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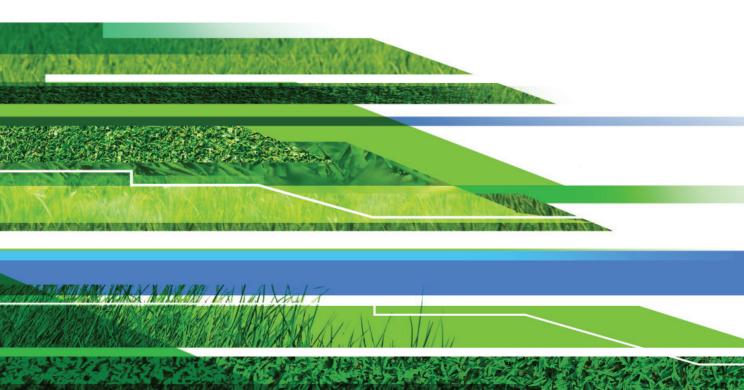


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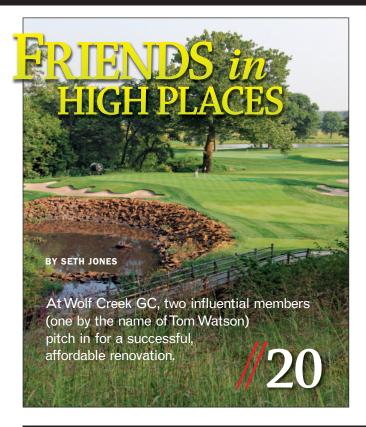
VOL. 71 // NO. 9

Golfdom/09.15

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











COLUMNS

// 6 Keeping up with The Jones—Seth Jones

// 12 At the Turn—Mark Woodward

 $/\!/\,14\,$ I'm Just Saying—Steve Wright

// 44 The Turf Doc—Karl Danneberger

// 46 Clark Talks Turf—Clark Throssell

SCULPIN

//43



DEPARTMENTS

//8 Starter

 $/\!/\,10\,$ Golfdom Gallery

 $/\!/\,16$ The Golfdom Files

 $/\!/\,48\,$ Professional Grade

 $/\!/\,54$ The 19th Hole

SUPER SCIENCE

// 43 Spray nozzle and fungicide mobility effects on microdochium patch

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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 Hiscock

SR. DIGITAL EDITOR Joelle Harms 216-706-3780 / jharms@northcoastmedia.net

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

CONTRIBUTING EDITORS

Karl Danneberger (*Science*), Joel Jackson, Matt Neff, Clark Throssell (*Research*), John Walsh, Anthony Williams, Mark Woodward, Steven Wright

BUSINESS

CLEVELAND HEADQUARTERS
1360 FAST 9TH ST. SUITE 1070. CLEVELAND. OH 44114

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

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

 $\begin{array}{ll} \textbf{ASSOCIATE PUBLISHER} & Bill\ Roddy \\ 216\text{--}706\text{--}3758\ /\ broddy@northcoastmedia.net} \end{array}$

NATIONAL ACCOUNT MANAGER Craig MacGregor 216-706-3787 / cmacgregor@northcoastmedia.net

ACCOUNT MANAGER Jake Goodman 216-363-7923 / jgoodman@northcoastmedia.net

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

MGR., GOLFDOM SUMMIT Ryan Bockmuller 216-706-3772 / rbockmuller@northcoastmedia.net

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

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

DIGITAL OPERATIONS MGR. Bethany Chambers 216-706-3771 / bchambers@northcoastmedia.net

WEB DEVELOPER Jesse Malcmacher 216-363-7925 / jmalcmacher@northcoastmedia.net

MARKETING/MAGAZINE SERVICES

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

SUBSCRIBER, CUSTOMER SERVICE 847-763-4942 / golfdom@halldata.com

CORPORATE

PRESIDENT & CEO Kevin Stoltman

VPOFFINANCE & OPERATIONS Steve Galperin
VPOF GRAPHIC DESIGN & PRODUCTION Pete Seltzer
EDITORIAL DIRECTOR Marty Whitford

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"I believe if I had met (Jeff) Burey 30 years ago, I'd be less of a mess on the golf course than I am today. I say this based on my son's recent appearance at the range."

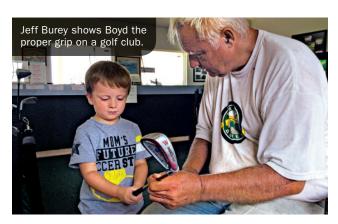
SETH JONES, Editor-in-Chief

A good start for Boydee

was a few days away from my fourth-ever round at Pinehurst No. 2, and I was near rock bottom. If you played golf with me this summer, you know what I mean. ¶ And I apologize to those kind folks who had to endure my golf game: Wayne Kappelman (at Half Moon Bay), Troy Flanagan (at the Olympic Club) and my friends at North Coast Media (at both Chagrin Falls CC and Nemacolin Woodlands Resort.) You're all good people and don't deserve to have to play golf with the player that I was. I probably should send flowers, but I'm not going to.

So I crawled back to my golf coach, Jeff Burey at Twin Oaks Golf Complex in Eudora, Kan. I've written about Jeff before. He has had a celebrated career in golf, including, coincidentally, a stint as the head golf pro at Pinehurst Golf & Country Club in the late 1970s/early 1980s.

It doesn't matter if I'm playing the Annual Eudora Pitch & Putt Classic or a round at his favorite course in the world, Pinehurst No. 2, Jeff is eager to help me. Jeff is a *Golfdom* fan, and I think he enjoys that of all the driving ranges in the world, I ended up on his. It was Jeff who arranged this month's cover story on Wolf Creek, where he was the head pro for more



than two decades.

So when I came to see Jeff in a panic recently, he was happy to help.

Jeff is the kind of golf coach that anyone would be lucky to meet. He's enthusiastic ("Great grip!") and philosophical ("You have to kill the pig.") He's a worrier (Recent

quote: "I know you've been traveling, I know you've been playing and I know I haven't seen you.") He's a big believer in youth golf (see Starter, page 8.) And most of all, he's a friend.

I believe that if I met Burey 30 years ago, I'd be less of a mess on the golf course than I am today. I say this based on my son's recent appearance at the range.

As I was stepping out the door to hit the range recently, my wife encouraged me that it would be good to get our 3-year-old boy, Boyd, "out of the house."

That's all fine and good, but how long is a 3-year-old going to let anyone hit balls?

I grumbled this out loud to Jeff. He and his wife, Cathy, weren't having it.

Turns out "Boydee" got more of a lesson than I did. It started with him underhandtossing Velcro tennis balls at a target (I'm not going to lie — my kid was money. I think he could have even taken a few bucks off the 6-year-old he was playing with if he understood the concept of money.) Before I knew it, Jeff and Cathy were shooing me out the door so I could hit balls while they worked with their new student.

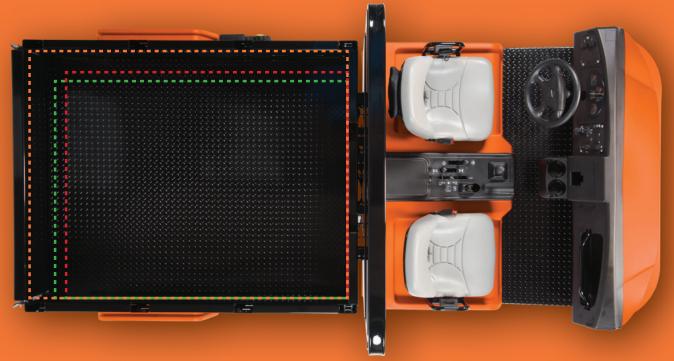
Jeff came outside and watched me hit — after mowing greens, fairways, picking range balls and fixing an irrigation leak — to talk about swing thoughts and where my head should be as I step up to No. 1 tee at Pinehurst No. 2.

After we left, my son wouldn't stop talking about his first day at the golf range. He even told his mom, "Mom, I'm a really good golfer."

So he's already exaggerating how good he is. Clearly, Boydee is off to a good start.

Contact Jones at sjones@northcoastmedia.net or via Twitter @SethAJones.

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//INVESTMENT IN THE FUTURE

KANSAS SCHOOL DISTRICT TO IMPLEMENT 'SNAG IN SCHOOL'

The Shawnee Mission (Kan.) School District and the Midwest Section of the Professional Golfers' Association (PGA) will partner to bring a new program to Shawnee Mission students.

The Midwest Section of the PGA's "Starting New at Golf (SNAG) in School" program will be part of the Shawnee Mission School District physical education curriculum starting this fall. Matthew Johnson, director of student activities and athletics, reports that more than 20,000 students in elementary and middle schools have the chance to learn golfing skills through the SNAG in School program.

"We are very grateful to the Midwest Section of the PGA for providing this opportunity for our students," says Johnson. "SNAG in School will enrich (students) and provide a new element to our physical education programs, and supports the Shawnee Mission School District's ongoing efforts to promote activity and a culture of wellness in our schools."

The program funded through a grant from the PGA's Midwest Section, will provide equipment to help facilitate this in-school activity. Shawnee Mission physical education teachers began working with professional golf coaches in early August to learn how to teach SNAG in Shawnee Mission schools.

"We are looking forward to the upcoming teacher training event," says Jeff Burey, Midwest PGA director of golf in school programming. "It is so fun to feel the energy and see the enthusiasm at the workshops."

Two Shawnee Mission (Kan.) **School District** physical education teachers work on their golf swings and learn from PGA professionals how to implement "SNAG in School" in their respective classes.



//INSERT LAWYER JOKE HERE

GCSAA HIRES D.C.-BASED LOBBYIST

The Golf Course Superintendents Association of America (GCSAA) has hired Robert Helland in an effort to increase its golf industry presence with policymakers.

Helland, who served as the GCSAA's Washington, D.C.-based federal lobbyist from the law firm of Reed Smith LLC for the past 10 years, joins the GCSAA as

director, congressional and federal affairs. He will work directly for Chava McKeel, **GCSAA** director of government affairs, with the objective of strengthening GCSAA's full-time communication with policymakers in Washington.



