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The Piper Calls

With other activities shut down, golf courses around the nation witness record-breaking rounds

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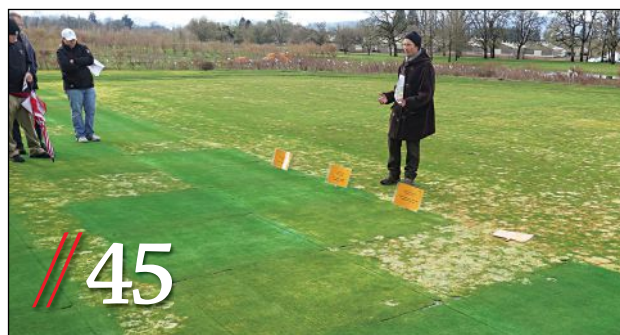
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“Apparently, many of my kind in a similar situation have rediscovered something that was there all along: the great game of golf.”

SETH JONES, Editor-in-Chief & Associate Publisher

Thwick. SMACK!

I think I’m a typical guy when it comes to most things. I like my sports live, my beer cold and my steak medium. I know the difference between King Kong and King Kong Bundy. I’ve seen all the *Lord of the Rings* movies but only made it halfway through reading *The Hobbit*. And, I now realize how painfully one-dimensional I am, when a pandemic threw a change-up at my typical summer routine.

For example, summer concerts are always sprinkled throughout my calendar. In 2020, there are no summer concerts. There is no “fight for your right to party!” because there is no party.

Summer popcorn flicks are always high on my list. The *Top Gun* sequel looked great, like a two-hour, air-conditioned flight simulator. But that’s a “negative, Ghost Rider, the pattern is full.”

Friday nights at Rick’s in Lawrence, watching the Kansas City Royals on the big screen with a Miller Lite pint dripping condensation on an overused coaster? Nope! The bars in Douglas County are closed. Townie bars, sports bars, heck, I’d take a trendy

speakeasy with a mustachioed hipster in a vest serving me something with a large block of ice in it.

So what’s a one-dimensional guy like me to do? Give *The Hobbit* another try? Go for a walk?

Apparently, many of my kind in a similar situation have rediscovered something that was there all along: the great game of golf. Who could have guessed back in March, when Americans were Googling hazmat suits, that in July they’d be searching for a new set of irons?

A couple of years ago, I was in Florida playing the Blue Course at Streamsong when Red/Blue Superintendent Kyle Harris pulled up to say

hello. He parked his car then walked over behind me and my playing partner to watch us. Right on cue, and because I’m me, I toed my iron ... and hit his golf cart. A *thwick*, followed with a *smack*, then an expletive. Humiliated, I quickly apologized. Harris, quite the intellectual, laughed and said, “It’s OK ... I enjoy it when two sounds that don’t go together are juxtaposed.”

I’m guessing Harris (if he still subscribes to *Golfdom*, after that moment) will appreciate this text I got from a superintendent friend in the industry:

Pandemic and good weather was the perfect formula for golf rounds.

I got that text, read it,

put down my phone. Then I paused and looked again at my phone and considered his sentence. “Pandemic ... good weather ... perfect formula.” *Thwick, smack!* What an unlikely juxtaposition. Welcome to the summer of 2020.

We’ll wait and see what the National Golf Foundation reports on rounds played for June and July, but based on what we’re hearing and seeing, records were shattered across the country. Groups stacked four deep at 5:30 in the morning ... the business people who used to be too busy for nine, back on the back nine ... young people dipping their toes in the water and giving golf a try. In this issue’s cover story, Associate Editor Sarah Webb talks to golf industry professionals around the country about this occurrence, this “if you build it, they will come,” *Field of Dreams* moment golf is experiencing.

With all due respect to the death and danger COVID-19 has wrought upon our great country, it’s awesome that golf finds itself at this moment in the spotlight as a safe, healthy, enjoyable game that is open to all walks of life. Only time will tell how this current spike in rounds will affect the game long term. But as all of us in the golf industry stand and look over this birdie putt, there’s one thing for sure: We’re not going to leave this one short. **G**

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NEWS, NOTES AND QUOTES



//CAROLINA IN MY MIND



The Carolinas Conference and Trade Show typically brings around 2,000 attendees to Myrtle Beach, S.C., each year. This year, however, the event will be virtual.

2020 CAROLINAS SHOW TO BE HELD ONLINE



As a result of the ongoing coronavirus pandemic, the Carolinas Golf Course Superintendents Association has canceled its in-person conference and trade show and replaced it with an online event centered on education.

"This is a sad day for our association, but it is the right thing to do," said Carolinas GCSA President Brian Stiehler, CGCS, MG, from Highlands (N.C.) CC. "The health of our members and the many industry partners who support them is our primary concern."

Since its inception in 1962, the Carolinas Conference and Show has grown into the largest regional gathering of golf course superintendents in the country, attracting some 2,000 attendees to Myrtle Beach, S.C., every November. The three-day event features a golf championship for more than 350 players, nearly 30 educa-

tion seminars and a trade show with around 200 companies covering more than 100,000 square feet of exhibition space at the Myrtle Beach Convention Center.

"Clearly, this is a major blow for our association and our members in many ways," Stiehler said. "But it is also a blow for all of golf in the Carolinas because (the show) is like an in-person Google for what worked and what didn't work on golf courses in the previous 12 months."

The decision to cancel comes after the 1,800-member association surveyed members, industry partners and educators to discern their likely participation in a traditional conference and show in the current health climate. The association is working to deliver formal education via online platforms this fall.

//ONLINE NETWORKING

BAYER'S 2020 WOMEN IN GOLF EVENT GOES VIRTUAL

Bayer's second Women in Golf event will be virtual, with educational sessions focused on personal and professional growth and online networking opportunities.

The virtual North American Women in Golf event will take place Sept. 16-18 and will bring together women in turf across the U.S. and Canada for a discussion on diversity in golf course management. Applications will be accepted through Aug. 10, and attendees will be notified around Aug. 31. All attendees must be at least 18 years old and a professional in a turf maintenance operation in the U.S. or Canada.

Bayer said the decision to go virtual is meant to put all attendees' health and safety first. Programming includes bringing together new attendees and alumnae members, panel discussions, a keynote speaker and a virtual happy hour.

//A NEW FACE AT AMVAC

AMVAC ADDS VP OF COMMERCIAL OPERATIONS

John Smith, a veteran of the professional products industry, has taken on a newly established role as vice president of commercial operations for Amvac Environmental Products (AEP), an American Vanguard company.

In his new role, Smith will oversee all marketing, branding, sales and key account management for AEP's products and technologies in turf, ornamentals, pest control and public health. AEP's product portfolio for the environmental and professional sector includes Nuvan, Dibrom, Turfcide, Navigator, Wisdom, Premion, Previa, ProVerde and SurePyc IQ. Smith previously spent nine years at WinField United as director of marketing. He also served a nearly five-year term as a board member for Responsible Industry for a Sound Environment.

//IN MEMORIAM

Bill Bengeyfield, former USGA Green Section national director, dies

➔ William H. (Bill) Bengeyfield, former USGA Green Section agronomist and national director, died June 3 at the age of 97 in his home in Meridian, Idaho, according to the *USGA Green Section Record*.

Bengeyfield served as USGA agronomist until 1978 when he became the director of golf courses and park maintenance at Industry Hills GC in La Puente, Calif. He was profiled by *Golfdom* in 2001 as a titan of the industry. In the article, he said he left the USGA Green Section to see if he could practice what he preached.

"I said to myself, 'Big Bill, let's see if you can do the things you've been talking about all these years,'" he told *Golfdom*. "I found out that what we were recommending to people really did work."

Bengeyfield returned to the Green Section in 1981 and served as na-

tional director from 1982 to 1990.

"I came along at an opportune time because the executive committee wanted to go forward with (more research)," Bengeyfield told *Golfdom*.



Bill Bengeyfield

"I stepped in and helped organize the Green Section Turfgrass Research Committee."

A hallmark of Bengeyfield's tenure was his belief that information provided by USGA Green Section should be firmly based in science. He served as chairman of the USGA Turfgrass Research Committee. During Bengeyfield's time with the Green Section, he also served as editor of the *USGA Green Section Record* from 1967 to 1978 and 1982 to 1990.

//UNDER NEW MANAGEMENT

LANDSCAPES GOLF MANAGEMENT ADDS MANHATTAN CC, MIDVALE CC

Landscapes Golf Management (LGM), a division of Landscapes Unlimited, has been selected to manage Manhattan (Kan.) CC and provide Landscapes Select services for Midvale CC in Rochester, N.Y.

Under the agreement with Manhattan CC, LGM will oversee golf and club operations, food and beverage, agronomy and membership and club marketing. LGM has been providing Landscapes Select services to Manhattan CC since 2011. As for Midvale CC, LGM will be providing accounting services through its Landscapes Select platform.

Founded in 1916, Manhattan CC began as a 9-hole course and country club. Today, Manhattan CC offers 18 holes of golf, a full-service clubhouse and aquatic and fitness facilities. The club has a long-standing tradition in Kansas golf, hosting State Men's and Women's Amateurs, as well as the Kansas high school championships. Midvale CC is a private golf and country club located in the rolling hills of Penfield, a few miles east of Rochester, N.Y. Midvale's Championship 18-hole course is the first designed and built by world-renowned architect Robert Trent Jones Sr., with outstanding practice facilities.

EMAILS @ TEXTS # TWEETS

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@MikeNowickiLPC:

Got stuck in a meeting this afternoon, told the guys they can go home when comfortable with the greens. Current time: 6:17 p.m. Current temp: 102. Current wind: 10-15 mph, guys still grinding. "It's the grind that sharpens the axe." Love these boys!!

Mike Nowicki

Superintendent
Jefferson Lakeside CC
Richmond, Va.



//THREE IS KEY

TROON TO MANAGE 3 DC COURSES

The National Links Trust, a nonprofit entity formed to preserve and protect affordable, accessible and architecturally engaging public access golf, is partnering with Troon to manage operations of three public golf courses in Washington, D.C.

