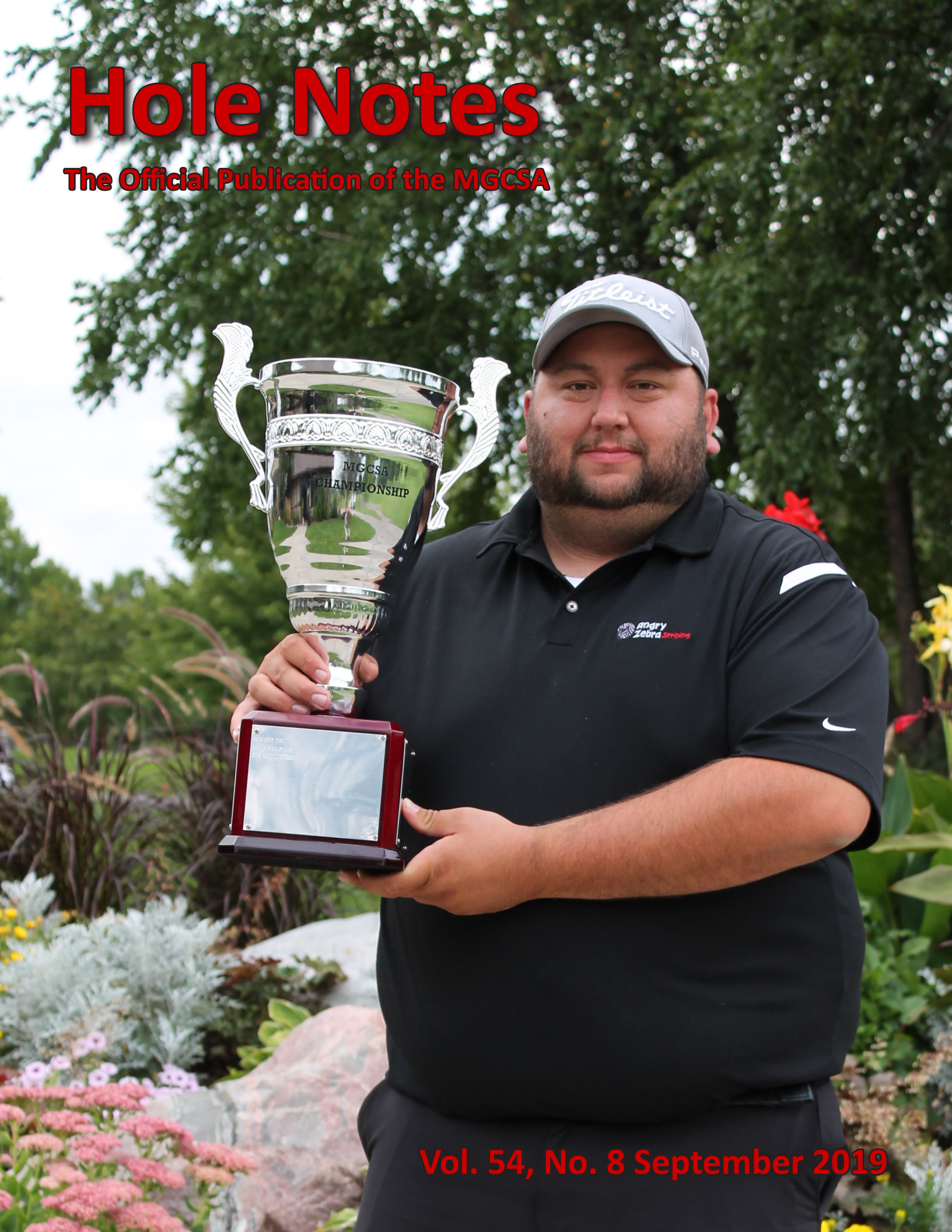
Hole Notes

The Official Publication of the MGCSA



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Mark Your Calendar:

September 24
Southwest Exposure at Dacotah Ridge Golf Club
Host Aaron Johnson CGCS

September 30
The Wee One at Le Sueur Golf Club
Host Tom Meier

October 14
The Scramble at Hazeltine National Golf Club
Host Chris Tritabaugh

Minnesota Chapter GCSAA
GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

Hole Notes Magazine
Vol. 54, No. 8
September 2019

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On the Cover
Matt "Bubba" Dahlke defeats the field at Oak Glen Golf Club with a final score of 74. Congratulations!!

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Presidential Perspective

by Matt Rostal, Superintendent Interlachen Country Club

September! Finally, it is a month when we can relax and take a deep breath from worrying about the golf course? Personally, I really enjoy September and October on the golf course. Compared to August, we now have a much smaller staff than in mid-summer (that is actually nice) so I have to jump in and help out with the daily tasks (that is actually very nice too)! September is always a busy time of year doing projects and planning for closing the course but there is always more time and no worrying about heat and humidity. It is the best time of golf season. September and October is a busy time for the MGCSA. We have a lot of on the calendar in the next six weeks. I would like to congratulate Matt "Bubba" Dahlke who won the 2019 MGCSA Championship at Oak Glenn. The first event in the next six weeks is The Southwest Exposure on September 24th at Dacotah Ridge Golf Course in Morton and I know Aaron Johnson will have the golf course in great condition for the event. Then, less than a week later, the Wee One Event is on Monday, September 30th at Le Sueur Country Club. I can't be more pleased that Le Sueur and Tom Meier stepped up to generously donate their golf course and golf for the Wee One which such a great cause. I would ask everyone who participates to thank Tom personally. I look forward to seeing everyone at the event.

