Danny Quast Through The Years

Top: 1982 with Steve Blendel during irrigation installation at Milwaukee Country Club
Middle: 1986 Presenting a donation from the Symposium Profits to O.J. Noer Foundation Director Tony Grasso
Below: 1990 Presenting to the WGCSA at Cedar Creek Country Club.
Below Right: 1992 Discussing turfgrass at the Golf Turf Symposium with Jerry Kershasky.

He moved to Fox Lake, headquartered his company in Juneau and continues there even now (Except when he and Beverly are at their winter home in Fort Meyers).

Throughout his career, Dan has acquitted himself with the highest form of professionalism, set a prime example for the rest of us to follow, and always had the welfare of his profession and his colleagues in mind. I hope each of you will take the time in the next day and a half to personally thank him.

Before I give up the podium, I want to mention a few of the many high points of Dan's activities in his Career.

1. Do you ever read The Grass Roots? I suspect the answer is yes. And do you know The Grass Roots was started by Danny, with the help from Wayne Otto and a few other Northside Milwaukee superintendents? If he hadn't had the gumption, ambition and vision, we may well not have read this or any other state publication as we have over the past 30-35 years. Please take time to thank Dan for that today or tomorrow.

2. Have you ever made use of the Turfgrass Information File at Michigan State University? That program was under pressure of extinction because of underutilization. Who joined a handful of people to save it from extinction? Yes – you guessed it – Dan Quast. Will you thank him for that sometime today or tomorrow?

3. Danny Quast is a big hearted person who has consistently cared about his fellow superintendents. When a small group of WGCSA members, looking for a way to keep Wayne Otto in our collective memory, decided to form the Wee One Foundation, Danny was at the table. Barely a month ago, Dan personally delivered some financial relief to Dan Barrett's widow Sherri. He has the kindness and sensitivity to be the perfect person for these difficult tasks. We cannot thank you enough for this Dan. You deserve a lot of credit for the success of the Wee One.

4. Have you ever used the book Golf Course Turfgrass Management: Tools and Techniques as a reference or textbook? One of the authors is….Danny Quast. Along with Coauthor Wayne Otto, who better could have written such a useful addition to our golf course literature. Please give Dan thanks for sharing his knowledge.

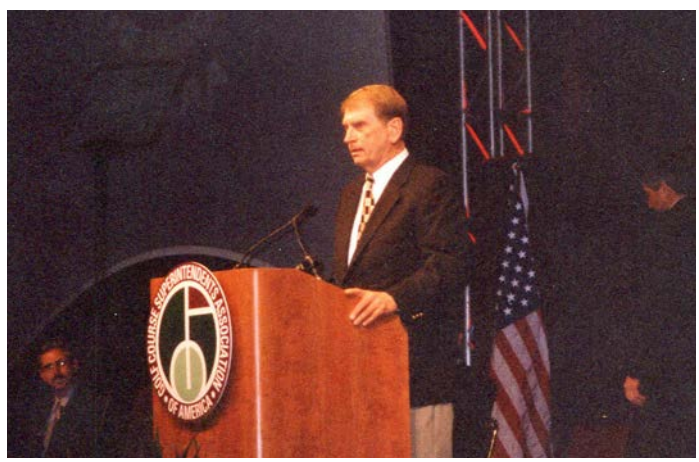
5. In addition to the symposium, O.J. Noer is remembered through the activities of the O.J. Noer Turfgrass Research Foundation. For over a quarter of a century the board of directors has included Danny Quast. Members show their dedication by traveling to the meetings at their own expense, and meet to award grants from the earnings of the foundations corpus. Thanks, DQ.

Where do I stop? He opened our eyes to the importance of arboriculture on our golf courses. He mentored a couple dozen men who left his tutorship to become fine superintendents on their own.

He has mixed and moved among us so easily – he is as common and familiar as an old shoe. I remember in 1990, right after – literally a few days after – The US Open he came up to our monthly meeting in Onalaska at Cedar Creek. We gathered around at dinner for talk and stories of the open; it was a lot of fun I still remember all these years later.

For all these things and those I have left out, Thank You Danny! The GCSAA recognized Dan in 2004 by presenting him with the Colonel John Morley Award. And today he is presented our highest honor.

