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### UPCOMING EVENTS


Wednesday, December 7  
**MGCSA Awards & Recognition Banquet**  
The Wilds Golf Club, Prior Lake  
Host Superintendent: Wes Stoneback

**2006**

Thursday, January 5  
**MGCSA Annual Business Meeting**  
Minneapolis Convention Center

January 4, 5, 6, 2006  
**Minnesota Green Expo**  
Minneapolis Convention Center

### About the Cover



This month's cover features the par 3, No. 12 at Hillcrest Golf Club of St. Paul. Photo courtesy of Thomas Schmidt, Superintendent at Hillcrest Country Club.






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## PRESIDENT'S MESSAGE

### *Awards and Recognition Banquet Set December 7 at The Wilds GC*

*By Robert Panuska*

My hope for everyone is that as you read this column your courses are beginning the process of preparing for winter. Aerifying is completed for the most part, snow-mold control is on hand and ready to apply, the late fall fertilization is awaiting application and the mowing schedule has been replaced by leaf removal. For me fall is a great time of the year to enjoy the course that has at times during the heat of summer caused me much grief and frustration. I try to think about things I would do differently and how I might make changes or what I will keep the same. We all seem to be in the mode of "doing more with less" which, as you all know requires careful evaluation and discussion before decisions are made. Good luck to you as you plan for next season and remember to "kick back" and take some time away.

**By now you have received an e-mail or letter asking for your help in supporting the horticultural plant pathology position at the University of Minnesota.** If you have not already done so, I want to encourage you to write a personal letter of support to the dean of the College of Agriculture Food and Environmental Sciences Dr. Charles Muscoplat. If you have written, I want to thank you for your support of this position.

**The MGCSA Board of Directors is very excited about the University's offer of the former head-house for the greenhouses on the St Paul campus for use by the TROE Center.** The MTGF has approved \$25,000 for architectural drawings for the remodeling and the University has hired an architect. The project details will be unveiled at the Green Expo in January. The MGCSA board has started the process of establishing a fundraising committee to begin the ground work of moving forward with a campaign to raise the funds for the remodeling project. Watch for more info in *Hole Notes* and at the Green Expo.

**Please mark December 7th on your calendar. This is the night of the MGCSA Awards and Recognition Banquet.** Details are still in the process of being finalized but the location is going to be the Wilds Golf Club in Prior Lake. Please plan to spend the evening with your wife or significant other for an enjoyable night out. Watch your mail for a personal invitation. The cost of the evening is being under-written by the event sponsorships at our meetings throughout the summer. This will help reduce the cost to attend significantly. I want to thank all of the vendors who have supported the MGCSA through this program. You have seen their names on meeting notices, tees, carts and meals, please take the time to thank them for their continued support.

*— Until next month  
Rob*

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# HOLE NOTES

Official Publication  
of the MGCSA

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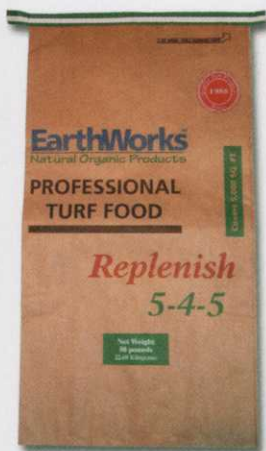
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Water Soluble Nitrogen.....	2%
Water Insoluble Nitrogen.....	3%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ).....	4%
Soluble Potash (K <sub>2</sub> O).....	5%
Calcium.....	3%
Sulfur.....	2%

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

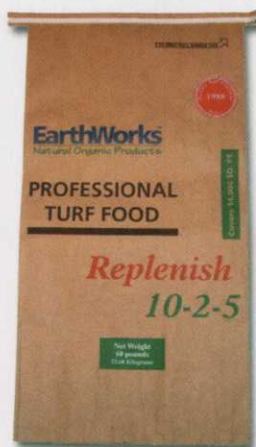
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Water Insoluble Nitrogen.....	5%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ).....	2%
Soluble Potash (K <sub>2</sub> O).....	5%
Calcium.....	3%
Sulfur.....	2%

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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# *New Relief Program Allows Donations to Help GCSAA Members Affected by Hurricane Katrina*

Ever since Hurricane Katrina ravaged the Gulf Coast, GCSAA has heard from members, chapters and industry wanting to assist in relief efforts for members in that region. In response, the association has created the GCSAA Hurricane Katrina Disaster Relief Program. Administered by GCSAA's philanthropic arm, The Environmental Institute for Golf, the relief program will distribute funds directly to affected GCSAA members to help offset their personal losses. The new program also supplements GCSAA's existing Emergency Relief Fund, through which members can also apply for assistance.