"We are fortunate to have someone with Bob's background and expertise join the association to add important member value and help take our advocacy efforts to the next level," says Rhett Evans, GCSAA chief executive officer. "It is critical that we have a consistent presence on Capitol Hill and in Washington, D.C."

//PUTTING THE "COO" IN COOL

TORO PICKS OLSON AS PRESIDENT AND COO

The Toro Co. has elevated Richard M. Olson to the position of president and chief operating officer (COO).

Olson has served the company in various roles throughout his 29-year

"The rich company knowledge and broad experience that Rick has gained through his leadership of both our businesses and manufacturing operations provide him with the unique strategic perspective that will be instrumental in helping us drive toward our... goals and beyond," says Michael J. Hoffman, Toro's chairman of the board and chief executive officer.

Olson holds a bachelor's degree in industrial technology from Iowa State University and an MBA from the Carlson School of Management at the University of Minnesota.

8 // **Golfdom** September 2015 Golfdom.com

Starter









NEFF HITS ANOTHER PIN

The regular contributors are starting to get a little jealous of Matt Neff, author of our "Assistant Living" column. It seems that Neff's column, in golf terms, keeps winning "closest to the pin."

This time, it's in response to his August 2015 column, "You might be a turf guy if..." where he channeled his inner Jeff Foxworthy. Some reader emails:

Matt

Nailed it! Very funny and relatable. I read your column to my wife, and she was like, "Yep, yep, yep..."

—Gary Deters, Superintendent Saint Cloud CC

Matt.

Great article, you really nailed all nine of your topics! As I was reading it, I thought I was the author. I rubberneck the same dang course every day; I need to start looking away.

—**Steve Hammon, Superintendent** Traverse City G&CC

Then the column topic caught fire on Twitter, where readers started volunteering their own "You might be a turf guy if..." examples, such as:

You triple-rinse your empty laundry detergent bottle at home and slice it.

—**Dave Braasch** (@gegcsupt)

...You're the only one smiling when it's raining on the 4th of July.

—**Tony Gustaitis** (@tonygus)

...You get dressed in the dark so you don't wake your family up.

—Chris Zugel (@czugel)

You have 99 problems, but enough golf shirts ain't one!

—**Robert Searle** (@Searle_Turf)

Email (or tweet) us your best "You might be a turf guy if..." lines. We'll post the best on Golfdom.com and send out Golfdom hats to our favorites. And Matt? Keep up the good work. (Now if we could just get him to send us a better photo of himself...)



Nemacolin breaks ground on Dye expansion

By Joelle Harms, Senior Digital Editor

Nemacolin Woodlands Resort in Farmington, Pa., held a groundbreaking event recently to announce plans to expand its Mystic Rock golf course with a \$6 million, nine-hole addition. Pete Dye, who designed the original Mystic Rock course, designed and will oversee the new addition.

Mystic Rock opened for play in September 1995 and underwent extensive renovations in 2004.

Jennifer Jubin, Nemacolin Woodlands' general manager; Dye; Joseph Hardy, Nemacolin's founder; and Maggie Hardy, Joseph's daughter and president and owner of Nemacolin, were in front of the press at the event to answer questions on the project.

The addition will stay true to the architectural design of Mystic Rock's original 18 holes, Dye said.

"Environmentally, we've set this thing up on a mountain, like nothing that has ever been done in this state," Dye said.

Eighty percent of the golf course will be established from seed, with greens, tees and fairways seeded with improved varieties of bentgrass. The primary rough will be sodded with bluegrass, and the secondary rough will be seeded with a low-maintenance Scottish fine fescue blend.



Groundwork on the addition began in December 2014, and construction began in August. The new holes are scheduled to open for play in July of 2017. Alan Fike is the director of golf and grounds at Nemacolin Woodlands Resort, and Andy Bates is the superintendent. Greg Iversen is the construction superintendent.

Golfdom.com September 2015 Golfdom // 9

Atypical tourist The privilege, nay, the honor, of planting the flags before Thursday morning's round was bestowed upon John Reid, assistant greenkeeper of The Duke's, St. Andrews.

Beauty shot While taking shelter from the rain (L to R) Brandon Wildt, Chicago GC; Brandon Bannow, Lakewood Estates CC, Lake Geneva, Wis.; David Blair, Quail Hollow CC, Charlotte, N.C.; Brandon Hicks, Quail Hollow CC; Joe Schneider, Maple Meadows GC, Wood Dale, III.; and Graeme Roberts, Camberley (Surrey, United Kingdom) Heath GC, pose for a photo.

Hitchin' a hayride There were bunker rakes galore on this hayride as volunteers ride to work on some of Whistling Straits' more than 1,000 bunkers.

Mow-torhead Precision is key when it comes to major tournaments. The second cut at the PGA Championship was maintained with four staggered mowers.

Leisure reading Fresh-off a midmorning nap and while waiting for dinner to be served, this crew member escapes into a Golfdom magazine.

On parade The traditional evening maintenance cart parade takes a brief pause to listen to directions. We're pretty sure they were being asked who wanted ice cream.

Lakeside view Rising early can pay off, like this view we got of the Jacobsen fairway mowers on the Lake Michigan-neighboring hole No. 8.

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10 // **Golfdom** September 2015

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Coco Fiber Drag Mat (Above) - Perfect for all playing surfaces. Resilient fibers 1 1/4" bond to vinyl-reinforced back of mat. Available in two sizes (4' x 6' and 3' x 5'). Includes 10' chain that hooks up to any vehicle.

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At the Turn

ONLY AS GOOD AS THE WEAKEST LINK



"It's well known in our business that the positions on our maintenance crews are not the highest paid positions, and it is extremely difficult to support a family on these wages regardless of what part of the country you live in."

MARK WOODWARD, Contributing Editor

Return on investment

ne of the most challenging parts of a golf course superintendent's job has nothing to do with turfgrass management. It's building a strong team of employees that you trust and that wants to stay with you for extended periods of time. Maintaining a consistent, trained staff is crucial to your success as a superintendent because you and your operation are only as good as your weakest link.

It's well known in our business that the positions on our maintenance crews are not the highest paid positions, and it is extremely difficult to support a family on these wages regardless of what part of the country you live in.

So for the sake of this column, let's assume you have finally secured an awesome staff of employees, and for all intents and purposes your maintenance operation is clicking along on all cylinders. The key now is how to motivate them to stay with you and continue to be productive, particularly during a hot growing season that drags on and ultimately zaps their energy and production.

Depending on where you're located, this can be difficult,

and it takes some serious thought and dedication on the part of management at any golf course.

Most important is to give your employees, who are working hard for you, the necessary resources to succeed, survive and thrive while they're working outdoors in trying weather conditions. They need the proper uniforms and equipment to protect them from the sun and/ or cold, as well as proper protection as they work around high-powered equipment that can be dangerous if not taken seriously. They need hats, gloves, sunscreen and protective footwear, depending on their specific job.

We all know these employees get up early in the morning and run high-powered hydraulic equipment in adverse conditions, sometimes six or seven days a week. It's not an easy job.

Just as important as giving them the resources they need to succeed is giving them the respect and appreciation that is many times more important to employees than their hourly wage. These maintenance employees truly are the lifeblood of your team. So how do you do this?

Some of the following have been successful for me:

- Regular company-paid for lunches
- Holiday gift certificates
- Golf hats/shirts with the golf course logo so they can wear them with pride
- End-of-the-year golf outing

for employees only

- Additional training for employees who show a penchant for promotion
- Promote-from-within opportunities
- Hand-written thank you notes
- The old fashioned pat-on-theback for a job well done
- Public recognition in front of other team members or in the course newsletter

We too often get caught up in our own worlds, specific jobs, board of directors, etc., and we forget to thank and recognize these members of our team. It doesn't matter if you operate maintenance year-round in the southern portion of the United States or if you're in the northern region and use seasonal staff during the summer, it is critical to keep staff motivated. The fact is, almost all courses operate on some kind of year-round basis, albeit in some cases with a limited staff.

Neglecting to show appreciation for your staff most likely will result in excessive turnover and reduced production. It also makes it extremely difficult to manage your staff to its full potential.

There are many things you can do to constantly motivate your employees that don't cost a great deal of money. Include these as budgeted line items. It's that important, and it can provide a huge return on investment with relatively minimal expense.

Mark Woodward is a senior vice president for OB Sports, principal of Damarco Golf, president of Mark Woodward and Associates and a contributing editor for *Golfdom*. He can be reached at mwoodward@obsports.com.



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"My life has been changing since I was very young; parents divorced, moved nine times before high school, then college (two moves) and now five moves for five different jobs."

STEVEN WRIGHT, CGCS, Pine Tree GC, Boynton Beach, Fla.

Embracing change

here have been a lot of job changes here in south Florida so far in 2015. I count more than 15 so far. The job carousel really has been spinning down here. Heck, I even got caught up in it myself. I believe each job change has brought about many positive results for the involved golf course management staffs and the clubs they work for.

Our industry tends to be slow to change. Just ask the salesmen trying to sell you something new. "If it ain't broke, don't fix (change) it." Whoever said that wishes for a nickel every time it's repeated. But if that statement were totally true, we would still be fertilizing with NHSO4 and spraying Daconil. OK, so those aren't great examples.

Superintendents actually deal with change very well. Back nine shotgun start at 7:45 a.m.? Got that. Four guys call out on a busy day? No problem. Seriously, just think about the weather. It changes all the time. We deal with it.

One of my career high-

lights was working for a Top 100 golf course. Serious golfers, if you know what I mean. I loved it for 10 years. But it turns out that even serious golfers can and do get in each other's way.

