

Wow, talk about deflecting blame. Historically our industry has used some pretty wicked chemistries, drained wet lands, over-watered on occasion and have had our own storage, clean and fill challenges. Yet it has always been easier to look at the perceived “bigger” offender.

Just as the golf course industry has made dramatic changes, so have our brethren in the commodities business. Are you aware of their positive transformations?

The Discovery Farms Minnesota Project is charged with collecting water quality information under real-world conditions to provide credible and practical information to support farmers in better farm management decisions. Discovery Farms Minnesota is a farmer-led effort to gather field scale water quality information from different types of farming systems and in landscapes all across Minnesota. The goal is to

provide practical, credible, site-specific information to enable better farm management. The program is designed to collect accurate measurements of sediment, nitrogen and phosphorus movement over the soil surface and through subsurface drainage tiles.

The Green Star Farms Initiative is a new approach intended to challenge farmers and those who advise them on farming practices to think critically about both agricultural production and resource protection. Aggregation of farm information allows agricultural businesses to compare individual analysis to other farms across the state, within a region, or within a sector. This aggregated information helps identify broader research and education needs, which is of value to the many farm organizations working together to address water quality and stewardship issues.

The Minnesota Agricultural

Water Quality Certification Program (MAWQCP) is a voluntary program designed to accelerate adoption of on-farm conservation practices that protect Minnesota's lakes and rivers. Producers who implement and maintain approved farm management practices will be certified and in turn assured that their operation meets the state's water quality goals and standards for a period of ten years.

Three great programs implemented by our partners in the "green" industry. Agriculture is a gigantic ship, and not unlike golf management, making a change in course takes time, lots of energy and inspired individuals to cause the course adjustment to happen. It is time to give our "brothers" a break and acknowledge their efforts.

Upon the playground during fourth grade, Billy Palmer, a lad competing with me for the ownership of "liking" Mary

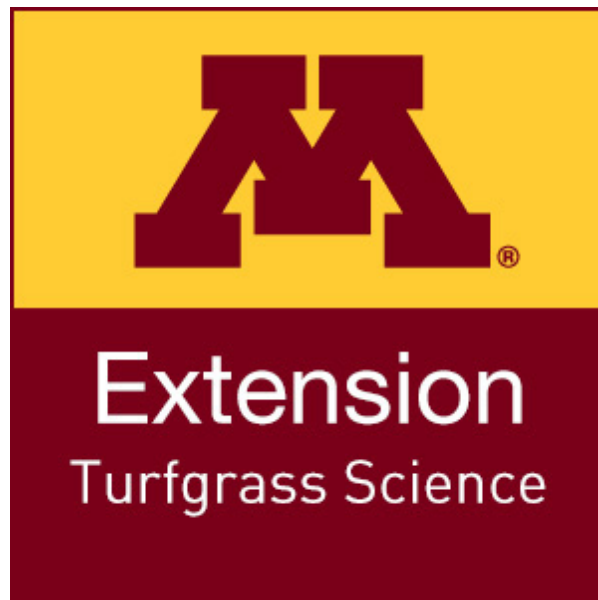
Durham, intentionally pushed my face into a very hard and unforgiving basketball post. The egg sized bump that grew upon my forehead sent me immediately to the nurse's office for an ice pack and then home for a bit of R&R.

Unfortunately for Billy, my older, and very, very much larger sixth-grade brother Curt, supported me in my absence. Needless to say, my "big brother" made it perfectly clear that nobody messes with the MacKenzie clan.

Isn't it time golf course managers quit throwing darts at our agricultural partners and focused upon our own challenges? Are we not in the same family and have the maturity to support one another during crisis and celebrate each other's success stories? The MGCSA should be embracing the farming industry for all of their positive attributes. After all, our Big Brother has a state agency named after them.