Although no one knows how many GCSAA members have been impacted, based on the ZIP codes where mail service has been suspended, at least 178 members were in the area most affected by the storm, and many more were in the surrounding areas.

## *How to Make a Donation*

You can donate to the program by

sending in the donation form (PDF) or by calling (800) 472-7878 to make a donation by credit card over the phone. The Environmental Institute for Golf is a 501(c)3 organization, and gifts are tax-deductible. For more information on this program, contact Teri Harris, GCSAA managing director, development, at (800) 472-7878, ext. 4465.

## *Applying for Assistance*

In addition, if you or someone you know would like to apply for these funds, please contact Scott Woodhead, GCSAA senior manager of governance, at (800) 472-7878, ext. 4418.

## *Other GCSAA Relief Efforts*

The Hurricane Katrina Disaster Relief Program is just one of GCSAA's programs to support both GCSAA members and others who were affected by Hurricane Katrina. The association's other efforts include:

## *U.S. Golf Hurricane Katrina Relief Fund*

Just as it did for the Southeast Asia Tsunami earlier this year, GCSAA is participating with its golf brethren in the U.S. Golf Hurricane Katrina Relief Fund. A goal of \$5 million has been established for all participating organizations. GCSAA will provide a donation to the fund on behalf of its members. Learn more.

## *Golf Industry Show Hurricane Katrina Disaster Relief Program*

Working with its partners who conduct the Golf Industry Show, GCSAA will organize fundraising activities around the show, Feb. 9-11 in Houston (originally scheduled for New Orleans). Funds generated by this program will be distributed based on evaluation of need. Look for announcements about these activities in upcoming GCSAA publications.

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# Turfgrass Research: Fall Update

By DR. ERIC WATKINS

Assistant Professor, Turfgrass Breeding and Genetics  
Department of Horticultural Science  
University of Minnesota

Last year, many of our research plots were planted late in September, which is a couple of weeks later than we would like. About that time, we kept saying things like, "We can't let this happen again," or "Next year will be different." If everything would have gone as planned, we would have had all of our turf plots in by the end of the first week of September.

Surprisingly, not everything went as planned. Just before Labor Day, it was looking as if we would be on track to meet our deadline; however, our deadline soon passed. Each day we would watch the weather forecast, and each day it would include the chance of rain. The rains came just often enough that we were not able to get out in the field.

Fortunately, the rains finally stopped for a couple of days and on September 16 we were able to finish our fall turf plots for 2005. Several new turfgrass research studies were planted in the past month. Here are some the highlights:

The 2005 Kentucky bluegrass NTEP trial includes 110 selection and cultivars and has been planted in several locations throughout the country, including the St. Paul campus. You will be able to view data as it becomes available at the National Turfgrass Evaluation Program website ([www.ntep.org](http://www.ntep.org)) or at the



Low input fairway trial.

University of Minnesota Turfgrass Science homepage ([www.turf.umn.edu](http://www.turf.umn.edu)).

Velvet bentgrass has shown some promise as a possible species for use on golf greens in Minnesota, especially where shade is an issue. Throughout the past year, we have watched the velvet bentgrass entries in the 2003 NTEP greens trial go from being the most beautiful varieties to the ugliest plots. In order to better understand the reasons for this decline, we will be conducting management studies on several of the newer velvet bentgrass varieties on a native soil green at the TROE center.

Creeping bluegrass, the perennial form of *Poa annua*, has been an important component of the University of Minnesota research program for many years. In late August, we seeded a large turf trial in order to evaluate newer germplasm for important turfgrass characteristics. A creeping bluegrass management trial was also established as part of Sam Bauer's graduate research project.

Tall fescue is not used extensively in Minnesota; this is primarily due to its perceived lack of winterhardiness. Last spring, we established a tall fescue trial and all of the varieties survived the winter without any noticeable damage. This fall, we seeded two trials in order to determine if fall-established tall fescue can survive a Minnesota winter.

Perennial ryegrass has many attributes that make it a tempting option for turfgrass managers in Minnesota; however, it has poor winter hardiness and is highly susceptible to crown rust. Newer breeding material is being developed that will have increased winter hardiness along with enhanced rust resistance. A small turf trial with some of the newest breeding material was planted on the St. Paul campus.

Native grasses may eventually be an important component of lawns and other turf areas in Minnesota. We are currently



Seeding the Kentucky bluegrass NTEP trial

establishing breeding nurseries of both tufted hairgrass (*Deschampsia cespitosa*) and prairie junegrass (*Koeleria macrantha*). The prairie junegrass nursery will be composed of plants that were the result of a collection trip to Nebraska and Colorado earlier this summer. We recently planted a small tufted hairgrass turf trial that consists of newer breeding material.