Lo and behold, the decision makers decided it was time for a change in general managers. The inevitable happened and we all had to deal with it. In his first staff meeting the new GM handed out the book "Who Moved My Cheese," by Spencer Johnson, M.D. It's quite the popular book and has been published in 37 languages and sold more than 26 million copies worldwide. It's a business fable, but we all thought it was business

BS. Most of us saw it as an insult, and some like me saw it as a way to "reorganize." Real or not, I felt it the most and I decided to make a change. Boy, what a change I got into.

The club I went to wanted full-scale change to the golf course management operations. This change affected a lot of the then-current staff. It had to be done. It was one of the reasons I was hired. This job change was tougher on the family. My wife and I knew it would be. I moved my family 500 miles away from home. It changed our lives in so many ways, and we are all stronger today because of that change.

But change is nothing new for this kid from Alpena,

Mich. My life has been changing since I was very young; parents divorced, moved nine times before high school, then college (two moves) and now five moves for five different jobs.

Now I've changed jobs again, and weirdly enough, we don't have to move. I've set a personal record, 12 years in the same house!

I wasn't looking for change every time things have changed. I was satisfied, but change came to me. I've learned to trust and embrace change through my faith. I trust these changes have a greater purpose. If not for me, than for someone close to me or someone I've not yet met.

Do I like all this change? Yes and no. It feels unnaturally natural. More often than not, superintendents are not looking for change, except maybe in that old equipment fleet.

Remember that your change also creates something new for everyone else. Your new staff eventually will embrace you if you bring positive changes to them.

I recommend proceeding cautiously with change. Career opportunities need to be well thought out. A job change can be exhilarating and life changing for everyone involved. Families are affected for sure, usually in positive ways, especially if it's a positive change for you.

Steven Wright, CGCS, is golf course superintendent at Pine Tree GC in Boynton Beach, Fla. He can be reached at steven_wrightcgcs@ pinetreegolfclub.net or followed at @wrightsteve19.

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FROM THE ARCHIVE

If you look into the archives of *Golfdom*, some pretty heavy hitters have been published in the magazine. In the March 1955 edition, Penn State's H. Burton Musser wrote on the topic of fertilizers. ¶ Musser stated that between 1948 and 1955 there were 25 articles printed on fertilizer issues in "popular magazines," and 33 major talks were given on the subject at conferences. In addition, another 50 papers in technical publications dealt with some phase of fertility that had a direct bearing on turf. ¶ From that collection of information he noticed that most authors and speakers agreed on basic technological principles and the way those principles should be applied. Musser put together those agreed-upon principles, and we have condensed them below. To read the full article visit **golfdom.com/exclusive.**

Controlling factors

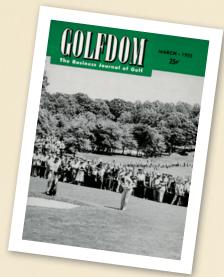
BY H. BURTON MUSSER

n analysis from this standpoint of what has been said and written shows that our knowledge of the subject can be classified into five main concepts, or groups of facts and procedures. These are the controlling factors in successful fertilizer use.

- The tremendous influence of the soil on the kind, quality and effectiveness of the fertilizers we apply.
- 2. The specific differences in the fertilizers themselves.
- 3. The way in which grass uses nutrient materials.
- 4. The procedures and practices best adapted to conform with and take advantage of the above technological facts. And finally,
- 5. The economic considerations involved. Cost always is a factor in any fertilizer program.

RELATIONSHIP TO SOIL CONDITION

To further emphasize this dependence of maximum fertilizer utilization on basic principles, let's look at its relationship to soil physical condition. When fertilizer is



applied to established turf, the only way in which it can get into the soil is to be dissolved in water and carried down. This is true whether it is applied in dry form or as a liquid in which it is in solution. If water does not penetrate because of heavy thatch or surface compaction, the fertilizer cannot do so. Unless it gets into the soil where roots can absorb it, it is of little value. Under such conditions the best correction is opening channels for its penetration by mechanical methods.

COMPLICATIONS OF WEED PROBLEM

Weeds are another important consideration. Heavy infestations of Poa annua or crabgrass on greens and fairways tremendously complicate the fertilizer picture. It is not good technique to apply fertilizer at times when the weeds are growing best and will make more effective use of the fertilizer than the grass. There is no question but that there have been instances when the weed problem was intensified in this way. The solution, however, is not simple. There are many times when fertilizers must be used to keep the grass in condition so that it will be better able to combat weed invasion, even though there is danger of weed stimulation. Where this is a serious problem, often, we get the most out of fertilizers only when they are used in connection with herbicidal treatments which will eliminate the weeds or set them back to such an extent they cannot compete.

COST FACTORS

Any discussion of getting the most out of fertilizers cannot ignore the cost factor. The actual dollars and cents value of "what is in the bag or bottle." The actual cost per unit of plant nutrient materials plus differences in time and labor of applications must be considered. If a unit of nitrogen in one fertilizer costs twice as much as in another, this must be taken into account. But is first cost the only thing, or always even the most important thing? Undoubtedly it would be, if all nitrogen was in the same form and could be handled in the same way. Unfortunately, this is not the case. There are material differences in rate of availability, safety and ease of application, frequency of application, stimulation of growth and rate of loss.

16 // Golfdom September 2015 Golfdom.com

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Doug Warner

ASSISTANT SUPERINTENDENT

Maidstone Club East Hampton, N.Y.

A course with a rich history like Maidstone Club should have a great staff, and Assistant Superintendent Doug Warner fits the bill. Warner possesses all the traits needed for success. Just ask his boss.

"Doug is always seeking to improve upon our systems, and he has a great vision and understanding of how to properly present our golf course, balancing plant health, playability and aesthetics," says John Genovesi, CGCS at Maidstone Club. "A lot of these skills can be learned, but one of the things I like most about Doug is that on or off duty he is a good person, and that's priceless."

WHERE DID YOU GET YOUR TURF

DEGREE? I'm originally from Long Island, N.Y., but I got an associates degree from the University of Massachusetts Amherst.

WHO WAS YOUR BIGGEST INFLUENCE IN STARTING A

CAREER IN TURF? I was working a summer job at Atlantic Golf Club in Bridgehampton, N.Y. My boss, Bob Ranum, really pushed me to pursue a career after he saw I had a feel for what I was doing.

WHAT'S THE BIGGEST ASSET YOU BRING TO A COURSE?

I would have to say my biggest strength is personality management among the crew. Specifically, making sure the whole crew gets along and works efficiently.

WHAT DISEASE IS THE BIGGEST CONCERN ON YOUR COURSE?

Traditionally, our course has had an issue with anthracnose, but the past few years, we haven't had any for the first time in recorded history. We just maintained a steady program of topdressing and did not face any disease resistance to our chemical applications.

IF YOU WEREN'T WORKING ON A GOLF COURSE WHAT WOULD YOU BE DOING? Before

I decided to go to school for turf I was studying to work in physical education. So I would be finishing up my degree and looking for jobs in that field.

WHAT HAS BEEN THE HIGHLIGHT SO FAR OF YOUR CAREER? Watching the evolution

of the Maidstone links-style course. We are working on a renovation project with Coore & Crenshaw, and it's unfinished as of now, but seeing it from the beginning to now has been awesome.

WHAT DO YOU LIKE THE MOST ABOUT BEING AN ASSISTANT SUPERINTENDENT? It's

something new every day, you're always going to learn something new, and you never know when it's going happen. You have to stay open minded and roll with the punches.

WHAT WOULD BE YOUR DREAM JOB IN THE INDUSTRY?

I just hope to find myself as a superintendent at a respectable links-style course.

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GETTING BY with a little help from FRIENDS

The unlikely duo of a hazmat response company owner and a World Golf Hall of Famer team up to help Wolf Creek members improve their course

BY SETH JONES

olf Creek Golf Club, located in Olathe, Kan., considers itself a "player's club." Of the 260 members, more than half boast single-digit handicaps.

However, those members also boast much more than impressive handicaps. Forget sand saves, some of these members save lives. Others are high-powered attorneys (but no lawyer jokes here, sorry). Judging by the parking lot, there's also at least one high-end car dealership owner.

Then there's the owner of a hazardous material response company and a World Golf Hall of Famer.

Those last two — Jack Stockdale, owner of Haz-Mat Response Inc., and Tom Watson, owner of five Claret Jugs, two green jackets and the 1982 U.S. Open trophy — are especially important to this story.

On borrowed time

Not to say that Jack Stockdale isn't a stick, but he might not lump himself into that single-digit handicap club at Wolf Creek.

"I play golf... or something akin to that," Stock-dale, a constant joker, says with a big laugh. In a lifetime spent in the construction business, first as a ditch digger and pipe liner, Stockdale now specializes in dealing with big problems such as

Continued on page 22



Continued from page 21 train derailments and chemical spills.

He did not know golf course renovation, but he did know Wolf Creek had a couple of big problems, and that they were of the expensive sort. Primarily, hole No. 5, a par-three, had a retaining wall that was deteriorating quickly, threatening to drop the entire green into the course's namesake, Wolf Creek. On No. 11, another parthree, erosion was causing the front embankment of the hole to crumble.

Todd Bohn, a Kansas State University graduate and the superintendent at Wolf Creek for five years, says the situation on No. 5 green was keeping him up at night.

"If we lose that green, that's \$100,000 plus the hole is unplayable," he says. "Ultimately we were on borrowed time."

Stockdale joined the course's board of directors, started listening to the costs involved with the two projects, and couldn't believe the numbers he was hearing.

"I don't have any skills in golf course renovation, but I knew we had a problem and I knew we didn't have the money to fix it, and I knew it would be an even bigger problem eventually," Stockdale says. "So my little brain got to whirling and starts to think, 'how can you fix this the cheapest, easiest way possible?'

"I was thinking cheap and easy. Well, it wasn't easy — I still had a full head of wavy hair when we started," jokes Stockdale, who hides his current hairline under a Haz-Mat Response Inc. hat. "But it was cheap."

The retaining wall on Wolf Creeks' par-three No. 5 hole would have to be fixed soon or the club would be looking at a \$100,000 rebuilding project on just a new green.

