



Hole Notes

The official publication of the MGCSA



Vol. 46, No. 7 August 2013

Twilight™ Golf Lighting Products

Twilight™ Golf Lighting Products promote twilight putting and evening special events allowing members, guests and customers to remain longer.



Twilight™ Golf Cup

- Fits most standard and putting green flags
- Bottom compartment houses the on/off switch charging port and Lithium-Ion battery
- Charger will charge up to three golf cups at one time
- Lithium-Ion battery will run the cup light for up to 8 hours



Quick-Connect Perimeter Lighting

- Solid brass die cast construction
- Provided with a 5W LED MR16 lamp
- Solid brass quick-connect adaptor
- Adjustable head rotates vertically allowing for on-site adjustability



MTI Distributing, Inc.
4830 Azelia Avenue N.
Brooklyn Center, MN 55429
800-362-3665
763-592-5600
Fax: 763-592-5700

MTI Distributing, Inc.
2131 16th St. N. Suite C
Fargo, ND 58102
800-782-1031
701-281-0775
Fax: 701-281-9417



Count on it.



The Legends at
Giants Ridge

Precisely Blended Soils

Delivered or Mixed On-site

Topdressing Sands
Bunker Sands
Green Colored Topdressing
Black Dirt & Peat
Horticultural Mixes

As the Midwest's leading golf course supplier, consistent product quality is critical. We carry a full line of topdressing sands and mixes containing top-grade Minnesota peat. For special needs such as increasing CEC ratio, we custom blend topdressing with fertilizer or humates using our computerized **Accublender™**.

Landscape Rock & Mulch
Retaining Walls & Pavers
Field Stone Boulders
Construction Sand
Cart Path & Road Base

Call our technical service team for soil testing or soil mix recommendations. Visit our website to view the full product offering.

THE SOIL EXPERTS.



Elk River, MN • plaistedcompanies.com • 763.441.1100

The MSMA Alternative

Kills grassy and broadleaf weeds.



*For your local PBI-Gordon distributor
visit pbigordon.com or
call Matt Cavanaugh @ 763.568.6696*

Always read and follow label directions. Checkered Flag/Label Design®, Gordon's®,
ProForm®, and Q4® are registered trademarks of PBI-Gordon Corporation. 07/13 02672



Upcoming Events

October 7

The Wee One

*Brackett's Crossing Country Club
Host Superintendent Tom Proshek*

October 15

Fall Shoot Out

*Minnesota Horse and Hunt Club
Host Superintendent Bill Gullicks
Bellwood Oaks Golf Club*

November 20

*Assistant's Professional Forum
Pinz in Woodbury
Host Assistant Superintendent
Casey Andrus
Interlachen Country Club*

December 4

*Annual Awards Banquet
Golden Valley Golf and Country Club
Host Superintendent Jeff Ische*

Country Club Turf

The Greenskeepers Choice

*Sod for the perfect
putting greens*

763-444-6753



EDITOR

DAVE KAZMIERCZAK, CGCS
DAVE@PRESTWICK.COMCASTBIZ.NET

CONTENTS

Vol. 46, No. 7 August 2013

Feature Articles:

- Wee One Support Recipient Selected** pages 14-17
By The Wee One Foundation
- Snow Mold Trial 2013-2013** pages 32-41
Dr. Paul Koch and Dr. Jim Kerns, University of Wisconsin
Dr. Brian Horgan and Andrew Hollman, University of Minnesota
- Tick Tock: Tick Borne Diseases are Time Bombs** pages 42-47
Contributed by Jamie Bezanson, Oneka Ridge Golf Club

Monthly Columns:

- Presidential Perspective** page 6
Scottie Hines, CGCS
- In Bounds** pages 10-11
Jack MacKenzie, CGCS
- Within the Leather** pages 50-51
Dave Kazmierczak, CGCS

Wee One Tournament October 7th Brackett's Crossing C.C.



Propane. Is this your next budget bonus?
Read pages 22-27 for more information



**Championship Results pages
12-13**

...Even More Content...

- Irrigation Efficiency; Are We There Yet?** page 18-21
By E. Paul Eckholm, CGCS, Yamaha Golf and Utility
- Alternative Fuels Offer Promise** pages 22-27
Contributed By Mark Linkletter, Ferrellgas

Hole Notes (ISSN 108-27994) is digitally published monthly except bimonthly in November/December and January/February by the Minnesota Golf Course Superintendents' Association, 10050 204th Street North, Forest Lake, MN 55025. Jack MacKenzie CGCS publisher. Please send any address changes, articles for publication, advertising and concerns to jack@mgcsa.org.



Presidential Perspective

by Scottie Hines, CGCS Superintendent at Windsong Farm

Well folks, here we are, half way through August. Where does the time go? Seems like we had snow on the ground last month! Mother Nature sure is funny. As I have said in the past: Mother Nature has a sneaky way of meeting the average. I am sure there are very few of you out there who can complain about the last 4 weeks of early September weather. I know it was a nice break for my staff.

Speaking of mid-August, my mantra has always been: If grass isn't dead by August 15, you almost have to try to kill it. The nights are cool. The days are noticeably shorter. The sun angle is getting less intense. Yes, we might have a few more days that bump the 90's but it won't last long. We have all the other factors working in our favor as well.

I know many of you are gearing up to start the aerification process. Fortunately, we are done with that process here at Windsong. All fine turf areas were punched the first full week of August. I wish everyone the best in getting it all done, hoping equipment and weather cooperate. It is a grueling week or so to get it all done but we cannot ignore the long-term benefits of aerification.

I wish there was some interesting and enlightening bit of information to disseminate to you but there really isn't much. We are at a stalemate with the DNR on presenting the BMP's for water for their input. They have been slow in replacing/promoting/hiring a new liaison to assist us with finalizing and presenting the BMP's. I will take this opportunity to remind everyone that water use and conservation is squarely on the radar screen of the DNR and other state agencies. Just because we dodged the usage fees skyrocketing this year does not mean we are off the hook. When we do get the feedback and acceptance of the water BMP's manuals it is essential that we have a 100% buy in by all courses, superintendents, owners and anyone else involved at our facilities.

There is not much on the national level. NPDES fix and Immigration reform legislation are in limbo on Capitol Hill. Kevin Clunis, CGCS has agreed to, again, be the MGCSA Voting Delegate. Thank you Kevin for that continued service. The delegate's meeting is scheduled for early October. Stay tuned for an update from that meeting at GCSAA Headquarters.

School is about to start and I hope everyone finds that little bit of time to spend with family before the new school year begins. I know I have been busier than ever, that is a good thing, but I have not been able to find the balance I need with family this year. I hope you have done better than I. I have to say, however, it's a great thing to have a wife that is in the golf business and understands what we go through. Thank you Kristin.

Best of luck as we enter, in my opinion, the best time of the golf season....autumn!

A TOAST, IN APPRECIATION OF YOUR BUSINESS. HERE'S TO YOU.

At Par Aide, we'd like to raise a paper cup to you, our valued customer. Because it's your unyielding dedication to the course that inspires us to keep building the industry's most innovative products. So from Par Aide, we salute all you do. Cheers.



Wherever golf is played.



PAR AIDE IS A PROUD SPONSOR OF
MCCSA, GCSAA, THE FIRST TEE
AND THE WEE ONE FOUNDATION.

WEE ONE MINNESOTA GOLF OUTING AT BRACKETT'S CROSSING COUNTRY CLUB

Supporting Eric Peters



MONDAY, OCTOBER 7, 2013

Lakeville, Minnesota
HOSTS: Tom Proshek,
Superintendent and the MGCSA



\$125 per Player / \$500 per Team

Four Person Scramble *only one MGCSA member per team necessary*

Great Golf Prizes. On course refreshments. Lunch on the course. Heavy hors d'oeuvres immediately following golf with cash bar reception.

Enter Early. Field is limited to 30 teams (120 players).

Taco Bar @ Brats to go (lunch included in registration fee)
Country Club Attire – Collared Shirts. Soft spikes only.

10:00 - 11:00 a.m.	Registration – Driving Range available
11:00 a.m.	GOLF - Shotgun
4:00 p.m.	Prizes and hors d'oeuvres reception (cash bar).

Contests:

1st Place \$400, 2nd Place Draw \$200, 3rd Place Draw \$100 (Gross)
Skins Game - \$20 per team 50/50 Split for \$50 Giant Putt Contest prior to shotgun
Mulligan Purchase: 4 for \$20 or 8 for \$40
Closest to the pin winners on the Par 3's will draw down for a set of irons.
Featured Raffle Prizes – \$5 for 5 tickets or \$20 for a LONG arm's length.
Green Egg Outdoor Grill, Golf Clubs, IPAD and M U C H MORE.

----- PLEASE FILL OUT COMPLETELY - THE DINNER COUNTS ARE IMPORTANT -----

Name: _____ Course/Company _____

Name: _____ Course/Company _____

Name: _____ Course/Company _____

Name: _____ Course/Company _____

REGISTER: ___ GOLFERS @ \$125 per Player / \$500 per Team (Golf, prizes, refreshments, lunch, hors d'oeuvres)

TOTAL ENCLOSED: \$ _____

PAYMENT METHOD: ___ Check ___ Credit Card: ___ VISA ___ MASTERCARD ___ DISCOVER

Name as it appears on credit card: _____

Credit Card Number: _____ Security Code: _____ Expiration Date: _____

Authorized Signature: _____

Make check payable to MGCSA and mail to: MGCSA, 10050 204th Street N., Forest Lake, MN 55025

Are You A Member Yet?

Throughout the United States only 270 individuals are members of the Wee One Foundation.