Dan has had some highly visible jobs, accomplished some great things, yet when he is with us all of that potential gloss and glitter disappears, leaving his character for all to see. And what we see in Danny Quast is a truly great man. Danny, Thank you for being yourself. And I believe that O.J. Noer would be pleased for you to receive this award on a day dedicated to him.



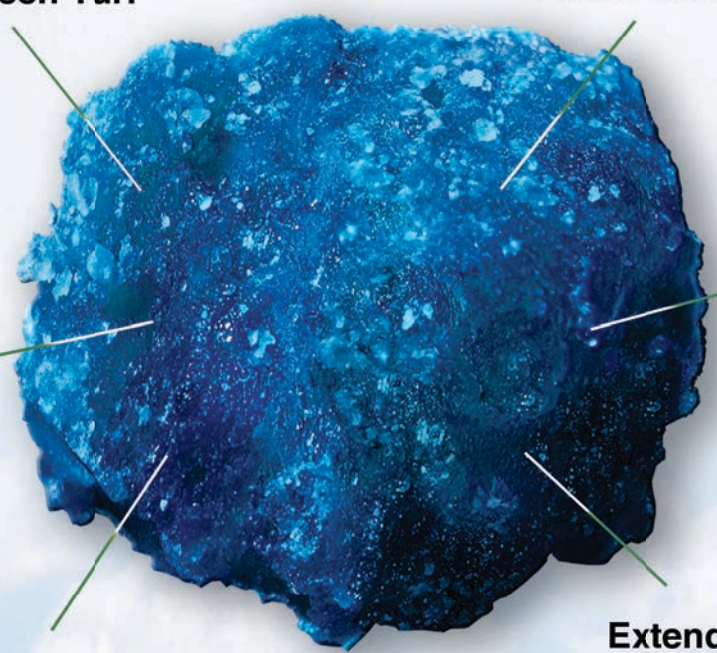
Danny Quast Through The Years

Top: 2001 with Bob Maibusch, Mike Handrich and Bob Vavrek while presenting at the Jacobsen Future Turf Managers Seminar.
Middle: 2004 accepting the Distinguished Service Award from GCSAA
Bottom Left: 2004 with Wayne Otto and Tom Schwab at the PGA Championship
Bottom Right: 2014 with Beverly in Fort Meyers Florida

MESA®

Patented Controlled Release Nitrogen

A little bit of blue makes a whole lot of green



DHD TURF & TREE

More brands.
Better performance.

LebanonTurf

Best of All Worlds™

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

48th Annual Wisconsin Golf Turf Symposium
Extreme Turf Managment

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

A large crowd was on hand to open the 48th Golf Turf Symposium and it was a fitting time to award Danny Quast the WGCSA Distinguished Service Award for his many contributions to the WGCSA and the golf industry. Congratulations Danny!

I struggle with this review every year because I come home with 25-30 pages of notes and could fill a entire issue of *The Grass Roots* with information learned from the speakers. If you were not able to attend the symposium this year you missed another great educational opportunity. I will cover a couple things from each speaker but next year your best bet is to be in attendance.

Our Keynote Speaker Dr. Ed Hopkins, Assistant Wisconsin State Climatologist for the Department of Atmospheric & Oceanic Sciences University of Wisconsin-Madison opened with historical data and statistics about our "extreme" weather patterns.

"Weather" is a snapshot of the atmosphere at a given time and place.

"Climate" is the typical weather conditions that define character of an area or long term averages. Our current "normal weather" is the averages from 1981-2010. The normal changes every ten years.

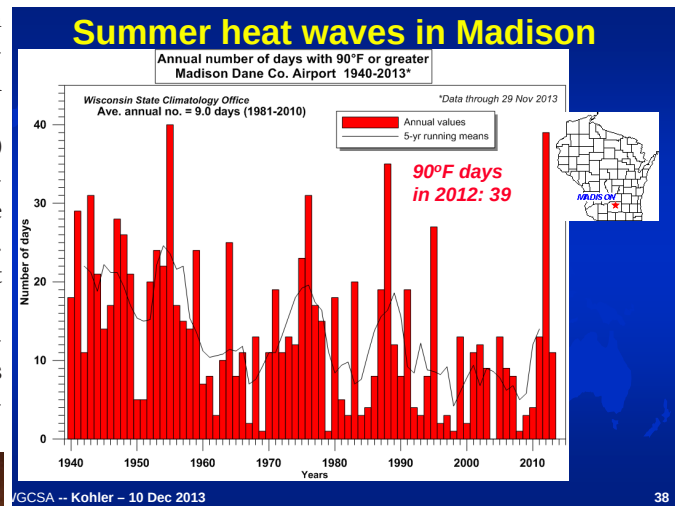
Dr. Hopkins said "Climate is what you expect, weather is what you get."

