

APRIL 2013
golfcourseindustry.com

Watch this little guy go ape on GCI's iPad/iPhone app!

GOLF COURSE[®] INDUSTRY

SERVING THE BUSINESS
OF GOLF COURSE MANAGEMENT

HOW TO GET FIRED

This ain't the time to be monkeying around with job security. GCI gives you great employment insights from the best in the business!



SALT SUCKS

PROTECT YOUR
TURF



Na⁺

Na⁺

Na⁺

Na⁺

Na⁺

Na⁺

High concentrations of salt in your soil disrupts osmosis, effectively sucking needed water away from turf roots. This leads to rapid wilting, reduced shoot growth and leaf tip burn.

Aquaplex Amino[®] sprayable osmotic regulator works within the plant to balance osmotic potential, improving water and nutrient uptake and minimizing the impact of stress caused by high EC.

AQUAPLEX amino[®]



Fight back against those evil little suckers.

Aquatrols[®]

www.aquatrols.com

IN THIS ISSUE



COLUMNS

- 16 Game plan**
Henry DeLozier: Rut Buster
- 28 Outside the ropes**
Tim Moraghan: Need For Speed
- 62 Design Concepts**
Jeffrey D. Brauer: No. 100
- 70 Irrigation issues**
Brian Vinchesi: Pick From The Cream of The Crop
- 92 From Dodson, with Love**
Ron Dodson and Bill Love: The Ecogolfer Pledge
- 96 Parting shots**
Pat Jones: You're Not Fired

DEPARTMENTS

- 4 Teeing off**
Swing Thought
- 6 Letters**
- 12 The Whiteboard**
- 90 Travels with Terry**
Equipment ideas
- 95 Classifieds**
- 95 Ad index**

HOW TO GET FIRED

This ain't the time to be monkeying around with job security. GCI gives you great employment insights from the best in the business!

FEATURES

- 30 Plant Health**
FRIENDS WITH BENEFITS
Meet your new BFFs when it comes to grub control, though white grubs may disagree with the term "beneficial nematodes."

- 37 Plant Health**
WHAC A GRUB
Aerification may allow you to more effectively control your white grub problem.



- 38 Course Profile**
CAJUN SEASONING
Superintendent Scott Poynot perfects his recipe for a quality playing surface – the right combo of turf and soil that requires the least amount of labor and inputs.



- 64 Water Management**
SOAK IT UP
Effectively moving water through your soil profile means not only healthier turf, but potentially lower irrigation costs.

- 72 Disease Management**
TURF EXORCISM
The power of cultural practices compels you! A sound management program is the best strategy to cast out the demon possessing your Poa greens – anthracnose.

- 79 Real Science**
MADE IN THE SHADE OR MUD IN THE SHADE?
Sunlight assessment is a key to success with ultradwarf Bermudagrasses.



GOLF COURSE INDUSTRY (ISSN 1054-0644) is published monthly. Copyright 2013 GIE Media Inc., 4020 Kinross Lakes Parkway, #201, Richfield, OH 44286. All rights reserved. No part of this publication may be reproduced or transmitted by any means without permission from the publisher. One-year subscription rate, \$33 in the United States, \$42 in Canada and Mexico, and \$88 in other foreign countries. One year foreign airmail rate: \$102. Two year subscription rate: \$65. Single issue rate, \$10. Subscriptions and classified advertising should be addressed to the Richfield office. Periodicals postage paid at Richfield, Ohio, and additional mailing offices. Postmaster: Send address changes to GOLF COURSE INDUSTRY 4020 Kinross Lakes Parkway, #201, Richfield, OH 44286. Canada Post: Publications Mail Agreement #40612608 Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2

gie
media
incorporated

SWING THOUGHT

One of the big misconceptions about all of us who make a living in this silly business is that we play golf all the time. Bet you've heard that one a million times huh?

The truth is the average insurance agent probably plays more rounds than most of us. And anyone who's played once in the past five months has played more than me. I just occurred to me that I haven't touched a club since the Carolinas GCSA tournament last November.

But, by the time you read this, I hope to have had a chance to get out. It might actually crack 50 degrees here in Cleveland soon and I will probably sneak down to one of our fantastic local Cleveland Metroparks courses and whack some balls around. But, before I do, I will go through my annual ritual of finding a swing thought for the year.

Each season, I pick a swing thought in a futile attempt to find that one thing – that one crazy little thing – that will convert me from truly lousy to happily mediocre. Last year it was “don't move your nose.” That kind of worked. My head was a little steadier and my body was a little quieter. It didn't keep me from going a mile past parallel or from swinging waaaaaay too hard most of the time. But, it gave me something to concentrate on. It gave me a simple goal.

In talking with superintendents over the last month who've all been waiting for the long delayed season to begin (the polar opposite of 2012), I've asked them about their “swing thought” for this agronomic season. What simple watchword or concept are they going to focus on every day to strive for constant improvement this season?

For a couple, it was “Soil.” They're attempting to use the season to fix imbalances in soils that cause so many other issues in the green stuff growing above it.

For another, it was “Balance.” He's trying to

keep his home life as positive and productive as his work life.

For a very old friend, it was “Survive.” He feels like he has a target on his back and he's worried he's lost the support of some key members and his GM.

I hate the fact that “Survive” has become the dominant thought for anyone as they begin another season in this profession. It shouldn't be like that, but it is. We are in a cycle in our industry right now where experience isn't valued enough, there are far more qualified people than there are jobs, and stress – which has always been an occupational hazard – is at an all-time high for many.



Pat Jones

Editorial director and publisher

Going into a season fearing the worst is simply wrong. It's wrong that he's in that position and can't really talk to others about it (he worries word will get out and the vultures will start to circle looking to snag the job if it comes open). It's wrong that he can't communicate openly

with key folks at his facility and try to work things out (they don't understand, he says). And, it's wrong that he – like many others – may simply be a victim of the fact that the club is restless and wants to make a change for the sake of making a change.

That's a crappy thing. And “Survive” is a crappy thought to have in your head for the season.

Instead, why not focus on “Thrive”? Why not let go of what you can't control and focus on doing a great job with what you can? Why not give off a positive vibe and help to lift others around you? Why not do your best under tough circumstances? Why not adopt an attitude that you can and will not just make it, but do it really well?

Why not make “Thrive” your watchword for the year?

Oh...but don't forget to update your resume...just in case.

Have a great year! **GCI**

GOLF COURSE INDUSTRY

Serving the Business of Golf Course Management

Vol. 25 No. 3

GIE Media, Inc.

4020 Kinross Lakes Pkwy, 2nd floor

Richfield, OH 44286

Phone: 800-456-0707

Fax: 330-659-0823

EDITORIAL

Pat Jones

Publisher/Editorial director

pjones@gie.net

Mike Zawacki

Editor

mzawacki@gie.net

Kyle Brown

Associate Editor

kbrown@gie.net

Bruce Williams

Senior contributing editor

Katie Tuttle

Assistant Editor

ktuttle@gie.net

SALES

Russell Warner

National account manager

216-236-5802

Martha Corfman

Manager, books

330-523-5366

Ted Schuld

Account manager

216-236-5937

Maria Miller

Conferences manager

330-523-5373

Bonnie Velikonya

Classified sales

330-523-5322

Jodi Shipley

Marketing coordinator

330-523-5368

GRAPHICS / PRODUCTION

Andrea Vagas, Creative director

Helen Duerr, Production director

Heidi Clevinger, Production coordinator

CORPORATE STAFF

Richard Foster Chairman

Chris Foster President and CEO

Dan Moreland Executive Vice President

James R. Keefe Executive Vice President

Marco Urbanic Director, Integrated Data Systems

Andrea Vagas Director, Creative

Helen Duerr Director, Production

Melody Berendt Director, Circulation

Maria Miller Manager, Conferences

Kelly Orzech Director, Accounting

Irene Sweeney Manager, Corporate Communications

Kevin Gilbride Business manager, GIE Ventures

Golf Course Industry is a member of:

Golf Course Superintendents

Association of America

National Golf Foundation

Golf Course Builders Association of America

The Irrigation Association

Responsible Industry for a Sound Environment





Who Says Three's a Crowd?



There's a Reason why the Top 3 Golf and Utility
Manufacturers use Trojan Batteries in their Vehicles.

When you calculate how well we perform against the competition, consider that our battery technology is backed by over **200+ years** of engineering expertise, acknowledge our industry leading performance at **40,000+** tested ampere hours,* plus the fact that we have been in business since **1925**, it is easy to see why all paths lead to Trojan Battery.

ALSO AVAILABLE IN:

Columbia Par Car | Cushman | Eagle | Garia | Melex | Star Car | Tomberlin

*Independent laboratory testing validates the sustained capacity and superior performance of Trojan Batteries.

Check out our innovative

New
Golf Batteries
for better performance on and off the course.



 **Trojan**
BATTERY COMPANY

FOR MORE INFORMATION:
(800) 423-6569 or +1 (562) 236-3000

TROJANBATTERY.COM

Anachronism snafu

I just had a look at the water quality article from Carmen Magro ("Drop by drop," February 2012). Either he or your editors made an error in one of the most important water quality parameters...

I'm sure I make plenty of errors, too, but I can't help but speak up. That particular error of misspelling sodium adsorption ratio and by so doing confusing the meaning is a particular concern of mine. I don't like claiming that TDS is total dissolved salts, either, for that should be total dissolved solids. I don't pick at every little error, but the SAR one is inexcusable and I wish it would never occur again.

Micah Woods, Ph.D.
Chief scientist
Asian Turfgrass Center

Editor's Note: We don't like errors, either. We forwarded Micah's concerns to Carmen who readily admitted he was in error. SAR should have been "sodium adsorption ratio" and we should have been more clear in his discussion of "total dissolved solids" (TDS).

In praise of the app

The new app is excellent. I didn't check it out until after the GIS show, but I am impressed. GCI definitely has become the most relevant, informative and best all around of the industry's publications.

Greg Cormier, CGCS
Director of golf course operations
Nashawtuc Country Club
Concord, Mass.

Kudos

Congratulations on the hard work you put into GCI. I personally think it's the best publication in the business. GCI is the one magazine I still read instead of checking all the digital outlets at my disposal. I really enjoy your unique perspective on our business and find your contributors are very well informed with their fingers on the pulse of the current climate in the industry. Keep up the quality work and thank you.

Thad Thompson
Superintendent
Terry Hills Golf Course
Batavia, N.Y.

It takes more than a
green to make a
golf course...

...and more
than wetting
agents to manage
your soil moisture


Hydretain®
Root Zone Moisture Manager

Hydretain captures soil moisture vapor normally lost to evaporation, passing it to the root system of turf and plants to improve overall health, eliminate localized dry spots (LDS), reduce disease, increase seed germination rates, enhance nutrient efficiency and significantly reduce watering requirements, saving time and money!

Visit hydretain.com to find your local distributor, or call 352-620-2020 for more information.



Justin Brown/Golf Club Images



Trust

It's why John Deere is chosen to cut the most famous green in golf.

Hole #17, Stadium Course at TPC Sawgrass

Not only do professional players expect the most famous holes in golf to be in perfect condition, they demand it on every hole they play on tour. Which is why John Deere Golf is proud to be the Official Golf Course Equipment Supplier of the PGA TOUR®. From tee to green, you'll find equipment like our E-Cut™ hybrid fairway and greens mowers on TPC® courses across the country. Choose the equipment that the most demanding players in the world trust: John Deere Golf equipment. Call your John Deere Golf distributor for a demo today.

Trusted by the best courses on Earth.



We'd like to hear from you.

E-mail us at gci@gie.net with your thoughts and opinions.



EDITOR'S NOTE: We received an unprecedented amount of feedback about Pat's February Parting Shots column. If you haven't read it yet, enter bit.ly/Xqr5vu into your Web browser. If you're using the iPad/iPhone app,

just click the image to access a copy of the column.

True believers

Wow, a column on something Pat has never done for a career. While you have been around this business a long time, how can you give advice without ever stepping into our shoes? I read your article and you pointed out some negatives, but I have to tell you after 40 years I am ready and looking forward to 41 and many more. I am only 53, so I hopefully have a ways to go.

So maybe this is the root for a new article. How do you reinvent yourself every year to stay motivated, or what motivates a superintendent to stay in this business a lifetime?

First for me is a smile from a golfer who

loved what they just played... from making a long putt... from seeing the sunrise with me, from one of staff just waving at them... Golfers are people who are on their play-grounds that we get to manage. We provide them with a recreational playing surface and we should relish that fact every day. If you are having a bad day you really have to step back and ask what is causing it? How can I control that negative?

I love seeing a new employee "get" what it is all about. The pride in mowing a straight line on a green, from putting down a semi load of sod, or maybe getting a sprinkler head to work right, we have a living, breathing organism that we deal with every day. It can get tricky at times, but you have to figure out how to put new life in it every day to keep it going...

Now, I never encouraged my son to get in or to stay out of the business. He just fell in love with it at a very young age and has never wavered. I think it is so deeply

ingrained in him that this is all he will ever do. It is not about the money, it is about the product he puts forward every day and the challenges that drive him and his staff.

Pat, I love your last couple of paragraphs. You're correct. It is a passion and a love and a sense of accomplishment. It is hard to explain it to others, but I am very proud I am one of the few who gets to do this and I thoroughly embrace it.

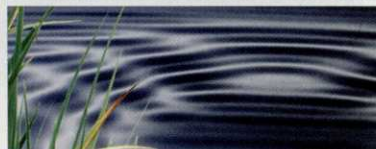
Rick Tegtmeier, CGCS
Director of grounds
Des Moines Golf and Country Club
West Des Moines, Iowa

Great column in the February GCI. I really enjoyed it as I can totally relate to the story of your son.

I got started in this crazy business while in college, too. I worked at a course in the golf Mecca of Myrtle Beach, S.C. While attending Coastal Carolina University (for

Green is more than just a color

With a 100-year tradition of sustainability leadership, Milliken not only delivers the colorants, turf paints and spray pattern indicators with the performance you've come to expect, our innovative products can help you have less impact on the environment and more impact on the beauty of your facility. Learn more at MillikenTurf.com.



Milliken®
Evergreen®

Green Turf Paint

Milliken®
Aquarius®

Soil Wetting Agents

Milliken®
Blazon®

Spray Pattern Indicator

Milliken®
Bullseye®

Spray Pattern Indicator

Milliken®
Mirage®

Lake and Pond Colorants

Milliken



Products That Work, From People Who Care® | www.valentpro.com | 800-89-VALENT (898-2536)

Read and follow the label instructions before using.

Tourney and Products That Work, From People Who Care are registered trademarks of Valent U.S.A. Corporation.
©2011 Valent U.S.A. Corporation. All rights reserved. AM24189.13



Learn more about
Tourney on tough
diseases. Use the
smartphone ScanLife
App or text a picture
of the code to 43588.

WHEN IT COMES TO FIGHTING TOUGH DISEASES, TOUGHNESS IS A VIRTUE.

Nothing takes out tough diseases like Tourney® Fungicide. Superintendents can handle the toughest diseases throughout the season with Tourney in the tank. It's the go-to solution for controlling a broad spectrum of tough diseases. Learn more at www.valentpro.com/tourney.

Tourney
FUNGICIDE
Tough made easy.

ANTHRACNOSE | BROWN PATCH | SUMMER PATCH | TAKE-ALL PATCH | FAIRY RING
DOLLAR SPOT | NECROTIC RING SPOT | GRAY LEAF SPOT | SNOW MOLD | OTHER PATCH DISEASES

Innovative and Exceptional!!!



Terra Spike XF
Fastest on the market.



CORE RECYCLER
Re-use sand, collect thatch.



SUPER 600
Verticut, sweeps and more.

Wiedenmann®
North America, LLC



912-790-3004

866-790-3004

www.wiedenmannusa.com

FEEDBACK

We'd like to hear from you.

E-mail us at gci@gie.net with your thoughts and opinions.

marketing) I got a job at The Witch Golf Links under Mr. Andy Apple. Like a lot of kids my age, I was thinking it was a good way for free golf.

I loved getting up in the early morning and experiencing everything you mention in the article. It was an incredible feeling every morning. I felt like I was one of very few who was up and awake. At that time (1997-99) I didn't even know that one could pursue golf course management as a career – you know, a golf course superintendent. I had never considered it... you mean people could actually make six figures doing this type of work? Two years of fun at The Witch and after graduation it was back to Chicago and time to get a real job.

After a year in the office world (23 years old at the time) I was being called back to what has ended up being my true life passion – a career in the golf course industry. I ended up going back to school, a junior college that offered a two-year turf degree program. While attending turf classes I also got hired on as an intern at Medinah Country Club, a fabulous opportunity. This is where I found out it was a great commitment as well as a unique profession and lifestyle.

As you so well explain “*sort of secret society of mad monks who live and breathe the turf and golf operations.*” I was able to move up the ranks quite quickly while at MCC, I went from intern, assistant, Course 2 superintendent and then onto superintendent of Course No. 3. I had absolutely nothing but passion for what I did. Many times it didn't even seem like work.

Anyway, I'm no longer at Medinah Country Club, nor am I a superintendent, but I still bleed the blood (2001-11). In all it was a great 10 years, but as you mention in the article, it is a lifestyle. I have recently transitioned into the sales side of the business, or as many have said to me, “The Dark Side.”

People ask me if I miss it – being a golf course superintendent. I'm not always sure how to answer because my response can be quite lengthy – with what I miss and don't.

I honestly don't feel as if I have ever left – and that's a good feeling. I am as passionate about golf course maintenance now as I ever was – whether its helping out a low-budget, mom-and-pop nine-hole course, or If I'm helping get a big deal with high-end country club or resort. I have found out that

I not only have a great passion from my days working at Medinah, but I also have great passion for the business and what it is we all do within the golf industry. It is the best profession in the world.

I have found (since taking off my blinders while at MCC) this is even a better industry than I ever thought with lots of possibilities and lots of great people.

Dave Kloss
JW Turf
Allenton, Wis.

I've been reading Pat's column for many years, and must say he does a heck of job. Pat's February 2013 column (You Gotta Believe, 58) is awesome. Like so many of our peers, I am going through a very tough time on the course with the reductions in staff and funding. The cost of goods and employees has been increasing like crazy, yet the demand from our members to be better than every course on the planet continues. I've been managing golf maintenance in Florida for 24 years and have never been so close to saying “Take this job and shove it!” After reading your column it helped me say to myself “Hang in there... Things could be a lot worse.” Thanks, Pat, for the words of encouragement.

Jon S. Cockerham
Director of golf course maintenance
Suntree Country Club
Melbourne, Fla.

Great column. It was a straight control-print for me. I will share it with my interns for years to come. Well said!

Nelson Caron, GCS
The Ford Plantation Golf Club
Savannah, Ga.

“You'll be doing battle every day with a fickle bitch called mother nature...” The best line ever in a turf publication. It's not Grantland Rice's “...outlined against a blue-gray October sky the Four Horseman rode again,” but it's up there.

Robert Waller, CGCS
Marriott Golf
Ocoee, Fla.

Upgrade Your Turf PGR Program to Legacy.*



- Premiere product for turfgrass enhancement and growth suppression
- Improved turfgrass color and quality
- Extended spray intervals
- Reduced "bronzing"
- Elimination of the "rebound" effect found with trinexapac-ethyl
- Uniform growth regulation on mixed turfgrass species
- Stops and reduces *Poa annua* populations
- Saves labor and fuel associated with mowing

Whether it's for turf enhancement or *Poa* conversion, SePRO has the right turf PGR for your desired objective.



- Selectivity suppresses the growth of *Poa annua* to a greater degree than desirable perennial turfgrasses
- Greater "regrowth" potential on bentgrass vs other growth regulators leading to faster conversion
- *Poa annua* conversion with no disruption to the playability of the turfgrass
- Improved turfgrass quality
- Less impact on bentgrass and Kentucky bluegrass compared to paclobutrazol formulations

Cutless.* The Standard for *Poa annua* Conversion.

For more information about SePRO turf growth regulators, contact your SePRO Technical Specialist or call **1-800-419-7779**. Visit our web site at www.sepro.com.



SePRO Corporation Carmel, IN 46032

*Trademarks of SePRO Corporation. The synergy derived from the combination of Type IIA and Type IIB PGRs is covered under U.S. Patent No. 7,135,435. Always read and follow label directions. ©Copyright 2010 SePRO Corporation.



Now available in
a liquid formulation!

**Cutless[®]
MEC**

The hole story

Superintendent Owen Coulson shared with GCI an outstanding photo essay of his maintenance crew's spring aerification regimen at Vestavia Country Club, Birmingham, Ala. Check out this issue's app version to view the complete photo essay.

"Two times each year the membership gives the golf course to the golf maintenance crew so we can 'tear up' the great playing surface that they've been enjoying," Coulson says.

"Each spring and fall for the last eight or so years we have been tweaking our process of aerification to get it perfect. Each time we actually get pretty close but we can usually pin point at least one little tweak here or there. This process has been made easier because of our record keeping from previous years, which includes everything down to quantity and type of pizzas we order for the crew on aerification day (2013 was 15 total for a crew of 22 - 4 pep; 4 saus; 4 Hawaiian; 3 chicken). Our 'checklist' makes it easier to have a starting place for each step of the process. We may not apply the exact same amounts each aerification, but we cut down considerably on the amount of time we spend during the set-up stage for each step.

"The greens at Vestavia Country Club were first constructed by George Cobb around 1951 and then renovated by John LaFoy in 1989. Then in 2001, the top 6 inches of turf and material were removed and new greens mix was brought in and seeded to L-93 bentgrass.

"With the existing drainage and majority of the greens profile being 24 years old and even the newer/renovated portion being 12 years old, a lot of sub-surface cultivation must take place for them to perform in a way that is suitable for our membership. By utilizing the deep-drill machines along with the larger hollow tine in conjunction with our process, we have been able maintain a putting surface that the membership is consistently happy with."



Great idea

Here's an idea from the United Kingdom. To create a better communication link between the grounds crew and the mechanic, John Critchley, the course manager at Les Mielles Golf and Country Club, St. Ouen's Bay, Jersey, UK, has introduced a machine log system. Each machine has an associated clipboard hanging in the mess room, which the operator must complete after use.

"We've had a couple of occasions where poor communication has affected golf course maintenance," Critchley says. "Also, if the mechanic is not on site once you have finished your task, people may forget to report the

faults. It resolves all these scenarios and many others."

To get his crew to buy into the concept, Critchley kept the form simple and clean. It contains blanks for the operator's name, times and dates, and any comments or faults. "It is then the mechanics responsibility to check these and complete any tasks needed," he says. "The crew have taken to this system far better than I thought, it creates organization and professionalism within the department."

Check out Critchley's blog at: lesmiellesgroundscrew.blogspot.com



From THE FEED



We're already past 1,500 downloads of the new GCI app, with more and more readers getting the chance to really interact with the issue. We don't want to brag (well, not directly, anyway), so we'll let some of our followers do it for us!

Joshua Smith @JoshfromCCTX

well worth the download too, now it takes a week to read an issue, it's really amazing.



Thad Thompson @TerryHillsMaint

Anyone interested in golf course maintenance. I urge you to follow @GCI Magazine and download their AMAZING app!!!



Michael Shaw @MickPhudd

app is very impressive!



iTurffapps @iTurffapps

Just read Feb addition of @GCI Magazine U will find yourself touching the screen on EVERY page to see what happens! Check it out #innovation



John Kaminski @JohnKaminski

that was "better spread the word more. The digital version is freakin awesome!"



DakotaMarc @DakotaDunesSupr

What are some good turfgrass apps for a iPhone? #iphone #turfgrass



Trevor Morvay @TrevorMorvay

@DakotaDunesSupr sun seeker, ipm scout, new holland weather, @GCI Magazine app.



Join the conversation
on Twitter @GCI Magazine!



Heavy metal

There's dollars in that rusting scrapheap behind the maintenance shack, just ask superintendent Chris Cook.

Cook and his crew at Bailey Ranch Golf Club, Owasso, Okla., started a metal recycling program during the winter of 2011-12. This past winter, Cook and his crew continued cleaning out the old equipment and scrap metal – old brake levers, reels, tools, shafts, and hydraulic motors. "Once we felt that we had harvested all the useful parts off of the equipment, I contacted a local scrap-metal facility and they explained their guidelines for accepting material – no fuel, oil, batteries," he says. "They brought us a 30 cu. yd. roll-off bin and we got to it. I quickly realized that we were going to need several more bins."

The local scrap metal facility they worked with required a minimum of 3,000 lbs. or they would charge for the service. No problem, says Cook, adding the Bailey Ranch crew recycled nearly 20 tons of metal, which earned them more than \$2,000 for the effort.

"We'll most likely spend that money on various small-engine tools that are in desperate need of replacement," Cook says.

As far as other recycling endeavors, Cook says they're exploring recycling the trash from off the course (mostly beer cans), but they haven't gotten any further than the idea. "I recycle all my trash from the office – print offs, trade mags, brochures, etc.," he says. "This adds up and I probably recycle 20-30 lbs. of paper each month."

FOR MORE...

Check out the issue's app version for more photos of Bailey Ranch Golf Club's metal recycling effort.



Dr. Know

Congrats goes out to Dr. Emily Merewitz, assistant professor in molecular turfgrass biology at Michigan State University, for being selected to receive The Musser International Turfgrass Foundation 2013 Award of Excellence.

The award is given to outstanding Ph.D. candidates who, in the final phase of their graduate studies, demonstrate overall excellence throughout their doctoral program in turfgrass research.

Dr. Merewitz received her B.S. degrees in plant science and plant biotechnology from Rutgers University. She went on to earn her Ph.D. at Rutgers under the tutelage of Dr. Bingru Huang in molecular turfgrass physiology which is now the focus of her teaching and research at MSU.

"I am very grateful to be considered and to have received such a prestigious award," Merewitz says. "It is quite an honor and it will motivate me even more to excel in the turfgrass industry. The industry has been extremely supportive of my research and this award is something that means a lot to me."



2013

CELEBRATE YOUR IND

Blooma Palooza

AUGUST 1-3, 2013

**RAKER TRIAL GARDENS
LITCHFIELD, MICHIGAN**

Held at one of the largest trial gardens in North America and in conjunction with the Michigan Garden Tour, **BloomaPalooza 2013** will celebrate the hard work, entrepreneurial spirit and unique style of the independent retailer, grower and supplier.

GET BACK TO YOUR INDEPENDENT ROOTS AT BLOOMAPALOOZA 2013!

BROUGHT TO YOU EXCLUSIVELY BY



DEPENDENT SPIRIT

REGISTER TODAY
www.BloomaPalooza.com

Retailers, growers, lawn care professionals, suppliers and passionate gardeners will find themselves immersed in this never-held-before event.

The BloomaPalooza 3-day experience includes:

- Independent garden center centric trade fair with the top industry vendors arranged in an outdoor, flexible space.
- Educational presentations from the most talented minds in the industry intermingled with bands on the main stage.
- Music festival format with live bands.
- Family oriented fun with special children-oriented activities throughout.
- Exceptional value including free admission for those 17 and under accompanied by a paying adult.
- Opportunity to view over 3,500 unique plant varieties in multiple forms and settings amidst the famed Raker Trial Gardens.





Henry DeLozier is a principal in the Global Golf Advisors consultancy. DeLozier joined Global Golf Advisors in 2008 after nine years as the vice president of golf for Pulte Homes. He is a past president of the National Golf Course Owners Association's board of directors and serves on the PGA of America's Employers Advisory Council.

RUT BUSTER

Are you in a rut? Are you haunted by last year's problems? When was the last time your club introduced something truly innovative? Since you're in the golf business, your answers to those questions may be "yes," "yes" and "I can't recall."

Golf is filled with remarkably creative people who do not imagine new things nearly as often, nor on as grand a scale, as they should. Sure, we've seen the advent of soft spikes and on-line tee times; but what homegrown idea has made an impact at your club?

Innovation requires a slight nudge sometimes. Apple's Steve Jobs summarized innovation – a topic with which he had a tremendous track record – simply saying, "Innovation distinguishes between the leader and the follower."

Innovation is the act of creating new things that solve problems and meet needs in value-adding ways. In golf, innovation comes in the form of products, systems, processes and technologies that make a club easier to use, the course more fun to play and membership a greater value.

Innovation is about what and how. What should we do? How do we do it? Consider the following three questions to get started.

1. WHAT DO OUR CUSTOMERS AND MEMBERS WANT? They tell you every day. Listen and learn. And then find ways to meet their needs by creating new solutions. In most cases, what they want is not complicated, nor is it difficult to provide. Here are the basics on most members' lists:

- Attention... Especially important for women who seek validation of their rights at the club.
- Convenience and simplicity.
- Care and concern for children and families.

2. HOW CAN WE MAKE CUSTOMERS AND MEMBERS FEEL SPECIAL? The ways to do it aren't new, but their implementation might be.

- Know everyone's name. Customer relations software enables you and your staff to connect names and faces with shoe size, the types of golf balls they prefer and their children's birthdays.

- Host focus groups and invite survey participation.

We need to understand **today's highly competitive circumstances**. Most clubs and golf courses operate within a sea of sameness with very little market differentiation.

- Honor the senior members of your club. There is great value in the wisdom acquired through a lifetime of learning.

- Invite your youngest members to answer the question, "What would make our club even cooler?"

Once you've collected the information, consider new and different ways to implement your ideas. Show a bias for innovation – not simply for the sake of change but for the sake of keeping the club current and fresh.

3. WHAT DO WE NEED TO DO TO SET OUR CLUB APART? Encourage innovation in three ways:

- Organizational encouragement sets the standard and expectation for innovation. Leadership helps establish a culture of innovation. Organizational encouragement breaks down barriers and helps great ideas flow across departments and functional areas.

- Supervisory encouragement develops an innovative culture and empowers individuals and work groups to find new solutions to old problems.

- Group encouragement facilitates innovation throughout the org chart. Your dishwashers may have great ideas for making the kitchen work more efficiently. The mechanic may have the ideal solution for finding more tee times on busy days. But you'll never know unless you encourage creativity and show them it's valued.

Think with the future in mind. That's what innovation is all about. For example, what do the 20-somethings want from a club today? Health and fitness opportunities, sure. But what can you offer beyond a treadmill and an elliptical?

