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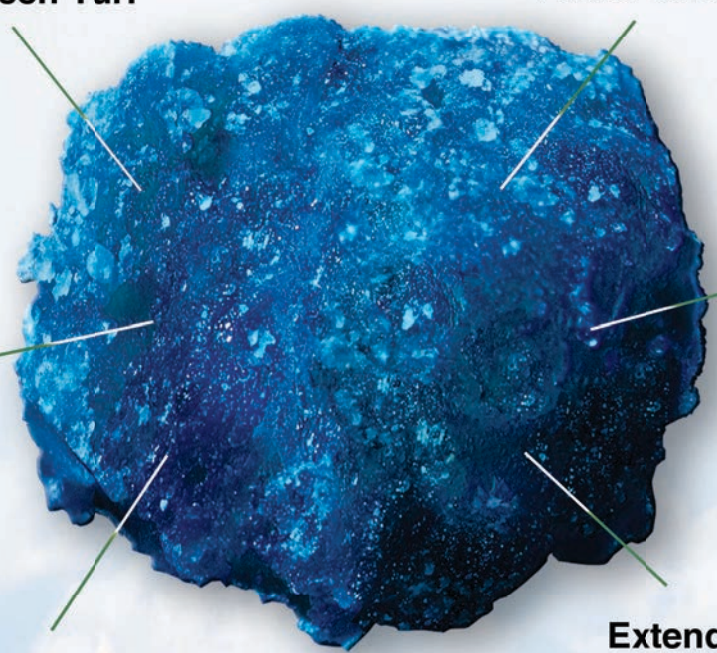

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ABOUT THE COVER

Dr. James R. Love was a professor at the University of Wisconsin Madison from 1956-1986 and started the turfgrass management program in 1961.

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You can't pay me back, you can only pass it on to those who come after you.
By Monroe S Miller, Retired Golf Course Superintendent and Retired Editor of *The Grass Roots*.

Monroe said this in describing advice from his mentor and professor Dr. James R. Love.

We can use this as an example to pass on lessons and skills to those under us.

THE GRASS ROOTS

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2014 WGCSA OFFICERS AND DIRECTORS
Front Row: Chad Harrington, Jim Van Herwynen, Jon Canavan, Josh Lepine. Back Row: Jeff Millies Brett Grams, Jeff Barlow, Kevin Knudtson, Mike Bremmer, Joe Sell. (Not pictured Steve Wasser and Scott Bushman.)

Attributes Are Found Home And Away

By Chad Harrington, Golf Course Superintendent, Autumn Ridge Golf Course

The Winter of 2013-2014 has been a cold one. I realize that winter in Wisconsin is not supposed to be swimsuit weather, but the polar vortex that we have been in this year has put a damper on many of the outdoor activities that make our off season a time that some of us look forward to. I always enjoy spending some time on the slopes with my family and friends, taking advantage of the natural beauty our area has to offer. Our State has so many beautiful attributes that I am not sure I appreciate enough on a daily basis.

With the GIS show being in Orlando this year, I decided it would be a great opportunity to take my family to Florida, get out of the cold, and see another part of our country. With the ice and cold weather issues in Atlanta, as well as other parts of the country, just getting there for us was a bit of challenge, but the warmth when we got off the plane, a day late, was almost shocking. The temperature at our departure in Green Bay was – 12 with a 97 degree swing to 85 when we landed in Tampa Bay, a welcome change in early February. We were able to see some of the wonderful sites that our country has to showcase that we do not experience on a daily basis in Wisconsin. I think even more importantly, this time away from home allowed us discuss what attributes Wisconsin offers us every day that we just take for granted. My 12 and 9 year old boys were so excited to see their first palm tree, which I am certain go unnoticed by people that live in that region, but it started a very interesting discussion topic. What does Wisconsin have to showcase that we take for granted and fail to realize how special the state is?

Florida did have the warmth, palm trees, and even alligators, but imagine bringing someone from that region to our beautiful state for the first time. Wisconsin offers varied terrain from the rolling hills and kettles to the flats of the central area. We have the shoreline of Lake Michigan, not to mention many small inland lakes, rivers, and streams. We have incredible State and National Forests that are filled with wildlife and a variety of trees and plants. We have an incredible change of season, which I realized I take for granted, and is something not everyone gets to experience.

