Velvet Bentgrass—
(Continued from Page 20)

the 1-9 scale (LSD0.05 = 0.5) (University of Minnesota, 2004).

Based on these trials conducted around the United States, the velvet bentgrass culti-
vars 'SR 7200' and 'Vesper' had consistently higher ratings; therefore, they would be good cultivar selections for golf greens. However, each golf course superintendent should evaluate cultivars in his/her respective area to assist in determining the best cultivar for their situation.

Seeding Time

Each turfgrass manager deals with different environmental conditions, which affect the establishment of any turfgrass species. Based on the environmental conditions in the location where velvet bentgrass is being established, the proper seeding time will vary. In the Northern United States (where velvet bentgrass grows best) the best time of the year to establish velvet bentgrass is during the late summer and/or early fall, preferably around the end of August to the beginning of September (Torello and Lynch, 2005). During this period, the tempera-
tures are high enough for seed germination, there is a reduced threat of disease, and fewer weeds germinate in the disturbed soils (Christians, 2004).

Seeding Procedures

The correct seeding procedure for velvet bentgrass golf greens involves seedbed preparation, starter fertilizer, seeding and covers. The preparation of the seedbed for planting a velvet bentgrass green is the same as the preparation to seed any golf green. A fertilizer high in phosphorus, such as a 1-2-1 ratio, needs to be incorpo-
rated into the seedbed. This fertilizer should be applied at a rate between 1.5 and 2 lbs of N per 1000ft² to ensure good velvet bentgrass germination (Skogley, 1975). Once fertilizer is incorporated, the velvet bentgrass should be seeded at a rate of 0.33 to 0.67 lbs per 1000ft² (Fermanian and Voigt, 2005). After seeding, it is highly recommended that the seeded area be covered with a germina-
tion blanket to reduce the potential loss of seed due to rain, wind or other factors. The normal maintenance practices for any golf green establishment (i.e. adequate watering, no traffic, constant monitoring, etc.) should be followed after seeding until the velvet bentgrass begins to germi-
nate. Velvet bentgrass seed typically germinates in five to seven days, however it may take longer based on environmental conditions (Boesch, 2005).

Management

Once the velvet bentgrass begins to germinate, it is time to begin specific man-
agement techniques. This includes the same basic management tasks for creeping bentgrass golf greens, but with different techniques. The main management prac-
tices that are different for velvet bentgrass golf greens are mowing, watering, aerify-
ing, topdressing and fertilizing.

Mowing

The process of mowing is essential to the precise management of golf greens. The average heights of cut for velvet bent-
grass range from 0.110" to 0.560" (Boesch, 2005 and Fermanian and Voigt, 2005). Although velvet bentgrass can be cut up to 0.560", higher heights of cut are not rec-
commended because of the rapid thatch accumulation (Fermanian and Voigt, 2005). Further, velvet bentgrass performs best when it is mowed at a height of 0.110" to 0.125" on greens, because it leads to denser velvet bentgrass growth.

(Continued on Page 29)
EXPO IS LOOKING EXCELLENT!

By Paul Diegnau, CGCS
Keller Golf Course

Winter educational opportunities are just around the corner and the 2008 Green Expo is shaping up to be a solid collection of seminars and presentations. The upcoming Expo will be held January 9-11 running Wednesday through Friday as in previous years.

Super Tuesday

The offerings for Super Tuesday on January 8 are very strong. Daylong topics include a "how-to" on shoreline restoration, a class on using your digital camera to its fullest potential and an entire day dedicated to landscape design basics. I, for one, hope to send my gardener to the landscaping class and I may attend the photography class to pick up a few pointers.

Wednesday

Wednesday starts off with a bang! Bob Fitch, Executive Director of MNLA and the man in charge of the Green Expo has inked a deal with the Minneapolis Convention Center that will allow us the use of three 400-seat auditoriums and one auditorium that can seat 2,000 people. All the auditoriums are theater-style seating with state-of-the-art electronics and all are accessed from the main registration area opposite the trade show floor. This year the University of Minnesota research updates, presented by Drs. Hogan and Watkins, will run PRIOR TO the keynote speaker, so make sure and arrive earlier than you may have in past years.