Troon will manage the operations for East Potomac Park, Langston and Rock Creek Park Golf Courses. The National Links Trust has proposed on a multiyear, multimillion-dollar investment in the restoration and rehabilitation of the golf properties, while developing and maintaining environmentally sound open spaces and parks for the benefit of the community, golfers and nongolfers alike.



"Some people are chomping at the bit to get out and play, while others who are considering taking up the game may decide not to. Growing the game is still a high priority for the golf associations and is necessary for the good of our industry."

MARK WOODWARD, *Contributing Editor*

Golf's top 5 challenges for 2020

2020 is turning out to be one of the most challenging years in all of our lives. Very few of us who are alive today have been through anything like what we have in the past several months. After all, the last major pandemic in the U.S. was in 1918.

We all know how it's affected our lives, our loved ones, our jobs, our communities, our country and even the world as a whole. But how has it affected the golf industry?

Let's talk about what will be the top five challenges for golf in the year 2020 as I see them.

1 COVID-19. This challenge changed everything we do in golf, and as we all know, we're still dealing with this one. It's my guess that many of the things we changed in how golf is played will carry on even after the virus has subsided, like cup inserts, no touching the pin, single riders in golf carts, no caddies, no valet parking ... and the list goes on. I also believe that many of the things we learned to do to reduce the

spread of the virus should continue to be done as a societal shift moving forward (e.g., washing our hands more regularly, social distancing and virtual meetings).

2 Revenue/loss of revenue For many golf courses, the loss of revenue for almost four-plus months could have a huge negative impact on their long-term sustainability. Obviously, some golf courses in the north may not have been in the middle of their peak season at the beginning, but golf courses in the southern part of the nation were right in the middle of their peak when COVID-19 hit. We've lost a large number of courses over the past several years, but in many cases, this resetting of the number of golf courses has been good.

My fear now is we will lose a number of golf courses that can't come out of the pandemic and recover.

3 Golfers/rounds Will there be a net gain or net loss in the number of golfers during and after the pandemic? I believe this could go either way. Some golf courses in the Southwest actually saw a record number of rounds during April and May because golf courses were deemed essential and stayed open with many social distancing practices put in place.

Some people are chomping at the bit to get out and play, while others who are considering taking up the game may decide not to. Growing the game is still a high priority for the golf associations and is necessary for the good of our

industry. We need to continue to do everything we can to gain and retain golfers for long-term sustainability.

4 Labor. Many golf courses struggled with finding and retaining quality labor prior to the pandemic. And now, coming out of the pandemic, there will be a large number of people who are unemployed. The question is, will working at a golf course in any capacity appeal to them? My gut tells me that labor will continue to be a challenge at many facilities.

5 Uncertainty. This is probably one of the hardest things to come to grips with because we just don't know what's going to happen moving forward. Most golf courses and associations have canceled tournaments, outings and events or modified them greatly for the foreseeable future. Determining the right time to start rescheduling events is the challenge. Will the virus have a resurgence? It has in many states including Arizona, where I am. Will it be possible to recover some of the lost revenues? Will golfers come out and play, or will the labor situation improve to pre-COVID-19 numbers?

All we can do as we get through the summer is stay safe, continue to practice social distancing, wear masks, communicate and wait and see what our "new normal" is going to look like. **G**

Mark Woodward is director of agronomy at Whisper Rock Golf Club in Scottsdale, Ariz., and a contributing editor for *Golfdom*. He can be reached at mwoodward@whisperrockgolf.com.

A SUPPLEMENT TO
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BATTERY- POWERED EQUIPMENT GUIDE

Mark Newton, CGCS,
Canyon Farms Golf Club,
Lenexa, Kan., tries out a
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Unheard heroes

As battery power continues to advance, the benefits for golf are (not) making some noise in the marketplace

By Seth Jones

Many consider the golf maintenance team the unsung heroes of the golf operation, but some superintendents would trade that moniker for the unseen and even *unheard* heroes of the golf operation.

Tom Kaplun, superintendent at North Hempstead Country Club in Port Washington, N.Y., falls into this camp. With two sides of the club's property line adjoining residential areas and the concern of disturbing members at the clubhouse, Kaplun was intrigued when he met with the team at Oregon Products at the 2014 *Golfdom* Summit. After seeing the company's blowers and trimmers in action, he decided to give them a shot.

Today, Kaplun has an entire arsenal of battery-powered equipment for him and his crew at North Hempstead, with an eye on expansion. Blowers and trimmers are his favorites, and he's also added an electric Cushman Hauler for his own transportation, and an electric Cushman with a Refresher Drop-In is now the beverage cart.

"(My interest) was twofold: It was working around the clubhouse or the practice putting green ... and the neighbors complaining about the early-morning disturbance," Kaplun recalls. "Now, I have eight of the cordless blowers with rapid chargers and two hedge trimmers. The hedge

trimmers can go all day. We have quite a few ornamental plantings around the clubhouse. The complaint was the right time to do it without interrupting the members. The battery-powered hedge trimmers are so quiet, we can do it any time of day now, and it's a nonissue."

Two batteries, 22 greens

Kaplun reports that the blowers pack the same power as a gas blower, but they won't last as long. His crew can get about 20 minutes out of a single charge on the low side, and that's if they have the throttle locked at full blast for the full 20.

In order to make the blowers last for 22 greens, Kaplun got creative. For triplex greens mowers and the greens rollers, he's attached a blower holder to the rollover protection structure on both machines. Each operator has a second battery on a rapid charger with him, so he can switch out batteries when one dies out.

"The thing I like about them is I don't have to worry about any gas or oil spills, along with the noise reduction," Kaplun says. "Two batteries will last through all 22 greens we cut, blowing off small debris. Now, if we have a heavy storm, obviously it's a different situation; I'll get more manpower out there, and we'll get some gas blowers. But, I'm trying to eliminate the gas blowers as much as possible from blowing greens."

Jason Wilk, product manager for Echo, echoes (*ahem*) those comments.

"The questions we get from superintendents mainly revolve around their need to understand if the battery blower will contain enough performance — and the run time of cordless compared to gas blowers can be a concern," Wilk says. "Most manufacturers offer larger-capacity batteries that can provide continuous run times up to a half an hour or more. Having multiple batteries will enable you to work all day, nonstop."

Wilk says that electric motor technology (brushless motors) and battery technology (lithium ion) have grown exponentially over the last several years. Battery-powered



Tom Kaplun

blowers can produce as much air volume and air speed as small gas-powered handheld blowers, he says, and Kaplun agrees.

"It doesn't last as long as the gas-powered blower but is much quieter, and I do find the power to be just as good as a gas blower," Kaplun says.

Like a new car

Kaplun is looking into adding battery-powered string trimmers eventually. And, his electric Cushman is a huge advantage for him in terms of how quickly he can get around the course.

"I don't have to wait for groups when they're hitting shots or on the greens," he says. "I just get around the course so much quicker with less disturbance than on a gas cart. One charge gets me almost two days."

The only battery-powered equipment he's not comfortable with yet is mowers.

"I have not found any kind of battery-powered mowers that can handle the hills we have," Kaplun says. "And, I haven't gotten complaints about mowers like I have with blowers and those other things."

The team at Kansas State University in Manhattan, Kan., has employed an electric greens mower for the last five years, and results are positive, with a few caveats.

"It's awesome for us. I have nothing but great things to say about it," says Dani McFadden, graduate research assistant, Kansas State University. "It's like a new car that shuts off when you brake for too long. Sometimes, I have to look down to make sure it's on, that it's cutting, to see that I'm getting clippings."

McFadden also appreciates that the reels can be sped up on the mower, even when going slow, so a single cut is like a double cut. But then there's the "but."

"But, if you get it out to Colbert Hills (Golf Course, Manhattan, Kan.), they might not think it's as great," she says. "They have hills and 18 greens to mow. We only have 17,000 square feet of research greens, and it's completely flat. But it's great for us and the way we use it."

Night and day

Battery-powered equipment in golf is not exactly new, says Emil Miller, marketing manager, Smithco. He has the experience, and the horror stories, to prove it.

His company has two new battery-powered offerings, a new bunker rake and a new greens roller. How new? New enough that they only introduced the bunker rake at the New England Turfgrass Show in March, back when trade

Continued on page BP5



These greens mowers tackle North Hempstead CC's 22 greens with handheld blowers and backup batteries.

BATTERY-POWERED EQUIPMENT GUIDE



Tom Kaplun's crew at North Hempstead CC tries to use only battery-powered blowers when blowing off greens.

Continued from page BP5

shows were a thing. The greens roller is still in the research and development stage, but set to debut soon.

"We built our first electric-powered bunker rake in 1992," Miller says. "We built it with golf cart technology, and it was a huge failure — we'll be the first to admit. We upgraded it through the years. In the late '90s, we switched to some industrial technology that worked well but lost our vendor. Now we got back into it 18 months ago, and we're seeing acceptance because everybody is going green."

Miller says the battery-powered market is "night and day" when it comes to acceptance among superintendents from back in the early '90s and 2000s to today. The reasons, he says, are because people are more environmentally minded and because the technology has improved so much over the years.

"Look at what's going on in the rest of the world, in terms of vehicles, power tools and everything else," he says. "E-Z-Go makes a golf car now that runs for days. It's the same technology we put on the bunker rakes. It's just a change in paradigm."

Miller says the main draw of the battery-powered bunker rake is the same thing Kaplun and McFadden enjoy about their battery-powered equipment: the silence. On a typical

golf maintenance day, the mowers go out first, Miller says. Once they're done, the bunker rakes go out second — but now they have golfers to contend with.

"They have to wait (on golfers). Now, we have a machine that makes no noise," Miller says. "Instead of waiting for play, they can literally rake bunkers as long as they are out of sight, out of play, with no disturbance to the tee sheets."

Miller also has high hopes for the company's electric greens roller. He says in the '90s and 2000s, a similar product used to do well for them as loaners — to major tournaments like the Ryder Cup — for the week of the event. "For some reason, superintendents wanted them on-site for major tournaments," he says with a laugh, "but never trusted them the rest of the year."

