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Matt Morton
Superintendent
The Riviera Country Club
Genesis Open PGA Golf Tournament



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"The man was not just a legend of golf writing and sports journalism but of journalism in general."

SETH JONES, Editor-in-Chief & Associate Publisher

Farewell, Mr. Goat Hills

Sports journalism, and certainly the great game of golf, lost a legend recently with the passing of World Golf Hall of Famer Dan Jenkins at the age of 90. I'm happy to say I knew Dan Jenkins, a little.

The man was not just a legend of golf writing and sports journalism but of journalism in general. He changed an entire genre of journalism. You would never know that when you saw Jenkins, quietly smoking a cigarette outside the media room. He was fine with chatting but just as happy to be left alone.

Whenever I saw Jenkins, I would interrupt that peaceful smoke break with a hello. While I won't claim to be a Dan Jenkins completist (he's written so much over the years), I certainly knew who he was and appreciated what he had done, moving sports journalism away from stats and the cold, hard facts and giving it a living, breathing pulse. I also knew that every time I would introduce my



That's Dan and me at the annual Golf Writers dinner in Augusta, Ga. 2016 was the year, I think.

self, he was friendly. Whenever I took a guest to the annual Golf Writers dinner and I saw Mr. Jenkins, I was sure to introduce the two. Not because I wanted to impress my

colleague with an introduction to a legend, but because I wanted the person to see that Jenkins was so nice he'd act like he knew who I am.

Maybe he did know who I

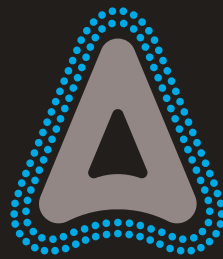
am. I'd like to think he did, a little. He definitely knew *Golfdom*, and that was my in. He actually wrote for *Golfdom*, which is both a shock and at the same time not surprising at all. It was in the May 1956 issue, which was — jeez — almost 63 years ago. Jenkins told me he was paid \$20 for the article, which was a fair rate back then — the same rate *Golf Digest* paid. Jenkins wrote about his hometown Colonial CC, a topic dear to the Texan's heart.

I asked Jenkins about Herb Graffis, founder of *Golfdom*. He told me he was a funny guy, great at dinner parties, but he didn't know Graffis well. The thought of Jenkins not knowing anyone in golf well was hard to believe.

Jenkins once told me that reporting on the modern-day PGA Tour had become much more challenging because today's players are more secluded from the media. He said it used to be common for him to have lunch with players, but of the modern crop, only Phil Mickelson had ever taken the time to sit down and break bread with him. This was over lunch, so I now have one thing in common with Phil.

That lunch, this photo, a love of golf and a byline in *Golfdom* might be the only thing Jenkins and I had in common — we are chasms apart in terms of talent and notoriety — but that's good enough for me. It was a pleasure, Dan Jenkins. Thanks for the stories. **G**

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NEWS, NOTES AND QUOTES



// WINTER HURRICANE

BOMB CYCLONE PUMMELS CENTRAL US

BY SARAH WEBB // Associate Editor

➔ Colorado and other parts of the central U.S. were among the first regions to feel the wrath of the massive winter storm that pummeled the area on March 13.

Dubbed a “bomb cyclone,” this type of storm is categorized by a drastic drop in barometric pressure, according to an article by Accuweather.

The storm dropped rainfall in the Colorado area, before switching over to snow, and produced hurricane-force winds, according to Zach Bauer, superintendent at Valley Country Club in Centennial, Colo.

“If we hadn’t gotten any wind, it would’ve just been like any other snow-storm,” Bauer said. “We got down to

such a low visibility that you couldn’t see 15 feet in front of you.”

According to Bauer, the wind felled three trees at his course, but other nearby courses lost as many as 20 trees.

The system moved eastward toward Nebraska, South Dakota and Iowa, where intense flooding and large, moving chunks of ice caused damage to much of the region, including many of the area’s golf courses.

In a newsletter to superintendents in the affected flood areas, Kevin Norby, principal/project architect of Herfort Norby Golf in Chaska, Minn., urged them to try and apply for grants from the Federal Emergency Management Association.



The bomb cyclone’s hurricanelike winds created large snow drifts, such as this one shown in a bunker at Valley Country Club in Centennial, Colo.



// FINISHING THE JOB

LONG COVE CLUB HIRES BOBBY WEED GOLF DESIGN

Bobby Weed Golf Design has been hired to continue with its planning and advisory services at Long Cove Club, in Hilton Head Island, S.C., on the heels of the design firm’s restoration of the golf course last year. The layout was designed by Pete Dye in 1981.

“Long Cove wishes to protect its heritage and preserve its status as an authentic Pete Dye design, never more relevant than now, with Alice Dye’s recent passing,” said Bobby Weed, president and CEO of Bobby Weed Golf Design. “With its original featuring, innovative land plan and colorful history, it is perhaps one of the most significant courses in the timeline of golf course design.”

Long Cove was Weed’s first assignment with Pete Dye and the genesis of Bobby Weed Golf Design. Constructed right after TPC Sawgrass, the golf course at Long Cove Club represents a “time machine” look into Dye’s work during one of the most productive periods of his career. The Long Cove construction crew, directed by Weed, included several future golf course designers, including Weed himself, Tom Doak, P.B. Dye, Ron Farris and Scott Pool.

// GOLFDOM WISDOM

You might want to reconsider communication electives for students in favor of programming classes. Their future workforce will just be an army of robots anyway.

#GolfDomWisdom

— Matt Cavanaugh, @CavanaughTurf

PHOTOS BY: ZACH BAUER; LONG COVE CLUB; ISTOCK.COM (WELLGLAD)

// ONLY ONLINE



Visit **Golfdom.com** for an exclusive video interview with GCSAA CEO Rhett Evans discussing with *Golfdom* Editor-in-Chief Seth Jones the recent spate of early-season incidents of Tour pros mistreating golf courses.

Evans talks Tour player course abuse

➔ Shot in the scenic Canadian Rockies during the Canadian Golf Course Management Conference, Evans says “(for players) to disrespect what our members do, and their efforts they put in so they can enjoy their round and make a good living, is disappointing.”

Also, on Twitter, Facebook and online in April will be *Golfdom's* cover-

age of the 2019 Masters. Sponsored by Syngenta, the coverage will include reports from the course, photos of the crew at work, video interviews, Masters gear giveaways and more. Follow @Golfdom to keep up with the action, and for those readers going to Augusta, the annual Friends of *Golfdom* meeting will be at No. 6 green at 11 a.m. on April 9-10. Hope to see you there!

THEY SAID IT

SERGIO GARCIA

... on Instagram, after damaging several putting greens during the Saudi International:

“I am an emotional player, and while I believe that’s one of my biggest strengths, it’s also one of my biggest flaws. I’m focused on working hard to channel that emotion the correct way and to be the best me, learn from it and move forward.”

PHOTO BY: GOLFDOM STAFF

// EXPANDING FOOTPRINT

BAYER CREATES NEW REGION, PROMOTES DOUG MCCULLEN

The turf and ornamentals business of Bayer within the company’s crop science division has created a new western sales region and promoted Doug McCullen to western regional sales manager of the new region, which serves customers from California through west Texas and northward into Wisconsin.

“In our quickly evolving green industry, turf management professionals need more customized, regional recommendations than ever before,” said Will MacMurdo, head of the Bayer U.S. turf and ornamentals business. “With this natural realignment of our sales team, we have refined the conventional split between cool-season and warm-season turfgrass regions to introduce this new western region and ultimately sharpen our focus on the unique needs of our customers in each region of the country.”



Doug McCullen

Prior to his new role as western regional sales manager, McCullen was an area sales manager, serving Bayer’s turf management customers in the Pacific Northwest region. Before joining Bayer in 2011, McCullen had 20 years of experience as a distributor sales representative and as a golf course superintendent in the Pacific Northwest. He has a Bachelor of Science degree in turf management from Oregon State University.

// ONE MORE TOOL OF THE TRADE

SYNGENTA UPDATES ABW MONITORING SYSTEM

Syngenta updated WeevilTrak, its annual bluegrass weevil (ABW) monitoring system, with new courses, researchers and control recommendations.

Tools available for 2019 include:

- WeevilTrak text alerts that provide timely updates on local ABW progression;
- WeevilTrak blog, regularly updated by 11 ABW researchers;
- Secondary course monitoring for localized stage-progression information;
- A growing-degree-day model designed specifically for the ABW; and
- An optimum control strategy outlining a proven ABW treatment protocol, which now includes recommendations for Provaunt WDG insecticide.

Golfdom Gallery



1 Reclining in the Rockies
FMC's Adam Manwarren (left) and Golfdom's Seth Jones kick back at the Canadian Golf Course Management Conference in Banff, Alberta. (Apparently someone needs to teach Seth how to properly wear a scarf.)



2 The best mustache in Canada ... or anywhere Jones spotted a familiar face (and facial hair) at the Canadian — that of Larry Conkings, director of sales for Precision Laboratories in the western U.S. and Canada.



3 The Publisher and El Presidente
Golfdom Publisher Craig MacGregor (left) congratulates Rafael Barajas, CGCS, Boca Grove Golf & Tennis Club, Boca Raton, Fla., on recently being elected president of the GCSAA.



4 International meeting atop the Rockies Jack Fry, Ph.D., Kansas State University (center) talks golf at high altitudes with his colleagues Henrik Norén and Håkan Blusi of the Swedish Golf Federation. Fry wanted to discuss his Wildcats winning the Big 12 regular season conference, but turns out they don't broadcast Big 12 basketball in Sweden.



