

ADVERTISEMENT

SINCE 1927—The Resource for Superintendents // Golfdom.com

Golfdom^{06.17}



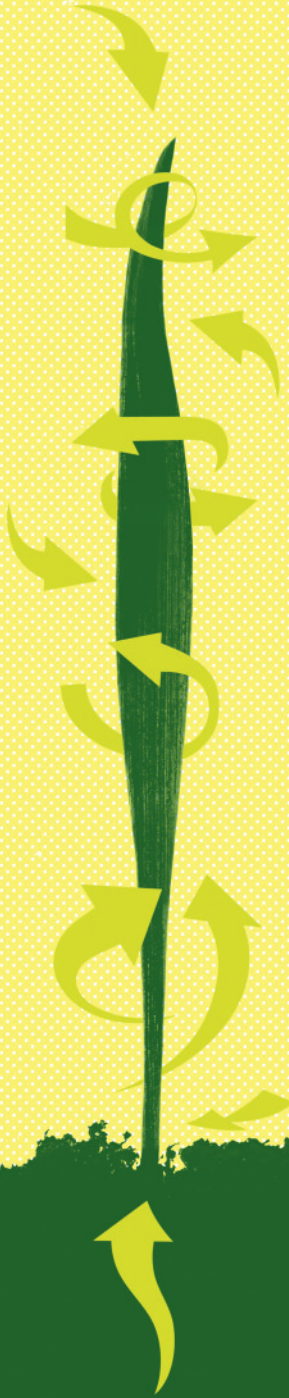
Greener turf has re-appeared.

Appear® fungicide is back to bring your turf a deeper green color that improves summer stress tolerance.

Learn more on the back. >>

 **Appear®**
Fungicide

syngenta®



Help the shortest blades meet the highest standards.

Appear® fungicide delivers improved summer stress tolerance and greater *Pythium* and anthracnose control than your current Chipco® Signature® program. The special pH neutral, pigmented formulation provides a deeper green color for your greens and tees. Appear mixes easily with Daconil Action™ or Secure® in a 14-day control program even under extreme summer temperatures.

To learn more about how Appear works together with your contact fungicide to provide improved turf quality, visit GreenCastOnline.com/Apear.



syngenta®

 Follow us on Twitter @SyngentaTurf #Time4Appear

© 2016 Syngenta. Important: Always read and follow label instructions. Some products may not be registered for sale or use in all states or counties. Please check with your state or local extension service to ensure registration status. Appear®, Daconil Action™, GreenCast®, the Alliance Frame, the Purpose Icon and the Syngenta logo are trademarks of a Syngenta Group Company. Secure® is a trademark of Ishihara Sangyo Kaisha, LTD. Chipco® and Signature® are trademarks of Bayer CropScience. All other trademarks used herein are the property of their respective company. 1LGG6047_APP_FPCT 05/16

SINCE 1927—The Resource for Superintendents // Golfdom.com

Golfdom

06.17

ROQUE SAAVEDRA
eyes mowing lines at
TPC Four Seasons
Resort & Club
at Las Colinas.

FOCUSED ON LABOR

Superintendents
across the country
shed light on the biggest problem
in golf maintenance — a lack of labor.



PLUS

FUNGICIDE SUPPLEMENT

PRESCRIPTION TURF MANAGEMENT

SOIL TESTING UNDER THE MICROSCOPE

SMITHCO Sand Star **50th Anniversary Celebration** **0% FINANCING** **FOR UP TO 36 MONTHS**

It's Smithco's 50th Anniversary and to celebrate we're giving you a great deal on the Sand Star Hydraulic Series, the finest bunker rakes made. For a limited time you can take advantage of 0% financing for up to 36 months.

The Sand Star Hydraulic Series offers you more innovative features, more power and more value than anything else on the market.

- Unmatched comfort, traction and stability.
- Perfectly balanced for superior traction and stability.
- 3 models in both 2- and 3-wheel drive, 16 or 18 hp gasoline engines, hydraulic and mechanical steering systems.
- "Star Trak" drive system on 3-wheel drive models for improved traction and increased transport speed.
- Hydraulic control of implements with "unmatched" ground clearance.
- Widest range of implements for grooming, rolling, aeration, renovation, construction, debris and core removal, topdressing and fertilizer applications and standing water management.
- ROPS with seat belt and work lights optional.
- Cool top canopy for all-day operator comfort.

SPECIAL 50TH ANNIVERSARY FINANCING ON ALL SMITHCO PRODUCTS!

Smithco and Univest Capital, Inc. are partnering to offer this exclusive financing opportunity.

See our home page at smithco.com or call Joe Lerario or your local Smithco dealer.

JOE LERARIO

Business Development Manager, Univest Capital, Inc.

Phone: 484-913-1593 • Fax: 640-514-2101

Email: sales@univestcapitalinc.com

Offer limited to approved applications received between 4/01/2017 and 7/31/2017 and closed on or before 12/31/2017. 0% offer valid for qualified customers only. \$1.00 purchase option, \$250 documentation fee and 1 advance payment required. Standard rate factor following promotional period for 24 months is .04576 and for 36 months is .03016. Financing provided by Univest Capital, Inc., a subsidiary of Univest Bank and Trust Co. Equal Opportunity Lender.



Smithco 50 1967 ★ 2017
YEARS

FOCUSED ON LABOR

Superintendents across the country shed light on the biggest problem in golf maintenance — a lack of labor.

// 16



Turf Rx // 37

In prescription turf management, you're the pharmacist.



COLUMNS

// 6 **Keeping up with The Jones**—Seth Jones// 13 **Historic Approach**—Sean Tully// 48 **Clark Talks Turf**—Clark Throssell

DEPARTMENTS

// 8 **Starter**// 12 **Golfdom Gallery**// 14 **The Golfdom Files**// 50 **The Shop**// 52 **The 19th Hole**

// 44

SUPER SCIENCE

// 43 **Topramezone and chelated iron for goosegrass control**// 44 **Soil testing under the microscope**

FOCUS ON FUNGICIDES

// FS1 (begins after page 18) **It doesn't matter on what course they're applied, fungicides are key to a superintendent's success.**

NIMITZ[®] Pro G



Before NIMITZ[®] Pro G



After 3 Treatments

Simply Better Nematode Control

www.NIMITZProG.com



Control Solutions Inc

Innovation you can apply.

Call 800-242-5562

www.quali-pro.com



QUALI-PRO

NIMITZ is a registered trademark of Adama Group Company. Contact your local distributor or Quali-Pro representative for more information. These products may not be registered in all states, please check the Quali-Pro website or the state's department of agriculture for registration information.

Which is the easiest way to get scientific insight into course conditions to make better decisions about your turf?

1

Measure moisture, EC and canopy temperature precisely, and record the exact position with each sample?

View, log and analyze your data while you're on the green and take necessary actions immediately?

2

3

Have your data scientifically analyzed automatically, but presented so you don't need to be a scientist?

4

"I've used other tools on the market, but POGO gives more information with greater accuracy, and it does the analysis for you."

Kurt Beatty
Green Brook Country Club

Listen to your peers?



Superior insight | Better decisions | Healthier turf

pogoturfpro.com/golfdom
1.800.452.5272

Golfdom

Seven-time winner of the national Folio Award for editorial excellence

EDITORIAL

EDITOR-IN-CHIEF Seth Jones
785-690-7047 / sjones@northcoastmedia.net

ASSOCIATE EDITOR Grant B. Gannon
216-363-7928 / ggannon@northcoastmedia.net

EDITOR-AT-LARGE Ed Hiscok
ehiscok@northcoastmedia.net

DIGITAL EDITOR Kelly Limpert
216-363-7933 / klimpert@northcoastmedia.net

ART DIRECTOR Pete Seltzer
216-706-3737 / pseltzer@northcoastmedia.net

CONTRIBUTING EDITORS

Karl Danneberger (*Science*), Joel Jackson, Matt Neff, Jared Nemitz, Clark Throssell (*Research*), Sean Tully, John Walsh, Mark Woodward, Steven Wright

BUSINESS

CLEVELAND HEADQUARTERS

1360 EAST 9TH ST, SUITE 1070, CLEVELAND, OH 44114

GROUP PUBLISHER Bill Roddy
216-706-3758 / broddy@northcoastmedia.net

PUBLISHER Patrick Roberts
216-706-3736 / proberts@northcoastmedia.net

ASSOCIATE PUBLISHER Craig MacGregor
216-706-3787 / cmacgregor@northcoastmedia.net

WESTERN REGIONAL SALES MANAGER Jake Goodman
216-363-7923 / jgoodman@northcoastmedia.net

EASTERN REGIONAL SALES MANAGER Chris De Cicco
216-337-4417 / cdccicco@northcoastmedia.net

EXECUTIVE SALES ASSISTANT Petra Turko
216-706-3768 / pturko@northcoastmedia.net

MGR., GOLFDOM SUMMIT Kyle Castro
216-706-3772 / kcastro@northcoastmedia.net

MARKETING MANAGER Scott Gebler
216-363-7932 / sgebler@northcoastmedia.net

SR. MGR., PRODUCTION SERVICES Rhonda Sande
216-978-9778 / rsande@northcoastmedia.net

SR. AUDIENCE DEVELOPMENT MANAGER
Antoinette Sanchez-Perkins
216-706-3750 / asanchez-perkins@northcoastmedia.net

DIR. OF AUDIENCE ENGAGEMENT Bethany Chambers
216-706-3771 / bchambers@northcoastmedia.net

WEB DEVELOPER Jesse Malmacher
216-363-7925 / jmalmacher@northcoastmedia.net

MARKETING/MAGAZINE SERVICES

REPRINTS & PERMISSIONS Brett Petillo
877-652-5295 / bpetillo@wrightsmedia.com

SUBSCRIBER, CUSTOMER SERVICE
847-513-6030 / golfdom@omeda.com

LIST RENTAL Brahm Schenkman
800-529-9020 / bschenkman@infocorefire.com

CORPORATE

PRESIDENT & CEO Kevin Stoltman

VP OF FINANCE & OPERATIONS Steve Galperin

VP OF GRAPHIC DESIGN & PRODUCTION Pete Seltzer

EDITORIAL DIRECTORS Marty Whitford, Marisa Palmieri

Golfdom does not verify any claims or other information appearing in any of the advertisements contained in the publication, and cannot take any responsibility for any losses or other damages incurred by readers in reliance on such content.

Golfdom welcomes unsolicited articles, manuscripts, photographs, illustrations and other materials but cannot be held responsible for their safekeeping or return.

North Coast Media LLC provides certain customer contact data (such as customers' names, addresses, phone numbers and e-mail addresses) to third parties who wish to promote relevant products, services and other opportunities which may be of interest to you. If you do not want North Coast Media LLC to make your contact information available to third parties for marketing purposes, simply call 847-513-6030 between the hours of 8:30 a.m. and 5 p.m. CT and a customer service representative will assist you in removing your name from North Coast Media LLC's lists.

GOLFDOM (ISSN 1526-4270) is published monthly by North Coast Media LLC, IMG Center, 1360 East 9th Street, 10th Floor, Cleveland, OH 44114. **Subscription rates:** For US, Canada and Mexico, 1 year \$58.95 print and digital; two years \$88.95 print and digital. All other countries, 1 year print and digital \$109.95, 2 years \$169.95. For air-expedited service, include an additional \$75 per order annually. Single copies (prepaid only) \$10 plus postage and handling. For current single copy or back issues, call 847-513-6030. **Periodicals postage paid** at Cleveland OH 44101-9603 and additional mailing offices.

POSTMASTER: Please send address change to **GOLFDOM**, PO Box 2090, Skokie, IL 60076. Printed in the U.S.A. Copyright 2017 North Coast Media, LLC. All rights reserved. No part of this publication may be reproduced or transmitted in any form by any means, electronic or mechanical including by photocopy, recording, or information storage and retrieval without permission in writing from the publisher. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients is granted by North Coast Media, LLC for libraries and other users registered with the Copyright Clearance Center, 222 Rosewood Dr, Danvers, MA 01923, phone 978-750-8400, fax 978-750-4470. Call for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law.





With the expectations for great turf conditions continually rising, superintendents need products they can rely on. To demonstrate how their products give superintendents the tools they need to succeed, BASF has invited five properties from various regions of the country to take part in its **Championship Rejuvenation** program, in which each course will be introduced to new technology or re-introduced to products they are familiar with.

The five participating superintendents and their courses are:

- Mike Golden, Sterling Farms, Stamford, Conn.
- Dan Marco, CGCS, Ruth Lake Country Club, Hinsdale, Ill.
- Chris Ortmeier, Champions Golf Club, Houston
- Brandon Schindele, Edina (Minn.) Country Club
- Josh Pope, The Greenbrier Resort, White Sulphur Springs, W.Va.

BASF Technical Services Representatives Kyle Miller and Dr. Kathie Kalmowitz will partner with each course's respective Regional BASF Sales Representative to navigate the superintendent through the program. The team will walk through each superintendent's chemical program and find ways to maximize the benefits of the specifically selected BASF products. As a team they will decide

what products to utilize and when and where certain application should occur.

Three of the participating superintendents have agreed to apply BASF's products on 9-holes of their respective courses in order to see a direct comparison between the two spray programs.

"Most of the courses in the program this year have unique opportunities and challenges that will put our products to the test. Using a side-by-side comparison on nine holes will give each superintendent a first-hand comparison of how their course is responding to our new chemistries," says Miller. "We appreciate the commitment of each of our five courses to weaving us into their treatment programs."

Updates on the five properties will appear on Golfdom.com in the form of videos, photographs, and blog posts, and in future editions of *Golfdom*.

SPONSORED CONTENT BY

 **BASF**
We create chemistry

Golfdom



“If this were the original Star Wars trilogy, this story is our ‘Empire Strikes Back’ — a lot of the good guys getting their butts kicked, but still hopeful despite the ominous outlook.”

SETH JONES, *Editor-in-Chief*

Stuck in the middle

I consider our team here at *Golfdom* HQ lucky — we cover an industry rich in interesting topics, colorful people and of course, beautiful scenery. While the industry has been in turbulent waters for a decade, I’m thankful to be in this business. If North Coast Media Editorial Director Marty Whitford ever asked me to trade places with him and take over his publication, *Pest Management Professional* magazine, I would have to challenge him to a death match.

I would lose — he was in the Navy, after all — but it gives you an idea about how much I cherish my job and enjoy this industry.

Yet this issue was a challenge (but not to the death, I don’t think. I’ll only know if I ever live to read this in physical print.) The cover story, part two of our three-part “Labor Pains” series, started out as a story on H2-B labor. Then it evolved, or devolved maybe, into something broader.

In part one of the series, published in April, we focused on the plight of the assistant superintendent. All of our sources seemed to be on the same page for that one — assistants are underpaid and overworked, and a gradual

change needs to come about or else we’re going to lose these people to other industries.