MGCSA Winter Outreach





From the U to You; *Survey Says!*

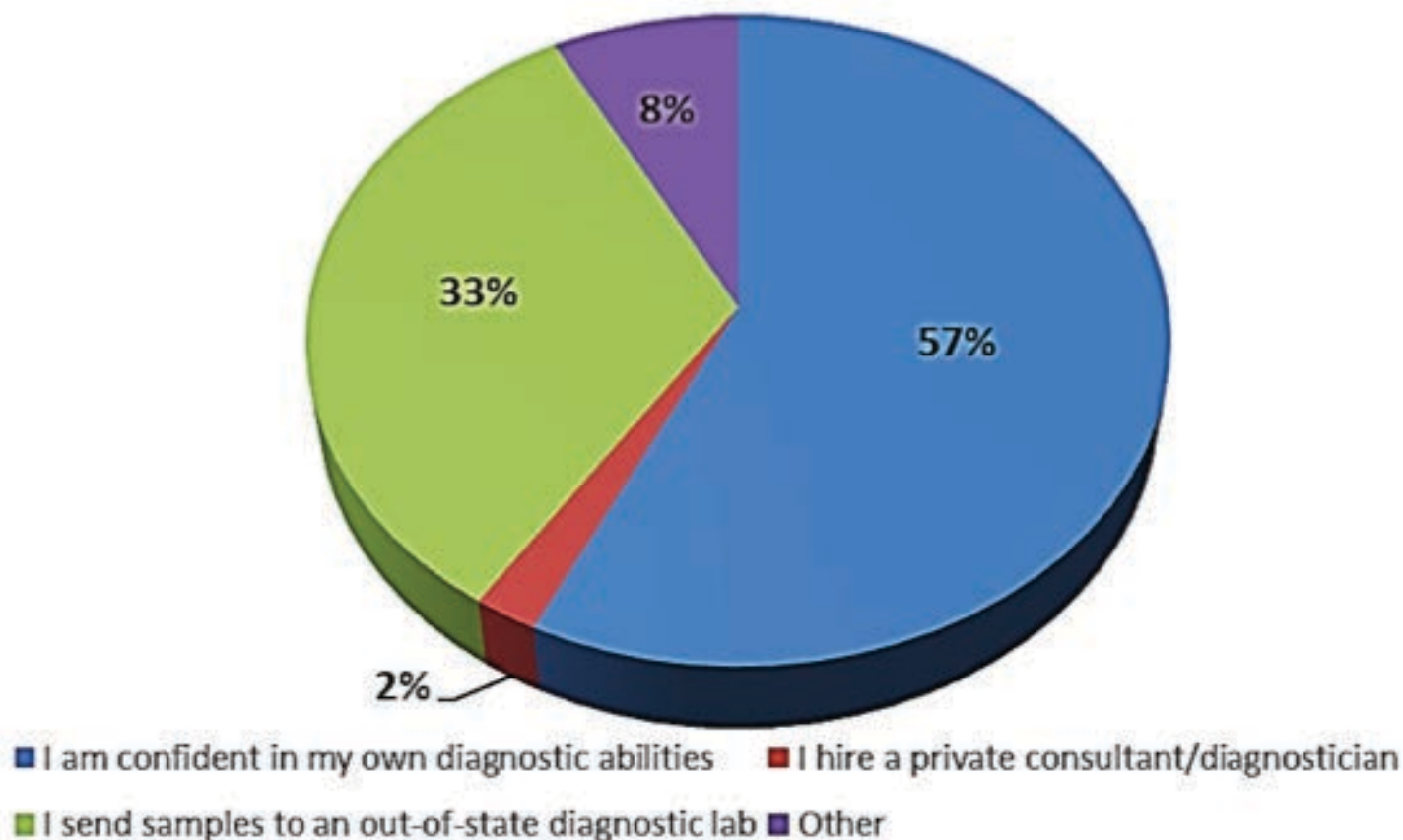
Dr. Angela Orshinsky, Extension Horticultural Pathologist

Thank you! Thank you for your response to the needs assessment survey sent out in November 2013. In a single month, over 140 MGCSA members took the time to answer questions about diseases and disease management. Why did I feel the need to conduct this survey? As a newcomer to this fine state, I needed a starting point. After speaking with some superintendents this fall, I had the distinct feeling that my previous experiences with turf diseases in Ohio were not likely to be the case here in Minnesota. I also wanted to understand your management habits, products that you prefer to use, and your willingness to try newer types of products – such as defense activators. More importantly,

it helped me to identify turf diseases that concern you and where I should put my efforts into developing educational materials. In this article, I'd like to share the results of this survey with you and let you know some of the ways that I plan to use this information to better serve the MGCSA. Much of the results were expected, but, like me, you may be surprised by others.