5 Funny meeting you here The Bethpage team took a break from winter maintenance and ran into former Bethpage Superintendent Craig Currier and 2019 PGA Championship General Chair Charles Robson while out to lunch. From left: Ryan Murphy, Vincent Herzog, Mike Hadley, Currier, Robson and Andy Wilson.

PHOTO BY: CRAIG MACGREGOR (1, 2) SETH JONES (3, 4); ABBY HART (5)

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The Gift of Augusta

While so many golf fans enjoy the tournament from afar, one longtime Masters attendee brings Augusta National to them **BY LEON GORDON**



The 2019 Masters Tournament will mark 61 consecutive years of attending the Masters for Lou Miller.

"The first one I went to was 1958, the first year Arnold Palmer won," recalls Miller. "I started out as a private in Arnie's Army ... over the years I eventually finished as a lieutenant colonel. After that first tournament, I probably saw 90 percent of Arnie's shots at the Masters."

Miller has lived an interesting golf life beyond his days following Palmer at Augusta National. He started out as an assistant professional 40-some years ago at Glen Arven CC, in Thomasville, Ga. He worked for four years as director of golf at Johns Island Club in Vero Beach, Fla. In the mid-70s, he became director of golf at Pinehurst (N.C.) Resort. He is currently owner and president of Old Edwards Club in Highlands, N.C.

Miller, now 74, stays in tiptop condition himself, walking up to 28,000 steps per day at Augusta National. And sure, he's

teed it up at Augusta National a couple times along the way.

"I first played it when I was still in high school," Miller recalls. "The superintendent at Augusta National at the time was from our county, so he got us on. We played with no pins, but we still felt like we were playing in the Masters."



Lou Miller

Miller has seen superintendents come and go. He even hired a former Augusta National superintendent once, he says.

"It's incredible, the modern superintendent of today is a multifaceted person," Miller says, clearly impressed with the advancements of the profession. "When (Gary) Player won in 1978, the greens (at Augusta National) were covered in *Poa annua*. The new modern grass growers are a totally different make and model (than) the superintendents of the past."

Miller says he has no one favorite thing about attending the Masters each year. He rattles off the ambiance of Augusta National, the roars on the course when a player starts making a charge, the

respect, the tradition, the history so prevalent there.

He's also made a little of his own history at the course. Every year, Miller takes a first-timer with him to the Masters. To those who have gotten the tour from Miller, this is a tradition like no other.

This year, he's taking two first-timers, one as the result of a letter he received from a woman describing her husband's struggles with Parkinson's disease. (The thought of the letter still chokes up Miller.) The other first-timer, Carlos Rodriguez, is the assistant superintendent at Old Edwards Club.

"He's a good player, and he loves golf," Miller says. "He went to a (professional tournament), and now he thinks he knows what the best is. There's nothing like walking Amen Corner; there's nothing like a ham and cheese on rye at Augusta. So, I'm going to take him there so he can see the best and smell it and taste it."

Follow Golfdom.com, @Golfdom and Golfdom on Facebook for live coverage of the 2019 Masters, sponsored by Syngenta.

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"The PGA Tour season is off to an interesting start, and not entirely for the reasons anyone, especially in this business, would choose."

MATT NEFF, *assistant superintendent,*
Wedgewood G&CC, Powell, Ohio

Men behaving badly

Have you ever been in your accountant's office reviewing your tax return when he discovers a mistake, completely loses his mind and starts overturning office furniture? Have you ever been talking to your doctor when he suddenly realizes he has the wrong chart and then, in a fit of rage, proceeds to rip it into pieces?

Yeah, me neither.

As literally everyone knows, this type of behavior would be wholly unacceptable and completely unprofessional — unless of course, you're a pro golfer.

The PGA Tour season is off to an interesting start, and not entirely for the reasons anyone, especially in this business, would choose. It seems as though a recurring theme since January has been players behaving badly.

Between Sergio Garcia and Bryson DeChambeau intentionally damaging playing surfaces, Matt Kuchar being tighter with a buck than a set of antlers and JB Holmes's brutal preputt rituals, it's been a rough year out there.

Kuchar's, um, frugality and

Holmes's pace-of-play issues, while not exactly a good look, aren't the end of the world, but DeChambeau's — and especially Garcia's — antics are a much bigger issue. I'm saying this not as a turf guy but as a golf fan. Turf damage aside, one of golf's greatest traditions is the integrity and class expected from players, and that expectation extends from the weekend foursome at the local muni all the way to the big leagues.

DeChambeau decided to take out his frustration on a bunker and a practice putting green in incidents at two tournaments this season that appeared to result in minor damage. In fairness to DeChambeau, he issued an apology the day after the put-

ting green incident and mentioned his "respect for the grounds staff and the game of golf."

By this point, I'm sure almost everyone is aware of Garcia's reprehensible behavior at the Saudi International. In case you missed it, Garcia was disqualified from the tournament for intentionally damaging five greens as a result of his displeasure with the condition of the newly grown-in surfaces.

Let me repeat that. He willfully damaged *five* greens, the same greens that his colleagues were also competing on, because he was dissatisfied with them. Let's say he did it once. While still inexcusable, at least you could chalk it up to one of those

"heat of the moment" things. But five separate greens? That type of behavior, or anything even approaching it, is completely unprecedented.

What's worse, the greens damage actually was the second act in his ridiculous melodrama that week. During his round the previous day, he had a complete meltdown as a result of a poor bunker shot and smashed his club into the sand several times while also blasting sand out of the bunker. Understandable, I guess, because it clearly was the bunker's fault.

He punctuated his little fit with a rant that I can only assume was completely NSFW. I'm not a fluent Spanish speaker, but I know enough to say that his mother likely was mortified.

Garcia managed to finally muster an apology several days after the incident, but unfortunately this isn't the first time he's been guilty of wildly unacceptable conduct on the golf course.

Not only were both of these acts incredibly disrespectful to the superintendent and staff, they also were disrespectful to the rest of the field and an affront to the greatest traditions of the game. Moreover, it certainly can be argued that two of the bigger names on tour engaging in this type of behavior could normalize it to the golfing public, and especially to the kids who look up to pro golfers. ☹

Matt Neff (mneff4@yahoo.com) is assistant superintendent at Wedgewood G&CC in Powell, Ohio.

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The Golfdom

FILES

FROM THE ARCHIVE

Does a golf club named after a murder victim really have to do much to make itself any more interesting? Perhaps not, but that wasn't going to stop Baltusrol Golf Club in Springfield, N.J., from making every effort to lure a major to the course. And it paid off when the PGA came a'calling. The following article was printed in the August 2005 issue of *Golfdom* and discusses the work done on the course prior to hosting the 2005 PGA Championship (it hosted the PGA Championship again in 2016). It appeared within a larger piece covering Mark Kuhns' career revival upon accepting a superintendent position at Baltusrol. To read the full article, visit golfdom.com/exclusive.

Baltusrol welcomes PGA for the first time

BY THOMAS SKERNIVITZ

“One of the big problems with hosting a major is moving people in and out,” (Mark)

Kuhns says. “And if you don’t have a second golf course or another 200 acres of land to work with, forget it. We’ve got 180 tractor-trailers that have to come in here (this summer) to deliver material. We’re literally building a city!”

Baltusrol has never hosted a PGA event. Kuhns, who hosted the 1994 U.S. Open as the certified superintendent at Oakmont (Pa.) Country Club, couldn’t be happier working with the PGA and its senior director of tournaments, Kerry Haigh, especially when it comes to game-day decisions the week of Aug. 8-14.

“That’s one nice thing about the PGA: They’re not really demanding a dried-out prune situation,” Kuhns says. “I asked Kerry, ‘When does your agronomist come on board to assist us with any problems or guide us with setup?’ He said, ‘Well, we really don’t have an agronomist, Mark. We don’t go to clubs where we need an agronomist.’ So there are no committees, no three or four people try-

ing to decide where the pin should be or what the height of the rough is going to be.”

Kuhns predicts the PGA champion will shoot a 4-under-par. Mark Hughes, the former superintendent of the Lower Course, says the course will offer “immaculate conditions.”

“I know the greens will be firm and fast,” Hughes says. “And the rough will

be extremely difficult for players to get out of.”

Under the guidance of Kuhns, Lower Course Superintendent Scott Bosetti and architect Rees Jones, several notable changes have occurred since 1999:

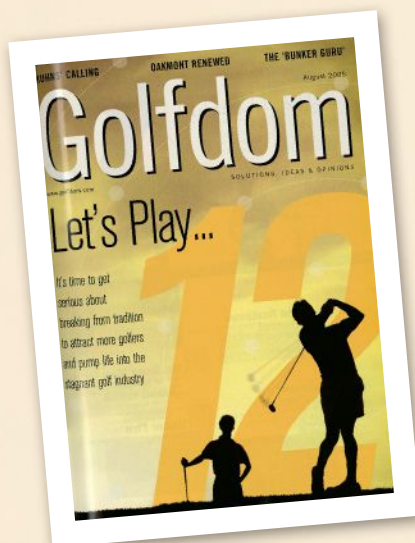
- For the sake of added length and historical restoration, new tees were built on holes 3, 5, 8, 10, 11, 13, 14, 16, 17 and 18. Totaled, the par-70 Lower Course measures 7,400 yards and is the longest course among the four majors this year. In addition, it features the longest hole of the major season — the 647-yard 17th.