The next event, or I should say a meeting that is not on the calendar, is the Board of Directors retreat September 28th and 29th. This was postponed from early March when we decided not to travel to Craguns Resort in an ice, snow and wind storm (smart decision). This is a very important and productive

meeting with Steve Randall who is the Director of Outreach for the GCSAA. He moderates a session with the BOD, reviewing the goals and action items we set two years ago at the retreat. We go through another strategic planning session to develop new action items and goals. He helps keep us focused on making improvements to support the Superintendent profession.

I believe this is an important meeting for our association to do every two years because it keeps us relevant and in line with what the GSCAA is trying to accomplish nationally.

The last event in the six week period is the Scramble at Hazeltine National Golf Club on October 14th. This is a combined fund raising event for scholarships and research. I would urge everyone to sign up early as the field is limited to 32 foursomes. This will be a great opportunity for groups to play a true championship golf course and I hope it is set up challenging for all the players. Sign up quickly, because once the event is filled ,there will be no other groups added.

If I don't see you at any upcoming event in the next six weeks, I hope you have an enjoyable and production last two months of the golf season!!

Exotic viburnum beetle arrived in 2019 in MN, following elm, willow, and lily leaf beetles

By Vera Krischik, Dept. Entomology, University of Minnesota, St Paul 55018, 612.625.7044; kriwc001@umn.edu

A famous evolutionary biologist J.B.S .Haldane remarked that, "… the creator has an inordinate fondness for beetles." Haldane, who died in 1964, noted that there are 300,000 species of beetle and only 10,000 species of mammals. In Minnesota we have many species of beetles, and many leaf feeding beetles.

Chrysochus auratus, Milkweed, Dogbane, native
https://www.marylandbiodiversity.com/viewSpecies.php?species=14671ogbane beetle,
https://commons.wikimedia.org/wiki/File:Dogbane_Beetle_-2 golden tortoise beetle
golden tortoise beetle, *Charidotella sexpunctata*, Morning glory, native
https://www.marylandbiodiversity.com/viewSpecies.php?species=14671

The MDA announced in summer 2019 that the exotic (not native) viburnum beetle from Europe was found in one location in MN. Many leaf-feeding beetles (family Chrysomelidae) have arrived in the US from Europe and Asia. These beetles do not vector diseases that harm humans or plants, but eat leaves as adults and larvae. Leaf feeding beetles feed together when they first hatch and then move to adjacent leaves, so damage is often localized in on spot, making it a prefer target for ladybeetle adults and larva that feed on the leaf-feeding beetles. Most leaf-feeding beetles are not usually pests, as the larval and egg stages are very vulnerable to being

eaten by predators. The sit together on leaves feeding gregariously and have few defenses, such as falling off the leaves, attacking the predators, wiggling, or even running away. So let us learn about identifying and managing viburnum beetles and others.

Leaf-feeding beetles are easy to kill with spot treatments of spinosad (Conserve), bifenthrin (Talstar) or azaadirachtin (Neem). A new chemical that is less toxic to bees called chlorntraniliprole (trade name Acelepryn) can be used on foliage and in soil for sscarab beetle grubs (Scott's grub ex). It is not necessary to use systemic neonicotinoid insecticides to kill them or to use a trunk injection or soil drench of a systemic insecticide around a tree.

The family of leaf-feeding beetles, Chrysomelidae

			
			
ninebark leaf beetle *Calligrapha spirae* Ninebark, native, 1	imported willow leaf beetle *Plagiodera versicolora* Willow, exotic, 2	elm leaf beetle *Xanthogaleruca luteola* Elms, native, 3	lilly leaf beetle *Lilioceris lilii* Lilly, exotic, 4

1 https://bugguide.net/node/view/117693; 2 http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/pests-and-problems/insects/beetles/elm-leaf-beetle.aspx3 https://bugguide.net/node/view/193191/bgimage;
4 https://www.marylandbiodiversity.com/viewSpecies.php?species=6426
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Leaf feeding beetles are in the insect family Chrysomelidae order Coleoptera, which means covered wing as their first pair of wings is hard and the flight wings are stored, folded under the strong wing cover. Many of the leaf-feeding beetles feed specifically on one genus of plants, such as elm leaf beetle, willow leaf beetle, ninebark beetle, cottonwood leaf beetle, and viburnum beetle. Both the adults and larvae feed on leaves. Larvae have weak mouthparts and cannot chew thru the leaf veins, so that the damage is called skeletonizing when the mesophyll

is eaten and the veins are left. Adults have stronger mouthparts and chew thru the leaves and veins and make small elongate holes. Both larvae and adults feed thru out their life cycle. There can be more than 1 generation in a summer.