Almost all of the respondents were superintendents or assistant superintendents, with an average of 25 years of experience working in golf course turf management. The results of the survey were nearly identical for members working on public, resort, and private or semi-private courses- allowing results to be grouped together.

How do you diagnose your turf diseases?



Plant Disease Diagnosis

I was rather surprised to learn that of the 92 golf course superintendents and assistant superintendents that responded to this survey, only one has submitted a sample to the UMN Plant Disease Clinic in the past year. So how are you diagnosing your turf disease?

So 57 percent of respondents are self-diagnosing turf disease. This is not a terrible thing since superintendents have classroom training for turf management, take continuing education credits and have a lot of real-life experience. As mentioned above, on

average you have 25 years of experience!

The survey also told us that your preferred information source for these diagnoses was through an internet search and using online fact sheets, but also with good old-fashioned books. There are a lot of great online sources out there – I completely agree! Michigan State University, North Carolina State University, and Purdue University online fact sheets are among my personal favorite turf websites. Still, I'd like to emphasize that accurate diagnosis is critical to proper management. Diseases like dollar spot and rust are pretty darn easy to diagnose, but other diseases can sometimes be a little

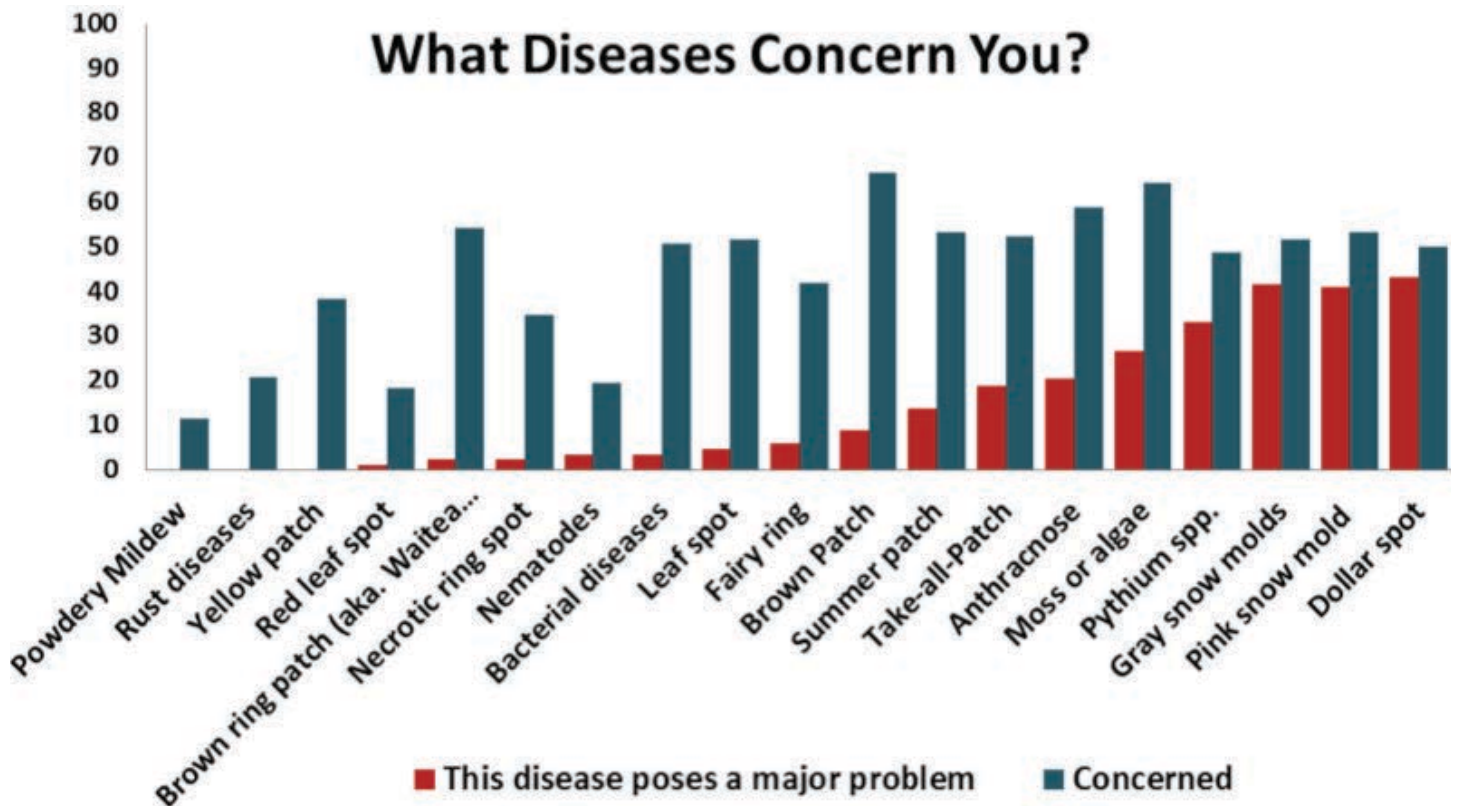
trickier to diagnose correctly. Please remember that the UMN Plant Disease Clinic is here to help if you see something that you are not certain of, or if you have tried everything to no avail.