Hello from Hawaii

In November of 2014, Stock-dale brought in three of his employees and some heavy equipment. He paid his employees like he would on any other project, keeping it on the books of his hazmat company and off Wolf Creek's.

Work rebuilding the retaining wall on No. 11 went swimmingly. They were even given more than enough free rock — more money saved — from a nearby church construction site. Work was completed in a few weeks. It seemed the golf gods were smiling.

"We initially started by fixing No. 11, and then Jack got wild," Bohn says. "He wanted to tackle the issue we had with No. 5. That's when we got Tom Watson involved, to tell us if he thought we were crazy, or if he thought we could do it... and if we could do it, what tweaks we needed to do."

Count Bohn and Wolf Creek lucky, not just for members like Stockdale, but for a member unlike any other: Tom Watson. A legend of the game, Watson calls Wolf Creek his home course and treats the staff like family. (Example: When Bohn recently limped out of his utility vehicle following what he thought was a sprained ankle from playing basketball, it was Watson who demanded he see a doctor. Watson even arranged the appointment himself. It turned out Bohn had two broken bones in his

Continued on page 24



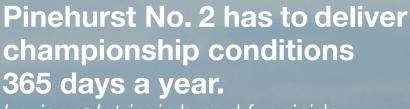






PHOTOS COURTESY: TODD BOHN





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We create chemistry

January in Kansas can be less than pleasant, so Wolf Creek's favorite son was spending the month in Hawaii, while Stockdale and Bohn were knee-deep in a construction quagmire. Thus began the string of text messages with

photos to the Aloha State.

"The challenge for me was communicating with (Watson) and getting feedback while at the same time getting Jack out of here as soon as possible, since it was costing him money," Bohn says. "But we wanted to get it done right."

Or, as Stockdale puts it,

To improve the sight line to the No. 11 green, Watson suggested to remove some brush near the tee box. They saved money on the project with free rocks found at a nearby church construction.











"Todd was so particular about everything, he sounded like my wife."

Hole integrity

Apologies to Mrs. Stockdale, but Bohn was "particular" for good reason. When a course stakes its reputation on being a player's course and one of the most difficult courses in the area, a renovation that makes a golf hole easier — donated or not — could spell doom.

Watson, who regularly practices at the course, says the difficulty of Wolf Creek is his favorite thing about the course.

"(Wolf Creek) requires you hit the ball with irons very, very crisply, solidly," Watson says. "The greens have a lot of pitch to them, and stop the ball well when they are in good, firm conditions. It takes some skill, and the golf course has a whole lot of variety to it."

The course was designed by Marvin Ferguson and opened in 1971. CE Golf Design renovated the course in 2006. Watson says the integrity of No. 5, which he calls the signature hole of the course, was important. That's why he and design associate Bob Givens made a tough decision when they elected to take out the retaining wall that previously fronted the green.

"I would have liked to see the retaining wall go back in, but it's an expensive project," Watson says. "Bob Givens came up with the idea to bank it down to the creek. I said to Todd, 'The most important thing is we can't let the bank play too easy where the ball would hang up on the bank — that would ruin the integrity

of the hole.' So I asked them to steepen the bank so that it can be cut to a certain length that a ball, when it's hit there, will go into the water."

Easy enough? Not quite. For the insertion of the slope and a new bunker, the creek had to be widened to two and a half times its previous width.

Stockdale and his team dammed the creek and pumped it in frigid weather. They then began moving the silt that had built up over years. Then the dam broke, and they had to wait 10 days to pump it out again and essentially start over.

"(The work on No. 11) went really, really well. The work on No. 5 was a little more difficult, to say the least," Stockdale says. "I knew when that rain came, the dam wouldn't hold."

Frustrated but not willing to give in, Stockdale, his crew and Bohn got back to work. After a five-week grind, the project was finished. Watson was impressed, both with the end result and the speed of work.

"How fast it was done was remarkable," Watson says. "I don't know what the cost was, but with Jack donating quite a bit of his time and equipment, it became a win-win."

"My crew and (Stockdale's) crew, we worked as a team and we got it done," Bohn says proudly. "We were able to accomplish a lot. His crew is top-notch. And it doesn't hurt to have one of the greatest players to ever play the game to help with the architectural work."

For Stockdale, he was just relieved to be done. Don't ex-Continued on page 26

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Count on it.





For the bunker renovations Bohn decided to go with Bunker Solutions, a system that uses an artificial turf liner. Plans are to switch all of the bunkers at Wolf Creek to the system.

Continued from page 24

pect him to be applying to the Golf Course Builders Association of America any time soon.

"It was interesting work, but I won't be volunteering any more. I've had my fill of golf course work," Stockdale says.

A lifetime par

With extra money in the club's pocket thanks to Stockdale's donated time, the

course set its sights on a new project: building a new practice putting green.

This time Wolf Creek went with the professionals: Lee's Summit, Mo.-based Mid-America Golf. Their new practice putting green is flatter and twice the size.

"It's instrumental to have a (quality practice area) at your club," Watson says, "because people don't have as much time, sometimes they just want to practice."

If both Watson and Stockdale are

happy, then Bohn is happy. Bohn, meanwhile, is recovering nicely from his foot su rgery (Watson texted him from the Open Championship at St. Andrews to find out the diagnosis) and the renovated holes have benefitted from a mostly pleasant summer with plenty of rain.

Stockdale's contribution is now honored with a plaque on No. 11.

"I was just looking for a way to help the course that was cost effective," Stockdale says. "It may have been more than I bargained for. We had a great big hole in the ground. I couldn't just walk away — I would have had to find somewhere else to play.

"But it turned out good; I get a lot of compliments on it."

But do his playing partners at least give him a stroke when he gets to No. 11 tee?

"I don't even put a tee in the ground," he laughs. "I write down a par, and drive on to No. 12." (



26 // **Golfdom** September 2015 Golfdom.com



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LESS TURF,

BY STEPHANIE S. BEECHER

umblings about the California drought have by now spread to every corner of the country. Still, it was a surprise when in late April, standing in a fallowed field typically covered in 5 feet of snow, Gov. Jerry Brown announced an unprecedented set of mandatory drought restrictions.

His directive was clear: Reduce water use across the board by 25 percent. No more voluntary cutbacks.

"The idea of your nice little green grass and lots of water everyday... that's going to be a thing of the past," Brown said at the news conference. "It's a different world. We have to act differently."

The state's recent crackdown on water use has served as a wake-up call for the golf course industry. Many superintendents are certain California's new restrictions will create a new norm, prompting golf clubs across the country to follow California's lead in an effort to save water — and money.

Going off the grid

While most superintendents have long had water conservation programs in the works, the added attention has driven some of them to take more drastic measures. Some courses have installed smart irrigation systems to monitor use, created water reclamation areas or resorted to strict water contingency plans, deciding which areas to water — perpetuating the turf care industry's new mantra: "Brown is the new green."

All these combined strategies equate to one of the most significant and widespread renovation seasons to date. In California and other droughtstricken areas, superintendents have the additional pressure of weighing water conservation efforts against current climate conditions.

For Bernardo Heights Golf Club in San Diego, maintaining a championshipcaliber golf course in drought conditions is nothing new.

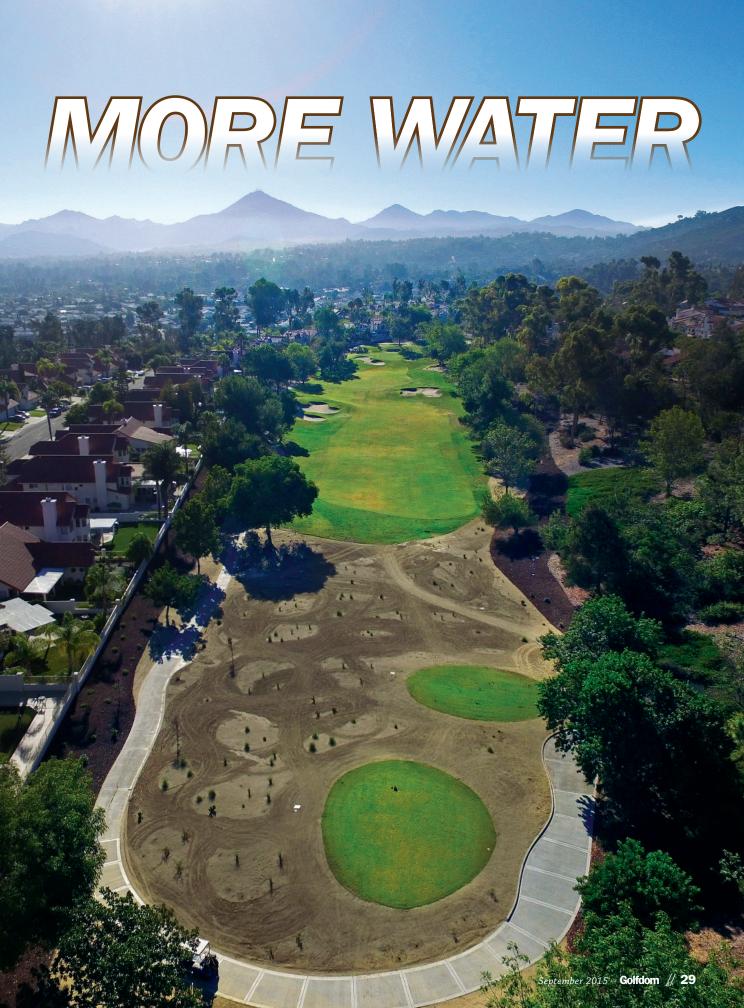
"When you talk about a drought in San Diego, well, we are technically a desert," says Bernardo Heights Superintendent and California GCSA President, Jim Alwine. "I think there are always 'drought conditions' down here. There is always a need to save water."