In 1994, elm leaf beetle, which was a major pest of American and hybrid elms, often defoliating trees of all their leaves. Once the Asian lady beetle, *Harmonia axyridis,* arrived in MN in 1990, complaints of tree aphids and elm leaf beetles stopped as these insects ate the eggs and immatures of these insects and the populations crashed.

Viburnum leaf beetle

The newest exotic leaf beetle to be found in Minnesota after elm leaf beetle and willow leaf beetle is viburnum beetle. The viburnum leaf beetle, *Pyrrhalta viburni*, is native to Europe, was detected in Canada in 1947, New York State in 1996, in Wisconsin in 2014, and in Minnesota in 2019.

Adult are approximately ¼ inch long and yellowish-brown in color, while larvae can be up to ⅓ inch long and range in color from yellowish-green to light brown with a series of black spots and dashes on their bodies. Larvae hatch in early May initially feeding together and skeletonizing the underside of leaves. In July thru September, females lay eggs in cavities on twigs in late summer and fall that hatch the next spring.

Viburnums vary in their susceptibility to the beetle, with arrowwood, European cranberrybush, and American cranberrybush viburnum being the most susceptible. Leatherleaf, Korean spicebush, and doublefile viburnum are most resistant.

Management is to spot spray larvae and adults with contact insecticides, such as spinosad, bifenthrin, or neem. Remember not to spray flowers or berries or during times when bees may be feeding on flowers.

		
Viburnum beetle adult	Viburnum beetle larva	damage

https://bugguide.net/ node/view/968936
https://extension.umd.edu/hgic/viburnum-leaf-beetle

Photo courtesy of the Minneapolis Golf Club

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THE SOIL EXPERTS.

The family of scarab beetles, Scarabeidae

 	 	 
Japanese beetle *Popilliae japonica* 300 host plant species Exotic, 1	rose chafer *Macrodactylus subspinosus;* May/June beetle; *Phyllophaga* species Native, 2	multicolored Asian lady beetle *Harmonia axyridis* Predator aphids, eggs, larvae Exotic, 3

1 https://www.maine.gov/dacf/php/gotpests/bugs/japanese-beetle.htm
2 http://cues.cfans.umn.edu/old/extpubs/7664japanese/DG7664.html
3 https://www.northeastipm.org/ schools/pests/multicolored-asian-lady-beetle/;

The scarab beetles are in the insect family Scarabeidae order Coleoptera, and are oval beetles with spiny legs. Most members of the family feeding dung or decomposing plant material in logs. However, a few species feed on vegetation such as the Japanese beetle, May/June beetle; flower beetles, and rose chafer. Adults feed on leaves, flowers, and fruits, while grubs feed on the root of grasses or other plant species. Damage by Japanese beetle adults causes skeletonizing and the volatiles from the damaged plant attract other Japanese beetles and they aggregate and feed on the top of leaves, on the top of the plant, in the summer. In the afternoon, as sunlight diminishes, the chemicals are no longer produced by the plant and the adult beetle, both male and female, move to grass to mate and law eggs. Every day the Japanese beetle move from feeding to oviposition/egg laying plants. Japanese beetles are killed by spraying the mass of adults with contact insecticides, the same chemicals that are are used for leaf beetles.

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Northeast Exposure at Lakeview National Thank you host Nate Beckman

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You never know who will show up at the Exposure Golf and Social events

Mulch Madness

By Faith Applequist, Tree Quality LLC, first published in The Scoop May, 2016

Just because you have a truck of much, doesn't mean you should smother your freshly planted tree.

With the hustle and bustle of planting, I see many trees falling victim to a plague of over mulching. Mulch around the base of trees is a good thing, but too much is a bad thing. What is the proper way to mulch a tree?

Mulch is in the shape of a "doughnut" not a "volcano".

"Mulch volcanoes" are excessive piles of mulch applied around the stem of trees. Think of a mulch volcano as a Band-Aid. What happens to your skin under a wet Band-Aid? It gets soft and mushy. This is what happens to tree roots under excessive mulch, they develop root rot. You will end up with trees like the ones in my neighborhood: 25 years in the ground and barely any bigger than when they were planted, and quite sickly looking. That is if they survive.

Maximum of 4" deep.

Too much mulch applied over the root ball or resting against the trunk can cause problems for trees. Roots often grow up and into the mulch causing stem girdling roots which can kill trees. Too much mulch over the root ball can intercept water that could have reached the roots. This can cause the roots to dry on newly planted trees, causing stress and tree death.

A wide, flat mulch ring.

Leave a gap, where there is no mulch, 12 to 18 inches from the trunk for any size of tree (that's why I refer to it as a "doughnut"). Place mulch out to the edge of a tree's crown or beyond. Remember, if a tree had a say in the matter, its entire root system, which usually extends well beyond the drip line, would be mulched.

What is my favorite mulch for trees?

Fresh, raw or un-composted hardwood mulches create the most benefit for the soil. Why? Because fresh chips are 'active' and generate carbon rich, microbiological activity that feed the landscape as it decomposes. Composted chips are inactive or stable, with all the nutrients being consumed in the compost pile.

Mulch should not touch the trunk of the tree.