What are you seeing out there?

Looking out the window at a Minnesota winter, it is absolutely no surprise that snow molds ALMOST topped the list as the disease that concerns you the most. So what diseases most concern you? Had I not asked the general membership to tell me what diseases are most important to them – and relied solely on conversations from my first 4 months here in Minnesota – I would have guessed that fairy ring was a huge issue here. Well, the survey says....

I ordered the results according to the “this disease poses a major problem” in ascending order. So the red bars at the right are the most concerning diseases to MGCSA members. The unsurprising results were that dollar spot was ranked as the most concerning disease with both pink and gray snow molds as close runners up. What did surprise me is that anthracnose is such a problem here in Minnesota as well as Take-all-Patch and moss and algae. I am glad that I asked! The other thing that I noticed is that some of the diseases that are not a major problem still concern many of you. For example, brown patch, brown ring patch, and bacterial diseases are of concern.

Now, I doubt that the reason that



bacterial diseases are of such a huge concern is that you are all suffering from it. My thoughts are that the recent identification and characterization of emerging bacterial diseases of turf may have you wanting more information and, therefore, have you a bit concerned. Of course, my thoughts may be wrong, so I will have to count on you to call me if you suspect that you are battling bacterial wilt or etiolation and decline symptoms. While bacterial diseases have been getting a lot of attention lately, it is important to positively confirm that it is in fact bacteria that are the cause of your etiolation and decline, as there are other suspected causes of etiolation.

Bacterial diseases are one of those cases where we still need to learn more about them to get a handle on contributing factors. In this case, positive confirmation of bacterial diseases by the Plant Disease Clinic would help both you and turf research by giving us more information about the distribution of the pathogens and the conditions under which they seem to be occurring.

Next up on the survey, I asked you where I should focus my basic science program. I was surprised by the results.

Clearly, you would like to see some more basic research done on dollar spot. This delighted me somewhat as I have spent eight of the past ten