“The 17th hole at one time was 630 yards and nobody had ever reached it in two until John Daly in the ‘93 Open,” Bosetti says. “So just in case someone wants to get a little itchy and wants to try to do that again, we lengthened it to 647. It’s a true three-shotter now.”

- All of the rough inside the ropes was replaced with more than 40 acres of sod comprised of approximately 80 percent Kentucky bluegrass and 20 percent perennial ryegrass. The fairways, tees and greens remain a mix of *Poa annua* and bentgrass.

“There’s a big difference between solid bluegrass and the native junk, which is pretty much a hodgepodge of bent, *Poa* and ryegrass. It’s got a dark, deep color to it,” Bosetti says. “It doesn’t mind being mowed at low heights, and when it grows out it gets gnarly and thick. Every time someone hits it into the rough, it’s going to be a consistent lie. That was one of the things that we strived for.”

- A rough renovation tightened the fairways, in most cases to 24 yards to 30 yards in width. “It’s definitely a new look,” Kuhns says. “We’ve narrowed all the fairways to PGA specifications from 260 to 330 (yards) out from the back tee.”



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Hometown Pride

With a nod to his local roots, Andy Wilson and his crew at Bethpage are readying the Black Course for the 2019 PGA Championship

BY ABBY HART

Bethpage's Andy Wilson has his eye on the calendar. "It's under 80 days until the tournament ... so in three months, it'll be over," he says, sounding a little wistful.

As Bethpage's director of grounds, responsible for spearheading operations for the 101st PGA Championship, to be played on Bethpage's prestigious Black Course, Wilson hardly can believe that the tournament will be a memory come Memorial Day weekend.

A mainstay on *Golf Digest's* "America's 100 Greatest Golf Courses" list (this year it ranks at No. 37) and located in Long Island, N.Y.'s Bethpage State Park, Bethpage's Black Course is one of the country's toughest public courses, with the equivalent of a homeowner's "Beware of Dog" sign on the first hole, warning golfers of its difficulty.

"It eats people up, but they love it," Wilson says, shaking his head. "They're crazy — I don't even like playing it, it's so hard. I go play the Green."

Course preferences aside, Wilson is immensely proud of his career at Bethpage and the quality of golf it continues to offer local golfers and golf fanatics alike.

"Being a public course, and especially because I live local and I grew up local — I take that seriously," he says. "We want the golf course to look good, and I think the people have a lot of pride in their golf course."

Continued on page 18





The Wanamaker Trophy, the top prize at the PGA Championship, awaits its next recipient at this year's tournament site, Bethpage's Black Course.



Andy Wilson

The Bethpage superintendent team. From left: Ryan Murphy, Michael Hadley, Eric Newell, Andy Wilson, Vincent Herzog, Sean Brownson, Shawn Brownell, Jake Suelflow, Hamilton Lopes and Erik Feldman.

Continued from page 16

With the 2019 PGA Championship moving from August to May — the first time in 70 years that the tournament will be played in May — the team is ready to prep the Black for its latest challenge and keep up the pride among Long Island locals.

Bethpage beginnings

In the early 1930s, the Bethpage Park Authority purchased Lenox Hills Country Club and hired golf course architect A.W. Tillinghast to design and oversee construction of the Black, Red and Blue Courses. Tillinghast also redesigned the Lenox Hills Course, which became the Green Course. The fifth and final course, the Yellow Course, was designed by Alfred Tull and opened in 1958.

Having grown up in the town of Bethpage and now living 10 minutes away in Farmingdale, which borders the state park, Wilson has spent most of his life in and around Bethpage. He first started working at the club in the summer of 1989, has been full time since 1994 and has held many positions there, including selling greens fees tickets and maintaining the tennis courts and polo fields.

During his early years at the club, the golf course was managed by local retirees who saw working on the golf course as a useful second

career that allowed them time to play golf. Craig Currier joined Bethpage in 1997 and brought with him a professional turf manager's outlook to overseeing Bethpage's five courses.

Seeing promise in Wilson, Currier and former Parks Director Dave Catalano encouraged him to attend turf school at Rutgers. (He already had completed his bachelor's degree in English at Fairfield University. "I did much better in my turf degree," he admits.)

Wilson became Green Course superintendent in 2000 and over time became overall assistant to Currier. When Currier took a short 12-mile jaunt west on the Long Island Expressway to become the superintendent at Glen Oaks Club, Wilson stepped into the director of grounds role on Jan. 1, 2010.

Space to grow

Wilson's approach to his greenkeeping team, in particular the superintendents on the Black Course as they look ahead to May, is to give them plenty of information and allow them the space to do their jobs and develop their skills.

With five golf courses and a crew of 50 to 60 people, Wilson reasons that the operation is big enough that people have the flexibility to figure out what they like to do and express their natural talents.

Continued on page 20



PHOTO COURTESY: THE PGA OF AMERICA (PREVIOUS PAGE)
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Bethpage Black saw major restorations in preparation for the 2002 U.S. Open, with additional work completed before the 2009 U.S. Open.



Michael Hadley



Vincent Herzog

Continued from page 18

"I tend to give guys a little leeway to see what they can do with that freedom," Wilson says. "When they reward you with good conditions, it's great."

Pittsburgh native and Penn State grad Michael Hadley is superintendent on the Black Course. In his 20-year career at Bethpage, he's seen the course undergo renovations and major changes alongside Wilson — sometimes a little too close, like when they shared a small office across from what is now Wilson's office.

During Wilson's and Hadley's tenures at Bethpage, they've worked the 2002 and 2009 U.S. Opens (won by Tiger Woods in 2002 and Lucas Glover in 2009) and the 2012 and 2016 Barclays tournaments (won by Nick Watney in 2012 and Patrick Reed in 2016).

The 2019 PGA Championship will be their third major and has given them their first opportunity to work with the PGA of America, with PGA Tour and USGA experience already under their belts. The PGA of America will be the seventh organization to host a tournament at Bethpage.

"You have to have trust," Hadley says about the close-knit team. According to him, it's necessary for the greenkeeping crew to communicate well with each other — allowing Wilson

to focus on the business around the golf course and the superintendents to take care of the turf.

Construction Superintendent Vincent Herzog agrees. "(Andy) remembers what it's like, and he just wants us to have the information. I don't think there's ever a point where it's too much."

Herzog was a high school golfer in Ohio and studied turf science in Alabama. Wilson hired him as an intern in the summer of 2010, and he packed his Ford Ranger for Long Island and finished his turf degree from his new home in New York.

Over the years, Herzog moved up from assistant on the Black Course to superintendent on the Red Course and moved up yet again last fall to become construction superintendent, overseeing construction projects across all five courses. This includes the massive infrastructure necessary to support the PGA Championship crowds.

Black Course Assistant Superintendent Ryan Murphy played golf for most of his life growing up in Massachusetts, which led him to study sports management and golf management.

Murphy applied for a job at Bethpage in 2012 during the first Barclays and hasn't looked

Continued on page 22

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In addition to the 2019 PGA Championship, the A.W. Tillinghast-designed Bethpage Black will also host the 2024 Ryder Cup.

Continued from page 20

back. “I honestly fell in love with it — being out with the guys in the field and working through the summer.”



Ryan Murphy

He says that so far this season, the course looks good and the work is “really detail oriented. I feel like we’re able to get the Black Course really dialed in year to year, and it’s about maintaining that.”

Not all members of the team had a prior love of golf. Head Mechanic Sean Brownson was on his way to becoming a pilot when he arrived on Long Island in 2007 for aviation training at Farmingdale State College. He took a job working on the golf courses at Bethpage and got his first taste of the tournament atmosphere when he worked the 2009 U.S. Open on the Black Course.

Even with his training completed and his pilot’s license in hand, the experience changed his life forever. “The excitement and the preparation, it just kind of drew me in, and I said, ‘This is what I want to do,’” Brownson says.

As it turns out, he had a recent opportunity to get that tournament rush at the 2018 U.S. Open at Shinnecock Hills, Bethpage’s neighbor that’s an hour east on Long Island, where his younger sister Lindsay served as assistant superintendent under Jon Jennings, CGCS. Brownson says he’s been getting his sister’s advice as the Bethpage team gears up for its big week.



Sean Brownson



Long Island in the spring

The Bethpage tournament crowds are famously rowdy, with 2016 Barclays winner Patrick Reed comparing the noise level to a football game. This superintendent crew is working hard to ensure that the players and the spectators have plenty to cheer about as far as course conditions — even with the date changing from late summer to spring.

Wilson started to get an inkling that schedule changes were in motion three years ago when PGA of America Chief Championships Officer Kerry Haigh asked him what the weather was like in Bethpage in May.

“That was sort of curious, a guy who was pretty high up the food chain, why’s he asking a humble civil service employee like myself — a municipal superintendent — about the weather in May,” Wilson laughs.

Considering the course’s *Poa annua* greens are in better condition in May than in the thick of a long season in August, making the move “put a smile on our faces,” he says, noting that the

Continued on page 24



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Continued from page 23

course's *Poa* greens typically are at their best mid-May to mid-June.

The Black Course superintendents treated last winter and spring as a sort of rehearsal for this year. The greenkeeping team's biggest concern is winterkill — really any winter damage. Hadley adds that the team has been experimenting and working with the PGA of America on *Poa* seedhead control.