In August we’ll publish the third and final part of the series. The focus on that installment will be on some outside-the-box thinking to overcome the dwindling labor pool. I won’t give too much away, but let’s just say we want to end on a high note, a hopeful note.

Which brings me back to this middle part of the series. Like a middle child, this one struggled finding it’s identity. If this were the original Star Wars trilogy, this story is our “Empire Strikes Back” — a lot of the good guys getting their butts kicked, but still hopeful despite the ominous outlook.

A lot of superintendents we talked to for the story aren’t quoted. Many of the interviews were informal conversations, just trying to learn about the difficulties that superintendents, who already are behind-the-scenes people, are experiencing behind the scenes with labor.

One of those calls was to my friend Robert Guerra, superintendent at Reunion Resort in Orlando, where we host the annual *Golfdom* Summit. Robert provided some useful insight to the story (you’ll see him quoted in the story), but the best thing he brought was the simple reassurance that this is a top-of-mind topic with our readers, worthy of a cover story, even if there are more questions

than there are answers.

In two months we’ll share our final installment of the series. That story will have some of the answers we found while speaking to people from around the country. If you have some thoughts on how golf maintenance can resolve its labor issues, please reach out to us and share some of those insights.

● As you’ll see in this month’s Starter feature, the annual Turf and Ornamental Communicators Association awards were recently held in Tampa, Fla. The *Golfdom* team and our sister publication, *Landscape Management*, had a really good showing. I’m always nervous about how we’ll do at these awards. I knew it must have gone well when, once the program was over, the bartender handed me a beer and said, “Wow... you were up there (accepting awards) a lot!”

Thank you to my team: Pete Seltzer, Grant B. Gannon, Kelly Limpert, Ed Hiscock, Clark Throssell and all the contributors. But also, thanks to you, the reader, for helping guide us each and every year. From talking with you at regional conferences, the national Golf Industry Show or just taking our calls — reader insight is what keeps *Golfdom* strong.

So, to you, the reader: Keep up the good work. Let’s do it again next year.

Email Jones at:
sjones@northcoastmedia.net. or
tweet him @SethAJones.

MORE UPTIME LESS UPKEEP



NEW HR600™
11.4-foot width-of-cut

The HR600 is built with uptime-boosting features designed to keep you mowing.



Save up to 50 hours of annual routine maintenance



InCommand™ onboard diagnostics for quick troubleshooting



Mow up to 13.8 acres per hour for increased productivity



SureStrength™ decks constructed with high strength structural steel



Exclusive Tilt Sensor Technology™ helps keep operators safe



Contract 070313

AFNAF Contract F41999-10-D-0007



U.S. General Services Administration
Contract GS-07F-0013M (utility vehicles)
Contract GS-06F-0042K (turf equipment)

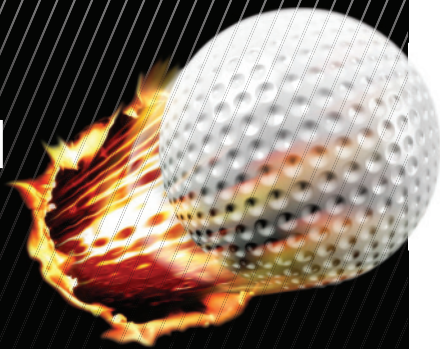


1.888.922.TURF | www.jacobsen.com



Starter

NEWS, NOTES AND QUOTES



// FAMILIAR FACES

FORMER SUPERINTENDENT IS NEW AQUATROLS CEO

BY SETH JONES

➔ Earlier this month, Aquatrols announced the promotion of Matt Foster from chief operating officer to president and CEO. *Golfdom* caught up with Foster to discuss his vision for the future of the company as well as his superintendent background.



Matt Foster

Golfdom: You have a background as a superintendent...?

Foster: I started off early in my career as a superintendent at Timberton GC in south Mississippi. That was from 1997 to 2001.

Golfdom: Do you ever miss your days of maintaining tufgrass?

Foster: I miss manipulating a putting surface, no question about that. I still think being a superintendent is one of the most rewarding — and at the same time thankless jobs — that is out there. That's why I think I feel so much for our customer.

Golfdom: We've heard that there are new changes you plan to bring to Aquatrols, including a renewed effort in research and development. What can you tell our readers about that?

Foster: We have experienced tremendous success with some of our flagship brands, such as Revolution and 1690 or Dispatch. But our pipeline needs some invigoration. We are redoubling our ef-

forts to do that. We are investing heavily into R&D, people and equipment. Most recently, we've secured 10 acres for a research farm 1.5 miles southeast of our office.

Golfdom: What's the plan for the research farm?

Foster: Mostly a farm for proof-of-concept trials and early stage development. I would expect it to be accessible for customers. We will be trialing both turf and agriculture projects on that site. Ten acres for research, that's a formidable piece of land. We should be luxuriating in space out there.

Golfdom: How long until we see these new technologies?

Foster: Right now, we have in varying stages, about eight projects that are past the proof-of-concept stage. We have launch years scheduled from late 2018 into early 2021 at this point.

For the complete interview, visit Golfdom.com.

// NINE IS NICE

USGA COMMITS TO PLAY9 PROGRAM

The USGA recently announced that it will be working closely with state and regional golf associations and courses throughout the United States to play host and promote local PLAY9 Days between May and October.

The USGA also has created online and printed toolkits for golf courses and facilities interested in hosting events. The toolkits offer posters, flyers and social media suggestions to raise awareness. Ideas for innovative themes and playing formats are also included.

PLAY9 USGA

In support of the program, the USGA will utilize usga.org/play9 as the hub for all PLAY9 content. The site features a course finder that identifies 9-hole facilities as well as 18-hole golf courses that offer 9-hole playing options.

"It's great to see the USGA's energy behind this program reminding people that being busy doesn't mean that there's no time for golf," said Troy Andrew, CEO and executive director of the Washington State Golf Association, in a press release.

// POP THE CHAMPAGNE

CHEMCHINA AND SYNGENTA CLOSE \$43 BILLION TAKEOVER

Enough Syngenta shareholders have stated their support to ChemChina to finalize the \$43 billion takeover of the Swiss pesticides and seeds group, the two companies recently announced.

The deal, announced in February 2016 and China's biggest foreign takeover to date, was prompted by China's desire to use Syngenta's portfolio of chemicals and patent-protected seeds to improve domestic agricultural output, according to a report from Reuters.

Based on preliminary numbers, around 80.7 percent of Syngenta shares have been tendered, above the minimum threshold of 67 percent support, according to a joint statement from the two companies.

Other deals in this sector include a \$130 billion proposed merger of Dow Chemical and DuPont, and Bayer's plan to merge with Monsanto.



Golfdom earned 16 awards at this year's TOCA Awards, the fourth year in a row *Golfdom* has taken home the most awards in the industry.

// AWARDS SEASON

Golfdom's sweet 16 at TOCA 2017

➔ It was another successful trip to the annual Turf & Ornamental Communicators Association (TOCA) meeting and award show for the *Golfdom* team. The association this year hosted its 28th meeting at the Saddlebrook Resort in Tampa, Fla., and *Golfdom* brought home an industry-leading 16 awards, including one Gardner Award, 10 first-place awards and five merit awards.

"The 2017 TOCA awards results just emphasizes that the *Golfdom* team's design and editorial content continues to be of the highest quality in its industry," said Kevin Stoltman, president and CEO of North

Coast Media.

For design of the magazine, Pete Seltzer, vice president of graphic design and production for North Coast Media, earned two first-place and two merit TOCA awards. He was also recognized, along with Editor-in-Chief Seth Jones and artist James Bennett, with the "Best of Show" Gardner Award for the July "So You're

Considering the Dark Side" cover.

Jones took home a first-place award for the best Turf Feature article, "The admiral of ultradwarf," highlighting 2016 Herb Graffis Businessperson of the Year Jared Nemitz. Jones also proved that he uses his camera for more than just taking pictures of himself for *Golfdom* Gallery. His photo, featured in the August 2016

article "Pay up or go home," was named Best Single Photo — created by a TOCA member or freelancer commissioned by a TOCA member.

For a complete list of *Golfdom's* awards visit Golfdom.com.



// THREE CHEERS

MARRIOTT GOLF NAMES TOP SUPERINTENDENT

Marriott Golf recently announced its annual awards for golf excellence across the company's portfolio of properties, and Mark Salisbury, superintendent at Starr Pass Golf Club in Tucson, Ariz., was recognized as Golf Grounds Manager of the Year.

Salisbury, a 20-year member of the maintenance staff at Starr Pass GC, maintains the 27-hole championship golf layout at the JW Marriott Tucson Starr Pass Resort & Spa. Under Salisbury's guidance, the property achieved top ratings for course conditions, as their commitment to environmental stewardship is always a top priority, according to a press release.

"We have some of the finest golf course superintendents in the world, and Mark Salisbury deservedly joins an elite group of award winners," said Robert Waller, senior director, grounds, Marriott Golf. "Mark's commitment to maintaining an immaculate golf course while utilizing eco-friendly course maintenance practices is both impressive and refreshing."

The Ritz-Carlton Golf Club, Grand Cayman in the Cayman Islands was named Golf Property of the Year, and Mike Cole, general manager of Golf at Stone Mountain (Ga.) Golf Club, was named Golf Professional of the Year.



Mark Salisbury

// GOLFDOM WISDOM

Having to pay the extra fee for overweight luggage because your bag is full of awards is a good problem to have. #golfdomwisdom

// MULLIGAN

ONE STROKE PENALTY

Golfdom's May "Carpets on the wall" feature story incorrectly stated that Durabunker Director Rhydian Lewis worked at Ecobunker before splitting off from the company to start his own company in 2014.

In 2010, Lewis formed the company Enviroports Ltd. with now-CEO of Ecobunker Richard Allen. While working under the name Enviroports, the company brought an artificial sod wall product called Envirobunker to market. In 2014, Lewis and Allen decided to go their separate ways, and each formed their respective companies, Durabunker and Ecobunker.

We apologize to both companies, and consider the first pint on us the next time we meet.

When Superintendent David Hoggard was hired in 1984 by Citrus Hills Golf and Country Club, the club had only one 18-hole course. Now, almost

34 years later, he oversees the maintenance of 63 holes. Hoggard has been a part of the acquisition of a 9-hole course and the building of two more 18-hole courses, including the venue of this month's Hole of the Month, Skyview Golf Course.

Players on the semi-private course start the 442-yard par 4 on Tifway 419 bermudagrass tees and aim for the matching Tifway fairway. Ultimately, they are trying to make it to the pin on the Tifdwarf green.

When it comes time to protect his greens from insects and pests, he relies on Syngenta's Acelepryn insecticide. The 34-year turf veteran's favorite part about the product is its endurance.

"It's the best product I've seen for longevity. I only have to make one application in the spring and another in the fall for year-round protection," says Hoggard. "As expensive as it is, I would say it is actually cheaper than other products because of how long it lasts."

Hoggard adds that Skyview at Terra Vista has been "unbelievably dry" this spring, but the course has been looking good. He gives credit for the course's quality to the plants' response to his spray program, which leans on Daconil Action and Heritage Action.

"Once I see symptoms on the course, we include both of the products into our spray program," says Hoggard. "Including them has definitely helped our turf to recover."

Hoggard admits that he has been using Heritage Action and Daconil Action for only a couple of years, but is glad he has switched.

"It's working better than what I used before, because the plants seem to respond faster and better," says Hoggard. "I don't know what technology or what kind of 'Action' is going on, but they work."



David Hoggard
SUPERINTENDENT

Hole



Hole No. 9

Citrus Hills Golf and Country Club

SKYVIEW GOLF COURSE • HERNANDO, FLA.

▶ 442 YARDS, PAR 4

FAIRWAYS & TEES: TIFWAY 419 BERMUDAGRASS
GREENS: TIFDWARF BERMUDAGRASS

of the Month

SPONSORED
CONTENT BY

syngenta®

GreenCastOnline.com/Daconil Action
GreenCastOnline.com/Heritage Action

Golfdom Gallery



1 Betting \$5 bills on No. 17
Watching a Wednesday practice round at The Players Championship, TPC Sawgrass, made for a friendly game of “Guess Who’s Closest to the Pin” between *Golfdom* EIC Seth Jones (left) and *Golfdom* Group Publisher Bill Roddy. (Good news, they finished the day all square.)



2 World champions World Golf Foundation CEO Steve Mona (left) and National Golf Course Owners Association CEO Jay Karen say hello at the National Golf Foundation’s 10th Annual Golf Business Symposium at the World Golf Hall of Fame in St. Augustine, Fla.

3 Who’s that? It’s Pat! (And Pat!)
What are the odds? Pat Roberts (left) is the publisher of *Golfdom*. Pat Leahy is the vice president of revenue of *Golfweek*. And even more interesting, the two are old friends — Leahy was even Roberts’ best man at his wedding 9 years ago.



4 Shark tales Surrounded by the busts of past inductees into the World Golf Hall of Fame, (left to right) Chris Campbell, Greg Norman Golf Design, Jason Harris, owner/superintendent of Orr Lake Golf Club, and David Wells, Bayer, share memories of the legends surrounding them.

5 A trip to see the Founder Any trip to the World Golf HOF mandates a stop by locker 38, honoring *Golfdom* founder and WGHO member (class of 1977) Herb Graffis. Syngenta’s Tripp Trotter and Roddy surround the legend’s locker.



6 A trip to St. Andrews? Not quite — Tony Ferguson of The Toro Co. and Jones did nab a photo on this replica of the Swilcan Bridge at the WGHO. (Maybe next time they’ll get a photo on the real deal.)





“... why does the USGA want general access to a tool that potentially can drive the game ever closer to the cliff’s edge of sustainability and expense?”

SEAN TULLY, *superintendent, Meadow Club, Fairfax, Calif.*

Stimpmeters should require a license to carry

A recent tweet from the USGA asked its members if they knew the green speeds at their home clubs. This by itself is no big deal. But the USGA was using this question to sell Stimpmeters to the general golfing public. That’s a problem.

With pressure to increase green speeds growing daily, why does the USGA want general access to a tool that potentially can drive the game ever closer to the cliff’s edge of sustainability and expense?

Fast greens require more inputs, more cultural practices and more staff attention to achieve and maintain desired speed. As golf gets disproportionately more expensive and takes longer to play, all golfers need to question the idea that golf is better with faster green speeds. Interesting, historic hole locations are lost at faster speeds. Extreme cases require some older courses to flatten their greens, adding cost and taking away interesting contours.

Responsibility for inappropriate green speeds doesn’t lie solely at the doorstep of the USGA. Yes, it has perfected a

tool to measure green speed, but superintendents need to better communicate how to identify a range of green speeds that work best for a specific course. A speed limit should ensure hole locations are not lost and that pace of play does not slow down.

