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**DONATING HIS PRIZE** to the TROE Center is Ben Just, Superintendent, Midland Hills Country Club, pictured on the right. Ben won the use of this vehicle from Tiziani Golf Car of Minnesota at the Harold Stodola Research Scramble on August 1 at Brackett's Crossing Country Club.

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### About the Cover

Pictured on the cover is the 16th hole at Midland Hills Country Club, site of the 2005 MGCSA Championship on Monday, September 26. Ben Just will be the host Superintendent.

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### UPCOMING EVENTS

September 26  
**MGCSA Championship**  
Midland Hills Country Club, St. Paul  
Host Superintendent: Ben Just

October 11  
**Fall Mixer**  
Monticello Country Club, Monticello  
Host Superintendent: Rick Traver, CGCS  
**TOPIC: SUPERNEWS GOLF WEEK  
BUNKER SEMINAR  
8:00 a.m. START**



## PRESIDENT'S MESSAGE

*Superintendents are the Best  
People To Respond to Problems  
That Arise On Golf Courses*

By Robert Panuska

Alright already, enough is enough of this heat and humidity. I certainly hope that by the time you read this we are well into some "normal" cool September weather. The disease pressure this summer and the resulting turf damage many have experienced is nothing short of the winter kill many had this spring. It seems that the general feeling I am hearing is that someone is to blame for this turf loss.

**Well, how 'bout this, the ever increasing demands to "push" the course way beyond what the initial design intended?** As an example, if your soil profile and drainage are not able to handle the amount of water you received this spring, then you were already behind the eight-ball when the really hot weather hit. Now couple that with an irrigation system that is 20-plus years old with single row coverage and lacking pump capacity so you have to water 11 hours to get even close to the amount of water you need. You have a formula for declining condition of the turf. The expectation of our customers for "perfect" condition regardless of these factors has driven many superintendents to total frustration.

**I wish I had the answers but I do know this for fact, the superintendent is the BEST person qualified to respond to the problems that arise on a course.** Will we do everything right all the time? No, but we have the experience and local knowledge to evaluate all the options and move forward with a plan. If you are facing a tough situation at your course, please do not hesitate to call upon a fellow MGCSA member for advice and help. It may be a simple phone call or visit over lunch for moral support or a more extensive visit to the course, but please reach out and use the vast experience this membership has to offer. It doesn't hurt to remind yourself about the good things about our work too.

\* \* \* \* \*

**Thank you to Dr. Brian Horgan and Dr. Eric Watkins** and all the folks at the University of Minnesota horticulture department for making the 2005 Field Day on July 28 a huge success. I continue to be amazed by the vast number of projects at the TROE Center from plant breeding and NTEP trials to nutrient and pesticide fate studies to alternative grasses. There are a multitude of research projects underway.

\* \* \* \* \*

**A very big THANK YOU to Tom Proshok and the entire staff at Brackett's Crossing Country Club** for hosting our annual MGCSA Harold Stodola Research Scramble on August 1. The weather was great and the course was in top condition. Don't forget about the Bunker Boot Camp at Monticello Country Club on October 10.

Until next month,  
Rob

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Official Publication  
of the MGCSA

Editor

Jack MacKenzie, CGCS  
jmackenzie426@msn.com

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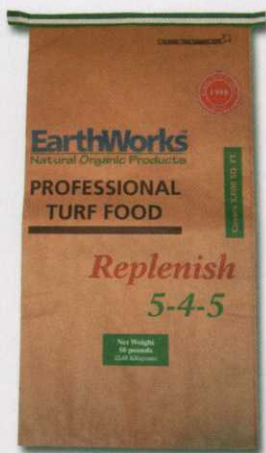
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Water Insoluble Nitrogen.....	3%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ).....	4%
Soluble Potash (K <sub>2</sub> O).....	5%
Calcium.....	3%
Sulfur.....	2%

Application: 10-20 pounds per 1,000 sq. ft.  
\*Available in both Standard and Greens Grade.