Lithium batteries in the greens rollers will be a game-changer, Miller says, because now the rollers will be the same weight as traditional rollers, minus the noise and the risk of leaks. He thinks all the advancements will have the attention of superintendents soon.

Now, there's just someone else they need to convince.

"Our biggest hurdle is the equipment technician," Miller says, "because they love their combustion engines. Batteries don't last forever, but gas engines don't last forever. Nothing lasts forever ... well, lies last forever."

Truth. **G**

PHOTO BY TOM KAPLUN

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Breaking into battery power



Chris Erickson

Local noise restrictions and residents and members living right alongside the golf course are major concerns for many golf course superintendents, and Chris Erickson, superintendent at Del Mar Country Club, is no different. His crew at Del Mar CC, an 18-hole private country club in Rancho Santa Fe, Calif., is all-in on battery-powered equipment, especially while performing maintenance tasks at 6 a.m., when his crews typically kick off their day.

“Within the country club community, there are noise restrictions until 7:00 a.m.,” Erickson explains. “We want to still be productive, yet abide by the noise restrictions for that first hour, so we’ll use a lot of the battery-powered equipment during that time. We have a golf course staff, as well as a clubhouse landscape staff, and both teams and operations utilize this equipment.”

Erickson shares how Del Mar got into battery power and how they’re reaping the benefits.

How does battery-powered equipment fit into the maintenance operations at Del Mar?

We’re able to get a lot done within that first hour before we go off to the course to start maintenance without disrupting neighbors and residents in the community. It gives us an opportunity to do some maintenance at the clubhouse, which is right across the street from our maintenance facility. We also use the string trimmers quite a bit. We’re able to go out and edge bunkers and string trim around trees and other accessories on the golf course. The blowers allow us to blow all the leaves and debris and clean up the parking lot surfaces.

We have a couple of extension hedge trimmers, four hand blowers, two string trimmers and two backpack blowers. We use the hand blowers for equipment operators in the morning that are able to put a hand blower in the back of their cart. They can use it around cart path areas, around tees and greens. Our greens mowers are equipped with hand blowers, so (crew members) can blow clippings off of the greens without running the risk of a fuel leak. We have three

greens mowers that go out in the morning, and they each take one, and then the cup setter, so one person will change cups and move tee markers.

What do you like about the equipment?

Not only the amount of power that they supply, but the design of the equipment, that it can stand up to the environment of being transported in golf carts, and the long, high number of hours used on it. So power, rugged design and ergonomics are three of the big characteristics that we look for in good equipment, and this seems to fit all of those categories. Another thing that’s also important is that parts are easy to get, and we haven’t had an issue there. Customer service is really good, not only from the distributor, but the manufacturer.

What initially sparked your interest in battery-powered equipment?

It was pitched to us by our sales distributor. They knew about our situation with noise restrictions in the mornings. In the past, we would find other jobs that didn’t create a lot of noise, and we used that time to do more of that manual stuff. Our sales rep let us try out the equipment for a couple of weeks so that we really got to experience it. That gave us the confidence that it was going to hold up and meet the demands of our program.

What was the feedback from members and employees when switching to the equipment?

We have much fewer noise complaints is the biggest result of incorporating the battery-powered equipment. (For employees), there’s always the inclination and desire to stick with what people are familiar with. They were more familiar with gas power, but they don’t need to use earplugs (with battery power). Really, all you hear is the action of either the blades on the trimmers or the blower motor. There wasn’t much resistance; there was just more the inclination to want to use the equipment that they’re familiar with. But, it didn’t take long to become a part of the daily program. **©**

Sand Star E Electric-Powered Bunker Rake

The Sand Star E is a new, electric-powered bunker rake. Nothing else is so quiet. And, in this business, everyone wants quiet.

"We try to create things that the competition doesn't have," says Don Smith, Smithco president.

The Sand Star E is powered by a 48-volt continuous AC induction Mahle industrial-rated motor with a peak torque of 83 Nm.

Operators can travel from hole to hole at 10 mph and travel up to 5 mph in reverse. The company says this bunker rake will cover every bunker on an 18-hole course on a single charge of six 8-volt batteries.

Smithco developed the bunker rake due to growing interest in quieter equipment.

"A golf course is supposed to be a quiet, peaceful place," Smith says. "This machine is about noise control. The crew can be working right next to golfers, and the golfers won't even notice. With other bunker rakes, the operator is obligated to stop and turn off the engine, let the group hit their shots, then turn it back on once they've moved on. We also made it operator friendly; this drives more like a car or truck. We really think we're on to something, because the superintendents loved it."

The Smithco Sand Star E features:

- Length: 68 inches
- Width: 58 inches
- Height: 52 inches
- Weight: 1,155 pounds with batteries; 735 pounds without batteries
- Wheelbase: 42 inches
- Ground Clearance: 5.5 inches – 7 inches under cultivator, depending on attachment
- Mahle motor
- Displacement: 48-volt (5 kw); continuous AC induction
- Peak Torque: 83 Nm
- Current: Sevcon Gen 4, Size 4, 450A 2min 540A Boost



- Forward speed: 0-10 mph
- Reverse speed: 0-5 mph (0-8 kph)
- Batteries: six 8-volt; recommend Trojan T890 Lead Acid or Trojan T875 AGM

For more information visit: www.Smithco.com

Smithco

BlueBird Electric 125-v Lithium-Ion Line

Introducing BlueBird Electric, a new line of 125-v lithium-ion battery-powered products with brushless motors from BlueBird Turf Products. All come standard with a two-year warranty.

BlueBird Electric's line includes:

A424E and A530E Aerators

- 125v li-ion battery with a 2,400-watt brushless motor
- A424E has a 17.5-inch working width
- A530E has a 19-inch working width
- 24 (5/8-inch) to 30 (5/8-inch) closed spoon coring tines
- 4.4-by-7.8-inch to 3.8-by-4.2-inch aerating pattern
- A530E features freewheeling outer tines

PR18E and PR22E Power Rakes

- 125-v li-ion battery with a 2,400-watt brushless motor
- PR18E has an 18-inch working width
- PR22E has a 22-inch working width
- Three-position ergonomic handle with foam padding

M22E Self-propelled Mower

- 125-v li-ion battery with a 1,500-watt brushless motor
- 22-inch deck width
- Rear-wheel drive
- Seven positions for single-point cut height adjustment (1.25 to 3.75 inches)
- 12-inch rear wheels and 8-inch front wheels
- High-vacuum design
- Variable cutting speed (0 to 2.2 mph)
- Three-in-one (18.5-gal. bag, mulch, side discharge)

HM200E Top-Handle Hover Mower

- 125-v li-ion battery with a 1,500-watt brushless motor
- 20-inch cutting width
- 1- to 3-inch cut height adjustment (0.25-inch increments)
- Best-in-class center of gravity
- Reversible stainless steel flail cutting blades (x 3)
- Reversible nylon swing blades (x 3) or optional triple-edged copolymer string (x 2)
- Weight without battery: 22 lbs.
- Variable cutting speed (0 to 2.2 mph)

LTD1000E Detachable Trimmer

- 125-v li-ion battery with a 1,000-watt brushless motor
- 17.5-inch cutting width
- The 0.095-inch diameter trimmer line
- Loop handle
- Variable speed trigger with three-speed settings (4,000; 5,000; or 6,000 RPM)
- Weight without battery: 12.6 lbs.
- Optional attachments include pole saw and articulating hedge trimmer (11 positions/180 degrees)

CS18E 18-inch Chainsaw

- 125-v li-ion battery with a 1,000-watt brushless motor
- 18-inch Oregon bar and Oregon 72LGX chain
- Automatic chain oiler
- Weight without battery: 12.2 lbs.

BL680E Handheld Power Blower

- 125-v li-ion battery with a 1,000-watt brushless motor
- Max. airspeed: 125 mph
- Max. air volume: 680 CFM
- Variable speed trigger with cruise control
- Three-speed setting (7,000; 15,000; or 22,000 RPM)
- Weight without battery: 8.1 lbs.

HT1000E Hedge Trimmer

- 125-v li-ion battery with a brushless motor
- 22-inch dual cutting blades
- 1.3-inch max cutting diameter
- 3,400 RPM blade speed
- Rotating rear handle
- Weight without battery: 12.3 lbs.

Learn more at BluebirdTurf.com.



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// **HIGH VOLUME AHEAD**

THE PIPER CALLS

With other activities shut down, golf courses around the nation witness record-breaking rounds

BY SARAH WEBB

Continued on page 24

PHOTO BY: GOLFDOM STAFF

// HIGH VOLUME AHEAD

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North Hempstead CC in Long Island, N.Y., boasted 7,800 rounds of golf played in May and June, a 47 percent increase over normal years.

Amherst CC in Amherst, N.H., has seen three to four groups lined up on the first tee as early as 5:30 in the morning.

Creekmoor GC in Raymore, Mo., adjusted its tee times from every 18 minutes to 12 to accommodate for the higher volume of golfers.

Such anecdotes represent more than isolated instances — courses around the country have seen large upticks in rounds as golf provides an outlet as a safe and socially distant activity amid the coronavirus pandemic.

“We’ve been getting a lot of new golfers out there that we haven’t had in the past, and hopefully, that will keep those people coming back, even when the coronavirus



► This tee at Amherst CC’s 9-hole executive course, Ponemah Green, is too small to handle the excessive rounds put on it, says Superintendent Steve Wilson.

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goes away,” says Steve Wilson, superintendent at Amherst CC. “I definitely see the trend continuing for the rest of the season, when people are working from home and have some stimulus money to spend.”

The May rounds report from *Golf Datatech* showed play was up more than 6 percent nationally — about 2.4 million rounds more than in May of 2019 — translating to a bump of about \$120 million in course revenue, according to Joseph F. Beditz, Ph.D., president and CEO of the National Golf Foundation (NGF) in a recent NGF newsletter. As of press time, the June and July reports were not yet available, but based on feedback from multiple sources, it seems those numbers should climb even higher.

