



“I’ll make dollar spot pay.”



“Even the best turf can fall victim to disease. But with **Honor® Intrinsic™ brand fungicide**, I won’t go down easily. On top of unsurpassed disease control, research shows that **Honor Intrinsic’s plant health benefits** give me a better root system so I can stand up to stresses like drought and moisture events, extreme temperatures, and aerification—better than ever.”

Intrinsic brand fungicides don’t just fight disease; they give turf the resilience to endure stress. Find out more by contacting Randy Lusher, 630.810.1832, randy.lusher@basf.com.



WISCONSIN SOILS REPORT



Late season potassium applications have been shown to increase gray snow mold infections.

Most non-sand soils have a high enough cation exchange capacity to retain a 1 lb/M application of potassium. Sandy soils may need some help provided by the polymer coating or spoon feeding approach.

Greens:

Assuming most greens are sand-based, either from construction or years of topdressing, I'd spoon feed potassium along with nitrogen in the ratio of 2 parts nitrogen to 1 part potassium beginning in May and ending in August (but continuing with N after that). I like to fertilize my research greens about every other week with 0.2 lbs N/M as urea, so that'd put me at 0.1 lbs K₂O/M per application or about 1.0

lbs/M for the season. I feel this is a very conservative approach which replaces the potassium removed by clippings. But as the research continues to unfold, I can imagine that my management philosophy for greens may evolve to look more like my fairway program. That said, if I were a superintendent, I'd leave the research to the researchers and use this conservative but research-based approach.

Why stop in August? Same philosophy as above, the benefits of potassium as a drought stress nutrient are much more convincing than the cold tolerance argument and we have seen that high tissue K increases snow mold pressure. Also, research by Woods et al. (2006 - New York) and Johnson et al. (2003 - Utah) has shown clearly that high soil potassium levels in sand based greens are always substantially reduced by spring, presumably by the snow melt leaching the potassium out of the root zone. Therefore, a large application to a sand root zone in fall will do two things: increase your susceptibility to gray snow mold, and 2) leach out of the root zone, becoming unavailable in spring resulting in a complete waste of time and resources.

So that's my strategy in a nutshell. But, terms and conditions subject to change without notice based on a new long-term study of potassium requirements of putting greens at the O.J. Noer Turfgrass Research and Education Facility. It is my hope that we can develop a huge range of potassium levels in the plants and the soil. At the low end, we hope to see potassium deficiency symptoms and at the high end, maybe increased gray snow mold damage. This

study will hopefully improve our soil test recommendations, and give you more confidence about your potassium program.

References:

Johnson, P. G., R. T. Koenig, and K. L. Kopp. 2003. Nitrogen, Phosphorus, and Potassium responses and requirements in calcareous sand greens. *Agron. J.* 95: 697-702.

Moody, D., and F. Rossi. 2010. Potassium fertilization affects psychrophilic pathogen susceptibility of annual bluegrass. *Int. Ann. Meet.* p. 61292.

Webster, D. E., and J. S. Ebdon. 2005. Effects of nitrogen and potassium fertilization on perennial ryegrass cold tolerance during deacclimation in late winter and early spring. *HortScience.* 40:842-849.

Woods, M. S., Q. M. Ketterings, F. S. Rossi, and A. M. Petrovic. 2006. Potassium availability indices and turfgrass performance in a calcareous sand putting green. *Crop Sci.* 46:381-389.



ARTHUR CLESEN INC.
arthurclesen.com

Our reputation is spreading....



Anderson, John.....630-669-0519
Bartosh, Scott.....262-221-5524
Hamilton, Dennis..608-295-2494



Phoenix Environmental Care

Phoenix Environmental Care is dedicated to offering you greater value in the turf care products you need every day. Phoenix products are much more than just plain "generics." Our newer formulations offer the latest technological innovations in manufacturing to produce top-quality pesticides and plant growth regulators at economical prices.

A New Generation of Quality Products.

Dovetail

Dovetail® (active ingredients iprodione and thiophanate-methyl) provides double-duty control of many diseases, including Brown Patch, Anthracnose, Dollar Spot and Pink Snow Mold. A convenient flowable formulation, Dovetail delivers a minimum of 14-day control and helps in resistance management.