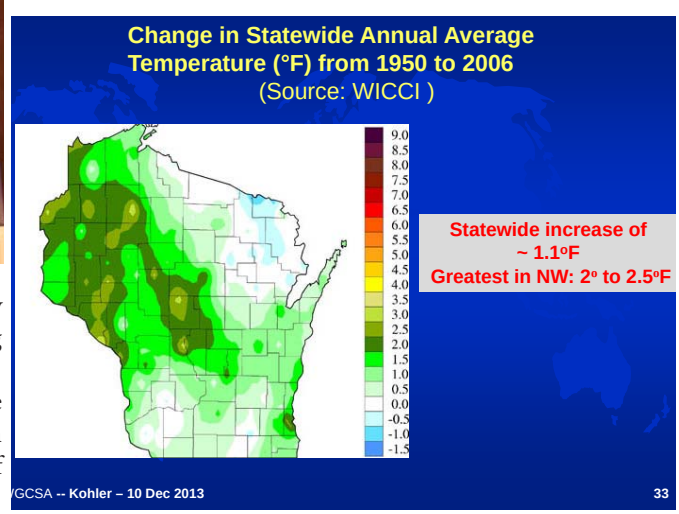
Extreme weather includes unusual, severe or unseasonal weather when compared to the normal and may occur up to 5% of the time. Extreme wether may evolve into changing climate over time.

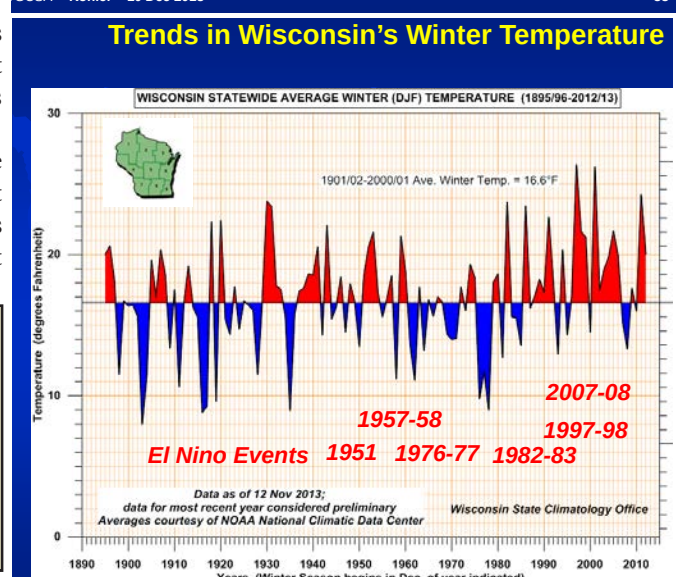
Dr. Hopkins provided a lot of information and at one point said "I have enough statistics to be dangerous"! Extreme weather has always been present and is unusual, severe or unseasonal weather at the extremes of historical distribution.

Ed expressed winters are clearly warmer than they used to be and this will result in a longer growing season, and changes in the USDA Plant Hardiness Zones. He gave no reason for this but added the weather has been variable for as long as there has been records.

Next up was Bob Small, Water Supply Specialist from the Water Use Section of the Wisconsin DNR discussing water use in Wisconsin. At first it seemed odd inviting the so called enemy to our symposium but it was quickly clear that Bob not only was a golfer but he was educated about golf course water use in part from work done by Dr. Doug Soldat.







Top Right: Annual number of days in Madison above 90.

Center: Dr. Ed Hopkins

Center Right: Change in statewide annual average temperature from 1950 to 2006

Bottom: Trends in winter temperatures from 1895 to 2012/13

Water withdrawal is defined as taking water from a surface or ground water source and making it unavailable for other purposes, even if only temporarily. Systems with a capacity to withdraw 100,000 gallons per day need to report.