Please help support a peer in need.

weeone.org



Tournament on October 7
Brackett's Crossing Country Club

Host Superintendent Tom Proshek



In Bounds

by Jack MacKenzie, CGCS

Cold rain
beat down
upon the
taut roof
and sides of

my tent sounding like Jiffy Pop popcorn attempting to escape it's foil cocoon. Wind whipped, the lake, 20 feet from my portable abode, was a flurry of foam and churning water. My first semi-solo trip to the BWCA wasn't starting quite as I had expected. Solo, as in I was spending the nights alone and semi, as in I was meeting a very good friend to fish for the better part of day two of the adventure. Alone, but not lonely I was cherishing my time in the lakes country.

My close buddy had recently moved to a primitive cabin on the north shore of Lake Superior, located spitting distance from the gitche-gumi, to take on a summer position in the resort area. Unfortunately for him, he left his heart shattered to pieces in the twin cities days before going north, as his long-term relationship had recently collapsed. No electricity, running water or even heat, he spent his time alone and very, very lonely working and thinking.

Considering his challenges, ours was to be an opportunity to reunite and share stories of broken dreams and unanswered questions with fishing as a distraction.

A lull in the torrent, I ventured out of my nylon cocoon, made chili mac and fresh broccoli for dinner, and then wet a line from the shore of my private island, in search of whatever would venture out on this soggy, gray late afternoon. Cast after cast, careful not to snag a tree, and soon I had landed a slab smallie, a 'hammer handle' and even a fair sized walleye. The sky, thick with racing and smoky colored cotton balls, gave me, for the briefest moment, a glimpse of sapphire blue and golden sunlight. A reminder that life, even in it's dreariest moments, has some brilliance to offer.

Up early the next day, oatmeal with coconut and craisens along with a side of fried spam, gave me the energy to paddle back to the canoe launch site and pick up my friend. The sky, thick as a tick with rain, held itself back until we were slow trolling far across the lake. Distant thunder sent us deep dipping to my campsite where a couple of cups of Joe,

some gorp and cigars settled us in for a round of guy talk to include the injustices of relationships.

Patient and empathetic, as I had worn a similar pair of shoes on more than one occasion, my attention was his as the story unfolded. “Out of no-where, complete surprise, taken aback, hurt, sad, alone and so very lonely,” he poured his soul out over the next couple of hours. With great appreciation for the trial he was putting himself through, I shared some insight as one who had travelled that self-sabotaged road several times before.

My divorce, my broken engagement, my battle to subdue the bottle and my sample of insanity, had all weighed in balance upon my ability to rely upon myself and my perception of a Higher Power to carry my banner when I felt alone and bordering upon defeat. When there appeared to be no hope, a tear in my mental fabric, utter confusion and incomprehensible ache, I had learned through experience what I

needed most was to take a step back and live my life one second at a time then one minute, followed by five or more. Focus on healing myself by myself, and stop playing the “what if” game. Learn to live with my idiosyncrasies one moment at a time and realize that truly I am a pretty decent guy and worthy of happiness.

“Soon, with practice, the pain will subside. New dreams will grow and replace the old ones. Above all be kind to yourself and develop a relationship with who you are so you will never again be alone and lonely,” I consoled.



A lull in the rain, we ventured

back on the water for an afternoon of less intense discussion, a lucky walleye hole and even a few laughs. Calmer, still moist, we had slayed some dragons and were at peace when we went our separate ways. Him back to his bachelor bunkhouse on the great lake, and me, a paddle of length, and a tent, which I hoped, was still dry.



Prestwick Golf Club Home of the 2013 Championship

Pristine Prestwick Golf Club played long and fair for a field of 48 contenders for four different flights of competition. Superintendent Dave Kazmierczak, CGCS, and his staff had been busy preparing their track for some time to bring it to peak condition for the August 13th event. Blue skies, temperatures in the mid- 70's and immaculate conditioning placed the course at the top of the pack going into and through the tournament. Although a winner of it's own "course" flight, the track itself generated several good scores and a number of Champions. A regular to the MGCSA Circuit, Jeff Pint, once again took home the Silver Challis with a score of 75 followed closely by Ben Walker.

Other winners included:

1st Flight Gross

1st place Rob Adams and 2nd place Greg Paulus

1st Flight Net

1st Place Will Onnka and 2nd place Rob Adams

2nd Flight

Low Gross Liza Chmielewski and Low Net Jeremy Stafne

Senior Flight Low Gross

1st place Jim O'Neill and 2nd place John Steiner

Senior Flight Low Net

1st place John Meyer and 2nd place Jim O'Neill





2013 Wee One Event Recipient Selected Eric Peters, Superintendent at North Links

Once again, ‘one of our own’ has been visited by hardship through a life threatening medical event. Superintendent at North Links Golf Course, Eric Peters, was recently diagnosed with cancer.

Here is an excerpt from a note sent by his family in May as posted on Caring Bridge:

“A few months ago, Eric’s back really began to bother him. He fell on the ice a couple times over the winter so we were sure he had pulled a muscle or bruised a rib. He visited a chiropractor

a few times and even tried getting a professional massage but nothing seemed to bring relief so he finally decided it was time to see a doctor. Upon the first visit, the doctor took an x-ray and determined that he had pneumonia but also saw something on the x-ray that she wanted to recheck after he had finished up with his antibiotics. She also ordered a CT scan to rule out blood clots in the lung. This was negative.

10 days after his initial x-ray, he returned for a second and the “suspicious” area in his right lung was still there. Eric returned the following day

for a PET scan. On May 3rd, the results of the PET scan came in and the initial diagnoses was that Eric has cancer. The areas it was found are: right lung, 2 vertebrae, 2 ribs, a spot near his pelvis, and possibly lymph nodes. Our family was totally shocked and feels like the rug has been pulled out from under our feet. “

Thank goodness for the Wee One Foundation and their support of Eric during his time of need. Shortly after hearing of his challenges, the Wee One Foundation sent him a check to help ease some of the burden he and his family were facing. ‘Industry peers helping their peers’, is exactly the intent when the Wee One Foundation was initiated in 2004.

For the last three years the MGC-SA has been supporting a local event to raise funds for this cause. And unfortunately each year there has been a request for access to these reserves as one of our fellow partners in the golf course industry has fallen victim to a medical crisis.



The Peters, Eric’s number one support team!

Eric shares in June:

“Some days are good and some days are bad but how is that different from life without cancer right? Most days are pretty good. I have more energy with every week so I’ve been able to get out and enjoy life more and more. Every day I set my own personal record for most consecutive days lived, so that’s cool.

I haven’t had a Doctor’s appointment in quite a while so it will be interesting when I do finally go in on August 9th. On the 9th, I will have blood drawn to check liver functions among other things, a brain scan, and chest and abdomen scan. I’m so curious to see what this pill is doing to the cancer. I’ve had some odd headaches when I stand up or bend over so pray that they are a result of the cancer going away instead of the

opposite. Another side effect that I hope gets better is my appetite. I used to LOVE food. I enjoyed cooking and eating and now I dread it. I know I have to eat and



On a good day with Wee One Committee Members John Meyer, Tom Proshok and good friend Andy Keyes.

eat healthy but nothing looks or tastes good. Even my favorite foods taste disgusting. I really miss eating and feeling healthy.

Thanks to everyone that has been so encouraging through this. It has been overwhelming to see the support and it makes me wonder if I would be as thoughtful or compassionate if the rolls were reversed.

Not much more to report until after my appointment on the 9th.”

This year Eric will be the beneficiary of funds generated at the annual Minnesota Wee One Event. Please help the Wee One Foundation support Eric and others as they are challenged with these unanticipated events in their lives. Whether you choose to become a title or tee sign sponsor, join as an annual member of the Foundation, or come

out to play on October 7th at Brackett’s Crossing Country Club, your contributions will serve someone in our industry when they need the help most. Unfortunately next year at this time we will once again be holding a tournament to support somebody else. Isn’t it nice to know that our industry chooses to help themselves in times of crisis?

In early August Eric’s wife wrote on Caring Bridge:

“Yesterday we first met with the surgeons so that they could evaluate his back and check his rod/screws. They were very pleased with what they saw and gave Eric the “go-ahead” to pursue any physical activities that he feels comfortable with(biking, running, swimming, lifting). There are really no limitations as long as Eric is listening

to his body and taking it easy when necessary. For a very active guy, this was very good and encouraging news.

While we were meeting with the surgeons, Eric's file was pulled up on the computer and Dr. Rose stated that he didn't want to "let the cat out of the bag" for our oncologist later, but the file stated that the tumor in his lung had "marked improvement". This was obviously very good news, but Dr. Rose wanted to save the details for our oncologist to go over. We kinda feel like he knew more of the details, as he was smiling and clearly happy for us. A definite change in his demeanor from our previous visits with him when it was all serious and bad news.

After this appointment we went to grab something for lunch. Right outside of Mayo in downtown Rochester, every Thursday in the summer there is live music and all kinds of food tents. A real party atmosphere. We wandered around and found something to eat and sat down to people watch and listen to the music for a bit. It was a nice little break outside of the clinic

Back to the clinic to meet with the oncologist. She pulled up Eric's scans on her computer screen (with a scan from June and one from Wednesday side by side) and began going through them starting at about his neck and working

her way down. She pointed out an area that I had not realized was so infected before. Surrounding his esophagus was a cluster of infected lymph nodes. When we compared the June scan with this weeks, it was very obvious that a significant change had taken place.

She then scrolled the screen down so that we could look at this lungs. The scan from June showed a tumor about the size of an egg. The current scan..... the tumor is barely detectable! She stated that it seems like the cancer has practically melted away, disintegrated. We were speechless. I was thinking that if the tumor had shrunk 25%, maybe 50% then things would be looking good. But almost 100%?! I really don't know what else to say about that, no words can explain. Stunned. Awestruck".

Eric is not out of the woods. He and his family still face challenges none of us would like to fathom. Support from their peers, both financially and with well wishes, are important during the high and low points of the road they are traveling.

Save this date, October 7th and play golf with your friends at Brackett's Crossing. Join the Wee One Foundation. Sponsor or contribute a raffle prize. Send a card or email. Support, both large and small, is precious.