Can you help them load an electronic version of their training regimen into a bracelet that stores and tracks biometric information? Can you help them find other technological solutions that make using the club and playing the golf course more interactive and social? Do you support a virtual scorecard that allows them to post directly to social media so they can engage friends during and after their round?


We need to understand today's highly competitive circumstances. Most clubs and golf courses operate within a sea of sameness with very little market differentiation. Use innovation to set your club apart from its competitors. See that your innovation becomes a brand promise for the club. Be better and be different than your competitors. Are you ready?

Winston Churchill said, "Without tradition, art is a flock of sheep without a shepherd. Without innovation, it is a corpse." The best club leaders can shepherd innovation and gain advantage in the highly competitive landscape. **GCI**

PERFORMANCE NUTRITION®

PATENTED TURF FERTILITY AND PEST MANAGEMENT PRODUCTS

MEET THE CAST OF PRODUCTS

KAPRE® PRODUCTS	Soil amendments and fertilizer additives.	
KRYSTAL KLEAR®	Chelated micronutrient solutions.	
NUTRISMART®	OMRI-listed biological fertilizer and humate granules; satisfies up to 50% of turf fertilizer needs.	
NUTROL®	Water-soluble bio-pesticide, tank buffer and P&K fertilizer.	
PENNAMIN®	Sprayable amino acid complexed micronutrient powders.	
PRUDENT® 44/42CW	Concentrated phosphite fertilizer solutions.	
VIBRANT®	Foliar fertilizer solutions with Krystal Klear® micronutrients.	
Z.ONE® VITASMART.	Granular aerification amendment for improved Nutrient Use Efficiency and soil conditions.	

“ ★ ★ ★ ★ ”

“NutriSmart® and Z.One® VitaSmart debut each spring and fall in the Performance Aerification Treatment™.”

“KaPre® and Pennamin® products appear regularly in the Performance Soil Treatment™.”

“Vibrant®, Prudent®, Krystal Klear® and Nutrol® perform in the Performance Foliar Treatment™.”

PERFORMANCE
NUTRITION

Performance Nutrition is a division of LidoChem, Inc.

LidoChem, Inc.
Performance Nutrition Division
Phone: (732) 888-8000
Email: info@lidochem.com
www.performancefertilizers.com

©2013 LidoChem, Inc.

KaPre, Krystal Klear, NutriSmart, Nutrol, Pennamin, Prudent, Vibrant, Z.One and Performance Nutrition are registered trademarks of LidoChem, Inc.

HOW TO GET

This ain't the time to be monkeying around with job security. GCI g



FIRING

gives you great employment insights from the best in the business!

By Bruce Williams, CGCS

If you work in this industry long enough, then sooner or later you begin to hear the torrid stories as to why golf course superintendents get fired. In fact, as a headhunter I often hear several sides of these story – from golf facilities and from superintendents.

While most superintendents tend to see the pink slips coming, you can be blind to the signs of an imminent career suicide. More times than not, things slowly build up over time. Eventually, there is the straw that breaks the camel's back and disaster can no longer be averted.

Hey, it's tough enough to keep your job in today's market, even if you are performing well. And while some circumstances are outside the realm of your control, there are enough hazards out there that can bring your career to a screeching halt. Let's look at some surefire ways superintendents get themselves fired and, most importantly, how to keep you on a greensmower and off the unemployment line.

SpeedZone
BROADLEAF HERBICIDE FOR TURF

**When You Need
Broadleaf
Weed Control...**



- ▶ **Visible activity in hours**
- ▶ **Effective, fast-acting, cool-weather product**

G pbi / GORDON
CORPORATION
An Employee-Owned Company

800.821.7925

pbigordon.com/speedzone

Checkered Flag Design®, Gordon's®, ProForm®, and SpeedZone® are registered trademarks of PBI-Gordon Corporation. Always read and follow label directions. 4/12 01809

COVER STORY

CAREER COUNTERMEASURE

PLAN B

Have a Plan B for your career and be prepared for the next step. Solid advice is to keep your head on a swivel as nobody knows what tomorrow will bring. Is your resume ready? Have you built a strong set of skills that employers would want? Don't wait until the pink slip arrives to be ready for the next step in your career. Statistics indicate that we will likely have as many as six different employers during our careers. Knowing that, it would bode well to prepare in advance for the inevitable.

WHO'S THE BOSS? Repeat after me: "It's their golf course."

When you believe the golf course is yours and that the members should follow your lead, then it is time to move on down the road. There is a huge difference between taking pride in your work and thinking you rule the kingdom. Never get too big for your britches. Be humble and appreciative that you are entrusted with the care of a golf course and always remember who's the boss.

CHA-CHA-CHA CHANGES. Change is life's only constant, and the golf course management industry is no exception. It may be new standards, new equipment, new cultural practices or any variety of "new" things. Most people who own or manage golf courses are accustomed to change. In fact, they expect change to happen. It is better that you are aware of potential change and then manage it along the way.

Too many times I hear stories of a great superintendent who drew a line in the sand and resisted change only to find that the next change at the club was bringing in a new superintendent who embraced change.

Here's an anecdote. A superintendent friend of mine had a long tenure at nice golf club. With a few years left before he planned to retire the club wanted to do a restoration of the classic golf course. That superintendent believed it would ruin the golf course. So after 30 years of employment he was asked to leave because he did not embrace the change. Remember, there is always somebody waiting in the wings to move into your spot. Instead, learn to go with the flow or be swept away if you don't lead – or want to lead – the change.

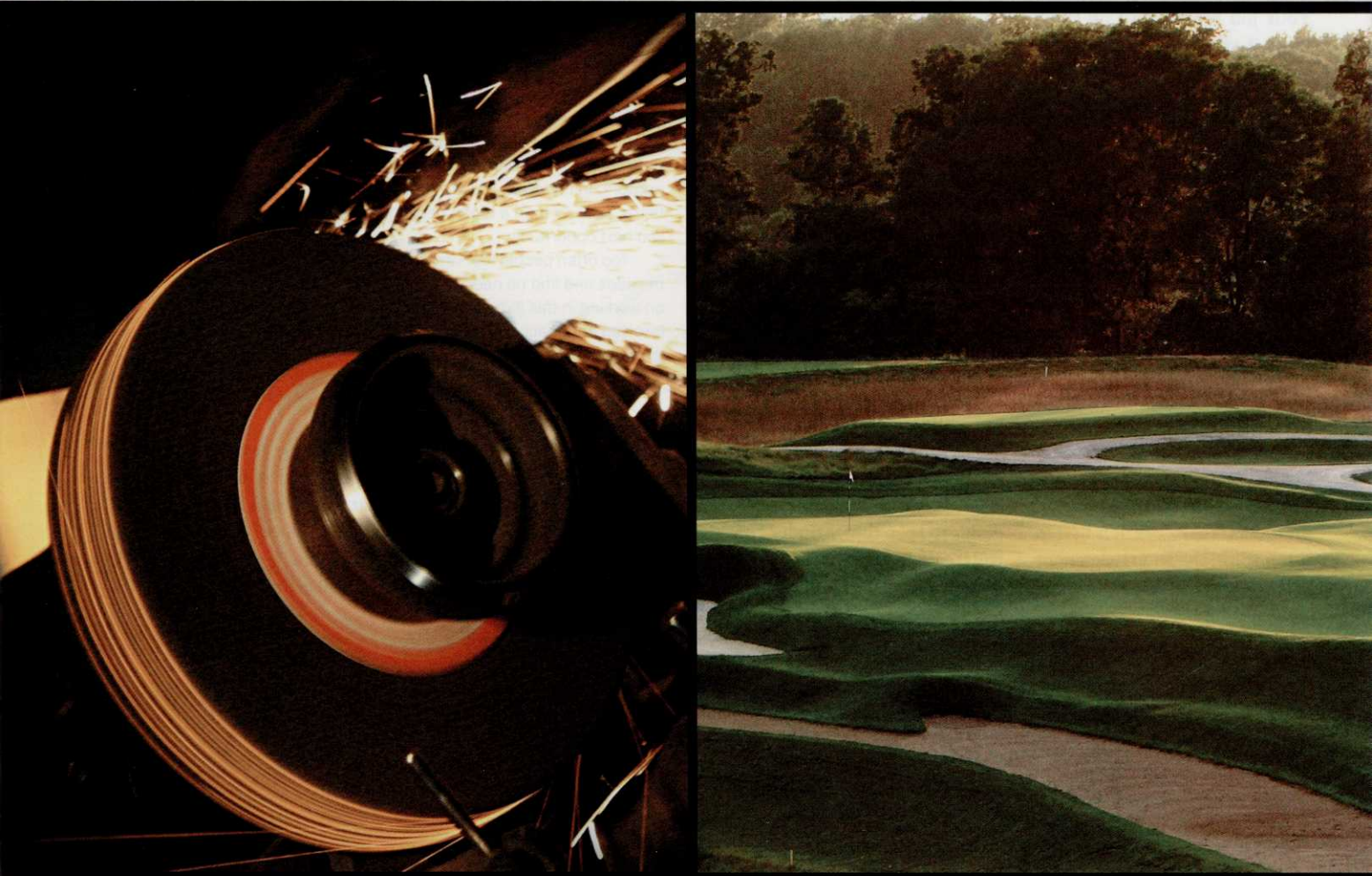
SAY WHAT? Keep your ear to the ground and listen to what members or customers are telling you.

Every job has its fair share of complaints and concerns expressed by golfers, owners and management. You need to filter what is being said and then determine your priorities. Most importantly, learn to accept constructive criticism.

If you don't listen or respond to what's happening around you, then you will be thought of as an ineffective communicator. Following a catastrophic loss of turf, lacking the skills to communicate with members and/or management is a close second to generate superintendent pink slips.

It's not unusual to hear the phrase "He wasn't a good communicator..." to describe the previous superintendent. Your ability to keep grass green is a given. Your interpersonal communication skills will make or break you.

Quality Of Cut Starts With Quality Of Grind



It's a fact. Grind quality equals cut quality. That's why you choose Foley. Spin or relief, touching up or returning to factory specifications, Foley gives you the most precise, accurate grind in the business. With ease and convenience nobody can equal.



Setting The Standard With The Worlds Most Valued Grinders
Proud Sponsor of GCM's MVT Award — Go to GCSAA.org for more information



And this notion extends beyond the confines of your course. Your job tenure will be short lived if you don't reach out to your golfers via blogs, websites, town hall meetings, newsletters and such. Those are forums for you to shine and keep management and golfers informed. If you don't keep people informed, then they will be left to make their own conclusions. In the end, it probably will not be to your benefit.

PROVIDE SOLUTIONS, NOT REQUIRE THEM. You were hired to manage the facility. There will always be problems that arise. The people you work for expect you to solve any and all problems. Therefore, it is best to bring solutions to management and ownership and manage the

process along the way.

Anyone who makes it a habit to head to the front office for answers to their problems will soon become expendable. Be known as the "go-to" person who solves problems and gets the job done – not some of the time, but all of the time.

By default, superintendents who are problem solvers have greater job security, especially in the current market.

SPARKS, SMOKE AND THEN FIRED.

At nearly every golf course there tends to be minor rumblings and grumbling from time to time. Those are the sparks that, if not addressed, begin to smoke and eventually turn to fire. It is a lot easier to keep things under control if caught in the earlier stages when there isn't a full-blown fire

CAREER COUNTERMEASURE

WATCH YOUR NETWORK

If you look at your employment as a job rather than a career, then you don't have to worry about developing and maintaining a network. In the event you are ever out of a job, though, there is no better support than a broad network of individuals to help you find your next opportunity.

Too often people feel very comfortable as employees of several decades and find no need to develop a strong network. If you plan on working in this industry for 40 years, then it is important to be involved and reach out to any and all who can help you manage your golf course and also help you with leads on future employment.

to extinguish. We all have encountered negative golfers from time to time. There is always a small segment of any group who is not happy all the time. Therefore, work hard to win

those people over. Out of sight, out of mind is never a strategy that works for a superintendent, whether on the course or in the clubhouse. Ignoring them will not make things better for you.

THE WORLD'S FIRST TRUE GASLESS™ ALTERNATIVE!

Featuring CORE™ Motor Technology



Conductor Optimized Rotary Energy or CORE™ technology produces the highest energy factor per pound of any existing motor at a fraction of the size and weight.

Intelligent Technology to Replace Gas™

- ALL THE POWER of gas products
- LESS COST than gas products— recharge alone is under 5 cents
- QUIET— no hearing protection required
- INSTANT START— goes to work right out of the box

C(•)RE™
GasLess Power™

www.coreoutdoorpower.com (406) 883-CORE (2673)

Designed and Assembled in the USA

QUAD POWER PAK

4X The Run Time!
Swap & Go Convenience!
Mobile Charging!



ALL THE POWER. LESS COST. MAINTENANCE FREE.



syngenta[®]

2013 Syngenta Acelepryn[®] Program

Purchase a minimum of one (1) gallon of Acelepryn[®] AND any other Qualifying Product(s) totaling \$2,400 and receive a pair of Oakley[®] Straight Jacket[®] sunglasses

EXAMPLE:

1 gallon of Acelepryn + 1 Daconil Action[™]/Heritage[®] Multipak



OR

Purchase a minimum of two (2) gallons of Acelepryn AND any other Qualifying Product(s) totaling \$5,000 and receive an iPad[®] mini + Wi-Fi

EXAMPLE:

2 gallons of Acelepryn + 4 gallons of Primo Maxx[®] + 1 Daconil Action/Appear[™] Multipak



Qualifying Participant

A "Qualifying Sunglass Participant" and "Qualifying iPad Participant" are defined as a golf course end-user who purchases Qualifying Product (as described in the Program Details below) during the Qualifying Program Period.

Qualifying Program Period

March 1, 2013 to June 30, 2013.

Qualifying Product

A "Qualifying Product" is defined as all Qualifying Products listed in the 2013 GreenTrust[™] 365 Golf Program.

Program Details

- Qualifying Sunglass Participants will be eligible to receive one (1) pair of Oakley[®] Straight Jacket[®] sunglasses for **each** \$2,400 in purchases of Qualifying Products, which must include at least one (1) gallon of Acelepryn[®] (52452) ("Sunglass Incentive").
- Qualifying iPad[®] Participants will be eligible to receive one (1) iPad mini +Wi-Fi for **each** \$5,000 in purchases of Qualifying Products, which must include at least two (2) gallons of Acelepryn (52452) ("iPad Incentive").
- This Program is subject to the following:
 - Syngenta reserves the right to modify or discontinue the Acelepryn Program at any time for any reason.
 - All Program eligibilities and incentives are subject to audit, and no rewards will be received in the event of noncompliance with Program rules.
 - Purchases of Qualifying Products during the Qualifying Program Period may only count towards either, but not both: **a)** Sunglass Incentive or **b)** iPad Incentive.

Program Redemption

Qualifying Sunglass Participants and Qualifying iPad mini Participants eligible to receive a Sunglass Incentive and/or an iPad Incentive, will be presented with Sunglass Incentive and/or an iPad Incentive by Syngenta after August 1, 2013 for Qualifying Product purchases during the Qualifying Program Period.

Notwithstanding anything to the contrary herein, Syngenta will not be liable to pay either the Sunglass Incentive or the iPad Incentive with respect to purchases for which Syngenta has not yet received payment.

Contact your Syngenta Representative, Syngenta Authorized Agent/Distributor or the Syngenta Customer Center at 1-866-SYNGENTA (796-4368). www.greencastonline.com



Apply early and the party's over for pests.

A single application of Acelepryn® insecticide in April or May gives you season-long control of all key white grub species, plus excellent control of turf caterpillars, European crane fly, annual bluegrass weevil, billbugs and other key turf pests. To learn more about how to use Acelepryn for optimal control of annual bluegrass weevil, visit **WeevilTrak.com**.

 **Acelepryn®**
Insecticide

syngenta™

For a special program offer, scan the QR code
or visit **GreenCastOnline.com/Acelepryn**



© 2013 Syngenta. Important: Always read and follow label instructions before buying or using Syngenta products. The label contains important conditions of sale, including limitations of warranty and remedy. All products may not be registered for sale or use in all states. Please check with your state or local Extension Service before buying or using Syngenta products. Acelepryn® the Alliance Frame, the Purpose Icon and the Syngenta logo are trademarks of a Syngenta Group Company. Syngenta Customer Center: 1-866-SYNGENT(A) (796-4368). MW 1LGG3037 03/13

Find out what their issues are and then kill them with kindness.

Consider this, 10 percent of the golfers are happy all of the time and 80 percent of the golfers are happy most of the time. The final 10 percent are unhappy more often than not. That being said we need to be sure the 10 percent who are negative do not infect the 80 percent in the middle. Catch negativity early and nip it in the bud. You may not be successful with all curmudgeons, but it is important to stop the fire from spreading and consuming you.

YOUR SKILLS DULL. If we rely solely on the

skills we learned while in college, then some of us would be using technology from the 1960s to manage golf courses. Education is important to learn the business and get those initial jobs. Continuing education keeps you current in those jobs. Today, there is a plethora of opportunities available to stay current. A few examples include seminars, webinars, the Golf Industry Show, chapter meetings and extension classes. Our business is not just about soil, water, grasses, weeds, insects and diseases. While it's important to stay current with those items, you must be proficient in human resources, equipment technology, new products, managing people,

and accounting and budgeting.

When trends like lightweight mowing, greens rolling, and the use of moisture sensors entered the industry there were those superintendents who were early adopters. There were also those who exclaimed "That will never happen at my course!" and are now out of a job.

Study the trends and know what is happening at courses in your area, as well as in the industry at large. Position yourself as the best-educated person at your facility so you can thoughtfully address those potential changes and trends when the time comes.

As a side note to this, despite where you are

Out of sight, out of mind is never a strategy that works for a superintendent, whether on the course or in the clubhouse. **Ignoring them will not make things better for you.** Find out what their issues are and then kill them with kindness.



with your career, be mindful of your age. For the younger portion of the superintendent ranks it is important to act in a more mature fashion than your actual age. Learn from mentors, always be professional and you will have a long career. For those who have three to four decades of experience under your belts, be aware of the youth nipping at your heels. It is likely they have kept current. If you follow their lead, then you will prosper in your career's twilight years. Don't become stale, and definitely don't become complacent. When you start thinking "what would they do without me" then it is likely your days are numbered.

DYNAMIC DYSFUNCTION. The mission, vision and goals of the facility need to be identified and it takes a team of people to work cohesively to accomplish those things. If walls are constructed rather than bridges to get along with fellow management, then the first casualty is usually the golf course superintendent.

When you're labeled as "difficult" it typically implies that you don't work well with the rest of the facility's management team. Remember, on a day-to-day basis, the manager and the pro have much more access to golfers and members than you do. Therefore, if you don't make every effort to cooperate and work together, then your fate can be sealed with regard to an issue before you even have the opportunity to do any damage control. Each member of the management team may have different roles, but it is essential that all have the same goals for the success of the facility.

FOUGHT THE LAW AND THE LAW WON. This goes without saying, but break a few laws and regulations and see what happens.

The EPA or OSHA rarely shows up on your doorstep for a social call. Most likely it's a harbinger for a very bad, very long day. If the yellow tape goes across the driveway and the club is closed because someone overlooked the laws, then someone will have to take the fall – most likely that person will be you. Become embroiled in a severe enough infraction and it could mean the permanent end of your career in this industry.

Even the best-looking turf will not help you to keep your job when the oversights have not been addressed. Develop a compliance program and make management and ownership aware of it. If they choose not to upgrade things and be compliant, then you have done your duty and the choice is yours

as to whether you want to continue your employment in that environment.

WORK VS. PLAY. Be cognizant that the golf course is your workplace – not a frat house. You are an employee and it is expected that you will conduct yourself and your business operations in a professional manner. There is a huge difference between being congenial and cordial vs. being one of the guys.

Play too much golf and you will warrant criticism from members as well as colleagues. Likewise, gambling, drinking, or hanging out with your members is a good way to alienate yourself to all those outside of that circle. Keep your personal life to yourself. Getting close to your golfers or their families will usually not end up with a positive result. Separate your social life from your professional life. You stand not only to lose your job, but that dark cloud around your behavior may follow you the rest of your career.

COMMON SENSELESS. When it comes to ethics, I remember what my father taught me more than 40 years ago. Whatever you do as a golf course superintendent, if you are unsure if it is ethical, then consider whether you would write that action on a 3x5 card and wear it on your forehead to your next green committee meeting.

Next time you consider accepting baseball tickets, golf junket trips, gift cards, etc., then you should be able to explain the purpose of the gifts and how they were utilized. Employers want a superintendent who negotiates the best prices on products and who is not driven by premiums and incentives. This is a very fine line to walk that is fraught with gray

areas. However, be warned that scenarios that reek of inappropriate ethical behavior will lead to job loss.

ABUSE AND LOSE. If you abuse substances or alcohol it will cost you your job. Some employers will afford you an opportunity to enter a rehab program. You usually get one chance to clean up and put this behind you. Employers are very reluctant to hire anyone who has a history of repeated abuse.

While it is abuse of another nature, there are the few out there who treat their employees poorly. When staff reports constant verbal abuse, then management will decide if it is easier to change your staff or get rid of you. Odds are that if the complaints are constant then the superintendent will be on the losing end of that battle.

Keep your grass green and your golf course playable. Beyond that, understand the circumstances that are common in terminations and stifling careers.

You need to be a true professional to not only succeed, but to enjoy a long, unblemished career. Your conduct and behavior sets the tone for how you will be viewed by employers and, better yet, future employers. Knowledge of current trends and a vision for the future will bring success as a superintendent, but being alert to common pitfalls will prevent you from committing career suicide. **GCI**

Bruce Williams, CGCS, is the principal of both Bruce Williams Golf Consulting and Executive Golf Search. He's also GCI's senior contributing editor.

GET BACK IN THE GAME

Okay. So you've been fired. It's not the end of the world. You can turn this situation around.

Here are 10 steps to move on with your career.

1. List and analyze the reasons you were terminated.
2. Separate perceptions from reality.
3. Learn from what just happened.
4. Conduct a self evaluation. Is there a long-term pattern that led to your termination?
5. Be able to explain your dismissal.
6. Establish a plan for change to prevent a repeat that led to your firing.
7. Make no negative comments about your previous employer... just move on.
8. Reach out to your existing network, share your situation and ask for some assistance.
9. Make finding a job your full-time job.
10. Don't make the same mistakes twice.

Solve Your Tough Challenges

A knowledgeable local partner can be a valuable resource that can provide the proven products and expertise needed to keep turf healthy and golfers happy.

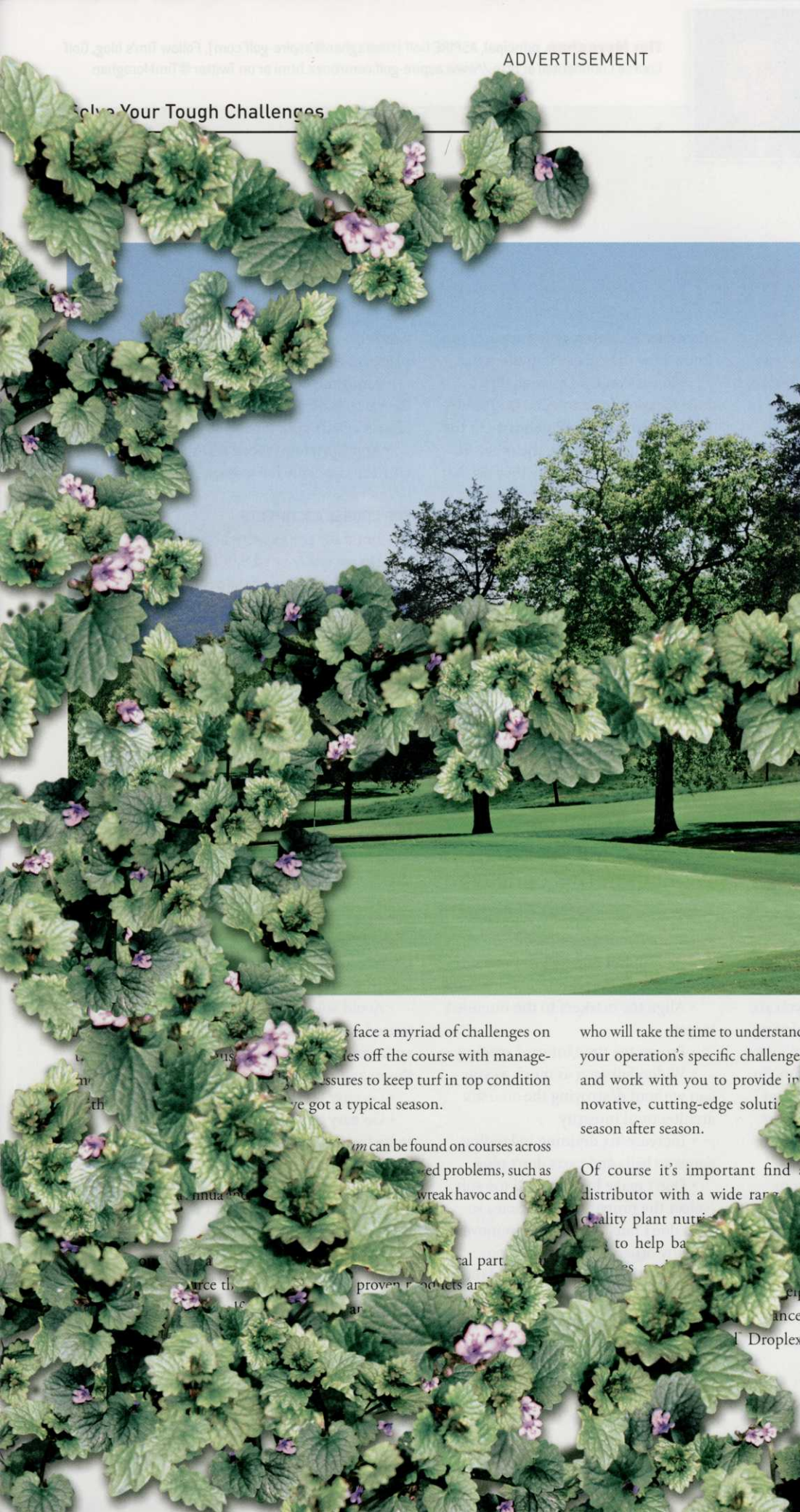
ent can help stretch maintenance budgets by keeping more spray on target and improving the efficacy of herbicides, fungicides and insecticides, making your budget go further.

Unique tools are another thing that can set distributors apart. WinField representatives combine local expertise with unique, data-based technology to simplify complex decisions for superintendents. Through soil, water and tissue nutrition testing; plant health assessment; and the use of unique tools like WinField's Turf Tech 1.0 (a turf variety database), experts offer unprecedented insights that find the right solution for each challenge season after season.

who will take the time to understand your operation's specific challenges and work with you to provide innovative, cutting-edge solutions.

Of course it's important find a distributor with a wide range of quality plant nutrition products to help balance your turf's nutrient needs and keep it healthy. WinField's Droplex™

WinField's proven products and services, you'll be armed with the necessary resources to maintain turf health and meet your golfer's expectations.





Tim Moraghan, principal, ASPIRE Golf (tmoraghan@aspire-golf.com). Follow Tim's blog, Golf Course Confidential at <http://www.aspire-golf.com/buzz.html> or on Twitter @TimMoraghan

NEED FOR SPEED

At the USGA's annual meeting a few months ago, it was announced that it will begin addressing pace of play, not only in their own events (good luck with that!), but down at our level, too. Along with many new programs to educate golfers (watch for another scintillating series of advertisements), the USGA said the Green Section will work with clubs to find ways to prepare courses to encourage faster play.

Hold on a second. I take a back seat to no one in my distaste for slow play. I'll support any good ideas that tackle the problem and will offer some down below. But you and I and everyone else with a pulse know where slow play is worst: On the pro tours, which we watch every week on television.

PGA and LPGA Tour players are so methodical and deliberate, it's painful to watch. Yet, we copy them.

Most of us have neither the ability nor the reason to spend 60 seconds lining up a two-foot putt. I don't think the pros really do either, but they do and likely will continue to. So I'd like to propose that the pros stand up and say, "Don't play like us. When you are ready to play, play. You're not playing for thousands of dollars, this isn't your livelihood, it's supposed to be fun. So please, don't copy us, but play faster."

It won't happen, but it'd be a start.

As for the USGA attempting to tackle this disease, I'd hope our national governing body has more important issues than how fast the 20-handicapper is playing. But if we agree slow play sucks, I suggest we help in this endeavor.

Here are some suggestions to superintendents, architects and golfers on how they can speed up the game.

FOR THE SUPERINTENDENT

- Set up your course to suit your

clientele. You know who they are, you know how they play. Help them out.

- Go easy on US Open-quality hole locations and roughs. Do Pebble Beach, Bethpage, or Pinehurst cut the holes, or cut the rough, the other 51 weeks of the year the way they do that one week, every six or seven years, they host the Open? For that matter, do Winged Foot, Shinnecock, and Olympic keep their courses Open-tough for their members?

As for the USGA attempting to **tackle this disease**, I would hope our national governing body has more important issues than how fast the 20-handicapper is playing. But if we agree **slow play sucks**, I suggest we help in this endeavor.

- Watch your green speeds.
- Be mindful of hole locations on busy days (weekends, holidays, etc.)
- Align tee markers to the intended target
- Proper tee time interval spacing
- Widen fairways as much as you can without destroying the course's architectural integrity
- Increase/fix draining in landing zones so balls and carts don't plug
- Don't make bunker sand too soft (select the proper sand particles so balls don't bury) and reduce/remove the silly ornamental grasses, too.
- Make the course firmer and drier. It will play faster
- Check tree placement. Don't have trees between bunkers and the next landing zone, including greens
- No long, forced carries from tee to fairway (especially middle and for-

ward tees). Don't grow native areas or place water in front of teeing grounds

- Limit the height of primary rough. Research indicates just $\frac{3}{4}$ -of-an-inch affects a ball's spin rate
- Appropriately placed rest room facilities; especially for women players.