Correcting this trend of excessive green speed requires changing the focus for golfers. Many golfers who claim to want fast greens actually seek consistency over speed. True-ness eliminates surface imperfections that cause a ball to move offline. Consistent roll on slower greens potentially reintroduces lost hole locations, sees pace of play speed up and gets more variety and fun back on the course.

We forget the original point of the Stimpmeter was to establish consistency across all the putting greens.

Unfortunately, that idea got lost.

Let’s take a page from the PGA Tour guidelines for course setup. According to the PGA Tour Course Conditioning Guidelines available online, a range of 9.5 feet to 11 feet on the Stimpmeter allows for speed to be adjusted for day-to-day challenges of Tour course setup. My favorite comment from the PGA Tour on green speed is, “Arbitrary and excessive green speeds can eliminate prime hole locations for the tournament, and this must be avoided.”

Comparing last year’s U.S. Open with The Open Championship offers stark contrast on attitudes toward green speed and championship golf. Royal Troon had it right. They managed green speeds to match conditions. Troon’s range in green speed during

The Open was 9 feet 5 inches to 9 feet 11 inches, and on one day the greens went unmowed because of high winds.

Then we have Oakmont, where fast is faster and green speeds in 1935 led to the development of the Stimpmeter. We all agree that the unpleasant rules situation with Dustin Johnson’s ball moving on the green would have been avoided if the greens were slower. What would’ve happened if the wind picked up in the afternoon, leaving the course unplayable, with balls rolling off the greens? A simple solution would be to say the greens were too fast, and let’s make sure we slow them down in the future. Instead, the Rules of Golf have been changed to eliminate a penalty to the player for his/her ball moving, essentially whitewashing the source of the problem.

USGA Executive Director Mike Davis recently was quoted by Jaime Diaz in *Golf Digest* as saying that not all innovations in the game have been good, and specifically calling out excessive green speeds. Instead of pushing for faster green speeds, changing the Rules to allow for faster green speeds and selling Stimpmeters to general golfers, perhaps the USGA can lead by example and establish a reasonable range for green speeds in its championships, setting a standard from which the rest of golf could learn.

Sean Tully is superintendent at the Meadow Club in Fairfax, Calif. He can be reached at stully@meadowclub.com or followed at [@tullfescue](https://twitter.com/tullfescue).

The Golfdom

FILES

FROM THE ARCHIVE

Fred V. Grau, Ph.D., is probably best known as the United State's first Extension Service turf agronomist at Penn State University, or as a former director of the USGA Green Section or one of the founders of the Musser International Turfgrass Foundation.

Believe it or not, Grau at one time was a sort of "Dear Abby" for *Golfdom* answering questions from superintendents in a column. In our January 1965 edition, he answered questions mailed to his home address in College Park, Md. To read the full article, visit golfdom.com/exclusive.

Grau's answers to turf questions

Thirty-eight years of intimate association with every phase of the turf industry makes it clear that all of us need to develop to the utmost an understanding of principles, which underlie thought and action. Time and time again we have heard it explained that, in turf, there is no cut-and-dried, easy formula for success. Success comes only when principles are understood and intelligently applied to the problem at hand...

Many older men in the profession may not have had the chance to study in this field although the younger men have that chance. It is to the credit of older superintendents that they have done such an outstanding job of learning by doing and by asking questions. It behooves us to study carefully their successes and their failures so that those who have the advantage of technical training may better understand the underlying principles...

Seeks dense turf

Q We seeded our new greens to a 50-5-0 mixture of Seaside and Colonial bent at 2 pounds per 1,000 sq. ft. We can't seem to get the turf to fill in and



make a dense putting surface. What do you suggest? (Ohio)

You have furnished no information on fertilization. It is possible that the grass is hungry for nitrogen. Another factor is your choice of grasses. Colonial bent is a bunch type grass that does not spread to form dense turf as creeping bents do. My suggestion is to treat these greens with the hydroseeding technique is to use one-half pound of Pennncross seed to 1,000 sq. ft. and the suggested fertilizer. Repeat two weeks later. After that, maintain a high N level to encourage the grass to thicken. Be very sparing with topdressing for a couple of months. Make sure that the pH range is not limiting.

10-6-4 or Straight?

Q We had soil samples taken from our fairway for tests

at three different laboratories. Results were in agreement showing pH 5.6, very high phosphorus and very high potash. We will apply limestone to correct the acidity. One source of information recommends a 10-6-4 fertilizer; another recommends straight nitrogen. We have mostly Bermudagrass. What should we do? (Missouri)

The limestone is essential. With ample supplies of P and K in your fairway soils it is hard to see why you should apply anything but straight nitrogen. Eventually the levels of P and K will drop where a complete fertilizer can be justified. Until that time you will get the greatest value for your fertilize dollar in straight nitrogen.

Bentgrass seeding

Q We have used suggested procedure for hydroseeding bentgrass seed with very good results. We seem to notice that we get quicker germination with hydroseeding than with ordinary dry broadcast seeding. Can you suggest a reason for this? (Indiana)

Research has shown that many seeds have substances in their seed coats that inhibit or delay germination. Soaking the seed overnight or washing the seed seems to remove the inhibitor. In the hydroseeder tank (spray tank) the seed is a churned and agitated water-and-fertilizer slurry. This effectively removes the inhibiting substances so that, when the seed-fertilizer mix is sprayed on the prepared seed bed, it is ready to germinate at once. Records show that bent seeds often show sprouts in three days.

Xzemplar® fungicide keeps reputations spotless

For unmatched dollar spot control, top courses
trust **Xzemplar** fungicide

*Jimmy Devaney,
Superintendent of
the Upper Course,
Mark Kuhns,
Director of Grounds,
and Dan Kilpatrick,
Superintendent of
the Lower Course,
Baltusrol Golf Club,
Springfield, NJ*

Premier courses like Baltusrol Golf Club, the host of 16 major tournaments, rely on **Xzemplar** fungicide. This go-to solution for dollar spot provides immediate knockdown plus a 28-day residual. Now, Superintendent Mark Kuhns and his team no longer have to spray every two weeks, and their players can enjoy beautiful, spotless fairways.

To keep your own fairways as spotless as your reputation, visit betterturf.basf.us for more details.

 **BASF**
We create chemistry

Always read and follow label directions.

Xzemplar is a registered trademark of BASF. © 2016 BASF Corporation. All rights reserved.

FOCUSED ON LABOR

Superintendents
across the country
shed light on the biggest problem
in golf maintenance — a lack of labor.

BY SETH JONES AND GRANT B. GANNON

When he's not at work, Robert Guerra is comfortable in a cowboy hat and cowboy boots. The superintendent at Reunion Resort in Orlando can do a Clint Eastwood stare when he wants to.

But that stare has been shelved for a while now. In fact, his menacing look has been replaced with a look of desperation. That's what happens when a crew of 15 — for 54 holes — suddenly shrinks to nine.

"I'm desperate for help," says Guerra. "With competition all around me, it's hard to find guys. It feels like no one is coming through the door to help."

In Las Vegas, Rhodes Ranch Superintendent Oscar Sanchez finds himself in a similar situation. One of his best operators just quit yesterday, taking a better paying job at a competitor golf course in the area.

"We were paying him \$12 an hour and that wasn't enough," he sighs. "He went to make \$15

an hour at another guy's place. I had another guy who was making \$14 an hour, now he's making \$20 an hour in construction. It's hard to compete with construction."

Across the country, superintendents share the same concern: a lack of people who are willing to be out on a golf course, working early hours, at a pay rate the course can afford.

"I talk to superintendents all around. Labor is bad for us because of our pay scale," Sanchez says. "My key guys — assistant, spray tech, mechanic, irrigators... they're really good. A couple of my operators are first class. The rest of my guys are just... so-so. There really isn't good help out there."

Continued on page 18

LABOR PAINS

PART 2 OF A 3-PART SERIES

Golfdom's 3-part Labor Pains series focuses on the many different challenges golf maintenance is faced with today. Part 1, "Assist the Assistants," appeared in April and focused on how assistants are weighing leaving the industry for jobs that pay better for fewer hours. Part 3 will appear in August and focuses on innovative ways superintendents are keeping their crews fully staffed. If you would like to share your story with us for Part 3, email us at sjones@northcoastmedia.net or ggannon@northcoastmedia.net.





Continued from page 16

Sanchez remembers a time when he could choose from 100 laborers who wanted to work for him. Now, he says, he must be flexible with his crew because if he tries to be tough, "they'll split."

"I had this same problem in 2000, when construction was booming. Then construction went down, and there were people who wanted to work for \$5 an hour," he laughs. "Right now, it's difficult. And everyone is facing the same problem because everyone is chasing the same crew members. We're all trying to get the same guys."

"If a guy can make more money working at a fast food restaurant than he can raking your bunkers, he's likely to be serving fries, and you're likely to be wondering what you're going to do to maintain playability."

ANTHONY WILLIAMS, CGCS

Help from H2-B

In April, a group of golf maintenance professionals visited Washington D.C. as part of the 10th Annual National Golf Day. According to the Golf Course Superintendents Association of America, it was the biggest National Golf Day yet.

Many of the attendees wore a black-and-white button on their suit coats that carried a simple message: Save H2-B.

Robert Helland, director of Congressional and Federal affairs for GCSAA, says H2-B is an important agenda item for GCSAA because of the challenging labor pool superintendents currently are facing.

"A lot of these courses with our member superintendents tell us over and over again — without those extra workers from overseas enrolled in (H2-B), they wouldn't be open," Helland says. "We respect that. We know that a lot of the times for the seasonal jobs that are out there, the workers are just not there domestically and our superintendents are forced to find employees from overseas to help fill out their work force."

One of those courses using the H2-B program with success is the Broadmoor in Colorado Springs, Colo. The resort has about 2,000 summer employees, with 300 of them being H2-B workers. Zach Bauer, superintendent at the Broadmoor West Course, says the H2-B program has helped round out his crew, along with college students and retirees. His H2-B workers, he says, are among the hardest working guys on the crew.

"What's really great is to pair the college



Zach Bauer

Continued on page 35

A SUPPLEMENT TO **Golfdom**

FOCUS ON FUNGICIDES



INSIDE

A word from our sponsor... **FS3**

Getting ahead of anthracnose... **FS4**

Success from coast to coast... **FS6**

Where a full house always wins... **FS12**

A NORTH COAST MEDIA PUBLICATION

SPONSORED CONTENT BY



IT'S YOUR CHOICE



PYTHFUL **or** BLISSFUL?



Segway® Fungicide SC makes Supers smile.

It's hard to be happy when Pythium disease damages your turf. So don't let it. Segway® Fungicide SC delivers outstanding protection against Pythium root dysfunction, Pythium blight, and Pythium damping-off. Segway works fast and lasts up to 28 days for healthier turf. Healthier turf means happier golfers, and happier golfers mean happier Supers.

GordonsProfessional.com

Always read and follow label directions. Gordon's® is a registered trademark of PBI-Gordon Corp. Segway® is a registered trademark of Ishihara Sangyo Kaisha Ltd. 10/16 04536

pbi/gordon
CORPORATION
Employee-Owned

Four core values to help superintendents: integrity, innovation, partnership and pride

By Brian Aynardi

Just as golfers enjoy looking out over a lush, green, and uniform putting surface, so do those pesky microorganisms called fungi. But the fungi don't view it as a masterpiece — they see it as their favorite meal!

This is an easy way to visualize plant disease, which is the net result of a fascinating interaction between a pathogenic microorganism and its host, in our case a turfgrass plant, in a conducive environment. Couple that with time, and you likely have some dead turf and some unhappy members at the doorstep to your maintenance facility. Fortunately, just as pathogens evolve, so do companies. Enter PBI-Gordon.

To most superintendents, PBI-Gordon is synonymous with herbicides, and for good reason: SpeedZone®, Q4® Plus and TZone™ SE are industry favorites. And Trimec®, one of the first herbicides developed specifically for turf pros, has been an industry leader for decades.

More recently, PBI-Gordon has stormed the fungicide market, and more and more superintendents are taking notice. Segway® (active ingredient = cyazofamid) is an industry go-to product for dependable control of Pythium disease. And the SDHI fungicide, Kabuto (active ingredient = isofetamid), delivers excellent preventative and curative control of dollar spot.

But I am not here to sell our current products. As an employee-owner and a research and development scientist at PBI-Gordon, I'm here to illustrate how our company philosophies aid us in striving to develop new products that will assist you in developing sound disease management strategies. We have four core values: integrity, innovation, partnership, and pride.

As with research at any level and in any

institution, research at PBI-Gordon is about integrity; integrity in that we conduct quality research through prominent scientists at renowned academic research institutions, and we only bring effective products to market. We think innovatively to keep the end-user (you, the superintendent) in mind as we develop the most convenient formulations and application methods with the most efficacious product. Currently, we are in the process of generating spray programs for different regions of the country geared toward combating established and emerging diseases, promoting and incorporating proper rotation of FRAC codes, and developing powerful new disease control products for the green industry.

Our greatest successes come from partnering with superintendents to evaluate new materials on their golf courses in order to understand if our development ideas meet with their needs. In this spirit, we will continue to consult with superintendents on every new fungicide we bring to market, ensuring these products provide exceptional disease control. As employee-owners, we are proud of the products we develop at PBI-Gordon, and we promise to continue using the same innovation and passion we have had for the past 70 years as we embark on our new path of developing fungicides for premier turfgrass disease management solutions.



 **pbi/gordon**
corporation
Employee-Owned

Getting ahead of anthracnose

Brian Aynardi, Ph.D., is the northeast research scientist for PBI-Gordon. Brian is a turfgrass pathologist and has conducted numerous research projects on the management and control of anthracnose, along with many other diseases. You may reach Brian at baynardi@pbigordon.com for more information.

PROVIDE A BRIEF BACKGROUND ON ANTHRACNOSE.

Anthracnose (*Colletotrichum cereale*) is a major problem on annual bluegrass (*Poa annua* L.) putting greens in the Northeast, Mid-Atlantic and other regions of the country. It exhibits both foliar blight and basal rot phases of the disease. Typically, the foliar blight phase starts in late May in the Mid-Atlantic region, when annual bluegrass starts to experience stress. The basal rot phase can occur anytime, but is most common beginning in mid to late May or early June, when daytime temperatures start to consistently reach 75 degrees F and higher. As the nighttime temperatures increase, late afternoon and evening thunderstorms become more frequent and the duration of leaf wetness lengthens. This is the time to be on the watch for anthracnose.

To reduce the severity of anthracnose, keep the mowing height at 0.125 inch or higher, roll to provide the desired putting green speed, apply 0.1 to 0.2 pounds of soluble nitrogen per 1,000 square feet every two weeks, avoid wounding the plants, and apply regular light topdressings when air temperatures are reasonable.