Kestrel

A unique, systemic broad-spectrum fungicide (a.i. propiconazole), Kestrel® controls more than 20 troublesome diseases, including Dollar Spot, Summer Patch, Brown Patch and Anthracnose, with low risk of phytotoxicity. Kestrel is available in a NexGen Formulation and a convenient 7.5 gallon BATPak® reusable containers.

Peregrine

Peregrine® (active ingredients chlorothalonil and thiophanate-methyl) has both systemic and contact action to provide preventive and curative control of Dollar Spot, Brown Patch, Anthracnose, Rust, Red Thread and other diseases, with no resistance issues.

Raven

Raven™ (active ingredient iprodione) helps you maximize control of a broad spectrum of common turf diseases, including Dollar Spot, Brown Patch, Grey and Pink Snow Mold and other destructive fungal problems.

Siskin

Siskin™ fungicide expands your flexibility for effective disease control across your golf course. A Group 3 fungicide, containing the popular active ingredient myclobutanil, Siskin provides systemic control of common fungal problems- all with minimal phytotoxicity risk. Siskin's many tank-mix options also support IPM and resistance management.

WingMan

Wingman® is a broad-spectrum fungicide (active ingredient mancozeb) that effectively controls a wide range of turfgrass diseases, including Brown Patch, Dollar Spot, Leaf Spot, Leaf Rust, Stem Rust, Stripe Rust, Fusarium Blight, Fusarium Snow Mold and others. WingMan also helps control algae on putting surfaces.

CutDown

CutDown™ (active ingredient paclobutrazol) is a highly effective plant growth regulator that can reduce mowing frequency by up to 50%, while promoting root strength on Bluegrass, Ryegrass, Fescue, Bentgrass and other cool-season varieties.

GoldWing

Improve management of mowing, clippings and trimming with GoldWing®, a low-odor reformulation of the active ingredient trinexepac-ethyl, a popular plant growth regulator. GoldWing also promotes root mass, lateral stem development and more on all major cool season turfgrasses. GoldWing is available in convenient BATPak® reusable containers.

Cardinal

Now make your job easier by slowing the growth of desirable turfgrass, and reduce the time you spend mowing and maintaining your course. Cardinal™ plant growth regulator (active ingredient ethephon) also controls turf growth in hard-to-mow places and even suppresses seed head formation of poa annua and white clover, all with a low risk of phytotoxicity.

Rook 4L

A fast-acting, low odor formulation of the active ingredient quinclorac, Rook™ 4L provides effective, extended residual control of crabgrass and many problem broadleaves. With longer-lasting control and tank-mix options, Rook 4L increases application flexibility. Rook 4L is quickly absorbed into plants and is rainfast in under an hour.

Dovetail

Kestrel

Peregrine

Raven

Siskin

WingMan

Pegasus DFX

CutDown

GoldWing

Cardinal

Rook 4L



Danny Quast, CGCS
(920) 210-8616
dqhdh@charterinternet.com

Matt Kinnard
(920) 210-9059
m.kinnard@sbcglobal.net

Mike Kozlowski
(920) 296-7914
mkozlowski1@wi.rr.com



Visit DHD Turf & Tree on FACEBOOK and TWITTER.

New for 2010

Pegasus™ DFX

NexGen Chlorothalonil

Green Pigment Masks Visibility And Improves Leaf Color

Low Dust Formulation

Improved Surfactants For Better Leaf Adhesion

Extruded Granule Improves Mixing

Ask your DHD Representative about
NexGen from Phoenix Environmental Care.

Blogging Green

By Jake Schneider, Assistant Superintendent, Blackhawk Country Club

Attention Golf Course Superintendents: I'm following you. But, before you contact your local authorities to file restraining orders, it should be noted that more and more of you are asking for it, and my diminutive stature probably doesn't make me much of a threat to anyone older than 10. At this point, it's likely that many of you are asking yourselves, "What have I done to deserve this special distinction?" Blog and tweet, that's what.