FOR COURSE ARCHITECTS

- Build for the expected clientele
- Do we really need 8,000-yard courses? Par 4s longer than 500 yards? A course of 6,300 yards is more than enough for the vast majority of real golfers
- Two or three teeing grounds per hole is enough. More than that gives the golfer too many choices, and the choice he makes is usually the wrong – and long – one
- Don't over-bunker, don't put water in front of tees, don't put water in front of greens on par 3s and par 5s
- The distance between a green and the next tee should not be more than 100 yards
- Place cart paths on the right side of the hole, especially the 1st and 10th holes, since 90 percent of all golfers fade/slice the ball
- Avoid wildly sloping, overly contoured putting surfaces where even an "average" green speed will lead to three- and four-putting
- Go easy on the blind shots
- Go easy on bunkers, too, but place some in strategic areas to stop balls from running into woods, water, and other hard-to-retrieve areas
- Appropriately placed rest rooms

FOR GOLFERS

- Play "ready golf." Hit it, find it, and hit it again
- If someone in your group is slow, tell him. And don't perpetuate his slowness by waiting. When you're

(MORAGHAN continues on page 94)

Solve Your Tough Challenges



As you know, golf course superintendents face a myriad of challenges on the course that can cause major difficulties off the course with management and members. Add in budget pressures to keep turf in top condition with limited resources, and you've got a typical season.

WinField's *Pythium* can be found on courses across

who will take the time to understand your operation's specific challenges and work with you to provide innovative, cutting-edge solutions, season after season.

A knowledgeable local partner can be a valuable resource that can provide the proven products and expertise needed to keep turf healthy and golfers happy.

adjuvant can help stretch maintenance budgets by keeping more spray on target and improving the efficacy of herbicides, fungicides and insecticides, making your budget go further.

Unique tools are another thing that can set distributors apart. WinField representatives combine local expertise with unique, data-based technology to simplify complex decisions for superintendents. Through soil, water and tissue nutrition testing; plant health assessment; and the use of unique tools such as the WinField™ Turf Tech Tool (a searchable turf variety database), WinField experts offer unprecedented, fact-based insights to help superintendents find the best solutions for each challenge they face.

WINFIELD™

In our business it's not a green jacket that proves you're a master.

Using our new WinField Insights™ Tech Kit, we can help pinpoint your challenges and provide the right products to help you look like a master. To learn more, visit winfield.com/golf

Friends with benefits

Meet your **new BFFs** when it comes to grub control, though white grubs may disagree with the term “beneficial nematodes.”

by Rob Thomas

Nematodes, often vilified for their propensity to negatively affect turfgrass conditions while feeding on the roots, are enjoying some positive recognition. Not the parasitic varieties, mind you. Rather their cousins... the beneficial nematodes.

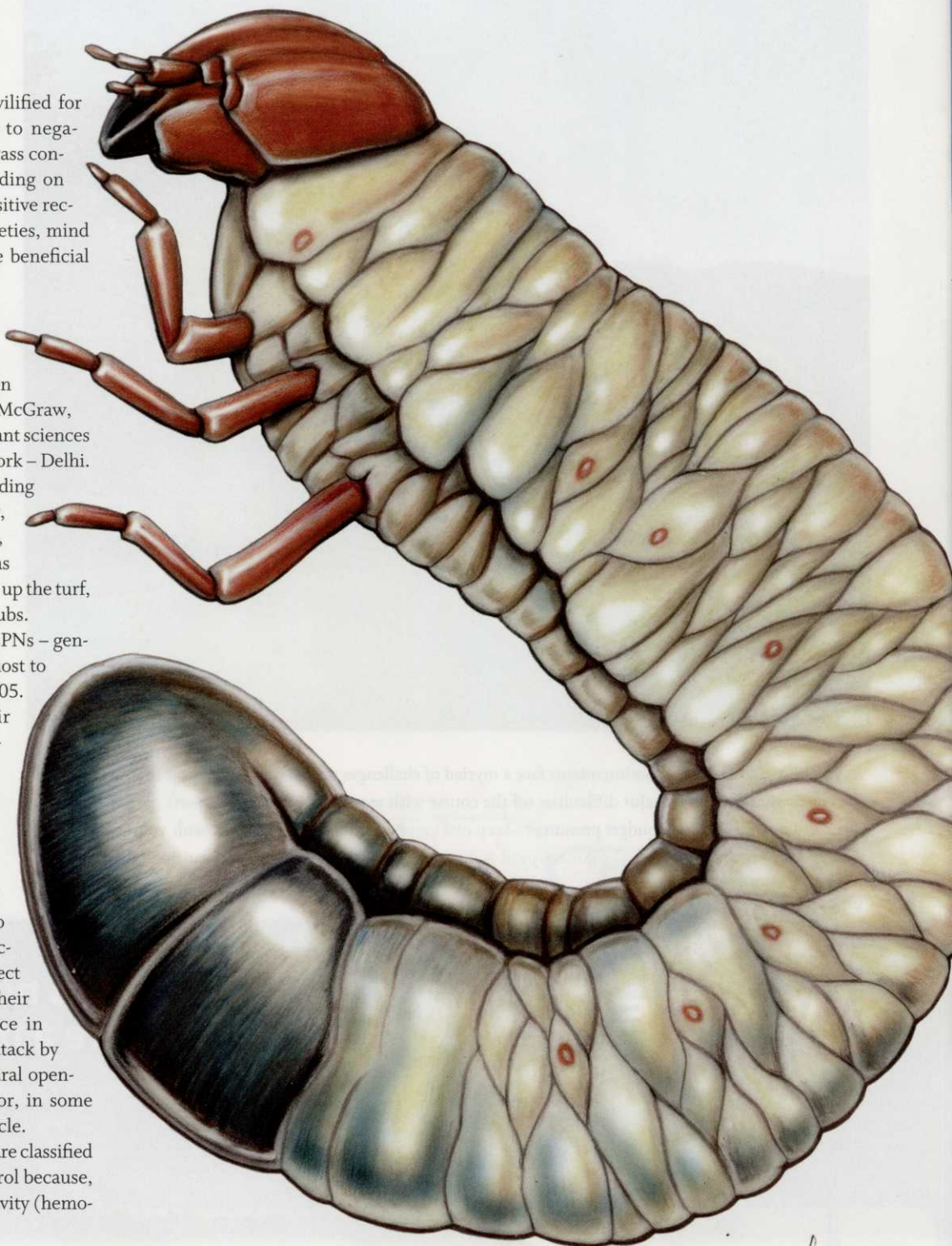
White grubs may disagree with the term “beneficial.”

White grubs – in particular the larval stages – damage turf in two ways, says Dr. Benjamin A. McGraw, associate professor – golf and plant sciences at the State University of New York – Delhi. Primary damage comes from feeding directly on the roots. Secondary, which may cause more damage, occurs when vertebrates, such as skunks, raccoons and birds, tear up the turf, searching for a good meal of grubs.

McGraw has been studying EPNs – generalist parasites that require a host to live and reproduce – since 2005. They can live outside of their hosts in an immature stage referred to as an Infective Juvenile (IJ). This stage is a free living, non-feeding stage that can be found in most soils, in most ecosystems.

“They live outside a host, but require a thin film of moisture to move around and to persist,” McGraw says. “They seek out insect hosts to infect by cueing into their breathing (CO₂) release. Once in contact with the insect, they attack by entering the host through natural openings (mouth, spiracles, anus) or, in some cases, directly through the cuticle.

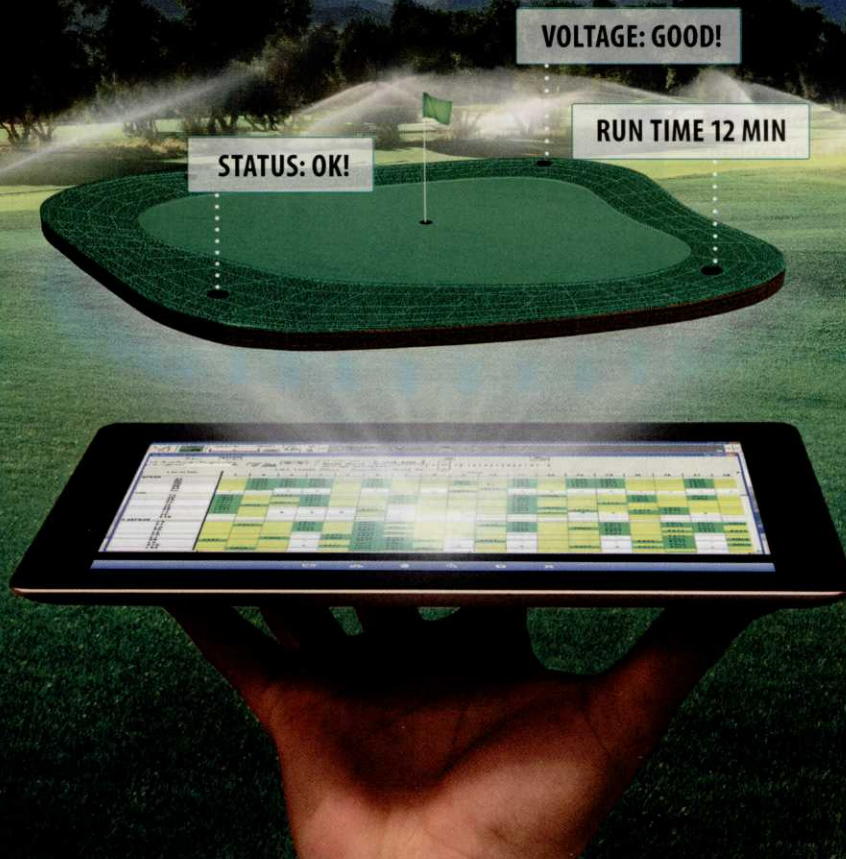
These beneficial nematodes are classified as pathogens in biological control because, once inside the insect’s body cavity (hemo-



Set your course at
rainbird.com/ICS



Setting the right course of action.
That's intelligent.



Integrated
Control Module

Rain Bird® Integrated Control (IC) System™ gives you flexibility for today and tomorrow. In a class of its own and masterfully engineered with rapid two-way communication, real time diagnostics and centralized control, the fully underground IC System puts you in command of individual rotors from your central control computer, tablet, radio and smart phone. The IC System helps save costs using significantly less wire and material, making it easy to install, expand and adapt as your course grows and evolves. With the Rain Bird IC System, you're setting a course of action. **Set your course at rainbird.com/ICS.**

RAIN BIRD®

coel), the IJs release a symbiotic bacterium that causes the host to die from septicemia, McGraw says. "The bacteria also convert the host's tissues to a substrate for nematode development to the adult stage and ultimately reproduce," he says. "After [the] cadaver has been depleted (and nematodes have developed through one to three generations), potentially hundreds to hundreds of thousands of new IJs emerge to seek out new hosts."

Beneficial nematodes are found naturally, says Julie Graesch, nematode field development specialist at Becker Underwood, but not at the levels needed for effective grub control.

Describing them as "driven organisms whose sole purpose is to find a grub," Graesch says there are two types of beneficial nematodes – ambush and cruiser.

"Ambush don't move as much and wait for the organism to come to them," she says. "Cruisers seek their host..."

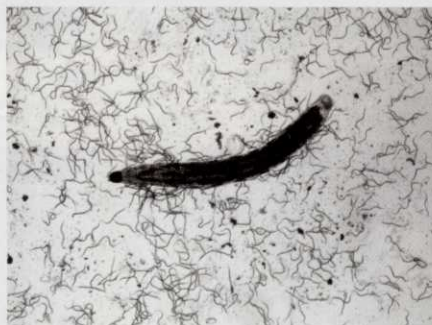
Because beneficial nematodes are live organisms, they're very sensitive and need to be handled in a delicate, specific manner.

According to Graesch, they are shipped "priority overnight" with cold packs and should be put immediately into a refrigerator upon receipt, but be sure not to freeze. And because energy is the only thing they have to move, if set on the counter, they'll still be moving, which will result in loss of energy and effectiveness.

When applying them, keep the nematodes agitated, not letting them settle to the bottom of the tank. Keep the water cold, as well. If applying in the heat of August/September, put the cold packs in the freezer and then place in the water when mixing, Graesch says.

Once applied, the nematodes need water to survive and move. When watering in, they'll sit on the grass blade. As soon as the blade dries, so does the nematode ... and dies. Sufficient watering will prevent that. Once in the soil, they need moisture, so irrigate abundantly for two weeks after application.

McGraw warns that the beneficial nematode's level of effectiveness can vary considerably, since they're living organisms, compared to their chemical counterparts. They may provide quite a high level of control, or provide multi-year suppression if they recycle or reproduce in great numbers, or may be ineffective if the wrong species are used. For example, if the nematodes attack strategy fails to match the grub's behavior or position in the soil or activity across the soil surface, then they won't be effective. Likewise, if the beneficial nematodes are mishandled – exposed



Top: Beneficial nematodes emerge to seek out a new host.

Bottom right: In addition to root damage, grubs are a favorite snack of skunks and raccoons.

Bottom left: Tiny, but deadly if you're a grub.

Beneficial nematodes: the positive and the negative

Pro

- Biological control
- No effects on humans
- Water quality
- Can provide rapid host death (48 hours or less after infection)
- Can be applied through standard chemical sprayers and PSI requirements
- No chance of resistance development

Cons

- Expensive
- Variable levels of control
- Sensitivity to environmental conditions (UV, drought, heavy rainfall – moved away from host)
- Must be handled with great care
- Nematodes are typically generalists – and not specific to attack



A fungus gnat nematode.



Inside one of these plump wax moth cadavers are thousands of wiggly nematodes, ready to serve as biocontrols against soil-dwelling pests.

to UV light, formulations or excessive heat – they can die before they have the opportunity to enter a host.

As for timing, when battling white grubs, McGraw recommends timing applications for when larvae are between their second and third instars. “In the northeast, this works out to also be the time when soils and moisture are favorable for nematode survival, infectivity and persistence,” he says.

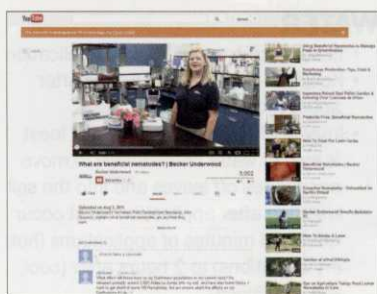
Frequency of beneficial nematode use is largely dependent on budgetary restrictions.

“Most people, given their higher costs relative to chemicals, will apply at a standard rate of 1 billion IJs per acre one time,” McGraw says. “Few people have examined split rates, but for some insect pests this strategy might be preferred.”

The higher cost may deter some superintendents from using beneficial nematodes, Graesch says, but she knows buyers are often drawn to the environmental upside. “If it’s a progressive, green golf course that wants to get away from chemicals, nematodes work

Video

Check out these great videos from Becker Underwood about using beneficial nematodes to control turf grubs. Just enter bit.ly/Z6IEQZ and/or bit.ly/16eAhXB into your Web browser. If you’re viewing this article via the iPad or iPhone app, just tap the screen pictures to activate the videos.



Fun fact

Though initial discovery and subsequent development of *Steinernema glaseri* – a species of entomopathogenic nematodes (EPNs) – as a biological control agent can be traced back to the early 20th century, research and use increased dramatically in the 1980s. This was preceded by the discovery of the beneficial nematode (*Heterorhabditis bacteriophora*) by entomologist George Poinar, Jr. in 1975.



JRM Inc.

Innovative Turf Technology

Made in America for America

“Quality Matters”



NEW PRODUCT

“The Vulcan”

Fits Anglemaster, Foley,
Peerless and Neary



Tines • Bedknives • Blades

Blocks • Bedknife Grinding Wheels

JRM Inc. • Clemmons, NC

(888) 576-7007

www.jrmonline.com



Above: Two white grub larvae killed by *Heterorhabditis bacteriophora* next to two healthy larvae Left: A white grub larva killed by *Heterorhabditis bacteriophora* next to two healthy larvae

just as well," she says. "[They] just have to justify the extra cost."

The "industry standard" application rate of 1 billion per acre would be appropriate for most white grub species, McGraw says, though good control could be achieved at lower rates with some, possibly lessening the overall cost.

Doing Internet searches, McGraw says costs for beneficial nematodes ranged anywhere between \$500 per billion all the way up to \$2,000. Comparatively, chemicals are generally around \$30-40 per acre.

Beneficial nematodes can be used in conjunction with chemicals containing the active ingredient imidacloprid, Graesch says, pointing out that chemicals can't always get down deep enough to reach grubs, whereas nematodes have their own propulsion.

So what are the drawbacks to enlisting the help of beneficial nematodes to control grub populations? Perhaps the biggest con, McGraw says, is there are seemingly few producers. "Supply and demand is not in the nematode producers favor, or the person wanting to get into applying EPNs," he says, circling back to the high cost.

Dr. Jennifer Grant, co-director of the New York State Integrated Pest Management Program at Cornell University, acknowledged the pricey nature of beneficial nematodes, but says it could be worse. "Because they are considered predators, entomopathogenic

nematodes are exempt from registration by the United States Environmental Protection Agency (US EPA)," Grant says. "This exemption from long-term safety and water-quality studies has greatly reduced the costs and risks typically associated with registering a new insecticide."

Still, paying more than 10 times what a chemical would cost to do the job needs justification. In the Northeast beneficial nematodes are often used for curative control – after the eggs have hatched and grubs are present, Grant says.

"If you find out too late (for preventative options) that you have a grub problem, it's an excellent option," she says, noting that there is at least one curative chemical on the market, though it's "fairly harsh, as far as toxicity."

Realizing you missed an area or if grubs break through chemical control are often cited as other justifications for using the higher-cost nematodes. They're fast acting, as well, doing much of their work within a week. And vertebrate feeding stopped almost immediately – within a day or two, Grant says.

As for advice for superintendents who may consider incorporating beneficial nematodes into their grub-control routine, McGraw says there may be strength in numbers.

"The market is not in your favor, but you should be commended for wanting to integrate nematodes into your management plan," he says. "Group discount? Get more

Keys to success

The tops tips to successfully enlist beneficial nematodes to battle grubs.

TIMING

- The goal is to prevent drying out of the nematodes
- It's best to apply before, during or after rain
- Avoid direct sunlight during application
- Apply in the early morning – if immediate irrigation is available – or late afternoon/evening

APPLICATION

- Use immediately after mixing
- Agitate constantly during application
- Apply when soil temperatures are between 54 and 86 F at application and at least two weeks after application
- Do not use the product past the expiration date
- Never mix fertilizers or pesticides with Nemasys G in the spray solution.

WATER

- Ensure soil is moist prior to application
- Keep soil moist for two weeks after application
- Irrigate after application with at least ½ inch of water immediately to move nematodes off leaves and into the soil
- Irrigation after application must occur within 30 minutes of applications (hot, dry conditions) to 2 hours after (cool, wet conditions)



MARUYAMA®

The POWER in Outdoor Power

The New **BL85 900**cfm

Featuring the new
patented 900 Tornado Tip



The lightest, most comfortable
and "oh, so very, very powerful"

MARUYAMA BACKPACK BLOWER ... PERIOD

Coming to a Golf Course near you.

See your local Dealer and get one now. Don't be the FALL guy.

- new spring-loaded, anti-vibe suspension
- new ergonomic design and great balance
- thicker, padded, support straps

www.maruyama.com



THE CLEAR CHOICE



KPHITE® 7LP SYSTEMIC FUNGICIDE BACTERICIDE

KPHITE 7LP Systemic Fungicide Bactericide is proven effective against pythium, dollar spot, brown patch and fungal diseases. KPHITE is EPA labeled, pH neutral and is uniquely formulated to increase plant health and vigor.



TO FIND A DISTRIBUTOR
OR LEARN MORE
WWW.PLANTFOODSYSTEMS.COM
800.343.7775

PLANT HEALTH



Costs for beneficial nematodes range between \$500 per billion all the way up to \$2,000. Comparatively, chemicals are generally around \$30-40 per acre.

people to buy into the practice and the industry should respond.”

Grant takes the same stance she would if a superintendent asked about chemical use on their course.

“I’d recommend to anyone to try a small area [first], regardless of what their strategy is for the next season,” she says. “Take an acre or small area of rough.

“This is a good one to have in your back pocket,” she adds about beneficial nematodes.

Start by thinking of beneficial nematodes as the live organism they are, comparing the purchase to buying a pet, Graesch says. “You need to take care of them when you get them... Need to take care of them during application... Need to take care of them after application,” she says. “They have to be properly stored, properly mixed, properly applied, and properly handled after application.” **GCI**

Rob Thomas is a Cleveland-based freelance writer and frequent GCI contributor.



Want more?

Check out this great research article, which first appeared in the September/October 2009 edition of the USGA Green Section Record, about enlisting

Mother Nature’s help in controlling white grubs on golf courses in the transitional climatic zone. According to the study, researchers found insect-pathogenic nematodes, Tiphia wasps, milky disease, and other pathogens accounted for moderate to high natural mortality at some sites. Enter **bit.ly/Wvf1LA** into your Web browser to read the report. If using the iPad/iPhone app, just tap the image.

By Katie Tuttle

Whac a Grub



Aerification may allow you to more effectively control your white grub problem.

Rather than targeting adult beetles, consider controlling the grubs feasting on your turf's roots with aerification.

In fact, this is a concept Benjamin McGraw, Ph.D., associate professor of golf and plant sciences at the State University of New York (SUNY)-Delhi, has been studying since 2009 and his research has produced some intriguing results.

There's some solid reasoning behind this research. For example, larvae typically damages turfgrass in the fall, the same time superintendents are going through the aerification process.

"We've wondered what the impact of running these machines over the area would have on something that was feeding close to the surface," McGraw says. "So the added benefit (of the research) is that we were able to document some pretty good control of larvae at the same time as doing these practices that are done to reduce compaction and

"So the added benefit (of the research) is that we were able to document some pretty good control of larvae at the same time as doing these practices that are done to **reduce compaction** and all these other beneficial things outside of pest control."

— Dr. Benjamin A. McGraw, State University of New York – Delhi

all these other beneficial things outside of pest control."

McGraw looked at three different types of cultivation treatments for his study: hollow- and solid-tine aerators using a Toro ProCore 648, solid vibratory tines using First Products UA 60 Area-vator, and air-injection systems using a Cambridge Liquid/Air Injection Systems (R).

The hollow- and solid-tine aerators move vertically, and some inject a core while others have a spike to dig directly into the ground. The solid vibratory tines

rotate on a drum and vibrate side-to-side. The air-injection systems injected air, liquids or a solid material into the soil at a high pressure, fracturing the soil.

Of the three types, McGraw found the last two did not work as well as they had hoped. "Once the (solid vibratory tine) goes in the ground, it kind of wiggles and we thought it might crush some of the grubs off to the side," McGraw says. "That didn't really work too

well, and it was very traumatic to the turf."

As for the air-injection systems, they did kill grubs, but McGraw did not find it to be overly measurable in the field.

"It didn't really look any different from the untreated control plots" he says.

The traditional method of hollow- and solid-tine aerators seemed to have the most impact on controlling the grubs. "We were able to document some pretty moderate to high levels of control just by aerifying, either in single or multiple passes over the turf," McGraw says.

But before you go out and dump your pesticides, you need to consider the variables.

"It's variable," McGraw says. "From one year in the field to the next you might get great control and you might get poor control. It is dependent on several factors like grub spacing and density, as well as aerator tine diameter, tine spacing, and frequency."

However, McGraw does have confidence that his findings will be effective. "Will it give you 100 percent knockdown? No way," he says. However, the potential exists to get a level of control comparable to that of applying chemical insecticides curatively, thereby eliminating an application. **GC**



Left: a white grub speared from one of the aerification processes. Inset: the tines of First Products UA 60 Area-vator.

CAJUN SEASONING

Superintendent Scott Poynot perfects his recipe for a quality playing surface – the right combo of turf and soil that requires the least amount of labor and inputs.

by Dan McDonald

When it comes to turfgrass, the words “good enough” aren’t in Scott Poynot’s vocabulary. That – and the desire to find a durable, consistent and eco-friendly grass for LeTriomphe Golf and Country Club – has driven Poynot to take some extraordinary steps in the turfgrass management field.

“Conventional wisdom sometimes needs to be challenged,” says Poynot, agronomist and long-time superintendent at the south Louisiana club. “Turf grass management standards created by our industry do not come in a one-size-fits-all box.” That’s why Poynot has what amounts to an experimental turf farm set up maybe 100 yards from LeTriomphe’s No. 10 green. At that checker-board location, Poynot and LeTriomphe are studying five different grasses, each planted in neat rows on four different soil conditions.

The goal is to learn which grass and soil combinations require the least amount of input and labor while still maintaining the high standards of performance that have become synonymous with the LeTriomphe course. It’s the type of research that is normally restricted to commercial turf farms and university agricultural extension programs.

“When most private clubs are looking for ways to cut costs and corners, we’re looking for ways to invest wisely and we want to embrace innovation,” says LeTriomphe general manager Dawna Waterbury. “I don’t know of another club that’s trying such a complete and comprehensive approach to its turf management program.”

The 20 small plots include plantings of platinum paspalum, sea dwarf paspalum, mini verde Bermuda, tif dwarf Bermuda and tif eagle Bermuda. The four different soil conditions are all USGA sand-in combinations using different amendments.

It’s not like LeTriomphe’s turf was in peril... far from it, in fact. During the past year, the course’s greens drew raves after Poynot be-



Scott Poynot’s goal was to find the perfect turf and soil combo while still maintaining the facility’s high standards of performance at LeTriomphe Golf and Country Club.



STRENGTH FROM THE GROUND UP

Nothing offers more plant health benefits than DISARM® fungicide. Xylem Pro Technology™ penetrates the leaf tissue fast to stop and prevent diseases. The end result is a greater number of stronger, longer roots and a healthier course overall.

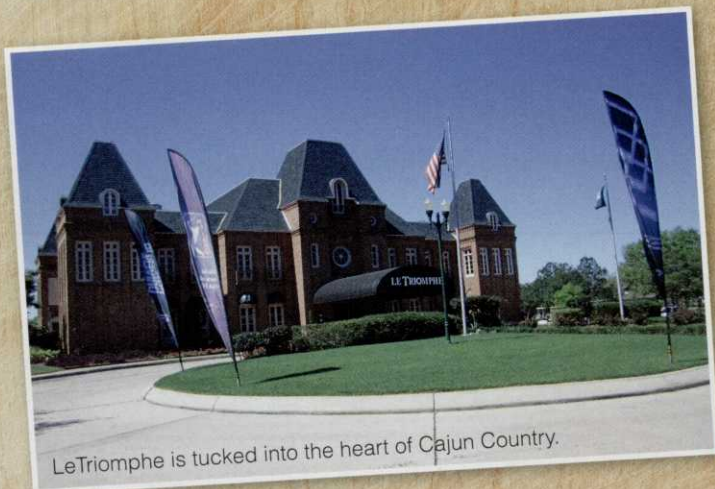
Disarm®

Premium strobilurin protection



Arysta LifeScience

Always read and follow label directions. DISARM and the DISARM logo are registered trademarks of Arysta LifeScience North America, LLC. The "Xylem Pro Technology" slogan is a trademark of Arysta LifeScience North America, LLC. Arysta LifeScience and the Arysta LifeScience logo are registered trademarks of Arysta LifeScience Corporation. ©2013 Arysta LifeScience North America, LLC.



LeTriomphe is tucked into the heart of Cajun Country.

gan a full-foliar fertility approach that has also been used at other high-end courses. Tweaking rates of several different nutritional products, growth regulators and hormones eventually yielded a quality product.

"After trying six different companies' foliar products, we found what I believe are the best foliars available in the industry," he says. "We managed the greens by paying very close attention to clipping yields and color. We also monitored scientific data and warm-season growth potential numbers to determine expected growth and compare that actual daily yield."

The research, time and money was worth it.

"Conventional wisdom sometimes needs to be challenged. Turf grass management standards created by our industry do not come in a one-size-fits-all box."

— Scott Poynot, LeTriomphe Golf and Country Club

"During our annual member-guest tournament this year, our greens' speed was equal to that of the U.S. Open," says LeTriomphe head professional Jeff Anderson. "For the club championship, it was a foot faster than the Open (the staff measured them at 14.5 on the stimpeter)."

"The greens at LeTriomphe are something special," says Ted Scott, a LeTriomphe member and caddie for PGA Tour member and Masters champion Bubba Watson, in September. "I have yet to see Bermuda greens better than what LeTriomphe has right now."

That success came at a price, though, and Poynot sought a solution to the significant dollars and the hours of labor to maintain that high level. He and LeTriomphe both received a plethora of advice from experts based on conventional wisdom, but virtually every new report came with the necessity of additional resources.

"We were spending a significant amount of money and hours and we weren't getting the results

that I expected," Poynot says. "That's when I decided to step back and analyze everything that occurred up to this point. I started thinking about all the different variables that make our course conditions unique, and that's where the journey began to go against conventional wisdom."

Underhill®

ANNUAL SPECIAL INSERT
EXPANDED TO 20 PAGES!

It's here!



- NEW Products for 2013
- Underhill Bestselling Products
- Handy 20-page Reference

— GOLF MASTER STOCKING DISTRIBUTORS —

NATIONAL CATALOGS



eagleonegolf.com

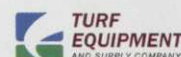


rrproducts.com



precisionusa.com

LOCAL DISTRIBUTORS



Atlantic Irrigation (CT/DE/NJ/NY/PA/VA) atlanticirrigation.com

Bisco (MA/CT/NH) gobisco.com

Colorado Golf & Turf (CO) 303-917-4141

Jerry Pate (GA/AL/TN/FL) jerrypate.com

Matrix (NY) matrixturf.com

Progressive Grower (MA) myturfsupply.com

Sierra Pacific (No. CA) sierrapacificturf.com

Smith Turf (VA/NC/SC/TN) smithturf.com

Spartan (MI) 1-800-822-2216

Sports Turf (So. CA) sportsturfirrigation.com

Turf Equipment (DE/MD/PA/VA) turf-equipment.com

Products that work...smart.™ • www.underhill.us



Underhill®

PROFESSIONAL WATERING PRODUCTS 2013

When a product does its job day in and day out - **it works.**
When it saves you time, money, or water - **it's smart.**
When it does both - **it's from Underhill.**

Products that work...smart.™



Magnum™ UltraMAX

MADE IN  USA

PREMIUM HOSE-END NOZZLES & ACCESSORIES

Step up to the most professional nozzle you can buy - MAGNUM™ UltraMax. Firefighter quality for professionals in any field, these variable flow, multi-function nozzles are virtually indestructible and leak proof. The innovative TURBO SHIFT models provide two distinct GPM ranges. And the outstanding distribution patterns of all MAGNUM UltraMAX nozzles make them excel in high demand areas like greens/tees, infield conditioning and equipment and stadium washdowns.



features / specifications

- Multi-Pattern Spray: Fog, Jet Stream, Fan
- Built for 1" and ¾" Hose Flow Rates (range: 7-43 GPM)
- Materials: Aircraft Aluminum, Stainless Steel, TPR Rubber

FULL THROTTLE

Single Variable Flow: Delivers steady, maximum volume fog, jet stream and fan patterns.