DO YOU FAVOR CURATIVE OR PREVENTATIVE FUNGICIDE APPLICATIONS TO CONTROL ANTHRACNOSE?

I recommend preventive BMPs and preventive fungicide applications. If superintendents try to rely on

curative fungicide applications, they already are behind.

It is important that superintendents manage anthracnose with a year-round approach. Implement practices that favor turfgrass health all year, and follow the specific BMPs outlined above before thinking about a fungicidal strategy.

Fungicide choices to manage anthracnose are limited, and on some courses the effectiveness of certain fungicides is limited. The pathogen causing anthracnose is resistant to some fungicides



BRIAN AYNARDI

and has reduced sensitivity to others. This makes designing a fungicide program to control anthracnose somewhat

challenging. A superintendent shouldn't make two consecutive applications with the same fungicide or with fungicides in the same FRAC (Fungicide Resistance Action Committee) code. You'll have better control with a tank mix of two fungicides with different modes of action, plus soluble nitrogen at the rate of 0.1 to 0.2 pounds per 1,000 square feet.

It takes a little trial and error to find the most effective fungicides for your golf course because the anthracnose may be resistant to certain fungicides. Determine which fungicides work well, and if a product isn't working, try something new to your golf course.

Begin preventive fungicide applications to control anthracnose on annual bluegrass greens

when daytime temperatures are in the 75- to 80-degree F range, nighttime temperatures are 55 to 60 degrees F and high relative humidity is present.

WHAT SHOULD A SUPERINTENDENT DO IF THERE IS A SEVERE OUTBREAK OF ANTHRACNOSE WHILE FOLLOWING A PREVENTIVE FUNGICIDE APPLICATION SCHEDULE?

If an outbreak of anthracnose occurs, remove as much stress from the grass as possible. Raise the mowing height, roll to maintain putting green speed, alternate days of rolling and mowing and apply 0.2 pounds of soluble nitrogen per 1,000 square feet.

IS THERE ANYTHING ELSE YOU WOULD LIKE TO ADD?

Be proactive. Don't wait for anthracnose to get a head start. Think and act preventively in both BMPs and fungicide applications.

Annual bluegrass greens with fast putting green speeds are under stress and most likely will develop anthracnose. Take a big-picture approach and develop a comprehensive strategy to manage for healthy turf all year, and develop an effective preventive fungicide strategy.

SPONSORED CONTENT BY



TIME IS RUNNING OUT!

Kabuto® Spring 2017
Promotion Ends June 30!

A HEROIC DEAL ON THE DOLLAR SPOT WARRIOR!



GET \$55 BACK ON EVERY GALLON* OF KABUTO®

Receive a \$55 rebate for every gallon of Kabuto® Fungicide SC you purchase!
Payment will be in the form of a VISA or GCSAA gift card – your choice!



Don't Miss Your Chance!

Visit GordonsProfessional.com for claim forms and rules.

*Minimum purchase: 4 gallons
Offer good on purchases made between
April 1, 2017 and June 30, 2017.

GordonsProfessional.com

Always read and follow label directions. Kabuto® is a registered trademark of Ishihara Sangyo Kaisha, Ltd. 5/17 04874



G pbi / GORDON
CORPORATION
Employee-Owned

Success from coast

From Atlantic to Pacific, superintendents reap the benefits of fungicide applications.

BY CHRIS LEWIS

Regardless of a course's location, every superintendent at some point understands how a lack of control feels.

Whether they're combatting the effects of weather or unusually short or long seasons, superintendents defending their courses from diseases typically have more questions than answers, including: "Which fungicide product is ideal for my course's diseases? When should I purchase it? And how often (and where) should I apply it?"

To provide answers for these (and other) questions, *Golfdom* recently submitted a survey to readers to learn which fungicides currently are most popular, how and when they are being used and what impact they are having. (Some of the results of the survey are presented as you read the story. For the complete results, visit our home on the web, Golfdom.com. Thank you to everyone who took the time to complete our survey, and a warm congratulations to Randy Adcock, superintendent, Prairie View Golf Club, Carmel, Ind., and Jim Wilkins, manager of golf operations, West Woods Golf, Evergreen, Colorado. They are our two randomly selected \$100 Visa gift card winners.) In addition, the magazine reached out to four superintendents across the country, each of whom shared the following success stories and advice.

Card Sound Golf Club

OBSERVE. ADJUST. REPEAT.

Sean Anderson has witnessed every type of weather — hot, humid, wet, dry — throughout his 11 years of service as the superintendent at Card Sound Golf Club, an 18-hole private club in Key Largo, Fla. For instance, throughout much of 2015, wet El Niño conditions led Anderson and his crew to apply more fungicide than usual. However,



within the last year or so, more favorable weather has reduced the course's disease patterns significantly.

"Each year seems to be quite different from the next, so the ability to adjust our fungicide programs is a must," Anderson says. "The key for us is being observant and understanding the disease patterns we have and the conditions that favor particular disease development."

Because of his longstanding career at Card



Sean Anderson

to coast

Card Sound Golf Club was built in 1976 and designed by the architectural team of Bruce Devlin and Robert Von Hagge.



“Timing is everything. You get so much more effectiveness by timing and targeting your applications.”

SEAN ANDERSON

Sound, Anderson has been able to monitor disease development and better understand certain disease triggers — from cloud coverage to temperature — and tailor the club’s preventative and curative applications according to the data he tracks.

He typically applies fungicides on greens, tees and approaches, using quite a few different types of chemistries and cycles. Often, during the summer and fall months, Anderson uses a 21- to 28-day cycle. He can shorten this cycle, though, if pressures are high, especially during cloudy periods in September and October.

“Timing is everything. You get so much more effectiveness by timing and targeting your applications,” Anderson states. “If you miss your window with preventative applications you end up spending so much more time focusing on curatives.”

To further improve the timing of applications to achieve success in controlling diseases, Anderson also advises superintendents to discuss fungicides with chemical manufacturing specialists.

“There is so much support out there these days from the different chemical manufacturing companies that are more than willing to help superintendents identify diseases and programs to combat the diseases,” he explains. “Take advantage of them.”

Cleveland Country Club

TRIALS AND ERRORS RESULT IN AN IDEAL FUNGICIDE “FIT”

With more than 12 years of experience as superintendent of Shelby, N.C.’s Cleveland Country Club, Scott McArthur understands that there is no such thing as a fungicide program that works for everyone. It simply doesn’t exist.

Continued on page FS8



Continued from page FS9

For several years, McArthur has used fungicides for fairy ring after initially trying a then-new program (unsuccessfully) that research had, at the time, shown to be the best.

“When it didn’t work for me, I talked to a fellow superintendent and used his advice, along

with part of my program, to create the fungicides that work best for me in my microclimate and soil structures,” he says.

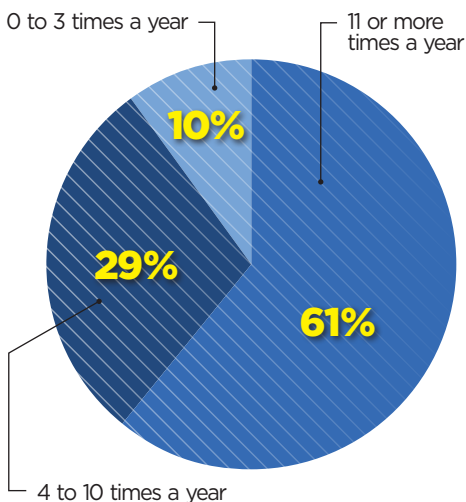
McArthur and his agronomy team currently use eight types of fungicides for diseases like fairy ring. His decision to use various fungicides ultimately was a direct result of two factors: conversations with peers and vendors who educated him on the best options available to treat Cleveland Country Club’s diseases, and a variety of trials and errors that helped him create the most cost-effective program possible.

The conversations, trials and errors have had a positive influence on McArthur’s results so far. For example, a few years ago the club had a large outbreak of fairy ring about two weeks before a member-guest tournament was set to begin — to the point where the course had so many mushrooms that it looked like a hail storm had just occurred.

“But, after talking to a superintendent who suggested Tebuconazole, I sprayed the generic at 0.6 ounces per 1,000 square feet,” McArthur says. “The fairy ring and mushrooms were long gone before the first day of the tournament. And best of all, it only cost about \$65.”

With a total maintenance budget of \$329,551,

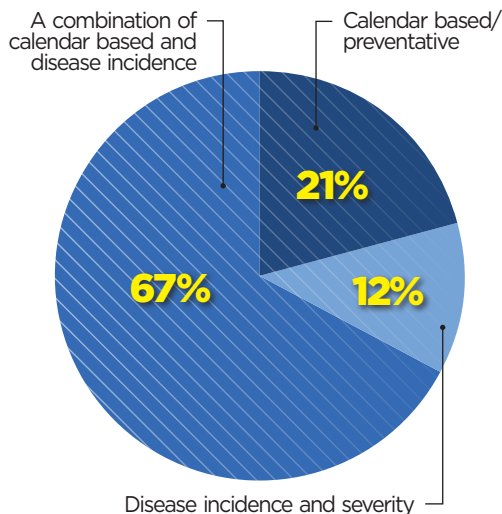
HOW OFTEN DO YOU USE FUNGICIDES?





After conversations with his peers and vendors over the years, Superintendent Scott McArthur has created the most cost-efficient spray program for Cleveland CC's diseases.

WHAT IS THE PRIMARY REASON FOR YOUR FUNGICIDE TREATMENTS?



defenses against diseases like *Pythium* root rot. He recently has overcome various diseases, including anthracnose, fusarium and waitea.

"Since Morro Bay is a seaside course with fog and wet conditions throughout the summer, it is an ideal environment for fungus. So we are on a 14- to 21-day spray schedule," Nunes says. "If we do not stay on schedule with our fungicide applications, disease will appear."

He continues, "It is important to also closely monitor weather predictions. If rain is predicted, we get our fungicides out ahead of schedule rather than waiting until after the storm when disease has a chance to form."

Nunes and his crew are open to using generics whenever, each of which is applied only to the courses' greens. They also avoid skipping an application or extending their intervals. Because of different environmental conditions, Dairy Creek's intervals are about a week longer than Morro Bay's: 21 to 28 days in all.



Albert Nunes

"Not only should fungicides be applied on time, but chemistries must also be rotated on a regular schedule to prevent resistance," Nunes explains. "Furthermore, superintendents should use combo fungicides, as they provide broad spectrum control and help prevent soil conditions that are favorable for disease."

Continued on page FS10

McArthur doesn't intend to spend more than \$10,000 on fungicides this year, as he will apply his products only on greens and, like Card Sound Golf Club's Sean Anderson, purchase them during the early order period of October.

"Aside from reducing costs by purchasing in October, superintendents should also try to not overuse the same fungicide," he continues. "But, if there is something that works well, they should stick with it and not change just because something is supposed to be better."

County of San Luis Obispo

STAY ON SCHEDULE

As the golf course supervisor, parks and recreation, for the Golf Division of the County of San Luis Obispo, Calif., Albert Nunes currently maintains 36 holes, including the 18-hole Dairy Creek Golf Course, based in San Luis Obispo, and the 18-hole Morro Bay Golf Course, located in Morro Bay, a responsibility he's had for seven years.

Operating on a maintenance budget of \$2.8 million this year, Nunes currently is adding P-K Phite and P-K Plus to his fungicide tank mix, primarily as a preventative measure, as each phosphate stimulates plants' natural chemical and physical

Continued from page FS9

Tonto Verde Golf Club

PREVENTATIVE GREENS PROTECTION

Because of Tonto Verde Golf Club's location in the desert (Rio Verde, Ariz., to be exact), Travis Blamires, director of agronomy, does not apply an overabundance of fungicides on either of the club's two 18-hole courses, the Peaks and the Ranch. Nonetheless, from time to time, disease pressure around overseeding does occur, leading Blamires and his crew to apply fungicides preventatively to greens before dropping any seeds.

"This ensures a layer of protection while we are

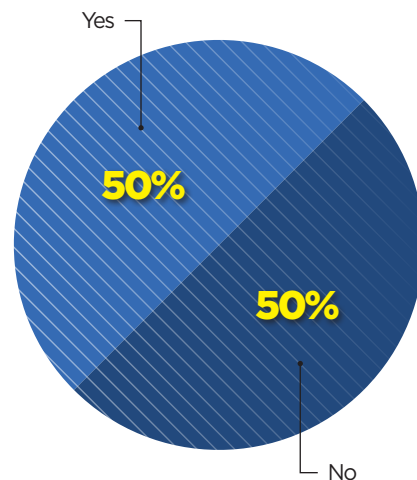


Travis Blamires

running water for germination and seeding establishment when the weather is still extremely warm," Blamires says. "We also apply fungicides preventatively on all our putting surfaces in the spring to treat fairy ring."

During his two years of service at Tonto Verde, Blamires has witnessed newly seeded grasses disappear virtually overnight from high humidity and extremely hot daytime temperatures. However, he has been able

DO YOU USE GENERICS IN YOUR FUNGICIDE PROGRAM?



to combat these harsh conditions by providing a layer of fungicide protection to his greens for the first two weeks after seeding, the period in which the seed is most vulnerable.

With a maintenance budget this year of \$3.2 million, Blamires doesn't intend to purchase a fungicide that isn't a name brand. In fact, he never uses generics because he believes name brands are more efficient. This spring, Blamires applied a

combination of fungicides that has been effective in keeping the turf healthy. He also says Heritage has become a popular application for pre-seeding in the Southwest. Blamires says he uses it before they drops seeds on greens.