Over the course of the past decade, it seems as if "communication" has been an ever-expanding and commonly-discussed topic of conversation among our ranks; second only to the something that I like to call the "weather". Whether golfers require it or not, many superintendents have greatly expanded their communication venues beyond the more traditional means of newsletter articles and pro shop/locker room postings. If you haven't already, take a quick spin around the information super highway, and you'll discover a plethora of tweeting and blogging superintendents. The Golf Course Industry website has a fairly extensive list of blogs, and if you want to get started, their list is located at <http://www.golfcourseindustry.com/BlogRoll.aspx>. For some reason, they don't list the very well-written and delightfully entertaining blog that's associated with Blackhawk Country Club.

Yes, last year, Chad and I took the plunge and entered the blog-o-sphere, and I must say that it's been wildly success-

ful, from a membership feedback perspective. Not since we slightly trimmed-up and cleaned out beneath our ever-greens have we heard so many compliments.

Prior to starting the blog, we would try to regularly update our page on the club's website, but this option wasn't terribly friendly to the user or to the publisher. Although it may be intimidating to many, I'm by no means a tech guru, and I've found blogging to be surprisingly simple. One of the nice features of blogs is the ability to save and "tag" your posts. So, rather than writing a new article about not applying mosquito spray on the fine turf areas, you can tag an article with a "mosquito spray" label and regurgitate it on a yearly basis. Also, several posts can be seen on one page. Besides keeping the members informed, I've been using the blogs and tweets of others as a learning tool; thus, the stalking.

Many would likely agree that both the innovative and the tried-and-true maintenance practices that have been, in the past, attained through conference attendance and interpersonal communication are often the most interesting and applicable. Well, blogs have made this both easier and faster. Between these maintenance blogs and various industry-related message boards, the transfer of information between strangers has never been easier.

Due to technological limitations (read: a phone without internet access), I've yet to enter the world of Twitter. But, as was previously mentioned, many superintendents are now tweeting and many of them have linked their Twitter accounts to their blogs. For a cash-strapped turfhead like myself, these websites offer wonderfully educational entertainment, and we've also successfully implemented a few of the techniques that I've read about.

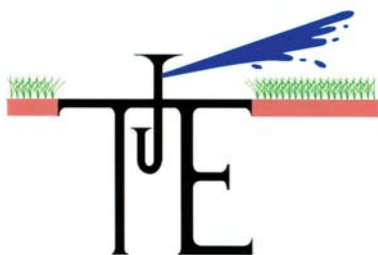
So, fellow turfies, I implore you to start a blog and to start tweeting if for no other reason than to fulfill the author's stalking tendencies.

A Few Samples

Blackhawk Country Club - <http://blackhawkgrounds.blogspot.com/>

Westmoor Country Club - <http://westmoorturf.blogspot.com/>

North Shore Country Club - <http://nscgcm.blogspot.com/>



T. J. Emmerich Associates, Inc

Irrigation Consultants

W28620 Beverly Lane • Harland, WI 53029

262-538-2776

Golf Course • Commercial • Master Planning
System Evaluations • GPS Services

Thomas J. Emmerich

Certified Irrigation Designer



See how equipment and agronomics can work together.

Only John Deere Golf offers both a full selection of golf maintenance equipment and soft goods from top name brands. Plus advice on how to pick the best of each for your course. Call us today.

Equipment Sales:
Frontier Ag & Turf,
West Salem, WI
800-950-4180

J.W. Turf, Inc.,
Hampshire, IL
847-683-4653

Agronomic Sales:
Wisconsin: Steve Wasser,
920-362-1809

South Wisconsin: Micah Wise,
262-613-2386



JOHN DEERE
GOLF

Think Ahead.

Hot Cocoa in July

By Robert Vavrek, United States Golf Association, Senior Agronomist, North Central Region

Editors Note: This article was originally printed in the USGA Green Section Record August 16, 2011, and is reprinted here with permission.

Cocoa probably wasn't your first choice of beverage during the torrid weather we experienced across the upper Midwest during July and early August. However, a coco mat may just be your best friend when you need to groom a putting surface for competitions or special events during the heat of midsummer.

It's strange how some basic turf maintenance practices



Coco mats can be used to lightly drag the turf to work in sand or stand up the turf for mowing during stress times or anytime.

seem to fall in and out of favor through the years. Rolling, brushing and grooming come to mind. During the early 90's, groomers were the rage and it was hard to find a roller or brush attachment on a mower being used at any golf course. Now, everyone rolls, brushing is gaining momentum, while grooming is so "last decade."