Getting championship ready

The team is staying on their game and making changes to ensure the grounds crew is successful in May. However, some changes on the course are designed to take the already formidable Black Course to another level for the pros.

Rees Jones and architect Greg Muirhead have been intricately involved in renovations at Bethpage, with Jones visiting at least twice a year and Muirhead visiting

a handful of times throughout the year.

Between the 2012 Barclays and after the 2016 Barclays, the greenside bunkers on the Black Course were rebuilt. The No. 11 green has a new extension on the back left of the hole, and a few more pin positions have been added.

Some additional alterations to the course include planting trees on the right side of the fairway on No. 1 and reshaping and rebuilding bunkers on No. 3. The No. 14 green has been rebuilt to add Championship hole locations.

The most dramatic changes have occurred on No. 18. Back in 2009, the front of the 18th fairway offered a generous bailout area about 30 yards wide, which pinched down to about 19 yards wide. In previous tournaments, players have chosen a conservative approach on that hole, choosing to lay up in the front fairway area.

The 411-yard hole was good looking but not ultrachallenging, Wilson concedes.

Now the fairway has been contoured to about 24 yards wide throughout, forcing golfers to be more accurate with their approaches.

Two additional bunkers on the right side of the 18th green were designed to offer some additional obstacles. "If someone does lay up in there and they miss, there is a little bit of danger to get there from a fairway bunker 160 yards out," Wilson says.

Jones is complimentary of the Bethpage team and the work they've put in. "(Black Course superintendent) Mike Hadley's a superstar," he adds.

After all the adjustments to the course, how does he think it stands up as a host for this year's PGA Championship?

"It's a great test," Jones says. "It's got some very strong holes ... it's got a great ebb and flow."

Jones says that with pros hitting longer drives and hitting shorter clubs and a number of elevated greens on the course,

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Bethpage works for the game that current pros tend to favor.

"They don't play the ground game as much," Jones says. "Because they play the aerial game, it suits them perfectly for the PGA Championship."

There's no place like home

Wilson has made a point of hitting the road and visiting tournaments to gain perspective on the agronomic side, learning about organizing volunteers, working with vendors and seeing firsthand the scale and what it takes to run a major — basically, what "the show within the show" is.

At Baltusrol in 2016, he spoke with the superintendent of another Tillinghast-designed course, Mark Kuhns, CGCS, during that year's PGA Championship. He made the trek up north to Hazeltine to work on Chris Tritabaugh's data team during the 2016 Ryder Cup.



Rees Jones and Greg Muirhead have worked with the Bethpage team and the PGA of America to modify hole No. 18 on the Black Course in preparation for May.

Last year, Wilson Stimped greens at Bellerive Country Club for Carlos Arraya, CGCS, for the 2018 PGA Championship. He wrapped up 2018 by crossing the pond for the Ryder Cup at France's Le Golf National, where he had the opportunity to ride around the course with Haigh.

After all his travels, he found that Bethpage Black isn't lacking.

"It's a matter of attention to detail, but

it seemed like all these guys were doing a lot of the same things," he recalls. "A few different techniques, but most of it involved organization, motivation and diligence ahead of time."

"It's nice, because I see those other golf courses and I think, 'Hey, we're in their league,'" he says.


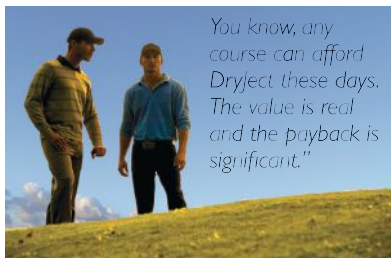
Not bad for a local Long Island kid and a humble municipal superintendent. 

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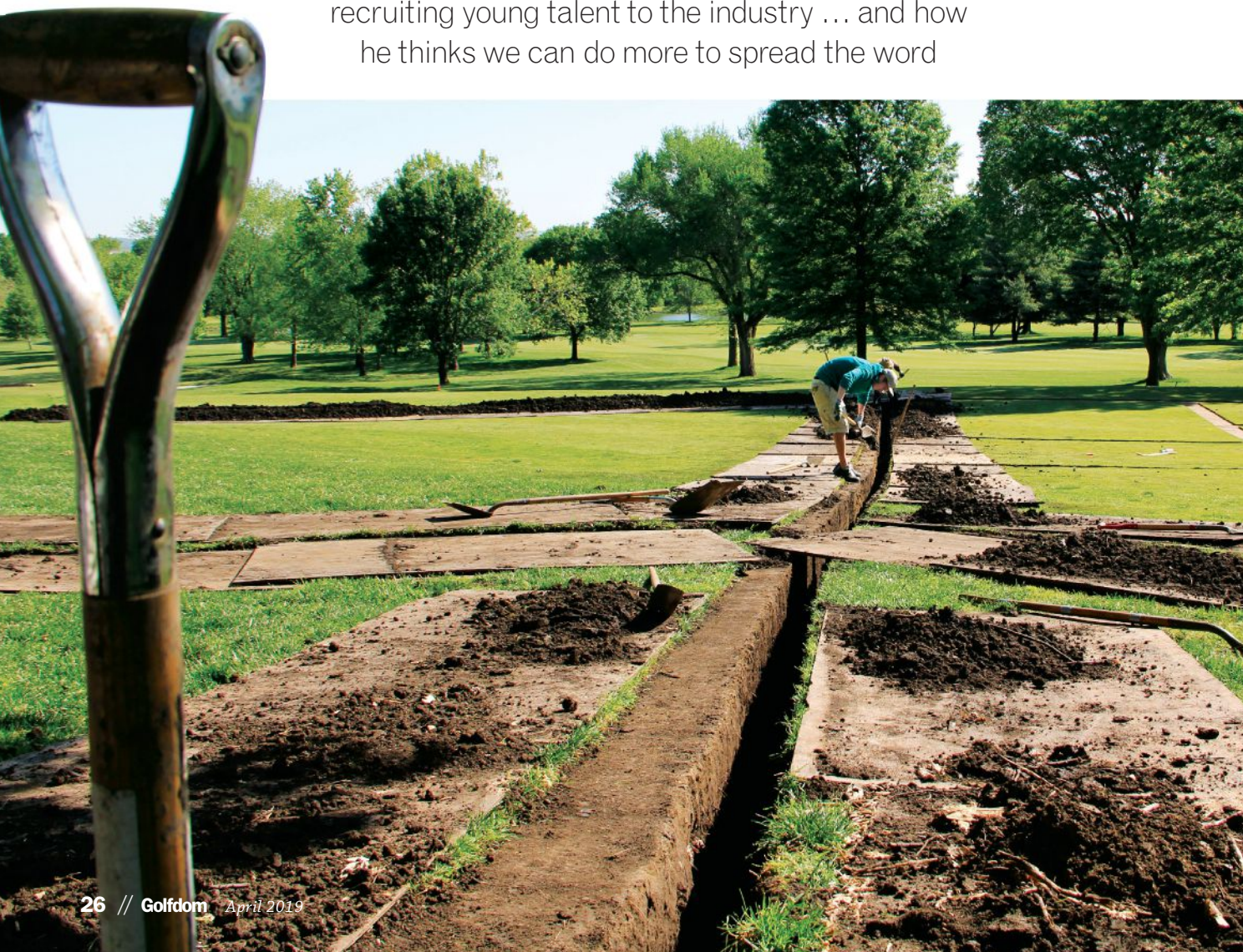
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The Young and the Restless

How a superintendent is being proactive about recruiting young talent to the industry ... and how he thinks we can do more to spread the word



Editor's Note: Because the author's golf club likes to keep a low profile, the author has asked to remain anonymous.

During my career, hot topics in the industry have come and gone. In the last couple of years, the focus has been on labor. This is one issue that isn't going away anytime soon. We can sit around and complain about it, but what is that going to accomplish? The numbers in turf programs are down, availability of Hispanic workers is down and young kids seem to be jumping into technological industries.

Why are fewer kids getting into turf? How many superintendents reading this just decided in high school or college that they wanted to study turf without working on a golf course?

Consider how our industry has evolved. As Hispanic workers entered the market, it was easy to find good and inexpensive labor. We stopped hiring high school kids — or at least as many high schoolers. We were negative about the industry as the economy turned south, and even if you had kids working for you, they listened to the hardships you spoke about. There is a huge gap for these kids to fill now, but we have chased away young people from our shops.

I constantly hear complaints about the next generation not wanting to work. Have you really tried hiring these young people, working with them, training and empowering young minds?

I visit local high schools to talk about the industry. Guess what? Nobody knows we exist! We have to spread the message ourselves. Nobody is going to do it for us. Go speak to the environmental science class at your local schools, reach out to the Boy Scouts, FFA or other organizations.

My yearly visit to the guidance counselor involves a conversation about introducing me to the middle-of-the-road students who think they want to work outside. I drop off a flier with pictures of outside work and my



"We've saved hundreds of thousands of dollars over the years by employing local kids and cutting back on overtime."

contact information. Posting an ad on Facebook may be another way to appeal to high school kids. Maybe it isn't as easy to find these young people, but I promise they are there, even in the wealthiest areas. We went through a dozen to find a few good ones the first year, but then I learned that some of these kids had a friend who they wanted to bring with them the following year.

We made it fun and trained them on various machines. Kids want to feel proud of what they are doing, and empowering them to think is a huge incentive. If you hand out mindless work all the time, a mindless attitude is what you get in return.