Spread mulch 4- inches deep to the drip line of the tree if possible; do not let the mulch touch the trunk. The mulch should form a flat donut with the trunk in the center.

The Championship
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11:00 a.m.	**GOLF - Shotgun**
4:00 p.m.	**Prizes and hors d'oeuvres reception (cash bar)**

Contests: Must be present at the reception to win.
Pro Shop Certificates 1st Place $500, 2nd Place Draw $300, 10th Place Draw $160, 18th Place Draw $160, 24th Place $160 Draw
Gross Skins Game - $20 per team The Rock "Speaker" Challenge WEE Putt Contest prior to shotgun for $100
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REGISTER: ____GOLFERS @ $140 per Player / $560 per Team of Four (Golf, prizes, refreshments, lunch, hors d'oeuvres)

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REGISTRATION DEADLINE: SEPTEMBER 20, 2019

Turfgrass Breeding 101

Dr. Eric Watkins, Department of Horticultural Science, UMN

The aim of the turfgrass breeding program at the University of Minnesota is to develop high quality, cold-hardy cultivars that have reduced input requirements. In addition, we evaluate turfgrass cultivars for performance in Minnesota. Each year, in late August and early September, we plant several turfgrass evaluation trials on the St. Paul campus. Included in these trials are populations from our breeding program, commercial cultivars, and entries from National Turfgrass Evaluation Program trials. Rare is a day when I'm walking the plots and there aren't clear cultivar differences for some important turfgrass traits--in early spring it might be snow mold resistance or spring green-up; in early summer I see differences in red thread disease; late summer brings stark contrasts in crown rust incidence; and by early fall it is clear which cultivars are best at out-competing troublesome weeds. All results from these trials can be found at www.turf.umn.edu. These turfgrass trials can provide valuable information as you make grass seed purchasing decisions.

Due to a difficult winter, a number of golf courses in Minnesota are currently re-grassing greens and fairways to pure stands of creeping bentgrass. These re-grassing projects provide an excellent opportunity to introduce new genetics onto the golf course. Perhaps the best recent example of how plant breeding can positively impact golf course superintendents is the work that has been done by Dr. Stacy Bonos at Rutgers University on dollar spot resistance in creeping bentgrass. Over the last decade or so, a number of new cultivars have been released that are able to perform well under high dollar spot pressure (Figure 1). This is an excellent example of plant breeding providing a great solution to a turfgrass management problem.

Right: Dollar spot pressure was very high at our research center in St. Paul this summer. Several cultivars in the National Turfgrass Evaluation Program trial were severely damaged by the disease.


DON'T
BUY
THIS
ONE!

For thousands of years, plant breeding progressed very slowly as people gathered and planted seeds. Over time, because these early farmers tended to select the best seeds to plant and then harvested the plants that survived, the genetics of the plant populations slowly improved. Plant breeding, as a formal activity, didn't really begin until Luther Burbank, best known for a still-popular potato, released numerous new plant varieties in the late 1800s and early 1900s; however, this early plant breeding work was not grounded in knowledge of plant genetics. The most important work that led to the knowledge needed for formalized plant breeding was developed by Gregor Mendel, an Augustinian friar in Brno, a city in present day Czech Republic. His classic work on peas, which demonstrated some very important concepts about how plants pass traits to their progeny, was the foundation upon which modern genetics and plant breeding was built. His work concluded in the mid 1860's, at which time he wrote up and presented his results; unfortunately, no one paid attention to his ideas and they stayed hidden for a few decades until early genetics pioneers happened upon his papers in the early 20th century, more than a decade after Mendel's death.

While plant breeding advanced rapidly in the first half of the 20th century, with the most prominent development being hybrid corn, turfgrass breeding didn't really take off as an important activity until the 1950's and 1960's when plant breeders at Penn State (H.B. Musser) and Rutgers (C. Reed Funk) began working on the improvement of several cool-season turfgrass species. At about the same time, Glenn Burton, a plant breeder in Georgia working for the USDA, released several hybrid bermudagrasses. Since that time, turfgrass breeding has expanded significantly with turfgrass breeding programs now established at many private companies and several public institutions.

Genes are sections of deoxyribonucleic acid (DNA) that lead to the formation of proteins that contribute to how a plant performs. Long strands of DNA are packaged into chromosomes. In a diploid species (like corn or perennial ryegrass or

humans), there are two of each chromosome (one from father one from mother). So, there can be two alternative versions, or alleles, of each gene. Most turfgrasses, however, are polyploids, meaning that they possess multiple sets of chromosomes. In these situations, there are multiple instances of each gene in the genome; for instance, in hard fescue, which is a hexaploid (six sets of chromosomes), there could be six variants of a gene--this complicates the process of understanding the gene and also makes it difficult to properly select for traits associated with the gene of interest. Polyploidy is the case for many cool-season turfgrasses including: creeping bentgrass, Kentucky bluegrass, tall fescue, and the fine fescues.