The WGCSA is an ever evolving entity that I also feel I sometimes take for granted. I had the opportunity to say hello and greet many of you at the GIS Hospitality Room this year, but really wished I had a bit more time for conversation. Our association hosted nearly 200 of our WGCSA members and guests this year in Orlando. The camaraderie among our association at that special event was second to none, and something I wish we could have more of when we are at home in Wisconsin. I need to thank, and urge all of you to as well, our loyal Industry Partners that realize the value of this association and events like the GIS Show Hospitality Room. Without them, we would not have nearly as many opportunities to network with others in the golf industry. I also want to send a personal thank you to Executive Director Brett Grams for his efforts setting up the event again this year. I greatly appreciate the time and attention that went into making sure our association had a successful and enjoyable time away home.

I look forward to seeing and talking to each of you at a WGCSA gathering this year. We again have a great lineup of host golf courses and speakers, and I will do my best not to take those offerings granted. I hope all of you have a great spring, and thank you for your support of the WGCSA.

WGCSA MISSION STATEMENT

The Wisconsin Golf Course Superintendents Association is committed to serve each member by promoting the profession and enhancing the growth of the game of golf through education, communication and research.

WGCSA VISION STATEMENT

The Wisconsin Golf Course Superintendents Association is dedicated to increase the value provided to its members and to the profession by:

- Enhancing the professionalism of its members by strengthening our role as a leading golf organization in the state.
- Growing and recognizing the benefits of a diverse membership throughout Wisconsin.
- Educating and promoting our members as leaders in environmental stewardship.
- Offering affordable, high value educational programs at the forefront of technology and service.
- Being key to enjoyment and the economic success of the game of golf.

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Survival of Fine Fescue Under Fairway Conditions

By Dr. Doug Soldat, Department of Soil Science, University of Wisconsin – Madison

Fine fescues aren't very common in Wisconsin golf course fairways, and perhaps for good reason. While fine fescues have a reputation of being a low maintenance grass, they come with substantial challenges: they lack heat and traffic tolerance, they are prone to thatch accumulation, they won't fill in divots as well as bluegrass or bentgrass, and they seem to thrive only in well drained soils. Overlook those flaws, and fine fescue is the perfect grass! Jokes aside, some of our most famous golf courses have fine fescue fairways and there certainly are places and situations in Wisconsin where fine fescue might be the best choice. Like all grasses, substantial variability exists within and among the fine fescue species, and choosing the proper species and cultivar is a very important decision.

We recently finished up a four year evaluation of several species and cultivars of fine fescue under simulated fairway conditions. The grasses were established at the O.J Noer Turfgrass and Research Facility in fall of 2008 by Dr. John Stier. The plots were mowed two to three times weekly at 7/8th of an inch, and annual fertilization was limited to 1.5 – 2.0 lbs of nitrogen per thousand square feet. The study was conducted on a silt loam soil with good internal and surface drainage. The plots were trafficked three times a week over the five year study period using a simulator composed of four axels of free spinning golf cart wheels loaded with approximately 500 lbs. Irrigation was applied weekly to replace 80% of estimated evapotranspiration.

We evaluated 25 fine fescues: 12 Chewings fescue cultivars, 7 strong creeping red fescue cultivars, and 6 hard fescue cultivars. Performance data was collected monthly for the five year period, but for this article we will only focus on two key indicators: percent of fescue cover one year after establishment, and percent fescue cover at the end of the trial (Table 1).

Fescue Cover

Fescue Species	1 Yr After Seeding	4 Yrs After Seeding	Difference
Chewings	86% A	73% A	-16%
Strong Creeping Red	85% A	60% B	-29%
Hard	60% B	35% C	-40%

Table 1. Percent of the plot covered with fescue at 1 and 4 years after seeding. Different letters within columns indicate statistically significant differences (alpha = 0.05).

Left: The fast and firm fescue covered tenth fairway on the tenth fairway at Erin Hills Golf Club during the USGA United States Amateur Championship.
Right: A close-up of the same fairway.