“To see new faces playing and people playing multiple times, that’s definitely a big kick for us,” says Rolando Hernandez,

head golf pro at Riverside GC in Victoria, Texas, which saw a 27 percent increase in rounds in May and June over last year due, in part, to the coronavirus. “It’s nice to be able to have the cash registers going, and overall revenues are pretty good because people are still going out and doing things, whether that’s going to the range or using our practice course.”



Rolando Hernandez

Challenges accepted

As the number of rounds increases, so do the challenges.

For instance, Amherst CC is currently operating with eight crew members,

Continued on page 26

PHOTO BY: AMHERST CC
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// HIGH VOLUME AHEAD

Continued from page 24

whereas it normally operates with 12, another result of the pandemic. The club also had to eliminate overtime hours, despite a 40 to 50 percent increase in rounds over last year.

Wilson notes that implementing daily safety screenings for employees adds another unusual element to the daily routine.

To make up for the changes, Amherst's crew members work four days a week and a weekend shift or five days a week and no weekend shift. Wilson says crews also take advantage of every bit of daylight possible by adjusting the daily start time from 5 a.m. to 4:30 a.m.

"It's just trying to get as much done as we possibly can ahead of play because it's very difficult to get back in there after the golfers are on the course," he says. "My guys work really hard and work well



▶ Daily temperature checks and increased sanitizing have become part of the daily routine at Amherst CC.

together, and we try to stay as organized and efficient as possible. We still get a fair amount of work done, but it's definitely less than what we've done in the past."

Amherst was closed for play for about five weeks at the beginning of the pandemic, but the crew was allowed to maintain the course at the time. Those five weeks of play-free maintenance set the crew up for success, but that lead time is

starting to run out. "The amount of play we've been getting is starting to take a toll, and recovery is slow as we're a pretty busy public golf course," he says.

Creekmoor GC has also seen its fair share of struggles on the labor front, according to Superintendent Tim Nielsen.

To stretch the labor it does have, the golf course has eliminated a lot of detail work, performs mowing early in the mornings

PHOTO BY: AMHERST CC

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► The driving range at Creekmoor GC offers golfers a safe and socially distant activity.

before play begins and focuses on hand watering the rest of the day. The club has also combined certain jobs to make crews more efficient.

"If that means a guy is mowing collars, because that's a job that doesn't take as long, we'll also have him clean bathrooms and move the tee markers," Nielsen says.

A saving grace for North Hempstead CC on the labor front was the golf course

closing on Mondays because all of its 26 scheduled outings got canceled or postponed until the fall.

"I said, (golfers) can play as much golf as they want, and I can keep my man-hours down if you just give me Mondays to really pound out a lot of the work," says Tom Kaplun, superintendent of North Hempstead CC. "And, they made it a green space day, so after 1:00 p.m., members can come

out and walk, bring their kids, ride bikes, that sort of stuff. No golf though. It's worked out."

Another factor affecting maintenance is the higher number of golf carts. With the pandemic opening the door for single-rider carts, increased traffic has caused more wear and tear on turfgrass.

"That's creating a lot of traffic issues on

Continued on page 30

PHOTO BY: CREEKMOOR GC

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- Pythium blight
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TURF USE SITES & RATES

Segway can be used on professionally managed turf areas including:

- Golf courses (tees, fairways and greens)
- Sod farms
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- Cemeteries
- Professionally managed sports fields
- Residential lawns by professional applicators

TURF USE RATES

Turf disease	Fluid ounces per 1,000 ft ²	Fluid ounces per acre	Application interval (Days)
Pythium blight Pythium damping-off	0.45 - 0.9	19.6 - 39.2	14 to 21
Pythium root dysfunction	0.9	39.2	14 to 28
Pythium root rot	0.9	39.2	21

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Estuarine Fish	Acute 96 hr. LC ₅₀ = >0.167 ppm
Estuarine Invertebrate	– 96 hr. LC ₅₀ /EC ₅₀ = 89 ppb mysid; 14.7 ppb mollusk

MAMMALIAN TOXICITY

Hazard Indicator	Technical
Acute oral LD ₅₀	>5000 mg/kg
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Acute inhalation LC ₃₀	>5.5 mg/L
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Skin irritation	N/A
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WE'VE BEEN GETTING A LOT OF NEW GOLFERS OUT THERE THAT WE HAVEN'T HAD IN THE PAST, AND HOPEFULLY, THAT WILL KEEP THOSE PEOPLE COMING BACK, EVEN WHEN THE CORONAVIRUS GOES AWAY.

”

— Steve Wilson, *superintendent at Amherst CC*

► While the semiprivate Creekmoor GC has remained extremely busy during the coronavirus pandemic, most tee times are taken by members, limiting the opportunity for additional revenue.

Continued from page 27

the golf course — to have twice as many golf carts out there just wears things down even faster,” Nielsen says.

Kaplun adds that even though his course put dividers in its carts, golfers prefer to take their own.

“People hated (the dividers) because they restricted airflow,” he says. “Every day I go out there, and it looks like we’re doing a double shotgun because we have so many carts out there!”

To keep the grass in the best condition possible considering the circumstances, some courses report topdressing and fertilizing tees a bit more to aid with recovery and performing core aeration in the fairways and roughs. Courses are also managing traffic with ropes and signage to try to change the traffic

patterns from day to day.

In addition to the challenges associated with higher rounds, it’s important to note that while an increased number of rounds may mean an upswing in revenue and new golfers for public courses, that’s not the case at private and semi-private clubs such as Creekmoor.

Rounds have skyrocketed at the course, but Nielsen says many of the club’s tee times — which run from 7:30 a.m. to 6:30 p.m. with 12 minutes in between — are taken up by members, leaving little to no room for additional revenue opportunities from public play or outside tournaments.

“Members obviously get preferential advanced tee times, so they end up taking all of our tee times,” he says. “So, 85 percent of our play is member play, whereas last year and previous years, member play was about 60 percent.”

PHOTO BY: CREEKMOOR GC



► George Waters, USGA Green Section Education, says USGA agronomists are reporting significant increases in rounds, leading to an increase in single-rider carts and course traffic.

Just happy to be out there

And yet, despite the challenges, superintendents glimpse the silver lining through the labor hardships, worn-down turf and additional safety checks.

“It’s great because you have people who were always on the fence about playing golf, because they didn’t have the time ... they’ve come out to play golf,” Kaplun says. “And, you have younger people out playing as well.”

Wilson adds that golfers and crews alike have adopted the same positive attitude: Golfers have been thus far understanding and complimentary of course conditions, and despite the chaotic nature of this season so far, crew members are also happy to be out on the course working.

“Even though with the extra \$600 per week per person for unemployment and the \$1,200 per person check, guys might be making more money sitting around the house, they’d much rather be working, lucky enough for us,” he says.

Hernandez agrees.

“Our employees obviously want to work and be able to provide for their families, still keeping in mind with having a job and getting out of their house that everything else is quarantined,” he says. “Golfers definitely want to be able to play, no matter what — especially some of the die-hards — they’ll do anything to get out and play some golf. So, I’m definitely excited for us to be open and still kicking at this point.” ©

PHOTO BY: RIVERSIDE GC

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QUALI-PRO

BEHIND THE SCIENCE

MOLE CRICKET KNOCKOUT

Quali-Pro's Doxem IG offers superintendents a quick and effective solution for mole crickets



Innovation is a big part of what makes Quali-Pro a top partner to the turf industry.

Take a look inside the Quali-Pro lab, and you'll find teams of people testing new combinations or brainstorming new, simpler solutions to age-old turf challenges.

The latest in a long line of combination chemistries from Quali-Pro is Doxem IG.

Doxem IG is a granular bait that can control a wide range of indoor and outdoor pests but is particularly efficient in eliminating mole crickets.

Mole crickets have been known to cause significant damage on golf courses, especially in the warmer soils of the Southeast turf market.

Like many turf insects, mole crickets do their damage out of sight and beneath the surface. They tunnel underground which dries out the soil, eventually killing the turf above.

"By the time you actually see or notice the damage, you could be

potentially losing turf," says Ian Rodriguez, Ph.D., technical services manager for Quali-Pro. "In addition to directly damaging roots, extensive tunneling near the surface turns into rapid drying and potential root death from desiccation."

This is why when superintendents see tunneling damage, they need to act fast.

An easy-to-use curative solution

Combining the active ingredients indoxacarb and novaluron, Doxem IG delivers two modes of action. Once ingested, indoxacarb begins disrupting the insect nervous system, leading to paralysis and preventing further feeding. Novaluron prevents insects from producing chitin, preventing further development.

Available in 25-pound bags or a 4-pound shaker, Doxem IG keeps

things simple. Superintendents don't have to mix up anything or even add water. Simply add the granular bait to a spreader and apply to the infected area. It is also weather resistant for up to two weeks.

No more filling sprayers for high-volume sprays down into the soil that leave a pungent smell on the course. Using a vegetable-based carrier, Doxem IG is the low-odor, easy-to-apply solution.

Superintendents can expect to see a stop in tunneling and an elimination of mole crickets in a few days.

"In one study, we've seen dead mole crickets on the surface of treated areas within 24 hours," Rodriguez says. Though Rodriguez says the product doesn't provide a contact kill, he says you



Ian Rodriguez

should see results within a few days.

Beyond mole crickets, Doxem IG is labeled for other common pests, such as cockroaches, ants and silverfish, and can be used on a wide variety of turf settings. While being highly attractive to targeted pests, the bait will have minimal impact on nontarget species.

Reliable combination for when you need it

There are two main windows for mole cricket damage — spring when adult mole crickets start to mate and then again in late summer to early fall when the new generation of mole crickets have matured.

With its launch in July, Doxem IG will be ready for superintendents right when they need it.



“We’re excited to provide an effective, convenient and low-odor mole cricket solution that does not require watering in and can be applied to virtually any turf area,” says Rodriguez.