At the University of Minnesota, we have an active turfgrass breeding program focused on the improvement of perennial ryegrass and fine fescues. In addition, we conduct research that can help turfgrass breeders improve the ways in which they select top-performing plants that eventually are used in cultivar development. Over the next several months in a series of articles in Hole Notes, members of our team will walk you through the different aspects of a plant breeding program. First, Garett Heineck, a newly-minted Ph.D., will write about the approaches we use when selecting turfgrasses in field trials and nurseries. Next, Ph.D. student, Yinjie Qiu, will cover some ways that modern biotechnological tools can improve turfgrass breeding outcomes. In the fourth article in the series, Dr. Dominic Petrella, will describe some examples of how our program optimizes approaches to identify the best plants for a given stress tolerance. Finally, I will conclude the series with some examples of current breeding projects.

Hopefully, these articles will help you understand how new turfgrass cultivars are developed and help you make even better decisions when looking for new turfgrasses to use on your golf course.

MGCSA Member Driven Research at work!

Increasing Self-Confidence is Key To Achieving Excellent Performance

By Dr. Bob Milligan, The Learning Edge

Think about the following hypothetical situation. You are a new appointee to a prestigious Board of Directors. You are now attending your first meeting. You look around the room at the other members, most of whom you have known for many years and have looked up to.

Place yourself in that situation and think about how you would feel and how anxious you would be to participate. I am confident that you would be a bit reluctant to jump right in. Part of the reluctance is taking the time to get to know the situation, the "lay of the field." Realistically though, another part is that you first need to develop the confidence to participate; at first you lack self-confidence.

Now multiply your lack of self-confidence in the above situation many times and you better understand where employees are when approaching a new task. They experience nervousness and self-doubt. Both reduce productivity, just as you likely were reluctant to participate. Employees need both the skill and the confidence to successfully fulfill the responsibilities in their position.

In employee management, we call this skill plus confidence COMPETENCE. How then do we develop competence in employees? Employees must learn the skill and develop confidence to successfully meet performance expectations.

Certainly, training is key to the skill component of competence, however, we leave that discussion for another article. In this article we focus on ways to increase employee COMPETENCE by boosting self-confidence - positive feedback and encouragement.

Positive Feedback

Ken Blanchard, management consultant and author, encourages supervisors to “Catch your employees doing something right”.

- WOW! That sounds simple.
- WOW! It is soooooo difficult.

Why?

The education, training, and experience of almost everyone reading this article has focused on animals, crops, and finances. We become outstanding at identifying problems - something that is or will become wrong - and solving them. It is only natural to use these same skills and experiences when supervising employees. These skills and experiences do serve us

well in being proactive in identifying and solving employee problems. Employees, however, need more!!! Remember, we humans can think, speak and feel. Employees desperately seek and respond positively to quality feedback, recognition and rewards.

What do I mean by “quality”? The most important component of “quality” is that the feedback is specific. Rather than just saying, “You are doing a good job,’’ you use the “catch your employees doing something right” to be specific, i.e. “Great job Jack, I noticed you going out of your way to remove the leaves that had blown into the alleyway. Thank you for following through on our emphasis on attention to detail”.

Note that in addition to being specific, the above example has two parts to get the “biggest bang for your buck” from positive feedback:
1) Compliment the specific current behavior or performance - removing the leaves from the alley.
2) Draw attention - reinforce - the positive behavior or performance you desire - attention to detail.
A final - and difficult - note on positive feedback; research is very clear that almost every human being, every employee, appreciates quality positive feedback. The challenge is that many do not show that appreciation.


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AND BACK
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Instead they mutter something like “it’s OK” or “it’s just part of my job”. Do not be deterred by these responses. The best way to overcome these responses is to be very specific, completely genuine, by develop a habit of giving positive feedback and recognition.

Encouragement

I have previously written of the importance of my high school vocational agriculture teacher in my career development. He was the first non-family member who recognized that I had capabilities beyond being an excellent student. He encouraged me to participate in FFA contests,public speaking, farm management and even forestry. He also encouraged me to seek leadership positions, ultimately resulting in my selection as State FFA Secretary.

Think about the people who have had a major influence on your life. Now think about what they did that impacted you so dramatically. I am pretty certain that, for most of you, encouragement will be a major component of the answer.

“Encouragement is to raise confidence to the point where one dares to do what is difficult”. This quote from Values.com reflects my experience and I would guess yours as well. If encouragement has been critical to your and my success, think about the potential power encouragement has for our employees, partners, and family members.

Every supervisor (and friend, parent or partner) should look for appropriate places to express encouragement:

- "I know you can do this."
- "I have confidence in you."
- "I know this will turn out well."
- "You can do it."

A Final Note

I have just added a new responsibility to your already full schedule- encourage and compliment your employees. The beauty is that success here will ultimately make many of your other supervisory responsibilities easier and less time consuming because your employees will be more motivated, focused and productive.

The MGCSA membership wishes to thank Dr. Bob Milligan for his leadership insights. He can be reached at: rmilligan@trsmith.com

chase straw u of mn

interviewed by matt cavanaugh

adjective

insensitive to criticism or insults.

"you have to be thick-skinned to work in the turf industry"

synonyms: insensitive, unfeeling, tough, hardened, callous.