Keynote Speaker

The keynote speaker will be Dave Horsager, a local resident and renowned motivational speaker. Mr. Horsager will offer a unique blend of amazing illusions, humor and powerful messages. You won't want to miss him.

Thursday Morning

Thursday morning will again feature a half-day seminar on a golf-related topic. This year, Dr. Thomas Nikolai from Michigan State will present his talk on all things related to green speed. This session will start at 7:00 a.m. and end at noon so don't stay out too late the night before. Other golf topics of interest include Dr. Van Cline from the Toro Company speaking on maintenance equipment fuel source technology, and Dr. Randy Cush from Syngenta will touch on crop oils and the role of inert ingredients in plant protectant formulations. Mark Esoda, CGCS, from the Atlanta CC will talk about proven techniques for enhancing your influence and effectiveness. Raphael Barajas returns to offer additional education opportunities on safety and turf maintenance for the Hispanic component in our industry. For the equipment technician in your organization, several interesting topics will be covered. Schaeffer Oil Company will have one of its senior scientists discussing the ins and outs of motor oils and lubricants as well as possible issues associated with the use of biofuels. An educator from Kohler will present in-depth information on engine failure analysis.

Thursday Afternoon

The highlight of Thursday afternoon could prove to be a panel discussion on "Managing Golfer Expectations." Members of the panel will include a Superintendent, a General Manager, a Golf Professional, a University Researcher/Educator, a MGA representative, and a USGA representative. The success of this session will depend on our memberships' willingness to participate and share ideas. I hope we take advantage of this wonderful opportunity. Several additional afternoon talks include Melissa Gugliatta from Syngenta speaking on chemical, biological and mechanical management options for small, shallow bodies of water, and Mark Esoda, CGCS, speaking on working with state regulators to develop a water management plan for golf courses.

Friday: Pesticide Recertification Day

Of course, Friday is pesticide re-certification day. Dr. Chris Williamson from the University of Wisconsin-Madison, will discuss the latest and greatest regarding Gypsy moth, Emerald Ash Borer, ants, Japanese beetle and earthworms. Dr. Larry Stowell of thePACE Turfgrass Research Institute will address moss and algae control measures on putting surfaces and provide an update on Waitea patch. I have only briefly touched on the topics relevant to golf course management. There is a multitude of sessions that cross over various segments of the Green Industry, so choices will be extensive. I should also mention that the entire membership of the Wisconsin GCSA has been added to the Green Expo mailing list so look for many more of our colleagues from the east to attend in 2008. The upcoming Green Expo is shaping up to be the best yet. Mark your calendars now!
Three new TriCure surfactant products to improve your turf

Advanced formulation improves on TriCure Surfactant's effect in treating and preventing hydrophobic soil conditions. **TriCure AD** provides optimum moisture balance critical for the prevention of dry, hydrophobic soil conditions, and successful water management.

Designed for treatment of native soils with high silt/clay content that are prone to compaction, **TriCure Micro** is formulated to penetrate heavy soils and treat the smallest micro pore space aiding infiltration and desired water holding.

An effective irrigation surfactant for use in improving surface water flow from rain and irrigation, **IrriCure** is designed to reduce puddling and surface runoff, as well as speed the 'dry-down' on soil surface.

*Reinders*
Solutions & Supplies for the Green Industry

Pat Walton  612-770-2015
Dennis Salwei  763-607-0450
Jerry Deziel  763-607-0445
Fred Anderson  715-456-0971