Irrigation Efficiency, Are We There Yet?

By E. Paul Eckholm, CGCS, Yamaha Golf and Utility



Having been a golf course superintendent for over 25 years, I felt that I had amassed a pretty good depth of knowledge when it came to irrigation systems. I had worked with designers, installers, pump stations, different manufacturers and done my fair share of repairs. All it took to dispel that myth in my mind was a change in career paths.

During the past three months I have participated in over two dozen training sessions in an attempt to attain a number of new certifications associated with my new position. During all of this training I have kept an open eye toward the real world applications of this knowledge and how it will be applied going forward into the future, faced with the environmental concerns we all will deal with on a

day to day basis.

What I have learned is that while I do indeed know a lot about irrigation, there are a lot of things that I never took the time to consider.

Sure, I was well versed in the inner operations of my system and was able to work the system to get the most out of it based on the limited design; however, the systems that exist in the real world are for the most part inadequate for the needs of the modern turf manager. This is not the fault of the designer, or the manufacturers, but rather a function of the changing needs of the turf based on the demands placed upon it. Additionally, the materials used to manufacture modern irrigation systems are perceived to have a limitless life span.

Indeed PVC pipe has been

shown to have a life span well in excess of 75 years, but, the performance characteristics of that pipe do change significantly during that time. Water flowing through the pipe will cause wear on the inside surface and increase friction which will therefore affect the performance of the system as a whole. Likewise the same type of wear will affect the irrigation head and all of the parts associated with it; valves, drives, o-rings, and most significantly nozzles.

When a new system is installed, how many, if any, of us has ever taken the time to do an initial irrigation audit of the system to check on the actual

real world performance of the design? How many of us took the time to go out with catch cans to see what the real precipitation rate was right after the system was installed to know what the real performance data was? Did it actually perform as the charts said it would? I would suspect that number is at or near zero. How then can a person go out now and look at an irrigation audit with catch cans and see if the system has degraded? Without initial data there is no real way.

Yes, you can do an audit and see if the data differs from the performance charts, but this only gives us part of the picture since we do

Winter Problems?
Get the IMPERMEABLE barrier!

greenjacket
Not just another Turf Cover!

Featuring the **NEW** Air Flow System

Actual user photos — not retouched!

Minimizes temperature fluctuations • Protects from ice damage, crown hydration and desiccation
Lightweight and durable for years of easy installation & storage
www.GreenJacket.com/mgs 888-786-2683

not know if the initial performance matched the charts when installed. Your performance may not match the charts, but maybe they never did.

Please do not misunderstand, irrigation audits are a good idea. However, do not assume that changing out the nozzles will restore the system to original design specs. Wear and tear on all of the system parts will affect performance and just as a 20 year old car will require more maintenance than a new one, 20 year old systems also require more maintenance and upkeep than a new one. Even though the pipe will last, the heads and nozzles may not. Changes to the system over time, be it through additions of lines or heads or whatever, will also affect the performance. Additionally, system programming, which is much improved with the current computer automation, will seriously affect head

performance. As they say, garbage in, garbage out. If the time is not taken to properly program the system, coverage and distribution will be different than expected.

Part of the problem lies with the fact that irrigation audits and system evaluations take time. Time is money. Many turf professionals do not feel that the time invested produces a large enough positive result to make it worth the time. So the question becomes, what is the point that it becomes worth the effort? Without the evaluation of the system, the turf manager will never know how much water is actually being applied to the turf and thus how much is being wasted, both in actual water and the system operational cost associated with that application. Plus, there needs to be system adjustments after the evaluation to make the time spent worth it,



but this takes additional time. We can no longer just assume that all of the fairway stations need to water at 15 minutes and all tees need 10. Each station needs to be set for the proper run time based on the evaluation of the system and the turf environment.

Why should you care about any of this? Over watering, under watering, and unnecessary irrigation are all possibilities. Even though we do not directly pay for water now, we will in the future, I can virtually guarantee it. How much time and effort will it take to analyze a small section of your course just to see how far off you really are? You think you put down an inch of water, but how much are you




really putting out. For the relatively small investment of time, corrected system water use rates, extrapolated out over the whole course and over a number of years, you would be surprised how much water and electricity you are using.

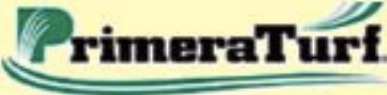
E. Paul Eckholm, CGCS is a former golf course superintendent and is currently an irrigation specialist at Yamaha Golf and Utility. Paul has been working with numerous manufacturers of irrigation products for the past 15 years on product development related to water use reductions. Paul currently holds a number of certifications in irrigation technologies.

Superior Turf Services, Inc.

Superior Organic

DESIGNED FOR PERFORMANCE, HOMOGENEOUS PRILL.
THE FINEST IN COMBINED TECHNOLOGIES.

  NX-PRO COMPOSITE TECHNOLOGY	8-2-10 Plus Greens & Tees BEST PERFORMANCE	14-0-14 Fe Fairways & Tees TOURNAMENT FAIRWAYS	14-0-7 Greens, Tees & Fairways FAST RECOVERY	11-11-11 Starter & Divot Mix ORGANIC & MINERAL	 Biagro Western Nutri-Grow 2-0-16 <ul style="list-style-type: none"> • Low Rates • Higher Active Ingredient • Patented Technology
---	--	--	--	--	--



SEED RESEARCH

GENETICALLY SUPERIOR BENTGRASSES FROM THE WORLD'S MOST COMPLETE BENTGRASS PROGRAM

FOR SUPERIOR TURF SERVICES, CALL:

Larry Thornton 612-804-1692	Matt Schmid 612-366-4128 Fax: 952-949-3889	Doug Zobel 952-201-9499
---------------------------------------	---	-----------------------------------



Alternative Fuels Offer Pro

Photo contributions Mark Linkletter

A Guide to Alternative Fuel for Lawn Equipment

Information from the U.S. Department of Energy and the Minnesota Propane Association

Powering commercial lawn service equipment with alternative fuels is an effective way to reduce petroleum use. A single alternative fuel commercial lawn mower can annually use as much gasoline or diesel fuel as a commercial work truck. Alternative fuels can also reduce pollutant emissions compared

with conventional fuels. Numerous biodiesel, compressed natural gas, electric, and propane mowers are now available to help keep the grass green and the nation clean.

Turfgrass is a fixture of the American landscape and the American economy. It is the nation's largest irrigated crop, covering more than 40 million acres.¹

¹ Energetics Inc. 2009. Propane Reduces Greenhouse Gas Emissions: A Comparative Analysis. Washington, D.C.: Propane Education & Research Council.



mise Part II

Legions of lawn mowers care for this expanse during the growing season. The annual economic impact of the U.S. turfgrass industry has been estimated at more than \$62 billion.²

Lawn mowing also contributes to the

² Haydu, J.J.; Hodges, A.W.; and Hall, C.R. 2006. Economic Impacts of the Turf-grass and Lawncare Industry in the United States. Gainesville, Fla.: University of Florida IFAS Extension, <http://edis.ifas.ufl.edu/fe632>.

nation's petroleum consumption and pollutant emissions. Mowers consume 1.2 billion gallons of gasoline annually, about 1% of U.S. motor gasoline consumption. Commercial mowing accounts for 35% of this total and is the highest-intensity use. Large property owners and mowing companies cut lawns, sports fields, golf courses, parks, roadsides, and other grassy areas for 7 hours per day and consume 900 gal to 2,000 gal of fuel annually depending on climate and length of growing season. In addition to gasoline, commercial mowing consumes

more than 100 million gallons of diesel annually.

Alternative fuel mowers are one way to reduce the energy and environmental impact of commercial lawn mowing. They may also save on fuel and maintenance costs, extend mower life, reduce fuel spillage and fuel theft, promote a “green” image, and may not be subject to operational restrictions on ozone alert days. Alternative fuel commercial lawn mowers are a powerful and cost-effective way to reduce U.S. petroleum dependence and help protect the environment.

Biodiesel

Biodiesel is a renewable alternative fuel produced domestically from a wide range of vegetable oils and ani-

mal fats. It is nontoxic and can reduce pollutant emissions when compared with petroleum diesel. It also improves engine operation by raising diesel fuel’s lubricity and combustion quality. Biodiesel blended with petroleum diesel can be used to fuel diesel vehicles without modifying the vehicles—20% biodiesel and 80% petroleum diesel (B20) is the most popular blend. B20 or other biodiesel blends are approved for use with some diesel-powered commercial lawn mowers without modification. Contact mower manufacturers to determine if B20 is approved for use in their diesel products.

Compressed Natural Gas (CNG)

Virtually all natural gas consumed in the United States is produced in North America, and, compared with gasoline





Put some serious muscle on your course.

Let the heavy hauling begin. The new ProGator 2020A features the only 4-cylinder EFI gas engine in the category. With 34 hp* and 970 cc of hill climbing torque, you'll get strength, raw power, and performance.



Done hauling?

This vehicle can be converted to a SelectSpray sprayer in just minutes, without tools. Best of all, it's easy to maintain with convenient access to everything you'll want or need to check on a daily basis.

No wonder the 2020A is ready to take on the toughest courses, while making it look easy.

Cannon Falls, MN (507) 263-4238 Hastings, MN (651) 437-7747 New Richmond, WI (715) 246-6565 Osceola, WI (715) 294-2191 Rosemount, MN (651) 423-2274 Turtle Lake, WI (715) 986-4403

www.frontieragturf.com

*The engine horsepower and torque information are provided by the engine manufacturer to be used for comparison purposes only. Actual operating horsepower and torque will be less. Refer to the engine manufacturer's web site for additional information.

and diesel engines, natural gas engines can produce lower amounts of some harmful emissions and the greenhouse gas carbon dioxide. The cleaner-burning nature of natural gas may result in reduced maintenance requirements, such as less-frequent oil changes, and extended mower life. In addition, natural gas does not spoil or clog fuel systems in lawn equipment during seasonal storage, whereas liquid fuels can.