From Table 1, we see that the Chewings and strong creeping red fescues established more successfully than the hard fescue cultivars. However, by the end of year 4, we see that the Chewings fine fescues were much better at maintaining plot cover, with the strong creeping red and the hard fescues falling off. The "Difference" column in Table 1 shows the relative decrease in plot cover from year 1 to year 4. The most common weeds in the plot were annual bluegrass, crabgrass, and clover, with other assorted broadleaf weeds.

In year 4, the top four grasses ranged from 83-89% fescue cover, and all four were Chewings fescues. Among these, the only named cultivar was 'Intrigue 2, the others were experimental. The bottom four cultivars ranged from 15 – 29% fescue cover and three were hard fescues with one strong creeping red fescue. These trends were similar after year 1, with three of the top four being Chewings fescues and the bottom four were all hard fescues.

These results indicate that (at least for the grasses tested) Chewings fescue is probably your best choice for fairway conditions in Wisconsin. Overall they, established well, and maintained high plot cover during the duration of the trial.

Chewings fescue is probably your best choice for fairway conditions in Wisconsin.

However, we observed considerable variation within the species. For example the worst performing Chewings had 38% fescue cover by the end of the trial while the best performing hard fescue had 51% fescue cover ('Spartan II'), so one needs to pay attention to the cultivar in addition to the species. Strong creeping red fescues didn't live up to their name, as they established well but lost cover during the study and did so at a greater rate than the Chewings fescue. But again, we observed a large amount of variability within the red fescues with two experimental strong creeping red fescues with over 80% cover and 'Boreal' strong creeping red fescue at second to last in plot cover at 22% after year 4.

Overall, these results are encouraging. In conversations with other scientists, I've learned that similar trials conducted in the late 1990s and early 2000s produced few if any cultivars that would persist in these conditions after four of five years. Having a handful of cultivars at over 80% fescue cover is a dramatic improvement in genetics. I see no reason not to expect continued improvement of fine fescues in years to come. As always, feel free to contact me for more information or a plot tour sometime this summer.

Are You A Rational Superintendent?

By Dr. Paul Koch, Department of Pathology, University of Wisconsin – Madison

The question posed in the title of this article at first blush seems like a personal affront. Even the mere fact I would have to ask if you're rational must mean there is some part of me that thinks you're irrational. However, I'm speaking not in terms of personality or temperament but rather if you're rational in an economic sense. In particular, are you rational when it comes to scheduling fungicide applications to optimize disease control? The simple answer is that most superintendents are not, and there is a clear explanation for why that is.

Several scientific papers have come out in recent years investigating the manner in which agricultural managers make decisions about their production methods; everything from why certain cultural practices are not adopted to developing risk management strategies as it relates to yield loss to how fungicide applications are scheduled (McRoberts et al., 2011; Hughes et al., 2013; te Beest et al., 2013). Each of these papers talks about the rational decision maker, which they define as someone who seeks to maximize profit 'and that this single objective explains the choices they make' (McRoberts et al., 2011).

Most of the concepts discussed in these papers relate to agriculture and focus on the economic choices made related to the cost of pesticides versus the impact that diseases have on yield. Though we don't work in terms of yield, many of the aspects discussed have consequences for golf course superintendents. There are a lot of theoretical equations included in these papers, but their basic conclusion is that the most economically rational manager would apply the minimum amount of pesticide to obtain the maximum amount of yield (ie profit). This seems pretty straightforward, why apply more pesticide than you need to? But in reality it's actually impossible because you can't forecast with complete certainty when or if disease will occur, and hence can't precisely determine when pesticide applications will provide the greatest profit.

The lack of certainty about when diseases will develop results in two types of managers; those that are risk-averse and those that are risk-tolerant. As the name suggests, the risk-averse manager will look to minimize risks whenever possible. With regards to disease control, this means they will often apply fungicides on a strict calendar-based method with little regard for the environmental conditions. The risk-averse manager will spend more on fungicides, but will lower the 'risk' that a severe disease outbreak will occur.

The lack of certainty about when diseases will develop results in two types of managers; those that are risk-averse and those that are risk-tolerant.

The risk-tolerant manager, on the other hand, will often apply fewer but hopefully more timely fungicide applications. They accept that their ability to forecast disease is imperfect, which could result in significant disease outbreaks. When they forecast disease correctly, they will often save money relative to the risk-averse manager due to fewer fungicide applications. However, when they forecast incorrectly the costs of recovery from disease or lost rounds of play may significantly outweigh the initial savings obtained from less pesticide used.