Low-input turfgrass for golf course fairways are the focus of Sam Bauer's graduate research. The newest low-input fairway trial consists of over 20 different grass species maintained at various management levels.



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# Up-to-Code: *Run-off and Rinse-Down Risk*

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



As I was out on a recent job-site visit I couldn't help but notice the extensive silt-fencing that we were required to install and maintain to control rainwater and natural sediment. It reminded me of the complex systems available to treat and reclaim the golf course wash-down water.

The trend to add more control and requirements to your operation is hard to avoid. The methods for treatment can range from simple separation of the solids all the up to a self-contained biological wastewater treatment and recycling system. Finding the best one for your operation depends on your budget and your local governmental agencies.

The benefits of collecting and recycling your rinse-down waste are well documented. Finding a solution that combines the most benefits within the allowable budget and site constraints usually requires some effort. While there are

numerous options available, some considerations are basic to any solution that you might choose.

Locating the wash area on your site is a good place to start. Make sure that the location is conveniently located and large enough to accommodate your needs. Consider water supply and drainage at the wash pad location.

A new concrete slab is almost surely to be required for any new solution. The wash area must be large enough to allow for efficient rinsing of your equipment. The concrete slab will need to be thicker and stronger than standard slabs to control cracks (leaks) and accommodate the required drainage slopes. Separating solids is one of the most basic steps in any system and the pad drainage system will likely include a sump area or a trough to serve as a collection point.

After the solids are separated, the

major issue is

where to send the liquid. This is where the issue gets much more complex. Depending on your specific location, you may be able to simply discharge into ponds or a storm system. More aggressive treatment is typically handled with special equipment.

A good solution for your wash-down area should also include design accommodations for future expansion or refit for new E.P.A. requirements. Careful planning will even allow a new system to be phased in over a period of time, potentially spreading out the cost impact. Advancements in technology and market competition will surely deliver different options and solutions in the future and flexibility will surely be an advantage.

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



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# The Secret to Spectacular Fall Colors

By AUDREY HILLMAN  
Master Gardener

Why are some years good for fall colors when others are not? The best autumn colors come in years when we've had plenty of rain (so the trees are not stressed), warm sunny days and cool, cool nights.

Other factors such as soil conditions and genetics also contribute to the color change equation.

The whole process is a slow one, and it begins as the days start to get shorter in late June. This change in the amount of light causes the plant to produce phytochrome, the chemical that starts the process of dormancy.

A layer of cells is produced between the branch of the trees and the leaf stalk. This layer is called the abscission layer and it blocks the passage of water and nutrients (chlorophyll), which is the predominant pigment, begins to slow.

When chlorophyll no longer colors the leaf green, we began to see the other pigments that were previously masked. These carotenoids give the leaf its yellow, orange and brown colors.

Now, here is where the genetics fit in. Some trees also have the ability to form another pigment known as anthocyanin, which gives leaves a red or purple color. For anthocyanins to form there must be sugar present, so any weather condition that enhances the production and accumulation of sugars in the leaf helps with the intensity of the red color.

Sunny days result in a high production of carbohydrates in the leaf, and cool nights help to break those carbohydrates down into sugars. The cool nights also help to keep those sugars in the leaf instead of going to other parts of the plant. When the skies are cloudy and the nights warm, fewer sugars are produced and more are moved from the leaf, leaving us with less intense color to enjoy.

But what makes leaves fall off the tree? As the abscission layer gets bigger, it actually divides into two layers. One layer is protective and forms on the branch. The other is a separation layer and forms on the leaf stalk. Once both layers form, there is not much left to hold the leaf in place and down it comes.

A popular myth about fall color is that we need a frost to produce good fall color. Killing frosts and freezing temperatures actually stop the color change and kill the leaves. So the best color comes when the nights stay cool (40-45 degrees Fahrenheit), but not freezing cold.

So that's the process that brings about a wonderful display of fall colors. Enjoy it when it happens. Soon enough you'll be raking up those leaves, and it's nice to remember that at one point we really did enjoy them.

*Master Gardener Audrey Hillman is a landscape and garden designer in Emmitsburg, MD.*

163 Yard Par 3 eighth hole at the Refuge Golf Club in Oak Grove, Minnesota.



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## Minnesota Golf Course Superintendents' Association's Appreciation & Recognition Banquet

**December 7, 2005**  
*The Wilds Golf Club*  
Prior Lake, Minn.

**Invitations will be  
mailed by November 1**

**All MGCSA members and spouses  
are encouraged to attend.**