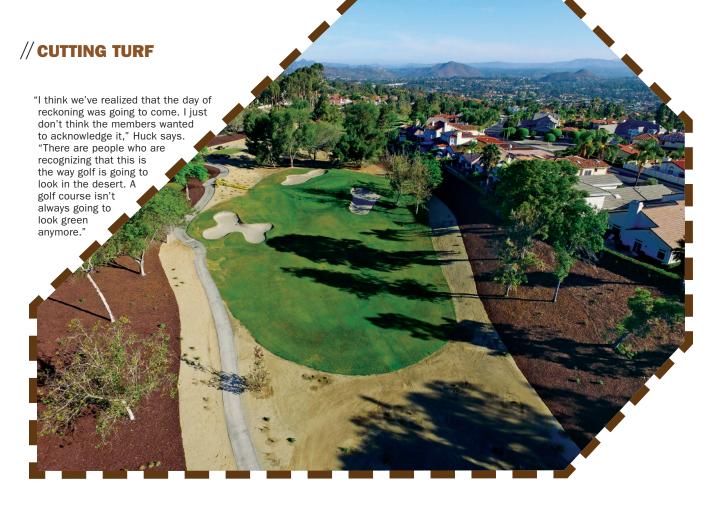
Along with other state golf courses following Brown's orders, Bernardo Heights is currently undergoing a massive renovation project to do just that.

The private 18-hole, par 72 course, designed by Ted Robinson, is changing its aesthetic in an attempt to get off the potable grid entirely. Though water conservation has been a top priority since Alwine first signed on as Bernardo Heights' director of grounds three years ago, the new restrictions have shifted his efforts into high gear.

In addition to converting the course from ryegrass to bermudagrass and embarking on an \$800,000 upgrade to its irrigation system, Alwine is oversee-Continued on page 30

As California mandates a 25-percent water use restriction, golf courses are stripping turf to conserve every drop of water they can.





Continued from page 28

ing the removal of more than 60 acres of golf turf. It's a huge project, but one Alwine believes is worth it.

Following Gov. Brown's announcement, the Metropolitan Water District of Southern California (MWDSC), along with the state's other water agencies, upped the ante on its turf rebate program, enticing homeowners, businesses and golf courses to spring into action. Funded through MWDSC water sales, the agencies agreed to pay roughly \$2 to \$3 per square foot of turf removed.

"YOU DON'T JUST REMOVE
THE TURF AND EVERYTHING
IS HUNKY-DORY. BUT IT HAS
FREED US TO NOT TO HAVE TO
IRRIGATE THAT 21 ACRES OF
TURF AND HAS MAXIMIZED
OUR WATER USE."

JESSE SEGUIN, BROOKSIDE G&CC

It was less of a question about whether Bernardo Heights was going to participate in the program, but more about when. The club broke ground on the project in May.

"Knowing we had the rebate lessened the challenge," Alwine explains, comparing the remuneration to a dangling carrot. "When you can get it paid for like this, (golf clubs) will jump on it."

The turf rebate programs "sort of drove the bus forward," says Mike Huck, an independent water management consultant. "I think it gave (superintendents) the political cover to do the things that they were already planning on doing."

Huck says that with the average golf course hovering somewhere between about 120 to 150 acres, removing ancillary turf areas could annually save courses as much as 80 percent to 95 percent in water savings, or about 12 million gallons of water.

Numbers like that are music to Alwine's ears. Just a few years ago, Bernardo Heights was balancing a water budget that bulged to more than \$500,000. The expected savings from its turf reduction

project frees up the course's money for better use elsewhere, he says.

Consider the following

With such a large scale project and a crew of just 15 people, Bernardo Heights opted to hire a landscaping firm to handle the labor. However, many golf courses doing smaller turf reduction projects are handling the work in-house, either renting the turf removal equipment from a local dealer or investing projected savings in a new fleet of their own.

"Renting can get pretty expensive, both in time and money, so many courses are making the investment," says Steve Relaz, product manager for Ryan's line of turf renovation equipment. "Having equipment like sod cutters on hand is more convenient for the golf course employees, and the work gets done faster."

Why? Relaz says the decision to remove turf is just one step in the renovation process. Superintendents also must consider irrigation system placement and how a turf reduction project will affect course

Continued on page 32



// CUTTING TURF

Continued from page 30

play and design. And of course, there's maintenance.

"Whether it's edging, leveling the ground near cart paths for safety reasons or fixing damaged turf areas, turf renovation never really stops," Relaz says. "There's always work to be done."

That's something to which Jesse Seguin, director of agronomy at Brookside Golf & Country Club in Pasadena, Calif., can relate. The club is about halfway through removing 21 acres of turf. He says that unlike other courses, Brookside opted to remove turf areas that weren't necessarily out of play, which increased their detail work.

"It's kind of an evolving project; we've had to tweak areas, modifying a few areas... I have three guys that work 25 hours a week just maintaining our turf reduction areas: edging, raking, spraying, removing leaves, etc.," Seguin explains. "You don't just remove the turf and everything

"Whether it's edging, leveling the ground near cart paths for safety reasons... turf renovation never really stops," Relaz says.

is hunky-dory. But it has freed us to not to have to irrigate that 21 acres of turf and has maximized our water use."

As Brown moves to reel in water use—the governor has threatened to enforce the mandates with hefty fines and increased utility rates— Huck says other courses may want to follow suit. Water rates more than doubled in California between 2003 and 2014, and he believes Brown will make good on his promise to push up rates.

For now, every single effort to save water counts. In addition to switching

from overhead to drip irrigation systems, for instance, Huck encourages superintendents to undertake other projects, such as switching out cool-season grasses for drought-resistant, warm-season varieties; incorporating native grasses or desert landscaping; and increasing the frequency of deep-core aeration.

"It is more difficult to aerate in drier conditions when the soil is hard, but the benefits of aeration remain," Relaz says. "Frequent aeration helps reduce the amount of thatch so that when it rains, more water is absorbed into the soil rather than being blocked and running off the thatch."

Yet so far, turf reduction remains the quickest route to water savings.

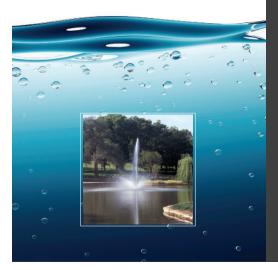
Benefits beyond the benefits

In addition to making a positive impact on a course's surrounding environment, Huck says superintendents' water conservation initiatives are likely to provide a financial benefit. In a way, Huck adds, it makes even more sense for superintendents to remove golf turf, even without receiving the rebate.

But it already may be too late for some. In July, the MWDSC announced it was closing the turf rebate program after exhausting more than \$350 million in funds. About 15 Continued on page 34

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32 // Golfdom September 2015 Golfdom.com

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// CUTTING TURF

Continued from page 32

pre-approved golf courses currently have projects in progress, says Sherita Coffelt, a spokeswoman for the MWDSC.

"Outdoor water use accounts for approximately 50 percent of total water use," Coffelt adds. "We have been doing toilet, washing machine and showerhead programs for more than a decade, so outdoor is the next area to focus on."

Though discussions surrounding a potential rebate extension remain on the table, Huck expects the turf reduction momentum to slow. However, golf courses shouldn't be deterred from embarking on a turf removal project, he says.

"Depending on what your source of water comes from, there's still an economic payback," says Huck. "I think there will be enough incentive over the next few years for it to continue. There may be courses that remove a portion of their turf each year. I really think this is a trend, and we will see it continue."

Seguin says golf courses may not have a choice.

"All of us have to reduce our water output, regardless of if there's a rebate or not," he says. "Being proactive and responsible turf mangers and managing this precious resource... it's the right thing to do for the environment. It just has to be done."

As Alwine walks the Bernardo Heights course, he says more than 50 contractors are hard at work driving equipment to remove and renovate the last few acres of extra turf. Dark mulch, decomposed granite and more than 500 desert plants have taken its place. Though the club experienced some initial pushback over the

changes from its membership, Alwine says they will continue to move forward with the renovation plan, including allowing the new bermudagrass to go brown during winter.

Most members who've returned to the course to take advantage of the nine holes that are open during the week have been impressed, Alwine says.

"It's a little more beautifully landscaped," he adds. "The course itself hasn't changed — it's really just the edges. It's different, but as far as playing it, it doesn't play all that differently. It shouldn't be about how green it is, or the aesthetic — it should be about playing quality." **@**

Stephanie S. Beecher is a Milwaukee-based writer and journalist covering the world of business. This is her first article for *Golfdom*.



34 // **Golfdom** September 2015



Jared Bumpus recently met with VGM Club's Troy Hoffman to discuss the savings and other benefits Key Golf has experienced through the Stens program. Key Golf's Jeremie Smith and George Folopoulos brought some recent purchases along while the group met on the practice green at Red Rock Country Club in Las Vegas.

THE KEY TO ENHANCING SAVINGS SOLUTIONS IN ULTRA-COMPETITIVE MARKET

ree in Vegas, your bottom line can get scorched if you're not careful of who you work with and the products you use," said Jared Bumpus, Regional Agronomy Director for Key Golf Management Company.

Survival in the desert and in the competitive golf course industry can be similar in that the unwary, uninformed can succumb to the environment. That's where Key Golf Management Company comes in to assist golf courses throughout the Southwest.

"We bring a unique culture into the workplace with both the crews and agronomic programs," said Bumpus. "Communication with our superintendents is crucial. I meet with our superintendents weekly and also have bi-monthly reporting on current conditions of the course and updates on upcoming projects."

Through this communication, Bumpus found a new way to save his courses' money, thus benefitting the bottom line. "VGM Club introduced us to the Stens program and how it could affect not only our bottom line but help streamline our turf maintenance equipment parts ordering process."

After the initial introduction to Stens.

Bumpus recognized that Key Golf would benefit from membership pricing, shipping costs and product availability.

"Jared saw the significant savings opportunities for golf course turf equipment maintenance and wanted to get each of their courses set up with our program," commented Amy

Kippenbrock, Territory Manager for Stens.