Natural gas must be compressed and stored at high pressure to enable adequate mowing time. This sealed and pressurized fuel-storage system has the advantage of eliminating evaporative

emissions and spillage, as well as the potential fuel theft sometimes associated with liquid-fueled lawn equipment. As of August 2010, there were more than 800 CNG fueling stations in the United States with stations in almost every state. Over the past decade, CNG has been the least expensive U.S. motor fuel.

Electricity

Electric power is quiet, requires little maintenance, and produces no tailpipe emissions. Electric mowers connected to an electricity supply with a cord or powered with rechargeable batteries are popular for residential use, but the rigors of commercial mowing have

limited their use for this application to date. However, recent improvements in battery technology have resulted in new products with potential commercial application. Some mower models provide up to 80 minutes of continuous mowing time, enough to mow more than an acre.

Propane

Also known as liquefied petroleum gas or LPG or auto gas, propane is the most widely available alternative transportation fuel in the United States. As of August 2010, there were 2,503 propane vehicle-fueling stations with locations in all 50 states. Most propane consumed in the United States is produced domestically, and compared with gasoline and diesel engines, propane engines can produce lower amounts of some harmful emissions and carbon dioxide, a greenhouse gas. The cleaner-burning nature of propane may result in reduced maintenance requirements, such as less-frequent oil changes, and extended mower life. Also, like CNG, propane does not spoil or clog fuel systems in lawn equipment during seasonal storage, which can be the case with liquid fuels.

Propane is stored as a liquid under relatively low pressure and becomes a gas at normal pressure (meaning it

enters the engine as a gas). The liquid storage gives it a high energy density, so a mower can run a long time on a tank of fuel, while the sealed and pressurized storage has the advantage of eliminating evaporative emissions and spillage as well as potential fuel theft.

There are two options in the propane arena: Buying an OEM propane mower, or converting a conventional one to run on propane. Both options have financial incentives available to encourage you to make the switch to propane:

1. National Propane Mower Incentive Program. PERC (Propane Education and Research Council) has a program that offers \$1,000 per mower, up to 10, for a company to buy new propane-powered mowers. Participants in the program provide feedback and performance data for one mowing season. A limited number of incentives are available. It's recommended that you apply for participation in the Propane Mower Incentive Program before you make a purchase of a qualifying mower or conversion kit. You will be notified shortly thereafter of your acceptance into the program. See testimonials from landscapers and fill out the application here: <http://www.auto-gasusa.org/mower-incentive>.
2. Minnesota Commercial Lawn

Mower Incentive Program. This program is designed for companies that use commercial size mowers on a daily basis, such as; lawn care professionals, landscape companies, golf courses, cities, universities, etc. The goal is to incentivize these companies or institutions to try propane as an off-road engine fuel. The program pays \$750 for the conversion of an existing gasoline powered mower to propane and \$1,500 for the purchase of a new factory-direct propane-powered mower. Full rules and details can be found by following this link, calling 763-633-4271, or emailing mpga@mnpropane.org.

Companies can participate in both

programs, meaning you could receive \$2,500 towards the cost of a new propane-powered mower.

Special Considerations

Some mower engines are designed to run on alternative fuels with little or no modification. Others are not. Using alternative fuels or fuel blends that are not specifically approved for your equipment can cause serious damage to the engine or significantly reduce performance. To ensure alternative fuel or fuel blend use won't damage your mower, be sure to consult your equipment's owner's manual or contact the manufacturer or dealer.



Superior Tech Products

Leading Edge Turfgrass Solutions
Golf Courses | Sport Fields | Parks

952-546-3678

www.stproots.com

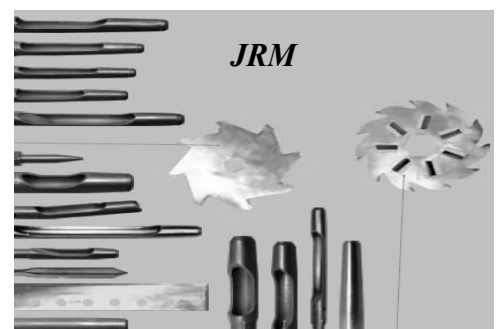
stp@stproots.com

**smooth
healthy
consistent
greens**

**Vibratory Greens Roller
& Greens Care Collection**

True-Surface

- * **Liquid & Granular Fertilizers**
- * **Organic Fertilizers**
- * **Post Patent Pesticides**
- * **Aerification Tines & Bedknives**
- * **Natural & Artificial Turf Grooming Equipment.**



Safe, sane and economical. Propane makes its debut at the U



Superintendent Brent Belanger and Mechanic Chris Carpenter are thrilled with their conversion projects. Greener, cheaper to operate and easier on their engines are three no-brain reasons to make the switch.

“Sure, converting some of our equipment to propane last summer was the greener and more environmentally correct thing to do, but in all honesty, we are saving about \$1.50 per gallon of equally productive propane and we no longer have issues with the new boutique gasoline in the equipment we have changed over,” Brent Belanger, Superintendent at Les Bolstad Golf Club said during a brief visit to review his equipment a few weeks ago.

Belanger, in the industry for 15 years and Superintendent at the 84 year old University of Minnesota golf club, and his Mechanic Chris Carpenter have been wondering why the conversion hasn't taken off at other courses. Grant money provided by the state, combined with help from Rich Nordstrom of ACME Alternative Fuel Systems, allowed a simple alternative to gasoline in three pieces of their mowing arsenal; one rotary mower and two triplex mowers. All work was completed by Chris in his shop.

In the works are one truckster and several more pieces of mowing equipment next winter. The only cost to the club is based upon, "my time and effort", according to Carpenter. "Once you get the first one down it is full speed ahead on the next unit. The only drawback is that I am responsible for filling the vehicle tanks rather than allowing the summer staff access to the 'big tank'".

Getting the tanks of propane proved to be quite simple with the help of Russ Head from Quality Propane. His company simply dropped off a 1,000 gallon tank adjacent to the existing fuel tanks in the shop yard. Self contained, the big tank needs no 'containment system' and is quite safe and much more controllable than small 20 gallon units.

Is safety an issue? With a smile Brent exclaimed, "It is a whole lot safer than sitting upon a tank of gasoline operating a hot engine! We really like the green philosophy; exceptional money savings and the lack for need to winterize the equipment at the end of the season. Shut the valve, run the engine until it stops and forget about it until next spring."

Considering a change at your club? Chris and Brent plan to host at least one meeting at their course for a live demonstration. Contact Jack at jack@mgcsa.org if you have any interest in this opportunity.

Nobody likes to wind up
in the bunker – *except us.*

Bunker construction, restoration and renovation –
using the latest, most innovative method.

Better
Billy Bunker
Method



The Pro's First Choice

PROFESSIONAL ADVISE AND SOLUTIONS

EAGAN WAREHOUSE:
1980 SENECA ROAD
EAGAN, MN 55122
651.686.6756

DELANO STATION:
511 RAILROAD AVE
DELANO, MN 55328
THE HISTORIC DELANO FEED MILL
763.398.0316

LORETTO:
CORNER OF RT. 55/RT. 19 IN LORETTO
IT'S WORTH THE DRIVE!
763.479.1481

LIZA CHMIELEWSKI

PENN STATE TURF MANAGEMENT DEGREE

SPECIALIZING IN:

FERTILIZER
HERBICIDES
FUNGICIDES
BENT GRASSES
ROUGHS & FAIRWAYS

KEVIN MANLEY

MSU HORTICULTURE (30-YEARS EXPERIENCE)

SPECIALIZING IN:

ARBORJET TREE INJECTION
EAB AND JAPANESE BEETLE
PRO'S CHOICE
SIMPLE/COST-EFFECTIVE DRAINAGE
ATHLETIC FIELD MIXES



Benefits of Membership in the MGCSA

MGCSA.org: The MGCSA provides its membership an electronic destination. The site offers a broad range of services including latest news, meeting information, important links, local association contacts and meeting schedules, as well as a market place for used equipment or student internships. Links are provided to the Affiliate Members who advertise on the web site.

Education: The MGCSA provides a range of high quality discounted professional education with more than 100 hours of relevant classes at the Northern Green Expo in January each year, supplemented by an extensive program at the Mega Seminar, as well as the annual MGA Spring Turf Forum.

Research: The MGCSA coordinates with researchers at the University of Minnesota's TROE Center to make sure you get the information you need. The association also directs Turfgrass Research Benefit Week, the annual sale of donated tee-times, to raise money for golf turfgrass research. And the association also contributes to The Turf Endowment fund to ensure a continuing program at the University of Minnesota.

Government Relations: The MGCSA provides access to the State Capitol through a continued relationship with the Minnesota Golf Association and other Green Industry Allies. This service keeps your association aware of issues likely to affect golf as they emerge rather than after the fact. This proactive presence also helps us educate legislators and regulators by providing solid information and research findings as they strive to make sound decisions for the good of the whole community. The MGCSA has representation at the Minnesota Nursery and Landscape's 'Day on the Hill' event.

Hole Notes Magazine: The MGCSA provides an award winning professional golf course superintendent association journal. Published ten times each year in a digital format, Hole Notes strives to provide relevant, interesting information that reflects the personality and professionalism of the membership. Links are provided to the Affiliate members who advertise in the magazine.

Membership Directory: At the Member's Only section the MGCSA provides an annually updated listing of names and contact details for every member of the association. This electronic directory puts each within fingertip reach of around 700 allied professionals across the region.

Employment Referral Service: The MGCSA provides a link between the people with jobs and those who want them. The employment referral service is available on-line at MGCSA.org as well as electronically delivered weekly through 'e-updates'.

Email Alerts: The MGCSA uses the internet to provide updates and alerts on urgent matters as they arise so we remain current with issues that may effect you, the industry and the Association.

