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Water-Lok

Golf courses in the northland are adopting the application of mineral treatments to their turf. Water-Lok is an all-natural product that effectively reduces everyday watering while improving turf health. Water-Lok is composition of volcanic rhyolite and fresh water diatoms that became "hard-pack" on an ancient lake bottom millions of years ago, as the lake disappeared. Today, Water-Lok minerals are mined from the freshwater lake bed and pulverized to soil-like consistency.

The product, applied as a topping, is spread over aerated grass surfaces and watered-in to root level, where particles of Water-Lok perform as tiny reservoirs that hold water in the soil, releasing it as needed to turf and plant root systems.

"It took only a week to see improvement on areas that would not green or retain water," says Bill Lewis, Designer for Black Bear Golf Course in Cloquet.

Water-Lok has the potential of being a great new tool for surfaces that are hydrophobic.

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The State of Minnesota is the first state in the country to grant Emerald® fungicide state registration. Emerald® fungicide is the latest advance in turf disease technology and is now available to help turf managers gain effective control of dollar spot, one of the most common and troublesome turf diseases. Emerald®, which recently gained registration from the United States Environmental Protection Agency, is a completely new chemistry that consistently demonstrated unmatched performance against dollar spot in university-based and golf course trials across the country.

Boscalid, the active ingredient in Emerald®, is classified as an inhibitor of respiration within the fungal cell. It is highly effective because it deprives these cells of energy and essential building blocks for different cellular components. Boscalid is unique since its mode and site of action differ from that of other turfgrass fungicides. This means that dollar spot – which is resistant to other chemical classes of fungicides – can be controlled by Emerald®.

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It's In the Hole.....



Ella Rachael Horgan

Cindy and Brian Horgan became proud parents of a little Junior Scientist on August 25th. Her name is Ella Rachael, 5 lbs., 10 oz. Everyone is doing fine. The only remaining question is where she'll get her B.S. degree - U of M or MSU?

Congratulations also go out to Sheila and Jeff Vinkemeier on their newborn Daisy Belle. Daisy decided to

come nine weeks early and weighed 3 lbs., 15 oz. at birth. Everyone is doing fine and Daisy's two-year-old sister Lily expects her sister home in early September.

MGCSA MEMBER BREAKS SCORING RECORD AT STATE GOLF TOURNAMENT

MGCSA member **Jeff Pint**, New Prague Golf Club, and his partner, Nathan Proshek, son of MGCSA member Scott Proshek, broke the Minnesota Golf Association scoring

record for most strokes under-par en route to their 3-stroke victory at the 41st MGA Four-Ball Championship at Golden Valley Golf & Country Club.

Pint and Proshek recorded an 11-under 62 on the second day to add to their opening round of 64 for a 36-hole total of 20-under 126 on the 6, 704-yard course. The team opened up Wednesday's round with an eagle-3 on the par-5, 486-yard first hole and managed another eagle on No. 4, followed by birdies at Nos. 6, 10, 13, 14, 15, 17 and 18. They parred the other holes.

Jeff also won the MGCSA Championship in 1999 making him the first Minnesotan to win both an MGA and an MGCSA golf championship!



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Dollar spot's never seen anything like new Emerald® fungicide. Emerald is the first all-new class of fungicide chemistry in years—and that's good news for superintendents battling resistance issues. Emerald sets a new standard for dollar spot control, offering you the first fungicide to reliably control dollar spot for three to four weeks with a single application. If you're tired of losing sleep over dollar spot, now you can rest easy knowing Emerald is on the job. It's the only fungicide you can really trust to consistently provide you with dependable dollar spot control for weeks at a time. It's time to make room in your fungicide rotation for the next generation of dollar spot control—Emerald fungicide. To learn more, visit www.turfacts.com.

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BASF

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September 8, 2003
STODOLA RESEARCH SCRAMBLE
OAK MARSH GOLF COURSE

Host Superintendent: Robert Porter
Oakdale

October 13, 2003
FALL MGCSA GOLF MIXER
LONG PRAIRIE COUNTRY CLUB

Host Superintendent: John Monson
Long Prairie

January 7-9, 2004
MINNESOTA GREEN EXPO
Minneapolis Convention Center
Minneapolis

January 27, 2004
GCSAA SEMINAR
"Maximizing Turfgrass Disease Control"
Instructor: Houston Couch, Ph.D.
SITE TO BE DETERMINED

January 28, 2004
GCSAA SEMINAR
"The Microbiology of Turfgrass Soils"
Instructor: Richard Cooper, Ph.D.
SITE TO BE DETERMINED

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Remembering Riviera—

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only three returned. Andrew Smith, Drew as he was known to most, suffered a heart attack and was pronounced dead that evening while dining at a restaurant. Drew, was a part of our team and Friday morning learned we had lost one of our team members. As a superintendent I have become swift to spot the young up and comers. Drew was one of these young men. His colleagues testified that Drew was fitted for a pace maker years prior and it did not work properly that evening. Friday morning Matt Morton dedicated our efforts and the 2003 Nissan Open to Andrew Smith.