From there the rest, as they say, is history. A meeting, coordinated by VGM Club, took products Key Golf's superintendents use to keep their turf place with maintenance equipment operating in the tough Vegas terrain.

Bumpus, his superintendents and Kippenbrock at the 2015 Golf Industry Show and the relationship grew from there.

The Stens Engine Maintenance Kits are one of many

"Once the connection was made, Stens knew precisely what products and parts my superintendents could utilize," said Bumpus. "They sent me their catalog, samples of parts specific to my equipment and a flyer detailing the savings with my VGM Club discount."

"Starting the relationship as we did sets us both up for success and we understand expectations on both sides." Kippenbrock added, "Effective communication to the mechanics and superintendents is crucial in making this relationship work. They know how to reach me with questions and knowing that Jared and I maintain contact with

> the superintendents ensures that Key Golf Management will take full advantage of the Stens program."

They say you don't need to be a full-blown survival expert to survive in the desert. You just need to be aware of your surroundings and seek out

sources to keep you alive. Communication and relationship building with

key vendors ensures that golf courses can save money and survive the competitive environment – especially around "Sin City."

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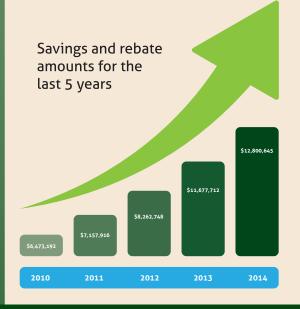


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sk any U.S.-based superintendent about their knowledge of, or experience with, fraze mowing, and they likely will respond with a common description — unusual, shocking, perhaps even mysterious.

In fact, the concept is so new that some superintendents either haven't heard about it or are just becoming familiar with it.

Yet, since it was introduced in 1996 by Dutch sports field manager Ko Rodenburg, it has become quite popular in the UK, especially within the soccer industry. Stadiums have used the cultural treatment technique — which removes the top ¼ inch to 2 inches of turf from fields — to eliminate most, if not all, organic buildup, *Poa annua* seeds and thatch.

In response, the technique's status is beginning to increase in the U.S. as well, where superintendents like Sean Anderson, who oversees the maintenance of Card Sound Golf Club, Key Largo, Fla., are discovering its positive implications firsthand.

"In the past, we had considered ourselves aggressive in thatch management, with multiple verticuttings and aerifications performed each summer to help manage our turf," Anderson says. "But we knew we would have a difficult time achieving our goals without stepping up our game moving forward."

After the course's fairways were converted during the summer of 2014 to Celebration bermudagrass, Anderson and his staff decided to implement the fraze mowing process.

At first, they were taken aback by the

results. Aside from the roots, the turf had virtually been removed, resulting in copious amounts of plant material (thatch, stolons, rhizomes, etc.) that needed to be disposed of.

But then the turf began to recover. Anderson and his staff applied an initial fertilizer application right after the fraze mowing was completed. The following week, staff members began their regular foliar program, which involves spraying every other week. In less than a month, Card Sound's fairways once again had acceptable playing surfaces without any thatch.

The ultimate thatch-eliminating practice

Anderson and his staff used a KORO Field Top Maker to complete the fraze mowing process. After attaching the Top Maker to a Kubota 5700 tractor, they simply let the machine remove the top half-inch of the fairways' turf. All material was deposited

Continued on page 38









Continued from page 37 onto a conveyor belt and then launched to the side of the tractor.

Afterward, the staff used four tractors and trailers to collect the material and transport it to an onsite area to be removed by contractors.

On the other hand, Shannon Wheeler, director of golf course maintenance at Wycliffe Golf and Country Club, Wellington, Fla., outsourced all fraze-mowing responsibilities to contractors, including the removal of turf itself.

Rather than fraze mowing the course's fairways, Wheeler decided to first focus on the Celebration bermudagrass practice range tee. Over time, the tee had become unleveled, primarily due to wear patterns from divots.

"We were interested in stripping, lev-

eling and sodding the tee top as soon as possible," Wheeler says. "But rather than verticutting and aerifying, we decided to try fraze mowing."

Wheeler and his staff decided to fraze mow only half of the practice range tee this past May so course members could still use the range. Within three weeks the range was completely covered with new turf; one week later, members were able to hit balls. The process was so successful that Wheeler decided to fraze mow the other half of the tee on July 30.

"Fraze mowing provided us a less invasive and more affordable solution than regrassing," he says. "We were able to remove the thatch layer and achieve a level surface without the added cost of stripping and leveling, since there was enough of the plant material left to regrow in an

Anderson and his staff used the Koro Field Top Maker to complete the fraze mowing process on Card Sound GC's fairways, while Wheeler fraze mowed half of Wycliffe G&CC's practice range tee.

acceptable amount of time."

The results were 1 inch of undulation removed from the practice tee and a firmer surface on which members could practice. Without the thatch, localized dry spots also declined considerably; after all, thatch decreases the durability of turf. And because Wheeler and his staff didn't have to renovate the practice tee, the club spent only 5 percent of the cost of verticutting and aerification.

In the meantime, Anderson and his staff eliminated 95 percent of Card Sound's thatch, all while instantly producing a grain-free surface. They also removed localized dry spots, leading to firmer fairways.

"Fraze mowing is the ultimate thatcheliminating practice," Anderson says. "We were practically able to regenerate brand new fairways without the headache of having to establish them from new sprigs."

Anderson anticipates he will fraze mow again in June 2016, which will allow him to take advantage of summertime's ideal growing conditions. In doing so, he says he will have more flexibility to be aggressive with his equipment and fraze mow as much plant material as possible.

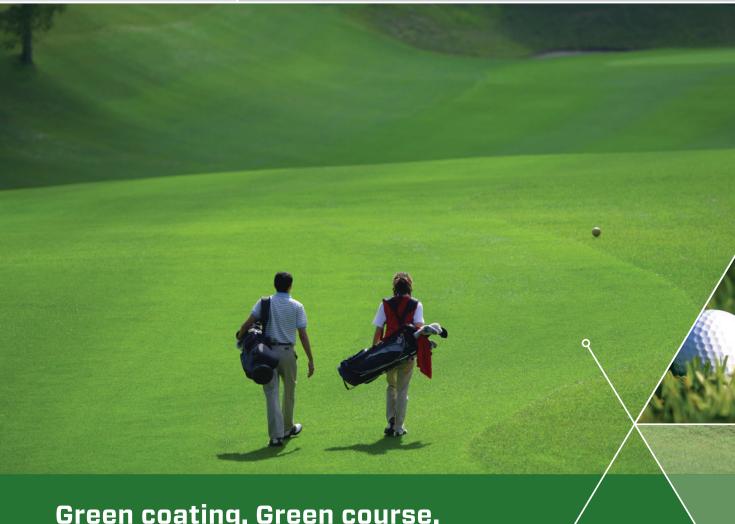
Wheeler agrees with this time frame, believing anytime between May 1 and Aug. 15 is typically ideal.

"Superintendents should only have to fraze mow once each year," he says. "Personally, we will reevaluate our practice range next spring to determine when we will fraze mow again. In addition, we may fraze mow the fairways of our East Course sometime in the future."

Anderson adds, "And since every golf course is different, superintendents need to find the timing that is best for their courses, based upon experiments and, at times, trial and error."

Continued on page 40





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Continued from page 38

Advice for superintendents

Wycliffe G&CC members were unsure about implementing the fraze mowing at the club's practice range. So Wheeler fraze-mowed a test area two months before mowing the first half of the range. Upon realizing the benefits of the experiment, members were encouraged by the prospects of the process.

"Through proper communication and follow up, our membership was confident the process would benefit Wycliffe in the long run," Wheeler says.

Anderson had more material to dispose of than Wheeler's contractors, since he had chosen to fraze mow each of Card Sound's fairways.

"The actual fraze mowing isn't time consuming itself. However, the material collection and dumping can be," Anderson explains. "It is important to know where the material will be disposed of, either onsite or hauled away."

When the fraze mowing process was complete there was little turf left except for the roots at Wycliffe G&CC but three weeks later the area mowed was covered in new turf. Both Wheeler and Anderson think that summer is the best time to fraze mow turf.

He advises superintendents to have enough trailers to transport the material without having to interrupt the fraze mowing itself. He also believes dump sites should be as close to the fairways as possible.

"If superintendents are unable to dispose of material off-site, they should consider reaching out to their local communities and seeing if someone may be able to use it, possibly for sprigs at another property or 'fill' material for construction," he adds.

Anderson also recommends adjusting cutting depths from time to time, taking soil moisture levels and land topography into consideration.

"One side shouldn't be cut in deeper than another," he says. "The adjustments are so precise too, typically anywhere from 1 to 30 millimeters, depending on the situation."

As for the early stages of fraze mowing itself, Anderson believes patience is crucial and admits he was anxious during the first couple days of the process, especially because it removes so much turf and generates a seemingly endless amount of material needing disposal.

"You don't need to be a hero the first day," he states. "Remember to take it slow. It's like a haircut. It's always easier to cut a little more off rather than cutting too much and trying to put it back on.

Each day forward we became more comfortable with the process," he notes, "and once we found our groove, we were able to fraze mow 3 or 4 acres a day. And now, as we look forward, we are optimistic about the ways in which the turf will perform in the future — without the thatch, seeds or buildup that had previously created a barrier between the turf and the soil." •

Michigan-based writer Chris Lewis specializes in reporting on golf in the U.S. He recently wrote about 2017 U.S. Open host course Erin Hills in the April issue.

40 // Golfdom September 2015



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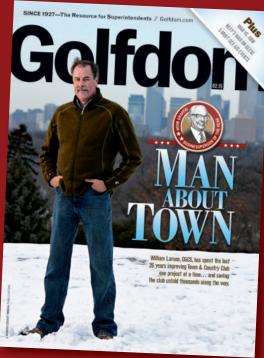
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In 1977 he became the first journalist to be elected to the World Golf Hall of Fame.