Low Flow (Residential Use) Model:
12-19 GPM (45-72 L/min)

High Flow Model:
15-40 GPM (57-151 L/min)

Super High Flow Model:
39-100 GPM (148-379 L/min)

NEW!

**Super High Flow
UP TO 100 GPM!**

TURBO SHIFT

Dual Variable Flow: Delivers light fog and low volume jet stream patterns before shifting to high volume jet stream and fan patterns.

Low Flow (Residential Use) Model:

Opens with 7-12 GPM (27-45 L/min)
Turbo Shifts to 14-17 GPM (53-64 L/min)

High Flow Model:

Opens with 12-17 GPM (45-64 L/min)
Turbo Shifts to 20-43 GPM (76-163 L/min)

Super High Flow Model:

34-104 GPM (129-394 L/min)



Pistol Grip

Firefighter Grip

UltraMAX Valves

Heavy duty ball valve, push-pull on/off control handle and exceptional build quality for long life under demanding use. Available in Firefighter Grip for two-handed operation or ergonomic Pistol Grip for comfortable, extended use. **Nozzles sold separately.**

ordering

All flow rates based on 80 psi (5,5 bar)

Part # NG550-DFH-75

Turbo Shift 12-43 GPM (45-163 L/min) - ¾" FHT inlet

Part # NG550-DFH-10

Turbo Shift 12-43 GPM (45-163 L/min) - 1" FHT inlet

NEW!

Part # NG550-DFSH-10

Turbo Shift 34-104 GPM (129-394 L/min) - 1" FHT inlet

Part # NG550-DFL-75

Turbo Shift 7-17 GPM (27-64 L/min) - ¾" FHT inlet

Part # NG550-DFL-10

Turbo Shift 7-17 GPM (27-64 L/min) - 1" FHT inlet

Part # NG500-SFH-75

Full Throttle 15-40 GPM (57-151 L/min) - ¾" FHT inlet

Part # NG500-SFH-10

Full Throttle 15-40 GPM (57-151 L/min) - 1" FHT inlet

Part # NG500-SFL-75

Full Throttle 12-19 GPM (45-72 L/min) - ¾" FHT inlet

Part # NG500-SFL-10

Full Throttle 12-19 GPM (45-72 L/min) - 1" FHT inlet

NEW!

Part # NG500-SFSH-10

Full Throttle 39-100 GPM (148-379 L/min) - 1" FHT inlet

Part # SVPG-75

Pistol Grip Valve - ¾" FHT inlet

Part # SVPG-10

Pistol Grip Valve - 1" FHT inlet

Part # SV-75

Firefighter Grip Valve - ¾" FHT inlet

Part # SV-10

Firefighter Grip Valve - 1" FHT inlet

Magnum™

SOLID METAL HOSE NOZZLE

Underhill® Magnum™ contains no plastic internal parts to break, stick or wear out. Our unique ratchet mechanism easily adjusts from gentle fan to powerful jet stream and prevents over-tightening damage. Precision-machined, incredibly smooth operation and outstanding distribution patterns make it ideal for high-demand areas like greens and tees. Magnum™ is also an excellent equipment wash-down nozzle.

features

- Multi-pattern sprays - effortless control with hydraulic assist on/off
- Solid metal internal - no plastic parts to break or wear out
- Ratchet mechanism prevents over-tightening damage
- Ultra-durable construction withstands any abuse
- Fire hose quality nozzle feels great in your hands
- Beautiful, consistent spray patterns for life
- Built for 1" and ¾" flow rates

specifications

Materials: stainless steel, aluminum, TPR rubber

Flow: 37 GPM at 80 psi

Inlet: ¾" hose thread (1" brass adapter available, see Page 4)



Magnum™ nozzle pictured with 1" brass adapter (sold separately on Page 4)



solid metal internal body

Won't stick...won't break



fan



jet



soak

CoolPro™

COOL WITHOUT OVER WATERING - NO ROOT DAMAGE

A hot summer day can be murder on your greens. Use too much water and you risk damage to the roots. CoolPro™ is the first nozzle specifically designed for the single purpose of lightly misting the turf canopy to cool without over watering. And its 25 foot fogging pattern gets the job done quickly.

features

- Precision™ nozzle fogs at 70 psi to deliver a 25 ft. pattern with only 4-6 GPM
- ¾" inlet (1" brass adapter available, see Page 4)
- Ergonomic handle/valve provides easy grip and variable on/off control.
- Durable solid metal design: zinc, aircraft aluminum and stainless steel.

ordering

Part # NG450	MAGNUM™ Hose Nozzle
Part # HNC075	CoolPro™ Valve and Nozzle
Part # HN0600	CoolPro™ Nozzle only
Part # CV075L	CoolPro™ Valve only

Perfect for tournament play, CoolPro™ puts down only enough water to cool the turf canopy. It prevents wilting while maintaining good ball speed. CoolPro is a great tool for protecting grass on hot days without damaging roots.



Precision™

SOLID METAL, SPECIFIC TASK HOSE NOZZLES

Underhill® Precision™ nozzles deliver millions of soft, uniform droplets to provide rapid yet surprisingly gentle water application over a huge range of flow rates. From soft watering to powerful drenching, patented Precision nozzles are designed with ideal flow rates and droplet sizes to fully irrigate without disturbing turf, dirt, seeds, etc., providing a precise solution for every hand watering application.



precision watering for specific tasks



Rainbow™ TASKS: Greens, tees, seed beds, transplants, delicate landscaping (15 GPM)



Rainmaker™ TASKS: Syringe and spot watering turf and hardy landscaping (23 GPM)



Cloudburst™ TASKS: Dry spots, drenching, and wetting agent application (35+ GPM)



Cyclone™ Pre-game skins watering, heavy watering of large areas, ideal for hydroseeding (50+ GPM)

Note: GPM will vary with pressure at nozzle.



high-flow valves



COMPOSITE / STAINLESS STEEL: ¾" hose thread inlet/outlet, oversized handle, up to 55 GPM



SOLID BRASS: ¾" hose thread inlet/outlet, up to 50 GPM

hose adapters / quick-connectors



ordering

Part # HN1500CV	Precision™ Rainbow™ Nozzle Kit
Part # HN2300CV	Precision™ Rainmaker™ Nozzle Kit
Part # HN4800CV	Precision™ Cloudburst™ Nozzle Kit
Part # HN5000CV	Precision™ Cyclone™ Nozzle Kit

Nozzle Kits include brass High Flow Control Valve and ¾" MHT x 1" FHT Adapter.

To order nozzle only: remove "CV" from part number.



Part # CV075H	High-Flow ¾" Valve - Brass
Part # A-BV77FM	High-Flow ¾" Valve - Composite/Steel
Part # A-BA107FM	1" FHT x ¾" MHT Brass Hose Adapter
Part # A-BA107MF	1" MHT x ¾" FHT Brass Hose Adapter
Part # A-BQ7M	¾" Quick-Connect, male end
Part # A-BQ7F	¾" Quick-Connect, female end
Part # HN075W	replacement washer, ¾" hose

NEW! DrainBlaster™

HIGH PRESSURE DRAIN CLEANING NOZZLE

This unique hose-end, high pressure nozzle guides itself in cleaning out drains, to remove debris with ease. Special feature includes a wire attachment connector for using wire locator to determine drain route.

features

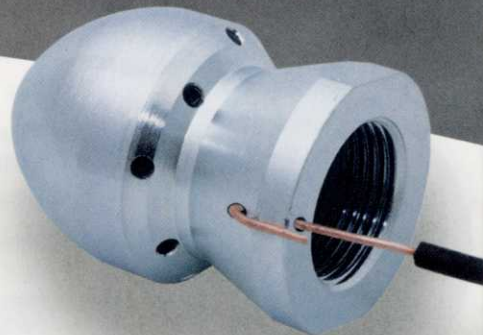
- Front jet cuts through blockage
- Rear jets propel nozzle upline
- Two stage flushing action
- Minimum water pressure: 70 PSI
- Heat treated grade 303 stainless steel for long life



Great for cleaning under sidewalks or cart paths



Ideal for 4"-6" drains and catch basins



Wire attachment connector for mapping drain location under greens, bunkers and other locations using a wire locator.

NEW! RainPro™

SOLID METAL SHOWER NOZZLE

A truly revolutionary shower nozzle for soaking turf or other landscapes... featuring an exclusive solid brass nozzle plate for outstanding pattern and special rubber bumper for nozzle protection.

features

- Ultra durable construction withstands any abuse
- Beautiful, consistent and uniform spray pattern
- Materials: zinc alloy, brass and TPR rubber
- Flow: 40 GPM @ 80psi (built for 1" and ¾" hose flow rates)
- Nozzle assembly unscrews for easy cleaning



RainPro™ nozzle pictured with 1" brass adapter and ¾" high-flow valve (sold separately on Page 4)



Tough TPR rubber bumper protects nozzle



Excellent for golf greens or other turf and landscape applications



ordering

Part # DN-75	DrainBlaster™ Drain Cleaner Nozzle – ¾" FHT Inlet
Part # DN-10	DrainBlaster™ Drain Cleaner Nozzle – 1" FHT Inlet
Part # SHN-75	RainPro™ Shower Nozzle – ¾" FHT Inlet
Part # SHN-10	RainPro™ Shower Nozzle – 1" FHT Inlet

PelletPro™

APPLICATOR GUN FOR SOLID WETTING AGENT TABLETS

Our heavy-duty surfactant applicator, high-flow valve and Precision™ Cloudburst™ nozzle combo comprises the finest wetting agent gun available. PelletPro™ accepts all wetting agent tablets and provides a high volume, yet soft spray for watering or applying surfactants to tight, hydrophobic soils.

features

- 35+ GPM to get the job done faster!
- Ultra Heavy-Duty construction: brass fittings, aircraft aluminum, stainless steel, precision engineered glass
- Pellet rotation (1 RPS) evenly dissolves/applies tablets
- Patented Cloudburst™ nozzle delivers large droplets in an outstanding fan pattern



PelletPro™ rotates pellets at one revolution per second (RPS) to evenly dissolve/apply wetting agent

IN-LINE APPLICATOR OPTION

Connect directly to a water source (quick coupler, HoseTap, etc.) to get the benefits of PelletPro with less handheld weight.



PelletPro's bowl works great as an in-line filter replacement for most spray rigs. Heavy-duty, transparent bowl shows fluid levels, won't crack during winter storage.

Two products in 1!

PelletPro and LiquidPro's Precision™ Cloudburst™ nozzle and high-flow valve quickly assemble to create a powerful, 35+ GPM syringe nozzle.



With the included 1" FHT x 3/4" MHT brass adapter, PelletPro™ and LiquidPro™ work with both 3/4" and 1" hoses.

LiquidPro™

APPLICATOR GUN FOR LIQUID WETTING AGENT

LiquidPro's chemical-resistant, UV-protected, lightweight siphon/mixing system can cover 1000 square feet in less than a minute! With unmatched speed and uniformity, you can virtually "paint" your turf with liquid wetting agent, fertilizers, and micronutrients. Adjustable metering dial offers 10 additive settings including "Water Only."

ordering

Part # A-PPWA50K	PelletPro™ Applicator Gun (with 1" FHT x 3/4" MHT adapter)
Part # A-PPWA50K-E	PelletPro™ Applicator Gun (with 3/4" quick-connect adapter)
Part # A-PPQ-075	PelletPro™ In-line Applicator: 3/4" FHT inlet, 3/4" MHT outlet
Part # A-PPQ-100	PelletPro™ In-line Applicator: 1" FHT inlet, 1" MHT outlet
Part # A-PPB	In-line Filter Bowl
Part # A-PPBG	Gasket
Part # A-LPWA50K	LiquidPro™ Applicator Gun (with 1" FHT x 3/4" MHT adapter)
Part # A-LPWA50K-E	LiquidPro™ Applicator Gun (with 3/4" quick-connect adapter)
Part # A-LPWAB-6	6-Pack of 32 oz. Polybottles and Carrier

MADE IN USA





NEW! ProLocker™

THE MOST POPULAR ASSORTMENT ALL IN ONE COMPLETE KIT

Keep all of your Underhill® professional watering tools secure and safe in this handy kit. ProLocker attaches easily to any utility vehicle for easy access. Case is ultra-durable, made of high-strength composite material and is lockable.

kit includes

- Entire Precision™ nozzle series and brass high-flow valve
- CoolPro™ fogging nozzle
- Magnum™ UltraMax nozzle
- PelletPro™ wetting agent applicator
- SuperKey XL™ golf sprinkler multi-tool
- Gulp™ UltraMax syringe pump
- Gulp™ UltraMax pump
- TurfSpy™ stress detection glasses
- HeadChecker™ nozzle discharge pressure gauge, flex hose and pitot tube



NozzleLocker™

THE VERY BEST NOZZLES - KEEP THEM SECURE (and handy)

kit includes

- Entire Precision™ nozzle series (Rainbow™, Rainmaker™, Cloudburst™ and Cyclone™)
- Solid Brass High-Flow Valve
- CoolPro™ with Precision™ fogging nozzle
- Your choice of MAGNUM™ multi-pattern nozzle (original, UltraMAX Turbo Shift, or UltraMAX Full Throttle)
- Unbreakable, lockable, corrosion-proof case to keep these tools safe and secure

**STOP LOSING
YOUR NOZZLES!**

ordering

- | | |
|--------------|--|
| Part # PL-K2 | ProLocker™ with ¾" Magnum UltraMAX Full Throttle nozzle |
| Part # PL-K3 | ProLocker™ with ¾" Magnum UltraMAX Turbo Shift nozzle |
| Part # PL-K4 | ProLocker™ with 1" Magnum UltraMAX Full Throttle nozzle |
| Part # PL-K5 | ProLocker™ with 1" Magnum UltraMAX Turbo Shift nozzle |
| Part # HP-K1 | NozzleLocker™ with ¾" Magnum (yellow) nozzle |
| Part # HP-K2 | NozzleLocker™ with ¾" Magnum UltraMAX Full Throttle nozzle |
| Part # HP-K3 | NozzleLocker™ with ¾" Magnum UltraMAX Turbo Shift nozzle |
| Part # HP-K4 | NozzleLocker™ with 1" Magnum UltraMAX Full Throttle nozzle |
| Part # HP-K5 | NozzleLocker™ with 1" Magnum UltraMAX Turbo Shift nozzle |



Quick Coupler Valves & Keys

SOLID BRASS, SINGLE SLOT/LUG ESSENTIALS

Built to last, Underhill® valves and keys are constructed of solid red brass and stainless steel. Valves incorporate rugged one-piece design.



Valve: Part # QV-075R
(3/4" FPT inlet)

Key: Part # QK-075
(3/4" MPT x 1/2" FPT outlet)

Valve: Part # QV-100R
(1" FPT inlet)

Key: Part # QK-100
(1" MPT x 3/4" FPT outlet)

Valve: Part # QV-150R
(1 1/2" FPT inlet)

Key: Part # QK-150
(1 1/2" MPT x 1 1/4" FPT outlet)

hose swivels

Part # HS-075 3/4" FPT x 3/4" MHT outlet
Part # HS-100 1" FPT x 3/4" MHT outlet
Part # HS-101 1" FPT x 1" MHT outlet
Part # HS-151 1 1/2" FPT x 1" MHT outlet

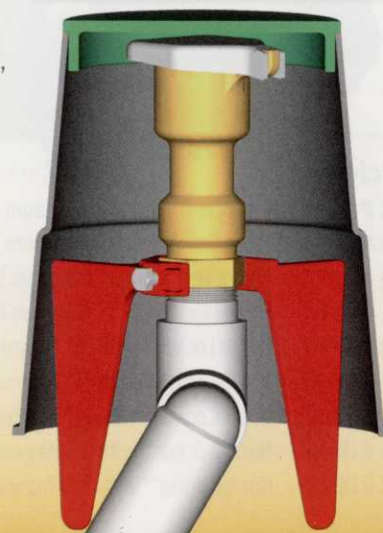


The Claw™

QUICK COUPLER MOTION RESTRAINT

When quick coupler valves become unscrewed from swing joints, it's more than just a hassle - it can be dangerous. The Claw™, new from Underhill®, offers a simple solution. Embedded in the soil below the quick coupler, and then securely attached to its base, The Claw provides significant resistance to rotational, vertical and horizontal motion, preventing the valve from moving. Made from high strength ductile iron, this compact anchor attaches easily with a single steel bolt.

EASY RETROFIT! Installs without removing valve or valve box!



The Claw™ pictured with 1" quick coupler, key and hose swivel.

ordering

Part # QCA-075100 The Claw™ for 3/4" and 1" valves
Part # QCA-150 The Claw™ for 1 1/2" valves

Impact Sprinklers

SOLID BRASS, ULTRA-RELIABLE WORKHORSES

For reliable, trouble-free, high-performance year after year, you just can't beat our brass impact sprinklers. Available in full circle and full/part circle, in inlet sizes of 3/4", 1" and 1 1/4".

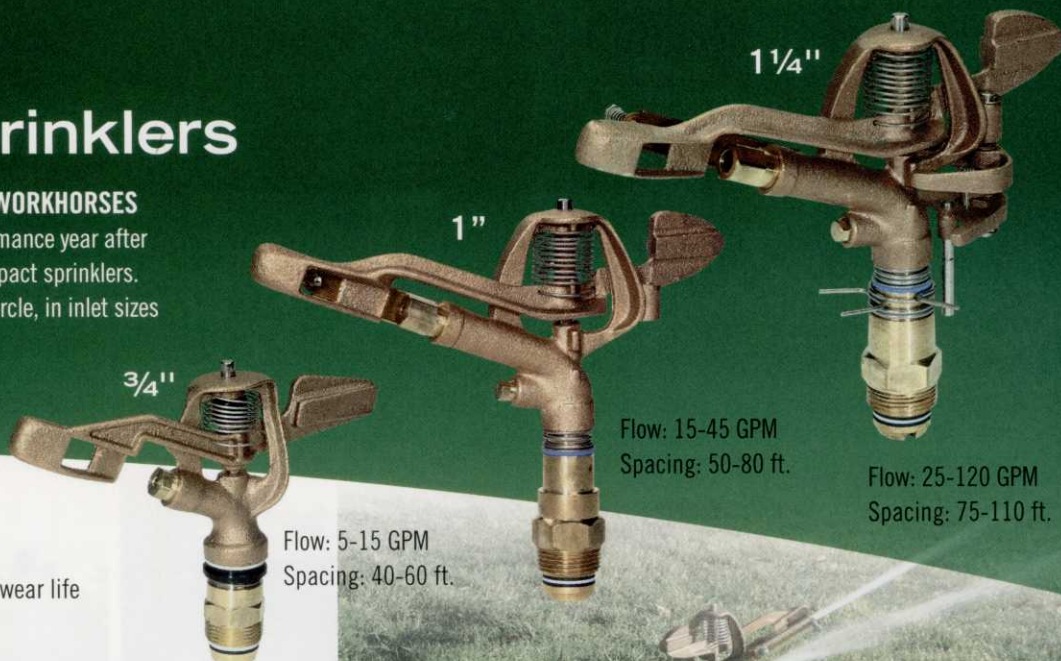
features

- Solid brass construction
- Stainless steel drive spring
- Bearing assembly hood for longer wear life
- Chemical resistant bearing seals
- Solid brass nozzle

ordering

		GPM	Radius (ft.)
Part # SI075F	3/4" MPT Full Circle	13	57
Part # SI075P	3/4" MPT Part/Full Circle	11	48
Part # SI100F	1" MPT Full Circle	23	71
Part # SI100P	1" MPT Part/Full Circle	23	71
Part # SI125F	1 1/4" MPT Full Circle	51	96
Part # SI125P	1 1/4" MPT Part/Full Circle	54	78

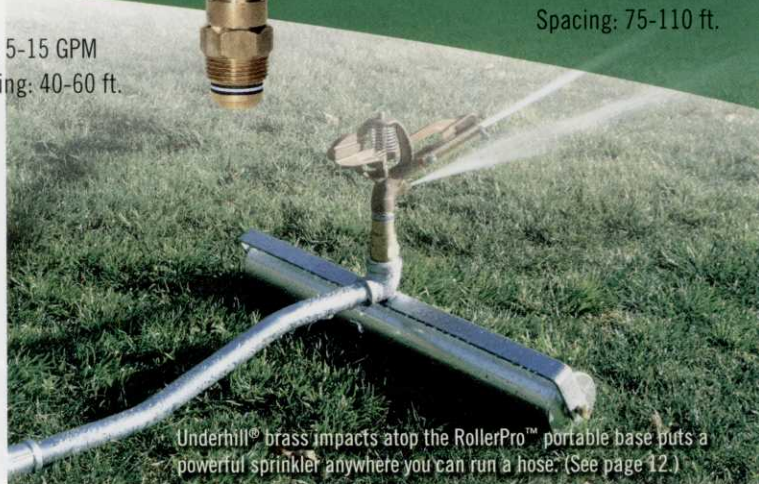
Performance data shown at 80 psi. GPM and radius will vary with pressure at sprinkler



Flow: 5-15 GPM
Spacing: 40-60 ft.

Flow: 15-45 GPM
Spacing: 50-80 ft.

Flow: 25-120 GPM
Spacing: 75-110 ft.



Underhill® brass impacts atop the RollerPro™ portable base puts a powerful sprinkler anywhere you can run a hose. (See page 12)

HoseTap™

SOLID METAL HOSE ADAPTER

HoseTap™ gives you a hose connection anywhere you have a Toro® or Rain Bird® electric, valve-in-head sprinkler... a fast connection when quick-couplers or hose bibs are not available. Includes aircraft aluminum body (won't break or wear out like plastic) anodized with sprinkler manufacturer color, o-ring, riser, 1" brass swivel and 3/4" adapter. Also available without brass swivel/adapter.

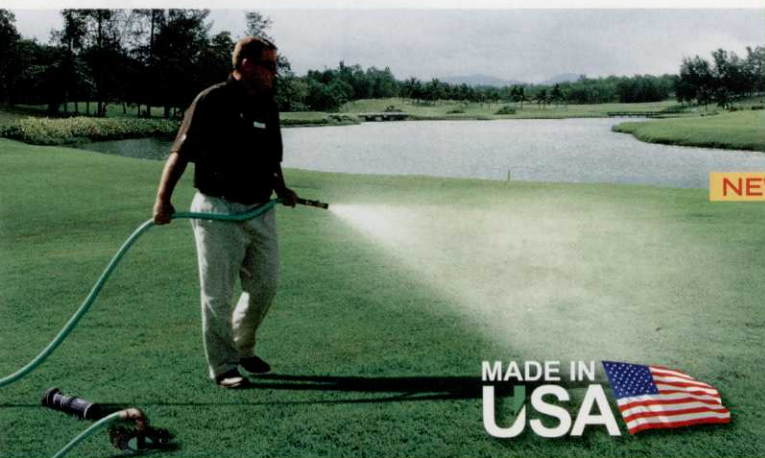


ordering

- Part # HN-T100S HoseTap™ for Toro® 1" inlet golf sprinklers
 Part # HN-T150S HoseTap™ for Toro® 1 1/2" inlet golf sprinklers
 Part # HN-R125S HoseTap™ for Rain Bird® Eagle 700 Series sprinklers
NEW! Part # HN-R150S HoseTap™ for Rain Bird® Eagle 900 Series sprinklers
 Includes 1" brass swivel and 3/4" adapter. Add "B" for BSP thread.
 To order without brass swivel: Remove "S" from part number.

REPLACEMENT O-RINGS

- Part # OR-100 Fits Toro® 1" inlet and Rain Bird® Eagle 700 Series golf sprinklers / HoseTap
 Part # OR-150 Fits Toro® 1 1/2" inlet golf sprinklers / HoseTap
 Part # OR-150R Fits Rain Bird® 1 1/2" inlet golf sprinklers / HoseTap



Serious about
saving water?

Profile™



SOLID METAL GOLF SPRINKLER NOZZLES

Upgrade your sprinklers with Profile™, the ultra-high uniformity, water conserving, solid metal nozzles from Underhill®. You will see improved results immediately, save millions of gallons of water every year and improve the playability of your course at the same time...guaranteed.



Golf Sprinkler with OEM Nozzles

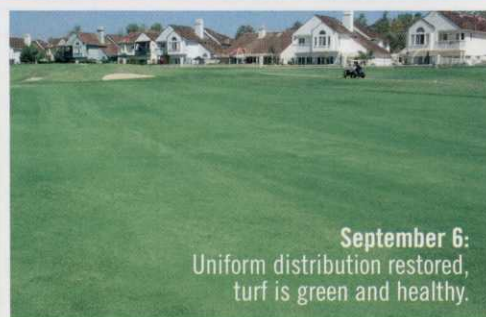


Same Golf Sprinkler with Profile Nozzles

Use less water, less energy and
less manpower and get better course playability.



August 14:
Profile nozzles installed
in problem area.



September 6:
Uniform distribution restored,
turf is green and healthy.

"Profile nozzles lived up to our expectations and eliminated patchy dry spots and donuts. We retrofitted all our fairways and now run a more efficient irrigation program."

Logan Spurlock

Superintendent, Sherwood Country Club

"It was like putting in a new irrigation system. I became a believer overnight."

Mike Huck

Irrigation & Turfgrass Services
Former USGA Staff Agronomist
Former Superintendent,
Murrieta Hot Springs Resort

See how Superintendents are upgrading their entire golf courses! Video online now at
www.underhill.us



"The real power is knowing that retrofitting sprinklers with Profile nozzles can be phased in to work within a course's operating budget."

Kurt Thompson

K. Thompson and Associates,
Irrigation Consultant and Trainer
Huntersville, North Carolina and Pace, Florida

"The Profile retrofit program has also extended the life of our Toro system while improving course appearance and playability."

Dennis Eichner

Assistant Superintendent,
Silverado Resort - Napa, California



Profile nozzles for Toro®

730 SERIES Full Circle: Front/Rear Nozzle Set

Part #	Nozzle Color # range/spreader	Toro Noz #
T730-3313	Brown 33 / Gray 13	33
T730-3413	Blue 34 / Gray 13	34
T730-3515	Violet 35 / Red 15	---
T730-3515L (50 psi)	Green 35 / Red 15*	35
T730-3615	Red 36 / Red 15*	36
T730-3617	Red 36 / Lavender 17	

* For square spacing, specify #17 (lavender) nozzle with the #35 and #36 range nozzles



760 and 860 SERIES Part Circle: Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange/close-in
T760-GY	Gray / Yellow
T860-GY	Gray / Yellow



830, 834S, DT SERIES Full Circle: Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange / close-in	Toro Series
T830-GY	Gray / Yellow	830
T834-GY	Gray / Yellow	834S
TD100-GY	Gray / Yellow	DT 34/35



835S SERIES Full Circle: Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange / close-in
T835S-WP	White / Plug

630 SERIES CALL FOR AVAILABILITY



670 SERIES Full Circle: Rear Nozzles

Part #	Nozzle Color: midrange / close-in
T670-BY	Black / Yellow



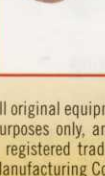
690 SERIES Full Circle: Rear Nozzle

Part #	Nozzle Color: spreader
T690-G	Gray



750 SERIES Full Circle: Front/Rear Nozzle Set

Part #	Nozzle Color #range / spreader	Toro Nozzle #s
T750-5617	Red 56 / Lavender 17	56
T750-5717	Gray 57 / Lavender 17	57



780, 854S, DT SERIES Midrange/Close-in Nozzle Set

Part Circle (780), Full Circle (854S), Part/Full Circle (DT 54/55)	Part #	Nozzle Color: midrange / close-in	Toro Series
	T780-BY	Black / Yellow	780
	T854-BY	Black / Yellow	854S
	TD150-BY	Black / Yellow	DT 54/55

855S SERIES Full Circle: Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange / close-in
T855S-PP	Pink / Plug

650 SERIES CALL FOR AVAILABILITY



Profile nozzles are so consistent, with distribution patterns so uniform... it's like rain on demand.™



Profile nozzles for Rain Bird®

EAGLE 700 SERIES

Full Circle: Midrange/Close-in Nozzles

Part #	Nozzle Color midrange / close-in	Rain Bird Nozzle #s
R70028-RG	Blue / Gray	28
R70032-RG	Red / Gray	32
R7003640-GG	Blue / Gray	36/40 and larger



Look familiar? Poor performing Eagle 700 sprinklers are often the result of clogged and worn nozzles. Profile nozzles' solid metal construction and nozzle shape were scientifically designed to solve this exact problem. They simply don't wear out. And they don't clog. Upgrade your old golf sprinklers to better than OEM with Profile!



900 EAGLE SERIES

Full Circle: Close-in Nozzle

Part #	Nozzle Color
R900-M	Maroon



91 SERIES BRASS IMPACTS

Full Circle: Close-in Nozzle

Part #	Nozzle Color
R91-G	Gray



51 SERIES BRASS IMPACTS

Full Circle: Front/Rear Nozzles

Part #	Nozzle Color # range / spreader	Rain Bird Nozzle #s
R51-1411.5	White 14 / Gray 11.5	14 / 11.5
R51-1611.5	Blue 16 / Gray 11.5	16 / 11.5
R51-1811.5	Yellow 18 / Gray 11.5	18 / 11.5
R51-2011.5	Red 20 / Gray 11.5	20 / 11.5
R51-2213	Green 22 / Black 13	22 / 13
R51-2413	Black 24 / Black 13	24 / 13



All original equipment manufacturers, names and products presented in this publication are used for identification purposes only, and we are in no way implying that any of our products are original equipment parts. Toro® is a registered trademark of the Toro Company, Rain Bird® is a registered trademark of the Rain Bird Sprinkler Manufacturing Corporation.