MINNEAPOLIS, MN  6801 Shingle Creek Parkway, Brooklyn Center  (763) 503-0200
www.reinders.com
On June 27 we welcomed Mr. Sam Bauer, a native of Durand, Wisconsin, and a graduate of the University of Minnesota. Sam's position is the Equestrian Course Superintendent for the 2008 Olympics. As I've mentioned before, the Equestrian events for the Beijing Olympics will be taking place on parts of the golf courses of the Hong Kong Golf Club. The 17-kilometer track with 27 jump sites winds its way through all three golf courses. The summer of 2006 saw the construction of the track along with the 27 jump sites. The Summer of 2006 is time that all connected with the Hong Kong Golf Club will not soon forget. This period of time and the encompassing construction gave a whole new meaning to the words of chaos and upheaval. Everyday brought a new adventure, and not always pleasant. As part of the process leading up to the Olympics a test event will be held over a small section of the Equestrian Course on August 18th. The purpose of the Event is to see if the track is suitable, and if all other concerns relating to the event will run smoothly. Warm-up and cool-down areas, the veterinary staffs, media areas, security issues, concessions, etc. will go through a shake down during the test event. This will enable all concerned to make changes and adjustments within the next year in preparation of the actual event in August 2008.

Sam literally stepped off the plane, caught up on his sleep and was thrust into putting together a staff and getting the track prepared for the Test Event. Time change, a new culture, hot, humid weather, warm season grasses being grown on pure bunker sand, mole crickets the size of small frogs, a wild boar -- that's baptism under fire on a slow day. I keep telling him to be patient, it will get busier and the weather will get hotter and wetter! Sam fortunately brought some wonderful, dry weather with him from Wisconsin, as we've had no rainfall in two weeks, which is very unusual for this time of the year. As the Olympics draws nearer, we'll be writing some articles and adding some great photos of what the entire process entailed. In spite of the stresses and chaos, it has been an amazing experience to date. I look forward to the actual event itself next summer.

The recent problems with contaminated products being sent to the United States and other countries from China has been a source of major concern not only for the affected countries, but Red China itself. This has proven to be a great source of embarrassment for the government in Beijing. The government official that headed up the department for food and drugs in Beijing was convicted of taking bribes, which led to many of the problems. The official was jailed, had a quick trial, found guilty, sentenced to death, and quickly executed. End of story.

Just recently in the far northern reaches of China a massive network of child slavery was uncovered. A number of small companies was found to be using children as young as eight years old to work in the brick-producing factories of the region. Throughout China the largest component in construction is brick and concrete. With all the construction being undertaken in Beijing in preparation for the Olympics, and many new construction projects undertaken with the large demand for upscale housing by the rapidly growing middle class, bricks are in great demand. Parents into slavery had either sold many of the children or the children had been kidnapped and sold. To date, the number of people found in slavery numbers in the thousands with the Red Chinese government's investigations continuing. Reality is that in a country with such a large influence on the world economy, slavery exists in large numbers.

A recent photo on the front page in the South China Morning News newspaper showed five convicted Chinese criminals (Continued on Page 25)
An Adventure in Life—
(Continued from Page 24)

blindfolded and facing a government firing squad. Criminal acts and justice is handled quickly in China.

Punishable by Death

In many of the Asia countries there is little tolerance for crime and crime involving drugs. When flying to Singapore, I noticed that on my airplane ticket was printed the following notice: Drug Possession is Punishable by Death. That does get one’s attention very quickly.

I recently had an experience that gave me an adrenalin rush for a couple of minutes. While on my normal early morning tour of the courses, I happened upon about a 6-foot long King Cobra snake. Rather than just try to slither away into the brush along side the cart path, it did an about face, stood up on its tail, and was preparing to challenge me. I reversed my cart as quickly as possible and did a hasty retreat. By the time the adrenalin rush, or was it fear, subsided, I was too late in getting my camera out for a photo before the Cobra did finally move off into the vegetative undergrowth. This definitely provided me with a respect for venturing into heavily vegetative areas looking for an errant shot when playing golf.

It still amazes me to witness how much abuse some of the warm season grasses can tolerate and snap right back. Bermuda grass and Zoysia can be scalped severely and recover very quickly, especially in hot weather. Turf that I have seen scalped, it (the turf) was comprised of bent grass or Poa, would never recover. With warm season turf, add a little water and heat and with a couple of days recovery is pretty well complete. Bermuda grass likes fertility. On our older varieties of Bermuda grass greens, 1 to 1½ pounds of actual nitrogen per month per thousand square feet are normal for good, healthy growth. With our heavy rainfall amounts in the summer months, adequate Calcium levels in the soil are critical for good disease control. The two biggest pests we deal with: Mole Crickets and Leaf spot.