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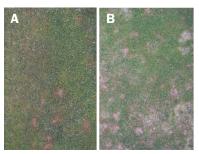
SPRAY NOZZLE AND FUNGICIDE MOBILITY EFFECTS ON MICRODOCHIUM PATCH

By Brian W. McDonald

icrodochium patch (*Microdochium nivale*) is a major disease on annual bluegrass (Poa annua) in the Pacific Northwest, Canada and northeastern coastal states. Little is known about the effects of spray-nozzle type used in combination with varying fungicide mobility on control of this disease.

A two-year field study was conducted at Oregon State to evaluate the effects of spray nozzles and fungicides with different mobility on control of Microdochium patch on a sand-based putting green with annual bluegrass.

The fungicides were applied with four different nozzles (XR11004 and XR11008 Flat Fans, which produce medium and coarse droplets, respectively, and the TurfJet Flat Fan 1/4TTJ04 and 1/4TTJ08, which produce extremely coarse droplets). The 04 and 08 nozzles sprayed at 30 psi and produced 0.35 gpm and 0.69 gpm, respec-



Banner applied with XR11008 nozzles (coarse droplet size, A) provided better control of microdochium patch than Banner applied with 1/4TTJ08 (extremely coarse droplet size, B).

tively. The study used two nozzle sizes to maintain a similar number of droplets at the two different spray volumes: 1 and 2 gallons per 1,000 sq. ft.

Fungicides used in this trial were Secure, Banner Maxx II and a difenoconazole solution, which have contact, acropetal and translaminar with limited acropetal mobility, respectively. Currently, the only available fungicide with difenoconazole is Briskway by Syngenta.

The fungicides were applied with a backpack sprayer with a three-nozzle hand-held boom at 30 psi. Five applica-

tions of Secure at 1.6 L/ha, Banner Maxx II at 3.2 L/ha and a difenoconazole solution at 1.3 L/ha were made every three weeks, ending in April.

Results showed that under high disease pressure, control is improved by using XR11004 and XR11008, compared with 1/4TTJ04 and 1/4TTJ08 nozzles. Sensitive paper analysis revealed significant differences between the four nozzles used, ranging from the XR11008 using a spray volume of 2 gallons per 1,000 sq. ft. providing 86-percent coverage, to the TurfJet 1/4TTJ04 using a spray volume of 1 gallon per 1,000 sq. ft. providing only 26-percent coverage.

Brian W. McDonald and Clint Mattox, Oregon State University, Dean K. Mosdell, Ph.D., Syngenta U.S., and Alexander R. Kowalewski, Ph.D., Horticulture, Oregon State University. Brian McDonald can be reached at brian.mcdonald@oregonstate.edu for more information.

NEWS UPDATES

BAYER SIGNATURE XTRA STRESSGARD NOW **AVAILABLE**

Environmental Science, a division of Bayer CropScience LP, has launched Signature Xtra Stressgard, a new formulation designed for protection from biotic and abiotic stresses, improved aerification recovery, winter recovery and early spring green-up.

"At Bayer, we know superintendents face countless biotic and abiotic stresses as they work to maintain pristine turfgrass, particularly on greens," says Mike Hirvela, fungicide product manager for the professional turf and ornamentals business at Bayer. "That's why we're pleased to be able to enhance one of the leading products on the market and give superintendents a new tool to manage stressors with more flexibility than ever before."

Bayer says Signature Xtra Stressgard offers an improved flexible rate structure, customizable for 7-, 14- and 21-day application intervals and updated label language outlining disease control and plant health benefits. It has a 25-percent reduction in the active ingredient rate from other Bayer Signature products that allows for the optimization of physiological plant processes and the natural growth of the turfgrass plant itself.

The new packaging allows four 5.5-pound bottles/case to aid usability and storage.

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Doug Soldat, Ph.D. (see full story on page 46)



"Fall is an important time for promoting turf recovery, improving plant health and setting the foundation for the following year."

KARL DANNEBERGER, PH.D., Science Editor

Fall's protocol

all is the best time to play golf. Although not the most popular time, temperatures have moderated, the air seems cleaner and the colors associated with fall are vibrant. You can say the same thing from a management perspective. Fall is an important time for promoting turf recovery, improving plant health and setting the foundation for the following year, all without summer's intensity and stress level. Below are a few of the important tasks I associate with fall.

SELF-ASSESSMENT

If you have suffered turf loss or thinning, it's important to determine the cause of the turf loss and take corrective measures. For example, if a rainy summer resulted in turf growing in saturated soil (anaerobic condition), installing drainage or re-contouring the surface to provide better drainage would be an appropriate fall activity. If turf loss is associated with a specific shading issue, fall is an excellent time to remove a tree or two.

CORING

Coring helps alleviate compaction that has occurred during the summer, enhances turf recovery and promotes overall turf health going into winter. When combined with heavy topdressing (i.e. sand), coring reduces organic matter. For controlling organic matter on sand-based greens, the goal is to apply a yearly total of more than 25

cubic feet per 1,000 square feet. You reach a significant amount of your yearly sand topdressing requirement when applying the topdressing to fill holes in conjunction with fall coring.

The downside of coring is that it often takes three weeks for the putting surface to return to its pre-coring smoothness and stability. No wonder golfers hate coring, and because they hate it so much, coring often gets pushed back later into the fall, resulting in cores that take longer to heal.

MOWING

Raising the height of a warm-season turfgrass like bermudagrass during the fall helps reduce the risk of winter injury. Higher height of cut provides more tissue protection to the crown. However, raising the height of cut on cool-season turfgrass has not been seen to enhance cold tolerance. With that said, and given the last few brutal

winters in the northern United States, *Poa annua* greens mowed at a higher height of cut seem to suffer less winter injury than greens mowed at extremely low heights.

FERTILIZATION

Cool-season turfgrass shoot growth slows in the fall, while root growth increases. Thus, fertilizing through the fall proportionally does more for root growth and storage than for shoot growth. In addition, fall fertilization promotes turf recovery from summer stress. Fall fertilization is really the first step in preparing your turf for the following year's summer stress. On the other hand, fall fertilization on warmseason turfgrasses can be a little more contentious, depending on how far north you are.

DISEASES

Under the right conditions, dollar spot can cause serious damage to both cooland warm-season turfgrasses well into October. As cooler and wetter weather occurs later in the fall, snow mold diseases like *Microdochium* begin to occur. These diseases generally are easy to control if monitored.

Fall is an extremely important time to clean up diseases left over from the summer—specifically anthracnose. Try to minimize any residual anthracnose scars going into winter. These scars or old symptoms serve as a source of inoculum for the coming year.

INSECTS

Insects generally are moving down, preparing to overwinter. However, insects like cutworms can be detected feeding, usually around core holes. If your core holes are slow to fill in or seem empty of sand (where other holes are filled), check for cutworm feeding.

Karl Danneberger, Ph.D., Golfdom's science editor and a professor at The Ohio State University, can be reached at danneberger.1@osu.edu.



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Rethinking fall soluble nitrogen fertilization of cool-season grasses

Doug Soldat, Ph.D., is a turfgrass scientist at the University of Wisconsin-Madison, where he directs his research efforts to better understanding soil- and fertility-related problems facing superintendents. Soldat can be reached at djsoldat@wisc.edu.

What led you to conduct research on fall and late fall soluble nitrogen fertilization programs for cool-season grasses?

In graduate school I was taught to question the conventional wisdom. In terms of nitrogen fertilization of cool-season grasses, we learned that soluble nitrogen should be applied when turfgrass is actively growing. But we also learned cool-season grasses should be fertilized with soluble nitrogen in fall and late fall.

These two concepts seemed to be in opposition to each other, so the first research project I started when I was hired at the University of Wisconsin was to take a critical look at fall and late fall soluble nitrogen fertilization of cool-season turf.

What were the findings of the research?

I want to emphasize that our research was with soluble nitrogen only. We found that the ability of cool-season turf to take up nitrogen decreased the later into fall we applied isotopically labeled nitrogen fertilizer.

For soluble nitrogen applied on Sept. 15, Oct. 15 and Nov. 15 in Madison, Wis., nitrogen uptake efficiency was 80 percent, 20 percent and 10 percent, respectively. We tracked nitrogen uptake until June 1 the year following application, so we were able to measure the amount of applied nitrogen taken up in fall and spring.

"Spoon feeding nitrogen at the end of the growing season will provide good green color."

Why is the nitrogen not being taken up in mid-October and mid-November?

Nitrogen is taken up by plants primarily through a process called mass flow. As water moves through soil to roots to be taken up for transpiration, nitrogen is carried along with the water and taken up by the plants. The greater the rate of transpiration of transpiration of transpiration of transpiration is carried along with the water and taken up by the plants.

spiration, the more nitrogen is being carried to the plant roots by mass flow.

In mid-September evapotranspiration (ET) is high, so nitrogen is being carried to the roots and the plants take up the nitrogen. In mid-October and mid-November ET is low, so only a small amount of mass flow is occurring, and therefore only a small amount of nitrogen is taken up by the turf plants.

Based on the results of your research, what approach to nitrogen applications in the fall and late fall do you recommend?

For putting greens in the northern portion of the cool-season zone, if a superintendent is planning to apply more than 0.5 pounds of soluble nitrogen per 1,000 square feet in a single application in the fall, that application should be made prior to Sept. 15. Starting in early October and throughout the rest of the fall, nitrogen should be applied in small doses like 0.1 pounds of nitrogen per 1,000 square feet every two weeks until the end of the growing season. Spoon feeding nitrogen at the end of the growing season will provide good green color and have greater uptake efficiency than a large application.

For tees, fairways and rough, fertilizing prior to Sept. 15 with a combination of soluble and slow-release fertilizer will work well.

What's next in this line of research?