SpotShot™ MADE IN USA

LOW VOLUME PORTABLE SPRINKLER KIT

SpotShot™ is an expandable sprinkler system kit ideal for turf areas requiring low volume watering for extended periods. Connect the Starter Kit to a quick coupler (or golf sprinkler with the HoseTap™ on page 9) and connect Add-On Kits for larger area needs.



ideal for

- Leaching salts on greens
- Targeting hot spots on fairways, roughs, etc.
- Mound watering
- New seed grown in
- Other low volume watering



Starter Kit includes 20' of ½" flexible PVC tubing with connection fittings, pressure regulator, sprinkler base and low volume rotating sprinkler (20 ft. radius / 0.65 GPM - 0.16 in./hr.)



Add-On Kit includes 20' of ½" flexible PVC tubing with connection fittings, sprinkler base and low volume rotating sprinkler (20 ft. radius / 0.65 GPM - 0.16 in./hr.)



Micro-Sprinkler Options

- 20 ft. radius / 0.65 GPM (0.16 in./hr.)
- 20 ft. radius / 1.2 GPM - (0.26 in./hr.)



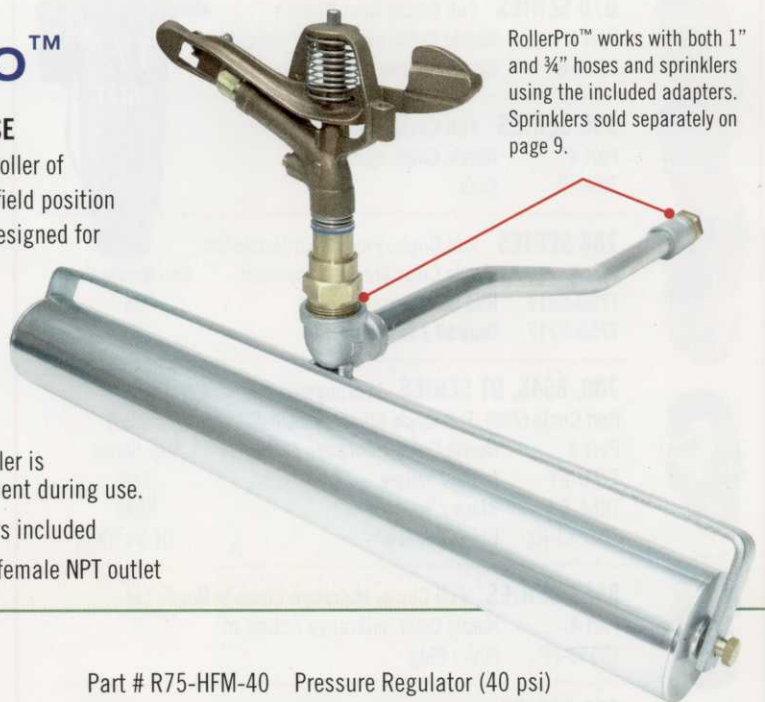
RollerPro™

PORTABLE SPRINKLER BASE

The 22" wide stainless steel roller of RollerPro™ provides a stable field position for supplemental watering. Designed for years of hard use, it is ideal for watering dry spots and newly seeded areas.

features

- 22" wide stainless steel roller is weighted to prevent movement during use.
- ¾" inlet and outlet adapters included
- Standard 1" FHT inlet x 1" female NPT outlet



RollerPro™ works with both 1" and ¾" hoses and sprinklers using the included adapters. Sprinklers sold separately on page 9.

ordering

Part # A-RP221	RollerPro™
Part # SS-SK	SpotShot™ Starter Kit (20 ft. rad, 0.65 GPM)
Part # SS-AOK	SpotShot™ Add-on Kit (20 ft. rad, 0.65 GPM)
Part # SS-SK26	SpotShot™ Starter Kit (20 ft. rad, 1.2 GPM)
Part # SS-AOK26	SpotShot™ Add-on Kit (20 ft. rad, 1.2 GPM)
Part # SS-SB	SpotShot™ Sprinkler Base

Part # R75-HFM-40	Pressure Regulator (40 psi)
Part # TP-050-20	20' Coil of ½" PVC, SuperFlex Pipe
Part # S40-050-HFS	¾" Hose Thread Female x Male, Slip Fitting
Part # S40-050-HMS	¾" Hose Thread Male x Female, Slip Fitting
Part # SS-S16	Micro-sprinkler (20 ft. rad, 0.65 GPM - 0.16 in/hr)
Part # SS-S26	Micro-sprinkler (20 ft. rad, 1.2 GPM - 0.26 in/hr)

Tracker™

PORTABLE IRRIGATION MACHINE

The Tracker™ offers an economical solution for supplementing seasonal watering needs of ¼ acre to 2 acre areas. It's also ideal for irrigating athletic fields, cemeteries, golf course roughs, or other large areas where an underground system is impractical. Built to last with precision German engineering and high quality materials, this portable powerhouse can irrigate an entire football field in just two passes.

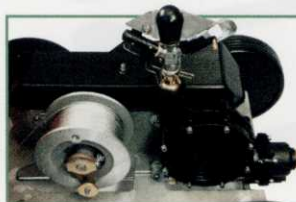
Tracker™ requires minimal labor to operate. Powered by water, it pulls itself along a nylon cable, dragging up to 360 ft. of 1" reinforced heavy-duty hose (sold separately). Each pass irrigates about 2/3 acre per 8 hours of operations.

specifications

- Weight: 58 lbs.
- Size: Length 33", Width 22", Height 22"
- Materials: Aluminum, Brass, ABS
- Minimum Water Pressure: 50 psi
- Hose Required: 1"

features

- Adjustable Speed Control: 20-70 ft./hr.
- Standard full or part circle sprinkler (8-15 GPM)
- 360 ft. nylon cable provides irrigated length of 400 ft.
- 70-85 ft. pass width
- Automatic shut-off at end of pass
- Water turbine drive and gear box
- Galvanized anchor stake
- Includes 1" brass quick-connect adapter



Precision German engineering, high quality components built to last!



DeepDrip™

TREE WATERING STAKES

Water and fertilize your trees at the roots, encouraging deeper roots and healthier trees with DeepDrip™ stakes. Water gets underground fast, so you can irrigate for shorter periods and save water.

They also help aerate the soil, and you can add fertilizer into the shaft to direct nutrients to the root zone.

Three Lengths For All Tree Sizes: Use the 14.5" stake for shallow root trees and shrubs, like rose bushes and ornamental trees (or boxed trees). The 24.5" stake is best for most other tree varieties except for palms and similarly deeper rooted trees, which will benefit from the longer 36" stakes.

Built Smart - And Easy To Use: The DeepDrip's reinforced tip and cap are made from ABS and the upper shaft is made from Schedule 40 PVC. Multiple holes in the bottom half of the spike, internally covered by a mesh filter, allow water to flow out but keep dirt from getting in and clogging the tube. The UV-protected cap acts as a reinforced cover when pounding the stake into the ground, keeps debris from entering the shaft and holds a 1/4" drip line/emitter securely in place. By inserting a screwdriver through the two holes at the top of the upper shaft, stakes can be easily pulled up to remove/reposition, or rotated to deter root invasion.

ADD TO EXISTING TREES! Install DeepDrip™ stakes during or after tree planting for instant access to the root system for fertilizer delivery or to set up deep automatic drip watering.



ordering

Part # T-400	Tracker™ Portable Irrigation Machine
Part # A-DD14	DeepDrip™ 14.5" watering stake
Part # A-DD24	DeepDrip™ 24.5" watering stake
Part # A-DD36	DeepDrip™ 36" watering stake

NEW! SuperKey XL™

MULTI-PURPOSE TOOL FOR TORO, RAINBIRD GOLF SPRINKLERS

The ultimate **all-in-one** tool for your golf sprinklers...think of it as a Swiss army knife, a must have companion. Made of stainless steel and composite material, it effortlessly turns electric valve-in-heads on and off, removes internal snap rings and performs many other sprinkler maintenance chores. Great for John Deere®/Signature® sprinklers, too!



Snap Ring Removal
(Bottom Valve or Internal
Rotor Assembly)

Screwdriver Tip for
Cap Disassembly or Pressure
Regulator Adjustment

Filter
Screen
Removal

Hardened
Bend Resistant
Metal

High Strength
Engineered
Material

On/Off
Control
Pointer

On/Off Control
Debris
Removal

On/Off Control
Assembly
Removal

Solenoid
Plunger
Removal

On/Off
Control

NEW!

EasyReach™ Key

EXTRA-LONG SHAFT ON/OFF KEY

Extra long and extra heavy duty metal key designed for easy on/off operation for **TORO**, **Rain Bird** and John Deere/Signature electric valve-in-head golf sprinklers. Made of high grade metal, EasyReach offers years of effortless on/off operation.

VersaLid™

VALVE BOX UNIVERSAL REPLACEMENT LID

VersaLid™ is the easy solution for broken or missing valve box lids. No need to guess what brand a buried box is or even worse - dig it up to find out - VersaLid's locking system fits all 6"-7" round valve boxes.

features

- Fits all 6"-7" round boxes • Universal fit
- Greater top-load strength and more UV-resistant than structural foam lids
- Purple Lid available for non-potable/reclaimed water

STRONGER! BETTER FIT!
than original equipment lids



Splice Kit

3M DIRECT BURY SPLICE KIT

Each kit includes one wire connector which accommodates wire sizes from 18-10 gauge and a waterproof gel case. Excellent for golf, commercial and residential applications.

ordering

Part # A-SKTRB	SuperKey™ XL for Toro ®, Rain Bird ® and John Deere® golf sprinklers
Part # A-ERT	EasyReach™ for Toro ® and John Deere®/Signature golf sprinklers
Part # A-ERR	EasyReach™ for Rain Bird ® golf sprinklers
Part # VL-6	Green VersaLid™ 6"-7" valve box lid
Part # VL-6P	Purple VersaLid™ 6"-7" valve box lid
Part # DBRY-4	Direct Bury Splice Kit - 4 Pack
Part # DBRY	Direct Bury Splice Kit - single unit

Gulp™ UltraMAX

SUPER HIGH-CAPACITY WATER REMOVAL SUCTION PUMPS

Whether you need to remove water from sprinklers and valve boxes or other areas or devices, UltraMax Series Pumps are the ideal tools for the job...huge capacities and the smoothest pumps you will ever use as well.

special features

- Super Smooth Pumping Action
- High Volume Capacity
- Strong Aluminum Pump Shaft
- Contour Grip Handle
- No Leak Seals
- Self Priming

GULP SYRINGE ULTRA

- 12 oz./stroke
- 12" pump chamber

BIG GULP ULTRAMAX

- 35 oz./stroke!
- 36" pump chamber
- 72" or 36" outlet hose

GULP ULTRAMAX

- 18 oz./stroke!
- 14" clear pump chamber
- 18" outlet hose

also great for



Easy, push-button cleaning system



Gulp UltraMAX and BigGulp UltraMAX include debris filter attachment for very dirty water.

ordering

Part # A-G12-C	Gulp™ UltraMax
Part # A-G3636CK	BigGulp™ UltraMax w/ 36" outlet hose
Part # A-G3672CK	BigGulp™ UltraMax w/ 72" outlet hose
Part # A-G12S-C	Gulp™ Syringe Ultra
Part # A-GTUB-C	100 ft. outlet hose

AuditMaster™

EXPERT SPRINKLER PERFORMANCE TESTING KITS

Increasing watering times to compensate for poorly performing sprinklers wastes a lot of water. Accurately measuring sprinkler application rates with Underhill® AuditMaster™ helps maximize water savings.



4"x 5" Marking flags on 21" wire (50-pack) are available in 6 colors.

AuditMaster Combo ST/LT Kit (pictured), includes large CatchCanPro cups (blue) and CatchCanPro Mini cups (30 each).

AuditMaster ST Kit excludes the large CatchCanPro cups. This kit is ideal for **SMALL TURF** audits.

AuditMaster LT Kit excludes the CatchCanPro Mini cups. This kit is optimized for golf courses, sports fields and other **LARGE TURF** audits.



CatchCan Pro™

features

- Self standing - easily anchors into turf, even on slopes
- Measures sprinkler application in inches or centimeters
- Unique design allows for shorter duration test
- Made of durable polypropylene engineered plastic
- Can be stacked for easy storage
- Each 10 pack kit comes with instructions



CatchCan Pro (CCPK-10) for **LARGE TURF** audits. Measures ml, cm, inches.

CatchCan Pro Mini (CCPMK-10) for **SMALL TURF** audits. Measures inches.

ordering

Part # AUD-ST	AuditMaster ST Kit
Part # AUD-LT	AuditMaster LT Kit
Part # AUD-STLT	AuditMaster Combo ST/LT Kit
Part # SALESPRO4	AuditMaster Wheeled Carry Case
Part # A-STW	Stop Watch
Part # A-WIND	Anemometer (Wind Gauge)
Part # CCPK-10	CatchCan Pro (Blue) - 10 Pack
Part # CCPMK-10	CatchCan Pro Mini - 10 Pack

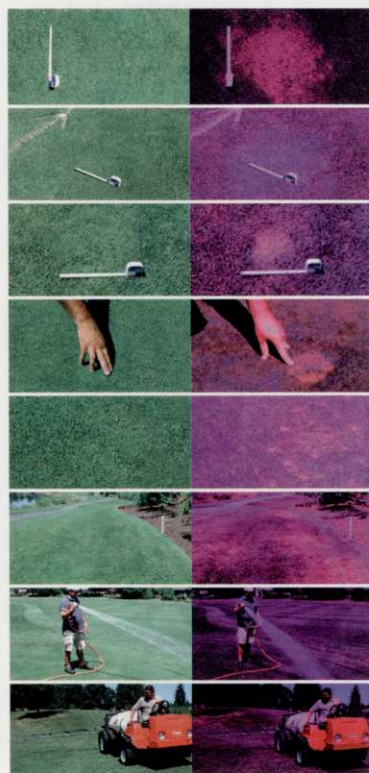
Part # MT-100	Fiberglass Measuring Tape: 100'
Part # A-FLAG	Marking Flags: Yellow - 50 Pack
Part # A-FLAG-B	Marking Flags: Blue - 50 Pack
Part # A-FLAG-O	Marking Flags: Orange - 50 Pack
Part # A-FLAG-P	Marking Flags: Pink - 50 Pack
Part # A-FLAG-R	Marking Flags: Red - 50 Pack
Part # A-FLAG-W	Marking Flags: White - 50 Pack



TurfSpy™

EARLY STRESS DETECTION GLASSES

Disease, drought and weed invasion are plant and turf killers. But by the time you see them it can be too late. TurfSpy™ glasses, with stress detection technology developed by NASA, lets you “see into the future” to identify problems 2-10 days before they are visible to your naked eye. Keep your turf and vegetation healthy BEFORE serious problems arise.



fusarium patch

pythium blight

yellow patch
(rhizoctonia)

brown patch

anthracnose

get a jump on broken
or poor-performing
sprinklers

highly efficient spot
watering saves time
and labor costs

superior weed location
and spraying saves
time and money

features

- Shatterproof/polycarbonate stress detection lens (ANSI approved safety lens)
- Wrap-around lens limits ambient light for optimal detection
- Sports frame with adjustable ear piece
- Lightweight case included

HOW IT WORKS

Dying vegetation absorbs and reflects sunlight differently than when it's healthy. The earliest signals occur at the outer limits of the human visual spectrum, and are rendered invisible compared to the predominant middle wavelengths. TurfSpy™ filters the light in the center so that fringe spectra, which show early plant stress, become visible.



ordering

Part # NG655-01 TurfSpy™ Glasses and Deluxe Case

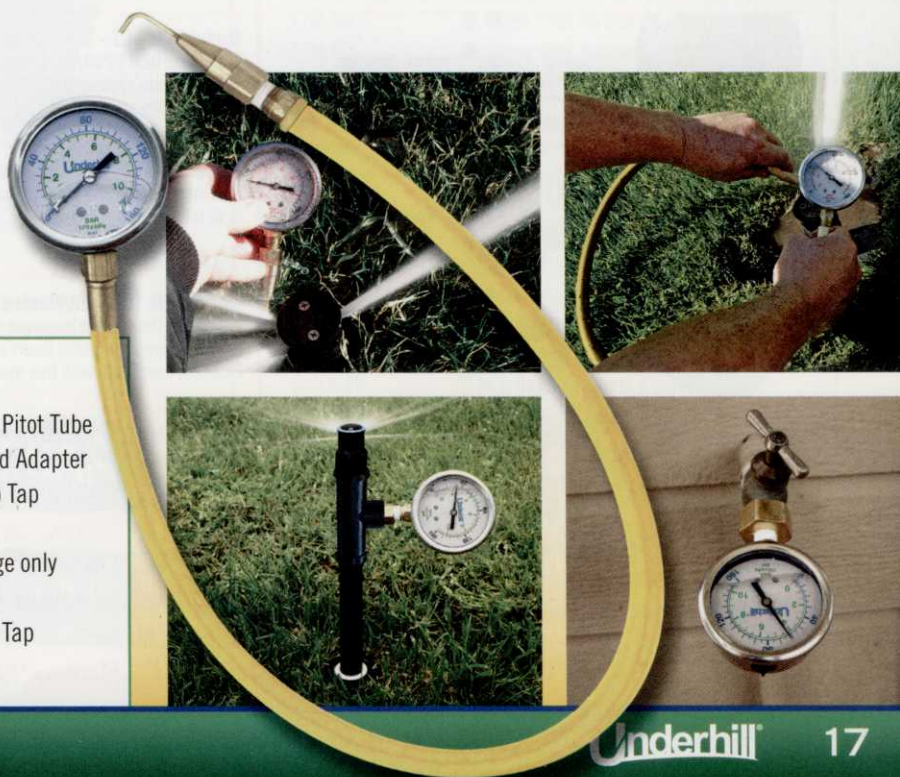
HeadChecker™

NOZZLE DISCHARGE PRESSURE GAUGE

Use this liquid-filled 160 psi gauge with 30" flex hose and solid brass Pitot tube, hose bib, or spray head adapter to measure water pressure at discharge points.

ordering

Part # A-PHG-160K	HeadChecker™ gauge, 30" Flex Hose, Pitot Tube
Part # A-SHG-160K	HeadChecker™ gauge with Spray Head Adapter
Part # A-HBG-160K	HeadChecker™ with ¾" POC Hose Bib Tap
Part # A-HCGPK	HeadChecker™ gauge and Pitot tube
Part # A-PG160L	HeadChecker™ 160 psi pressure gauge only
Part # A-HCP	Pitot tube only
Part # A-HBT	¾" Hose Thread x ¼" Brass Hose Bib Tap
Part # A-SHA	Spray Head Adapter





GRUND GUIDE by Underhill® Marking Systems



SPEED AND QUALITY OF PLAY...GOLF AS IT SHOULD BE.

You know Grund Guide for making premier yardage marking solutions. Now backed with the strength of Underhill® distribution and product development, you can have the highest quality and most complete yardage marking systems available today and into the future. We offer durable and high-visibility customized markers for all popular golf sprinklers along with unique fairway, tee box, and driving range markers. Speed up and improve the quality of play with Grund Guide Marking Systems.

Sprinkler Head Yardage Markers

	<p>Model SPM 106 - TORO Engraved Caps: Perfect-fit caps engraved and color filled for high visibility. Multiple number locations vary for lids with holes.</p>	<p>FITS: Toro 730, 750, 760, 780, 830/850S, 834S, 835S, DT34/35S, 854S, DT54/55, 860S, 880S COLORS: Caps - ●/○/●/●/●/●/● Numbers - ○/●/●/●/●/●/●</p>
	<p>Model SPM 107 - Rain Bird Engraved Caps: Perfect fit caps engraved and color filled for high visibility number identification.</p>	<p>FITS: Rain Bird E900, E950, E700, E750, E500, E550, 700, 751, 51DR COLORS: Caps - ●/○/●/●/●/●/● Numbers - ○/●/●/●/●/●/●</p>
	<p>Model SPM 110 - Hunter Engraved Caps/Covers: Perfect-fit flange covers (G800, G900) and caps (G90), engraved and color filled for high visibility.</p>	<p>FITS: Hunter G800, G900, G90 COLORS: Flange cover / caps - ● Numbers - ○/●/●/●/●/●/●</p>
	<p>Model SPM 101 - Fit Over Discs: Anodized aluminum (no paint!), these markers are engraved and custom fit to each sprinkler. Multiple number locations vary for lids with holes.</p>	<p>FITS: Toro 630, 650, 660, 670, 680, 690, 830/850S, 834S, 835S, DT34/35, 854S, 855S, DT54/55, 860S, 880S, Rain Bird 47/51 DR, 71/91/95, E900, E950, E700, E750, E500, E550, 1100, Hunter G-70/75, G-90/95, G-990, G-995, John Deere/Signature - Call COLORS: Discs - ●/●/●, Numbers - ●</p>
	<p>Model SPM 105 - Universal Tags: Anodized aluminum (no paint!), these markers are engraved and designed for most universal fit applications. Tags are installed using 1/8" rivets.</p>	<p>FITS: Universal - Options: Crescent 2-7/8"W x 1"H, Round Edge 3"W x 1"H, Square Edge 2"W x 3/4"H COLORS: Tags - ●/●/● Numbers - ●</p>
	<p>Model SPM 103 - TORO Snap-In Markers: OEM UPGRADE to high quality polycarbonate custom fit. One complete, high-visibility marker snaps into OEM plug.</p>	<p>FITS: Toro 730, 750, 760, 780, 830/850S, 834S, DT34/35, 854S, DT54/55, 860S, 880S COLORS: Snap in - ○/●/●, Numbers - ○/● (Reclaimed water option - ● no number - available)</p>
	<p>Model SPM 108 - TORO & Hunter: Special engraved plastic material designed to fit into OEM lid recess</p>	<p>FITS: Toro 730, 750, 760, 780, 834S, DT34/35, 854S, DT54/55, 860S, 880S and Hunter G800, G70/75B, G870, G875, G880, G885, G990, G995 COLORS: Markers - ○/●, Numbers - ●</p>
	<p>Model SPM 104 - Lid/Molded Recess Markers: Durable replacement lid, with reverse engraved number insert process. Excellent number ID with this model</p>	<p>FITS: Rain Bird 47, 51 COLORS: Lid - ●/○/● Insert - ○/●/● Numbers - ○/●</p>
	<p>Model SPM 102 - Rain Bird Yardage Highlighter Snap-Ring: Replaces OEM snap ring with perfect fit bright yardage and reclaimed color identification.</p>	<p>FITS: Rain Bird E900, E950, E700, E750, E500, E550, 700, 751 COLORS: ○/●/● (Reclaimed Water)</p>

ordering example

Marker Model	Sprinkler Mfg	Series	Marker Color	# Color	Qty. of #s on Marker	Total QM on Order
SPM-106	Toro	730	Black	Yellow	1	76

View/download complete ordering guide at www.underhill.us

Fairway / Tee / Range Disc Markers

Large 7 1/2" cap with big bold 3 1/2" standard yardage numbers. Ideal for fairway, tee and driving range marking. Optional 8" mounting pipe attachment available for secure installation.

FAIRWAY STANDARD DISC SYSTEM

Color-coded markers with bold 3 1/2" yardage number. Several system options available.



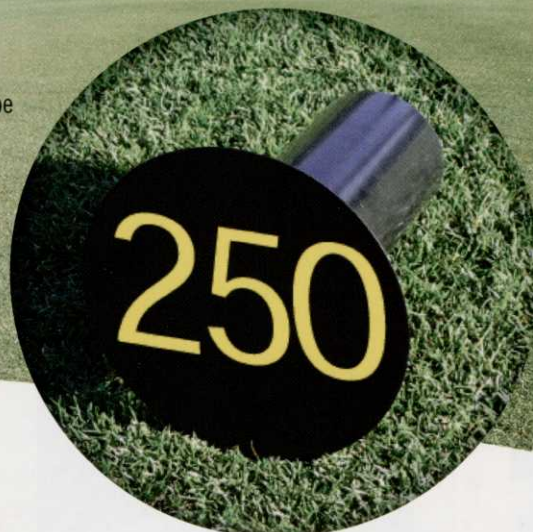
FAIRWAY CUSTOM OPTIONS

Markers can be customized to display specific yardage numbers, include logos, or custom design.



TEE BOX / DRIVING RANGE CUSTOM OPTIONS

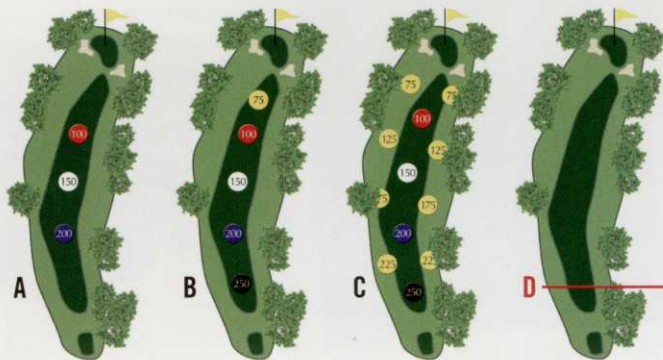
Markers can be customized to display specific multiple numbers, include logos, or custom design.



Disc Marker pictured with optional 8" mounting pipe (installs easily with standard cup cutter)

SYSTEM EXAMPLES

- A: 3 markers placed down the center of the fairway at 50 yard intervals
- B: 5 markers placed down the center of the fairway for greater coverage
- C: Markers placed on sides and center ("diamond" layout) for highest visibility
- D: Create a custom system with your choice of color and numbers/markings



Valve Box / Universal Markers

These engraved, anodized aluminum (no paint!) markers are ideal for isolation or control valves, satellites or other applications.



VB-31 SAT

VB-31 SAT

ordering

Standard Disks with Markings

FTM-Y-75	Yellow Disk with 75
FTM-R-100	Red Disk with 100
FTM-W-150	White Disk with 150
FTM-BL-200	Blue Disk with 200
FTM-BK-250	Black Disk with 250
FTM-RWB-KIT	3 Disks with Yardages (●/○/●)
FTM-YRWB-KIT	5 Disks with Yardages (●/●/○/●/●)

Custom Disks for Fairway, Tee Box and Driving Range

FTM-Y	Yellow Disk no markings
FTM-O	Orange Disk no markings
FTM-R	Red Disk no markings
FTM-W	White Disk no markings
FTM-BL	Blue Disk no markings
FTM-BK	Black Disk no markings
FTM-G	Green Disk no markings
FTM-L	Lavender Disk no markings

Tee Box / Fairway / Driving Range Custom Markings

To order, add to end of custom disk part numbers above.	
Example: FTM-Y-#1 (Yellow Disk with One custom number)	
XXXX-#1	One custom number to disk
XXXX-#2	Two custom numbers to disk
XXXX-#3	Three custom numbers to disk
XXXX-CUST	Custom Design; Script
XXXX-LOGO	Logo added to disk
XXXX-#4	up to 4 flags / targets / yardages
XXXX-#8	5 to 8 flags / targets / yardages
XXXX-#12	9 to 12 flags / targets / yardages

Accessories

FTM-PL	8" Mounting Pipe for all disks
--------	--------------------------------

Valve Box / Universal Markers

SPM-105-B	Black anodized marker
SPM-105-M	Maroon anodized marker

For detailed ordering information of custom markers, visit www.underhill.us



20505 Crescent Bay Drive • Lake Forest, CA 92630 USA

tel: (949) 305-7050 • fax: (949) 305-7051
1-866-863-3744 • www.underhill.us

An industry leader in innovative watering products all over the world, Underhill® brings 34 years of know-how in developing our inventory of "Products that work...smart.™"



For even more products that work smart, like our super long throw **Mirage™** sprinklers (up to 174 ft. radius!), the **Sapien™** 2-wire controller, **Novo™** 2-wire converters and 2WIRE decoders, visit www.underhill.us



Form No. UIWP-B13

UNDERHILL INTERNATIONAL PROFESSIONAL WATERING PRODUCTS 2013

©2013 Underhill International Corporation. All original equipment manufacturers, names and products presented in this publication are used for identification purposes only, and we are in no way implying that any of our products are original equipment parts. Toro® is a registered trademark of the Toro Company, Rain Bird® is a registered trademark of the Rain Bird Sprinkler Manufacturing Corporation, Hunter® is a registered trademark of Hunter Industries. John Deere® is a registered trademark of Deere & Company. Signature® is a registered trademark of Signature Control Systems, Inc.

Products that work...smart.™

LeTriomphe, a Robert Trent Jones, Jr., course tucked into the heart of Cajun Country, has been open for 26 years. For the past 21 years, it has served as host for the Web.com Tour's Chitimacha Louisiana Open and is one of the five oldest stops on that Tour. But a dozen years ago, the course was struggling to meet PGA Tour standards with regards to greens condition.

"The property was facing challenges when I was asked to come to LeTriomphe," says Poynot, who directed golf maintenance at the property for 12 years.

The course was closed for much of 2003 when the greens were reconstructed, and during that time Poynot sought a superior turf product.

"Our thought process was to avoid the ultradwarf Bermuda grasses," Poynot says. "We didn't want a turf that would require the intense and disruptive processes of frequent vertical moving and topdressing. What we really wanted was a tiffdwarf from a farm that had no history of mutating."

After consultations that included PGA Tour involvement, the club went with a mid-dwarf or tweener, one that was receiving a lot of attention for its quality, consistency and texture along with a lack of mutation history.

However, the rhizome and root development with that strain of turf proved to be limited, and after three seasons of extra aerifications and fertility and cultural practices recommended by the USGA, there was still no in-ground improvement in the roots and rhizome structure.

Although LeTriomphe maintained good surfaces and the greens were exceptional for

"Our thought process was to avoid the ultradwarf Bermuda grasses. We didn't want a turf that would require the **intense and disruptive** processes of frequent vertical moving and topdressing. What we really wanted was a tiffdwarf from a farm that had no history of mutating."

— Scott Poynot, LeTriomphe Golf and Country Club

major events such as the Web.com Tour stop, it was getting more and more difficult to produce a consistently high-performing surface.