The 30-hour week

We have a unique system, and it seems to be mutually beneficial. We hire local kids to work 30 hours a week, only in the morning. They are able to go to the pool and hang out with their friends in the afternoon, and we aren't babysitting half of our crew every afternoon. They work every weekend — when we are busiest — and never on overtime. We hire more people than we need at one time so they can take family vacations. It's OK, because the cost is low for a young local kid who is never on overtime.

We also allow the employees to play golf on days we are closed so they better un-

derstand the impact their work has on the course. Maybe they will be members some-

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day. They might even be an experienced green chairman someday!

We have turned three local kids into turf students in the past few seasons, with another one heading to turf school in the fall. As these young people express interest, our demands of them increase so they fully understand what the business entails.

As long-term employees continue to get raises, these positions reset as many local students go to college or graduate. We've saved hundreds of thousands of dollars over the years by employing local kids and cutting back on overtime. It works, but in turn, you have to work at it. The younger workers might be hard for the assistants to manage and train. The mechanic might have to fix a few more things, as employee turnover is inevitable.

However, this system has worked for us and is much cheaper than racing land-



Hiring local high school kids during the summer creates exposure to the turf industry and may even help cultivate future turf students.

scape companies to see who can pay more. I know what I was like as a high school employee, and many people took me under their wings to help me get to where I am. I

think we can do the same for the next generation and provide a great value to our clubs.

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THAT'S A WRAP

BY THE GOLFDOM STAFF

The 2018 *Golfdom* Summit was the largest ever, with 20 companies showing their wares to superintendents from around the country. The team at *Golfdom* at first was nervous about the larger group, but with some nimble planning, the challenge of hosting 20 partners became a success.

“Two things came together to make this the most successful *Golfdom* Summit ever — having 20 partners and having the superintendents meet in groups of two with each partner,” said *Golfdom* Publisher Craig MacGregor. “Having two supers with each partner made the conversations flow more naturally, and it also meant every superintendent got quality time with every partner and vice versa.”

Brad Sladek, technical service manager for Intelligro, said having two superintendents meeting with him and Sales Account Manager Tony McKenna made the Summit both successful and exciting. The best-case scenario for him was when one of the superintendents used Civitas and the other did not.

“It’s one thing to hear about a product from a service manager, but it’s a very different thing to hear it from a fellow superintendent who is using our product,” Sladek said. “It was the first Summit I had been to, but the format change really helped us ... it reduced anxiety and opened up a nice dialogue with the superintendents.”

Because of this success, MacGregor said the 2019 *Golfdom* Summit is again close to being

sold out, with only three spots left for sponsoring partners. Companies already committed to the 2019 *Golfdom* Summit include:

- The Andersons
- BlueBird
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- FMC Corp.
- Frost
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- Nufarm
- PBI-Gordon
- Pogo Turf Pro
- Quali-Pro
- Sipcam Agro USA
- Smithco
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- U.S. Aqua Vac
- WinField United
- Turfco

To learn more about the *Golfdom* Summit, visit GolfdomSummit.com.

In the final part of our 2018 *Golfdom* Summit recap, we take a look at five more partners and what made the 2018 edition so special. (Hint: the more, the merrier.)

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Quali-Pro

Listening and learning were the primary objectives for Quali-Pro at the 2018 *Golfdom* Summit, according to Nicholas Strain, the company's business director.

"We are here (at the Summit) to know the things we need to develop," Strain said. "We're in that development mode where we're trying to find new things for superintendents to help with their (turf) problems."

Through interactions with the superintendents in attendance, Strain said he and the rest of the Quali-Pro team gained some insight into the extreme weather issues many courses had to combat, particularly in the Northeast, which saw unusually high heat and humidity last year.

Strain said that with those extreme temperatures came increased disease pressure from summer patch, as well as from dollar spot.

"Dollar spot is always the big one," Strain said. "That'll always be the one we'll have to stay focused on."

In addition to determining what types of products should come down the pipeline, Quali-Pro showcased two of its current products: Enclave, a snow mold and spring dead spot combatant, and Negate, an herbicide for use in the South to help clear out grassy and broadleaf weeds.

"With Enclave, it's not just a northern product, but (superintendents can also) think about it as a southern turf product," Strain said, referring to the product's ability to help contend with spring dead spot.

Superintendents talked to Quali-Pro about some of their major turf challenges: summer patch and dollar spot.



The Intelligro team listened to attendees and then explained how Civitas Turf Defense could integrate into their programs.

Intelligro

Intelligro, a subsidiary of PetriCanada Lubricants in Ontario, Canada, produces a wide array of turf and plant protection products, including a line implemented in rose gardens and vineyards.

Wine and roses, however, were not the focus of Intelligro at the 2018 *Golfdom* Summit.

The company instead highlighted its main product for the golf course: Civitas Turf Defense.

A paraffin wax product derived from mineral oil, Civitas Turf Defense is a fungicide and insecticide superintendents can use to improve integrated pest management efficiencies and deliver protection against other stresses, according to the company.

"For those of you who are aware, you know that it's a unique product that takes some dissecting," Intelligro's Sales Account Manager Tony McKenna told Summit attendees.

He added that it was his (but not Intelligro's) first time participating in the Summit and that he was excited to have some



PHOTOS BY: ABBY HART



Civitas users in attendance.

Brad Sladek, technical services advisor, said that while Civitas is not new, the product does require explanation concerning how it works — which made the Summit's small group setting ideal.

"Because of how our product works, it can be very specific in how it fits in with each program, so we like to see where it fits in," Sladek said. "(Civitas) was launched 10 years ago as a fungicide, but what we've learned is (that) on the abiotic side, it can really help. Whether the stress is drought, cold, traffic ... we can find a use. Our product is helping the plant do more of what it is already naturally doing."

PHOTO BY: KELLY LIMPERT

Cub Cadet

Cub Cadet and its parent company, MTD, are expanding through the development of new products and acquisitions.

Continued on page 32



The Cub Cadet team demonstrated their Infinicut line of mowers on the Reunion Resort practice greens.

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Continued from page 31

One of these new products is the Infinicut RGX robotic mower, which was zipping around on the practice putting green at the *Golfdom* Summit. The model on display was so new, in fact, that Cub Cadet asked attendees to not post photos of the robotic mower to social media, as what they were seeing was a prototype. Indeed, the version on display at the 2019 Golf Industry Show looked different.

The mower is a hybrid in the sense that it takes a sports turf mower's strengths and applies that cutting technology to a robotic mower, said Tony Whelan, director of sales and marketing for Cub Cadet's specialty turf products division.

"We're taking the success of the Infinicut mowers — used at venues like Real Madrid, Wimbledon, Pittsburgh Pirates and Toronto FC — and applying it to the success of the RG3 robotic mowers, and the result is the Infinicut RGX," Whelan said. The RG3 mowers are powered by lead-acid batteries, and the new RGX models will have all lithium batteries and a new positioning system.

"A lot of people, when they first see it, they think in terms of productivity and no labor," Whelan adds. The machine has the ability to cut and roll, so it saves time, and because it operates robotically, it saves labor.

Whelan told Summit attendees about Justin Daigle, the superintendent at Perry Park Country Club in Larkspur, Colo., who was able to get to the list of jobs he always wanted to get to but never had the time, because this machine operates on its own.



The Andersons talked to Summit attendees about how their products can help decrease overapplication of chemicals.

It also eliminates footprints on the green before the players get to it. Daigle also found that with a walk-behind mower, there were about 1,600 footprints on the green before players even set foot on them. So, an additional benefit of the Infinicut RGX is an improved playing surface, Whelan noted.

The Andersons

The Andersons may have started out as Andersons Truck Terminal in the 1940s as an agribusiness for the grain industry, but the company's goal at the 2018 *Golfdom* Summit was to showcase a few of its more modern turf health products.

"We wanted to give attendees more detailed info on the products we featured during the boardroom meeting the first day," said Tony Atchison, territory sales manager for The Andersons. "We also wanted to get feedback on what products they were using of ours currently."

At the Summit, the company, which is based in Maumee, Ohio, highlighted products such as HCU, Foltec SG and Contec DG Gen 3. HCU, or humic-coated urea, is a nitrogen source featuring urea-humate fusion. A foliar nutrient technology, Foltec SG is a proprietary combination of dry soluble granules (SG) that quickly solubilize in the spray tank. Gen 3 granules are homogeneous, allowing for a consistent spread pattern. The granules also stand out against turf, making it easy to see where product has been applied, decreasing the possibility of overapplication, according to the company.

"(The *Golfdom* Summit) provides us a great opportunity to interact with customers and get feedback on other opportunities so we can help with their agronomy needs," Atchison said.

Capillary Concrete

Capillary Concrete is a polymer-based concrete that can move water up and down to regulate the moisture content of sand. But more than a technology to help superintendents move water through sand, Capillary Concrete also helps superintendents move dollars.

"Fifty years from now, financing bunker renovations is going to be very common," said Martin Sternberg, CEO of Capillary Concrete. But for the time being, Capillary Concrete is the only bunker renovation company that allows renovations to be financed, he said.

Operational risk is associated with how much money superintendents spend to fix something. Bunkers represent more than 50 percent of the operational risk of a golf course. Courses only need a couple inches of rain to completely wipe out a bunker, Sternberg told the *Golfdom* Summit audience.


"If you get hit with a really bad storm, or a hurricane, you aren't going to be in as bad of a situation as you would if you didn't have this," Sternberg said. 

PHOTO BY: KELLY UMPERT



Super Science

// AGGIES IN AGRONOMY

LIVING THE GREEN GRASS LIFESTYLE

By Chrissie Segars, Ph.D.