With more and more pests developing resistance to insecticides, it’s now more important than ever to create products that will continue to be effective well into the future.

Quali-Pro’s commitment to the turf industry

With a focus on combinations, Quali-Pro is able to provide products that eliminate the need for tank mixing multiple products to save superintendents time and money.

Another element that Quali-Pro keeps in mind is insecticide resistance. With more and more pests developing resistance to insecticides, it’s now more important than ever to create products that will continue to be effective well into the future. That’s why Doxem IG delivers two modes of action, reducing the chance insects will build a resistance to both active ingredients.

Quali-Pro has been a leader in the development of innovative and post-patent formulations, offering professionals the industry’s widest array of active ingredients. And, there are no plans of slowing down.

“Novaluron is our proprietary active ingredient. We’re trying to find as many uses for it as we can, and there will be more to come with novaluron in the coming months and years,” Rodriguez says. 



100 YEARS YOUNG

BY SHANE SHARP

Despite reaching its 100-year anniversary, the USGA's Green Section is too busy adapting to golf courses' ever-changing needs to celebrate its centennial



When it comes to nonprofit organizations, more than half fail between their first and fifth year of existence. Not so for the 126-year-old United States Golf Association (USGA), which celebrates the centennial of its Green Section this year, despite the survival-of-the-fittest backdrop.

But, alas, there's barely any time for reflection within USGA's ranks. While it isn't totally reinventing itself, the Green Section is busier than ever (and that's saying something) as it artfully adapts to the industry's most pressing needs.

"The USGA Green Section has constantly evolved its programs and services to address golf's ever-changing needs, so it's in our DNA to continue meeting the challenges of tomorrow," says Senior Managing Director of Public Services Rand Jerris. "Our willingness and ability to evolve is grounded in a deep sense of purpose to serve the game, the golf courses who are our customers and their collective needs."

Those collective needs have shifted drastically over the past decade as both public and private golf courses strive to operate more effectively and efficiently with maintenance budgets — and staff — that are under constant pressure to do more with less.

After all, through its unwavering, four-prong mission of research, education, consulting and outreach, no organization has had a more pro-

found impact on the golf experience than this elite group of agronomists and data scientists.

A merger in the making

In 2017, the USGA's Research, Science and Innovation Group (RSI) rolled out the first version of its "Facility Tool" to help courses with the beleaguering pace-of-play issue that's haunted the industry for so many years.

Small GPS loggers were placed on golfers at several courses to track their movements on foot and in carts. Movement patterns were overlaid with variables like green speed, rough height and bunker locations. As a result, operators could visualize how these elements impacted the speed at which golfers moved through the course.

Early on, however, the RSI Group discovered a powerful, ancillary benefit: The Facility Tool could also help courses identify underutilized sections of turf that could be removed without affecting play. It was first deployed at Crandon Golf Course in Key Biscayne, Fla., in concert with architect John Sanford, and resulted in a master plan that could ultimately save Crandon \$350,000 annually.

It was this successful foray into turf territory that helped lead to the merger of the Green Section with the RSI Group in the fall of 2019. With this brand-new and expansive platform

Continued on page 39

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THE LEADER.

Different look for East Lake

Labor Day weekend's Tour Championship will welcome golfers and TV viewers alike with unobstructed views and access

East Lake Golf Club has been the permanent home of the PGA Tour Championship since 2005. Things are going to look a little different Sept. 4-7 in Atlanta as this year's tournament will be held without spectators.

It's safe to say the team at East Lake GC, which includes Ralph Kepple, director of agronomy, and Charles Aubry, superintendent, understand the course has to be looking its best for the unobstructed views for golfers and TV spectators alike.

"We strive for that every year, but the television audience will get to see more of East Lake than ever before, so we are widening our scope," Kepple says.

Kepple and Aubry say without the infrastructure, the course's turf will catch a break, and the grounds crew will be able to move faster.

"There's more prep work that comes with having spectators. With spectators, we'd need to prepare tournament build areas and get those ready for the fact that we're going

to have a hospitality stand on top of turfgrass for 60 to 90 days, and that grass isn't going to see sunlight," Aubry says. "How are we going to make sure that rough is playing like a true rough and a true penalty instead of it being an area that's being beat down by 20,000 fans a day?"

In the early days of the Tour Championship at East Lake, Kepple says the team struggled with timing preemergent herbicide applications

around the tournament as well as the East Lake Cup in late October. Often, that meant applying products early before the Tour Championship or cleaning up applications after the East Lake Cup. At the suggestion of Patrick McCullough, associate professor at the University



Ralph Kepple

of Georgia, Kepple and the East Lake grounds crew began to use Kerb SC T&O specialty herbicide from Corteva Agriscience on the zoysiagrass fairways in a rotational program.

"The first thing he brought up is that we can apply Kerb in early November, and it'll kill young



Poa plants," Kepple says. "It will provide preemergent control long enough that we can put out spring applications. This program works great for us because we can do it after both of our events that are televised and not have to worry about a misapplication. At the same time, it's providing us with a really good control."

To keep the East Lake course looking good year-round, the team also uses Turflon Ester Ultra herbicide to control bermudagrass encroachment on zoysiagrass fairways and tees.

"We spray on a monthly basis until the end of the growing season," Aubry says. "We're applying this



A whole new view. While East Lake Golf Club has been the home of the PGA Tour Championship since 2005, the tournament — which will be held without spectators Sept. 4-7 — will look a bit different to broadcast viewers this year.

herbicide on roughly 25 acres of turf on a monthly basis. This helps keep our fairways clean and free of bermudagrass, giving us a nice uniform playing surface on our fairways.”

Aubry and Kepple also use Fore 80WP Rainshield year-round as a standard cleanup fungicide.

And, as far as getting ready for the extra scrutiny of his course, Aubry says he’s going to do what any superintendent does when faced with adversity — find a

way through it.

“What we do as superintendents is find a way to solve the problem and get through the battle.

That’s just how it’s going to continue to be for the foreseeable future, especially leading into the Tour Championship,” he says.

Kepple says he’s thankful for the support of the turf industry with the Tour Championship volunteer program.

“Corteva Agriscience has been a good partner for us, and they’ve

supported us in our tournament volunteer program, which we appreciate,” he says.

Aubry says he’s stressed to the team at East Lake how great it is to have their course showcased on TV.

“At the end of the day on Labor Day, you’re going to be able to turn your television on, and you’re going to be able to watch the Tour Championship. It’s going to be one of the few nationally televised live sports that you’re going to be able to see on Labor Day,” he says. “Golf’s in a good spot.”



Charles Aubry

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LEGENDS INITIATIVE



MATT SHAFFER

Director of Golf Course Operations Emeritus
Merion Golf Club, Ardmore, Pa.

By Seth Jones

Started by Anuvia, the Legends Initiative celebrates superintendents who have gone above and beyond in their careers — not just in maintaining tremendous golf courses, but also in their contributions to the industry, creative problem-solving and mentorship. *Golfdom* sat down with Anuvia's inaugural Legend, Matt Shaffer, to discuss hosting the 2013 U.S. Open, his time at Merion and what golf character stands out to him the most.

Matt, what have you been up to?

I started a company called Minimalistic Agronomic Techniques and was working with Anuvia and BioBoost. Then COVID-19 hit, and that put the kibosh on my traveling.

What are some career highlights from your time at Merion?

We built a great mentor program, so I turned out 18 great superintendents, and we placed well over 100 assistants and five mechanics. And, we hosted the Amateur, the Walker Cup and the (U.S.) Open. Bringing the (U.S.) Open to Merion, I feel like I had a little to do with that. I can take about 15 percent of the credit.

One of your former assistants-turned-superintendents said your best skill is getting a group of people to work together on a seemingly insurmountable task and get it done.

How do you do that? Misery likes company. If everybody worked equally hard, it all of a sudden became easy. I told them, you're going to have lots of hard days, but in the end, you'll be rewarded. They saw other people move ahead and get great jobs. When they had difficult times, I told them to reach out to those guys. They'll tell you, it's worth it. Nothing in life comes without a sacrifice, and this is your sacrifice time ... and they bought in.

Some of your agronomic practices were experimental at one time, and now are widely adopted. What are some practices you put in place that you're most proud of? I always hated to water. I was a real stingy waterer. I would teach these guys how to water, you can't just learn it; you have to be mentored. I think if you got my guys together and asked them what makes Shaffer a different agronomist, they'd say he doesn't spray,

doesn't water and he's a rolling maniac. The rolling started in Cleveland, because Dr. Karl Danneberger sent me a graduate student. He went back and told Dr. Danneberger, 'That guy never sprays, and he never gets any disease on his greens!' So of course Karl gets me on the phone and says, 'what's the deal?' I said it's a combination of good fertility, great water management ... and rolling. Nobody was rolling much back then.

You got to meet so many people through the years. Who stands out to you? Pete Dye was such a character. Getting to spend any time with Pete was a privilege. One day I told him I was going to buy a golf course. He just worked me over on the phone! I wish I could have recorded it. There are so many wonderful people you get to meet who are open and kind and generous with their time ... it's awesome.

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Continued from page 34

fortified by data-driven decision-making, the new-look Green Section has leveled up for its next 100-year era.

"We can now provide more sophisticated technology tools to speed and increase the reach of transferring knowledge and expertise into the field," Jerris says. "We don't see this as a new direction but rather enhancing and improving our capabilities, so we can deliver even more impact for golf courses for the next 100 years."

Green Section and RSI Managing Director Matt Pringle adds, "The fall of 2019 really offered us a pause and juncture to reflect on our 100th year of serving the golf industry and to ask ourselves where to go from here. There was a prevailing sentiment around our consulting service that it was too expensive for your average public. That's not the case, and we needed to change that perception through education and outreach."

Thinking small

Including multimillion-dollar research projects and major championship preparations, the Green Section has quarterbacked numerous high-profile projects over the years. But, Chris Hartwiger, longtime director of course consulting, believes data-driven "micromodels" that benefit a wide variety of facility types will be a major focus of the section in the coming years.