Scholarships: The MGCSA extends its support to the next generation through an annual scholarship program to assist children and grandchildren of superintendents who have achieved academic excellence.

Wee One Support: The MGCSA annually hosts a Wee One fund raising golf outing with the proceeds going to support this outstanding program that serves those in the golf course turf management industry.

Snowmold Chemistry Test Trials

What Worked the Winter of 2012-2013 and What Didn't

Research trials were held at 6 sites across the Midwest: OJ Noer Turfgrass Research Center in Madison, WI; Odana Hills GC in Madison, WI; Sentryworld GC in Stevens Point, WI; Wawonowin Country Club in Champion, MI; Les Bolstad GC in St Paul, MN; and The Legacy at Craguns Resort in Brainerd, MN. In addition, small 'Auxiliary' research trials were also held at 3 sites in Wisconsin and Michigan. Only two trials, Craguns and Wawonowin were used in this article as they had high disease pressure.

The MGCSA appreciates the efforts of the University of Wisconsin and the Turf Diagnostics Lab, and credits them with the contents of the presented studies. We are in debt to Dr. Koch, his colleagues and the courses where the studies took place. Thank you to Dr. Brian Horgan and his team of turf professionals for their contributions to the project.





2012-2013 Snow Mold Control Evaluation Craguns Golf Resort – Brainerd, MN



Paul Koch, Ph.D.; P.J. Liesch; Sam Soper; and Jim Kerns, Ph.D.
Department of Plant Pathology
University of Wisconsin-Madison

Andrew Hollman and Dr. Brian Horgan
Department of Horticultural Science, University of Minnesota

OBJECTIVES

To evaluate fungicides for the control of Typhula blight (caused by *Typhula ishikariensis* and *T. incarnata*) and Microdochium patch (caused by *Microdochium nivale*).

MATERIALS AND METHODS

This evaluation was conducted at The Legacy at Craguns GC in Brainerd, MN on a creeping bentgrass (*Agrostis stolonifera*) golf course fairway maintained at a height of 0.5 inch. Individual plots measured 3 ft x 10 ft (30 ft²), and were arranged in a randomized complete block design with four replications. Individual treatments were applied at a nozzle pressure of 40 p.s.i using a CO₂ pressurized boom sprayer equipped with two XR Teejet 8004 VS nozzles. All fungicides were agitated by hand and applied in the equivalent of 2 gallons of water per 1000 ft², with the exception of the granular product Pillar G. Early applications were made on October 16th, 2012 and late applications were made on November 7th, 2012. The experimental plot area was not inoculated. Snow cover persisted on the experimental area from mid-December to late April, a period of approximately 160 days. Disease severity, turf quality, and turf color were recorded on May 9th, 2013. Disease severity was visually rated as percent area affected, turfgrass quality was visually rated on a 1-9 scale with 6 being acceptable, Normalized Difference Vegetative Index (turfgrass color) was rated using an NDVI Turf Color Meter® from Spectrum Technologies. Data was subjected to an analysis of variance and means were separated using the Waller-Duncan test. Means for disease severity, turf quality and turf color for individual treatments are presented in the following table.

RESULTS AND DISCUSSION

Disease pressure was moderate Craguns with non-treated controls averaging 21% disease. The primary pathogen causing disease was *Typhula ishikariensis*. All treatments reduced disease compared to the non-treated control except treatment 2. Only seven treatments failed to provide acceptable snow mold suppression ($\leq 5\%$ disease). Most treatments providing acceptable disease control contained 3 or more active ingredients in the application. Turfgrass quality mirrored disease severity, with most treatments providing acceptable turfgrass quality. No differences in turf color were observed by the NDVI meter.

Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 9th, 2013 at The Legacy at Craguns GC in Brainerd, MN.

	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
38	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	8.0a	0.644a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Torque	0.6 FL OZ/1000 FT2	Early/Late			
39	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	7.8ab	0.632a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Torque	0.6 FL OZ/1000 FT2	Early			
	Chipco 26GT	4.0 FL OZ/1000 FT2	Late			
40	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	7.8ab	0.630a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Trinity	1.0 FL OZ/1000 FT2	Early			
	Trinity	0.5 FL OZ/1000 FT2	Late			
41	Civitas	8.0 FL OZ/1000 FT2	Early/Late	6.3def	7.0b-e	0.635a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Daconil Ultrex	5.0 OZ/1000 FT2	Late			
	Chipco 26GT	4.0 FL OZ/1000 FT2	Late			
42	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	7.8ab	0.648a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Concert II	5.5 FL OZ/1000 FT2	Late			
43	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	7.8ab	0.631a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Instrata	5.5 FL OZ/1000 FT2	Late			
44	Civitas	8.0 FL OZ/1000 FT2	Early/Late	5.0def	6.3e-h	0.616a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Chipco 26GT	4.0 FL OZ/1000 FT2	Late			
	Daconil Action	5.4 FL OZ/1000 FT2	Late			
45	Civitas	14.5 FL OZ/1000 FT2	Early/Late	16.3bc	5.5hij	0.629a
	Harmonizer	4.0 FL OZ/1000 FT2	Early/Late			
46	QP TM/C	6.0 OZ/1000 FT2	Late	0.0f	7.5abc	0.633a
	QP Iprodione	4.0 FL OZ/1000 FT2	Late			
	QP Propiconazole	2.0 FL OZ/1000 FT2	Late			
	Foursome	0.5 FL OZ/1000 FT2	Late			
47	QP TM/C	6.0 OZ/1000 FT2	Late	0.0f	7.5abc	0.635a
	QP Iprodione	4.0 FL OZ/1000 FT2	Late			
	QP Tebuconazole	0.6 FL OZ/1000 FT2	Late			
	Foursome	0.5 FL OZ/1000 FT2	Late			
48	QP Iprodione	4.0 FL OZ/1000 FT2	Late	0.0f	7.5abc	0.631a
	QP Tebuconazole	1.1 FL OZ/1000 FT2	Late			
	Foursome	0.5 FL OZ/1000 FT2	Late			
49	QP Enclave	8.0 FL OZ/1000 FT2	Late	0.0f	7.5abc	0.636a
	Foursome	0.5 FL OZ/1000 FT2	Late			
50	Turfcide 400	10.0 FL OZ/1000 FT2	Late	0.0f	6.8c-f	0.612a

^aEarly fungicide treatments applied on Oct. 16th, 2012 and late treatments applied on Nov. 7th, 2012.

^bMean percent diseased area assessed on May 9th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 9th, 2013 at The Legacy at Craguns GC in Brainerd, MN.

	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
38	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	8.0a	0.644a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Torque	0.6 FL OZ/1000 FT2	Early/Late			
39	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	7.8ab	0.632a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Torque	0.6 FL OZ/1000 FT2	Early			
	Chipco 26GT	4.0 FL OZ/1000 FT2	Late			
40	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	7.8ab	0.630a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Trinity	1.0 FL OZ/1000 FT2	Early			
	Trinity	0.5 FL OZ/1000 FT2	Late			
41	Civitas	8.0 FL OZ/1000 FT2	Early/Late	6.3def	7.0b-e	0.635a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Daconil Ultrex	5.0 OZ/1000 FT2	Late			
	Chipco 26GT	4.0 FL OZ/1000 FT2	Late			
42	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	7.8ab	0.648a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Concert II	5.5 FL OZ/1000 FT2	Late			
43	Civitas	8.0 FL OZ/1000 FT2	Early/Late	0.0f	7.8ab	0.631a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Instrata	5.5 FL OZ/1000 FT2	Late			
44	Civitas	8.0 FL OZ/1000 FT2	Early/Late	5.0def	6.3e-h	0.616a
	Harmonizer	0.5 FL OZ/1000 FT2	Early/Late			
	Chipco 26GT	4.0 FL OZ/1000 FT2	Late			
	Daconil Action	5.4 FL OZ/1000 FT2	Late			
45	Civitas	14.5 FL OZ/1000 FT2	Early/Late	16.3bc	5.5hij	0.629a
	Harmonizer	4.0 FL OZ/1000 FT2	Early/Late			
46	QP TM/C	6.0 OZ/1000 FT2	Late	0.0f	7.5abc	0.633a
	QP Iprodione	4.0 FL OZ/1000 FT2	Late			
	QP Propiconazole	2.0 FL OZ/1000 FT2	Late			
	Foursome	0.5 FL OZ/1000 FT2	Late			
47	QP TM/C	6.0 OZ/1000 FT2	Late	0.0f	7.5abc	0.635a
	QP Iprodione	4.0 FL OZ/1000 FT2	Late			
	QP Tebuconazole	0.6 FL OZ/1000 FT2	Late			
	Foursome	0.5 FL OZ/1000 FT2	Late			
48	QP Iprodione	4.0 FL OZ/1000 FT2	Late	0.0f	7.5abc	0.631a
	QP Tebuconazole	1.1 FL OZ/1000 FT2	Late			
	Foursome	0.5 FL OZ/1000 FT2	Late			
49	QP Enclave	8.0 FL OZ/1000 FT2	Late	0.0f	7.5abc	0.636a
	Foursome	0.5 FL OZ/1000 FT2	Late			
50	Turficide 400	10.0 FL OZ/1000 FT2	Late	0.0f	6.8c-f	0.612a

^aEarly fungicide treatments applied on Oct. 16th, 2012 and late treatments applied on Nov. 7th, 2012.

^bMean percent diseased area assessed on May 9th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 9th, 2013 at The Legacy at Craguns GC in Brainerd, MN.