Hello, turf lovers! My name is Chrissie Segars, and I am the new Extension turfgrass specialist at Texas A&M AgriLife in Dallas. I grew up in a small town of fewer than 1,000 people in South Carolina, where the peaches are sweet, but the people are sweeter. I received my undergraduate degree from Clemson University (Go Tigers), a master's degree from both Louisiana State University and Oklahoma State University and went on to receive my Ph.D. in crop science from Oklahoma State University.

During my time at Oklahoma State, my research focused on screening turfgrasses for various characteristics, including sod tensile strength, photosynthetic capabilities concerning athletic field paint applications and carbohydrate production. In February 2019, I began my journey of becoming an Extension turfgrass specialist in Dallas. I'm excited to see what the future may bring.

Green grass is a lifestyle for all of us. I certainly believe in the future of turfgrass, but I also believe in the future of the people in the turfgrass industry. It's my hope that through this position, I can have a positive impact, not only on the grass that grows on golf courses, athletic surfaces, home lawns and sod farms, but also on the people who manage those areas. My goal is to provide resources, education, hands-on demonstrations and real-life data to the turfgrass industry in the state of Texas on topics that you want and believe are needed.

I hope that I can develop positive relationships with superintendents that not only help their personal situations but that will also lead to a better turfgrass industry. I look forward to meeting and working with you all. ©

Chrissie Segars, Ph.D., is the Extension turfgrass specialist at Texas A&M AgriLife Extension. You may reach her via email at chrissie.segars@ag.tamu.edu. Follow her on Twitter @hairyligule21.



Chrissie Segars



NEWS UPDATES

EWING OPENS FIFTH LOCATION IN NORTHEAST

Ewing Irrigation & Landscape Supply has opened a fifth location in the Northeast and mid-Atlantic region. Ewing Franklin Lakes is located in Franklin Lakes, N.J.

"We're excited to continue serving our customers in the Northeast and mid-Atlantic," said Phil Kerchner, regional manager for Ewing's Northeast/mid-Atlantic region. "Ewing's culture is about partnering with our customers and helping them grow their businesses while having a lot of fun along the way, and that's exactly what we're doing."

This store's opening comes a year after Ewing opened four other Northeast locations back to back in Gaithersburg, Md.; West Berlin and Tinton Falls, N.J.; and Ronkonkoma, N.Y. The store will carry a wide variety of products for green industry professionals, including irrigation supplies, fertilizer and chemicals, tools and accessories, golf course products, sports field materials and more.

"Ewing is dedicated to serving green industry professionals in the Northeast," said Chris Rhodes, Ewing Franklin Lakes store manager. "We now have multiple locations for industry pros in the area, because we're here as a resource for our customers. We have a well-stocked inventory, quick and reliable deliveries and a knowledgeable staff that can assist them with questions they might have."

“DEPENDING ON YOUR LOCATION, COMPOST MAY BE LESS EXPENSIVE THAN A GOOD-QUALITY TOPSOIL.”

Pete Landschoot, Ph.D.

(see story on page 34)

// **BETTER THAN TOPSOIL?**

Compost amendments on the golf course

By Pete Landschoot, Ph.D.

If you are a golf course superintendent struggling with poor or marginal soils, compost amendments may provide some relief.

A good-quality compost can improve structure in soils with a high amount of clay, reduce compaction and increase infiltration. Amending compost into sandy soils can add nutrients, improve water and nutrient retention and increase soil microbial activity. If done correctly, amending compost into poor soils should result in better turf performance and may save on fertilizer and irrigation costs.

Compost availability has increased in recent years because of more production facilities coming online in areas where golf courses are concentrated. Depending on your location, compost may be less expensive than a good-quality topsoil.

When considering how much to purchase, consider that compost can have a stronger soil-modifying effect than equal or greater amounts of topsoil. However, before jumping on the compost bandwagon, realize

“Areas of your property with poor or marginal soils or that receive high amounts of traffic are good candidates for compost applications.”

FIGURE 1



Compost application on an approach to a putting green.

that application and incorporation of compost into soil is labor intensive and time consuming, so carefully consider where to use it and where not to use it. Also, become familiar with the basics of choosing a quality product. Finally, know how much to apply and how to incorporate compost into soil.

WHERE TO USE COMPOST

Areas of your property with poor or marginal soils or those that receive high amounts of traffic are good candidates for compost applications. These could include cart paths, tees, approaches to greens and fairway areas where topsoil is thin. Typically, we don't use composts for putting green soils because they can contain higher amounts of mineral matter than sphagnum or reed sedge peats and may not be as resistant to decomposition

(i.e., not as stable).

If you've never used compost as a soil amendment, start with a relatively small area such as an approach to a green or the clubhouse lawn to gain experience with application equipment and methods of incorporation. Once you have had a chance to evaluate the results of your applications, you can move on to larger projects.

CHOOSING THE RIGHT COMPOST

Not all compost products are alike. Composts are made from source materials, including yard trimmings (leaves and grass clippings), biosolids, animal manures, food residual and other organic byproducts. Product quality can vary depending on how it is composted and stored.

Because of quality concerns, it's essential to have some basis for

ALL PHOTOS BY: PETE LANDSCHOOT

evaluating suitability of compost products for use on golf turf. Ideally, the product has been field tested or routinely used by other turf managers. If possible, visit the compost facility, take a sample and examine it for unwanted objects and unusual or offensive odors. Also, check the compost piles for the presence of weeds. If weeds are growing in the compost, there's a good chance weed seeds will be present as well. Ask the facility manager for a chemical and physical lab analysis of the compost. Compost manufacturers who test their products on a regular basis are better able to monitor quality and uniformity from batch to batch.

The following are general guidelines for determining the suitability of compost for use on golf turf. Some of these are field tests you can perform on your own, whereas others require a lab test.

Visual appearance. A good-quality compost resembles a dark potting soil and has a light, crumbly structure. It should be screened to 0.375 inch or 0.5 inch and be free of large stones, wood pieces, plastic and glass.

Odor. Most composts have a pleasant, "earthy" aroma, similar to a forest after a rain. Some biosolids and animal manure-based products initially have strong musty odors, but this usually dissipates a couple of days after application. Avoid composts with strong ammonium or sulfur odors, as this may indicate an unfinished product.

Moisture content. Research at Penn State has shown that the moisture content of compost influences quality and uniformity of application. Typically, composts with moisture contents between 30 percent and 50 percent are suitable for spreading and soil incorporation. Wet composts (greater than 60 percent moisture content) tend to form clumps and balls, are difficult to spread evenly on turf surfaces and mix poorly with soil. Also, wet composts are heavy, difficult

Continued on page 36

FIGURE 2



A good-quality compost should resemble a dark potting soil and have a light, crumbly structure.

TABLE 1

Guidelines for Choosing a Compost.*†

Appearance and odor	
Color	Brown to black (similar to a dark topsoil or potting soil)
Particle size	Approximately 0.375 inch to 0.5 inch; free of large wood pieces, stones, plastic and glass
Structure	Loose and crumbly
Odor	"Earthy"; avoid products with strong ammonia or sulfur odors
Physical characteristics	
Moisture content	30 to 50 percent; excessively wet composts do not mix well with soil
Organic matter	Greater than 60 percent on a dry-weight basis and well decomposed
Ash content	Less than 40 percent
Chemical properties	
Carbon-to-nitrogen ratio	Below or equal to 30:1
Nitrogen	Typically, 0.5 to 3.0 percent
Phosphorus	Variable, usually about 0.2 percent
pH	6.0 to 7.5
Metals	Determined by state and federal agencies
Soluble salts	Depends on turf species, type of salt, concentration and application method. Consult test lab or other expert to determine how this will affect the turf.

*Use this information only as a general guide. Some composts have properties that do not fall within these guidelines yet are acceptable in certain situations. Others, though they may fit these guidelines, may have drawbacks in other criteria.

†The information in this table is taken from: Using Composts to Improve Turf Performance, Penn State Cooperative Extension <https://extension.psu.edu/using-composts-to-improve-turf-performance>

FIGURE 3



Topdressing units with large hoppers, belts and brushes mounted in the rear are preferred for surface applications.

Continued from page 35

to handle and can smear into turf and pavement. If you squeeze a handful of compost and water drains out, it's generally too wet to apply.

Dry composts (less than 20 percent moisture content) tend to produce excessive dust, which may accumulate on windows, buildings and vehicles. Dust may be hazardous if inhaled or if it enters the applicator's eyes. Dry composts also are difficult to work into soil, forcing equipment operators to spend more time and effort tilling the soil.

Organic matter content. Composts can vary widely in organic matter content. Our research has shown that composts containing more than 60 percent organic matter on a dry-weight basis tend to be the best soil amendments. You can determine organic matter by a lab test, but most test procedures consider everything combustible in a furnace as organic and do not distinguish among humus, wood chips, bark and plastic. So, a visual examination of the compost must be part of the evaluation.

Carbon-to-nitrogen ratio. Soil-test labs typically report a value that indicates the ratio of carbon (C) relative to the amount of nitrogen (N) in compost, often reported as C:N. This ratio is an important indicator of the

plant-available nitrogen in compost. If the C:N is above 30:1, soil microorganisms can "tie up" or immobilize nitrogen, making it unavailable to turf. If the C:N is 30:1 or less, turfgrasses can use the nitrogen in compost.

pH and nutrients. A desirable pH range for compost is 6.0 to 7.5. Although a compost with a pH value a little outside this range may be acceptable for use on a golf course, extremes in pH may reduce nutrient availability or cause toxicity in turfgrasses. In an establishment study at Penn State, a manure-based compost with a pH of 8.5 tilled into a clay-loam soil caused seedling inhibition, probably because of ammonia or ammonium toxicity.