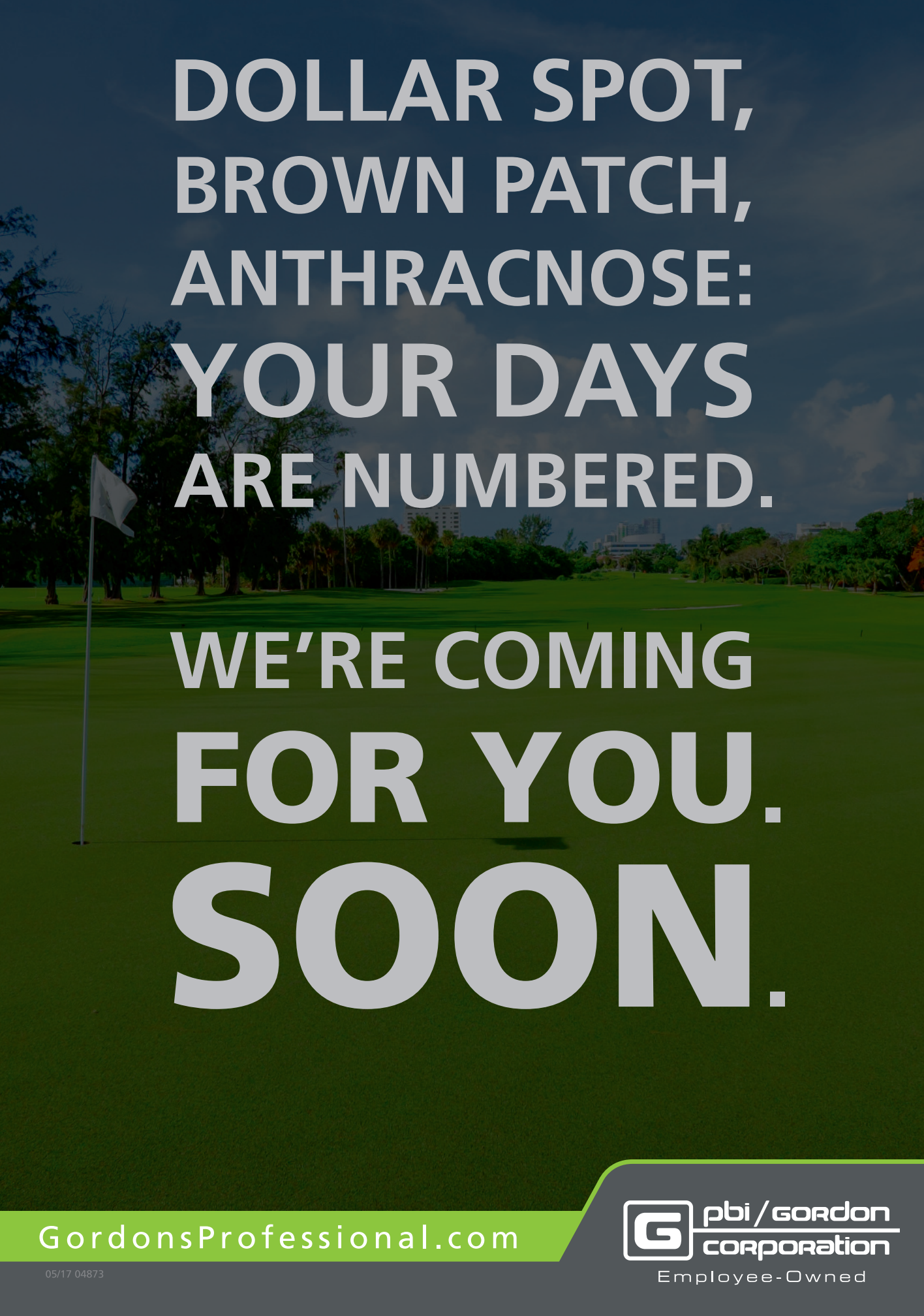
"Regardless of the fungicide, superintendents must ensure they are also rotating chemical classes whenever they're applied," Blamires states. "It is imperative to not keep putting the same chemistry down time after time on the same disease."

"The bottom line," he adds, "is each course is different, and comfort is also important. Superintendents must use whichever fungicides they are most comfortable with, as well as the ones that work best for their own unique sites." ©



Superintendent Travis Blamires will maintain Rio Verde, Ariz.'s Tonto Verde Golf Club's two 18-hole courses on a budget of \$3.2 million this year.

PHOTO COURTESY TRAVIS BLAMIRES



**DOLLAR SPOT,
BROWN PATCH,
ANTHRACNOSE:
YOUR DAYS
ARE NUMBERED.**

**WE'RE COMING
FOR YOU.
SOON.**

GordonsProfessional.com

05/17 04873

 **pbi / Gordon
CORPORATION**
Employee-Owned

NO LIMITS

Where a full house

Forget the royal flushes, Rhodes Ranch Golf Club in Las Vegas goes all in on a packed tee sheet.

BY SETH JONES

Roy Smith, general manager at Rhodes Ranch Golf Club in Las Vegas, remembers playing the course he now manages some six or seven years ago. At the time, he was a student at the University of Nevada Las Vegas, enrolled in the professional golf management program. After just nine holes of playing on greens that were 70 percent dirt, he swore he'd never play it again.

"Now, lo and behold, I'm running the place and seeing what it can be capable of, thanks to proper maintenance and good service," he says. "Oscar has really turned it around."

Oscar Sanchez has been Rhodes Ranch superintendent since October 2012. He's been in the golf maintenance business since 1991, starting out in southern California. He has been in Las Vegas for the last 14 years, at four different golf courses.

"Las Vegas has been pretty good to me and my family because I've had the opportunity to do what I like to do — work as a golf course superintendent," he says.

OSCAR'S GRIND

Rhodes Ranch is a public daily-fee course, an "oasis in the desert," as Smith calls it.

While it's an oasis in the desert to visitors, it can be a grind for the employees. Like any public daily-

fee course, the success or failure of Rhodes Ranch is determined by the number of players the course hosts. They hope to see 64,000 golfers a year, or about 250 players a day, based on the number of days they're open.

That means during the busy season — March through May — the first group goes off at 5:30 a.m. and the last group is walking off No. 18 as



Oscar Sanchez

the sun is setting. While summers also are important, the rates drop as the temperatures rise.

Sanchez laughs when asked about the size of his crew. Yesterday it was 17, today it's down to 16, including himself. One of his best operators left to take a job in construction, which happens all the time, it seems. But he says they still get it done.

"We start our work an hour before the first tee time. We accomplish the most ahead of play. Second assignments get complicated, but we get it done," Sanchez says. "We all work together. The first two or three groups might not see the whole picture because they want to play fast and get ahead of us. But the other 240 people are going

Continued on page FS14

"The first two or three groups might not see the whole picture because they want to play fast and get ahead of us. But the other 240 people are going to see everything nice and neat and in the best conditions possible."

OSCAR SANCHEZ

always wins

Rhodes Ranch Golf Club in Las Vegas hope to see 64,000 golfers a year, which averages to 250 players a day.



FOCUS ON FUNGICIDES



"(Sanchez is) out there doing everything, he does all the same work his laborers do, and he takes more pride in the place than anyone else on the property," says Smith.

Continued from page FS12

to see everything nice and neat and in the best conditions possible."

While Sanchez doesn't have a formal turf certificate, he has taken hours of GCSAA seminars and short courses over the years. Plus, as Smith says, "He works harder than anyone I've ever seen.

"What he's capable of doing with what seems like always a short staff and a tight budget never ceases to impress me," Smith says. "He's not the kind of superintendent who tells others what to do and then sits back. He's out there doing everything, he does all the same work his laborers do, and he takes more pride in the place than anyone else on the property."

PREVENTING PYTHIUM

Sanchez has many enemies when it comes keeping the course looking the way he likes it. A lack of skilled labor would be one (the construction industry, as mentioned before, keeps snatching up his crew members). The constant barrage of golfers would be another. And in terms of agronomy, *Pythium* blight would be a third enemy.

According to *Golfdom* Research Editor Karl

Danneberger, Ph.D., *Pythium* blight is most active when temperatures are between 86 degrees and 95 degrees F and nighttime temperatures remain above 70 degrees. The disease is most severe on turf sites that have high traffic and drain poorly.

In Las Vegas, with high overnight temperatures in the summer and humidity built up by regular irrigation cycles, *Pythium* can pop up. To combat it, Sanchez uses Segway from PBI/Gordon as a preventative. He's been using it for two seasons with great success.

"It works better as a preventative than a curative," Sanchez advises. "The key is, as soon as you start seeing it, spray it before it starts appearing in big patches. *Pythium* is one of the enemies here because it stays hot and humid overnight. We'll start seeing it in the first week of July."

With Sanchez and his team keeping Rhodes Ranch in pristine condition, the course is successful again, Smith says. Recalling the dead greens there several years ago — before he or Sanchez were at the course — he says the competitive Las Vegas golf market demands excellent conditions.

"We have a lot of non-resident golfers, a lot of tourists to impress," Smith says. "We do it every

year. This year, definitely, has been as busy as any we've seen. With the course conditions what they are... we wouldn't have had as successful of a three-month period as we just had without (great conditions). And the past three months have been very, very good."

Not just a grass grower, Sanchez understands how important it is to the success of Rhodes Ranch to perform well over the March-through-May peak Las Vegas golf season.

"February, March, April and May. In June it gets empty. Right now is when they can sell an expensive golf round," Sanchez says. "So in other words, if you don't make your money between February and June, you're not going to make your budget for the year."

VEGAS ALWAYS WINS

Smith describes Rhodes Ranch as a player-friendly course filled with palm trees and built inside a 3,500-home community. The par 3s are tough, he

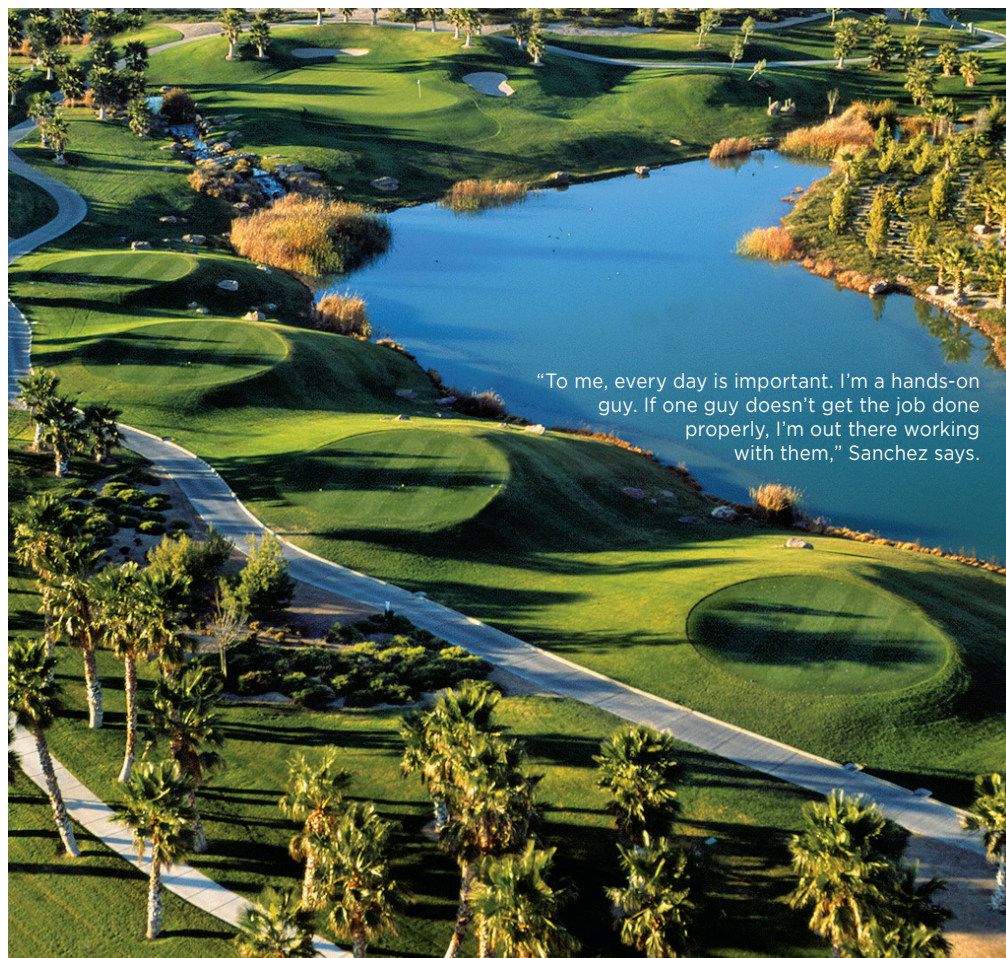
says, but the rest of the course is set up with fun in mind.

Success, he says, is having a packed tee sheet with no inventory left behind.

"My success is different than Oscar's. For me, it's get as many people out there as possible and keep them as happy as we can," he says. "We do that by providing great service, from the beverage cart to the service staff scrubbing their clubs down at the end of the day. If I can get 300 golfers through here with no complaints in four and a half hours, I'm stoked."

Sanchez says that it doesn't matter to him if it's peak season or the slower summertime. Every day is important to him, and every day he's happy to be there.

"To me, every day is important. I'm a hands-on guy. If one guy doesn't get the job done properly, I'm out there working with them," he says. "I am happy every day and I'm happy with what my crew does every day." **G**



"To me, every day is important. I'm a hands-on guy. If one guy doesn't get the job done properly, I'm out there working with them," Sanchez says.

THIS ISN'T A GAME.



FOR YOU IT'S A MATTER OF PRIDE.

PBI-Gordon helps protect your course and your reputation.

A golfer might brag about a good day on your course, but make no mistake: that's your turf, your mission, and your business card. And PBI-Gordon is dedicated to helping you keep it looking great. For almost 50 years, PBI-Gordon has offered innovative, effective turf solutions for the golf industry, from original Trimec® Turf Herbicide to new Kabuto™ Fungicide SC.

GordonsProfessional.com



Kabuto™ is a trademark of Ishihara Sangyo Kaisha, Ltd. Trimec® is a registered trademark of PBI-Gordon Corp. 4/17 04674

LABOR PAINS

PART 2 OF A 3-PART SERIES

Continued from page 18

kids with one of the H2-B workers on a job. The college kids really learn what it means to work hard and do the job right when they see the H2-B guy do it," he says. "I just can't say enough about our group of H2-B workers. They keep coming back each year from Jamaica to work for us and they do a great job. One of the guys has been coming here as long as I have been at this course, and he is like a brother to me. We really have a great camaraderie among our staff, and that helps us put the best golf course out there we can for our visitors."

Not everyone is enjoying the same success as the Broadmoor, though. Tony Gustaitis, CGCS at Whitmarsh Valley CC, Lafayette Hill, Pa., had to leave the program behind last year due to increasing costs in the program. It was especially hard to do, Gustaitis says, because some of the H2-B workers had become "like family" to him.

"The government tightened restrictions — this is pre-Trump — with the Department of Labor and Homeland Security that the hourly rate you had to pay the H2-B guys jumped 50 percent," Gustaitis says. "You also have to pay anyone else that does a similar job the same rate. So, you're talking 10 people that are all going to get huge raises if I pursued (H2-B)."



Tony Gustaitis, CGCS at Whitmarsh Valley, Lafayette Hill, Pa., has lost seven crew members because of rising H2-B expenses.

That means Gustaitis has lost seven workers from his regular summertime crew. Five clubs in his area compete for crew members. While he's been mostly successful (lucky, he says) in keeping a full staff, it hasn't been easy.

"I'm just putting ads in the newspapers and going through the normal online search firms for summer and temporary labor, and that isn't panning out all that great," he says. "It's very difficult to find someone coming off the street that wants to work on a golf course and wants to get up at 4:30 in the morning to get to work at 6."