	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
38	Civitas Harmonizer Torque	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2	Early/Late Early/Late Early/Late	0.0f	8.0a	0.644a
39	Civitas Harmonizer Torque Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Early Late	0.0f	7.8ab	0.632a
40	Civitas Harmonizer Trinity Trinity	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Early/Late Early/Late Early Late	0.0f	7.8ab	0.630a
41	Civitas Harmonizer Daconil Ultrex Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Late Late	6.3def	7.0b-e	0.635a
42	Civitas Harmonizer Concert II	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	0.0f	7.8ab	0.648a
43	Civitas Harmonizer Instrata	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	0.0f	7.8ab	0.631a
44	Civitas Harmonizer Chipco 26GT Daconil Action	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2 5.4 FL OZ/1000 FT2	Early/Late Early/Late Late Late	5.0def	6.3e-h	0.616a
45	Civitas Harmonizer	14.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late	16.3bc	5.5hij	0.629a
46	QP TM/C QP Iprodione QP Propiconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.5abc	0.633a
47	QP TM/C QP Iprodione QP Tebuconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.5abc	0.635a
48	QP Iprodione QP Tebuconazole Foursome	4.0 FL OZ/1000 FT2 1.1 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late	0.0f	7.5abc	0.631a
49	QP Enclave Foursome	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.5abc	0.636a
50	Turfcide 400	10.0 FL OZ/1000 FT2	Late	0.0f	6.8c-f	0.612a

^aEarly fungicide treatments applied on Oct. 16th, 2012 and late treatments applied on Nov. 7th, 2012.

^bMean percent diseased area assessed on May 9th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 8th, 2013 at Wawonowin CC in Champion, MI.

Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
55	Civitas Harmonizer Trinity Trinity	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Early/Late Early/Late Early Late	11.3def	5.8e-h 0.607a
56	Civitas Harmonizer Daconil Ultrex Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Late Late	10.0def	5.8e-h 0.670a
57	Civitas Harmonizer Concert II	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	21.3cde	5.5fgh 0.637a
58	Civitas Harmonizer Instrata	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	8.8ef	6.5b-f 0.649a
59	Civitas Harmonizer Chipco 26GT Daconil Action	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2 5.4 FL OZ/1000 FT2	Early/Late Early/Late Late Late	7.5f	5.8e-h 0.644a
60	Civitas Harmonizer	14.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late	27.5c	5.3gh 0.576a
61	QP TM/C QP Iprodione QP Propiconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.5ab 0.659a
62	QP TM/C QP Iprodione QP Tebuconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.8a 0.629a
63	QP Iprodione QP Tebuconazole Foursome	4.0 FL OZ/1000 FT2 1.1 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late	0.0f	7.3abc 0.629a
64	QP Enclave Foursome	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.5ab 0.670a
65	Turfcide 400	10 FL OZ/1000 FT2	Late	3.8f	6.5b-f 0.649a
66	Chipco 26GT Daconil WeatherStik	4.0 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Late Late	6.3f	6.0d-g 0.678a

^aEarly fungicide treatments were applied on Oct. 8th, 2012 and late treatments were applied on Oct. 30th, 2012.

^bMean percent diseased area assessed on May 8th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 8th, 2013 at Wawonowin CC in Champion, MI.

Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d	
55	Civitas Harmonizer Trinity Trinity	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Early/Late Early/Late Early Late	11.3def	5.8e-h	0.607a
56	Civitas Harmonizer Daconil Ultrex Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Late Late	10.0def	5.8e-h	0.670a
57	Civitas Harmonizer Concert II	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	21.3cde	5.5fgh	0.637a
58	Civitas Harmonizer Instrata	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	8.8ef	6.5b-f	0.649a
59	Civitas Harmonizer Chipco 26GT Daconil Action	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2 5.4 FL OZ/1000 FT2	Early/Late Early/Late Late Late	7.5f	5.8e-h	0.644a
60	Civitas Harmonizer	14.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late	27.5c	5.3gh	0.576a
61	QP TM/C QP Iprodione QP Propiconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.5ab	0.659a
62	QP TM/C QP Iprodione QP Tebuconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.8a	0.629a
63	QP Iprodione QP Tebuconazole Foursome	4.0 FL OZ/1000 FT2 1.1 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late	0.0f	7.3abc	0.629a
64	QP Enclave Foursome	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.5ab	0.670a
65	Turfcide 400	10 FL OZ/1000 FT2	Late	3.8f	6.5b-f	0.649a
66	Chipco 26GT Daconil WeatherStik	4.0 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Late Late	6.3f	6.0d-g	0.678a

^aEarly fungicide treatments were applied on Oct. 8th, 2012 and late treatments were applied on Oct. 30th, 2012.

^bMean percent diseased area assessed on May 8th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 8th, 2013 at Wawonowin CC in Champion, MI.

Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
55	Civitas Harmonizer Trinity Trinity	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Early/Late Early/Late Early Late	11.3def	5.8e-h 0.607a
56	Civitas Harmonizer Daconil Ultrex Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Late Late	10.0def	5.8e-h 0.670a
57	Civitas Harmonizer Concert II	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	21.3cde	5.5fgh 0.637a
58	Civitas Harmonizer Instrata	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	8.8ef	6.5b-f 0.649a
59	Civitas Harmonizer Chipco 26GT Daconil Action	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2 5.4 FL OZ/1000 FT2	Early/Late Early/Late Late Late	7.5f	5.8e-h 0.644a
60	Civitas Harmonizer	14.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late	27.5c	5.3gh 0.576a
61	QP TM/C QP Iprodione QP Propiconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.5ab 0.659a
62	QP TM/C QP Iprodione QP Tebuconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.8a 0.629a
63	QP Iprodione QP Tebuconazole Foursome	4.0 FL OZ/1000 FT2 1.1 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late	0.0f	7.3abc 0.629a
64	QP Enclave Foursome	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.5ab 0.670a
65	Turfcide 400	10 FL OZ/1000 FT2	Late	3.8f	6.5b-f 0.649a
66	Chipco 26GT Daconil WeatherStik	4.0 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Late Late	6.3f	6.0d-g 0.678a

^aEarly fungicide treatments were applied on Oct. 8th, 2012 and late treatments were applied on Oct. 30th, 2012.

^bMean percent diseased area assessed on May 8th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 8th, 2013 at Wawonowin CC in Champion, MI.

Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
55	Civitas Harmonizer Trinity Trinity	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Early/Late Early/Late Early Late	11.3def	5.8e-h 0.607a
56	Civitas Harmonizer Daconil Ultrex Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Late Late	10.0def	5.8e-h 0.670a
57	Civitas Harmonizer Concert II	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	21.3cde	5.5fgh 0.637a
58	Civitas Harmonizer Instrata	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	8.8ef	6.5b-f 0.649a
59	Civitas Harmonizer Chipco 26GT Daconil Action	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2 5.4 FL OZ/1000 FT2	Early/Late Early/Late Late Late	7.5f	5.8e-h 0.644a
60	Civitas Harmonizer	14.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late	27.5c	5.3gh 0.576a
61	QP TM/C QP Iprodione QP Propiconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.5ab 0.659a
62	QP TM/C QP Iprodione QP Tebuconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.8a 0.629a
63	QP Iprodione QP Tebuconazole Foursome	4.0 FL OZ/1000 FT2 1.1 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late	0.0f	7.3abc 0.629a
64	QP Enclave Foursome	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.5ab 0.670a
65	Turfcide 400	10 FL OZ/1000 FT2	Late	3.8f	6.5b-f 0.649a
66	Chipco 26GT Daconil WeatherStik	4.0 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Late Late	6.3f	6.0d-g 0.678a

^aEarly fungicide treatments were applied on Oct. 8th, 2012 and late treatments were applied on Oct. 30th, 2012.

^bMean percent diseased area assessed on May 8th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 8th, 2013 at Wawonowin CC in Champion, MI.

Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
55	Civitas Harmonizer Trinity Trinity	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Early/Late Early/Late Early Late	11.3def	5.8e-h 0.607a
56	Civitas Harmonizer Daconil Ultrex Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Late Late	10.0def	5.8e-h 0.670a
57	Civitas Harmonizer Concert II	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	21.3cde	5.5fgh 0.637a
58	Civitas Harmonizer Instrata	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	8.8ef	6.5b-f 0.649a
59	Civitas Harmonizer Chipco 26GT Daconil Action	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2 5.4 FL OZ/1000 FT2	Early/Late Early/Late Late Late	7.5f	5.8e-h 0.644a
60	Civitas Harmonizer	14.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late	27.5c	5.3gh 0.576a
61	QP TM/C QP Iprodione QP Propiconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.5ab 0.659a
62	QP TM/C QP Iprodione QP Tebuconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.8a 0.629a
63	QP Iprodione QP Tebuconazole Foursome	4.0 FL OZ/1000 FT2 1.1 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late	0.0f	7.3abc 0.629a
64	QP Enclave Foursome	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.5ab 0.670a
65	Turfcide 400	10 FL OZ/1000 FT2	Late	3.8f	6.5b-f 0.649a
66	Chipco 26GT Daconil WeatherStik	4.0 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Late Late	6.3f	6.0d-g 0.678a

^aEarly fungicide treatments were applied on Oct. 8th, 2012 and late treatments were applied on Oct. 30th, 2012.