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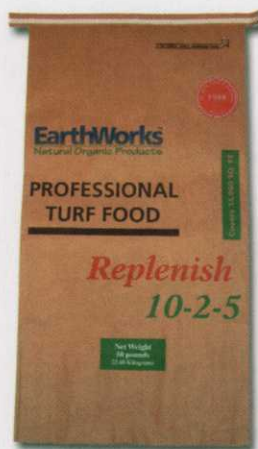
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Water Insoluble Nitrogen.....	5%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ).....	2%
Soluble Potash (K <sub>2</sub> O).....	5%
Calcium.....	3%
Sulfur.....	2%

Application: 3-15 pounds per 1,000 sq. ft.  
\*Available in both Standard and Greens Grade.



- Soil test** - to determine basic nutrient needs such as calcium, potassium, magnesium and phosphorous
- Calcium** - if limestone is needed in large quantities, it is best to apply up to 20 lbs of gypsum per 1000 sq. ft. 2-4 weeks before aerification and then add the required limestone into the aerification holes. This allows for exchange of other nutrients off the soil colloid
- Magnesium** - if the soil test shows a need for magnesium, either Pro-Mag or Sul-Po-Mag can be applied at time of aerification, although Sul-Po-Mag is fairly soluble and does not have to be applied in aerification holes.
- Potassium** - Potassium sulfate is very soluble and is best applied over the top of the turf and not in the aerification holes, but Eco-Lite, a physical amendment and sustainable form of potassium is best applied in the holes at high rates.

- Phosphorous** - if phosphorous is called for on the Soil First soil test, two forms are most likely recommended. MAP is a soluble form of phosphorous and should be applied over the top of the turf, but rock phosphate should be applied into the aerification holes.
- Organic amendments** - aerification is the best time to apply organic fertilizers because they are designed to feed the soil
- Nitrogen** - soluble forms of nitrogen can help heal aerification holes but is best applied over the top of the turf

**Aerification:** This is the best time to add needed sustainable nutrients and food sources such as rock minerals and carbon (limestone, rock phosphates, organic fertilizers and physical amendments). The soluble nutrients such as nitrogen, gypsum and potassium sulfate can all be added to the soil surface before or after aerification.



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## Musing the Minutes

By Rick Traver, CGCS  
Monticello Country Club

I must tell you all I am in a state of euphoria today. We received a little over an inch of rain last night and while it may only be a temporary relief from dragging hoses and moving quick couplers, it is quite the relief. Especially since my club championship is this coming weekend. We do have an automated system but it is single row and we have seen no rain to speak of in seven weeks, which has left me with some serious dry spots. Might be a good time to push for an irrigation upgrade, eh! I understand some of you are having a worse time, and my prayers are with you.

**To the business at hand**, your Board of Directors met on August 1 at Brackett's Crossing Country Club. I would like to personally thank Tom Proshek for the accommodations. That has to be one of the nicest board rooms we have had the privilege of using.

**Scott Turtinen reported** from the business office that the Turf Tourney generated \$15,720 for research. The Scholarship

scramble generated \$3,250 from its golf event. Scott also reported that Kevin Clunis, who has generously donated his time, is registered as our delegate with the GCSAA.

**Jack MacKenzie, CGCS**, editor of *Hole Notes*, requested that we explore the idea of publishing bi-monthly. His logic stems from the time and energy it takes to put each issue together, as well as obtaining member-generated articles. Speaking as a former editor, Jack has done an excellent job of elevating the quality of content in our publication and takes pride in maintaining a quality publication. As a Board we discussed this issue and asked Turtinen and MacKenzie to look at how this would affect the bottom line. *Hole Notes* is not a huge revenue source for the MGCSA, however, it does generate income.

**Paul Eckholm, CGCS** reporting on the state legislature and the DNR's new usage tax/fee on irrigation, was something that slipped through committee during the state legislative special session. Paul stat-

ed that many things were slipped in during the special session, many to generate revenue, but many to spend more of our tax dollars as well. He had a copy of the bill with him and it was quite large. It appeared to me from the expressions on Mr. Eckholm's face as well as the things he said that his faith in our state legislature has waned a bit over the last couple of years.