It's too bad that the use of coco mats falls into the category of trendy maintenance practices. When I inquire about coco mats at Turf Advisory Service visits the typical responses are: never tried them, too expensive or too old school. Yet, they remain a highly useful, versatile and underutilized option for grooming a putting surface during stressful conditions.

Experienced superintendents suspended aggressive maintenance practices when the hot, humid weather settled in. Some superintendents who didn't now have experience establishing temporary greens. Higher heights of cut, limited topdressing, less mowing and more rolling make sense during a heat wave, but also the putting surface can become dense and matted. A coco mat may be the best option for addressing this concern.

Vertical mowing and the use of a heavy topdressing brush are out of the question when the temperatures climb into triple digits, but you still may be able to gently lift the turf just prior to mowing with a coco mat. Furthermore, a lightweight cocoa mat can be an effective option for moving a little sand topdressing into a putting surface without causing excessive abrasion to the turf.

Go outside the box and talk to vendors that provide equipment to sports field managers and golf courses. You will be surprised to find that coco mats come in a wide variety of sizes and prices that can accommodate most any need or budget.



WISCONSIN Turf
EQUIPMENT CORPORATION



Winter Service Work
Tune-Ups
Oil & Filter Changes
General Maintenance
(Call for other repairs)

1306 W B-R Townline Rd
Beloit WI 53511-9002
800-443-1840
sales@wisconsinturf.com

REEL SHARPENING
Spin & Relief Ground

Deep Solid Tine Aeration Services

Reserve your date today!

10 Greens\$1,250.00
19 Greens\$1,750.00

CORE AERIFICATION AVAILABLE TOO!



Contact: Tom Bjornberg
 tbjornberg@yamahagu.com
 Office: 952-890-5541
 Cell: 612-718-8491
 Toll Free: 800-352-2779

New Rain Bird Golf Rotors With Full- and Part-Circle Performance



Make the most of every rotor with new Rapid-Adjust Technology featuring MemoryArc™. Available on new Rain Bird® 751 Golf Rotors, this innovative feature allows you to easily adjust watering on greens, fairways or roughs for unmatched versatility and precise control. Offering proven Rain Bird durability and distribution uniformity, these cost-efficient rotors are also backward-compatible with existing Rain Bird rotor cases. Doing more when it matters most.
 That's The Intelligent Use of Water.™

Introducing Rapid-Adjust Technology featuring MemoryArc™

Set primary rotor arc.

Turn the Full/Part Adjustment Screw for full-circle operation.

Turn to part circle again for either Arc A or Arc B setting.

No need to adjust arc when going between full- and part-circle settings.

“My entire member board knew which greens were mowed with the Baroness and which ones were mowed with the other mowers...they told me to buy Baroness even though we were under lease with the other mowers”
Bill Murtha, Superintendent
Binghamton Country Club, NY

BARONESS
 QUALITY ON DEMAND



Contact: Chip Lewison
 clewison@yamahagu.com
 Office: 952-890-5541
 Cell: 952-540-7458
 Toll Free: 800-352-2779



Contact: Billie Mac Donald
 bmacdonald@yamahagu.com
 Office: 952-890-5541
 Cell: 651-788-2877
 Toll Free: 800-352-2779

YAMAHA
 GOLF & UTILITY
 RELIABILITY STARTS HERE

The Fescue of Your Dreams

By Robert Vavrek, United States Golf Association, Senior Agronomist, North Central Region

Editors Note: This article was originally printed in the USGA Green Section Record June 24, 2011, and is reprinted here with permission.

How would you describe the perfect natural rough? For many golfers, the romanticized version would be a sparse stand of golden brown fescue, about knee-high, crowned by slender seedheads that yield and ripple like ocean waves against the gentle breeze. Furthermore, when an errant shot finds this ideal rough, you find your ball without too much difficulty and with a little luck, have a decent chance of advancing the ball toward the green. Worst-case scenario is simply a wedge back to the short grass. Never lost, never in jail and never – well, hardly ever – is the ball unplayable. Alas, this perfect rough is quite the oxymoron if you think about it.

