up in the same place. This will be a result of the post peak oil economy which has created the increased volatility of oil prices.

Our current economy is based on an economic growth business model that is unsustainable. We need new standards and balances. The current perception of expectations for perfect wall to wall turf has to end.

Budget cuts need to be at least 30% overall to keep long term sustainable standards or we must change. This cannot be predicated on increased green fees. We must reduce inputs, specifically water and get off the treadmill of meeting golfers' expectations. We have a moral obligation to preserve the integrity of the game. We need to re-connect to the origin of the game and our local economy. We need to embrace nature, get rid of golf carts and promote caddies. We need to educate golfers in the real spirit of the game and the preservation of natural resources.

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We need to promote a low input turf program. We should work with nature and not try to dominate it. People need to recognize that golf course playing conditions vary with seasons. We should re-design course modifications to reduce inputs.

We need to be more judicious with water management and seek out and use renewable energy sources. Organic

fertilizers and a better connection to local economy are vital. All decisions should be based on what preserves and protects natural resources. We should look at maintenance building re-design. We can increase our recycling efforts and focus on more compost production. We should recycle water and design and build commercial gardens. We need to move toward a higher degree of self sufficiency. All landscape designs should be low input. We should be more concerned with surface water quality and groundwater protection.

Test plots with reduced inputs could be used as research holes to educate the public of what a lower input/sustainable golf course would look like. We can start to develop a data base.

Tom says that many of these programs will require capital expenses

to move forward. Anything we can do to work toward sustainability will improve our courses position in future. Tom says we need to reduce operating expenses and invest in future. We will require a new business model. Cutting costs will be necessary. Courses that will survive and thrive will be ones that invested in the new business model. He believes we should do now willingly or be forced to later.

Erwin McKone, of Briar Ridge Country Club, President of the ITF, then moderated a short question and answer session based on Tom's comments.

Some highlights included:

- To get golfers to change will be a slow process. It's going to require education and a commitment to the process.
- The entire staff needs to support and embrace the concepts. Get decision makers to commit.
- The changes should be in small incremental steps. It starts with a re-write of the mission statement. The education should be in low doses.
- Re-evaluate current practices
- Golf courses are ideally suited to be leaders in the "green" movement.



Dr. Bruce Branham kicked off the second day with two talks for the group.

Many attendees bantered back and forth with Dr. Branham as he took questions throughout his talks.

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- Self sustainment should be the goal.
- Education is the biggest issue to change golfer's perception of what is acceptable.
- It seems like golfers want what they want. They drive the standards. All we can do is attempt to educate.

So that was Tom Mead's vision of the future of golf, any questions?

Day 2 of the ITF Winter Education Days drew a SRO (standing room only) attendance.

Dr. Bruce Branham from the University of Illinois led off the day with his presentation on "Controlling *Poa annua* in Your Golf Course Fairways without Anyone Ever Noticing". The whole "trick" to this program is the gradual reduction in the *Poa annua* population without leaving voids, dead areas and minimizing discoloration. We all know that the golfers could not tolerate anything less.

The problem with some herbicides is that they either don't work or they work "too well".

Dr. Branham's work takes a more practical approach by using the herbicide Velocity more like a PGR than as an herbicide.

His program for existing fairways of a bent/*Poa* blend is a little different than for a newly renovated fairway with very little *Poa annua* and slightly different for a brand new seeded fairway. He has tested many different options for control.

His results are (but don't quote me):

For newly renovated bentgrass fairways and with very little *Poa annua*:

- 2 oz/A, 6 applications over the course of two weeks while the turf is actively growing.

For existing stands of bent with a "lot of *Poa*" he is recommending lower rates.

- Option 1: 1 oz/A, 2 applications in May and June
- Option 2: 1 oz/A, 3 applications in May, June, July
- Option 3: 1 oz/A, 5 applications in June, July, August, September, October



Mr. Jerry Williams explained the Rules of Golf in a clear and digestible format as they pertain to our profession.

The goal is to keep the *Poa annua* so weak, it peters out slowly and the bent dominates and grows laterally over the weaker *Poa* plants. It's not supposed to be noticeable.

Use caution however because over regulation can be too much if you have heavy cart traffic concerns. In addition too much in July and August can be a detriment if there is pythium disease pressure.

Gradual reduction is the key. There may be a slight discoloration 2-3 days after application. This can be "masked" with the addition of iron.

For brand new seeded fairways: 6 oz/A, 3 weeks after seedling emergence, typically in September or October. The seedlings don't look good, but they can handle the stress.