**James Bade reported on the EXPO** and stated all speakers are lined up for January. He also informed us that the March-Mini would be at the Town & Country Club, Host Superintendent, Bill Larson, CGCS.

**Dr. Eric Watkins**, reporting on the University of Minnesota, thanked everyone for the participation at Field Days on July 28. Hearing from people who attended it sounded like an excellent event.

**Dr. Brian Horgan** reported on his trip to the United Kingdom with his students. That sounded like a great learning experience for them all. We all volunteered for the next trip, but I don't think he had a whole lot of faith in any of us as chaperones. Must have thought we would all be out golfing or something.

As you all go into the fall, I hope your aerations go well and that your play is plentiful and profitable.

Take care and have a great month!

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# Scottish Appeal to Turfgrass Management

By JONATHAN SPITZER  
Foreman, Woodhill Country Club

As a young professional in the turf industry and a recent graduate of the University of Minnesota, I was given a perspective-broadening experience through a class trip to England and Scotland. This trip, taken with the University of Minnesota's International Experiences in Horticulture class during late May of this year, allowed a visit to the Royal and Ancient Golf Club of St. Andrews. I have come to realize that turf management practices in Scotland are much different than they are in the U.S. On the first day that we arrived, Gordon Moir, the Superintendent at St. Andrews, discussed his daily maintenance practices of his 135 holes of golf. While Gordon is mainly in charge of maintenance of the Old Course, he also oversees the maintenance practices on the other courses.

**The St. Andrews staff** was preparing for this year's Open Championship while we were there as it was less than two months away. Despite being in preparation for a tournament, I was amazed how different their practices were compared to common practices in the U.S. The aesthetics of golf courses are much more demanding in the U.S. than they are in Scotland. In the U.S., it seems as though golfers demand a soft visual with a hard playing surface, and the course being green is an absolute priority. In Scotland it is much different. It seems like the hard and fast playing surface is the highest priority at St. Andrews. Lush, green, visually soft grasses are set aside as a priority. Gordon explained that he waters very little, trying to keep the turf's roots active and given the fact that his water is very alkaline. He also mentioned that it is very expensive to water 135 holes so watering is only done when absolutely necessary. They average almost an inch of rain per week during the wet season, and a half-inch during the dry season, most of that rain coming in little bits every day, which reduces the need for watering.

**Fertility practices** were also very different than what are common here in the United States. Most of their turf is composed of fine fescues, making fertility requirements quite low. Keeping turf lean also helps reduce mowing and thatch issues. It also reduces the already low disease pressure. Fertilization is usually

done once during late August to early September depending on temperature and rainfall. The fertilization is usually done by applying 1 lb. N/1000 ft<sup>2</sup>. That's it. No more. Here it seems as though we are fertilizing monthly, some times biweekly.

**Cultural practices** are a very large part of the maintenance program at St. Andrews. Topdressing occurs at least every other week, and if weather cooperates, it is done more frequently than that. Vertical mowing is done bi-weekly. Gordon mentioned that compaction is probably his biggest problem at St. Andrews, especially on the Old Course, as it can see up to 70,000 rounds per year. Therefore, aerification is done two to three times per year. Light weight rolling is frequently employed to all of the greens to guarantee a fast playing surface.

**Pesticide and other chemical use** is very limited on all of the courses at St. Andrews. Other than moss and algae, weather conditions make it so that disease pathogens are not normally found or do not become active in Scotland. They try to limit chemical applications to once or twice a year. Chemical applications are severely frowned upon throughout the UK and it has become a large political issue in recent years. Air movement is very good along the North Sea, where at St. Andrews, there is hardly a day when it isn't windy. It seems as though they try to keep their pathogens in check by using good and frequent cultural practices.