My soon to be six year old gets completely fixated on things he likes. At three years old it was drums, at 4 years old it was ninja warrior, at five years old it was fishing and now, as he is about to turn six, he actually turned his eye to golf. For all of these tasks he is all in…for a time. "Dad, can we play a shredder song for me to drum with?" "Dad, can you build a ninja course in the basement?" "Dad, let's go to Fleet Farm and look at tackle." "Dad, let's go to the golf course and golf." The trend in his life is that he will eventually turn his eyes to the next big thing. At this

point, I don’t know what is a fad and what is going to stick. Everything is still new and he is still evolving. This same thing can also be true in the turfgrass industry. So much has changed over the past five years with management practices and much of that has been driven by technology. Many of us have tried different strategies to determine what works well, what is a hoax and what is a fad, but we will not know until we try because the fact remains; we don’t know what we don’t know and we may need to be thick-skinned to hear it.

The one simple thick-skinned question:
Chase, you have visited with and have had many conversations with golf course superintendents and assistants. Based on the current facts, research and knowledge, what is one thing you see that we, as turfgrass managers, could change to help improve turfgrass decisions?

Chase: “*Learn more about utilizing new technologies and data to help with their decisions. I'm talking soil moisture sensors, GPS, satellite and drone imagery, etc. Clipping volume, GDD modelling, all that fits under the umbrella too. The key word is "help”. They aren't meant to replace the decision-maker, or be the be-all and end-all final decision, they're simply meant to help with the*

decision process. There is no doubt superintendents are interested in it all, but are they willing to put the time in to fully learn how to use and actually implement the technology and data to make meaningful management changes? The general answer right now is no. Some superintendents have, but the vast majority have not. Cost may be a valid excuse; some courses just can't do it. However, I've talked to plenty of superintendents that have the resources and just aren't maximizing their opportunity to reduce management inputs with the technologies and data they have."

thick-skinned: All of the technology and data collection has ramped up so quickly over the past 5 years, do you think any of the technologies available and data being collected is a fad?

Chase: *"I used to think so, but that was before I began going out and actually talking to superintendents about it all. I think superintendents label certain technologies and data as fads because they can't be applied at their golf course. Or, like I said earlier, superintendents aren't willing to put the time in to fully learn how they can be applied at their golf course. It's a mix between both."*

“I will say this - good for those superintendents who actually tried some new technology or data collection method, but ended up seeing no value in it. It’s my opinion that value could indeed be found, yet I’m just glad to hear they tried. What frustrates me the most is when someone completely writes the technology and data off without even considering to try it. Superintendents who are capable, but won't even try it, are like my grandpa who wouldn't get an iPhone because he thought it was for hipsters and he didn't need it. Guess what though? My grandpa got an iPhone last year and you can’t get him off it.”

“My point is, don’t knock it until you try it. The vast majority of those superintendents I’ve spoken to who are using this stuff find some kind of value in it. Their reasons for using the technologies and data are all over the board too, and not just directly for management decisions.”

thick-skinned: What data currently do you find as most valuable? What data is being adopted the most?

Chase: *“The value of the data is going to be dependent on the golf course. I think the biggest potential is in the handheld or in-ground soil moisture sensors, and I'm not talking just for dialing in irrigation on greens. Most superintendents are already using them for that. I think they should be used more on fairways, especially the newer soil moisture meters and their GPS. So much more could possibly be explained by better understanding soil moisture variability across a course. That knowledge would*

assist with certain management decisions that could lead to significant input reductions."

"Behind the data that has been around for a long time (e.g. soil moisture and firmness on greens, green speed, etc.), I think GDD modeling and clipping volume are probably the most widely adopted newer data. Anything related to GPS and imagery is definitely behind that. GPS and imagery technologies are starting to become more popular, particularly GPS sprayers and drones, but there is still a lot of work to do figuring out how exactly to maximize their potential and quantify their benefits from an agronomic, economic and environmental standpoint. There is work out there, though, that is currently being done to address these issues."

thick-skinned: It takes time to figure out what we like and what works for us. My soon to be six year old is certainly proving that and I will not know what stays and what goes in his life for likely another ten years. It takes time to figure out what is real, what is not and what is a fad in this business. Many of the things we do and try do not provide instant gratification. It takes time for

the grass to react. It takes time for the soil to change. It also takes time for the turfgrass manager to change. The amount of time it takes to implement anything new can be a little daunting and because of this, many of us will not take the time to explore new things and anything technology related is not immune. Many of us may not even take the time to explore new technology that has even been proven, because, in our minds, the learning curve and time needed to implement the technology may not out weigh the improvement vs. what we currently do. Many technologies have proven to be fads, but so many more are here to stay and can improve the quality of conditions and save on resources that we use. Take the time, talk to peers and see what may be right for you.

Chase Straw is a Postdoctoral Research Associate at the University of Minnesota. Chase can be reached at cstraw@umn.edu or on Twitter @StrawTurf. If you can't reach Chase, he can be found painting his face blue and white to cheer on Kentucky Wildcats Basketball.

Matt Cavanaugh is an Assistant Superintendent at Rush Creek Golf Club in Maple Grove, MN.