These Velocity programs are mostly for *Poa annua* removal.

There is still more research to do for removal of the other fairway nuisance "weed", *Poa trivialis*.

He stated that there has not been a significant difference among use on different bentgrass cultivars. The annual bluegrass varieties seem to be more sensitive than the perennial bluegrass varieties. There is potential for damage of overspray during the application to Kentucky bluegrass in the fairway surrounds if the same pattern is used over and over.

How about Velocity for use on putting greens?

Dr. Branham says the concept should work. He is looking for volunteers.

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Dr. Branham stayed on the podium for his next presentation, "Everything You Ever Wanted to Know about Nitrogen Fertility".

- How much nitrogen is really used by the plant after a fertilizer application?
- How much nitrogen is lost through volatility?
- How much nitrogen is really absorbed by the plant when foliar feeding?

Dr. Branham went through a review of the nitrogen cycle, just like in Plants 101. Microbes in the thatch get the first "crack" at the available nitrogen. The plants wind up getting the waste from the microbes. Turf is one of the best crops for building soil organic matter.

These experiments that were undertaken at the University of Illinois required very expensive sophisticated equipment, not the kind of stuff you get in a Gemplers catalog.

- For low rates of foliar applied urea, the efficiency was 25-40% maximum uptake of the total urea applied within 6 hours.



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- Higher volumes of water will have less nitrogen uptake, it washes off the plant.
- Adjuvants improved uptake by a very slight percentage.
- The remainder of N enters soil roots & follows normal N cycle.
- Tank mixes didn't affect N uptake.
- Foliar applications are valuable but not as efficient as we are led to believe. They do provide a better efficiency in the short term.
- Urea is still the most widely used and cheapest N source.
- Volatilization loss potential on non slow release products can be up to 20%.
- Leaching potential can be as high as 1-20 % on non slow release products.
- Add urease inhibitors for better response efficiency.
- 30% of total N applied as fertilizer is never recovered.

In closing, most of the data is derived from field crops. Turf is different. The microbial populations are very powerful and very plentiful. Dr. Branham's final recommendation for better nitrogen efficiency is to return clippings to the canopy and recycle the leaves when the *Poa* is not seeding.

Jerry Williams, Past President of the CDGA made his presentation of "Rules Infractions by Players, by Superintendents".

He says most golfers never learned the rules because they feel the rules are stupid or unfair. His presentation was relevant to us because he is concerned that more Superintendents don't know the rules of golf or the appropriate markings as it applies to maintaining the golf course. We have the ability to impact play and potential rulings.

- Jerry gave us a general overview of some very specific rulings.
- Nearest point of relief ruling is perhaps the most misunderstood and most violated rule.
- He went over artificial obstructions, both immovable and moveable
- Proper hazard stakes and markings can impact play.
- Ball drops are good to help with practical solutions to difficult rulings
- Marking of yellow vs. red hazards overview.
- Hazards must start and stop someplace, they must tie into something.
- Stakes identify hazard, lines define it, stake is in hazard.
- You may repair your ball mark whether you are on the green or not.

The Last presentation of the ITF Winter Education Days featured Tim Moritz and Doug Bauer of Pizzo and Associates presenting on "Creating Sustainable Outdoor Environments"

Some of the benefits of natural areas are:

- Lower maintenance
- Habitat restoration
- Improved water quality
- Increased biodiversity
- Wildlife attraction
- Shoreline erosion prevention
- Assist with infiltration of storm water
- Solve goose problems. Geese have a natural instinct to stay out of these areas for fear of predators.
- Stop the spread of invasive plants

Many naturalized sites are just unmaintained patches of weeds. Slide examples were shown of bad "not native" and naturalized areas.

Areas traditionally mowed can be naturalized to reduce maintenance costs. This can add up to an even bigger savings if multiple acres are used.

For a newly renovated site use no irrigation. Invasive species are much better competitors. Don't use any fertilizer.

Bioswales can be designed and used as water retention/holding areas. They filter surface water. Naturalized areas provide a more colorful and diverse look. Seed is less expensive than plugs when proceeding on a naturalization project.

There can be significant cost savings over armored (rock) shoreline erosion. There can also be a long term cost benefit to prairie areas over managed turf.

Native areas are not for everyone and every site. These projects require some education to "sell" benefits of the project.

A big thank you to all the volunteer people at the ITF and an especially big thank you to all of the sponsors who without, we could not do these Winter Education Days. **-OC**

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