Dynamic changes

Estoban Rodriguez has been working at TPC Four Seasons Resort Las Colinas in Irving, Texas, for 20 years. A Mexican immigrant, Rodriguez was led to golf maintenance by his uncle, who told him the work was enjoyable.

Rodriguez instantly took to the work, and enjoys seeing the golf course progress through the seasons. It took two years before he was hired full time, but once it happened, he hasn't looked back. In fact, his supervisors are sometimes shocked to see that once he clocks out from the maintenance crew, he hangs up his maintenance gear and puts on a shirt and tie to work in the clubhouse, serving guests at banquets.

"Any extra work I can get, I'll take," Rodriguez says. "Riding a mower doesn't tire me out so much that I'll turn down overtime pay."

Rodriguez's supervisor (on the golf maintenance crew, at least) is Anthony Williams, CGCS, director of golf course



Estoban Rodriguez



"Superintendents just can't find the people they need for the seasonal jobs," says GCSAA's Robert Helland.

Continued on page 36

Continued from page 35

maintenance and landscaping operations. It doesn't surprise him to see Rodriguez working at the resort, because he knows his work ethic.

"We're lucky because we've got a lot of guys like Estoban who have been here for a long time, know how to get the work done, and they seem to enjoy it... but they're not spring chickens," Williams says. "The people at the state unemployment agencies — their work ethic doesn't match what we need, which is physical work, being out in the weather."

Williams says the industry has changed over the last 20 years. Rather than managing the golf course based on its needs, he now manages the course based on how many people he can put out on the course, and their skill level.

"The way we do business is dynamically changing. There's so many people

"There should be a way to solve how we're handling immigration," says Anthony Williams, center, with his crew. "People are suffering on both sides."

competing for the same labor pool here — construction, landscaping, fast food.

LABOR PAINS
 PART 2 OF A 3-PART-SERIES


It is tough," he says. "When you step up to the white board and you're filling out who is going to do what, and you run out of people before you run out of jobs... sooner or later that math ends poorly for everybody." ©



PREMIUM SCIENCE. PREMIUM VALUE.

Wilbur-Ellis offers high quality products, such as our LINK® line of liquid foliar turf and ornamental plant nutrient products. Contact your local Wilbur-Ellis representative today for more information.

pro.wilburellis.com

Find your local specialist at locations.wilburellis.com



WILBUR-ELLIS®

Ideas to Grow With®

For information only. Not a label. Prior to use, always read and follow the product label directions. WILBUR-ELLIS logo, Ideas to Grow With, and LINK are registered trademarks of Wilbur-Ellis Company LLC. K-0517-929

Turf Rx

In prescription turf management,
you're the pharmacist

BY JESSE TRCKA

Rx

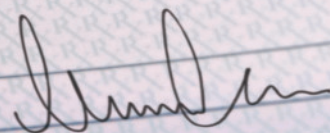
MEDICAL CENTER

Adjust sprinkler run times

Reduce the amount of fertilizer
applied to part of a fairway

Use soil moisture probes and their
data to irrigate and create a
more homogenous putting green

M.D.



M.D.

Continued on page 38



The shrinking of sprayer technology and the introduction of GPS mapping systems has allowed superintendents to become even more precise with their applications. The Oglebay Resort, Wheeling, W.Va., (pictured) utilizes the technology on its four courses.

Many tools of our trade have their roots in agriculture.

Things like drainage, seeders, fertilizer spreaders and sprayer technology have been influenced by the agricultural industry. Most of these tools started off as rough approximations of what we recognize today.

The demand for more refined outcomes with much tighter tolerances has driven the improvement of these tools, giving us a host of new products. There's no clearer example of this in the past five years than the shrinking of sprayer technology, namely the introduction of GPS mapping systems. While accuracy to within a few feet may be sufficient for fields covering hundreds of acres, spraying just 25 acres of fairways, let alone 3 acres of tees, necessitates higher accuracy. Equipment is now accurate to inches rather than feet and continues to improve.

In the past few years, many of us have jumped on the bandwagon of these new sprayer systems, helping us refine the boundaries of application areas, eliminate tracking dye or foam, improve application

under/overlap and decrease excess application area because of whole boom versus individual nozzle control. It's been about improving efficiency, but that's not the whole story. These systems offer opportunities to take progress even further.

CONSISTENCY'S THE GOAL, BUT HOW?

Enter prescription turf management, something that most of us do already in some form or fashion. Examples include adjusting sprinkler run times to accommodate a wet or dry tee box, reducing the amount of fertilizer applied to part of a fairway and using soil moisture probes and their data to irrigate and create a more homogenous putting green.

Consistency is the goal, but with so many variables, consistency sometimes seems

unattainable. So, what does it take to improve uniformity further than we already have? The answer, at least to start, is data. How healthy is our turf? We need to know how turf is performing so we can make necessary adjustments to programming. We also need to catalog the location of this data. Where exactly is the turf in need of more inputs or fewer inputs?

Widespread availability of affordable data has improved dramatically in recent years. Superintendents can obtain Normalized Difference Vegetative Index (NDVI) data from satellites, plane flyovers, or with the most recent method, drones. In general terms,

NDVI is a measurement of the photosynthetic abilities of vegetation. Plants that are healthy and productive easily can be differentiated from those not growing as vigorously. Once we have this data we can make further inferences about the causes of problems and best ways to adjust our management practices.

At Wayzata Country Club, we now use NDVI data in combination with our sprayer control systems to adjust our fairway fungicide program. By extracting the plant health information from NDVI data, we look at how and where we could reduce our total inputs. Seeing what the NDVI imagery shows as higher performing turf ver-

sus poorer performing turf is no surprise. The areas with better performing turf are all locations that rarely require extra care, and the lesser performing areas are those needing extra attention in the past.

It's also interesting to identify problem causes for some of the lesser performing areas. For example, many areas of WCC that show up lower on the NDVI scale can be attributed to high traffic and fairway expansions. The reasons stressed turf shows up lower on the NDVI scale are numerous, and it takes the knowledge and experience of the superintendent to determine the root cause of this stress. It's also telling that the areas where

dollar spot first appears are almost always areas that are lower on the NDVI scale.

MAPPING FUNGICIDE NEED

With this information in hand, we next determine how to alter a fungicide application for its best use. With some apprehension about venturing into the unknown, I started our program with just two application rates, 1 gallon per thousand GPK and 1.5 GPK. From there I generated a prescription map, delineated into two parts, with lesser performing turf on the NDVI scale receiving the 1.5 GPK and the better performing and less stressed turf receiving 1 GPK. Essentially, I

Continued on page 40

The Best Equipment. On Earth.

Seago scours the globe to bring the finest specialized turf care equipment to golf courses everywhere.

Look to Seago for:

- Mowers
- Edgers
- Water Removal

SEAGO
INTERNATIONAL, INC.
SPECIALIZED EQUIPMENT AND GOLF OPERATIONS

www.seagousa.com 800-780-9889



Introducing...

The NEW F-15 from Air Force

2-stroke Engine (60cc)
for All Angle Mowing.
15" cut and weighs
less than 25 lbs.



Continued from page 39

apply only 2/3 of a tank mix in areas that the satellite and I agree could do with less. The determination of that line is

completely subjective, it could be set anywhere along the NDVI scale. My initial goal was to reduce total fungicide use by 15 percent to 20 percent,

Trcka uses NDVI data in combination with sprayer control systems to adjust his fairway fungicide program at Wayzata CC. By extracting the plant health information from NDVI data, he looks at how and where they could reduce their total inputs.

which helped determine the separation line between rates.

With map in hand — or more precisely, loaded into the sprayer computer — it was time to make an application. One big question quickly was answered — the sprayer transitioned smoothly from rate to

rate on the same fairway, so it was a success from a technology standpoint.

The turf health standpoint was the next question. Would the 2/3 rate application be effective for as long as the full rate? Our observations indicated a resounding yes. There



PHOTO BY: JESSE TRCKA



With the ability to apply 2/3 of a tank mix in specific areas of the course, Jesse Trcka was able to decrease his fungicide use by up to 20 percent.

was no observable disease incidence at the lower application rate, even at intervals recommended for the higher application rate. For example, a 3-oz./1,000 rate will last at least 28 days, and a 2-oz. rate will last 14 to 21 days. Our prescription map allowed us

to apply 3 oz./1,000 to areas of higher disease pressure and a 2 oz./1,000 rate to areas of lower pressure as well as maintain a minimum interval of at least 28 days.

Seeing it firsthand changed my perspective on both the rates of fungicides and fre-

quency of applications. Rather than maintaining a two- to three-week preventative application schedule, I am now more comfortable stretching the intervals to four-plus weeks. With the change in frequency, I'm also adjusting rates accordingly, knowing that a higher

label-rate application won't be applied evenly across the whole golf course, only in areas that it has been designated necessary. The net result is fewer applications, fewer inputs and overall cost savings.

We will expand the param-

Continued on page 42



RECLAIM YOUR RESOURCES



Waterfall Filter
Designed for effective grass and particle separation

Save money by saving water in your daily maintenance

Golf courses use thousands of gallons of water everyday to maintain their equipment.

How much do you use?

Mi-T-M Biological Water Treatment Systems allow you to treat and reuse your wash water.

Cold & Hot Water Pressure Washers • Air Compressors • Portable Generators • Air Compressor/Generator Combinations
Air Compressor/Generator/Welder Combinations • Wet/Dry Vacuums • Jobsite Boxes • Portable Heaters • Water Pumps • Water Treatment Systems

Continued from page 41

eters that we have set in our use of the system, for example, adding one or two more application volumes to the prescription maps for further reductions. This means adding an intermediate rate of 1.25 GPK, and

even a 0 GPK for areas that have minimal disease incidence and low pressure. We'll also look at adding fertility and wetting agents into the equation in our continued effort to create a more homogenous turf stand.





LET'S SPREAD WITH EASE!

- ✓ Compost
- ✓ Sand
- ✓ Top Soil

Turf Pros' #1 Top Dresser
Since 1994

1-866-ECO-LAWN (326-5296) | www.ecolawnapplicator.com

Hydration A-Plus®



THE PERFECT RAIN

Bicarbonate Reducing Penetrant & Water Holding Agent



PLANT FOOD COMPANY, INC.
est. 1946 The Liquid Fertilizer Experts



www.plantfoodgolf.com
800-562-1291 | pfc@plantfoodco.com

THE DOWNSIDE


Now for the downside. Some products are not as conducive to variable rate applications, at least not in the same tank mixes I have referenced. More actively functioning — and probably growing — areas of turf requiring lower fungicide rates probably are not the areas we want to target for a lower rate of a PGR. Unfortunately, this means additional applications of PGRs and any other product, like a phosphite, that don't fit the same prescription map. This doesn't mean we can't create maps to target areas where a higher PGR rate would be beneficial, but it wouldn't be the same map.

Making these extra apps may be a dealbreaker for many, but with only PGRs going into the tank, these applications go quicker than we thought. Along the same lines of reducing total number of fungicide applications, there is a consideration to make in adjusting PGR rates and reducing the frequency of these applications as well.

I've asked myself if we have met our reduction goals, and if so, was it worth the additional effort? The answer is yes to both questions. Not only did I start the season not intending to make as many variable-rate applications as we did, but I

At Wayzata CC, Trcka makes applications ranging from 3 GPK to 0 GPK depending on the turf in the area's disease incidence frequency and pressure.

had planned to do the opposite. But as the year moved on, the savings were as obvious as the extra product on the shelf. It goes without saying that many of these fungicides are costly, and savings add up quickly. I speak for myself when I say that the cost savings, along with reduction in inputs, more than make up for the additional labor costs and time lost from other areas.

I would be remiss to not reference the others involved in this process. When I reference "we," I refer to Aaron Johnson of Winfield and Ken Rost and Kirk Stueve of Frost Inc. Without their assistance, none of this would have come about. Utilizing their knowledge to access the necessary NDVI data from GeoTech and turn that into specific prescription maps was essential. It was an interesting and rewarding process that has left us looking forward to how we can continue to grow in our use of this technology. 

Jesse Trcka is superintendent at Wayzata Country Club in Wayzata, Minn. This article originally appeared in *Hole Notes*, official publication of the Minnesota GCSA, and is reprinted with permission.

PHOTO BY: JESSE TRCKA



Super Science

// LOOKING BEYOND MSMA

TOPRAMEZONE AND CHELATED IRON FOR GOOSEGRASS CONTROL

By Adam Boyd and Scott McElroy, Ph.D.

Goosegrass (*Eleusine indica*) is one of the most problematic grassy weeds of turfgrass. Management can be difficult because of goosegrasses' ability to thrive in extreme environments and the lack of available post emergent herbicides offering acceptable control.

Monosodium methanearsonate (MSMA) was a primary post emergent herbicide used for goosegrass control in warm-season turfgrasses until 2009, after which the EPA heavily restricted its use in the turfgrass industry. Previous research has shown that topramezone (Pylex, BASF) offers excellent postemergent control of goosegrass and potentially could add to the diminishing list of available herbicides.

Just as with other HPPD inhibitors, turfgrass injury can be an issue. Pylex affects the carotenoid biosynthesis pathway, causing leaf bleaching in warm-season turfgrasses. Previous research conducted at Auburn University in 2015 and 2016 indicated that Pylex used in combination with chelated iron significantly reduced the bleaching effects on bermudagrass (*Cynodon dactylon*).

Greenhouse trials were conducted to determine whether the addition of

chelated iron affected Pylex efficacy for goosegrass control. Two rates of Pylex (0.25 and 0.5 fl. oz. /A), five rates of chelated iron (0.5, 1, 2, 4 and 8 oz. /1,000 sq. ft.), and MSO (0.5% v/v) were mixed in all possible combinations and applied sequentially (initial, three weeks after initial) to two goosegrass biotypes.

The results of the trials showed that both rates of

Pylex, with or without the addition of chelated iron, yielded complete control of both goosegrass populations for all treatments in both greenhouse trials. Our data suggest that the combination of chelated iron and Pylex may offer another herbicide option for goosegrass control in bermudagrass. Turfgrass managers should consider this herbicide to combat future issues with goosegrass resistance.

Adam Boyd and Scott McElroy, Ph.D., are at Auburn University, Auburn, Ala. Contact Adam with questions at apb0036@auburn.edu.



Examples of heavy goosegrass infestation before Pylex plus chelated iron application (left), and three weeks after application.

NEWS UPDATES

TPI APPOINTS EXECUTIVE DIRECTOR, ASSISTANT EXECUTIVE DIRECTOR

Turfgrass Producers International (TPI) has named Casey Reynolds, Ph.D., as the association's executive director. Additionally, the group has selected Karen Cooper for the newly created position of associate executive director.

Reynolds comes to TPI from the position of assistant professor and turfgrass Extension specialist at Texas A&M, where he coordinated statewide turfgrass research and Extension programs. He was the creator and editor of the program's website, AggieTurf.tamu.edu, and developed much of its educational content. Prior to joining Texas A&M, he served as a turfgrass research and Extension associate for North Carolina State University from 2003-2013.