Most managers, both in turf and agriculture, are risk-averse and prefer the increased degree of certainty that comes with more fungicide usage. While they may spend more money than is required to control disease, they at least reduce the uncertainty (i.e. risk) that comes with trying to forecast precisely when disease will develop. This technically makes the vast majority of golf course superintendents irrational in an economic sense (because they are spending more than the absolute minimum to control disease), but it allows for more effective planning and more certain costs from year to year. In short, think of the fungicides you apply as 'insurance' against unforeseen disease outbreaks. Higher quality insurance will cost more upfront and in the absence of anything going wrong, but when something does go wrong having quality insurance can often save significant sums of money relative to a lower quality insurance plan.

So can golf course superintendents become more rational? That would depend on the ability to more precisely pinpoint when disease outbreaks will occur so that fungicides will only be applied as needed. Disease forecasting for most turf diseases has historically been pretty abysmal, but there have been some more accurate forecasting tools developed in recent years. This summer we intend to research just how accurate those forecasting tools can be, how they can be implemented at your course, and how truly 'rational' they can make you. Well, at least from an economic point of view.

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The Winter Of 2014

By Bruce Schweiger, Turfgrass Diagnostic Lab Manager, O.J. Noer Turfgrass Research and Education Facility

As I sit down to write this article it is snowing. Many times that statement will give you an idea of when I wrote this article, but this year it seems to be snowing every other day. It is early March and recently winter has loosened its grip on Wisconsin and the upper Midwest. Snow has started to melt and Superintendents and Grounds Managers are beginning to rustle. The talk of ice damage is very popular in southeast Wisconsin, Chicago and southern Michigan. Last year at many of you had your bout with ice covered turf. For many of you your worst fears were answered last spring with dead turfgrass in lawns, sports fields and golf courses. A few of our colleagues were able to turn the bad situation into a positive with a much needed re-grassing project, re-grading project to improve surface drainage or just the removal of some key tress. Time and time again tragedy is the impudence for change.

What will the spring of 2014 bring? That is a hard question to answer! Talking to many of you over the past few weeks the conditions are very different throughout the state, but to me appear to be much more "normal" for a Wisconsin winter. I am hearing reports of soil temperature in the mid-twenties, greens plugs being brought inside and greening up, or greens as hard as rocks with frost but not too many reports of ice. What does all this mean, I do not think anyone can give us a definite answer but I hope things will be fine. Some of the concerns I do have are in the southern part of the state and northern Illinois where some snow mold programs were not built around grey snow mold (Typhula incarnata) control.

In recent history there has been minimal grey snow mold damage in the southern part of the state and as budgets have been restrained Superintendents have chosen to develop their snow mold spray program around Microdocium Patch (Microdocium nivale). These programs usually do not provide adequate grey snow mold control. The extended snow cover in southern Wisconsin this winter is creating excellent conditions for grey snow mold development. The extreme cold and the frozen soil surface may hinder the Typhula incarnate development, let's hope. Every year Superintendents try to improve their snow mold control program and make changes after reviewing Dr. Koch's snow mold trial results. I encourage you to be proactive and study these snow mold study results each year but, caution you to compare many years worth of data. One year a product or combination might look good but the pressure may have been low and that level of control may not be repeated in subsequent or previous years.

I know that budgets are the driving influence but every golfer putts out on every hole, they might not see all the fairways, but greens are that long lasting memory of your course. In a year like this if you may have significant grey snow mold damage, what will the cost be in lost revenue, seed, fertilizer, and labor be to make the needed repair? Compare that to the added cost of including grey snow mold control into your program? Many times the best budget decision might be to spend the money to continue with a grey snow mold control program.

Other interesting issues that have come across my desk for discussion are vole damage, rabbit damage, and salts. I think we are going to see turf damage along sidewalks, parking lots, driveways and any roadway that borders your property. As the snow piles up the amount of salt in that snow just kept accumulating. There was salt applied and the next day or two it snowed again and all that salt was plowed away and the cycle started over. Some of these piles are full of road salt. If you encounter salt damage to your turf I would recommend aereationing, apply gypsum, tying up some of the salts and watering in well, and hope for a few good soaking rains.