49 Wisconsin golf courses report surface water and 390 report ground water use. Bob would like to improve the annual reporting rate because 91% of golf courses reported in 2012 compared to a statewide average of 95%. Other goals include:

- Improve registrations to include both original sources and irrigation system withdrawals to account for wells that pump into surface water. (Will count only larger of the two.)
- Improve registration accuracy.
- Integrate DNR reporting with UW Turfgrass irrigation research.
- Coordinate with WGCSA and USGA to determine if and how data can be put to best use.
- Identify other potential collaborators.

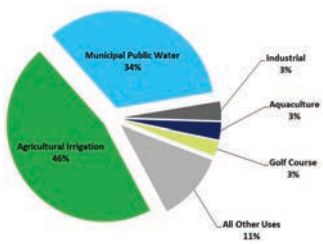
Golf Courses may want to hide our numbers but accurate reporting and data is important to prove the value of our use and the actual conservation efforts golf courses use to reduce water use. Bob expressed golf courses use less water than many other land users.

Expect to see more from Bob in these pages in the future as he works with Dr. Soldat to gather accurate data on golf course use and conservation.

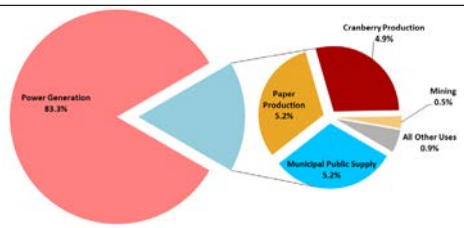
Groundwater Use in Wisconsin:
2012 Withdrawals

292,303,941,228 groundwater gallons from 13,000 sources in in 2012, up 37% from 2011.

- Agricultural Irrigation surpassed municipal public water in 2012 due to the drought.
- Could cover the land area of Wisconsin with ¼ inch of water.
- Enough water to fill Lambeau Field over 600 times.
- Golf Course withdrawals ranked 5th with 7.4 bGal or 2.5% of the statewide groundwater withdrawal.



Surface Water Use in Wisconsin:
2012 Withdrawals



2012 Surface water withdrawals totaled 1.963 trillion gallons from 995 sources up 1% from 2011.

Golf Course withdrawals ranked 10th with 1.1 bGal or .05% of the total surface water withdrawal.

Several sectors reported decreased withdrawals including Aquaculture (-10%) , Mining (-8%), Power (-2%), and Municipal Supply (-2%).

Increases were reported in Paper (+5%) and Cranberry Production (+122%)

Top Right: Bob Smail, Water Supply Specialist

Middle: Ground water use withdrawals show golf courses ranked 5th with 2.5%

Bottom: Surface water use withdrawals show golf courses ranked tenth with .05%

Dr. Karl Danneberger was next with a talk titled "High Temperature Stress Management". Stress is defined as anything that subjects the turfgrass plant to hardship. Temperature stress of turfgrasses occurs when the plants are exposed to temperatures above or below their optimum range.

High temperature stress is closely related to light, light quality, light wavelength, light duration and the light saturation point of the specific plant. In cool season grasses the stomates close as the plant reaches the light saturation point.

On a clear summer day sunlight is direct and of high quality leading to only 2% of solar radiation being used for photosynthesis. The rest is heat that needs to dissipate through absorption or reflection.

Dr. Danneberger presented three scenarios of turf canopy temperatures given all have adequate moisture for transpiration.

1. With a temperature of 90 degrees with clear skies and a wind greater than 5 mph the canopy temperature will be 90 degrees.
2. With a temperature of 90 degrees with cloudy skies the canopy temperature will also be 90 degrees.
3. With a temperature of 90 degrees and clear skies and little to no wind the surface canopy temperature will rise to 105 degrees.

This example shows the value of tree removal to allow natural winds to blow across the green to easily cool the surface. Indirect heat stress will cause a depletion of carbohydrates in the plant and a decline in the root system. Direct or acute heat stress will cause a disruption in the membranes, a degradation of the plants

Dr. Karl Danneberger from The Ohio State University

proteins while cell function shuts down leading to plant death. When moisture stress is coupled with heat stress death can come quickly.

Karl's research has shown that high soil temperatures are more detrimental than air temperatures. Soil temperatures greater than 70° can cause a 50% reduction in root growth but if aerification is done before the soil temperatures reach 70° turf managers can reduce the stress period due to air exchange.