To her position, Cooper brings professional writing expertise along with 15 years of administrative and project management experience, according to TPI.

From April 2007 to December 2013, she served as senior manager of conference education for the Golf Course Superintendents Association of America (GCSAA). She comes to TPI from Louisiana State University, where she developed adult learning training courses specifically designed to meet the needs of the target audience for the National Center for Biomedical Research & Training/Academy of Counter-Terrorist Education.

“ADDING POTASSIUM HAS NOT MADE THE GRASS ANY GREENER, DENSER OR FASTER GROWING. WE’RE NOT SAYING THAT POTASSIUM ISN’T REQUIRED.”

Doug Soldat, Ph.D.

(see story on page 44)

// DIFFERENT RESULTS FOR DIFFERENT FOLKS

Soil testing under the microscope

By Doug Soldat, Ph.D.

In the first chapter of the Soil Science Society of America's 1990 book, "Soil Testing and Plant Analysis," authors Peck and Soltanpour write that "Success or failure of soil testing varies depending upon the amount and quality of research data available for the calibration and interpretation of the tests." Unfortunately, turfgrass scientists have not generated a large amount of research data useful for soil test calibration of turfgrass. As a result, soil nutrient interpretations and fertilizer recommendations are imprecise and of questionable accuracy.

The consequences of this lack of data have been recognized by turfgrass scientists for a long time. In 1978, Tom Turner and Don Waddington demonstrated the variability in soil test interpretation by sending soil samples to various turfgrass soil testing labs around the country. Each laboratory analyzed the same seven soil samples. There was relative agreement in the interpretation of the soil potassium

(low, medium, high, etc.), as the labs were never more than one level away from one another, although they only were in total agreement for sample 6 (Table 1).

More interestingly, however, they saw a wide range of potassium fertilizer recommendations from the various laboratories. For example, sample 3 had the lowest soil K, and the fertilizer recommendations ranged from 1.2 pounds to 2.5 pounds of K₂O per 1,000 square feet. Sample 6 had medium soil K, and the lab recommended the same 1.2 pounds to 2.5 pounds of K₂O per 1,000 square feet. Sample 1 had the greatest amount of soil K, and the interpretations ranged from 0 pounds to 1.7 pounds of K₂O per 1,000 square feet. Lab No. 5 (see table) is particularly interesting because it recommended 1.7 pounds of K₂O per 1,000 square feet for each of the seven samples, regardless of whether the soil K was reported low or extremely high. What is the point of soil testing if the fertilizer recommendation doesn't depend on the result?

Laboratories didn't agree on soil test interpretation 40 years ago, and they still don't agree today. Researchers are working to change that by continuing to study how soil nutrient levels affect grass growth, but progress is slow. This article describes the results of a soil test calibration study for potassium on creeping bentgrass grown on a sand root zone.

A CONTINUING STUDY

In 2011, a project was initiated — and continues in 2017 — at the O.J. Noer Turfgrass Research Facility in Madison, Wis., on a USGA putting green with A4 creeping bentgrass (*Agrostis stolonifera* L.). The treatments include five levels of liquid potassium sulfate at rates ranging from 0 pounds to 0.6 pounds of K₂O per 1,000 square feet every two weeks (approximately 0 pounds to 8 pounds K₂O per 1,000 square feet annually, depending on the exact start and stop dates of the applications). Urea is spoon-fed throughout the season for an annual total of about 2 pounds of

TABLE 1

Soil Lab	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7
Soil K Interpretation followed by the fertilizer recommendation in pounds of K ₂ O per 1,000 square feet							
#1	Very High (0.8)	High (1.7)	Medium (2.5)	High (1.7)	High (1.7)	Medium (2.5)	Very High (0.8)
#2	Very High (0.0)	Medium (2.5)	Medium (2.5)	Medium (2.5)	Medium (2.5)	Medium (2.5)	High (1.7)
#3	Very High (0.0)	Medium (2.0)	Medium (2.7)	Medium (2.0)	Medium (2.0)	Medium (2.7)	Very High (0.0)
#4	Very High (1.7)	Medium (1.7)	Low (1.7)	Medium (1.7)	Medium (1.7)	Medium (1.7)	Very High (1.7)
#5	High (0.7)	High (1.2)	Medium (1.2)	Medium (1.7)	Medium (1.7)	Medium (1.2)	High (0.7)
Avg. soil K	386 ppm	174 ppm	126 ppm	146 ppm	159 ppm	136 ppm	377 ppm

Turner and Waddington's (1978) survey of soil testing laboratories interpretations and recommendations for potassium fertilizer from turfgrass areas. Labs often agreed on the interpretation (low, medium, high, etc.) but varied widely in the amount of fertilizer recommended.

nitrogen per 1,000 square feet.

Plant tissue samples are collected monthly to measure clipping yield and tissue K content. Soil samples also are taken monthly to a depth of 3 inches and analyzed for plant-available nutrients using the Mehlich-3 method. Turfgrass color index is evaluated every two weeks using a reflectance meter that measures wavelengths corresponding to chlorophyll reflectance (CM-1000, Spectrum Technologies). Visual turfgrass quality also is evaluated every two weeks using the standard National Turfgrass Evaluation Program rating scale of 1-9, where 1 represents completely brown or dead turf, 6 represents the minimally acceptable turf quality and 9 represents the greatest possible quality. We use a golf cart traffic simulator six times per week to create wear stress on the plots, as potassium has been associated with wear tolerance in the past. Wear traffic was not applied in 2016 because of mechanical failure of the simulator.

Finally, because we were interested in how potassium affects common diseases, we apply fungicides only rarely, usually in cases where we are concerned about losing the entire stand. Disease incidence is quantified by counting infection centers, visual percentage estimation, and by the grid intersection method, where we place an 81-point grid on the plot and the presence/absence of the disease is recorded directly under each intersection.

WHEN THE RESULTS GET INTERESTING

By treating the grass with different levels of potassium fertilizer, we create fairly large differences in soil and tissue levels across the treatments (Table 2). Despite this wide range in potassium availability over the study period, little has happened to the turf. Averaged over six years, turfgrass color index, visual quality and clipping yield are all statistically similar for all treatments (Table 3).

In short, adding potassium has not

TABLE 2

Treatment	Average Soil K	Average Tissue K
	ppm	%
Control	21 d	1.24 c
Calcium sulfate @ 1.3 lbs./1,000 sq. ft.	22 d	1.26 c
Potassium sulfate @ 1.3 lbs./1,000 sq. ft.	29 c	1.51 b
Potassium sulfate @ 2.6 lbs./1,000 sq. ft.	34 b	1.62 ab
Potassium sulfate @ 8 lbs./1,000 sq. ft.	43 a	1.78 a

The treatments employed in this study created a range in Mehlich-3 soil K and tissue K content. Different letters within columns indicate statistically significant differences according to Fisher's protected LSD_{0.05}.

TABLE 3

Treatment	Average daily growth	Average color index	Average visual quality
	g/m ²	1-999	1-9
Control	4.3 a	242 a	5.4 a
Calcium sulfate @ 1.3 lbs./1,000 sq. ft.	4.3 a	240 a	5.4 a
Potassium sulfate @ 1.3 lbs./1,000 sq. ft.	3.7 a	241 a	5.4 a
Potassium sulfate @ 2.6 lbs./1,000 sq. ft.	3.9 a	243 a	5.5 a
Potassium sulfate @ 8 lbs./1,000 sq. ft.	4.1 a	239 a	5.4 a

The treatments have not created significant differences in growth, color, or quality when averaged over the study period. Different letters within columns indicate statistically significant differences according to Fisher's protected LSD_{0.05}.

made the grass any greener, denser or faster growing. We're not saying that potassium isn't required. It simply means that we have not found the soil level at which problems become evident for this situation. The treatments that do not receive potassium fertilizer average about 20 ppm soil K (on the Mehlich-3 test), while the highest rate has reached an average of 43 ppm soil K.

However, in about two months of the year — March and April — this study gets interesting.

Beginning in 2014, we noticed differences in pink snow mold among the treatments. The snow mold was more severe on treatments that received potassium, and lower on non-fertilized treatments. We've observed this effect

each year, and each year has produced more snow mold pressure than the last (Table 4). The differences in snow mold damage are striking, and they're shown in Figure 1.

I am not familiar with another nutrient where high levels are so clearly associated with a negative impact, except for nitrogen, which we know can exacerbate biotic and abiotic stresses when over-applied. Ours also is not the first study to report increased snow mold damage associated with potassium fertilizers. Researchers at Cornell University and the University of Massachusetts reported increased incidence of gray snow mold with increasing potassium fertilization.

Potassium often is thought of as a

Continued on page 46

Continued from page 45

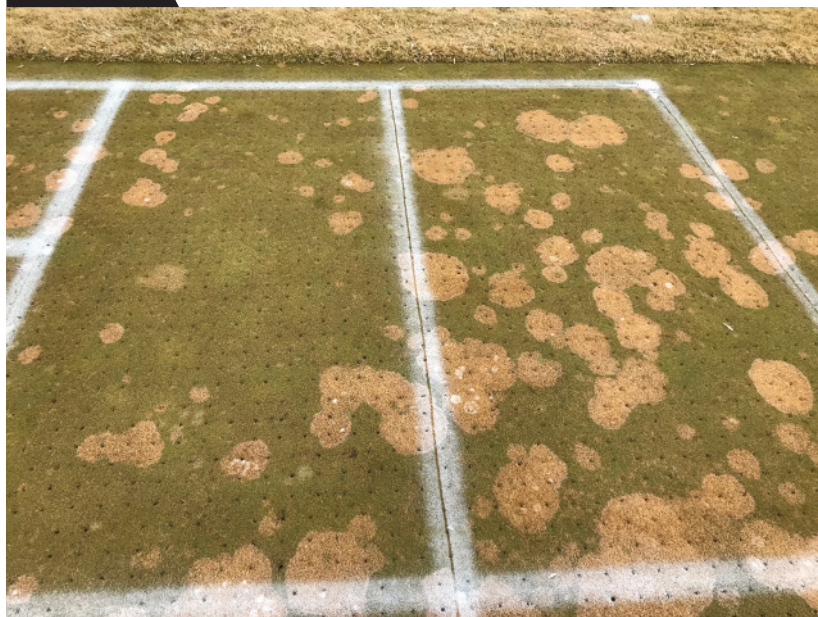
stress nutrient. It has been implicated in traffic stress, heat stress, cold stress and disease stress. I believe that this has led to the over-application of potassium fertilizers. Our work suggests that there may be negative consequences of excess potassium beyond the time and money wasted when an excess of the required minimum nutrient is applied.

Some have expressed indifference to these results because of the well-documented ability of fungicides to control snow mold disease. But a time may come when pesticide restrictions force managers to rely on ecological and cultural tools alone to manage pests. The more information we have, the better prepared we'll be.

It's important to highlight the specificity of these results to creeping bentgrass. Researchers at Rutgers have clearly documented that low potassium levels can result in increased winterkill and summer anthracnose damage to annual bluegrass (*Poa annua* L.). This is the frustrating aspect of soil test calibration work — the results may differ from one grass to the next, which further complicates the interpretation of soil tests.

However, on the bright side, I think these differing results have provided an opportunity to use potassium to manage for the type of grass that we want to maintain. If a golf course superintendent has a pure stand of creeping bentgrass, keeping potassium

FIGURE 1



The plot on the left has not received potassium for the past six years. The plot on the right has received 1.3 pounds of K_2O /1000 square feet annually during that period. The grass type is 'A4' creeping bentgrass maintained as a putting green on a sand-based root zone.

levels low may be a good strategy to keep annual bluegrass from invading. On the other hand, a manager with primarily annual bluegrass should use the latest data to make sure the potassium requirements of annual bluegrass are being met to minimize anthracnose and winterkill.

LESS POTASSIUM THAN EXPECTED

This study sheds light on potassium requirements of creeping bentgrass

grown on sand root zones. The amount of potassium required to maintain healthy bentgrass appears much lower than previously thought. Table 1 illustrates that the lowest sample was near 126 ppm, considered to be between medium or low in potassium. We are finding that superintendents can grow healthy creeping bentgrass on sand with as low as 20 ppm soil K. This is substantially lower than even the lowest current recommendation (Pace Turf's Minimum Levels for Sustainable

TABLE 4

Treatment	Spring 2014	Spring 2015	Spring 2016	Spring 2017
	%	%	%	%
Control	0.5 b	2.0 c	4.8 b	19.0 b
Calcium sulfate @ 1.3 lbs./1,000 sq. ft.	0.0 b	0.8 c	5.6 b	18.2 b
Potassium sulfate @ 1.3 lbs./1,000 sq. ft.	2.5 a	8.5 b	22.5 a	54.6 a
Potassium sulfate @ 2.6 lbs./1,000 sq. ft.	3.3 a	12.0 a	22.5 a	49.7 a
Potassium sulfate @ 8 lbs./1,000 sq. ft.	3.5 a	7.8 b	20 a	59.9 a

The treatments resulted in significant differences in pink snow mold (or microdochium patch). Different letters within columns indicate statistically significant differences according to Fisher's protected LSD_{0.05}.

Nutrition recommends keeping potassium at or above 42 ppm).

However, we know that potassium requirements depend on soil type and the grass species being grown. So, while I am confident that you can grow good creeping bentgrass with Mehlich-3 levels around 20 ppm on sand like ours, it's likely that the soil requirements would be different for annual bluegrass or bermudagrass (*Cynodon* sp.), etc. Please continue to support and encourage soil test calibration research as we continually work toward a greater understanding of the soil levels required to satisfy the varied turfgrass nutritional requirements.

References

Peck, T.R., and P.N. Soltanpour. 1990. The principles of soil testing. P. 1-8. In R.L. Westerman et al. (ed.) Soil testing and plant analysis. ASA, CSSA, and SSSA, Madison, WI. Schmid, C.J., J.A.

Murphy, B.B. Clarke, M. DaCosta, and J.S. Ebdon. 2016. Observations on the effect of potassium on winter injury of annual bluegrass in New Jersey in 2015. *Crop, Forage & Turfgrass Management*. DOI: 10.2134/cftm2015.0170.

Turner, T.R. and D.V. Waddington. 1978. Survey of soil testing programs for turfgrasses. *Communications in Soil Science and Plant Analysis*. 9:71-87.

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

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

Ad Index

Companies featured in this issue

ADVERTISER	PAGE
BASF	5
BASF	15
Compass Minerals	CV3
Control Solutions Inc	3
Cub Cadet	CV4
Ecolawn Applicator	42
Jacobsen	7
Mi-T-M Corporation	41
PGI/Gordon Corporation	FS2, FS3, FS4, FS5, FS11, FS16
Plant Food Company Inc	42
POGO Turf Pro	4
Seago Int'l Inc	39
Smithco	CV2-p1
Syngenta	CVRTP, 10-11
Vitamin Institute	47
Wilbur-Ellis	36
Z Line Products	47

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.