Since the roots weren't doing their job, Poynot implemented the full-foliar fertility approach. Even though the greens would not dry down like the Open or Players' Championship surfaces due to the lack of root and rhizome development, the surface quality remained at a high level with Poynot foliarly applying everything the plant needed to be healthy.

The foliar feeding program produced a superior turf than relying only on soil intake, but Poynot questioned the sustainability. Because of the current turf's limits and his desire for a greener approach, he convinced LeTriomphe owner Mike Maraist of the benefits of investing in research.

"Mike has always been tremendously supportive of whatever we've done," Poynot says. "Without him, we wouldn't have the quality surfaces that we have, and we wouldn't be putting the time and effort into this project."

The background research led to Poynot and the club installing its own turf research plot, an area that Poynot hopes will lead to innovations in regional turf grasses. "When you're dealing with grass species that are native to your area, less maintenance and fewer resources are needed," he says. "When the greens are healthy and fewer fertilizers and chemicals are needed, everyone benefits."

"Think about it... golf began in Great Britain with cool-season grasses in a cool-season environment in very sustainable soil conditions. These courses haven't been touched for a hundred years. You don't see them changing out greens every couple of decades or spending anywhere near the amount of money that we do in the U.S." **GCI**

Dan McDonald is a freelance writer who authors a golf column in *The Lafayette Advertiser*.



The club went with a mid-dwarf or tweener. However, the rhizome and root development with that strain of turf proved to be limited.





Jeffrey D. Brauer is a veteran golf course architect responsible for more than 50 new courses and more than 100 renovations. A member and past president of the American Society of Golf Course Architects, he is president of Jeffrey D. Brauer/GolfScapes in Arlington, Texas. Reach him at jeff@jeffreydbrauer.com.

NO. 100

Back in May 2004, I sat down to write my first Golf Course News column. That I wrote even one is a miracle, considering the editor they had just fired recommended me. I figured I was probably out the door before I was even in. That I have written a hundred of these columns is even more miraculous. It's been fun, even with the monthly panic of "What do I write this month?" being a constant companion. I wonder how newspaper columnists wordsmith on a regular basis.

I started at a time when I had already realized the value of expressing design ideas in writing. I figured if I couldn't explain my design philosophy clearly in writing, then I probably didn't have a strong one. I had been writing some thoughts in short bites to clarify my ideas anyway, and in many ways, this column simply forced me to keep it going constantly.

My father's advice (he was a business executive) also helped me as an "amateur" golf course architecture writer. In high school, my father, sensing computers were the future, insisted I take the girl-dominated keyboarding class. He stressed the importance of expressing my thoughts in writing, and to do it succinctly. He felt any ideas not expressed in two or three sentences were probably "as well formed as a post-oatmeal bowel movement." At his urging, I wrote a business plan for my then new business venture, and even before reading it, he made me trim it from a dozen pages to three, while leaving in all the important content.

Those editing skills come in handy, as that is how these columns are written. At various times, my maximum word limit has been 450, 600, 800 and 1,000 words. My first draft usually takes a day to write, and I spend at least one more day whittling it

The **lowest point** was an email from a superintendent saying, "Thanks a lot. My GM slammed your column on my desk, and fired me, saying I should have known how to solve this problem."

down to size, usually by cutting my bad puns, old stories and other fluff, to my regret and the probable delight/relief to readers. Sometimes I "cheat" by spreading content into multiple columns, like my series on the superintendent's role in construction.

My instructions through three editors have been to write about 2/3 "meat and potatoes" columns and 1/3 on design issues. The first President Bush didn't "get the vision thing" and when it comes to golf course design, most readers don't either. They prefer reading about more practical issues of immediate need. In total, I've written:

- 34 design issue related columns
- 11 on master plans
- 10 on irrigation or environmental issues
- 10 on construction/reconstruction
- 7 on bunkers
- 3 each on greens, drainage, trees and maintenance
- 2 each on cart paths and tees
- 1 each on safety and ADA

The other 11 touched on golf-related memories, tributes to recently deceased industry members, or similar topics. I focused on humor twice, once using the style of Rodney Dangerfield to explain the moribund state of the industry (*To save money, one course replaced the superintendent with the golf course dog...when I called to ask about their golf course conditions, the answer was "ruff."*) In another case, I assumed the persona of "Dat Effen, Golf Course Architect," to explain how angry golfers are when the design doesn't suit their game. (It seems like Dat Effen, Golf Course Architect,

designed EVERY course I play.)

While writing is fun, and there is always some self-satisfaction at heeding my late-father's advice in writing clearly to share 36 years of accumulated golf-design knowledge with readers, it is always a highlight when readers take the time to provide feedback on the columns. I get at least one email most months complimenting me. A few ask for free advice, which I give if I can from long distance.

I had only two lowlights over these 100 columns – one company accused me of unfairly "pitching" a competing supplier. As it happens, their national sales manager shares my last name (not related) and I do remain neutral.

The lowest point was an email from a superintendent saying, "Thanks a lot. My GM slammed your column on my desk, and fired me, saying I should have known how to solve this problem." That was my column on adjusting approach-area sprinklers to different reverse points to reduce wet spots. I was passing on free, easy to implement advice that USGA construction guru Jim Moore had been researching. Obviously, it was new info to many, not something "every superintendent should already know."

I appreciate GCI's editors for nominally paying me for these few days of writing fun each month, and appreciate all who read me regularly (You three know who you are). While I do slightly panic every month, in looking back at what I have written, I see there is so much more I want to cover. Here's to another 100, providing you'll still have me. **GCI**

BITE THIS BULLET

if you can catch it



Working speeds
near 4 mph

Introducing '**The Bullet**' by Redexim North America. This new Verti-Drain has working speeds near 4 mph for the highest performance in its field.

The Bullet has working widths of 64 and 83 inches and is the most productive Verti-Drain ever built. It is built heavier than other high speed aerators, yet it can be used with tractors starting from 45 hp and up.

Both models are low maintenance with sealed bearings on most pivot points, a single-speed gearbox and optional hydraulic depth adjustments made from the tractor seat. These units penetrate 9 inches into the soil, and our patented parallelogram action give you a true forced heave to the tines, thus producing the shattering effect and relieving compaction, leaving the surface ready for play.

NO PARALLELOGRAM - NO FORCED HEAVE.



Depth adjustments made
from the tractor seat



See 'The Bullet'
in action

Redexim
NORTH AMERICA, INC.



www.redexim.com ■ 636-326-1009

Soak it UP

Effectively moving water through your soil profile means not only healthier turf, but potentially lower irrigation costs.

By Katie Tuttle

As superintendents find ways to use money more efficiently, and at a time when water conservation is becoming an increasingly important topic, wetting agents have become a much larger part of the discussion.

This interest stems primarily from the 2008 drought, says Dr. Keith Karnok, University of Georgia professor of agronomy.

"[It] really woke people up," Karnok says. "Water restrictions essentially affected everyone, especially golf courses and the rest of the green industry. Water scarcity and conservation is something that has become a concern for all regions of the country. The fact is, short of desalination, we aren't making anymore water, yet population and use continue to grow."

Karnok has spent the last 25 years focusing on using wetting agents on water repellent soils and/or water repellent sand rootzones. This research, Karnok says, has found that wetting agents, when used on water repellent roots zones, reduces the amount water used on sand-based putting greens by 30 to 50 percent.

It's a statistic superintendents dealing with reduced water availability issues may find interesting.

"We have shown conclusively that when rootzones are water repellent, wetting agents can save significant amounts of water," says Karnok. "Therefore, we feel confident that if a golf course is dealing with soil water repellency in greens, tees or fairways, the use of a wetting agent will be beneficial."

Over the past few seasons, superintendent Erin McManus has witnessed warmer temperature and heavy rains at Medina Golf and Country Club in Medina, Minn. The course was built on farmland in 1922 and, although it is relatively flat, several holes have peat bog soil, as well as heavy clay soil.

McManus employs various types of wetting agents depending on whether they want to move water into the profile, hold moisture into the profile, or a combination of both. "By using the wetting agent we are able to hold moisture on the high spots and let the water infiltrate in the lower areas," he says. "[However] what works for my course will not work for all golf courses and that is where we, as superintendents, can experiment with different wetting agents to get the desired result."



A water-repellent core. Inset, the absorption of water in treated (left) versus untreated (right) soil.

HEALTHY TURF STARTS WITH BETTER IRON.

SPRINT® 330+Mn HIGH PERFORMANCE IRON CHELATE

For healthy turf, start by feeding your soil with the industry's highest performing iron chelate and water-soluble manganese micronutrient blend: Sprint® 330+Mn. The unique combination of iron and manganese blend delivers an agronomically favored 1:2 ratio of plant available iron and manganese micronutrients, resulting in better resistance to and recovery from disease and insect damage for improved overall turf quality and performance.



Scan to learn more.

800-232-5907 • beckerunderwood.com

**BECKER
UNDERWOOD**
Inventing the Future



Left, localized dry spots (LDS) caused by water repellent soil. Above, an instant visual of what happens to drops of water on treated and untreated soil.

“[However] what works for my course will not work for all golf courses and that is where we, as superintendents, can experiment with different wetting agents to get the desired result.”

—Erin McManus, Medina Golf and Country Club

Because quality water has become such a premium, Mica McMillan, senior research agronomist for Aquatrols, says more pressure is placed on superintendents to conserve this resource – from both an environmental and financial/budgetary standpoint.

“It’s more bang for your buck,” McMillan says. “You not only save water, you save water costs and you also saves costs of anything you apply with your water.”



Left, Superintendent Erin McManus. Right, Dr. Keith Karnok.



Not only do wetting agents save superintendents money by using less water, they also save money by using less fertilizer. Many superintendents inject fertilizers with their wetting agents and it is important to make sure that the fertilizers are absorbed into the soil and do not run off.

Wetting agent use on water-repellent soils helps move inputs such as fertilizers and pesticides more uniformly into the soils, Karnok says. “More effective chemical use results in a healthier turfgrass plant,” he adds.

Research data supports improved efficacy of fungicides or herbicides with wetting agent use, McMillan says. “It helps maximize not only your water but your fertilizer applications as well,” he adds.

In the end, it all boils down to money savings. On top of the money saved from less water and more efficient fungicide or herbicide application, there is also the energy saving side of things to consider.

If you’re running your pumps all the time to continuously wet up your soil, your pumps continue to use energy. If you use a wetting agent to keep wetting and rewetting the soil, the pumps do not use as much energy, creating less of a negative environmental impact.

Not 100 percent sold? Consider what’s best for the golfers. “Playability is one of the leading factors in what we as superintendents look for in projects,” McManus says. “A wetting agent can help keep the putting surfaces more firm and fast. This increases playability during rain events and other factors that we cannot control.”

However, not every golf course necessarily needs to use a wetting agent, McMillan says. If you have recently built a new golf course or a new hole, and you have made sure the construction was perfect, there will not be any hydrophobic coatings and therefore it is a good idea to save your money by waiting. It typically takes six months to develop a hydrophobic layer.

McManus also does not believe every course needs a wetting agent. Superintendents should ask themselves what goal they want to reach from using the agent, he says.

“Make sure you use a wetting agent that



How they WORK

Wetting agents work in two ways – they break

surface tension and they improve water use efficiency, says Mica McMillan, senior research agronomist for Aquatrols. Wetting agents do this by coating the hydrophobic coatings on the soil particle. This moves the water in and around the soil particle and down into the soil profile. If your soil is having a problem taking in water, a wetting agent may help.

For more information, check out the online presentation by Aquatrols Territory Manager Ken Mauser, who explains the behind water repellency in soils Enter bit.ly/WzAmRR into your browser, or check out the presentation in the iPad/iPhone edition of this issue.

OARS

Organic Acid Removal System – The Original

The Proof Is In The LEACHATE!

The removal
of organic acids
from soil particles
alleviates
localized dry
spots and water
repellency in the
soil profile
reducing stress
on turf

LEACHATE
Containing Dissolved
Organic Acids After
Using OARS

LEACHATE
After Using
All Other
Surfactants



suits your needs and don't be afraid to run some small trials on your course to find out what works for your individual case," he says.

McManus worked with Winfield to run a wetting agent trial on their greens over a couple seasons. He says the results from those trials will dictate the types of products he uses on the course.

Another situation where no wetting agent is required would be if your course gets a lot of rain or has very wet conditions.

"Look at your soils and ask if you really need a wetting agent," McMillan says. Of course, once the soil does dry down, the hydrophobic coatings will start to reorient themselves and you will have trouble rewetting your soils. Then you will need to use a wetting agent, or a lot of water, to rewet it.

"I don't always recommend that you go out and mindlessly spray a wetting agent," McMillan says. "Look at your conditions. What's the age? What are the environmental conditions? Are your soils water repellent?"

However, Karnok offers a different view-

point. "Some research, including our own, suggests that under certain circumstances the application of a wetting agent to non-water repellent soil could be beneficial in terms of water savings and improved turfgrass health and quality," he says. "We have found this to be the case in some situations, but not all. Therefore, I cannot say with complete certainty that all golf courses should be using a wetting agent."

Despite this, Karnok says a lot of superin-

tendents use wetting agents.

"It should be pointed out that our surveys of golf course superintendents have shown that 94 to 98 percent of all golf courses in the U.S. use wetting agents either regularly or occasionally," he says. "They are without a doubt an important tool for almost all golf course superintendents." **GCI**

Katie Tuttle is an assistant editor at GCI.

Test for water repellent soil

As you know, water repellency ruins distribution uniformity (DU) and therefore reduces irrigation efficiency (IE). However, many turfgrass managers don't know how to test for it.

- After a few dry days, pull a soil core and place small drops of water from the thatch/mat layer downward. Soil must be completely dry to determine water repellency.
- Note time for complete penetration of drop
- Five seconds or more – definite presence of water repellency. Greater than 60 seconds – severe water repellency.
- Any delay in penetration – water resistant.
- Solution: Apply soil surfactants to reduce surface tension and hydrate water-repellent soil particles.

LED lighting... less maintenance, greater efficiency.

Benefits of LEDs:

- Integrate LED bulbs with existing fixtures
- 80% more efficient than Halogen and Incandescent bulbs
- 40 times the operational life of other bulbs
- Reduced maintenance and cost over the life of the light

replacement bulbs

Direct LED replacements of common Incandescent and Halogen bulbs for landscape, interior, and exterior fixtures.



landscape fixtures

Light fixtures for landscape applications such as garden, path, fountain, and pond lighting.

superbrightleds.com
Fast Delivery • Always In-Stock • 866-590-3533

Order by 1:00 p.m. CST
for same day shipping.



Bird Phazer Laser for Canada geese



5 3/4" X 1 1/8"

During a recent USGA Turf Advisory Service visit, a laser was used to show how Canada geese can be removed from the course.

The pocket-sized Bird Phazer Laser emits a powerful bright green light. When the beam hits the feathers of geese, it makes a bright splash of light. Their eyes are very sensitive to uv light, and the bright green laser light is very traumatic for them. A flock of more than 50 Canada geese immediately took flight from more than 200 yards away.

\$199 Compare to the
Avian Dissuader

geesedamage.com
(800) 555-9634
JWB Marketing Columbia, SC

**You can't change the climate.
That's why we created new chemistry.**

There's no controlling the temperature. But with Briskway™ fungicide, you can help control all major summer turf diseases with no heat restrictions. Thanks to a new active ingredient—difenoconazole—Briskway is a cooling DMI containing fungicide that can be used on all turf types, even in the hottest months, with no PGR effects. Combine that with the disease control and plant health benefits of azoxystrobin, and you can keep your turf looking great no matter the climate.

Visit www.NoHeatRestrictions.com



 **Briskway™**
Fungicide

syngenta®

©2012 Syngenta. Important: Always read and follow label instructions before buying or using Syngenta products. The label contains important conditions of sale, including limitations of warranty and remedy. All products may not be registered for sale or use in all states. Please check with your state or local extension service before buying or using Syngenta products. Briskway™, the Alliance Frame, the Purpose Icon and the Syngenta logo are trademarks of a Syngenta Group Company. Syngenta Customer Center: 1-866-SYNGENT(A) (796-4368). MW 1LG2034-P1 8/12

TM



Brian Vinchesi, the 2009 EPA WaterSense Irrigation Partner of the Year, is president of Irrigation Consulting Inc., a golf course irrigation design and consulting firm headquartered in Pepperell, Mass., that designs irrigation systems throughout the world. He can be reached at bvinchesi@irrigationconsulting.com or 978/433-8972.

PICK FROM THE CREAM OF THE CROP

If you were fortunate enough (the pride) or unfortunate enough (the money) to have children go through college, then you've noticed every area of study has some type of national student competition. In it, students compete against their peers at other colleges and universities. For example, when I was in college, way back when, I put a model airplane engine and a transmission in a small toy tractor and competed in a tractor pull. Yes, a tractor pull – miniature sled and all.

My son – a commercial pilot – competed in a flying competition between schools and won two national championships. In turf management, the competition is the Turf Bowl, held each year at the Golf Industry Show.

For horticultural students, the Professional Lawn Care Network (PLANET) holds its competitions each year in March during Student Career Days (SCD). Along with the student competitions there are workshops, a career fair and various other educational opportunities. Each year around 900 students from more than 60 schools compete in one or more of the 28 events. These include skid steer and compact excavator operation, hardscape installation, turf and weed identification and leadership skills, to name a few. A green industry company or group of companies sponsors each event and is responsible for developing, setting up and judging. Always held in March, the competition moves around the

country from school to school. This year's competition was at Auburn University, last year Kansas State and next year Colorado State. For more SCD information, visit the website: studentcareerdays.org.

For the last 12 years, I've had the pleasure to be involved as both a workshop presenter and as a judge. It's my favorite volunteer endeavor of the year. Three irrigation competitions that take place: irrigation design, irrigation assembly and irrigation troubleshooting.

In irrigation design, students have a professional commercial or residential irrigation design they must answer questions about and complete the missing parts.

In irrigation assembly, a pair of students receive a small, two-zone irrigation plan and have to build, operate, adjust and program it within 110 minutes. You see things done with pipe and irrigation equipment you never knew were possible. It's both entertaining and educational.

Irrigation troubleshooting requires students to fix a mechanically and electrically sabotaged irrigation system, as well as complete a written qualifying test.

Okay, so why is this of interest to a golf course? SCD's participants are the industry's cream of the crop. They are all well trained and many have several years of field experience. In fact, a large percentage are second-career individuals and/or outside your typical college-age demographic.

I bring this to your attention because you may be unaware that these



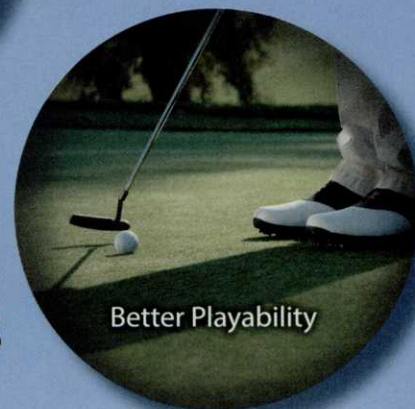
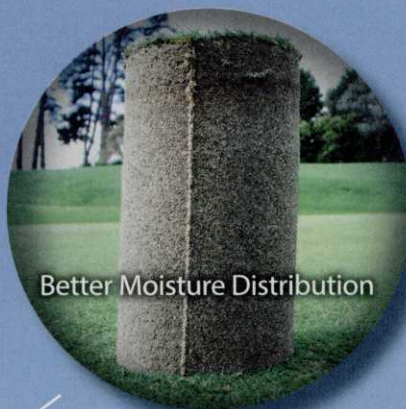
Three irrigation competitions take place at PLANET Student Career Days.

students are a potential labor pool. While most aren't turf majors, they do have diverse backgrounds in equipment operation, arboriculture and landscape construction.

These students have excellent potential as a golf course irrigation technician. I get asked all the time if I know of any irrigation technicians available or anyone who would be interested in being one. Wouldn't it be nice to hire someone who knew something about irrigation to start with; solvent weld cementing, valve and wire troubleshooting, or how to properly size pipe or make a wire splice? While training is required, you won't be starting from ground zero. Look at the list of participating schools on PLANET's website, or contact your local community or four-year college's horticultural program. Do they have students graduating with experience and an interest in irrigation?

And as the saying goes, "Put your money where your mouth is." I watched a very smart young lady kick ass in all three of the irrigation competitions over a 3-year period. Now she is one of my employees. GCI

The first name in surfactants. The last you'll need to know.



It's no surprise that Revolution is trusted by so many turf professionals around the world. It's the only soil surfactant that goes beyond water repellency issues, providing comprehensive water management and plant health benefits as well.

Revolution's patented formulation balances air and water in the soil profile, leading to a better root system and improved soil health. By maximizing the potential of your growing environment, Revolution helps turf function more efficiently and perform at consistently higher levels, even under stress.

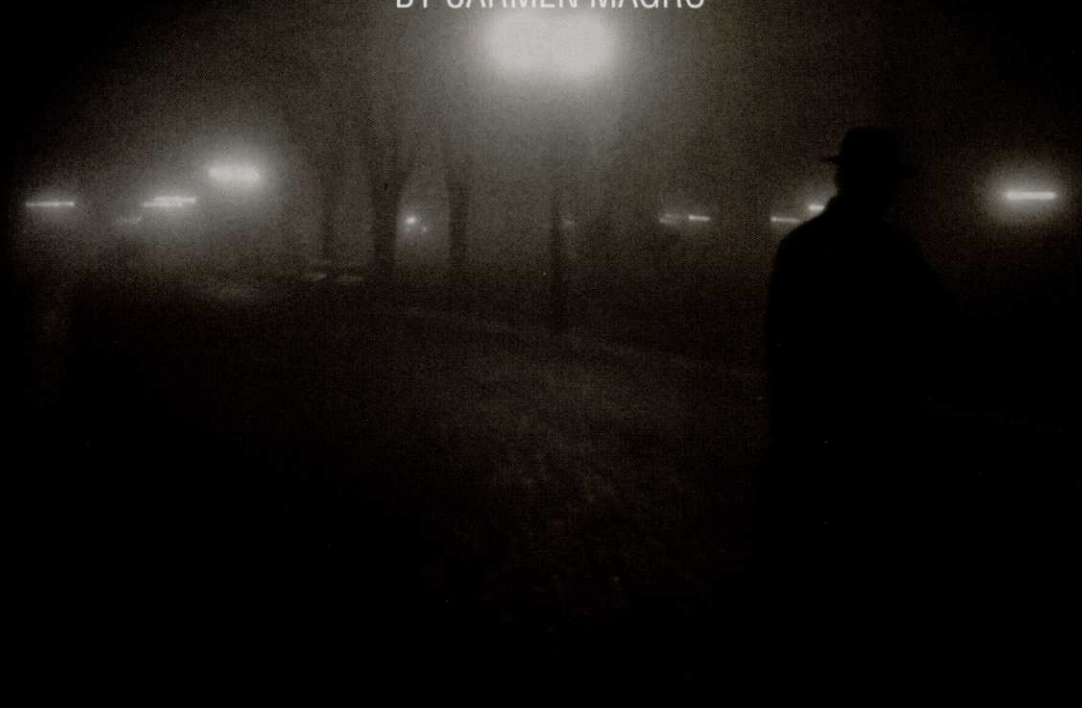
Try it — and see the benefits for yourself.



 **Aquatrols®**
www.aquatrols.com

TURF EXORCISM

BY CARMEN MAGRO



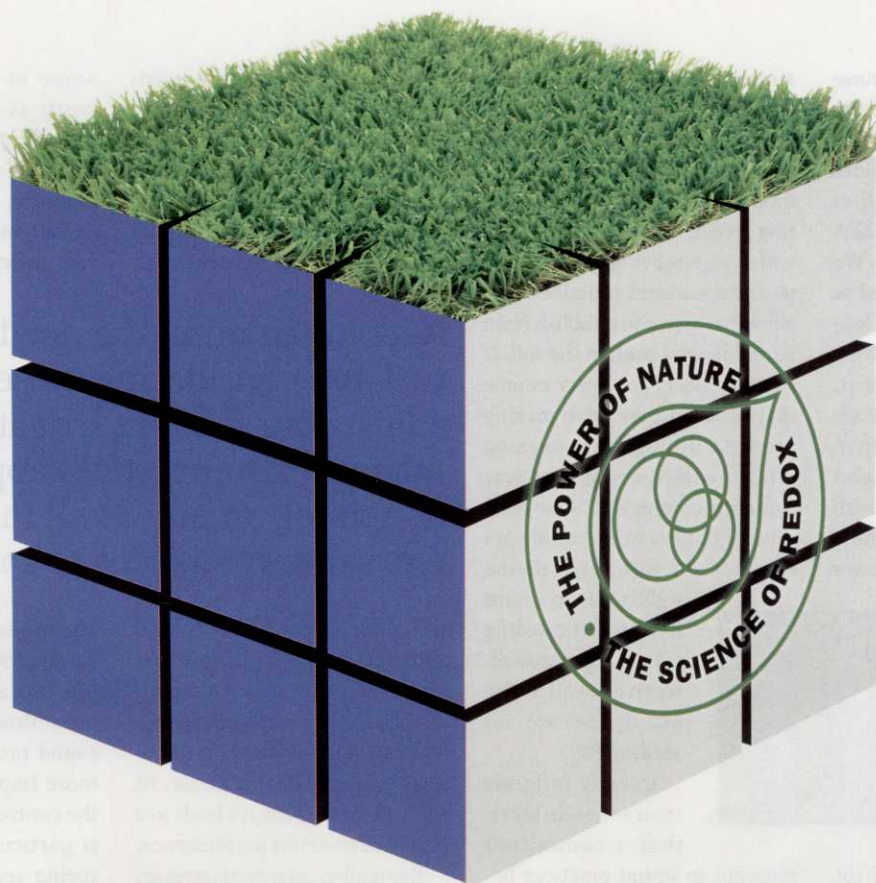
The power of cultural practices compels you! A sound management program is the best strategy to cast out the demon possessing your *Poa* greens – **ANTHRACNOSE.**

As a golf course superintendent, I battled forms of anthracnose that I believed were the work of the Devil – out to make sure that my turf suffered and to ensure my life was a living hell.

Anthracnose is a common scourge on the minds of many superintendents. As we enter a new spring in the northern hemisphere, there are many things to consider so we can limit the chances of this disease showing up. Note that anthracnose is primarily a disease affecting *Poa annua* and creeping bentgrass – both cool-season grasses – putting greens in particular although incidents of warm-season

hosts being affected are being identified. Many genetic enhancements, primarily to creeping bentgrass, have made the turf plant more resistant to anthracnose pressure. However, the facts support a sound management program is the best defense against this disease.

It was early in my career and, like many others, clueless as to how to handle it most effectively since the reports from academia were conflicting, to say the least. Some of us tried every mode-of-action pesticide we could to get a handle on the disease because the reports were saying if you have it, you have to treat it...period. Inheriting a slew of



The Perfect Solutions.

Single package Flowable solutions for any condition and all budgets.

Turf management - growing exactly what you want where you need it - can often seem like a complex puzzle, meeting player's expectations in less than ideal growing and environmental conditions while facing budgetary restraints. That's where Redox Turf technology provides the ideal solutions for any golf course.

With new flowable solutions designed specifically for fairways and greens, and expert agronomic

recommendation based on the industry's most advanced soil testing, you can be assured of results that can be seen on the course, and on your bottom line. We guarantee it.

TURFRx Fairway
Flowable

TURFRx Green
Flowable



RedoxTURF

www.redoxturf.com Redox Chemicals, LLC 1-877-503-2207

pesticide technologies, my course hadn't seen the likes of anthracnose due to the residual effects of some very potent pesticides formulated decades ago. All of these I gladly gave up to the EPA amnesty collection program. We had no desire to use outdated or past pesticides that were no longer being made or were proven harmful to the environment. That one decision led to new ailments my turf hadn't seen when environmental stresses heightened early in my career. But with regard to knowing how to handle anthracnose, how things have changed.

Anthrachnose basically has two forms. One is the not so lethal foliar form that discolors turf, but can be treated fairly effectively with fungicides labeled for its control. The other, basal rot anthracnose, hollows out all life in the plant down through the crown and at the key junction where lower plant stems meet the crown. If anthracnose has matured to this level in your turf, control is typically not a viable option on the affected plants, and most efforts are more effectively



aimed insuring the surrounding turf does not get infected. Since anthracnose attacks *Poa annua* more severely than other common species, particularly on putting greens, many will over-seed with creeping bentgrass or simply perform cultural practices that allow *Poa annua* to establish from its viable seed bank in the soil. If I had a nickel for every course that believed they were making progress through over-seeding efforts where *Poa annua* was primarily coming in... One good thing about *Poa* is you can always expect it to return if you do the

right thing to insure it does. Overseeding is typically pretty effective despite the fact that we are not seeding *Poa*.

In early turfgrass courses, we learn that a committed program to sound practices beginning with the proper turf species and sound irrigation, cultural and fertilization practices is the best defense against ailing stresses on our turf. Of all the diseases, this statement is not as important as it is with the control of anthracnose. It is controllable through sound practices, espe-

cially those affecting the nutritional uptake and movement through the turf plant. In nearly every anthracnose episode, there is some tie to a condition that is limiting the delivery, availability and movement of nutrients into

some of which may be very costly as the interval and rates typically increase when we have unexpected outbreaks of disease pressure.