His work also shows that plants can and need to acclimate to high temperatures. Plants have the ability to protect themselves from lethal temperatures so we need to avoid doing stupid things while the plants are acclimating.

Dr. Danneberger also discussed Systemic Acquired Resistance (SAR) where products such as phosphites or acibenzular are used to keep the plant healthier. He was concerned that it is possible to overdo the use of these products and have the plant constantly working harder.

Karl's take home point was to measure soil and canopy temperatures and respond with proper management practices to reduce plant stress.

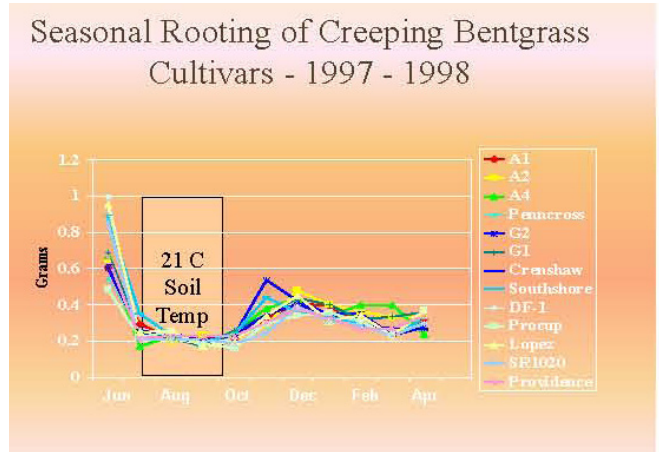
Dr. Doug Karcher from the University of Arkansas finished up the first day with "Wetting Agents". He started with a little history and stated that since 1883 there have been 1,200 publications on hydrophobic rootzones with a huge increase since 1964 when sand based putting greens became popular.

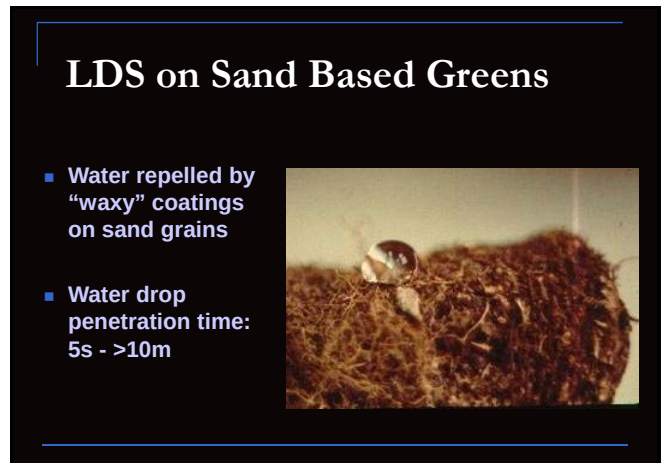
Localized dry spots are caused by organic coatings on soil particles causing water repellency. The coatings were originally blamed on fungi but are now considered to come from waxes from leaves, plant root exudates, decomposing organic matter and fungal hyphae and exudates.

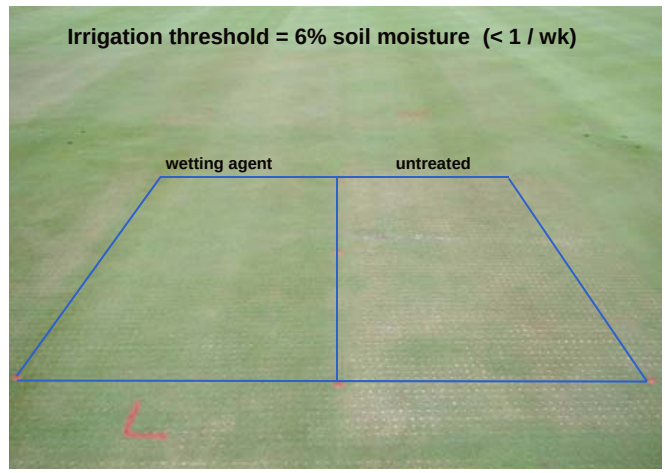
Wetting agents are used to act as a bridge between waxy coatings and water droplets. However all wetting agents leach or are decomposed by microbes so they are a temporary fix.