The second day we were in Scotland we played the Eden Course of St. Andrews. The weather was nice, occasional clouds, about 55 degrees and the wind increased as the day moved into the

afternoon. Immediately I was stunned by the ruggedness of the landscape. No trees, just Gorse lining the fairways. The playing surface was very hard and fast. The turf was green and smooth. Every lie (except for the rough) that your ball landed in was tight. It is truly a place where you want to keep the ball in the fairways or on the greens. You really pay for missing your target at St. Andrews. The greens were very large and the fairways were narrower than that you would think of in the U.S. Oh and bunkers! Some bunkers were 7-8 feet deep and hard as a rock. I only managed to get in one and it was pretty shallow, but it still took two shots. Another contrast to courses in the U.S. is the lack of water. There are very few water hazards, other than the North Sea on the golf course. It seems as though in bounds water hazards are a very large part of the game here in the U.S; however, this is not the case in the UK.

**Overall, the time that I had at the Royal and Ancient Golf Club** of St. Andrews was a quality international experience. I never thought that I would actually be able to walk on that course, let alone meet and talk with the Superintendent. This experience also gave me a new perspective on turf management that most turf professionals would not get to see here in the U.S. I don't think that most people realize how different golf courses are in the UK until they actually see them. I sure didn't, and I was truly surprised. I would highly recommend visiting the Royal and Ancient Golf Club of St. Andrews to any turf professional, or anyone that is interested in golf and its origins.



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# Up-to-Code: *Storing Hazardous Materials*

By DAVID HARCHANKO, Truman Howell Architects & Associates, Inc.

The issues surrounding safe storage of chemicals and fertilizers are complex and ever changing. The lines of responsibility between the agencies that attempt to control these issues allow for overlap and can vary by jurisdiction. Make sure that you consult with your professional consultants to determine specific solutions to your facilities.

**In Minnesota**, the local Fire Department is likely to be the most active in monitoring the storage of hazardous materials. Because the Fire Department may be required to extinguish a fire or rescue an accident victim, they need to know that the materials are stored correctly. The Fire Department is also likely to be in control of the fire sprinkler design requirements.

The construction of the building, its plan layout and its materials, are controlled by the local Building Department and the applicable building code. The area of the building, its placement on the site, its use and its construction will determine if fire sprinkling is required.

**OSHA and the EPA** tend to focus on

safe procedures and allow the other agencies deal with the design of the facilities. That said, an understanding of the applicable procedures is useful to design the space needed for the required procedures.

**Fertilizers and pesticides have a corrosive effect** on building materials, especially metals. Controlling the moisture and temperature of the storage area is also important to maintaining product integrity and reducing corrosion. Also, the pesticide storage must be physically separated from the fertilizer storage to further protect against explosions. Because herbicides and pesticides can cross-contaminate each other, these products require separate storage.

**The light and ventilation fixtures in storage areas** should be explosion proof. A good practice is to switch the ventilation fan with the light so that both go on together. If you can place this switch outside of the storage area you can provide even more protection for your staff from fumes and explosion.

**Spill containment and recapture** is an important consideration around liquid

chemicals. A recessed concrete floor area or a raised curb can serve to contain a storage area. Reclaiming spilled material requires proper plumbing design engineering and equipment.

**Consider space** for storing your protective clothing and equipment. This area should be clean and organized to encourage safe procedures. Safety data sheets, procedure manuals and safety training records should be readily accessible for use and review.

**And finally**, make sure that emergency shower and eye wash facilities are available for your specific location. Make sure that these devices are always kept ready for use, accessible and in good working order.

The storage of pesticides and fertilizers is a fact of life for modern turf management facilities. Keeping up with the latest safety procedures will provide a safe work environment.