"It's not about big data. It is about collecting the right data from facilities that helps them make decisions," Hartwiger says. "The more courses you have participating in this modeling, the more patterns and trends start to emerge."

For example, in 2018, Hartwiger and USGA agronomist Addison Barden posed a seemingly simple question: What do good putting surfaces have in common? The answer, as it turned out, was much more complex.

The duo embarked on a project with six courses in the Southeastern U.S. to gain scientific clarity and develop a methodology for superintendents to employ within their existing maintenance budgets. The performance indicators were green speed and clipping volume, while inputs included fertilizer, weather, mowing and rolling.

"We're up to 21 courses participating and hope to add more this year," Hartwiger says. "The charts and graphs help superintendents visualize green performance over time, and spreadsheets allow them to model for different variables. Collectively, the information enables them to provide golfers a more consistent putting surface over time."

Similarly, the Green Section has developed a model to assist courses with the timing and budgetary impact of aerating greens. Facilities in destination regions, like Myrtle Beach and Hilton Head, S.C., have historically avoided punching putting surfaces anytime close to the spring or fall peak season. While such a practice makes common sense, it doesn't necessarily make scientific or economic sense.

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INNOVATE. RESEARCH. DELIVER.

Stepping up the fungicide game

Three university researchers share why the latest Syngenta fungicides will shake things up in the turf industry

Bringing new products to market is a marathon, not a sprint. It can take years of thoughtful experimentation, careful planning and diligent research. But, some products are worth the wait.

This summer, Syngenta is launching three new fungicides: Posterity XT, Posterity Forte and Ascernity.

If the initial feedback from researchers is any indication, the new fungicides in the lineup could give industry standards a run for their money.

The Swiss Army knife of fungicides

Building off the success of Posterity, Posterity XT combines three leading active ingredients, including ADEPIDYN technology (pydiflumetofen). It is labeled

for broad-spectrum control of more than 25 cool-season turf diseases — including dollar spot, brown patch, fairy ring and summer patch — and has shown to be effective for up to 28 days.

“Posterity XT combines a couple of actives that everyone knows: propiconazole and azoxystrobin — basically the components of Headway, and we know with Headway, we’re going to get great control of root-infecting diseases. Then, you throw in the ADEPIDYN, the active ingredient from Posterity,” says Paul Koch, Ph.D., assistant professor in the department of plant pathology at the University of Wisconsin-Madison. **“So now, we put all three of these products together, and we expect to get control of just about any disease you’re going to see in the Midwest.”**

Koch has been testing Posterity XT on dollar spot for the last several years, but it was the 2019 trial that really stood out.

For most of the year, dollar spot pressure was low to moderate. But then August rolled around, and it exploded. In the untreated area, a 3-by-5-ft. plot, there were 142 dollar spots. In the plot treated with Posterity XT, there were zero.

“You can’t do any better than that,” Koch says. **“We’re looking at the highest pressure, the most severe conditions for dollar spot, and Posterity XT performed exceptionally well.”**

Improving on Posterity

Syngenta is also releasing Posterity Forte, a new fungicide for controlling spring dead spot and take-all root rot for warm-season turf, as well as extended control of dollar



University of Wisconsin-Madison trial

Left: Nontreated control plot shows multiple dollar spots.

Right: Clean after being treated with Posterity XT on 14-day intervals.

PHOTOS BY: PAUL KOCH



Both rapid blight and anthracnose were present, as well as turf scalping, prior to the start of this study. In the end, Ascernity was among the top treatments, according to Jim Baird, Ph.D., the University of California, Riverside.

spot plus brown patch and leaf spot control for cool-season turf.

"We're building on the success of Posterity on spring dead spot that we've had and creating a broader-spectrum product that is more useful for superintendents," says Lane Tredway, Ph.D., technical services manager for turf at Syngenta.

Compared to Posterity XT, Posterity Forte contains a higher ratio of ADEPIDYN to azoxystrobin and propiconazole, resulting in a product that is safer for use on warm-season grasses and enables golf course superintendents to control spring dead spot and take-all root rot with one product.

"What Posterity Forte gives us is a little bit better and more consistent control from what we're seeing with spring dead spot," Tredway says. "It's a really good formulation, and those active ingredients are performing at their best."

Reliable and consistent control

Ascernity fungicide is a robust combination of SOLATENOL (benzovindiflupyr), an advanced SDHI technology in golf effective against large patch, brown patch and anthracnose, and difenoconazole, the cooling DMI, to prevent and control more than 20 diseases in cool- and warm-season turf with no heat restrictions.

Mike Richardson, Ph.D., professor at the University of Arkansas, has been studying large patch for more than a decade, with a focus on SOLATENOL since the fall of 2014.

"One of the things we've seen over the decade-plus that we've been working on this disease is that even the better fungicides, the ones we've considered to be industry standards, they can be inconsistent," Richardson says. **"We've seen consistent results with Ascernity year in and year out, and that's one of the most important things for**

superintendents that are trying to manage this disease. They just can't have failures and breakdowns with their fungicide programs. That's where Ascernity shined in our trials."

Like Richardson, Jim Baird, Ph.D., a turfgrass specialist at the University of California, Riverside, began testing Ascernity around 2014 or 2015 and was also impressed with the results.

After repeating the trial, the team realized the product was doing more than combat diseases.

"This is really the first time I've ever really seen additional plant health benefits from fungicides," Baird says. **"With Ascernity, it was not only combative against anthracnose and rapid blight, it also restored turf health."**

All three of these products will be launched later in 2020 and available for purchase during the upcoming early order period.

More information can be found at [GreenCastOnline.com/Golf](https://www.golfdom.com/Golf)

Serious about resistance management

Another significant benefit of all three of these brands is managing resistant populations.

"You have built-in resistance management with Posterity XT," says Paul Koch, Ph.D., assistant professor in the department of plant pathology at the University of Wisconsin-Madison. "You don't have to worry about rotating as frequently. You've already got it built in."

With dollar spot, resistant populations are increasing in all chemical classes, which is why the topic has been growing in urgency from educational institutions to chemical companies alike.

"It's time we get really serious about resistance management with SDHIs," says Lane Tredway, Ph.D., technical services manager for turf at Syngenta. "We need to take action on that before it becomes so widespread that it's too late."

To find a season-long program to control diseases and manage resistance, visit [GreenCastOnline.com/Programs](https://www.golfdom.com/Programs).

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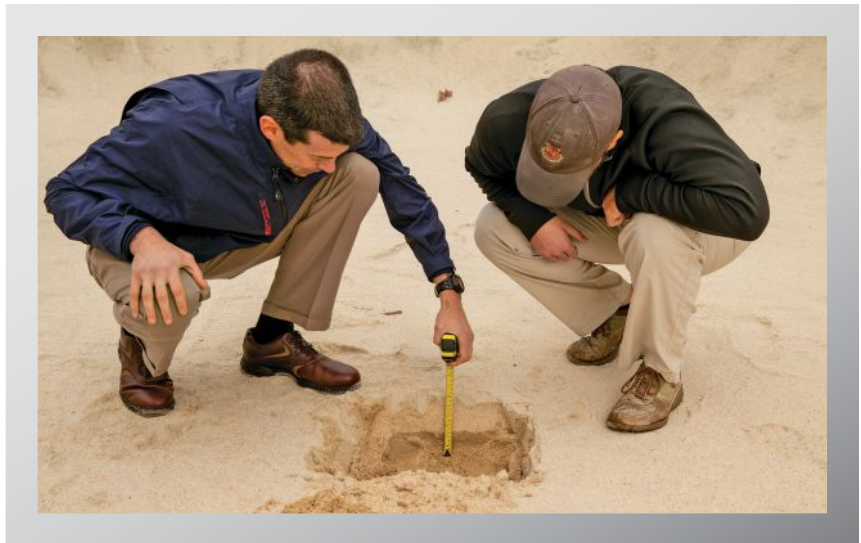
"Aerating greens in winter months leads to longer recovery time, which can have an even greater effect on revenue," Hartwiger says. "With the model, a course can enter any date, and it will generate the number of days needed for recovery."

Forward thinking

Mike Wallace, superintendent at Simsbury Farms Golf Course in West Simsbury, Conn., is working with the Green Section to create a plan for the construction and maintenance of junior tees on all 18 holes. Like many courses, previous junior tees were simply areas cut next to fairways.

"It is our goal to have the junior golfer get the same enjoyment from the round of golf as any adult patron," Wallace says. "To attain that goal, they need to be treated accordingly and equally."

Simsbury Farms has built a new forward



Evaluating bunker locations helped the USGA Green Section in remedying pace-of-play issues that have plagued the industry for so long.

tee on its fifth hole and hopes to move forward with a full set of junior tees this year as funds become available. The Green Sec-

tion has been instrumental in helping design tee boxes that can be cut with fairway mowers as they run through each hole in

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the morning, according to Wallace.

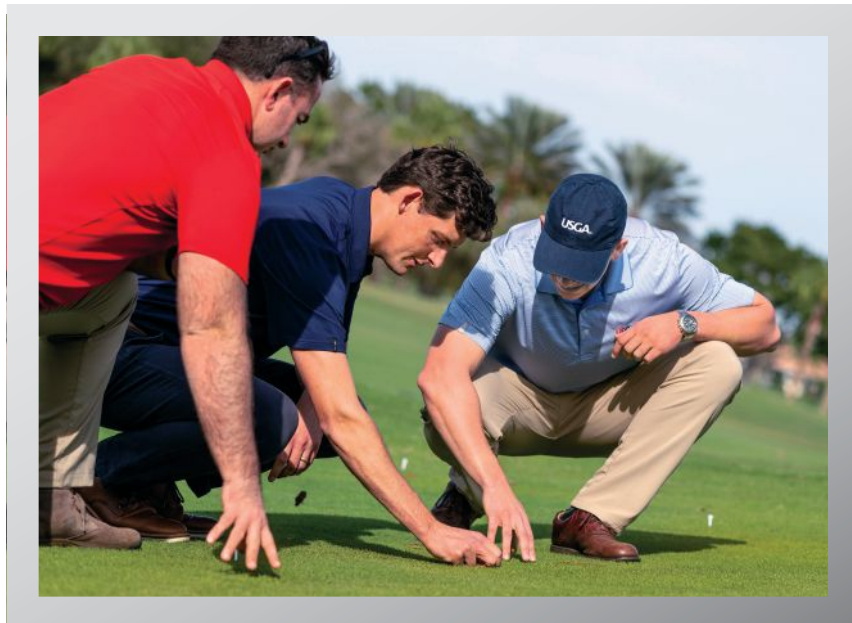
"The topic of forward tees for juniors and especially for women is really going to blow up over the next few years," Hartwiger says. "Courses that want to grow rounds and memberships should be focused on this right now."