One challenge for turf managers is wetting agent classifications are not standardized universally but are used more as advertising words. In research the benefit of wetting agents becomes more apparent the lower the soil moisture is kept.

Dr. Karcher also provided research that shows various wetting agents alone provided no difference in green speed, surface hardness or ball mark depth but did provide quicker recovery from ball marks during dry periods especially later in the season.







Top: Dr. Danneberger shows creeping bentgrass roots do not recover from summer stress until October

Middle: Dr. Karcher shows how to conduct a drop test to measure water repellency

Bottom: Plots kept at 6% soil moisture show the value of wetting agents

Bottom Left: Dr. Doug Karcher, University of Arkansas

Doug finished up with showing that most wetting agents tested reduce localized dry spots and improve moisture uniformity without adversely affecting moisture content while appearing to have little effect on putting surface performance.

He urged attendees to get and use a moisture probe to measure moisture content and uniformity to reduce irrigation frequency. With proper soil moisture content for your site turf managers can reduce summer stress, surface matter organic content, summer diseases, moss, algae and their water budget. In his experience the TDR probe is easy and accurate.

After Wednesdays breakfast buffet Dr. Zach Reicher joined us to discuss "Poa Annua Management". Poa annua can provide a fine playing surface because it is fine bladed, tolerant of low mowing and recovers quickly from seed.

Even though poa makes up the primary plant on many greens, tees and fairways poa is still considered a weed. Poa annua is apple-green in color, seeds in late spring and often again in fall. Poa is susceptible to snow molds, winter-kill, ice cover, heat, water stress and often widespread death.

It is considered one tough plant as it can be found from the equator to the Arctic Circle and can produce 360 seeds per plant per year. Seeds are viable in the soil for 6 years and can germinate in darkness. Seeds on a green can germinate immediately and on fairways after only 4 months or a chilling period.

Although many manufactures claim they can control poa annua few have had good long term success. Dr. Reicher expressed that multiple control measures are needed and often required forever or minimum of the 6 years the seed is viable in the soil. Before control should be attempted turf managers should receive support from the clubs decision makers while being honest about expectations.

Due to the genetic diversity of poa control can be limited and the weed has shown resistance to numerous herbicides. Any successful program will need a multi pronged attack with various chemical and cultural practices. Considering Primo promotes poa health it should not be used as part of a poa annua control program but is valuable for promoting quality poa.

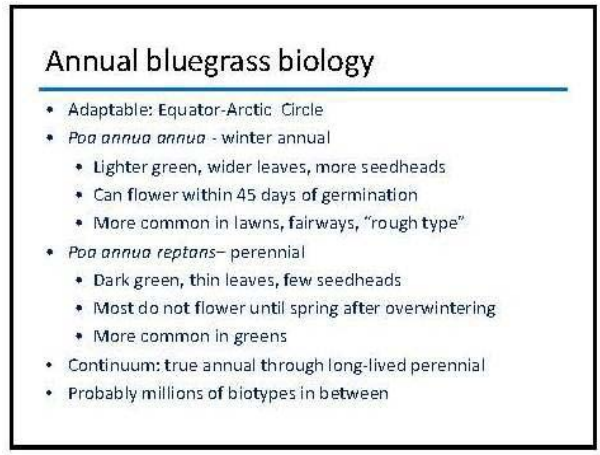
As part of the multiple faceted plan phosphorus needs to be limited all season and late season applications of Nitrogen. On a scary note no fungicides labeled for summer patch or anthracnose should be used and clippings should be collected during seedhead formation.

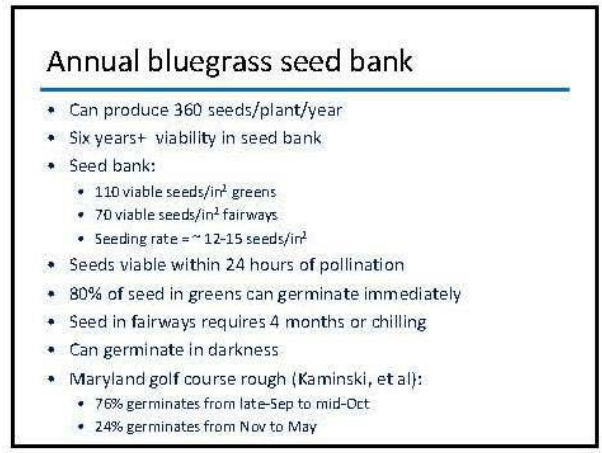
Considering aerificaiton brings up poa annua seeds from the soil profile courses looking to promote poa should aerify in fall when germination is peaking while courses that are looking to reduce poa annua should aerify in the summer. On sand based greens or greens with a layer of sand with no significant organic or thatch layer can forego aerification all-together.