*(Editor's Note: David Harchanko may be reached at 952-401-7889 for more information.)*



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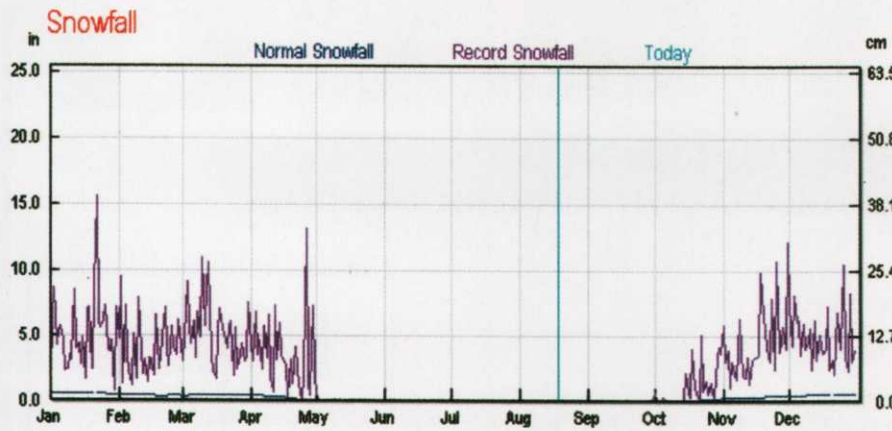
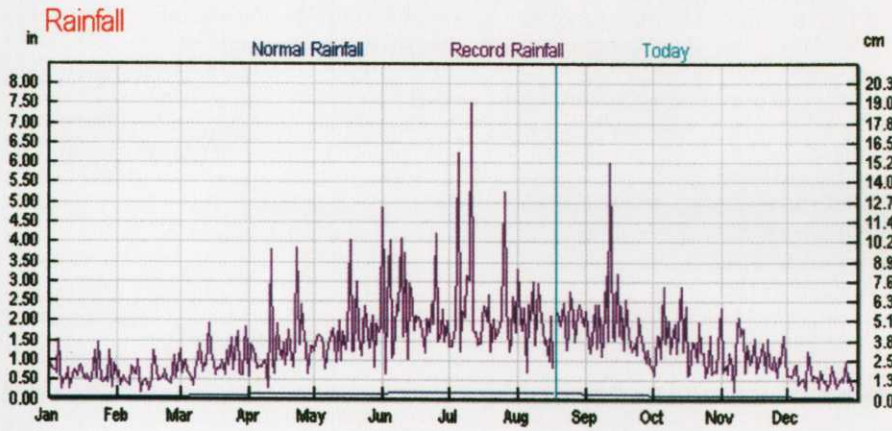
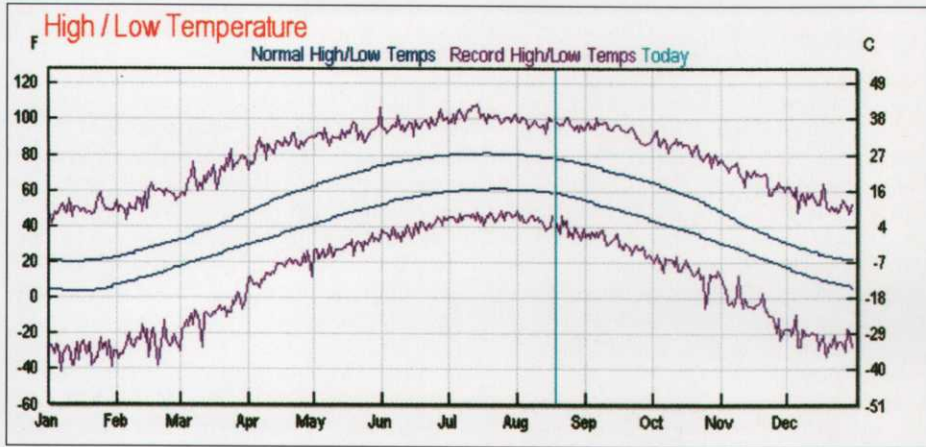
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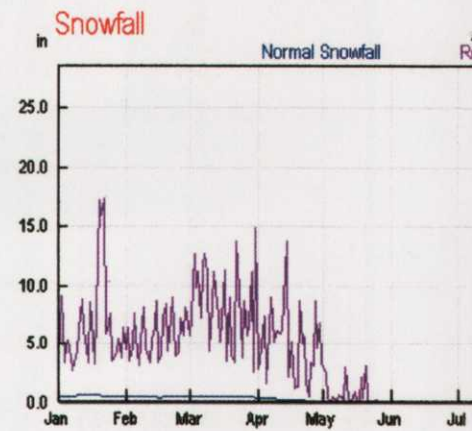
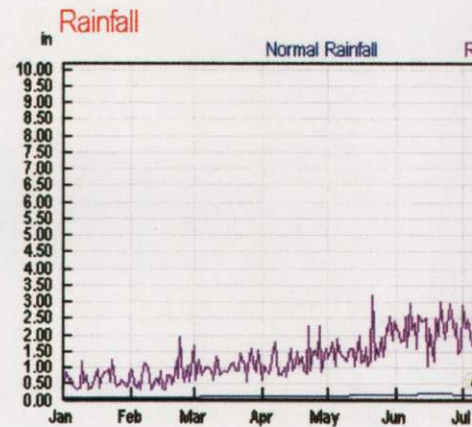
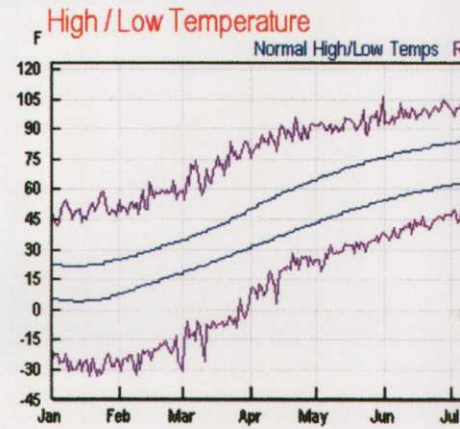