Educational Support Available:
The Great Lakes School of Turfgrass Science
Online Scholarship Program
Provided by:

Minnesota Chapter
GCSAA
GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

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General:

In order to enhance the educational opportunities of our existing membership/staff and promote the Golf Course Management Industry, the MGCSA is offering a new Reimbursement Program for the Great Lakes School of Turfgrass Science Online. (4) Reimburse coupons will be offered annually to approved applicants who complete the Online program and submit their Certificate of Completion. Applications will be reviewed by the Scholarship Committee. All decisions of the committee will be final.

Applicants will be notified by December 15th prior to the School's Registration deadline. Applicants will still need to register/pay for the Online School as if they were attending on their own. The Reimbursement check of $495 will be issued to the individual or company paying the initial Class Fee following the completion of the course. Four scholarships are available for the 2020 class.

Eligibility:

1. Applicants must either be a MGCSA member or sponsored by a MGCSA member to apply.
2. Completion of the program and providing Certificate of Completion is necessary for reimbursement.

Criteria for Selection:

1. (4) Applicants shall be selected based on employment history, recommendations and personal statement essay.
2. Financial need is not a factor in the selection
3. Any Scholarship Committee member with a conflict of interest must remove him/herself from the process. (family member or current employee applying)

How To Apply:

Applicants must complete the ***application form*** and supply the following under one cover:

1. Personal Statement Essay
2. All applications must be post marked by Dec. 15th of the year submitted.
3. Send applications or email to:

MGCSA
10050 204th Street North
Forest Lake, MN 55025
jack@mgcsa.org

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Badgerland Exposure at Eau Claire Country Club Thank you host Nick Peinovich










GCSAA Grass Roots Ambassador Eric Ritter CGCS in action with Congressman Tom Emmer

Wild Marsh Superintendent Eric Ritter talks up the great story of golf, environmental stewardship, responsible resource management and technology with Minnesota Congressman Tom Emmer. Supporting the cause was WMGC Golf Professional Jerry Kroc.

One Cause. One Goal. One Percent.

***One Cause**: Help golf course management professionals and their dependents that are having trouble paying medical bills due to the lack of comprehensive insurance or adequate financial resources.*

***One Goal:** Raise $10 million in 10 years to support these families.*

***One Percent:** Donate 1% of your 2014 revenue, maintenance budget, or salary over the next 10 years in 10 payments.*

Example Contribution:

2014 Salary = $70,000

1% = $700

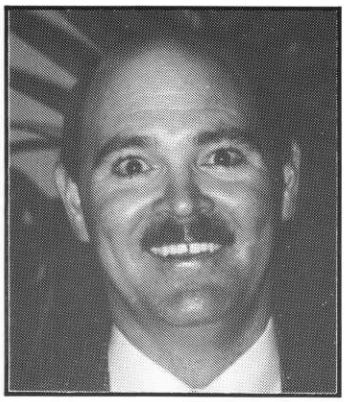
Donation = $70 per year for 10 years

To learn more about One for the Wee One,
visit weeone.org/onepercent or call (630) 457-7276.

wee one foundation

Wee One Foundation is a 501(c)3 non-profit association. A tribute to Wayne Otto, CGCS.

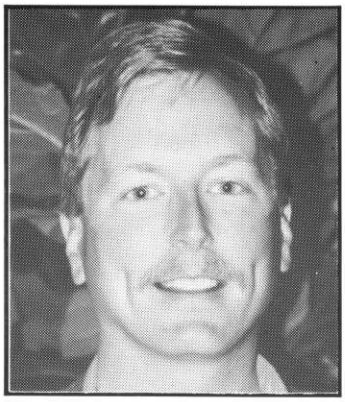
What Is Your Biggest Environmental Concern?



TOM McCANN
Landscape and Turf

"Education! Governmental bodies are making decisions that will affect our industry based on the information provided to them. Therefore, we have to educate them correctly and with up-to-date information on the products we use today.

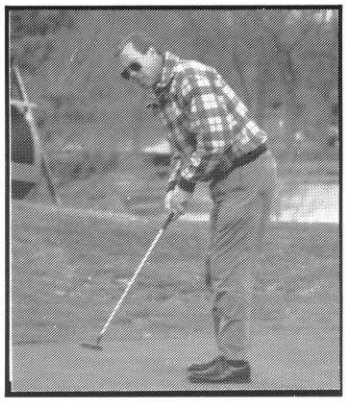
"If incorrect information is provided to these legislative people, we could lose more products from our day-to-day inventory of pest management material."



JACK MacKENZIE
North Oaks G.C.

"As a self-proclaimed environmentalist, I am concerned that the educated superintendent's progressive attitude toward integrated pest management, licensing and certification and common sense ecological responsibility is being overlooked. Overbearing and uneducated groups are failing to appreciate the necessary balance between economic and responsible pesticide use.

"As an association, we need to continue, and expand upon, our lobbying efforts to control those individuals who threaten our livelihood and also the game of golf as we perceive it to be."