We think calendar systems aren't accurate enough for nitrogen applications. Based on our research, we believe ET rate may be a good guideline to follow to determine when to apply soluble nitrogen in fall. Work on turfgrass growth models based on temperature done by Larry Stowell, Ph.D., of PACE Turf, also offers guidelines concerning when to fertilize turf that is an improvement over a calendar system. Preliminary work by Bill Kreuser, Ph.D., at the University of Nebraska using soil organic matter indicates it may also be useful in determining nitrogen application timing.

An approach that considers climate and soils data like ET, temperature and soil organic matter may turn out to be the best approach — certainly better than calendar-based approaches.



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

46 // Golfdom September 2015 Golfdom.com



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THE LAMENT OF BUBBA WATSON

Fire ants aren't a welcome sight on a course, but Watson wished they were at Whistling Straits.

BUBBA WATSON'S TEE SHOT missed the 5th hole's fairway during his final round of the PGA Championship at Whistling Straits. He found his ball perched on an anthill. ¶ At that moment he would've been delighted to see fire ants — their presence would have allow him to move his ball without penalty. They weren't fire ants, he played his shot (after he muttered, "Ow, it bit me,") and went on to birdie the hole. Most golfers aren't like Bubba, and don't want to see pesky fire ants. For them we have two products to help, as well as options for dollar spot control and a propane-powered utility vehicle.

BY GRANT B. GANNON // Associate Editor

1.Topchoice

Topchoice professional fire ant treatment is guaranteed to provide protection for a full year. With its strong residual, a single application of **BAYER'S** Topchoice controls existing fire ant colonies and prevents new infestations. It is formulated specifically for broadcast application with commercially available spreaders, making it easy to apply. Topchoice offers high effectiveness and is the lowest dose, nonbait, professionally applied insecticide — effective after rainfall or irrigation.

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Advion Fire Ant Bait from **SYNGENTA** features the active ingredient indoxacarb, which provides fast control of fire ants. Research has shown Advion Fire Ant Bait can provide total colony control, including the queen, in 72 hours. By providing effective control year round, Advion Fire Ant Bait is designed to save superintendents time and money while keeping areas free from this aggressive, painful and invasive pest. For season-long control, use low rates (0.5 oz./1,000 sq. ft.) and two applications.

Syngenta.com

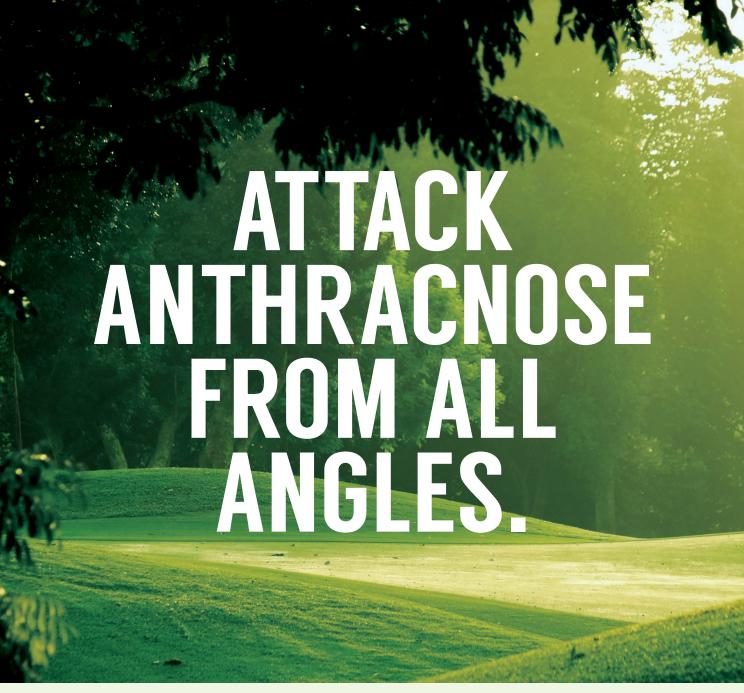






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This utility vehicle from R&R **PRODUCTS** is equipped with a Kawasaki LP 480 cc propane engine and can reach speeds up to 10 mph. The three-wheel drive system has optional power-assist steering. The Sand Max 521LP carries two 4-gallon fuel tanks and an eight-bulb LED light for accurate work during hazy conditions. Additional attachments available for separate purchase include a tooth rake, sprig rake, drag mat carrier system, manual front blade and core collector.

Rrproducts.com

2. ArmorTech ZOXY-T **UNITED TURF ALLIANCE**

has introduced ArmorTech ZOXY-T, a new fungicide that combines azoxystrobin and tebuconazole, which will be available this fall. The combination of the two fungicide technologies delivers broad-spectrum disease control, including control of

foliar diseases such as dollar spot. Apply ArmorTech ZOXY-T at its highest rate to greens and tees to deliver a full amount of each active ingredient, or spray at a lower rate for fairway disease control. ArmorTech ZOXY-T is currently labeled for golf course use only and is available in four 1-gallon cases.

Utaarmortech.com

3. Tourney Fungicide

Late season fall clean-up fungicide applications help reduce diseases like dollar spot for the following season. Tourney Fungicide from **NUFARM** takes control and fights tough diseases in turf. As one of the most active fungicides on the market, it's an effective control of a broad spectrum of tough diseases, including necrotic ring spot, gray leaf spot, snow mold and other patch diseases. Plus, Tourney delivers turf quality and low use rates.

Nurfarm.com







50 // **Golfdom** September 2015 Golfdom.com



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SINGLE-SCREEN SCHEDULING PLATFORM. What used to take an hour now takes minutes with quick and easy color-coded programming. Available in conventional or decoder configurations, Pilot allows you to create and edit schedules out on the course – an industry first. Plus, Pilot is backed by Hunter's Field Service Team with on-site training and assistance.

To schedule a private demo at your course, visit hunterindustries.com/golfdemo





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—BRIAN PALMER, SHOREACRES, LAKE BLUFF, IL

"It was an honor to attend such a top-rate, first class function. The Summit had a great flow to it with the short, to-the-point boardroom presentations, the one-on-one vendor meetings and the interaction I was able to have with fellow professionals in the industry."

—TOM KAPLUN, NORTH HEMPSTEAD COUNTRY CLUB, PORT WASHINGTON, NY



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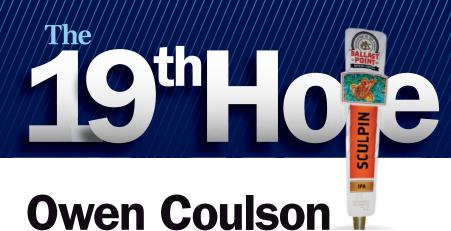
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^{*} Fully charged battery voltage measured without a workload is 40 volts. Nominal voltage is 36 or 37 depending on battery used.

^{**}Based on estimate for a 5'10" (1.8 m) individual operating at a 60 degree angle +/- 18 degrees





SUPERINTENDENT // Vestavia CC, Birmingham, Ala.

After 18 holes of golf, what's your drink of choice? Water. Well that or a Scuplin IPA.

Are you married? Kids? My wife, Sally, and I have been married almost 13 years. We met at Mississippi State. We've got three kids, Maury, 8, Carter, 7 and Caroline, 4. My wife's a nurse and a mom. When she's at the hospital I take the kids to school and I don't know how she does what she does everyday.

What teams do you root for? I have a little love for the Red Sox, the Braves and the Tampa Bay Bucs... that's probably 2 percent of my love, while 98 percent of my love is for Mississippi State, every sport. It seems like in the South, every-

body is more geared to college sports than professional. We go to all the (football) games and love it.

How will Mississippi State's football team do this season? I've got us going undefeated. ... I've had us going undefeated for about 30 years.

Tell me something about your crew at Vestavia. My managers are very unique. I've got an assistant who was a construction superintendent for a golf course construction company; I've got a mechanic who was a superintendent and

a construction superintendent; I have another assistant who came to me from baseball



fields... it's a unique view that I get from these guys.

What was the last good book you read? I just finished a book last week. I'm not a crier,

and I cried the entire way through it. It's called "Fear-

less: The Undaunted Courage and Ultimate Sacrifice of Navy SEAL Team Six Operator Adam Brown," by Eric Blehm. Oh, man. It's a biography... the story of his life was awesome. The one I read right before that was "The Martian," by Andy Weir, a Matt Damon movie that's about to come out. Both were recommended, both were great. Any time I had a spare minute I was reading them.

Fill in the blank: I know an employee is going to be a good worker when I see... That they care. If they care and they want to be good, I can work with that.

What would your crew say is the fastest way to get under your skin?

Nit-picky detail stuff, like ropes leaning, when my guys pull a tire off the path when they're mowing, when a bunker rake isn't straight. Ask my assistants, they'll say poor grammar — which I've probably used all through this interview.

As interviewed by Seth Jones, Sept. 3rd, 2015.

54 // **Golfdom** September 2015

Optimal turfgrass performance requires optimal, timely decisions.

The free POGO Turf Pro app turns your smartphone or tablet into a data acquisition and logging system that collects, displays and **instantly analyzes** data measured by the WiFi-connected POGO.

Real-time analytics and assessments of turf/soil moisture, salinity and temperature are displayed, allowing timely reaction to conditions that could lead to costly problems. All data is synced with POGO Turf Pro Cloud for further analysis.

- Turf conditions
- GPS coordinates
- Key course setup variables



Turf conditions for the entire green (even interpolated between where samples were taken) are illustrated with color-coded areas on a satellite map. See the variation of moisture, salinity and temperature across every zone of your course, and understand the effects of their interaction.







Hit diseases in as many ways as possible, all season long.

Secure® fungicide is the first multi-site contact fungicide in the market in over 45 years. The only registered fungicide for turf in FRAC group 29, Secure has no known resistance and low risk of future resistance. With 12 applications of Secure, when used in rotation with Daconil Action™ fungicide, you can create a solid foundation by protecting your course with a multi-site contact, all season long. For a sure shot against 10+ diseases including resistant dollar spot, brown patch and leaf spot, make Secure your foundation fungicide.

See Secure perform in a time-lapse video at GreenCastOnline.com/Secure





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