Nutrient content of composts is low

when compared with most golf turf fertilizers. However, because composts are used mostly as soil amendments, relatively large amounts are applied in a single application, increasing the nutrient load to turf. Surface applications of 0.25 inch of compost typically elicit a turf green-up response from nitrogen and other nutrients. A 1-inch or 2-inch layer of compost tilled into a soil prior to establishment can supply all the nutrients required by turf for a year or more. A recent study at Penn State showed a nutrient response in turf lasting five years from a 2-inch layer of yard-trimmings compost tilled into silt-loam soil.

Soluble salts. Excessive soluble salts sometimes are present in compost made with animal manures. High concentrations of soluble salts can injure turf by restricting absorption of water, and in extreme cases through ion toxicity. Unfortunately, it can be difficult to determine if a certain concentration of salt will injure turf because injury potential depends on the type of salt, salt tolerance of the turf species and the method of application. If you suspect high soluble salts in a compost, check with a lab that analyzes soluble salts and ask for advice.

APPLICATION METHODS

Surface applications. Surface application of compost is a means of gradually

Continued on page 38

TABLE 2

Suggested amounts of compost (cubic yards) per unit area applied to soil surface and tilled into soil prior to establishment.[†]

Unit area in square feet	Cubic yards of compost required for 1-inch layer	Cubic yards of compost required for 2-inch layer
1,000	3.1	6.2
5,000	15.5	31
10,000	31	62
20,000	62	123
40,000	123	247

[†] The information in this table is taken from: Using Composts to Improve Turf Performance, Penn State Cooperative Extension <https://extension.psu.edu/using-composts-to-improve-turf-performance>

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Continued from page 36

incorporating organic matter into soil over a period of three to five years. It's typically accomplished by light topdressings of compost following core aeration. Surface application of a 0.25-inch layer of compost is easily worked into aeration holes and mixed with soil cores by dragging or slicing with a disc seeder or verticutting equipment. The key to successful surface applications is to obtain good incorporation and mixing with soil. Simply depositing compost on the surface with no incorporation will result in an organic layer on the surface that can lead to excess water retention and shallow rooting.

Because compost is light and bulky, topdressing units with large hoppers, belts and brushes mounted in the rear are preferred for surface applications. We have successfully used slicing equipment to break up cores and drag mats to mix the compost with soil. Dragging also helps to move compost into holes created by core aerators.

Recent research results from a large-surface application trial showed that four years of applying annual applications of 0.25 inch of a yard-trimmings compost (60 percent organic matter) showed an increase in organic matter of 1.5 percent.

Tilling compost into soil before establishing turf. Another means of compost incorporation is rototilling into soil. You may use this method when establishing turf on bare soil. It provides an excellent opportunity to immediately improve soil structure and increase organic matter content. The most effective method of tilling compost into soil involves stripping sod from the surface, followed by an initial tilling to loosen the soil, then spreading a 1-inch to 2-inch layer (approximately 3.1 to 6.2 cubic yards per 1,000 ft²) of compost on the soil surface and tilling to a depth of 4 to 6 inches (Figure 4). Check to make sure the compost is adequately mixed with the soil and not distributed in a layer at the surface before curtailing

FIGURE 4



Compost being tilled into soil using a rototiller.

tilling. If not thoroughly mixed, large clumps of compost and soil will remain and result in variable soil conditions and turf growth.

The rate of compost you use depends on the compost and soil conditions. Composts with higher percentages of organic matter and nutrients will provide the greatest soil improvement. Lower rates are better suited for soils that need only limited improvement, whereas higher rates are good for poor soils (very sandy soils, clay soils or shallow topsoil low in organic matter). In research trials, we found that more than 2 inches of compost may be difficult to mix thoroughly 4 to 6 inches into the soil. Some soil test labs provide specific recommendations for rates of compost based on the organic matter content of the soil.

Although compost tends to decompose faster than sphagnum or reed sedge peats, the benefits of tilling compost into soil should last for many years. Research at Penn State revealed a 2-inch layer of yard-trimmings compost with 60 percent organic matter tilled into a silt-loam soil increased organic matter 3 percent compared to a nonamended control soil after five years.

If soil problems are limiting turf performance, consider the addition of compost as a long-term solution. **G**

Acknowledgements

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Pete Landschoot, Ph.D., is a turfgrass scientist at The Pennsylvania State University. You may reach him at pjl1@psu.edu for more information.

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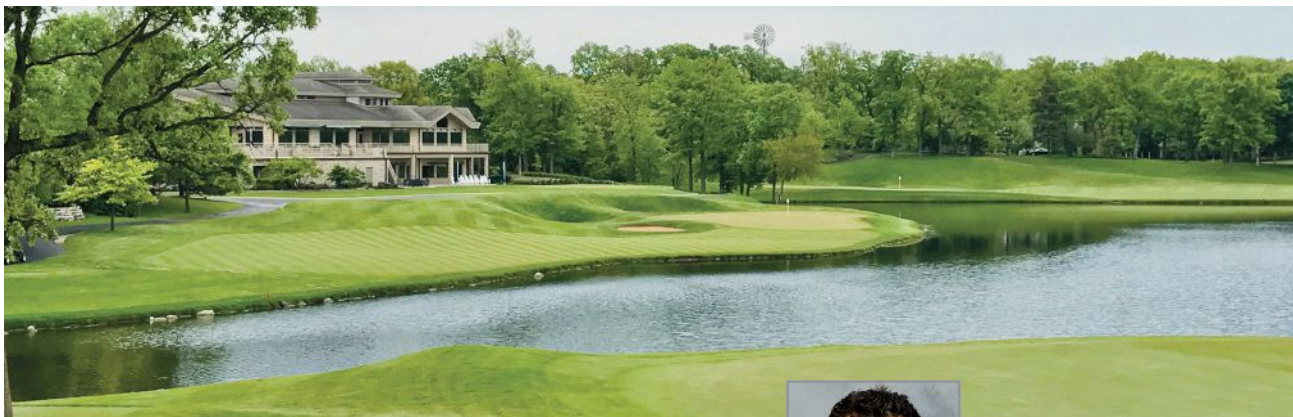
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CONDITION. PERFORM. RECOVER.

Tested perfection.

How a Chicago club weathered the perfect storm for dollar spot to keep turf disease-free for the pros



Ryan Mumper

The Ivanhoe Club, on Chicago's north side, offers a trio of 9-hole courses. It's enough to keep anyone busy through the season. However, when the club hosted an event like the Web.com Tour's Rust-Oleum Championship in early June 2017 and 2018, things had to be beyond perfect.

Pressure was high. "I tend to keep the programs pretty tight, preventively," says Ivanhoe Club Superintendent Thomas Prichard, CGCS. "We're not used to seeing any disease here."

He and his assistant, Ryan Mumper, require a dollar spot program that will perform as well as the Web.com players.

Conditions must be pristine, but Mother Nature does not always cooperate. Last year, for example, the spring and summer were wet and pressure for dollar spot was exceptionally high.

Despite their busyness, Prichard and Mumper find experimenting with their spray programs worthwhile.



Thomas Prichard

As part of their constant evaluation, they set aside the half-acre No. 5 fairway, on the Forest Course to test the effectiveness of some newer products, including Posterity and Secure Action, as well as Primo Maxx and Heritage for broad-spectrum disease control.

"We had really great results with Posterity fungicide," Mumper says. His plans called for a by-the-book 21-day spray interval, but poor weather conditions got in the way. Their second application did not go on until day 26.

"The fairway was as clean on the 26th day as it ever was," Mumper says.

Altogether, the turf remained disease- and dollar spot-free for a full 40 days after the initial application of their test.

"We had a really clean fairway," he continues. "Our control test plot was really lit with dollar spot. Disease pressure was high."

Mumper was doubly impressed since there were no other materials used

on that fairway and says he plans to continue evaluating the benefits of Secure Action's acibenzolar-S-methyl (ASM), which boosts turf's natural defenses against disease.

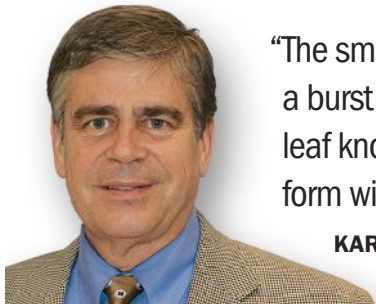
Mumper and Prichard bookend their Posterity applications early in the year and late-season at 0.16 fluid ounces per 1,000 square feet, aiming to apply Secure Action every 14-20 days at one-half ounce per 1,000 square feet in the middle weeks. Primo Maxx goes down at one-quarter ounce as part of the tank mix.

"We're all in with Posterity," says Prichard, who preordered his 2019 spray program this past fall. "In the face of unpredictable weather, we feel confident that we'll get a full 21 days out of our applications."



To sign up for dollar spot alerts based on the Smith-Kerns model, visit **GreenCastOnline.com/DollarSpot** or scan the QR code.

Tweet @SyngentaTurf and tell us how you #ConditionPerformRecover



“The smell of cut grass comes from a burst of organic compounds from the leaf known as green leaf volatiles, which form within seconds of being cut.”