So how do we limit the need for unexpected pesticide ap-

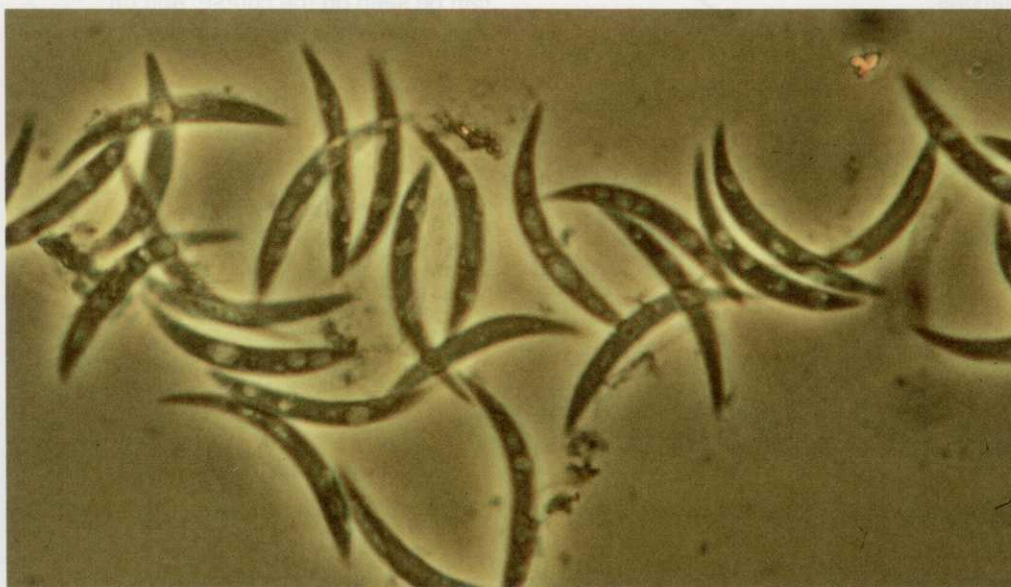
Keeping in mind the needs of the turf and considering those needs to adjust your fertility, irrigation and soil management practices appropriately in a timely manner will in fact greatly reduce your chances of anthracnose.

the plant. I've seen again and again how not-so-sound practices affected the movement of water, air and nutrients through the soil, and this almost always leads to increased episodes of disease. At the very least, it always leads to a lack of desired turf performance.

Remember, managing stresses and diseases or any other non-desirable influence on turfgrass performance is simply a checks-and-balances system. If the ailment or stress outweighs the plant's ability to tolerate it, then we will see non-desired results. This will lead to the need for increased pesticide applications,

plications? Better yet, how do we improve the performance of our turf and limit the chances for anthracnose showing up? A sound program has never been more important than it is with the control of Anthracnose. This is particularly the case as the spring season progresses. Last year, many experienced anthracnose outbreaks, and the industry rumor was that anthracnose "strains" were getting stronger. That was not the case. As many experienced unusual weather patterns that basically led to early spring growth activity – some areas experiencing spring growth in later winter – the plant's biological clock started earlier than usual. In nearly every situation where the management of the turf did not meet the early growth, there was a void left in the plant, particularly a nutritional void.

Two things should always match the growth of turf. One includes cultural practices like topdressing and irrigation management where we match the organic deposits of turf by diluting with sand (or removing with cultivation alternatives) or replace water that is being removed by plant activity. The other includes nutritional inputs. Turfgrass has an internal clock that does not operate by the calendar. Root growth begins



Colletotrichum graminicola (400X), causal agent of anthracnose diseases.



Overseeders

**Precision
Seeding
Technology**



**Ground
Quake Sand
Injector**

**RotaDairon™
Soil Renovator**



**Turf
Surgeon
Verticuts and
Collects**

Trenchers



Vacuums



**Topdressers
and Spreaders**



Verticutters

Welcome to our Newest Dealers!

- » A-OK Turf Equipment, Coventry RI
- » Bonneville County Implement, Idaho Falls ID
- » Commercial Turf and Tractor, Chillicothe MO
- » Show Turf, Boynton Beach FL
- » Turf and Industrial, Santa Clara CA
- » G.C. Duke, Ontario Canada
- » Storr Tractor, New Jersey & Long Island



864.225.3666
www.stecelequipment.com

DISEASE MANAGEMENT

when the soil starts to climb just above freezing in the north (about 10 degree F warmer for warm-season grasses), then the need for nutrition exponentially gets greater with each passing day. Since turfgrass is typically grown in high-sand environments – on putting greens in particular – there is not a huge buffer of nutrients waiting to be picked up from the soil. In addition, the roots are not overly extensive early on and therefore do not cover a lot of soil area to pick up necessary nutrients that are present.

Therefore, more damage can be done to both cool- and warm-season grasses early in the growing season than many imagine. This damage can lead to disease issues later on, especially anthracnose (again primarily on cool-season turf), which is just waiting to thrive as soon as the turf is injured in some way (like cultivation practices or poor mowing practices).

While foliar anthracnose typically shows up in summer months, basal rot anthracnose can be found in any season of the year and



Basal rot hollows out all life in the plant down through the crown and at the key junction where lower plant stems meet the crown.

has even been found to be active underneath snow cover. Much work has been done and proven in recent years to support what we have seen in the field around the world...that anthracnose is directly related to nitrogen and other nutrient availability in the turf, as well as the overall conditioning of the turf. In other words, if your nutritional program is limiting or primarily depending on uptake from soil reserves of key nutrients like nitrogen, or

if you have injured turf from dull mowers, mechanical or other physical damages, you could be a prime candidate for an anthracnose outbreak. On the flip side, if you have a nutritional delivery system that meets the day-to-day needs of turf and you have a sound system that insures sharp mowers and limited physical damage to the turf plant, you greatly reduce anthracnose outbreaks.

Like many diseases, anthracnose thrives in extended moist conditions, particularly those that exceed 10 hours of moisture a day where the canopy remains wet. Insuring that thatch and soil conditions conducive for water control and movement through the profile exists greatly reduces the chances for anthracnose outbreak, as well. So don't skip that cultural practice designed to keep the profile performing well and be mindful of irrigation inputs to insure the water is always targeted to just beneath the root tips.

(ANTHRACNOSE continues on page 94)

MORE control.

Clover, thistle and over 250 other broadleaf weeds disappear with one application of Millennium™ Ultra². With 'meltdown' and residual control, it keeps turf clean and pristine for weeks, and can be applied virtually any time for maximum flexibility. That's how Nufarm brings you more control – and more confidence. Ask your distributor for Millennium Ultra².

Millennium[™] ULTRA²

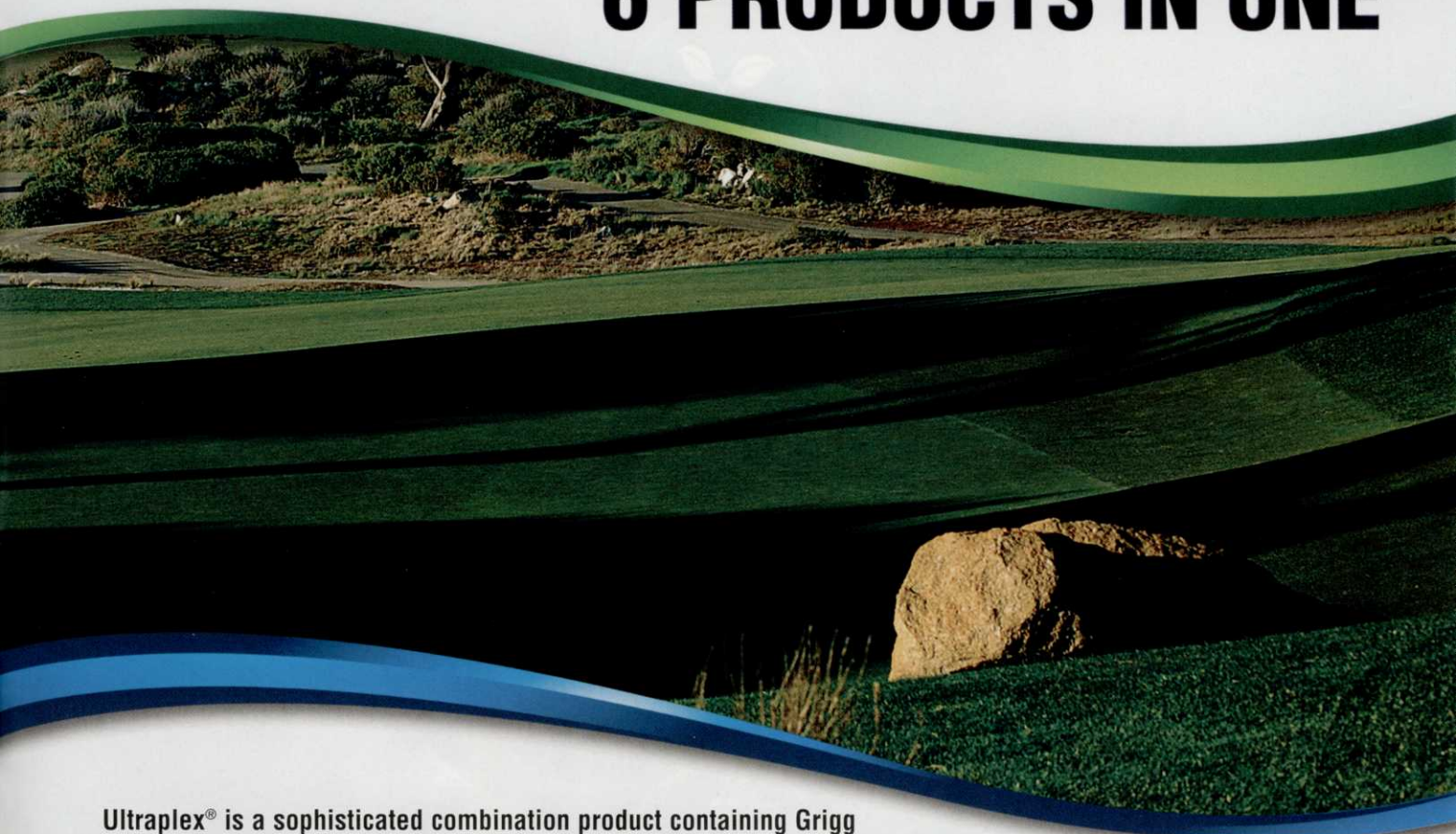
More where it matters most.
www.nufarm.com/usto

©2013 Nufarm. Important: Always read and follow label instructions. Millennium[™] is a trademark of Nufarm.





NEW AND IMPROVED ULTRAPLEX[®] 6 PRODUCTS IN ONE



Ultraplex[®] is a sophisticated combination product containing Grigg Brothers[®] exclusive Elicitor[®] Technology and is designed for use in all seasons. Ultraplex[®] is an important component to most Grigg Brothers[®] programs for improved plant health and stress tolerance. Ultraplex[®] now includes the following 6 components.

- Effective natural biostimulants, amino and organic acids.
- Sea plant extract (*Ascophyllum Nodosum*)
- A water buffering agent
- Macro Nutrients, (N & K).
- A full organically chelated micronutrient package including Fe, Mg, Mn, Zn, Cu, and Boron.
- A natural, non-ionic and organic surfactant for improved leaf coverage and absorption.



Toll Free (888) 246-8873 • Fax (208) 673-6342

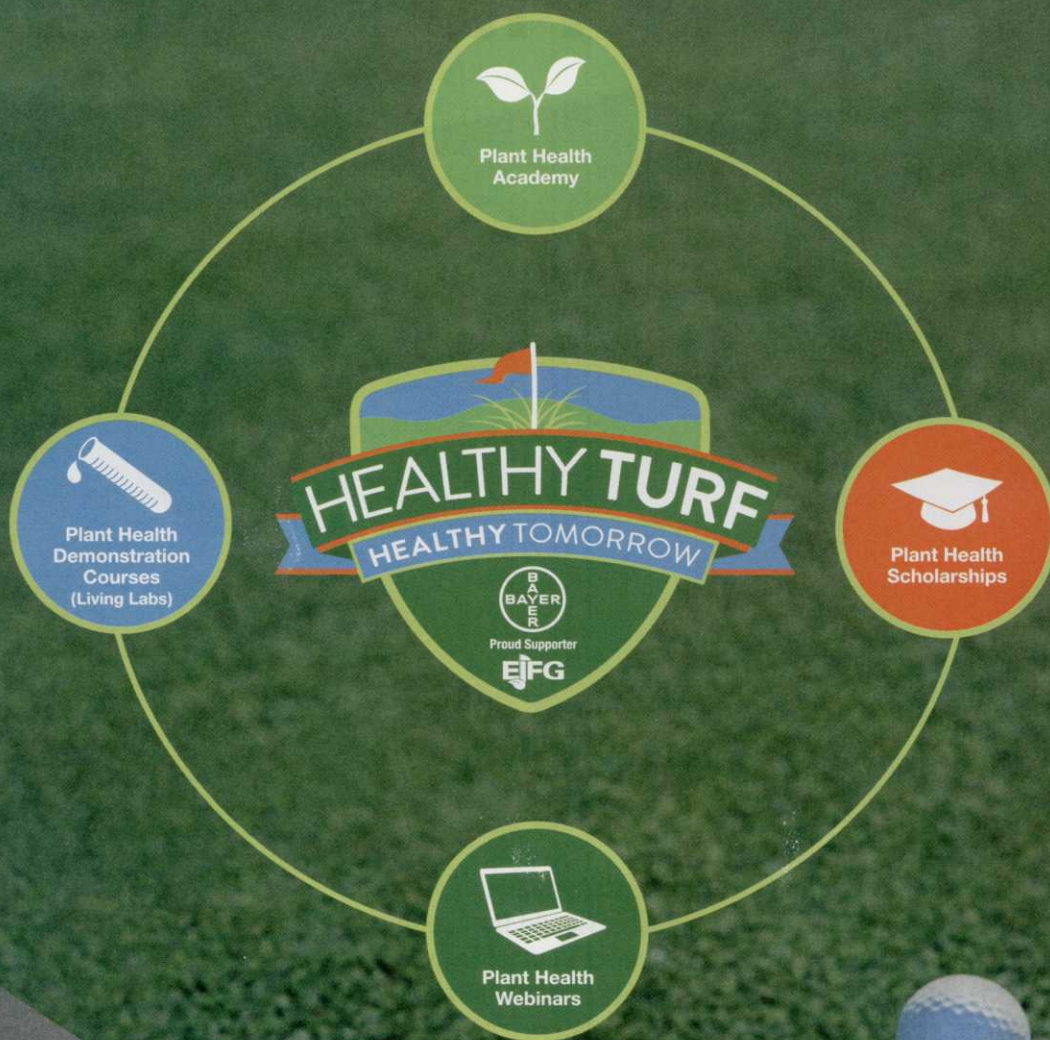
P.O. Box 128 • Albion, ID 83311

facebook.com/griggbros • www.griggbros.com

Elicitor[®] is a registered trademark of Turfgrass Management Inc. DBA Grigg Brothers[®]



TOGETHER, WE GROW.



Bayer

The future of plant health is Bayer's top priority. To prove it, we're committing \$300,000 to the advancement of plant health research and education through the *Healthy Turf, Healthy Tomorrow* program, with GCSAA and the Environmental Institute for Golf. Visit backedbybayer.com/healthy-turf to learn more or contact your local Bayer representative to participate.

Bayer CropScience LP, Environmental Science Division, 2 TW Alexander Drive, Research Triangle Park, NC 27709. 1-800-331-2867. www.BackedbyBayer.com. Bayer and the Bayer Cross are registered trademarks of Bayer. Not all products are registered in all states. Always read and follow label directions carefully. ©2013 Bayer CropScience LP.

BY CHRIS HARTWIGER

Made in the shade or mud in the shade?

Sunlight assessment is a key to success with ultradwarf Bermudagrasses.

Trees and turfgrass are like brothers. Give them ample space to grow and they get along just fine. Put them together in a small bedroom and the bigger one is going to dominate. Just

like finding a proper distance between brothers is a key to harmony, trees and turf must have adequate space, too. If they are too close together, the trees will out compete turfgrass for growth-related resources like

sunlight, water, and nutrients. Spaced appropriately, trees and turf will get along just fine, too. Ultimately, finding the proper distance to allow both trees and turf to flourish is an agronomic challenge on many golf courses.

In the Southeast Region, most golf courses have identified and corrected shade problems through trial and error. This could be called “after the fact” or “reactive” shade management. It typically works this way. Certain putting greens on a given course develop poor turf quality over a period of years. Shade is identified as a limiting factor. Protests about protecting the trees ensue. The protesters eventually capitulate under the weight of factual evidence and the desire to have acceptable turf quality on the putting greens. Trees are removed, and turf quality on the putting greens improves. All in all, this model has worked well, and today many golf courses have dealt with their shade issues.

The recent trend in the Southeast to replace creeping bentgrass on putting greens with an ultradwarf Bermudagrass does not lend itself to an “after the fact” or “reactive” shade management program because ultradwarfs do not tolerate shade well. A “before the fact” or “proactive” shade



Planting trees too close to a putting green can result, years later, in levels of shade that hinder turfgrass growth, particularly ultradwarf Bermudagrasses.

management program is desired because officials at courses want to know if their putting greens receive enough sunlight to sustain an ultradwarf Bermudagrass.

This article will help golf courses assess shade levels on their putting greens prior to a conversion from bentgrass to an ultradwarf. Golf courses with an ultradwarf presently will be able to use this information in case there is a need to address existing shade problems. In this article, some basics of plant physiology are reviewed, and important terms that will be used during site assessment are defined. Practical tips for proactively addressing shade will be presented.

HOW PLANTS GROW. Plant growth is a highly complex and ordered process. Plant growth requires energy, and the source of that energy is the sun. Light is the mechanism for energy transfer from the sun to the plant. The term irradiance (radiant

energy) refers to the energy received on a specified surface, or, in our case, on the plant's leaf (Beard, 2002). Turfgrass plants receive the sun's energy via tiny particles called photons. The plant converts the radiant energy it receives into chemical energy through the process of photosynthesis.

Turfgrass plants are selective about the type of light (solar radiation) they require for plant growth. They absorb the bulk of their energy in the visible light range (400 to 700 nm) of the electromagnetic spectrum. This range is referred to as photosynthetically active radiation (PAR). Plant pigments such as chlorophyll molecules each have optimum absorption ranges. PAR in the ranges of 400-500 nm (blue light) and 600-700 nm (red light) is the most important for plant growth. PAR in the range of 500-600 nm (green light) is basically inactive for plant growth (Bell, Danneberger, and McMahon, 2000). The human eye detects light best

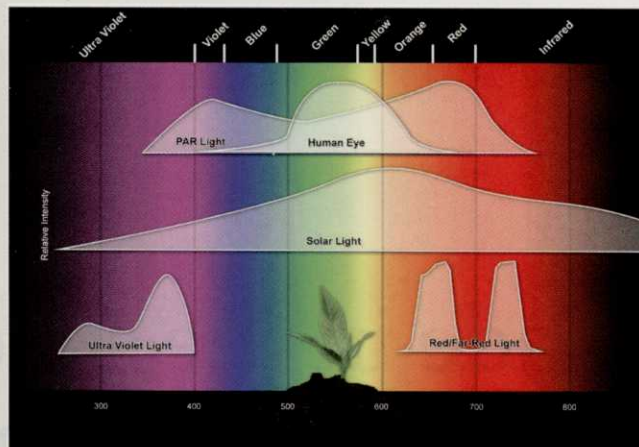


Figure 1: Ranges of light absorption for photosynthesis in plants. Note that the area where visible light for humans is greatest, it is of least value to plants. Therefore, light levels detected by the eye are not a good predictor of light levels used by plants for photosynthesis.

at about 550 nm. Therefore, the light the human eye is good at detecting is the light that has no value for plant growth. For a graphical look at ranges of light absorption for plants, refer to Figure 1.

LIGHT QUALITY. Light particles (photons) have different energy levels as determined by their individual wavelengths. Light quality refers to the spectral distribution of light, or the relative number of photons in each portion of the light spectrum (visible and invisible) emitted from a light source.

Outside, the different shade sources have different effects on light quality in terms of plant growth. Shade from clouds and shade cloths in research are considered to be spectrum-neutral. They filter out all wavelengths of light equally. Shade from trees is not spectrum-neutral, and it changes the ratio of blue light to red light, which can affect plant growth. There have been conflicting research data regarding differences to turfgrass growth between deciduous and conifer induced

shade, but research on turfgrass at Ohio State University showed no difference in spectrum response between deciduous and coniferous trees (Bell, Danneberger, and McMahon, 2000). This article will not resolve this conflict, so for the purpose of this article, no distinction is made between different types of trees and their impact on light quality.

LIGHT QUANTITY. Given that trees are the most common means of shade on golf courses, the quantity of light becomes the most pressing question. It would be nice if shade could be evaluated strictly in terms of the number of hours of direct sunlight needed, but that would assume that in terms of plant growth, the PAR for one hour of sunlight is constant throughout the day. Practically speaking, this would imply that one hour of sunlight between 7 and 8 a.m. is equivalent to an hour between 12 and 1 p.m. Unfortunately, one hour of direct sun between 7 and 8 a.m. has much less PAR than an hour of sun between 12 and 1 p.m. Therefore, a method

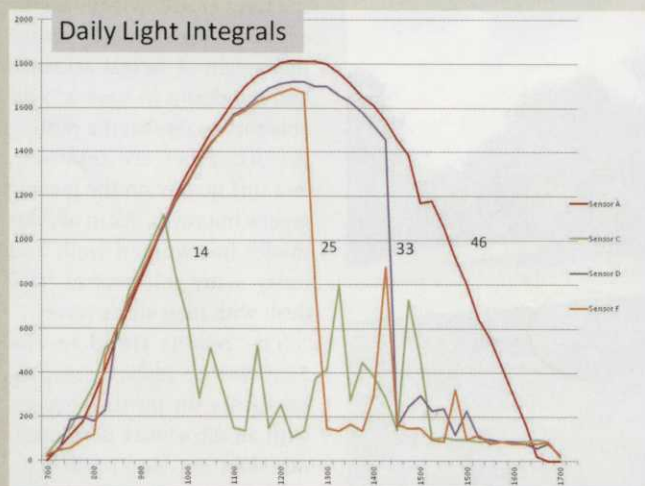


Figure 2: A DLI (daily light integral) is a measure of the total amount of photosynthetically active radiation (PAR) a given area receives in a single day. This graph shows the DLI measure by four different sensors. Note how each DLI curve changes throughout the day, with the highest levels achieved at solar noon. Sharp drop-offs or changes in the curve are caused by shade from trees.

YES, IT'S SUNSCREEN FOR YOUR TURF.

It is scientifically proven that ultraviolet and solar radiation is dangerous to turf. In fact, it can turn healthy green turf wilted brown in just a few hours. Turf Screen™ is the only product proven to protect turf from UVB and solar radiation. It's engineered with the same FDA-approved, all-natural ingredients as human sunscreen. Turf Screen improves turf quality, reduces maintenance costs and provides the extra level of protection turf needs during periods of extreme stress. This summer, forget the pigment imposters and demand Turf Screen.

To learn more and hear what superintendents say about Turf Screen, visit turfscreen.com.



DEVELOPED BY A SUPERINTENDENT FOR SUPERINTENDENTS

©2013 Turf Max, LLC.



Shade from trees surrounding a putting green vary throughout the year due to the changing angle of the sun. The quantity of light for plant growth not only changes based upon shade, but on the time of day.

to measure PAR over the course of an entire day is needed rather than a method to measure PAR at any given moment.

Scientists measure PAR as the number of photons striking a square meter every second. This measurement is sometimes referred to as the Photosynthetic Photon Flux Density, and the units to express the intensity of PAR light are micromoles per square meter per second. For the purposes of measuring the total amount of PAR an area receives in a 24-hour period, scientists use the term Daily Light Integral (DLI). The DLI is expressed as the number of moles of PAR per square meter per day. Figure 2 shows an example of DLI for a clear summer day with no shade. Note how PAR peaks in the early afternoon and is substantially lower in the hours just after sunrise and just before sunset. PAR will peak at your location at solar noon, which is defined as the time when the sun reaches its highest point and crosses the meridian. Depending on the time of year, solar noon can occur before or after 12 noon. More details on solar noon can be found at <http://www.sundials.co.uk/equation.htm>.

Dr. Todd Bunnell and Dr. Bert McCarty identified in a research project at Clemson University that a Daily Light Integral of 32.6 was needed for TifEagle Bermudagrass

to provide an acceptable level of quality. Practically speaking, Bunnell and McCarty recommend eight to ten hours of sunlight for TifEagle Bermudagrass in Clemson, S.C. (Bunnell and McCarty, 2004a). Four of those hours should be between approximately 11 am to 3 pm, when PAR levels are highest. This is excellent information to know when assessing sunlight levels.

Bunnell and McCarty continued shade-related research and examined the effect of the plant growth regulator Primo, mowing height, and nitrogen rate on TifEagle Bermudagrass grown under varying levels of shade. They found that plots with four hours of sun (12 noon to 4 pm), applications of Primo, and a 3/16" height of cut, produced acceptable turf quality at a DLI of 22.1. These researchers concluded, "Therefore, applying a plant growth regulator that inhibits gibberellic acid and raising mowing heights will improve the growth, quality, and performance of ultradwarf Bermudagrass greens in shade (Bunnell and McCarty, 2004b)."

MEASURING DAILY LIGHT INTEGRALS. With a solid background now established in light terminology and more confidence in how much light an ultradwarf needs, attention can shift to measuring sunlight levels on a

golf putting green.

Equipment Needed. The first step in assessing shade levels is to identify the Daily Light Integral on the area in question. This can be done through the acquisition of both a light sensor and a meter to read the light sensor. A popular sensor model contains a row of three to six sensors and comes with detailed instructions for use. Based on 2011 prices, the cost is approximately \$600 - \$650. Other less-expensive light sensors can be purchased for several hundred dollars, but these meters may only express DLI within a range, not as a specific number. Spectrum Technologies (Plainfield, Ill.) is a company with many available choices that would work well in determining the DLI on a putting green.

WHEN TO TAKE MEASUREMENTS. Summer:

The Clemson studies were conducted over two years, and data were collected between late June and mid-August. During this time of year, Bermudagrass is producing the greatest quantity of vegetative growth, so it makes sense to assess shade levels for the purpose of growing acceptable ultradwarf turf. Use the light sensor to take measurements sometime between mid June and early August. Because the light sensor will need to be at a given location all day long,



MUSKETEER™

Turf Growth Regulator

Musketeer is the first turf plant growth regulator (PGR) to incorporate three PGR technologies to uniquely and effectively suppress Gibberellic Acid synthesis, leading to superior growth regulation of targeted turfgrasses. Musketeer is the result of SePRO research and based upon the same patented turf PGR synergy technology as SePRO's Legacy* Turf Growth Regulator. Musketeer is specifically formulated to aggressively target growth suppression of *Poa annua* in cool-season turfgrass species, such as creeping bentgrass, while providing excellent turfgrass enhancement. The result—more bentgrass and less *Poa annua*.



SePRO Corporation Carmel, IN 46032



*Trademarks of SePRO Corporation. The synergy derived from the combination of Type IIA and Type IIB PGRs is covered under U.S. Patent No. 7,135,435. Always read and follow label directions. © Copyright 2012 SePRO Corporation.

Real Science

Affordable technologies are available for in-field use to more effectively observe the path of the sun and identify trees that block sunlight. When only a few trees may be an issue, a superintendent using the Sun Seeker can identify the trees that block sunlight to a putting green and the approximate length of time these trees cause shade.



there may be interference with play, even though the actual sensor is less than 18 inches long. Make plans to communicate where the sensor is, and make a local rule to deal with any interference.

Spring and Fall: Consider taking measurements in spring and fall, also. These are times of the year when metabolic changes are occurring within the plant in response to day length and temperature. Although plant physiologists have quantified that changes do occur in the plant at these times of year, there is minimal research that quantifies minimum levels of sunlight necessary for adequate long-term growth. We do know that as day-length decreases and temperatures decrease, the plant begins to store carbohydrates that ultimately will be used during greenup the following spring. Therefore, shade in the fall may have an effect on winter survival and spring green-up.

Conversely, sunlight levels in the spring will have an impact on soil temperature and spring green-up, too. It stands to reason that areas receiving less sunlight may be slower

to greenup in the spring months. Superintendents have aided the green-up process by increasing canopy temperature through the application of turf paints or dyes and green or black topdressing.

Taking a few measurements during fall and spring will help identify shaded areas. Because we do not have a recommended minimum DLI for the fall, determining acceptable shade levels in the fall will be a judgment call.

WHERE TO TAKE MEASUREMENTS. A golf course superintendent can identify the putting greens that historically have battled issues caused by shade. It is common on some greens that there is only a small corner or area that may receive more shade than other parts of the green. It is a good idea to take two or three measurements on a putting green to assess both the highest and lowest levels of shade on a putting green.

If someone is interested in determining the percent shade that a putting green receives, it will be necessary to also take

a DLI reading on any area in full sun. To determine the percentage of shade, use the following equation.

$$\% \text{ Sun} = \frac{\text{DLI of Shady Location}}{\text{DLI of Sunny Location}} \times 100$$

$$\% \text{ Shade} = 100 - \% \text{ Sun}$$

A word of caution is in order – when determining the percentage shade, be sure to take the DLI measurements for both areas on the same day. Try to pick a day with full sun and minimal clouds. Cloud cover can and does impact DLI, so if data were taken on two different days, results could be skewed.

How many measurements to take? This is a judgment call on the part of the end user. The Clemson study took data for almost two months and had the ability to take an average of all those days. At the local level, it would be a good idea to record data on several days that one would consider to be sunny or a typical summer day. A typical summer day in the Southeast would be one

GENIUS IS GOOD.

*Ingenious is definitely
more appropriate.*



INTRODUCING THE PILOT CENTRAL CONTROL SYSTEM
The new standard in advanced golf course irrigation control.

With the lowest cost-per-station and the most advanced features available, Pilot Central Control offers a smarter way to manage golf irrigation. From easy installation and simple usability, to large screen interfaces, and one-tool servicing, no detail was overlooked in developing this innovation. Whether your system is traditional or decoder-based, don't settle for yesterday's standard. Choose the solution with the ingenuity that can make your course take flight.



with clear skies in the morning and some isolated clouds in the afternoon. Please note that in the Bunnell and McCarty study the two year DLI for plots in full sun was 41.6, with a maximum DLI reading of 52.1.

Is it necessary to measure every putting green? Probably not. Start first with the putting greens most influenced by shade. Generally, there are two or three greens that cause the most concern. Measure them first and make a determination if other less-shaded greens need to be measured. If the shaded greens have DLIs more than 33, it won't be necessary to evaluate less-shaded greens. Also, look for corners of greens that may have shade issues and measure them. The edge of the green with the cleanup lap has more mower traffic and turning, therefore solve the shade issues on the edges and the rest of the green should be okay.