Macau, which is off the coast of Red China, can be reached from Hong Kong in a Hydro-boat in about 45 minutes. This is a wonderful place for a weekend trip. This gambling mecca has overtaken Las Vegas as the highest revenue producing location. It is amazing in that the island and area is very small, nothing at all on the scale of the largeness of Las Vegas. There are very few shows to be seen. For the non-gambler, there are extensive markets and a lot of history to be viewed and learned. The newly found rapidly growing Chinese middle class is gambling its dollars away at a vigorous (Continued on Page 26)
An Adventure in Life—
(Continued from Page 25)
pace. Many American gambling interests are investing and moving into the Macau market. Steve Wynn of Las Vegas fame just recently opened one of the largest casinos in the world in Macau.

Singapore is a very enjoyable location for a vacation. My perception was that Singapore would be a very dirty, crime-ridden city and country. I guess my perception came from seeing the city in movies, etc. I have found the city to be very modern, robust and growing, but expensive. Some of the golf courses are excellent and afford some great views of the Singapore harbors and the seaside. The weather is hot and sunny, the beaches white, the golf great, and the accommodations wonderful. There is plenty to see and do. For me, I was reminded of trips to Hawaii.

Next week the European Tour officials will be paying us a visit in preparation for this year’s Hong Kong Open taking place here in late November. Sure seems hard to believe that it will soon be time to get ready for another Open. Preparing for the Open last year was fun and the tournament itself was very satisfying. I have been fortunate to be able to be at a site that hosts a major tour event each year. One of the goals in my career was to be involved in some type of golf tour event.

Sports have always been a big part of my life and lifestyle. Even being in Hong Kong, I’ve still managed to stay involved and up-to-date through publications I receive, ESPN and the Internet. In the Asian countries soccer and rugby are the sports of choice and interest. Rugby is somewhat interesting, but soccer still doesn’t hold my interest. Fortunately American football is around the corner and another season will soon be upon us. It is interesting to see how little is known about American football here.

For me, a life insight has been to see, understand and realize that the Chinese people have very little knowledge or care what is happening elsewhere in the world. Family, having food, clothes and shelter is their lot in life and sole focus of their daily living. As a culture or peoples, rulers and governments have always controlled the people's lives. This control and rule has created a culture of people that have a very hard time in thinking or making decisions. A large part of the population, especially the older generations, appears to be almost robot like. It has been my observation that when something out of the ordinary occurs, a human freeze occurs. Nothing will happen or proceed forward until someone who has the ability to think or make a change steps forward to make a decision. Even when that occurs, there is a huge reluctance to change, as that isn’t the way it has previously been handled or the process accomplished. This I view as the major stumbling block for this culture to move forward with any type of eventual real independence. The hope for the Chinese people really lies with the younger generations. The younger people are being strongly influenced and educated through the computer and the Internet age. This has and is enabling the younger people to realize and understand that thinking is good and that there are many different societies in the World. The future for independence, freedoms and eventually a form of democracy will come to being through the young Chinese.
The Tessman Company
Hires McCann and Poppitz

The Tessman Company, serving the green industry since 1950, is proud to announce the addition of two salespeople.

Tom McCann comes to The Tessman Company with 19 years of industry sales experience and 20 years of golf course management experience. Tom’s other credentials include Soil Science degree from the University of Minnesota; Class A Golf Course Superintendent, MGCSA; Member - Board of Directors, MGCSA, and Class A member - GCSAA.

Mark Poppitz brings two years of industry sales experience and 30 years of golf course management experience. Mark’s other credentials include Turf Maintenance and Management Degree; Certified Golf Course Superintendents Association - Achieved national certification level, and an active member of the Minnesota Golf Course Superintendents’ Association.

Both may be contacted at (651) 487-3850.