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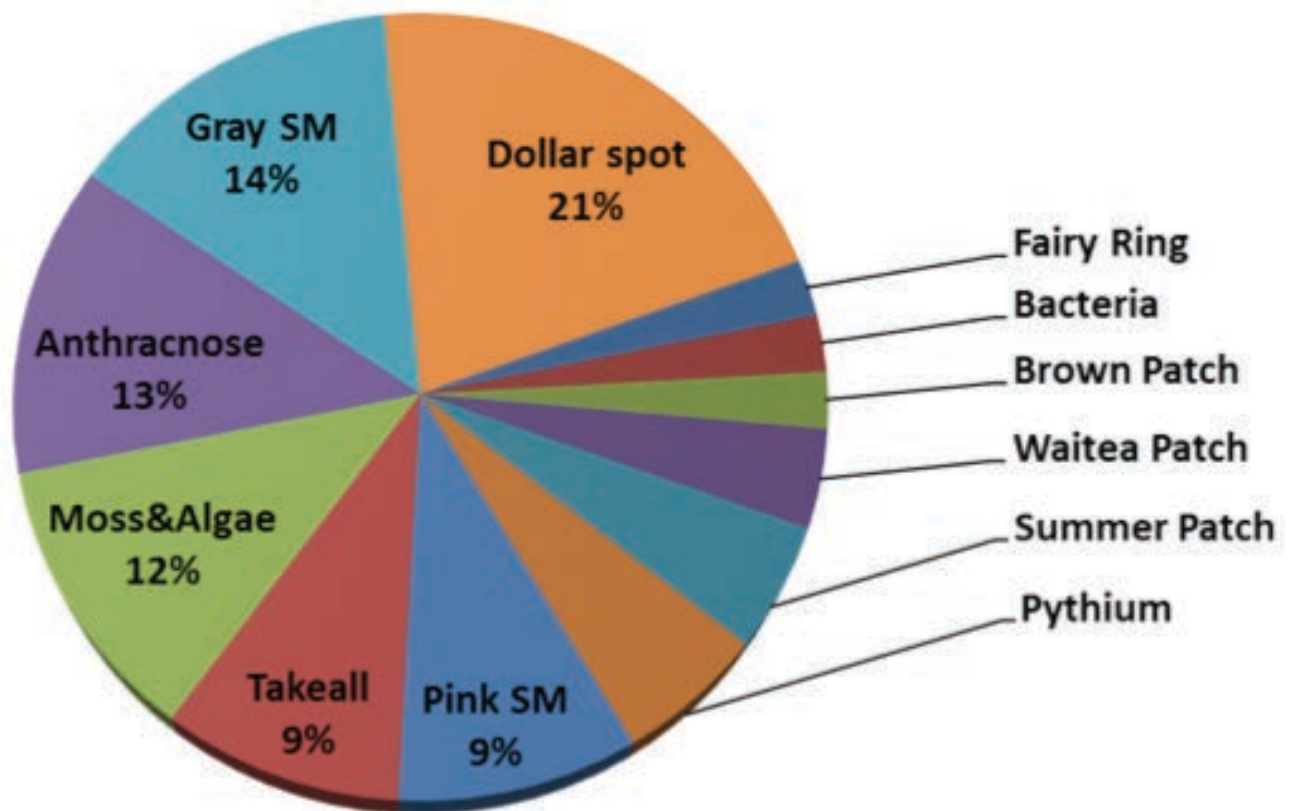
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On what disease would you like to see basic research conducted?



years researching dollar spot disease, and I have several ideas on how to progress from our current knowledge of the fungal pathogen. While anthracnose also seems to be of interest to many of you, there is world-class research done at Rutgers on this disease. Perhaps we can use this interest in anthracnose as a great reason to welcome back Dr. Bruce Clark at another future meeting to share his results with you!

What about gray snow mold? My program has started working with UMN turf grass breeder, Dr. Eric Watkins, to characterize plant defense responses of various fescue species with varying resistance to gray snow mold

pathogens. If we can begin to understand the plant – pathogen interactions in this fescue system, it should be possible to translate these results for the improvement of other grass species as well. I hope to have some interesting results to share with you around this same time next year.

Of course, money matters. So which of these diseases is costing you the most to manage? Of course, dollar spot! In fact, 48 % of you told me that dollar spot was the most expensive disease for you to manage. In second place, we have gray snow mold at 25 percent which is no surprise.

Management Practices

I am happy to hear that most respondents indicated that they have an IPM program in place (75%). This is fantastic. It also sounds like many of you are actively rotating and tank mixing your fungicides, which can aid in preventing fungicide resistance with some diseases.

A question that I found to be interesting was regarding plant defense activators. Most of you have tried them, primarily Daconil Action and Civitas (See figures). What was interesting here is that 37 percent of those using plant defense activators do not

know if they worked. It looks like I have found my first set of field projects!