Just where would we find this fescue of our fantasy? The avid golfer would probably remember watching a wayward drive into deep rough at Shinnecock Hills Golf Club during U.S. Open television coverage or recollect images of sparse, golden roughs from various venues in the United Kingdom during coverage of the British Open.

Fescue is a catch-all term often used to describe a group of grasses. There are many different types of fescues – sheep's fescue, creeping red fescue, tall fescue, chewings fescue – to name just a few examples. The classic fine fescue rough that most golfers would encounter is most likely composed of some combination of sheep's, chewings and hard fescues.

There is no shortage of fine fescue roughs to be found at courses across the northern United States. In fact, it's likely more of a challenge to find a course built during the past 20 years where the architect has not incorporated unmowed fine fescue into the design. So why are there 10 gnarly, weedy jungles of fescue for every rough of sparse, wispy grass?

The primary culprit is water, and to a lesser extent, fertilizer. Granted, ample moisture and nutrients are essential during establishment, but once the grass matures, the best way to maintain a relatively pure stand of sparse turf is to limit inputs of water and nutrients as much as possible. In

contrast, the quickest way to transform thin fescue into an unplayable weed patch is to apply plenty of irrigation and nitrogen.

The strength of fine fescue is an ability to survive in dry, sandy, infertile soils a bit better than Kentucky bluegrass, bentgrass or most other cool-season grasses commonly used on a golf course. Fescue's weakness is its inability to compete with the aforementioned grasses or weeds when plenty of water and nutrients are available.

Far too often, fine fescue is planted in areas where it is doomed to failure. Low, chronically wet areas of the course, sites with heavy soils that hold abundant water and nutrients, and areas immediately adjacent to greens or fairways that are irrigated frequently are all places where fescue will probably fail.

Eliminating or adjusting sprinkler coverage to keep fescue dry is only part of the solution, since we cannot control the weather. Frequent rainfall during an unusually wet season can cause just as much harm to a fescue rough as uncontrolled irrigation. In addition, a wet spring can produce dense foliage that persists all season and a crop of extra-tall seedheads that are susceptible to being permanently blown down (lodging) in a strong wind.

We love our motorized carts in the United States, but carts and fescue are like oil and water...they just don't mix. Concentrated cart traffic will definitely affect the health and appearance of natural fescue roughs and can cause problems of equal magnitude on regularly mowed fescue fairways or roughs.

Make every effort to keep the roughs dry. Keep carts off the turf. Control weeds with a well-timed herbicide application when necessary. Prevent the accumulation of excess plant debris in natural roughs with an annual mowing operation, but be sure to remove the plant debris to prevent clumps of dead grass from smothering the turf. Follow these suggestions and you just might achieve the wispy fescue of your dreams. The roughs will look great from a distance and, with any luck, you won't have much opportunity to see them any closer with a club in your hand.

USGA GREEN SECTION

Dry and wispy fescue gives the appearance of long thick grass (left) but is easy to find your ball (below) as behind the 11th green at Erin Hills Golf Club.



Nobody Cares More About Your Sand



Waupaca Sand & Solutions
715-258-8566 - www.WaupacaSand.com



WAUPACA

Regulations

By David Brandenburg, Golf Course Manager, Rolling Meadows Golf Course

It seems every year a new rule or regulation comes along to affect the way we do our jobs. It shouldn't be surprising since the state and national politicians are looking for ways to make an impact and make things better for us and the environment. Unfortunately making things better for one group comes at a price of time and usually money for the end user. It may be extra cost in doing things different or the cost of increased paperwork.

Not all changes are new laws but many come about by new or stronger enforcement or just a different interpretation of old rules. The golf industry has survived AG-29 and NR-151 that effected how we apply and report fertilizers and chemicals with little problem. It has added extra costs in regular soil samples, and time for reporting, training and planning. In the next few years there a few new things that will add challenges to our jobs a turf managers.