Aaron Johnsen Wins Essay Contest

Aaron Johnsen recently won the GCSAA Graduate Student Essay contest. His essay is re-printed in this issue of Hole Notes beginning on Page 18.
Frequently Asked Questions About Green Aerification

By TOM PROSHEK
Superintendent, Brackett’s Crossing Country Club

Why do we have to aerify our greens, they look good?

Reduces traffic stress, reduces thatch, increases root development, increases water infiltration, releases gases in soil from decomposition.

Why aren’t the holes filled after aerification? Not enough sand on greens? Too much sand on greens? How long until the height of cut (H-O-C) will be lowered on greens after aerification?

We always mow our greens at same H-O-C from open to close.
Typically mow greens (with riders couple times) seven days after aerification (minimize sand removal).
Quality of cut after first couple times post-aerification (sand-ing), is gone after first couple greens cut (sand is abrasive and dulls mowers instantly).
Walkers typically mowing 10 - 14 days after aerification.
Eliminate Primo (turf growth retardant) to insure hole recovery.
At Brackett’s Crossing we fertilize greens five days prior to aerifying to insure turf growing and to help aid in hole closing.

Heavy watering to set sand into the turf canopy (Mother Nature rain increases this process).
Speed at which sand sets into turf canopy determines when mowers can mow for first couple of times. If we mow early, this will defeat the purpose of sanding the greens.
If we don’t apply sand at all, we can mow greens without interruption (not desired).
Sanding greens maintains soil structure (prevents layering), playability (smoother greens), reduces organic matter build-up (decaying root zone material), reduces thatch build-up (decaying growth crowns).
Now we have to weigh previous scenarios against playable green surface for the golfers.

Biggest Challenge

Biggest challenge we have to deal with is how much to water, when to mow for first time, when to mow with walkers, keeping in mind not to remove too much sand, when to re-apply Primo, etc.
Typically aerification procedures subside from 14 days to 21 days. This is determined by size of holes, depth of holes, how much sand applied, proper irrigation to set sand, temperatures.
Weather conditions and time of year have effects on recovery time with aerification hole healing.
Goal is to fill all holes on greens, difficult to achieve (typically less than 2% left unfilled).
If we add more sand to greens prior to first mow, it just prolongs our first mow.
Typically between days 14-21 we are mowing with walkers, apply Primo and working towards our weekly green maintenance program.
Light top-dress, followed by rolling (Mondays).
Rolling greens total of three times per week, otherwise damaging to turf.
Applying Primo every two weeks (consistency of turf growth)
Brush dragging, spiking or needle tine greens as needed until next aerification.
To sum up aerification, extremely valuable to the quality of turf, yet disruptive to play for couple of weeks and not fun for staff during aerification.
Velvet Bentgrass—
(Continued from Page 21)
(Boesch, 2005). The frequent mowing that occurs on golf greens increases the transpiration / water loss; therefore, irrigation inputs need to be understood.

Irrigation

Each turfgrass species needs varying amounts of water to remain healthy, especially on golf greens. It is difficult to specify the exact amount of water that velvet bentgrass needs due to the variety of management practices, environmental conditions and soils. As was discussed earlier velvet bentgrass needs less water than creeping bentgrass and can survive by replacing 60% of ET during the summer (DaCosta and Huang, 2006).

Aerification

Due to the thatch problems associated with velvet bentgrass, aerification is a necessary management practice. Traditionally creeping bentgrass golf greens are core aerified; however, slicing aerification is better for velvet bentgrass (Skogley, 1975). Since copious amounts of thatch accumulate quickly, the aerification process should occur at least every fall and preferably two times a year (Christians, 2004).

Topdressing

Along with appropriate aerification, topdressing is an essential component of velvet bentgrass management. Topdressing on velvet bentgrass greens should accompany a vertical mowing program. Topdressing should occur once every 2 to 3 weeks, with vertical mowing occurring every month (Boesch, 2005). The topdressing should be applied in light amounts that can easily be brushed in to insure minimal disruption to golfers (Christians, 2004). This topdressing program will not only reduce the thatch accumulation, but also improve the quality of the playing surface (Skogley, 1975).