Needless to say we all came together and delivered an outstanding product through the rest of the tournament.

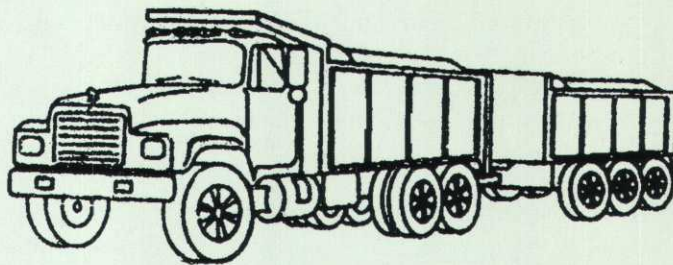
I may have strayed from what you as a reader may be looking for when I share my experience at Riviera. I could tell you about the Poa greens stimping 13 or the how the kikuyu grass is like a brillo pad, and rye grass is considered a weed. I could even go into details of how Mr. Latshaw made the call to spray Proxy on Wednesday evening, for seed head suppression, the day before the tournament. I could go into all that, but what it really comes down to is this; enjoy what you do, do it well, and remember, life is too short to worry about green speeds, carts on the green banks,



Mike Kelly, right, with Juan, the course setter at Riviera CC.

or divot boxes. Don't get me wrong, it's easier said than done, but we truly have to put it in perspective.

My experiences at Riviera, Hazeltine and Interlachen were extremely enjoyable and educational. I have come to the conclusion that this business, although trying at times, is one that produces men and women of character, and the comrades that I have met along are truly all professionals. To watch a variety of individuals from all walks of golf course life come together and make a cohesive team dedicated to the playability of the tournament was inspiring.



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PROUD SUPPORTER OF RESEARCH AND EDUCATION THROUGH THE MGCSA

Winter Injury of Putting Greens 2003

By DAVE MINNER

Extension Turfgrass Specialist

Iowa State University Horticulture Department

Winter injury is nothing new to putting greens in Iowa. In fact, several known causes for winter turf injury include desiccation from open dry winters, suffocation under ice, low temperature crown hydration in low wet areas, and snow mold. Each year presents a unique combination of winter stress factors that ultimately determine the degree of turf injury. The 2001-02 winter brought 90 continuous days of snow cover that prevented desiccation by providing a protective blanket of snow, however heavy disease pressure occurred from both pink and gray snow mold. Freeze thaw cycles caused some of the snow to melt and refreeze as a two-inch layer of ice. In spite of these potential problems there was very little turf lost to winter injury on putting greens in 2001-02. Fast forward to the winter of 2002-03 and we are finding out that some courses in the central Iowa area have experienced putting green injury that ranges from 95% turf loss to absolutely no injury at all. The following is an update pertaining to observations from our research facility in Ames and from visiting twelve golf courses in central Iowa. Thanks to all the superintendents that shared their experiences with winter injury and their strategies for making the greens playable as soon as possible.

+ Putting green turf was killed as the result of winter desiccation. This is a cumulative type of injury that progresses as conditions remain dry from December through March. Conditions that exacerbate the problem are: no snow cover, sunny days, windy conditions, no turf covers, and limited soil moisture from rain, snow or irrigation.

+ Winter injury has been observed on putting greens containing creeping bentgrass varieties 'Pencross', 'A-4', and 'L-93'. Demonstration plots at Veenker Memorial Golf Course indicated that 'A-4' was injured more than 'Pencross'. Bentgrass varieties are typically selected based on turf quality and performance during the summer rather than their ability to tolerate winter stress. L-93 is one of the newer generation bentgrasses that have been successfully used in Iowa. It has excellent summer performance but is slow to green up and start growing after the winter. At this point there is no reason to select one variety over another based on the many types of winter injury that may occur.

Golf courses containing mostly *Poa annua* greens were also severely injured. Typically *Poa annua* is more susceptible to all forms of winter injury than creeping bentgrass. This year winter desiccation appeared to cause severe damage on both creeping bentgrass and *Poa annua*. When *Poa*

annua has been severely damaged it is a good opportunity to increase the bentgrass population by overseeding.

+ None of the greens that were injured used winter protection covers, however many greens that were not injured also did not use winter protection covers. At this point I have not had any reports of injured greens that were covered. Please let me know if you used covers and still experienced injured greens. The Evergreen cover by Covermaster is the most widely used cover for winter protection. This year it appeared to me that the Evergreen covers retained more moisture in the grass mat and also kept the green from thawing out before non-covered greens. Putting green covers would have been especially helpful this year in preventing desiccation injury. Courses that can't afford covers often use a heavy layer of topdressing to somewhat bury the green and prevent excessive drying of the grass crowns. Heavy topdressing was beneficial in reducing the winter desiccation injury experienced during the winter of 2002-03.

+ Winter water was tanked to some greens and applied by hand watering. Winter watering significantly increased winter survivability of greens. A single watering in January helped some greens and watering on several occasions during December, January, and March helped others that were newly established in the fall.