DATA INTERPRETATION. After taking the Clemson studies into account, a superintendent or course official has solid information in hand to make an educated assessment to determine whether adequate sunlight for growing an ultradwarf exists or if additional action is warranted. Please note that the target of 32.6 is an indicator, not an absolute, and does not take into account additional stress factors, such as traffic, water quality, soil-borne pests, etc. Added stress will require higher DLI.

The initial measurements described above will yield several different outcomes.

- Summer DLI comfortably above 32.6; no action needed. Sunlight is adequate for an ultradwarf. There may be some minor tree issues to deal with, but even if no trees were re-

moved, the ultradwarf will have enough sunlight to grow sustainably.

- Summer DLI at mid 20s-33; potential action needed. Are there trees that can be removed, or is the course able to manage this green differently? Primo use will be essential. A putting green in this scenario is going to require closer attention. Assess the percentage of the putting green that has a DLI below 32.6. A secondary issue for putting greens in this range is to look at DLI levels in the fall and spring, too. The lower a summer DLI level is, the more important it will be to have as much sun in the fall and spring as possible.

- Summer sunlight below DLI of 22-30; action needed or green will be deemed unsuitable for an ultradwarf. In this case, removing trees or moving the green is necessary

INCREASING SUNLIGHT LEVELS.

On a shaded putting green, it may not be difficult to agree that trees need to be removed, but there may be disagreement on which ones need to be removed. The trees that need to be removed are the ones that will provide the greatest increase in DLI. Fortunately, there are several tools that are available to assist in this process

- Commercial Services – Companies such as ArborCom Technologies use computer modeling technology to determine the shade impact of individual trees on a given putting green. Shade patterns on a putting green can be modeled for any day of the year and any time period during the day. Within the model, an almost unlimited number of scenarios can be run, examining the impact of the removal of a given tree or multiple trees on sunlight levels. This is a highly precise process.

- Applications on Handheld Devices (i.e., apps) – An app developed for the real estate industry has found a niche in shade management. This app is called SunSeeker and is available on iTunes for a nominal fee for owners of an iPhone or an iPad2. With the app running and the device in camera mode and facing the object(s) potentially causing shade, the user will see several lines across the screen. A blue line traces the path of the sun on the winter solstice, December 21. A red line traces the path of the sun on the summer solstice. A third line traces the path of the sun on the day of the user's choice, with the

During the summer months, this app is quite helpful in identifying trees that block sunlight and determining the duration of time that they block sunlight. This app is a good tool to assist in identifying the fewest trees

to remove to achieve the largest increase in direct sunlight.

A WORD ABOUT WINTER SHADE.

The angle of the sun decreases by about 36% over the course of a year, and, as a result, shade levels may increase dramatically during the winter months if there are trees along the western, southern, and eastern sides of a putting green. Questions involving whether to measure winter shade are common. A warm-season species, such as Bermudagrass, moves from periods of rapid vegetative growth in the warmer summer months to periods of slower to no growth in winter months. The times and rates of growth change are dependent on upon temperature and day length.

In the fall and winter, changes in temperature and light intensity trigger changes in a Bermudagrass plant. Dr. James Beard explains it this way,

References

- Beard, 1973. Turfgrass: Science and Culture. Prentice-Hall, Inc., Englewood Cliffs, N.J.
- Bunnell, B. Todd; McCarty, Bert. 2004a. Sunlight requirements for ultradwarf bermudagrass greens. *Golf Course Management*. August. 72(8): p. 92-96. TGIF Record 97252
- Bunnell, B. Todd; McCarty, Bert. 2004b. PGRS and higher heights: improving TifEagle greens in the shade. *Golf Course Management*. October. 72(10): p. 93-97. TGIF Record 98380
- Bell, G. E.; Danneberger, T. K.; McMahon, M. J. 2000. *Crop Science*. January/February. 40(1): p. 189-195. TGIF Record 63676
- Beard, J. B. 2002. *Turf Management for Golf Courses*, 2nd ed. Ann Arbor Press, Chelsea, Mich.
- Cooper, J. D. 1970. Potential production and energy conversion in temperate and tropical grasses. *Herb. Abstr.* 40:1-15.
- Miller, Grady L.; Edenfield, Jeffry T. 2002. Light intensity and duration influence growth of bermudagrass. *Golf Course Management*. September. 70(9): p. 111-113. TGIF Record 81976

FASTER? OR BETTER?

YES.

Who says you can't have both? With our fast one-time set-up, you're grinding in just minutes. Better than that is simple operation. With our patented auto-index system, you relief grind blade-to-blade hands-free. There's no standing and waiting, only time-saving efficiency and a flawless grind.

 **neary**
TECHNOLOGIES

Does More. Costs Less.

www.nearytec.com



Real Science



Meters with multiple sensors are now financially affordable and can be used as a tool in assessing the quantity of photosynthetically active radiation (PAR) for turfgrass plants.

"High light intensities and low temperatures interact to cause winter discoloration of Bermudagrass leaves. High light intensities cause degradation of the existing chlorophyll, while low temperatures impair chlorophyll synthesis. The result is typical winter discoloration since the chlorophyll degradation rate exceeds the rate of synthesis" (Beard, 1973).

The implication for the topic in this article is that sunlight levels in the winter do not contribute much to plant growth. Therefore, the key issue with winter shade relates to direct or indirect low temperature injury. Shaded putting greens or shaded areas on a putting green are going to have lower soil temperatures because they receive less solar radiation. The focus for superintendents then switches to monitoring air and soil temperatures and turfgrass covers as needed.

CONCLUSION. Trees and turf are an everyday occurrence on golf courses. The desire of all superintendents is to find the proper balance

between the locations of trees in relation to areas of turf, particularly the putting greens. As new grasses are being used in the Southeast, the need for assessing unlight levels has started anew. Fortunately, important research and a variety of tools are now available to every superintendent. Applied appropriately, these resources provide the most accurate measurement and assessment of shade on your golf course, setting the stage for sustainable turfgrass for many years. **GCI**

Chris Hartwiger, USGA senior agronomist, enjoys his time in the shade during the hot summer months in the Southeast Region.

Editor's Note

This article is reprinted from the May 11, 2012, Vol. 50 (10) of the USGA Green Section Record. Copyright United States Golf Association. All rights reserved.

A Feast for the Ears!

Original podcasts • New ideas • Practical advice



SUPERINTENDENT
R·A·D·I·O N·E·T·W·O·R·K

CHECK IT OUT AT:
www.golfcourseindustry.com
and on iTunes!

SPONSORED BY:



POWERED BY:



Anthracnose attacks at different times, in different ways.



Keep stress at a minimum and rely on these high-performers from Phoenix.

Dovetail®

(thiophanate-methyl + iprodione)

Kestrel® MEX



(propiconazole)

Pegasus™ DFX



(chlorothalonil)

Pegasus™ HPX



(chlorothalonil)

Peregrine®

(chlorothalonil + thiophanate-methyl)

Raven™

(iprodione)

Skylark™

(tebuconazole)

T-Bird® 4.5L



(thiophanate-methyl)

T-Bird® WDG



(thiophanate-methyl)

Viceroy™



(fosetyl-al plus pigment)



NexGen

Enhanced Technology

Enhanced high performing
post-patent formulations



Advanced Adhesion Technology

Improves control of anthracnose
and other tough diseases



Phoenix-UPI - www.phoenixenvcare.com

888-240-8856

1002 Slater St., Valdosta, GA 31601



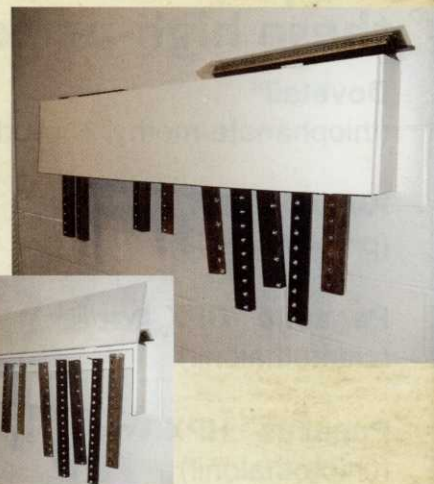
Terry Buchen, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or terrybuchen@earthlink.net.

Travels With Terry

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares helpful ideas relating to maintenance equipment from the golf course superintendents he visits – as well as a few ideas of his own – with timely photos and captions that explore the changing world of golf course management.

BEDKNIFE RACK

Robert Smith, equipment manager at the Merion Golf Club in Ardmore, Pa., built this rack to keep the bedknives from warping by hanging them vertically. Three-quarter-inch plywood was used measuring 5 feet long by 12 $\frac{3}{4}$ inches high by 4 $\frac{3}{4}$ inches deep. A 2-by-4 board, with $\frac{1}{4}$ -inch-by-4-inch hex-driver ceramic-coated nails mounted to it, with the nail heads ground off, hold the bedknives in place. A $\frac{3}{4}$ -inch plywood cover using the same dimensions, with 3-inch hinges, folds up and down nicely. This rack is mounted with concrete bolts into the cinderblock wall in the grinding room of the new state-of-the-art maintenance facility and it was painted the same color as the walls. It took about one hour to build and scrap materials were used (about \$20 if purchased new).



CUSTOMIZED EQUIPMENT MANAGER'S VEHICLE

This 2010 Kubota RTV900 4 WD has a homemade lift tailgate (\$200) for easy lifting of walk-behind greens mowers for transporting them back and forth to the mechanic's shop. A separate winch is used with a 1,500-pound capacity that has the yellow-colored up-and-down control mounted on the left side rear. The bed was extended approximately 15 inches on either side using the existing tailgate cut to fit and welded in place. A used ramp from a Dual Express Model 3000 DX reel grinder is used as the new tailgate – and a 4-foot by 12-inch by $\frac{1}{8}$ -inch piece of flat steel tailgate extension is used that slips in place over two 1 $\frac{1}{8}$ -inch diameter steering-shaft rods from a Toro Workman. Two pieces of 1 $\frac{1}{4}$ -inch "L" channel welded together, with the grooves cut vertically on each side, is where the tailgate slides up and down from the $\frac{1}{8}$ -inch winch cable. Two chains hold the tailgate in a horizontal position. Additional equipment includes a Mile Marker PE 2.5 electric winch (\$100), with a 2,500-pound capacity, that is bolted to the front bumper, which is bolted to the frame with $\frac{1}{4}$ -inch box steel added for bracing. A 1,500 watt/12.5 continuous amp 12-volt to 110-120-volt inverter (\$150) is mounted underneath the



hood for operating an air compressor with air tools, a battery charger and grinder. A 6-inch vise (\$30) is mounted behind the passenger seat that slides 2 feet outwards from the bed that

is mounted on a steel plate and sliding square tubing. Two red flashers (\$10) are mounted in the rear below the roof, as this vehicle is licensed with a recreational license plate. A Craftsman toolbox is mounted on the left side with "L" brackets and angle iron. The 3-cylinder, 36-horsepower Kubota diesel engine has a SSS Turbo (\$1,600) installed for 15 additional horsepower. Robert Smith, equipment manager, at the Merion Golf Club in Ardmore, Pa., has been spending about two months on and off on this project and he is still adding more custom features.



one helping many

The Wee One Foundation assists turf professionals and their dependents that incur overwhelming expenses due to medical hardship without comprehensive insurance or adequate financial resources. Since its inception, Wee One has gifted over \$500,000 to families across the United States. Make a difference, today. Support the Wee One Foundation and help fellow superintendents, their families and others in the golf industry through their times of struggle.

.....

To learn more about Wee One, visit **weeone.org** or call **(630) 457-7276**.

wee one
foundation



Ron Dodson and **Bill Love** are the founders of Love & Dodson, LLC a firm that specializes in sustainable planning, design, construction and management of golf courses, recreational facilities and sanctuaries. www.loveanddodson.com

THE ECOGOLFER PLEDGE

For the entire time that I have been working in the golf industry I have been told that golf courses are designed and managed for golfers. I've also been told that it is golfers who can either support more environmentally oriented golf course design and management, or demand that courses be managed in ways that cause environmental problems.

I have always thought and advocated that properly sited, designed and managed golf courses can be great forms of land use. In addition I know that environmentally oriented course management can actually save money and resources. But, I have heard over and over again, "We can't do this or that, because our members won't stand for it."

I believe much of this is just opinion that isn't based in fact. I also believe that it is a small minority of golfers who tend to loudly express themselves and make superintendents miserable.

The problem is that the vast majority **don't actually say much** of anything one way or another, so the "noisy golfers" get all the attention and that leads to the belief that "most" golfers prefer the manicured look that often leads to a **bad reputation** for the golf industry.

The vast majority of golfers simply are looking to enjoy themselves, play the game, have a good meal and a few drinks and be on their way. The problem is the vast majority don't actually say much of anything one way or another, so the "noisy golfers" get all the attention and that leads to the belief that "most" golfers prefer the manicured look that often leads to a bad reputation for the golf industry.

As you may know, I am now the

volunteer chairman of the International Sustainability Council and Audubon Lifestyles (isc-audubon.org). Recently, ISC-Audubon launched the EcoGolfer League, which is a basic membership opportunity for golfers to show they actually do care about golf and the environment and are willing to take some simple actions while they are playing the game to demonstrate that commitment. This is called the EcoGolf Pledge, which is comprised of 10 easy-to-practice items that every golfer should be doing anyway.

To become an ISC-Audubon EcoGolfer all one has to do is visit isc-audubon.org and join up. It is a \$25 annual membership, which will include a number of benefits, including golf related items and discounts on ISC-Audubon products and ISC-Audubon golf events. The EcoGolfer League was just recently launched in conjunction with the announcement of the ISC-Audubon EcoGolf Celebrity Golf Tournament Series. This Tournament series will kick off in early April

this year and over 30 film, television and sports celebrities have registered to play in the April event, which will be held at the Westin Diplomat Golf Club in Hollywood, Florida.

The EcoGolfer League and overall effort to get more direct involvement by golfers has already picked up some good speed and has been written about around the globe in just the first few weeks of its existence.

Every golf course superintendent

should want every golfer to become involved in the EcoGolfer League. This is a great way for all environmentally oriented golf course superintendents and managers to build a network of golfers who are not only supportive of their conservation management actions, but to actually see golfers become more active in doing their own part to help courses become more engaged in conservation on the course. **GCI**

The EcoGolfer Pledge

- Walk rather than ride in carts when practical.
- Avoid walking in and disturbing natural vegetation, wildlife habitat, and out of play areas.
- Avoid water's edge areas on the golf course, especially where the chance of shoreline erosion is high.
- Be respectful of the local wildlife on the golf course, and don't molest, stress or disturb them.
- Use reusable water bottles when I'm on the golf course.
- Dispose of recyclable items in recycle bins when available.
- Pick up and properly dispose of trash found on the golf course whenever I see it.
- Pick up and dispose of broken tees found on the course.
- Repair and replace divots in the fairway, and ball marks on the greens.
- Seek out and play golf courses who have adopted sustainable management policies, management practices and environmental.





Our mission is to preserve and enhance green spaces in our communities where we live, work and play.

BECAUSE GREEN MATTERS.

A national non-profit service organization, Project EverGreen works to help spread the good word to consumers about well-maintained lawns and landscapes, sports fields, parks—anywhere that green exists. The more people believe in the environmental, economic and lifestyle benefits of green spaces, the better off we'll all be.



WORKING TOWARD A SUSTAINABLE FUTURE.

Together with key industry partners, Project EverGreen has established the following programs to help make a greater impact, sooner:

GreenCare for Troops SnowCare for Troops

- Project EverGreen connects military families with lawn and landscape companies, as well as snow removal companies to receive free services while their loved one is serving overseas.
- More than 3,500 contractor volunteers and 12,000 military families have signed up for GCFT, while 1,100 contractor volunteers and 1,500 military families signed up for SCFT.
- These popular programs have garnered attention on TV and in newspapers across the nation including Mike Rowe's *Dirty Jobs* and NBC's *Nightly News*.



Community Based Revitalization Projects

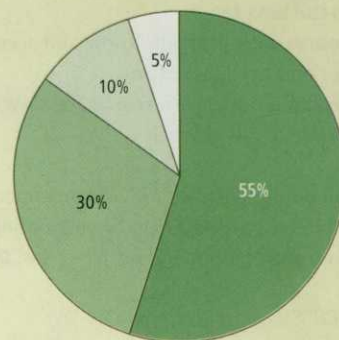
- Focused community revitalization and renovation projects across the United States encourage industry professionals, consumers and anyone who's passionate about healthy green spaces to work together to improve their city and surrounding areas.
- Over the last seven years, our message has made a positive impact in: Akron, Ohio; Milwaukee, Wisconsin; Greensboro, Raleigh and Charlotte, North Carolina; Ft. Myers, Florida; Toronto, Canada; and San Antonio, Texas.
- Maintained green spaces generated community engagement, involvement and communication among residents, city leaders and visitors.

GreenCare for Youth

- By reaching out to children of all ages, we can create a greener tomorrow.
- The Art of Green Spaces Competition, sponsored by Birds and Blooms, encourages students to use all forms of art to share how they feel about the green spaces in their lives.
- Golf bag tags, featuring messages on the benefits of green spaces, are given to participants of the GCBAA Sticks for Kids program.
- Youth sports field renovations make playing surfaces better and safer.

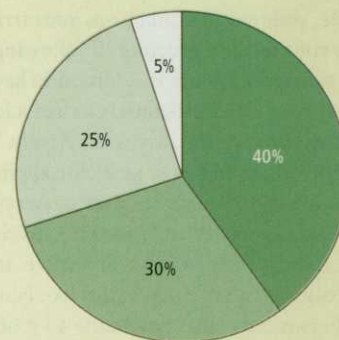
YOUR SUPPORT HELPS US SPREAD THE GOOD WORD.

- Company contributions (55%)
- Service contractor contributions (30%)
- Associations/Media/Agencies (10%)
- Individual contributions (5%)



HOW YOUR CONTRIBUTIONS ARE UTILIZED.

- Programs (40%)
- National marketing/communications (30%)
- Administration (25%)
- Fundraising (5%)



For more information about Project EverGreen, call us toll-free at 1-877-758-4835 or check us out on Facebook at www.facebook.com/ProjectEverGreen.

www.ProjectEverGreen.com

(MORAGHAN continued from page 28)

ready to hit, hit!

- Get off your cell phone
- Practice on the range, not the course. And those five practice swings before each shot don't help
- Mulligans? Extra shots through the green? Certainly not if anyone is waiting. And even if they're not waiting. Don't
- When it comes to choosing which tees to play, leave your ego in the car and play to your skill level. And even then, "playing it forward" is always a smart idea
- If you must use a rangefinder or GPS, do it quickly and appropriately: It doesn't help on a shot less than 60 yards
- Plumb-bobbing and walking around the hole checking the breaks isn't necessary to make your two-footer for a 7
- Rake footprints when leaving a bunker
- Fix ball marks on the green
- Park your cart or place your bag or trolley on the side of the green closest to the next tee
- Be honest with yourself. Know and accept your limitations. You'll play better and have more fun
- Understand the biggest reason for slow play among us 20 handicappers is the \$5.00 golf ball

If we all do our part, the USGA can concentrate on its core competencies: the Rules of Golf, conducting national championships, and causing/settling equipment controversies. **GCI**

(ANTHRACNOSE continued from page 76)



Like many diseases, anthracnose thrives in extended moist conditions.

Keeping in mind the needs of the turf and considering those needs to adjust your fertility, irrigation and soil management practices appropriately in a timely manner will in fact greatly reduce your chances of anthracnose. If you have a chronic and recurring condition for Anthracnose development, take a strong look at your

soil profile, your cultural practices, your irrigation management and of course your fertility program. If following the sound practice of applying nutrients foliarly in addition to key granular applications, insure that your foliar program is in fact a foliar one and that your droplets are covering the leaves effectively. This will aid in not only your fertility program but in pesticide applications, as well.

If pesticide applications are necessary, speak with your colleagues in your regions about what is working for them as that is probably the most effective advice you will receive. In addition, follow key research coming out of universities like Penn State, N.C. State and Rutgers in particular that have done a lot of work in Anthracnose control methods. But always remember that universities can never match your conditions or stresses, so use the research as a guideline to finding a program that works best for you... and always follow label recommendations. **GCI**

Carmen Magro, MBA, CGCS, is the founder and chief agronomist of Agronomy Management Solutions, and a frequent GCI contributor.

Hey.

**Do you sell stuff
to superintendents?**

We notice you're reading this page.

GUESS WHAT?

Thousands of your customers are
doing exactly the same thing.

**GCI:
PARTNER WITH US**

PRINT / DIGITAL / WEB / MOBILE
/ APPS / SOCIAL / CUSTOM

mediakit.golfcourseindustry.com

COMPANY	WEBSITE	PAGE
Aqua Aid	www.aquaaid.com	67
Aquatrols	www.aquatrols.com	2, 71
Arysta LifeScience	www.arystalifescience.com	39
Bayer Environmental Science	www.backedbybayer.com	78
Becker Underwood	www.beckerunderwood.com	65
Core Outdoor Power	www.coreoutdoorpower.com	22
Foley United	www.foleyunited.com	21
Grigg Brothers	www.griggbros.com	77
Hunter Industries	www.hunterindustries.com/golf	85
Hydretain	www.hydretainadvantage.com	6
Jacobsen	www.jacobsengolf.com	98
John Deere	www.deere.com	7
JRM	www.jrmonline.com	33
JWB Marketing	www.birddamage.com	68
Lidochem, Inc.	www.performancefertilizers.com	17
Maruyama US	www.maruyama-us.com	35
Milliken	www.millikenturf.com	8
Neary Technologies	www.nearytec.com	87
Nufarm	www.nufarm.com	76
PBI/Gordon	www.pbigordon.com	20
Phoenix Environmental Care	www.phoenixenvcare.com	89
Plant Food Systems	www.plantfoodsystems.com	36
Project Evergreen	www.projectevergreen.com	93
Rain Bird	www.rainbird.com	31
Redexim	www.redexim.com	63
Redox Chemicals	www.redoxturf.com	73
SePro Corp.	www.sepro.com	11, 83
Sipcam/Advan	www.sipcamadvan.com	97
STEC	www.stecephipment.com	75
SuperBright LEDs	www.superbrightleds.com	68
Syngenta Professional Products	www.syngentaprofessionalproducts.com	69
Trojan Battery Co.	www.trojanbattery.com	5
TurfMax	www.turfscreen.com	81
Underhill	www.underhill.us	40
Valent	www.valentpro.com	9
Wee One Foundation	www.weeone.org	91
Wiedenmann North America	www.wiedenmannusa.com	10
Winfield Solutions	www.winfield.com	27, 29

*denotes regional advertising

FOR SALE

Discount Small Engines & Parts

Small engines & parts
from Briggs & Stratton, Kohler,
Tecumseh, Robin and more.
www.smallenginesuppliers.com

Also, look up your own parts
and buy online at
www.smallenginepartssuppliers.com

How to Outsmart Mother Nature... Use **EVERGREEN**TM The Turf Blanket the World Relies On

- Earlier spring green-up
- Faster seed germination
- Deeper root development
- Delays dormancy in fall
- Ideal winter blanket
- Best for quick turf repairs
- Available in any size
- 3, 7 or 10 yr warranty covers

For details call
1-800-387-5808 today!

covermaster.com

E-MAIL: **info@covermaster.com**

COVERMASTERTM
COVERMASTER
COVERMASTER
AHEAD OF THE GAME

COVERMASTER INC., REXDALE, ON, M9V 5C3
TEL 416-745-1811 FAX 416-742-6837

Let us help you get the word out.
Golf Course Industry Article Reprint Services

E-mail: **reprints@gie.net** or call 800-456-0707 to learn more.

MERGERS & ACQUISITIONS

ATTENTION OWNERS/BUYERS

Thinking of buying or selling
your Golf Course Business/
Commercial Real Estate?

Specializing In:

- GOLF COURSES
- ACQUISITIONS
- MARINAS

CALL: Eddy A. Dingman, CNS
Coldwell Banker Commercial NRT

**National Golf & Marina
Properties Group**

847-313-4633

www.golfcourseandmarinasales.com

SEEDS

NATIVE SEEDS

Largest distributor of native
seed east of the Mississippi, from
Canada to Florida! We specialize in
upland to wetland sites, including
bioengineering for riparian sites.

Your native seed source.

Contact **ERNST SEEDS** today.

www.ernstseed.com - 800/873-3321

SERVICES

**WHAT DO YOUR CALLERS HEAR
WHEN PLACED ON HOLD?**

Promote your services and enhance
your image with a customized
"on hold" recording by Watt Media.

1-800-250-8233

MAXIMIZE YOUR ADVERTISING DOLLARS



Please contact
Bonnie Velikonya
at **800-456-0707** or
bvelikonya@gie.net.



Pat Jones is editorial director and publisher of Golf Course Industry. He can be reached at pjones@gie.net or 216-236-5854.

YOU'RE NOT FIRED

Unless you're a backwards magazine reader, you'll have already digested our cover story on trends in employment and termination in our happy little industry these days. If you are a backwards reader and you're starting here, please go to the beginning of the magazine and read that story before you read this column. At the very least, glance at the monkey on the front cover. Go ahead...we'll all wait for you.

(Pause)

Okay, now that we're all literally on the same page, let's begin!

For the record, I've been fired twice in my life...both times without actually being "fired."

The first time happened when I was about 16. I was a delivery driver for a florist and absolutely loved the job because I got to make women happy all day by handing them pretty flowers. Then, I ran into a curb and just shredded a tire on the delivery van. The owners – normally nice people – turned ugly and wanted to deduct the cost of the tire out of my pay (which

For the record, I've been fired twice in my life...both times without actually being "fired."

was some grand amount like \$3 an hour, I think). I told them I didn't think that was fair. They told me they didn't really need an extra delivery driver anyway and my position no longer existed...and I believe they actually did deduct the cost of the tire out of my last check, too. I was downsized and screwed before I graduated from

high school. Lesson learned: If your boss wants to get rid of you, he will.

The second time I was "not fired" was when I was kicked out the door at my old magazine nine years ago. I had been successful in many ways there, but I was also an arrogant dumbass drunk and I didn't work and play well with others in that big corporate environment. At the time, the place was run by humorless executives and investment bankers who didn't give a steaming pile of crap about my magazine or this market beyond the fact that there was a profit to be turned.

I knew I'd worn out my welcome so I told the company and my immediate colleagues that I was leaving to do my own thing but I wanted some kind of continuing role. We were negotiating a consulting deal that would have kept me involved as a figurehead and made my transition into self-employment a lot simpler. Since I felt my departure was imminent, I decided it was okay to booze it up at a trade show – despite being on double-secret probation for earlier issues with drinking. Someone who didn't like me much (still doesn't) ratted me out to the boss, a very nice guy who was forced to "not fire" me a couple of days later. Instead of being canned, I was "asked to resign." The bottom line was no consulting deal, no severance to speak of and a big friggin' mess for them and for me. I can't blame anyone else...it was totally self-inflicted...but they had decided they didn't want me around anymore – even as a consultant – and I gave them a convenient and cost-effective way to get rid of me.

The lesson I learned was the same one I learned in high school: If your boss wants to get rid of you he will.

Mistakes? I've made plenty. But I have gained some valuable insight

along the way, such as:

- Be nice. It sounds insane, but don't be a jerk to work with. Stay calm, don't yell and scream and don't take everything personally. Remember: this too shall pass.

- Instead of fixing the blame for every problem on someone or something else, just fix the problem. Eventually, if another person or thing is the real problem, fix it without anger or remorse.

- Learn. The only really stupid mistake is making the same stupid mistake twice.

- Add value to everything you touch.
- Try really hard to listen and remind yourself not to be the smartest guy in the room.

- Teach, don't lecture.

- Talk to your customers (golfers) as much as possible. Your job is to satisfy some need they have. Figure out what it is and how you can do it.

- Don't mistake your job with your identity. Your title is not who you really are.

- It doesn't matter who gets credit.
- Don't take it home with you.
- Everything is better if you work with good people and you're passionate about each other.

I'll leave you with a simple thought from the late Steve Jobs that captures how I felt about my experience with being "not fired" that may be some consolation to you when and if you face the same moment: "I didn't see it then, but it turned out that getting fired from Apple was the best thing that could have ever happened to me. The heaviness of being successful was replaced by the lightness of being a beginner again, less sure about everything. It freed me to enter one of the most creative periods of my life."

Think about it... **GCI**

ETQ™
Enhanced Turf Quality

Proven fungicides. Premier technology. Pure science.

All season long with ETQ.

Our expanded ETQ™ fungicide portfolio delivers broad-spectrum disease control and enhanced turf quality all season long. These science-based solutions blend proven active ingredients with protective ETQ technology – in ratios to maximize turf health. The ETQ technology makes plants more efficient, thus improving fungicide effectiveness. The result is comprehensive disease protection, unparalleled stress management, remarkable turf quality . . . and peace of mind. Consider what our ETQ fungicides do:

- ▶ Protect turf from UVA and UVB rays, heat and other stress factors
- ▶ Optimize turf color, strength, density and consistency
- ▶ Provide an economic solution for disease control and enhanced turf quality
- ▶ Deliver total protection for high-performance turf

SipcamAdvan fungicides with ETQ technology.

Echo Dyad ETQ®
Turf Fungicide

(chlorothalonil)

E-Scape ETQ®
Turf Fungicide

(chlorothalonil/tebuconazole)

Eclipse ETQ®
Turf Fungicide

(iprodione)

Sipcam Clearscape® ETQ™
Turf Fungicide

(tebuconazole)



SipcamAdvan
The Natural Choice™

www.sipcamadvan.com
800-295-0733

SUPERIOR QUALITY-OF-CUT. SURPRISINGLY AFFORDABLE.

NEW LF510™



The new **Jacobsen LF510™** fairway mower offers **affordability from the start, simplified maintenance** and a reliable **Kubota diesel Tier 4 final engine** – making it easy to afford, use and maintain through its entire life. The LF510's clean and consistent quality-of-cut is provided by the new **TrueSet™ cutting units with Classic XP™ reels** that boast an **industry-leading 425-lbs. of holding power**. Mow your fairways without scalping your budget with the new Jacobsen LF510. See your local Jacobsen dealer for more information.

1.888.922.TURF | www.jacobsen.com