KARL DANNEBERGER, PH.D., *Science Editor*

The scent of spring

The arrival of spring’s warm, sunny days awakens turfgrasses from their dormant winter state. Brownish turf is replaced by dark green, which announces the rejuvenation of life on a golf course.

As the turf continues its march toward summer, it provides a few scents along the way.

One of the most striking smells as turfgrasses begin to grow and flourish is the smell of freshly mowed turf. The sweet smell that arises is immediately noticeable. The smell potentially can arise after any mowing, but why is it I notice it most often on Saturdays? Maybe smell is also an aesthetic sense, given I associate Saturdays with being on my lawn or playing a round of golf.

We have the capacity to distinguish more than 10,000 smells, and freshly cut grass ranks among the world’s top smells. A smell originates from molecules that are generally light and that evaporate easily (volatile).

The smell of cut grass comes from a burst of organic compounds from the leaf known as green leaf volatiles, which form within seconds of being cut. The release of these volatiles is a response to the plant being injured. Some of these compounds are produced when turf is damaged by frost.

The release of volatiles is important when the plant is under stress. Some

volatiles signal the plant to produce organic compounds like salicylic acid and jasmonic acid. Researchers believe that plants give off a burst of these volatile organic compounds as an antimicrobial defense to protect the wounded leaf from pathogen attack.

Traumatic acid compound is triggered and signals the plant to make more cells to cover up or close up the wound. Some volatiles released into the air act as a call for help. These volatiles include alcohols and esters, which have been reported to attract beneficial predatory insects to help fend off caterpillars or other insect pests. That smell of freshly cut grass is a sign that the plant is signaling its defenses to protect it from microbial and predator attack.

There is a downside to these volatiles. They act as precursors to ozone formation. Australian researchers have found that 20 percent of ozone-causing chemicals can come from vegetation.

Although the volatiles released from

turfgrass plants don’t sound enticing, they are similar to the burst of organic compounds released by raw vegetables when you bite into them and chew. So, for staff members and golfers who enjoy chewing on grass blades — feel free — the smell is harmless.

While thinking about this column, I wrote down my top smells. I include, in no particular order, coffee, barbecue, vanilla, a freshly cleaned house (Clorox?), chocolate, bacon, gasoline (I like cars) and rain. I associate rain with golf courses.

Spring rain or thunderstorms have a distinct smell or scent. This smell is known as petrichor. The word is constructed from the Greek word *petra*, meaning stone, and *ichōr*, which means the fluid that flows from the veins of gods. In rural and wooded areas, this smell is produced by the actinomycetes, bacteria that produce something like filamentous hyphae. The rain kicks up the spores produced by the bacteria, and they float to your nose like an aerosol. The smell is rather sweet, as captured by playwright Estela Portillo Trambley: “The smell of rain is rich with life.”

Rain that is more acidic produces a different smell. In urban environments, rain tends to be more acidic than normal. Acidic rain hitting organic debris or chemicals on the ground releases minerals that react with chemicals lying on a surface, like gasoline. I would describe this smell using an Eva Wolfe quote, “I know the Devil; he’s an illuminated rebel and he smells like rain.” Rain is probably the most quotable smell.

Golf courses contribute to the beauty, functionality and recreation of a landscape. Often overlooked, however, is the contribution made to our sensory inputs. **G**

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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FMC

The Shop

// MUST-HAVE NEW EQUIPMENT



1 Divanem nematicide

The Divanem nematicide label from **SYNGENTA** now features a spot treatment rate of 12.2 oz./10,000 ft.² for golf courses. At this spot treatment rate, more of the active ingredient is made available to the turf roots and plant tissue for greater control of spiral, sting, lance and root-knot nematodes on greens, tees and fairways, according to Syngenta. This rate also provides a faster response for improved turf quality. GreenCastOnline.com/Divanem

2 Turf Cloud drone

Powered by **GREENSIGHT**, Turf Cloud's complete suite of management tools allow superintendents to proactively and easily monitor and maintain their property through efficient use of labor and resources, according to the company. Users can view and react to daily automated drone imagery and plant health analytics, assign tasks and view labor investments from anywhere in the world, as well as keep track of equipment fleet repairs and plan turf management practices. GreenSightAg.com

3 551 Series rotor

RAIN BIRD's 551 Series rotors are designed to water tee boxes and other smaller areas of the course. All 551 Series rotors offer short-to-medium-range coverage, higher flow rates, uniform distribution and valve-in-head options with a full-circle/360-degree arc and an adjustable arc from 30 to 345 degrees, according to the company. Four nozzles are available for various radii and flow rates. Rapid-adjust technology featuring MemoryArc makes it possible to switch between full- and part-circle operation in seconds, Rain Bird says. RainBird.com/Golf



4



6



5

CHECK OUT MORE NEW EQUIPMENT ONLINE

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

4 Bac-Pack nematicide

SOIL TECHNOLOGIES CORP.'s Bac-Pack bionematicide and biofungicide is an effective nematode and disease suppressant and root growth promoter, says the company. The liquid product consists of selected beneficial bacteria, antioxidants and seaweed extracts that increase plant vigor and resistance to nematodes and disease. University research shows that the product quickly rejuvenates problem areas and provides a boost to plant roots so that turf recovers fast from damage, Soil Technologies Corp. says.

SoilTechCorp.com

5 TTS-800 Series rotor

The TTS-800 Series rotor from **HUNTER INDUSTRIES** provides maximum uniformity and longevity, according to the company. The extra-large, fast-access flange compartment accommodates multiple wire connections and two-way modules. No-dig total top serviceability makes maintenance simple. The TTS-800 includes a robust and serviceable inlet valve with exclusive Filter Sentry technology that scrubs the filter clean with every activation. Proven to be water-efficient and durable, the TTS-800 high-torque gear drives provide years of service and reliability, Hunter Industries says.

HunterIndustries.com

6 Total nematicide

QUALI-PRO's Total nematicide and insecticide controls turf-parasitic nematodes and bermudagrass mites on golf course greens, tees and fairways. It is compatible with Quali-Pro's propiconazole 14.3, Strobe 2L and mefenoxam 2 AQ fungicides. Mixing Total with a fungicide can improve root quality and result in a healthier, more tolerant plant, Quali-Pro says. The product contains 1.9 percent abamectin (0.15 pound of abamectin per gallon). It's available in 1-gallon bottles.

ControlSolutionsInc.com/Quali-Pro

The 19th Hole

Alan Brown

SUPERINTENDENT // Timuquana CC, Jacksonville, Fla.



Alan, what are you having? Crown and Coke.



Tell me about your family. I've been married 11 years to my beautiful wife, Carlyn. We have three kids: Knox is 7, Dylan is our 5-year-old girl and Hudson is 3. And they're all crazy.

Where did the name Knox come from? Well, I went to the University of Tennessee in Knoxville ... and my sister suggested it.

fun? Between church and soccer, that's pretty much our life. We hit the beach as much as possible, but we really are spread pretty thin.

Tell me about Timuquana. Every town has that old traditional country club ... and we're that club in Jacksonville. It's a 1923 Donald Ross, built close to downtown on the St. Johns River.

And you're hosting the U.S. Women's Amateur Four-Ball at the end of the month. How has the weather treated you going into the tournament? We average 50 to 55 inches of rain annually; we got over 80

inches in 2018 — and 10 inches came in December. That gave us a not-so-good start to 2019. It seems like we can be 22 degrees or 84 degrees in the same week. That's tough on the grass because it never knows what to do — it never goes completely dormant. I wish it would. I wish it could sleep once in a while.

Who is your favorite golfer, and why?

My father, because he taught me the game of golf. He plays to a 3 or 4, but I always tell him, he's a 3 or 4 at his home course, so that's why I take him to new courses.

What is your junk food weakness?

Chocolate chip cookies with a glass of milk. I cook them every night. I wait for the kids to go to bed so they don't eat them all.

What's the farthest you've ever been from home? Cape Town, South Africa,

where my wife is from. Cape Town has everything. It's almost like San Diego ... there are mountains, beaches, cliffs, wild animals ... and the wine is spectacular.

How will you and the crew celebrate the conclusion of the Four-Ball?

That's a good question ... I've taken the guys to go ride go-carts before. I've grilled steaks for them before. What I'd like to do this time is treat them to steak dinners in the clubhouse. I'm going to tell them to put on their Sunday clothes and be ready to be treated like a member.

As interviewed by Seth Jones, March 13, 2019.



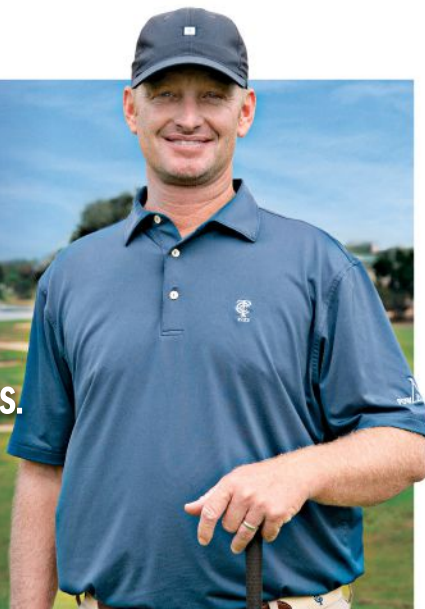
So, I don't need to ask what teams you root for? Tennessee Volunteers, through and through.



What do you and the kids do for

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