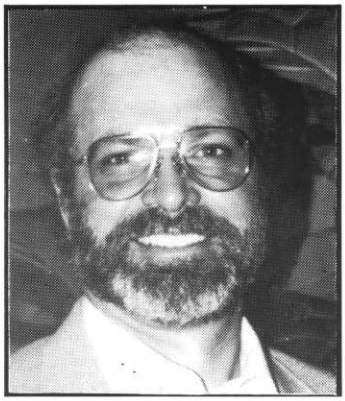
DOUG MAHAL
Minikahda Club

"My biggest environment-related concern is the inability of our industry to adequately educate the public, in general, and lawmakers specifically, before they decide the fate of the pesticides we use on our golf courses.

"I have a concern that eventually the visual appearance of a pesticide sprayer on the course will no longer be tolerated and that midnight applications will be the norm.

"I think we, as superintendents, have a large responsibility for some of this public education, particularly to the portion that are members of our clubs. Let them know what you're applying and what it's controlling. Let them know what compliance issues you have undertaken. Make this information available upon request. Make them know they employ an environmentally responsible superintendent.

"It's important that we hide nothing if, in fact, we are storing, handling and applying legally. We can not allow ourselves to be above the law in this regard or we certainly won't be able to blame lawmakers or the general public for our woes."



CARY FEMRITE
Pebble Creek C.C.

"My biggest environmental concerns start with public awareness. Awareness raises issues that people rarely consider, and stimulates conversation in people's day-to-day lives.

"Media attention raises awareness through public meetings which, in turn, generate conversation on environmental issues. The gaps occur with misinformation and unfound claims. So then, education and training—which we in the MGCSA have drawn attention to—provides us, the professionals, with data and findings to help educate our public bodies.

"Water, air quality and food processing are the biggest concerns I have because our golf course is located on a river, adjacent to agricultural fields, with a power plant within a mile. I'm pleased and relieved that NSP is very conscientious to addressing these issues in our area and deal with them sincerely and professionally.

"I try to do my part by talking with my committee on the necessary issues and our alternatives, plus future concerns.

"Communication, education and awareness lead to better understanding and positive results."

In Bounds

by Jack MacKenzie, CGCS

On a recent inquisitive foray into articles I had written over the last couple of decades, my thirst for knowledge was quenched at the Michigan Turfgrass Information Files. There, a member of the GCSAA has free access to a wide range of turfgrass materials in the form of articles, scientific journals and even our own Association magazine Hole Notes. An occasional visitor, I have been impressed with the amazing knowledge base and talent our industry offers. This particular trip into scientific presentations, columns and photographs took me down memory lane.

Oh my, I appeared young in April of 1992, as you can see by my picture opposite this page; more hair, less facial 'flesh', an enthusiastic expression and great dimples (I guess the later two identifiers stayed the same!). The title of the column was, What Is Your Biggest Environmental Concern? This inquiry was presented to several well seasoned turf professionals, and one with just ten years under his belt, me. Reflecting upon the date and ages of the participants I can say that there was likely about 60 years of experience pondering the same question about the environment.

What I find most interesting is that the date could be changed to September 2019 and the response would stay identical. Re-read the first and second sentence of each perspective. All reflect a concern of public unawareness. These concerns date back over 25 years.

Education of our constituents, neighbors, legislators and players is still of paramount importance. Our gang of professionals is a highly educated

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and regulated group of property managers responsible for all aspects of golf course operation from human resources to playability to turf and environmental management. This message needs to be repeated frequently to get the point across and keep it in the forefront of conversations that could stray toward negative reflections of the golf industry.

When I consider how things "were" and how things "are", I am pleasantly surprised at how much "educational" progress our industry, nationally and more importantly, as a state association, has made through the many un-mandated and self-imposed actions we have taken to promote our professionalism. The MGCSA is a leader in the advocacy movement with active GCSAA Grass roots Ambassadors, a hosted, on-going annual Golf Day on the Hill in Saint Paul, the completion and publication of numerous BMP manuals and the MGCSA Board's attitude to be "sitting at the table" prior to the time that issues become flash points.

Courtesy of eight years of proactive Board of Director's actions, your Association is a presence in the halls of the State Capitol, at state agency meetings and occasionally upon city committees. You are represented generally at both public and private forums with the messages of professional management and environmental stewardship being the trump cards.

However, on a personal level, have you done much to promote the industry message of a well learned profession comprised of environmental stewards? In today's world of social engagement, there are many tools to get the message across that you are a responsible member of the community providing a healthy and productive work environment while stimulating the state and national economy.

Here are two words to consider, “clip and paste”, well, three I suppose. Indeed, “clip and paste” whole articles or links from the mgcsa.org website (take a gander under the Resources tab), to your players, neighbors and employees. Go to the TGIF and “clip and paste” even more information to your mayor, city council and legislators for the personal touch. The tools are already there, all it takes is a “clip and paste”

From 30,000 feet to ground level, education has been, is and always will be paramount to the success of our industry. Each of you has had plenty of education and apply your knowledge on a daily basis to produce an incredible product. Take a moment and share your industry knowledge base with those who don’t have your expertise.

The concerns stay the same no matter the generation. And the solution is just one “click and paste” away. The solution begins with you.

Minnesota Chapter
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Golf Course Superintendents Association of America

We really are better when we work together

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