When asked if there's a micromodel for plotting the location of these new forward tees, Hartwiger releases a hearty laugh.

"Of course," he says. "It spits out a bar graph of the distance and clubs that women hit into holes. On most courses, they are hitting fairway woods into greens on 14 out of 18 holes. That's a different game than many of us play and not nearly as enjoyable."

Holistic approach

If helping facilities improve pace of play and the golf experience for women, juniors and beginners sounds a lot like growing the game of golf, well, that's exactly the



Information provided from USGA research allowed courses to make putting surfaces more consistent. Pictured here: Cole Thompson, Zach Nicoludis, Paul Jacobs.

plan. And to do that, the Green Section will look to double-down on its partnerships with other industry organizations.

"I really think a consulting agronomist

and golf course architect can be a powerful team to help golf courses," Pringle says. "There is some overlap, but we are mostly

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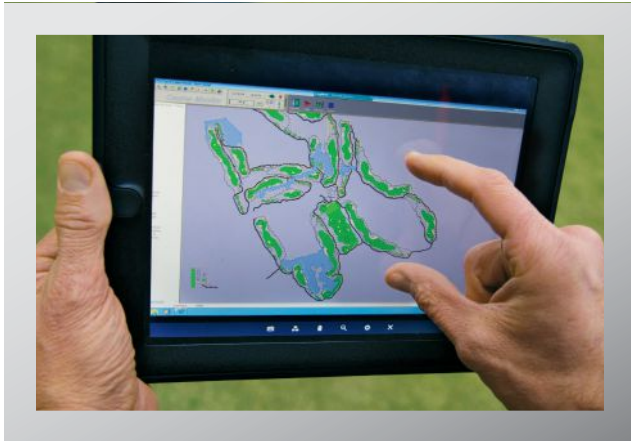
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complementary in terms of strategy and services. Finding ways to get both organizations to get to know each other and our services better is a prime objective.”

Jerris also sees public golf courses as being a major emphasis for the Greens Section in the coming years. Approximately 75



The more courses that participate in modeling, the easier it becomes to identify trends and patterns.

percent of the facilities that engage the USGA for consulting are private currently. Not only have private clubs historically had the budget to support it, but they also have the willingness to push the agronomic envelope to keep members satisfied.

“It will be important for the Green Section to continue to evolve its programs, research and services to be more relevant, accessible and affordable for low- to midbudget facilities,” Jerris says. “If you have programs that deliver great impact, you’ll have greater collective influence on the game.”

Keith Hall, owner of The Pointe and Carolina Club golf courses in North Carolina’s Outer Banks, is a prime example of a public course operator who utilizes the full menu of Green Section services. Including consultation on fertilizers and equipment updates and relocating forward tees and turf reduction, Hall has sampled a bit of everything over the past 25 years.

“They are a treasure chest of information and some of the smartest people you will meet in this industry,” Hall says. “They answer all of your questions and provide a written report covering that plus anything else they find on the golf course. You can call or email Chris (Hartwiger) anytime, and he’ll get back to you in short order.”

As the Green Section forges into its next 100 years, one thing is for certain. It has big shoes to fill: its own. ©

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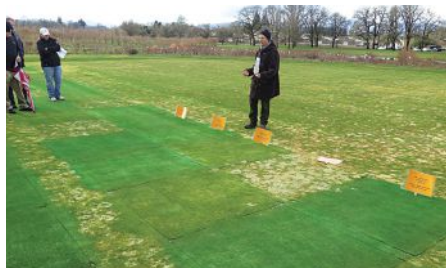
// DOUBLE UP ON DEFENSE

MICRODOCHIUM PATCH CONTROL ALTERNATIVES

By Clint Mattox, Ph.D., and Alec Kowalewski, Ph.D.

Microdochium patch (*Microdochium nivale*) is a major turfgrass disease in cool, humid regions. Currently, traditional fungicides are the only known methods of control. We researched rolling, as well as the application of mineral oil, sulfur and potassium-phosphite as alternative fungicide options to control Microdochium patch on annual bluegrass (*Poa annua*) putting greens.

A field experiment was initiated in September 2013 and concluded in June 2015 on a putting green built using USGA-recommended particle size sand at Oregon State University, Corvallis, Ore. The experimental design was a two-by-four by two-by-two randomized complete split-plot design, with four replications. Factors included rolling, fertility, mineral oil and year.



Oregon State University scientists developed alternative control methods for Microdochium patch during cooler winter weather.

The putting green was rolled five days a week compared to plots that were not rolled. Fertilization treatments applied per 1,000 square feet included 0.25 pound of Sulfur DF, 6.0 fluid ounces of PK Plus (potassium-phosphite), a combination of the Sulfur DF and PK Plus applied at these respective rates every other week, and no fertility. We also compared mineral oil (Civitas Turf Defense) applied every other week at a rate of 8.5 fluid ounces of product per 1,000 square feet to plots not receiving mineral oil. In Corvallis, Civitas Turf Defense applied alone or in combination with PK Plus, Sulfur DF or PK Plus with Sulfur DF significantly suppressed Microdochium patch. Rolling also suppressed Microdochium patch, and a combination of Sulfur DF and PK Plus suppressed disease more than either product applied alone.

Treatments of Civitas Turf Defense were applied in combination with PK Plus, Sulfur DF or PK Plus, with Sulfur DF producing the best results. Rolled plots of the same treatments resulted in the most inferior quality due to abiotic damage. It's important to note that Civitas Turf Defense has not been an effective Microdochium patch control in regions that have prolonged snow cover. **Ⓢ**

The authors would like to acknowledge the funding support for this research from the Golf Course Superintendents Association of America, Western Canada Turfgrass Association, Northwest Turfgrass Association and the Western IPM Center.

Clint Mattox completed his Ph.D. under the direction of Alec Kowalewski, Ph.D. Contact Kowalewski at Alec.Kowalewski@oregonstate.edu or reference the research publication DOI: 10.1002/agj2.20191.

NEWS UPDATES

PBI-GORDON ADDS SENIOR DIRECTOR OF OPERATIONS

PBI-Gordon has hired Gary Wolf as the senior director of operations.

Wolf brings more than 30 years of industry experience to PBI-Gordon.

Most recently, he was director of active ingredient operations at Bayer, where he was responsible for the chemical manufacturing of active ingredients for herbicides, fungicides and intermediates at four plants. Prior to that, Wolf was a production



manager with Exide Technologies and spent more than a decade with Compass Minerals in various leadership roles.

"We are thrilled to have Gary on our team," said Neil Cleveland, vice president and general manager of the PBI-Gordon business unit. "His leadership, experience and record of success will support our strategic growth and further enhance our efforts to manufacture and deliver exceptional products for our customers and industry partners."

A former officer in the U.S. Army Reserves, Wolf earned his bachelor's degree in chemical engineering from the University of Alabama and his MBA from Wake Forest University.

“IN THE END, SNOW MOLD PRESSURE WAS VERY HIGH ACROSS MOST OF WISCONSIN AND THE UPPER MIDWEST.”

Paul Koch, Ph.D.

(see story on page 49)



Yellow nutsedge can often be easier to manage than its counterpart, purple nutsedge.

Know your sedge

In order to properly manage these perennial weeds, it's critical to know which species is infecting your turf

When it comes to sedge management, proper identification is critical, says Jim Brosnan, Ph.D., professor in the Plant Sciences Department at the University of Tennessee. He says a good example of why proper ID is important is because purple nutsedge is more of a challenge to manage than yellow nutsedge.

"There's an ID piece there that can be tricky if you don't have a fully developed plant, one that's being mowed regularly, so the floral component of that plant might not be there," he says.

Brosnan says *kyllinga* is another member of the sedge family that's easy for superintendents to misdiagnose or miss as it has a similar leaf texture and growth to some turfgrass species. This can be an issue in northern states, since *kyllinga* (once thought to be a southern weed) has been found as far north as Connecticut.

"That's a point where superintendents might be caught

off guard, thinking 'that's a southern weed,' and it's moving north pretty readily," he says. "It's one to keep an eye out for."

To ensure you have proper weed ID, Brosnan encourages superintendents to take advantage of the Extension services of their land grant university. He says there are also great resources online through NC State, UT and the University of Missouri, among others.

Sedges are good indicators of wet spots on a course, and Brosnan recommends taking a look at the underlying cause of wet spots in order to manage sedges with an integrated approach.

"If I just spray that herbicide, I'm probably going to have *kyllinga* problems in the future because I haven't changed the growing environment," he says, noting that a better approach is to use an herbicide to control the weed growth, in addition to addressing any drainage issues that may be causing wet spots. **G**

PHOTO COURTESY OF JIM BROSNAN, PH.D., UNIVERSITY OF TENNESSEE

Syngenta

DEAN MOSDELL, PH.D.

Technical services manager



Sedges can be found on a variety of turf types. Purple nutsedge is not cold tolerant, so it proliferates in southern climates. At least one species of *kyllinga* can be found in most U.S. states except for those in more northern climates. Yellow nutsedge can be found in most U.S. states but is less common in the Deep South and Hawaii.

Improve drainage and turf competition. Don't move soil that is contaminated. These weeds are perennial C4 plants, so postemergent herbicides are ideal options. Although acetamide herbicides have activity on germinating tubers of yellow nutsedge, turf tolerance is limited to warm-season grasses. On warm-season grasses, ALS inhibitors are effective on sedges and *kyllinga*. On cool-season turf, mesotrione is effective at seeding, and herbicides containing halosulfuron or sulfentrazone are options in most established turf species.