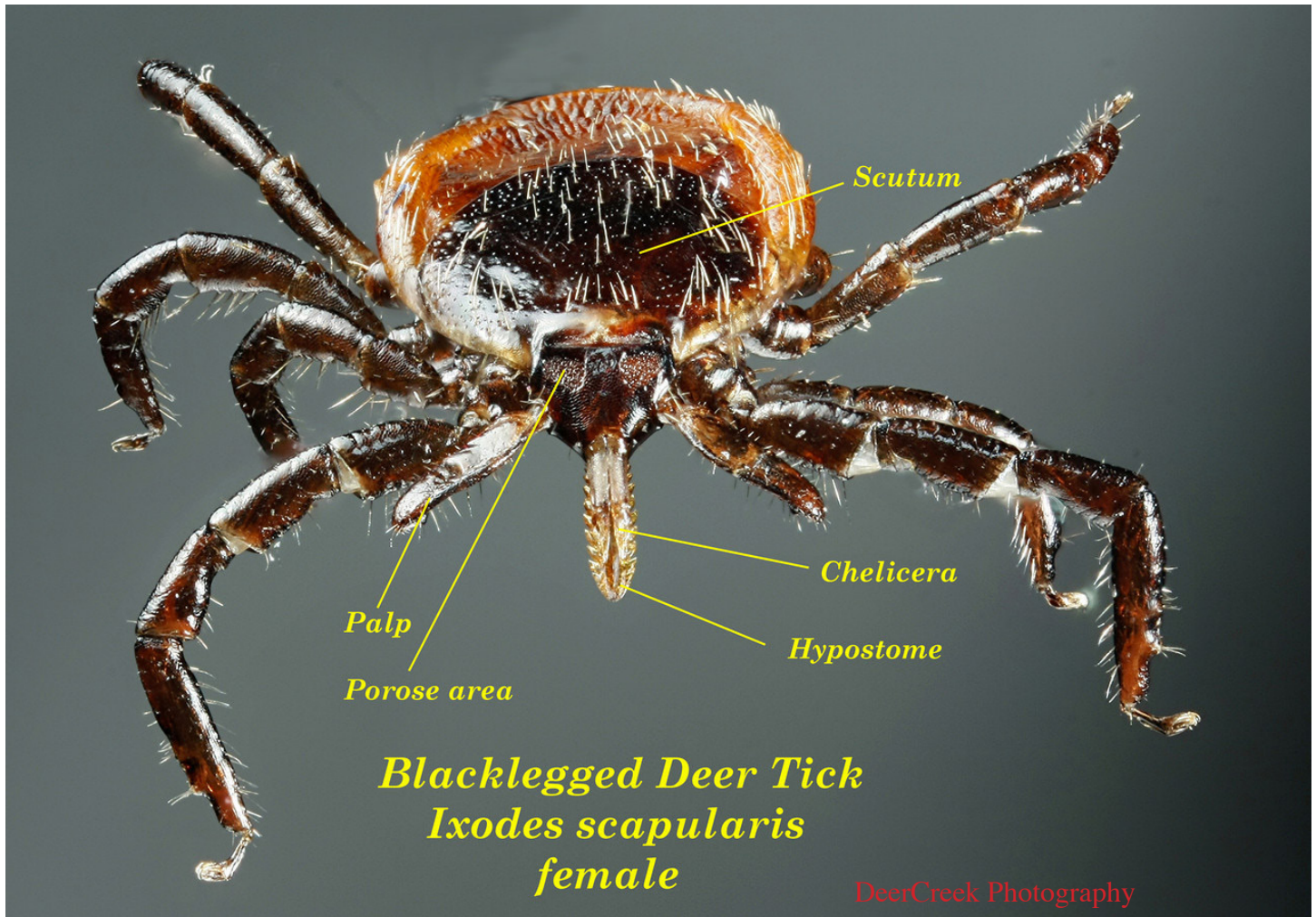
^bMean percent diseased area assessed on May 8th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

Tick Tock; Tick Borne Diseases a Matter of Time

By Jamie Bezanson, Superintendent at Oneka Ridge GC



“I thought I was going to die!”

June 1st, 2013 was an ordinary Saturday, I was getting prepared to host some friends over for a back yard barbeque and show them around our family’s new home. Around 1:00 P.M., I put my 2 year old daughter down for

a nap and was feeling kind of fatigued and thought it would be a great time to grab some Z’s. During the evening I began to shiver and shrugged it off as being chilled due to the unseasonably low temperatures. After everyone departed I hurried to get under the covers of my bed and warm my body. As I wrestled with my blankets and tried to warm up I realized I had never felt this cold before and questioned, what was going on in my body? Was this it? Am I taking the big one?

The next morning I woke and could not get out of bed, I had a fever and headache, my body ached and I was shivering. I was in bed for all but about an hour of Sunday. Monday I was disappointed when I woke up again to find my health was no better. I still had a headache, body aches and was still shivering. I was needless to say very concerned with my condition but thought I would give it one more day to see if it would improve.

On Tuesday the sun still came up and I still had the same symptoms. I pulled my clothes on and drove myself to work to get payroll done. The drive that morning took every bit of focus I had and was probably not a great decision. I arrived back home and went back to sleep and woke up when my wife called at 11:00 am saying she was very concerned and she had made a doctor's appointment for 11:50 am. I painfully took a shower and made it to the clinic.

I explained all my symptoms to the Doctor and told him I thought I either had the influenza, a virus or tick bite. He took my temperature at 102 degrees and ruled out influenza because I did not have a cough or a sore throat. He said if it is a tick bite it could be either Lymes or Ehrlichia. The only way to find out was to draw

blood test to see which one it was. The results would take 3-4 days and he explained that if I took amoxicillin it would not cure Ehrlichia but if I took Doxycycline it would cure both Lymes and Ehrlichia. I did not want to risk being sick for 3 or 4 more days so I chose Doxycycline. I was able to take two doses of Doxycycline that day. I woke up at midnight with an excruciating headache so I took two Tylenol and went back to bed. At 2:00 A.M. I woke to find myself completely drenched and my headache was gone. My fever had left and for the first time in 4 days I thought I may beat this disease.

I did not make it in to work that Wednesday but by that night I was able to have dinner with my family and could see improvement. My health gradually improved and by the weekend I started to feel normal again. Over the next week my condition continually improved and I regained all my strength. The Doxycycline made my skin very sensitive to the sun which even though the doctor told me it would, I had to learn the hard way. After a couple painful sunburns I purchased some SPF 50 to protect my skin from the big orange ball in the sky.

The following Monday the Doctor called with the results which were that the tests came back negative for

Lymes and positive for Ehrlichia. I had never heard of Ehrlichia before and I hope to never have it again but here are a few specifics that I learned. It is transmitted by a bite of an infected black legged or deer tick and symptoms typically begin one to three weeks after exposure. Symptoms include fever, muscle pain, severe headache, fatigue and chills. Less frequent symptoms include nausea, vomiting, acute weight loss, diarrhea, joint pain, mental confusion, cough, rigors, and skin rash. A tick bite may leave a bull's-eye or mark only 50% of the time and can be diagnosed by certain blood tests. Both Ehrlichia and Lymes can cause long term side effects if left untreated. These side effects may not show up for months or even years.

I didn't notice any bite marks or find the tick that bit me but one observation that I did find interesting was that I had a sore back for a month prior to any symptoms showing up. After taking the antibiotic my back pain went away and I haven't felt this good in a long time.

If anyone isn't feeling themselves I would recommend going to the doctor and getting checked out. The possibility of having long term side effects was enough to scare me.



Quality since 1971...

HARTMAN

Golf Course Construction
& Renovation

Specializing in...

Bunkers • Tees • Laser Leveling • Green Drainage • Irrigation • Design • Pump Station Upgrades

8099 Bavaria Rd.
Victoria, MN 55386
952.443.2990

info@hartmancompanies.com
www.hartmancompanies.com

CDC: Lyme disease rates 10 times higher than previously reported

Atlanta. Preliminary estimates released by the Centers for Disease Control and Prevention indicate that the number of Americans diagnosed with Lyme disease each year is around 300,000. The preliminary estimates were presented Sunday night in Boston at the 2013 International Conference on Lyme Borreliosis and Other Tick-Borne Diseases.

This early estimate is based on findings from three ongoing CDC studies that use different methods, but all aim to define the approximate number of people diagnosed with Lyme disease each year. The first project analyzes medical claims information for approximately 22 million insured people annually for six years, the second project is based on a survey of clinical laboratories and the third project analyzes self-reported Lyme disease cases from a survey of the general public.

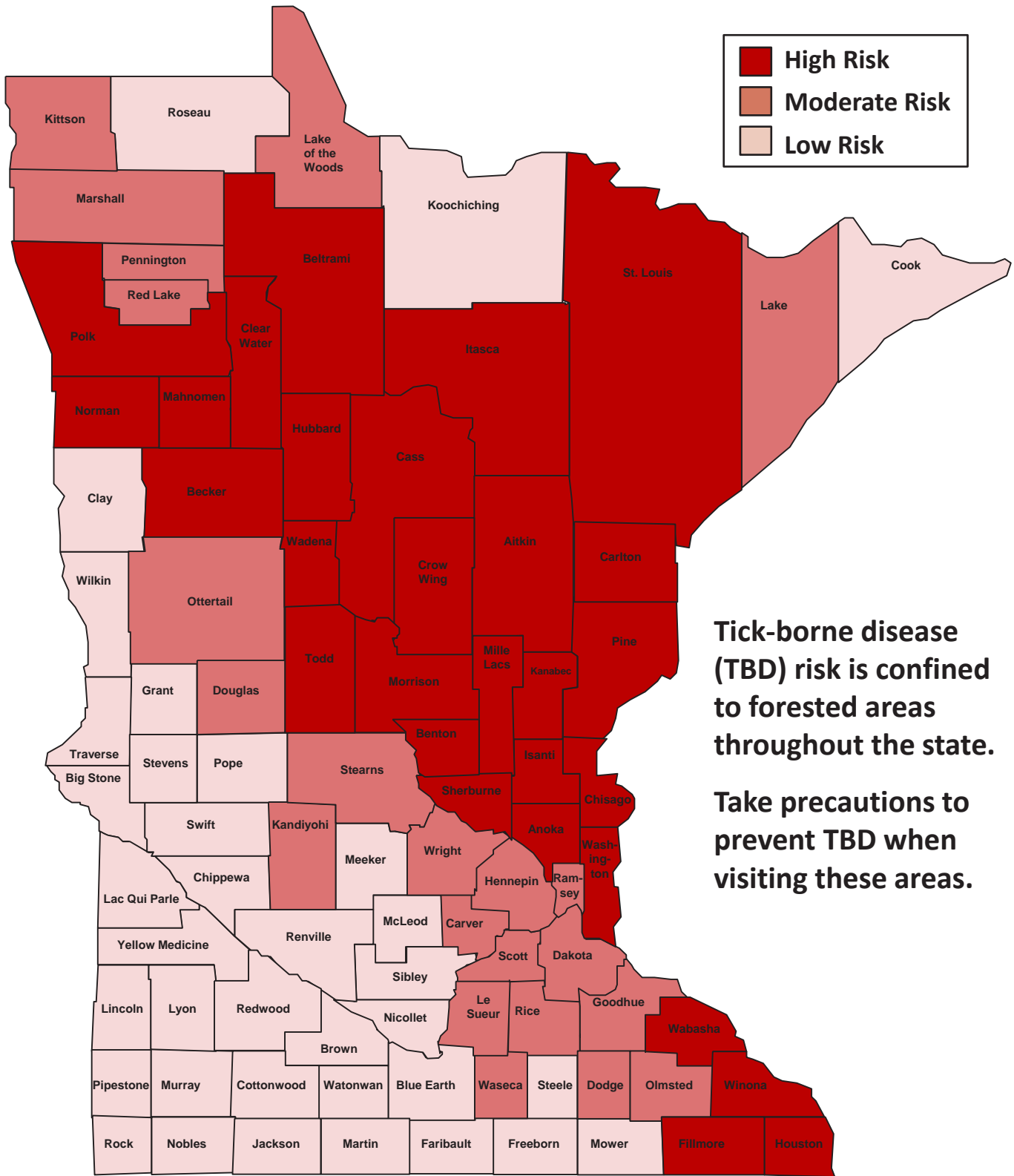
Each year, more than 30,000 cases of Lyme disease are reported to CDC, making it the most commonly reported tick-borne illness in the United States. The new estimate suggests that the total number of people diagnosed with Lyme disease is roughly 10 times higher than the yearly reported number. This new estimate supports studies published in the 1990s indicating that the true number of cases is between 3- and 12-fold higher than the number of reported cases.