# SOUTHERN MINNESOTA



	Monthly Averages											
	January	February	March	April	May	June	July	August	September	October	November	December
High Temperature (F / C)	20 / -7	26 / -3	38 / 3	55 / 13	68 / 20	78 / 25	82 / 28	79 / 26	70 / 21	58 / 15	41 / 5	25 / -4
Low Temperature (F / C)	3 / -16	8 / -13	21 / -6	35 / 1	46 / 8	55 / 13	60 / 16	58 / 14	49 / 9	38 / 3	24 / -4	9 / -13
Precipitation (in / mm)	1 / 20	1 / 19	2 / 45	3 / 69	3 / 86	4 / 94	4 / 107	4 / 99	3 / 88	2 / 69	2 / 41	1 / 26
Snow (in / cm)	9 / 24	8 / 20	10 / 25	2 / 6	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	trace / trace	4 / 10	9 / 24
Wind Speed (mph / kmh)	15 / 25	15 / 24	15 / 24	16 / 25	14 / 23	13 / 22	12 / 19	12 / 19	13 / 21	14 / 23	15 / 24	15 / 23
Wind Direction (from the)	NW	NW	NW	NW	South	South	South	South	South	South	South	NW
Cloud Cover (out of 8)	5.2	5.3	5.6	5.4	5.2	4.9	4.5	4.6	4.7	5.0	5.9	5.7

# TWIN CITIES



	Monthly Averages											
	January	February	March	April	May	June	July	August	September	October	November	December
High Temperature (F / C)	21 / -6	27 / -3	39 / 4	56 / 14	69 / 21	79 / 26	84 / 29					
Low Temperature (F / C)	3 / -16	9 / -13	23 / -5	36 / 2	48 / 9	58 / 14	63 / 17					
Precipitation (in / mm)	1 / 24	1 / 22	2 / 49	2 / 62	3 / 86	4 / 103	4 / 107					
Snow (in / cm)	11 / 27	9 / 22	10 / 25	2 / 5	0 / 0	0 / 0	0 / 0					
Wind Speed (mph / kmh)	11 / 17	11 / 17	12 / 19	13 / 20	11 / 18	11 / 17	10 / 16					
Wind Direction (from the)	NW	NW	NW	North	ESE	SE	South					
Cloud Cover (out of 8)	5.1	5.1	5.4	5.3	5.1	4.8	4.3					