Fertilizing

Fertilization is another component of a good management program that will improve the quality of the golf green. Velvet bentgrass requires 3 to 5 lbs of nitrogen per 1000 ft² per year (Skogley, 1975). Unfortunately, this is not a hard rule, because this amount can vary depending on soil type, rainfall and traffic. On fine-textured soils, 2 lbs of nitrogen per 1000 ft² per year can lead to good results (Torello and Lynch, 2005). While, on sandy soils, 5 to 7 lbs of nitrogen per 1000 ft² per year can achieve good results (Boesch, 2005). No matter what conditions are influencing fertilization rates, the research shows that velvet bentgrass requires lower nitrogen rates to limit potential problems (Skogley, 1975).

Maintaining velvet bentgrass involves the traditional putting green maintenance practices: mowing, watering, aerifying, topdressing and fertilizing, with some twists. By following the proper establishment and management techniques for velvet bentgrass, a high quality golf green can be produced.

After examining the advantages and disadvantages of velvet bentgrass, along with the proper establishment and management techniques, the decision to use velvet bentgrass on a golf green can be made. Velvet bentgrass produces an elite playing surface due to its characteristics and requirements. Past problems, which led to the formation of negative connotations towards velvet bentgrass, are manageable. With the recent release of new velvet bentgrass cultivars and an understanding of the topics in this paper, the use of velvet bentgrass on golf greens can occur.

(Editor’s Note: References used in this article may be found at www.mgcsa.org.)
In Bounds: Change and Flexibility

By JOHN “JACK” MacKENZIE, CGCS
North Oaks Golf Club

George joined me on my way to work today, George Gershwin and his Rhapsody in Blue that is. Yesterday it was John, Paul, Ringo and another George and tomorrow it may be Cher or even Garth. Recently my attitude regarding change is good, very good. Even on the golf course.

A Once staunch proponent of half-and-half mowing, so classic and beautiful in its simplicity, my membership swayed my thoughts through mandating a stripped cut. This change came even after lengthy discussion about wear and tear on equipment, contamination of our new first cut low-mow bluegrass with Poa seeds from the fairway and the additional time necessary to complete the task ahead of play. As the one ultimately accountable for my club’s agronomy, budget and equipment purchases – I was acting in a responsible manner.

The mowing design, however, really didn’t matter to me as long as we kept ahead of play and provided a consistently great product. And although some felt my hesitance to cross-cut the fairways was due to a retentive issue, change came quite quickly as soon as the club initiated a new mowing pattern.

Change is good. The fairways do look great. It is too soon to tell if there is contamination and the effect that wear and tear will have upon the equipment, but the visual impact is quite different and appealing to many. From my perspective I am okay with the new style and I damn well embraced it.

So if they want a water cooler on every tee, fantastic. Or perhaps the addition of a senior set of tees, let’s go for it. Even the decision of bunker rakes inside or outside of the bunkers is left to the discretion of the players through committee action for me to implement. Painting the soil in the cup sets? I’m right on top of it. None of these changes is worth fighting a battle over.

Especially if that war would potentially end up with a fatality, me. We all know of a time or two that superintendent bullheadedness has sent a basically good guy packing. Agronomics often has nothing to do with our job. It boils down to politics and who is in charge.

In my early years I was at a club where the general manager was told by the club president to fire the food and beverage manager due to a personal tiff. The GM refused on the grounds that the said employee was an asset to the club and the President’s accusations were inaccurate and not based upon the individual’s job performance. The GM’s contract, due shortly to be renewed, was not. The F&B manager was retired at the same time. Not too fun to watch, but I learned a lesson.

So what battle would I fight? There isn’t one. The State of Minnesota has a law that allows employers to fire employees at will and without any provocation. I am employed by the membership and will bend to its ways. My success as superintendent will be measured by how well I embrace change and my flexibility related to the demands of my membership.

Tomorrow my son Tyler and I will share the cab to work. It is his turn to choose the music. Hmm, who will it be? Weird Al Yankovic, Thirty Seconds To Mars or Eminem. Change is good...right?