“We know that routine surveillance only gives us part of the picture, and that the true number of illnesses is much greater,” said Paul Mead, M.D., M.P.H, chief of epidemiology and surveillance for CDC’s Lyme disease program. “This new preliminary estimate confirms that Lyme disease is a tremendous public health problem in the United States, and clearly highlights the urgent need for prevention.”

CDC continues to analyze the data in the three studies to refine the estimates and better understand the overall burden of Lyme disease in the United States and will publish finalized estimates when the studies are complete. Efforts are also underway at CDC and by other researchers to identify novel methods to kill ticks and prevent illness in people.

Minnesota Tick-borne Disease Risk*

*Based on average incidence (cases/100,000 population) of Lyme disease and human anaplasmosis cases in Minnesota, 2007-2011



Tick-borne disease (TBD) risk is confined to forested areas throughout the state. Take precautions to prevent TBD when visiting these areas.



Minnesota Department of Health – Infectious Disease Epidemiology, Prevention and Control Division
 (651) 201-5414 • TDD/TTY (651) 201-5797 • www.health.state.mn.us

April 2013

How Not To Remove Ticks

Don't Remove Ticks With Your Fingers.

In many cases a tick is likely to be carrying pathogens such as lyme disease, ehrlichiosis and others that are harmful to humans and pets. Tick saliva or blood is something you don't want on your skin. Pulling on a tick, even with tweezers, can tear the mouth parts from the body of the tick and leave embedded parts in the host.

Don't Squeeze, Crush or Squash A Tick.

This can force spirochete and other infective body fluids through the mouth parts of the tick into the host. Don't Apply Substances To A Tick. Applying any substances, such as petroleum jelly, fingernail polish remover, repellents, or a lighted match that upset or harm the tick almost always cause the tick to vomit the contents of its stomach back into the host. No matter how badly a tick may want to remove itself, it is not capable of doing so quickly. Ticks can live without air for long periods; attempts to smother it can allow disease transmission for hours.



You may or may not have the typical “bull’s eye” rash often associated with lyme disease.

Minnesota Golf Rounds Fore Research Huge Success

The last certificate for golf sent, and final check tabulated, this year's Minnesota Golf Rounds Fore Research generated over \$27,500 for research projects at the University of Minnesota. These funds, \$13,000 over the 2012 drive, are created through the generous contributions of tee times at mostly private or high-end public facilities for sale to the public. This dramatic increase over recent campaigns can be attributed to several factors.

For the last 24 years, specific tee times were available only the first week of June. In 2013 tee time certificates, including carts, were offered for use through the season. The recently reactivated Minnesota Golf Course Superintendents' Association Research Committee also did a stellar job of

raising additional certificates through a phone call barrage to fellow turf managers. And, of perhaps greatest note, the MGCSA partnered with the Mid-West Chapter of the CMAA, the Minnesota Chapter of the PGA and the Minnesota Golf Association for additional promotion amongst their ranks.



Monies generated through the Rounds Fore Research program are used to keep the University of Minnesota's Turfgrass Research, Outreach and Education Center a viable destination for current and future turf studies. The additional funding created in 2013, and for

the next couple of years, will be used to directly support the new horticulture pathologist at the U of M.

The Minnesota turf industry has been missing a pathologist since Dr. Jon Powell left the University of Minnesota several years ago. In 2013 a horticultural pathologist position was created in the College of Food, Agri-

cultural and Natural Resources. The search process, which the MGCSA was active in, generated an excellent candidate for the position; Dr. Angela Orshinsky from the University of Guelf where she produced studies on Sclerotinia homeocarpa in bent grass amongst other turf related topics. As a new Extension Specialist with the University, and one the turf industry will be closely allied with, the

MGCSA Board of Directors strongly supported contributing start up funding to facilitate the transition into Dr. Orshinsky's new role.

None of the research or University support would be possible without the help of the following clubs. Thank you for your consideration and generosity.

Brackett's Crossing Country Club
Dellwood County Club
Edina Country Club
Hazeltine National Golf Club
Golden Valley Golf and Country Club
Hillcrest Golf Club of St. Paul
Indian Hills Golf Club
Lafayette Club
Medina Golf and Country Club
Mendakota Country Club
Midland Hills Country Club
Minnesota Valley Country Club
North Oaks Golf Club
Northland Country Club

Oak Ridge Country Club
Olympic Hills Golf Club
Owatonna Country Club
Somerby Golf Club
Somerset Country Club
Southview Country Club
ST Cloud Country Club
The Minikahda Club
Town and Country Club
TPC – Twin Cities
White Bear Yacht Club
Windsong Farm Golf Club
Wayzata Country Club
The Jewel Golf Club

Thank You For Your Support



Within the Leather

by David Kazmierczak, CGCS

What a glorious day it was on Tuesday, August 13th 2013. The kind of day any golf course superintendent would wish for if hosting an event. Luckily for me and my crew, this was the day we hosted the MGCSA Championship.

Not that the weather was much different than the previous couple weeks. If you are into high temperatures in the mid 70's and low humidity coupled with glorious sunshine, Minnesota has been right up your ally lately. But compared to what the day could have been like, the weather just could not have been better to prepare a golf course for tournament play, or to play in the tournament itself.

My group started on the 10th hole, and after a quadruple-bogey on the 11th I pretty much decided to hell with it- my championship pursuit lasted all of about 15 minutes - and proceeded to relax, enjoy the fine company I was with and enjoy the day. As fun as it was to play, what

happened after was better.

I can't imagine a more satisfying feeling as a professional, as I experienced after the tournament, and that is why I am bringing this event up. After the round, I received many, many compliments on the course itself, the conditioning, the set-up, the friendliness of the inside staff and numerous other things. We have received these kinds of compliments before at various times and in various ways, but this was quite special.

This was from my peers.

This was from guys for whom I both respected and admired. Well wishes from old friends and new acquaintances alike. This was from people who know golf courses. This was from people who understand what it takes to accomplish a solid product in this business, and took time out of their busy schedule to come play our course and support the MGCSA as well. What a fine time we all had.

Now I would be remiss at this point not to mention the fact that there were only 48 of us that were able to play in the championship. This number, to be frank, is quite low. I fully understand why so many

were unable to attend. I heard among the reasons airification, vacation, cost, out of town, prepping for a tournament of our own, etc. They are all good reasons to not participate in an event such as this. But let's face it- 48 players is a pathetic number, especially in an association of our size.

When I first heard the number of attendees the day before, I must admit my heart kind of sank. We were working hard to prepare for the tournament, put out best foot forward and when I walked into the pro shop and said we only had around 40 participants, I felt like a complete idiot. We reserved an afternoon for 40? It wasn't said and our pro never would, but that is what I was feeling. I decided after walking out of the pro shop that the number didn't matter at that point. We were going to do what we could to make the course the best it could be and whoever showed up was going to get our best effort.

While it is clear more needs to be done to attract more attendees to the MGCSA events, or at least figure out why attendance is so low, that is not what I wanted to focus this column on. What I wanted to tell you is how much I appreciated the 48 who did attend.

I'm sure if you ask any superintendent who has hosted an MGCSA event they will all tell you

the same thing- what a great time it was hosting the event, and how proud they were to have their crew prepare the course, and how good it felt to help the MGCSA. I know I sure did.

It really didn't take that much extra effort either. We certainly spit shined a few tee plaques we otherwise would not have, and got a few long put off superficial projects done as a goal for the event, but otherwise business as usual. The pro shop certainly didn't have too much extra work with the smaller number, and heck they do tournaments all the time anyway.

So what I'm trying to get at is that if you were ever inclined to host an MGCSA event by all means go for it. The return on your effort is substantial. It doesn't really matter if you get 48 or 148 to attend, for the guy hosting the feeling is the same. I was humbled, I was proud, and I would do it again in an instant.

Thank you so very much to the MGCSA for allowing me, my staff and our course to host this year's championship. To all who came, especially the guys who came from a great distance, thank you for making the day very special for us and Prestwick Golf Club. I will never forget it.