Irrigation systems were turned on in early April and it was soon realized that some of the grasses were not going to recover. Kentucky bluegrass and perennial ryegrass on tees, fairways, and green surrounds greened up normally with negligible turf loss. *Poa annua* on greens, and in green surrounds, and on fairways and tees exhibited various degrees of turf loss. *Poa annua* is genetically diverse and there are often hundreds of clones on a single golf course. Some clones were completely killed and others were hardly damaged.

Injured areas of *Poa annua* and creeping bentgrass often turned tan and in severe cases the grass was bleached completely white. Lower mowing seemed to increase turf injury from desiccation. Greens that allowed winter play showed the most severe injury in a 10-foot circle around the pin. After initial green up it was observed that some greens were showing as much as 50 to 90% more brown tissue than other non-affected greens.

Over the next two weeks greens continued to show new green shoots emerging from the brown turf.

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Winter Injury of Putting Greens—

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However, most samples taken on 24 April, and placed in the green house, did not show any new initiation of turf shoots from the browned turf. In other words, most of the new green shoots that survived should already be visible by the end of April. These shoots will continue to grow and fill in. Superintendents should not anticipate that new shoots would initiate from the base of brown plants after the first of May. In the future Superintendents would be wise to

In the future Superintendents would be wise to sample the greens every two weeks after the ground thaws when they suspect winter injury. The cup cutter samples can be watered and placed in a warm sunny location to determine just how well the green will recover.

sample the greens every two weeks after the ground thaws when they suspect winter injury. The cup cutter samples can be watered and placed in a warm sunny location to determine just how well the green will recover. A 2-liter pop bottle cut in half makes a perfect miniature green house for growing and observing recovery of cup cutter cores. This will help you communicate with management and prepare a strategy for re-establishment if needed.

Superintendents are using a variety of seeding techniques to quickly reestablish grass in the most severely damaged areas. Most are using multiple seeding techniques to insure rapid and uniform turf cover. Hole punching with a solid quadra-tine followed by seeding and topdressing has produced tufts of grass on 1-inch centers. A light verticutting in two or more directions followed by seeding and light topdressing has also been effective in placing closely spaced rows of turf. Pull behind spikers provide a one inch by 1/16-inch slit for grass seed to drop into. The trick with all methods is to insure that the seed is planted within the thatch and mat so that it does not rest on the surface where it will not germinate. The seed needs to be covered by a thin layer of topdressing so that it will remain wet and germinate. Some golf courses have elected to close the greens for a few weeks while seeding and reestablishing the grass. Covers have been used to speed the establishment process on greens that are closed for play. Aerifier holes that are 2 to 3 inches apart will cause a bumpy surface that takes too long to fill in. A combination of punched holes, slicing, verticutting, broadcast seed, and light topdressing provides the best chance for providing a smooth surface in a short amount of time. Grass will estab-

lish faster if traffic is limited, however, most courses are electing to keep the greens open for play while simultaneously establishing new grass from seed. When possible limit play on the newly establishing grass. It is also not necessary to add traffic by mowing greens if they do not have enough grass to warrant mowing. Raising the mowing height will help greens recover faster.

Here are some tips to help understand and prevent winter injury by desiccation:

- + Covers almost always prevent or reduce injury from winter desiccation. In the absence of covers heavy winter topdressing is the next best choice for preventing winter desiccation.

- + Winter play can accentuate winter desiccation injury.

- + *Poa annua* is more susceptible to winter desiccation injury than creeping bentgrass, however both species experienced severe injury this year on certain golf courses.

- + Greens exposed to wind and direct sun experienced the most injury.

- + The ability to provide winter watering of greens is very important in years when desiccation is prevalent.

- + Sampling of the greens every two weeks after the ground thaws in late winter will predetermine the ability of the green to recover and help the superintendent develop a timely re-establishment strategy if needed.



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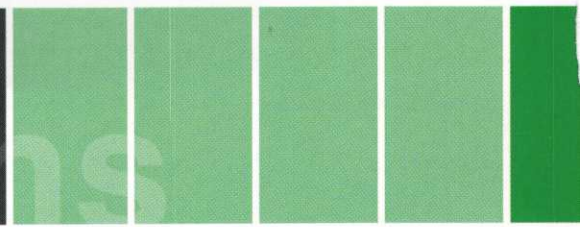
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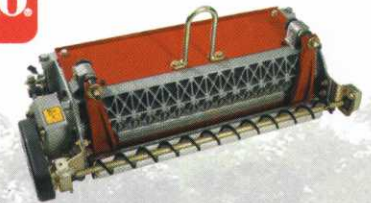
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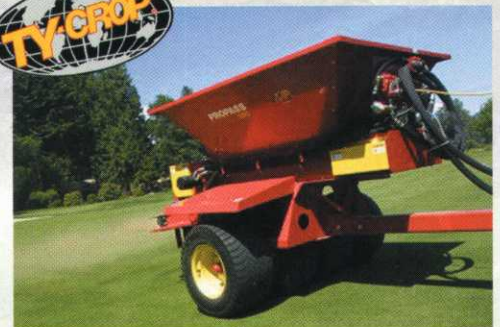
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