TIER 4 Emission Standards

Many regulations affect the manufactures that we buy products from and go unnoticed by us until we wonder

why that engine is different or why the price has increased on our equipment. Most of these changes have to do with vehicle and engine emissions and the effort to reduce green house gasses in response to global weather changes. The technology is available to reduce greenhouse gasses but the issue is at what cost in dollars and engine power loss. In a competitive sales market manufactures are not going to increase the cost of their machine to possible save the ozone layer. Since manufactures are not going to voluntarily add cost to the machines, Congress and the Environmental Protection Agency will force them to change with new regulations.

One change coming January 1, 2013 is called Tier 4 Emissions Regulations. These new regulations will require expensive changes to 25 to 100 horsepower diesel off road engines used in mowers and tractors. Larger engines have already gone through this change and now it is the small engine manufactures turn.

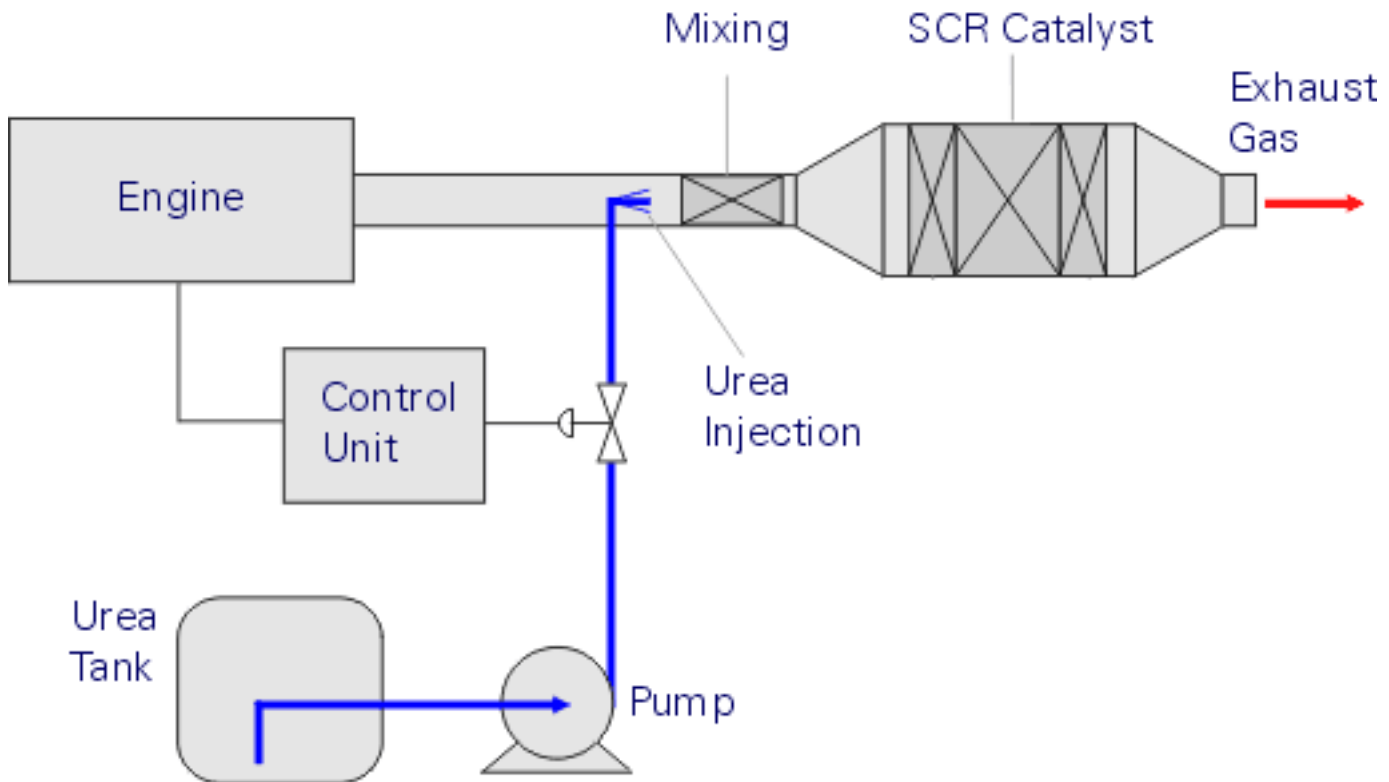


Diagram of a Typical SCR System Using a Urea Injection Pump to Change Exhaust Fumes