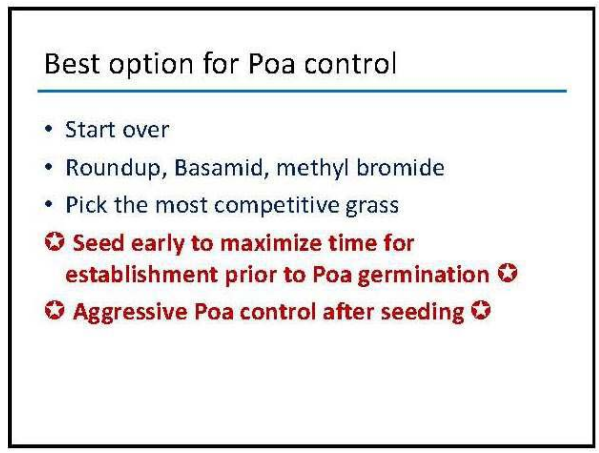
As shown in the slide to the right Dr. Richer showed the best option for poa control is to kill off the existing turf and start over with a more competitive grass.

To give the bentgrass a competitive chance the best time to seed is shown to be before mid-August and preferably in early July.

In the end Zach taught us the road to poa elimination is long and expensive and the road to promoting poa as a major part of greens, tees and fairways is wrought with failures due to environmental stresses.







Top: Annual Bluegrass Biology

Middle: Annual Bluegrass Seedbank

Bottom: Best Options for Poa Control

Bottom Left: Dr. Zach Reicher, University of Nebraska - Lincoln

Aquatrols Revolution®

Aquatrols Dispatch® Injectable

Aquatrols Dispatch® Sprayable

Aquatrols AQUEDUCT® SOIL SURFACTANT

Aquatrols AQUEDUCT® Soil Surfactant SWDG®

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.

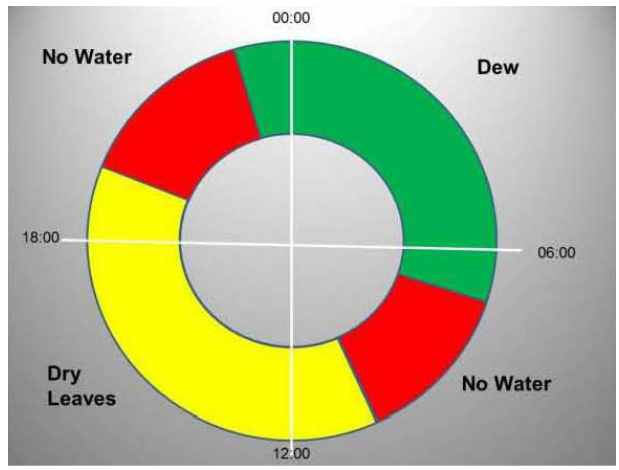
Larry Lennert
Territory Manager
Greenfield, WI
llennert@aquatrols.com
(773) 620-2382

Aquatrols®
www.aquatrols.com

Dr. Danneberger returned to discuss "Irrigation During Summer Stress" and provided a multitude of pictures showing various kinds of turf stress and damage from earthquakes, volcanic ash, winter dessication and shade.

Karl discussed the value of reducing the wetness window and removing morning dew through dragging, whipping, mowing or rolling. Dew can be 77% sugar that should be removed or diluted when possible.

Dr. Danneberger also discussed the benefit of green and fairway topdressing to promote surface firmness by reducing thatch. If a club is looking to go to the next level, topdressing fairways is the next level. Once a 5-6" layer of sand is built up even a saturated profile will still provide a solid and stable surface.



Above: To promote plant health avoid extending the period of leaf wetness by avoiding watering during the period right before or after dew formation.

Left: Can topdressing fairways take your club to the next level?