SUPERthrive®
Your Essential
Turf Tool!

SUPERthrive® ~ the secret to abundant summer sports turf.

SUPERthrive® Features

- Unique vitamin solution with kelp
- Non-toxic ingredients

SUPERthrive® Benefits

- Restores plant vigor
- Reduces transplant shock

Always Ahead in Science and Value
(800) 441-8482 | Visit our New Website! www.SUPERthrive.com



Z LINE
Bunker Systems

Show your bunkers some love with our affordable liner kits!

800-369-8451
www.zlineproducts.com

Summer heat and the frustrations that follow

Every summer, cool-season grasses on putting greens decline and performance suffers because of heat stress at some or many locations in the country. How widespread the turf decline and how severe a problem it represents depends entirely on the weather. The hotter the weather and the duration of the hot weather determine how much the turf suffers — and if a superintendent's job is in jeopardy.

It's the superintendent's job being in jeopardy that aggravates me. For the life of me, I can't figure out why someone would fire a superintendent over marginal turf performance during prolonged hot weather. Nobody can control the temperature outside. Superintendents typically aren't fired when cold temperatures kill turf. Everyone realizes and understands that nobody controls the temperature during the winter, and people accept the consequences of dead or injured turf. Why can't those in leaderships roles at golf courses follow the same logic and understand that cool-season grasses on greens sometimes thin out and occasionally die when it gets hot and stays hot for an extended period.

One of my most frustrating experiences as a turfgrass Extension specialist during my time at Purdue University was when superintendents would call me during an exceptionally hot, humid Indiana summer seeking advice on how to get their cool-season grass greens through the stress. I would respond with the usual suggestions: raise the mowing height, alternate days of mowing and rolling, skip mowing altogether, provide sufficient but not excessive nutrients, adequate but not abundant water, control traffic from golfers and maintenance equipment,

avoid topdressing during extreme heat, use fans if available and apply a bios-timulant (which are more effective if applied before the stress begins).

“It is time for an education offensive regarding heat stress damage to cool-season grasses.”

After I'd gone through the list of suggestions, the usual response was that the superintendent had done all that, except the fans, and fans were not realistic for their situation. And after my list above, I had nothing. I'm afraid that even today the list of suggestions to manage cool-season grasses during heat stress is not as long as anybody would like it to be.

It is time for an education offensive regarding heat stress damage to cool-season grasses. We need to communicate that all the recognized practices to manage turf during heat stress have been taken. We all need to explain that more water doesn't reduce heat stress and excess water makes heat stress

more lethal. Heat stress and drought stress are different. While they may sometimes occur together, they need to be managed differently. When trying to explain the difference between heat and drought stress, I ask people if they have ever been hot but not thirsty. The answer usually is yes, and that cooling off takes moving into the shade or into an air-conditioned building to cool off. But because turf can't move into the air conditioning, it has to suffer through the heat and will decline even if supplied with adequate water.

In all communications regarding management practices to minimize damage during heat stress we need to include the message that at some point doing nothing beyond sound agronomic practices is the best approach. That there is no magic answer to coping with heat stress on cool-season grass putting greens is an important realization for golfers, superintendents and scientists to accept.

We all know summer stress is coming to a cool-season grass putting green near us. The time is now to get ahead of the problem and let golfers and leadership know that all accepted steps have been or are being taken to minimize damage, but if the temperatures get high enough and last long enough, the turf is going to suffer and performance will decline.



Clark Throssell, Ph.D., loves to talk turf. Contact him at clarkthrossell@bresnan.net.

Defending Our Turf

Congratulations to the *Golfdom* editorial and design teams on another haul of TOCA Awards!

Golfdom

The *Golfdom* team once again led all golf market publications with 16 total Turf & Ornamental Communicators Association (TOCA) awards — matching the number won by *GCI*, *GCM* and *Superintendent* combined!



TOCA First Place Awards

- » **Design**
Printed magazine/two-plus page design, advertising: “Hole of the month”
Grant B. Gannon, Pete Seltzer
- » **Photography, Video And Multimedia**
Best single photo – Use of stock art “The sky is the limit” Pete Seltzer
- » **Photography, Video And Multimedia**
Best single photo – created by a TOCA member or freelancer commissioned by a TOCA member “Pay up or go home,”
Seth Jones
- » **Photography, Video And Multimedia**
Best print magazine cover (stock photos, commissioned art, illustrations, typography, etc.) “So you’re considering the dark side,” James Bennett, Seth Jones, Pete Seltzer
- » **Special Projects**
Writing for special projects “A tribute to the king” Seth Jones, Pete Seltzer, Grant B. Gannon, Mark Woodward, Joel Jackson, Steve Wright, Karl Danneberger
- » **Special Projects**
Miscellaneous special publishing project “The Fall Classic, Early Order Program special” Seth Jones, Pete Seltzer, Grant B. Gannon, Jared Nemitz
- » **Special Projects**
Special Event – Publishing “The Golfdom Summit” Kevin Stoltman, Pat Roberts, Seth Jones, Bill Roddy, Craig MacGregor
- » **Writing**
Turf feature article – commercial publications “The admiral of ultradwarf,”
Seth Jones
- » **Writing**
Product information article – commercial publications “Hidden beneath the GIS waves,” Ed Hiscock, Grant B. Gannon
- » **Writing**
Headline writing – commercial publications “In-tents course management,” Curt Harler



TOCA Merit Awards

- » **Design**
Cover page design – printed magazines
Page 15 – “The sky is the limit,” Pete Seltzer
- » **Photography, Video And Multimedia**
Portrait/Personality (photo of individual or group of individuals) “Game on!,” Pete Seltzer, Matt Hawthorne
- » **Writing**
Series of columns by regular department columnist – commercial publications
“Keeping up with the Jones,” Seth Jones
- » **Writing**
Product information article – commercial publications “What’s new at GIE+Expo,”
Seth Jones
- » **Writing**
Operations profile – commercial publications
“Reverse the Course,” Chris Lewis



Gardner Award – “Best of Show”

Photography, Video and Multimedia – Publishing
“So You’re Considering the Dark Side” *Golfdom*, North Coast Media, James Bennett, Seth Jones, Pete Seltzer

The Shop

// MUST-HAVE NEW EQUIPMENT



1

2



3

1 Rear-Tine Tiller

This Rear-Tine Tiller from **YARDMAX** has a 208cc Briggs & Stratton engine with 9.50 ft-lbs gross torque and 190-rpm rotational speed. The unit provides one-handed control, while counter-rotating tines break up hard ground and deeply till the soil, according to the company. Its transmission has a self-propelled drive system and offers one forward and one reverse gear.

The 18-inch rear-tine design has seven depth adjustments and a 6.5-inch working depth. The 13-inch tines are self-sharpening, and there are AG treads on the 13-inch pneumatic wheels.

yardmax.com

2 Fusion 2.5

With its patented three-pronged metal retractable system in a switchblade design, the Fusion 2.5 makes ball mark repairs easier for golfers and continues to help reduce pitch mark repair damage to greens. The user pushes the three prongs in and out of the affected area, restoring the ground and relieving compaction simultaneously. The product, from **PITCHFIX**, comes in 14 color options and features an ABS rubberized handle, built-in pencil sharper and removable 1-inch ball marker.

pitchfixusa.com

3 RolleyGolf

The RolleyGolf from **ROLLEY** is an electric cart with a lithium battery that lasts 36 holes on a single charge and allows golfers to select from two modes while they play a round. In "Walk Mode," players can steer the power-assisted cart with the handles or link it up to their smartphone or tablet to control remotely. In "Ride Mode," the RolleyGolf will transport golfers up to 15 mph around the course. Its design has a naturally low center of gravity that provides stability for the rider, while the unique steering system allows for fluid directional transitions.

rolleygolf.com



4



5



6

CHECK OUT MORE NEW EQUIPMENT ONLINE

To stay up to date on all the latest products and services, visit golfdom.com/category/products

4 | Contour Mower

VENTRAC'S Contour Mower features an 83-inch working width, making quick work of any mowing job around waterways, slopes, hills, low spots and uneven terrain without sacrificing quality of cut, according to the company. Three independent floating decks glide over slopes and around dips, following the contour of the terrain. The side decks flex 40 degrees to prevent scalping and gouging. The MJ840 also features full-length rear rollers for stand-out stripes, rear discharge and a flip-up deck design for cleaning and service.

ventrac.com

5 | Spider ILD02

The radio-controlled slope mower Spider ILD02 is designed for the maintenance of flat and uneven terrain with slopes of up to 40 degrees. The 4-wheel drive system from **DVORAK** is powered by a 24-hp Kawasaki engine and has a cut width of 48.5 inches. A remote controller with a range of 100 meters guides the unit, which weighs in at just over 800 pounds. With the controller, the user can start and switch off the engine, preset the travelling speed range, adjust the height of cut and shut down the whole system in an emergency.

slope-mower.com

6 | MaXimus aeration

The MaXimus aeration service from **DRYJECT** uses a high-speed, water-based injection system to blast aeration holes through the root zone to fracture the soil. The patented vacuum technology simultaneously fills holes to the surface with high volumes of sand or amendment, with up to 22 tons of sand per acre. This process can relieve compaction, increase water infiltration, reach the root zone with oxygen and amend your soil with high volumes of material, all at the same time, according to the company. DryJect is a service, so there is no equipment for superintendents to buy or lease.

dryject.com

The 19th Hole



Mark Semm

SUPERINTENDENT // The Clubs of Cordillera Ranch, Boerne, Texas



Mark, wait... you went to Iowa State? I transferred (to ISU) in '96, graduated in '98. I started out in Minnesota, played some basketball there... I decided I wasn't going to be the next Michael Jordan, so I had to grow up.

Man, I had no idea you were a Cyclone. But OK... what can I get you? I'll take a Makers and Seven.



So now you've got screws in your ankle... I broke my ankle playing baseball with my boy. Now I've got tension wire in my ankle... it's like when you have tension wire to keep a foundation from cracking!

Is this your worst sports injury?

I've never had a broken bone before. It's humbling. Today was my first day back in three weeks... I'd be lying if I didn't tell you I was worried — was I broke past the point of the 30-day exchange limit? I think the one thing I'll learn out of this, with two kids... stop and take a breath and appreciate things.



"MY CREW STEPPED UP TO THE PLATE (DURING MY ANKLE INJURY). I HEARD FROM THEM EVERY ONCE IN A WHILE, BUT I REALLY HAD TO FOCUS ON MYSELF. AND NOW TODAY, MY FIRST DAY BACK... MY RIGHT-HAND MAN, CASH, PICKED ME UP AT THE HOUSE TO GET ME TO WORK TODAY."



What sports teams do you pull for?

I'm Cubs, Bulls, Blackhawks. I grew up just north of Chicago in Zion, Ill. They're my hometown teams. I spent more time my senior year of high school in the bleachers at Wrigley than I did in school.

So what did you do when the Cubs won it all last year?

I was here at the house with Meg... she was conked out. When we won it, I jumped straight up in the bed and I broke our ceiling fan. I'm not going to lie, I was in tears.

How did you and Meg meet, anyway?

We met in Dallas, she was living in Wilmington, N.C., finishing her Masters... it was a wedding set-up. We walked down the aisle together. It's going to be 13 years this fall. We have a daughter,

Kaitlyn, a dance fanatic, and a son, Ryan, a baseball nut.

Tell me about the first and second time you met Arnold Palmer.


I am humbled to talk about my time spent at Augusta, but... when I was an intern, I was on 13 green. Palmer, Nicklaus and Player are coming through. I got off to the side. I was a ways away, but Palmer starts walking towards me, which made me nervous. He introduced himself, and I was like, "Oh, (expletive)." We talked Iowa State for a minute... I came back to Augusta the next year as an assistant. Those same three are coming down No. 15. Mr. Palmer sees me and says — like it was yesterday — "Hey Mark! Weren't you here last year? How's Iowa State? Did you graduate?"

As interviewed by Seth Jones, May 23, 2017.

STANDING UP TO STRESS

Why Golf Course Superintendents Are Making the Switch to Protassium+

Many golf course superintendents supply their courses with fertilizers that contain high levels of potassium and chloride. While high potassium content is beneficial, high chloride content often leads to turf burn and increased stress. To avoid the detrimental effects of chloride, golf course superintendents have turned to **Protassium+™ premium sulfate of potash**, a premium K source with more to offer.

	 PROTASSIUM+®	Muriate of Potash
CHLORIDE	Less than 1%	47%
SALT INDEX	0.85 per unit of K₂O* Lowest of all major potassium sources	1.93 per unit of K ₂ O
SULFATE SULFUR	17%	0%
POTASSIUM	50%	60%
VERSATILITY	Turf Granular Mini Granular Greens Grade Soluble Fines	Limited
ORGANIC CERTIFICATION	OMRI CDFA	No
BEST VALUE	✓	X

Contact your local retailer or Compass Minerals at 800.743.7258.



PROTASSIUMPLUS.COM



THE NEED FOR POTASSIUM

Healthy and resilient turfgrass thrives on potassium. Without proper potassium applications and replenishment, turfgrass appearance and durability can be greatly compromised.



THE ADDED NUTRIENT

Known as the 4th major nutrient, sulfur serves many essential functions in turf growth, such as chlorophyll formation and enzyme activation¹. With Protassium+, turfgrass receives 17% of readily available sulfate sulfur, which is often tied-up in the soil.



IMPROVED RESILIENCY

With unpredictable weather conditions and heavy foot traffic, durability and strength are necessary. Potassium activates over 80 plant enzymes that support the physiological development and durability of turfgrass².



A SAFER K SOURCE

Protassium+ has virtually no chloride and the lowest salt index per unit of K₂O as compared to any major potassium fertilizer. It is one of the safest K options for turfgrass and can be applied worry-free all year round.



*Lower salt index has higher level of safety.

©2017 Compass Minerals. All rights reserved. ¹ Stewart, Dr. W.M. (Mike), "Sulfur—The 4th Major Nutrient," IPNI Plant Nutrition TODAY, Spring, 2010, No. 7, www.ipni.net/prnt

² "Turf + K," Compass Minerals, Web. <http://www.protassiumplus.com/turf>

TRUEEDGE

THE EDGE YOU WANT. EVERY TIME.



THE TRUEEDGE ADVANTAGE

- Maintain the architectural integrity of the green's true edge
- Simple, easy to see display precisely guides the operator
- Quickly mounts to most walking and riding greens mowers



CUBCADETGOLF.COM/TRUEDGE

Cub Cadet