The final issue of focus was fungicide resistance. Luckily, 65 percent of you have never experienced fungicide resistance. Only 8 percent of respondents said that they have experienced resistance, and 27 percent of respondents suspect they've had resistance issues but never had it formally confirmed.

Dollar spot was the primary disease reported to be demonstrating resistance issues, and the primary fungicide of concern was Thiophanate-methyl. Thiophanate-methyl resistance is well documented with the dollar spot fun-

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gus. Its single site mode of action means that it is very easy for the fungus to become resistant.

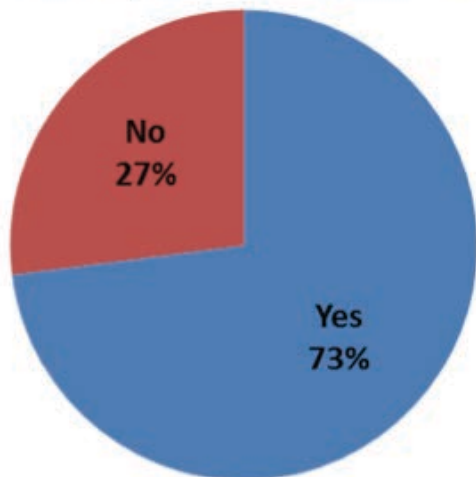
In general, fungicides with single-site of action are best used in a rotation with fungicides of different chemical classes to prevent resistance. Interestingly, several of you suspect that you've had resistance issues with brown patch. Currently, brown patch resistance to fungicides has not been reported. If you suspect fungicide resistance on your golf course, please

contact me so that we can figure out what is going on. Sometimes, what looks like resistance could be a fungicide application issue or a misdiagnosis.

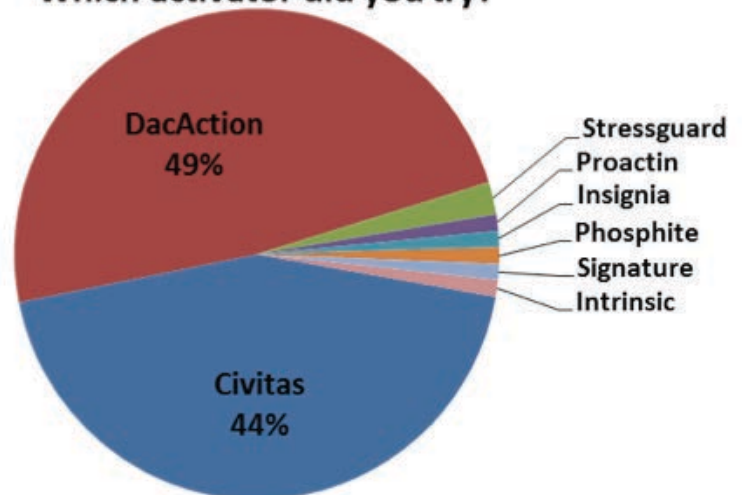
So What is Next?

Based on these results, my lab has already begun to compile information on turf diseases that are of concern to you. We will bring you the most current information on all turf diseases,

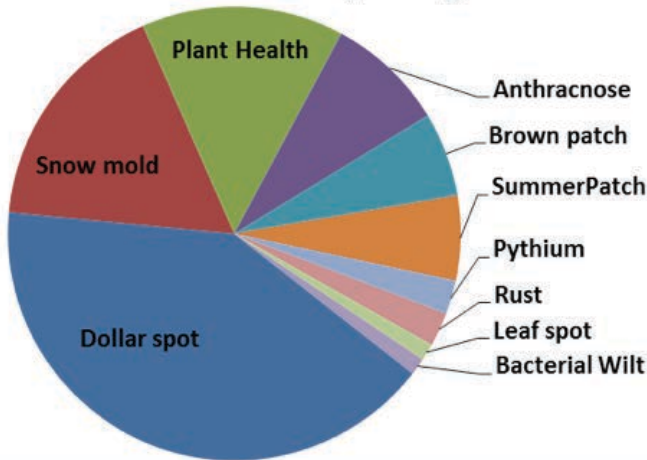
Have you tried activators ?



Which activator did you try?



What disease did you target?



Did the activator work?