FMC Professional Solutions

TINA BOND, PH.D.

Technical service manager



Sedges can be found throughout the golf course. Sedges have a triangular stem and leaves arranged in threes. Nutsedge grows sparsely. Yellow nutsedge produces yellow flowers and tubers at the tip of the rhizome. Purple nutsedge produces purple flowers and hairy tubers connected by rhizomes. *Kyllinga* grows in thick mats, produces a round seedhead and spreads via rhizomes. Yellow nutsedge and *kyllinga* are distributed across the U.S. Purple nutsedge is found in warm-season climates across the Southern U.S. Manage turfgrass so it will outcompete weeds, and properly manage drainage and irrigation to prevent infestations. Do not plant infested sod or tuber-contaminated soil. Sulfentrazone can be used to manage sedges. Time applications after shoot emergence but before tuber production.

Bayer

TODD LOWE

Technical services manager



There are many sedges that are problems in turf, and each have glossy three-ranked leaf arrangements and triangular stems. However, *kyllingas* have a single spike seedhead, while yellow nutsedge has a seedhead with stalked clusters of yellowish seeds, and purple nutsedge has purplish seeds. Yellow and purple nutsedge also have underground tubers. Sedges favor moist soils, so improving soil drainage and reducing soil saturation, to the extent possible, can help discourage sedges. Recent research from the University of Nebraska shows the most effective controls are thick turf and postemergence applications in the three-to-five leaf stage (earlier than previously thought). A dedicated postemergence program is needed, and with most sedges and *kyllingas*, repeat applications are required for perennial sedges and *kyllingas*.

PBI-Gordon Corp.

ERIC REASOR, PH.D.

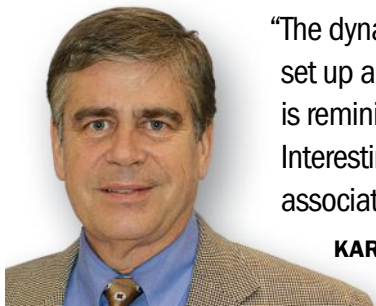
Southeast research scientist



Nutsedges and *kyllinga* are in the *Cyperaceae* plant family, making them difficult to identify. They have a triangular-shaped stem and glossy appearance. Purple nutsedge leaves are abruptly pointed, and yellow nutsedge slowly tapers to a point. *Kyllinga* typically has a finer leaf texture than nutsedges and a light green color.

Nutsedges and *kyllinga* can occur on any part of the golf course; however, *kyllinga* is more common on greens. Purple nutsedge is more common than yellow in southern regions, whereas *kyllinga* is moving farther north.

Cultural control measures may not provide acceptable control. Fortunately, there are several herbicide active ingredients. Some active ingredients include sulfentrazone, halosulfuron, flazasulfuron, trifloxysulfuron, imazosulfuron and pyrimisulfan. Be sure to read the herbicide label prior to any application.



"The dynamics of a practice tee in how it is set up and moved as the season progresses is reminiscent of horse-racing tracks ... Interestingly, 'turf' is a term often associated with horse racing."

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

Off to the races

Maintaining a quality practice tee enhances the golfing experience while contributing to the success of the golf club. The practice range tee is the golfer's first impression of the golf course.

To golfers who are either practicing or taking a golf lesson, the practice range is a direct reflection of the quality of the club's professionals and golf course superintendent.

The dynamics of a practice tee in how it is set up and moved as the season progresses is reminiscent of horse-racing tracks. In horse racing, there are two types of tracks: dirt and turf. In the United States, most horse races, including prestigious events like the Kentucky Derby, Preakness Stakes and the Belmont Stakes, are run on dirt tracks. In other parts of the world like Europe and South America, the majority of horse races are run on turf. Interestingly, "turf" is a term often specifically associated with horse racing.

Club Hípico de Santiago is the oldest horse-racing track in Chile. The club has 86 race meetings a year. A race meeting is a series of races taking place at the racetrack over a day or series of days. At Club Hípico, 14 to 20 races take place during each meeting with around 13 horses per race. The majority of race meetings are on turf.

To handle the turf wear and divotting caused by the racehorses, the track

itself changes. As in practice tees, providing a strong agronomic base is important in maintaining a healthy and safe turf. For example, the turf base at Club Hípico is bermudagrass. However, during the season, the turf is overseeded with perennial ryegrass to help provide a uniform cover.

To help reduce concentrated traffic from the racehorses, the dimensions of the racetrack slightly change during the race season. The inside rail that horses congregate along is mobile. At Club Hípico, for example, the inside rail is moved outward 4 meters (~ 4 yards) after two or three race meetings.

Initially, or for an important race session, the rail is set at the innermost part of the turf track, designated at 0 meters. After a few race meetings, the rail is moved outward by 4 meters to the 4-meter mark. As the race sessions continue, the rail is moved to the 8-meter mark, then the 12-meter mark and then maybe the 16-meter mark. As

the meetings progress, the pattern for moving the inner rail is repeated. This is done to allow for repair and recovery of the turf in the high-traffic area.

Designating practice tee hitting areas follows the same concept of the mobile racetrack rail. Once the overall hitting area of a practice tee is defined, which is usually 2- to 2.5-yard strips across the width of the tee area, hitting stations are established within the strip. Hitting stations are often defined with dividers, bag holders or buckets of balls. The hitting stations vary in width depending on the situation, but the reported width is about 3 yards.

Assuming most golfers are right-handed, they will tend to use the right-hand portion of the hitting station. This is important when moving the hitting station the following day. By moving the hitting stations to the left approximately half the hitting station width, you should get two days of hitting out of one station.

With the coronavirus ever-present, social distancing will need to be considered when determining the width of the hitting station. The downside is that the number of hitting stations may decrease, but the actual number of days you get out of hitting from one station increases.

Maintaining a season-long healthy and desirable practice tee depends on a number of factors, but rotating the hitting station efficiently is a major key. Whether from the heavy-traffic area along a racetrack's rail or from the divot side of the hitting station, consistent and slight changes can increase the use and duration of the turf. **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.

//TIMING IS EVERYTHING

Snow mold strikes again

By Paul Koch, Ph.D.

By my count, this is the eighth consecutive year I've written a snow mold article for *Golfdom*. Over these eight years, some things have been constants, such as the need to mix multiple active ingredients for acceptable disease control in heavy-pressure environments. Other things are specific to each year, such as how minor environmental changes over a small area can lead to large changes in disease development.

This article will be much the same. Certain things you've heard me say before (you need multiple actives if you're in a high-pressure area) and others you haven't because I haven't mentioned them. Let's take a look back at the 2019-2020 winter to help us prepare for 2020-2021.

TURF HARDENING IMPACTS SNOW MOLD RESISTANCE ... A LOT

From an environmental standpoint, last fall and winter in the Midwest were drunk. An early and prolonged cold snap in October and November caused early course closures and a mad rush to blow out irrigation systems and get out snow mold applications.

In Madison, we got almost 6 inches of snow on Halloween, which made for some difficult trick-or-treating. Fast-forward to December, and the weather felt more like September. Multiple weeks with high temperatures in the 40s and 50s culminated in a 54 degree F Christmas Day and a Koch household Christmas party that moved to the back patio. Winter returned on Jan. 1 when snow fell, and it stuck until mid-March.

FIGURE 1



Snow mold pressure at our research station in Madison, Wis. was very high despite a relatively short window of snow cover.

Discussion among superintendents in Wisconsin centered around how much snow mold would develop

and whether breakthrough would occur in treated areas. I was unsure,

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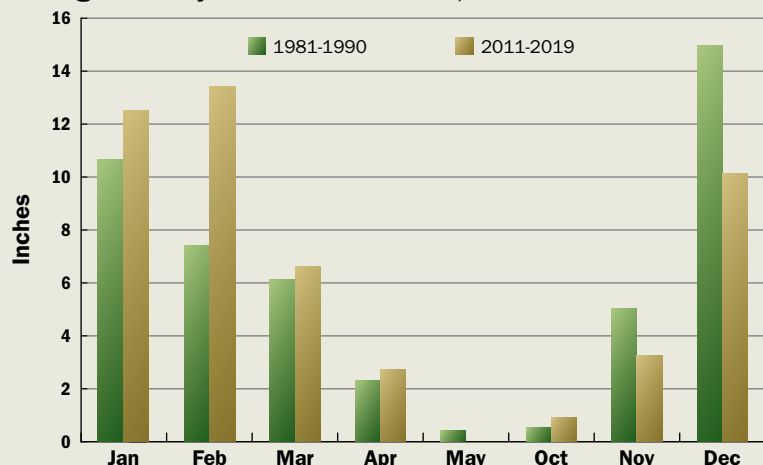
torn between conflicting indicators. On the one hand, there was snow on the unfrozen ground, which generally leads to lots of snow mold. On the other

hand, the snow fell late, was never that deep and barely lasted 60 days.

In the end, snow mold pressure was very high across most of Wisconsin and the upper Midwest (Figure 1).

FIGURE 2

Average monthly snowfall in Madison, Wis.



Average monthly snowfall in Madison, Wis., has increased over the last 10 years in January and February but has fallen significantly in November and December. December is usually a critical time for snow mold development. The figure is taken from the website <https://news.wisc.edu/new-weather-normals-show-how-madisons-climate-has-changed-over-40-years/>.

FIGURE 3



There can be a sharp cutoff in effective snow mold control. At our research site on Timber Ridge GC in Minocqua, Wis., the difference between no control and great control was just 12 days.

Research Takeaways

- Snow mold breakthrough on fungicide-treated turf was very rare, suggesting that snow mold applications made in October and November knocked back the fungal population.
- We see increases in snow mold control when fungicide applications are made at heating degree day accumulations right around 100 (i.e., from July 1 of each year, record how much below 50 degrees F the average daily temperature was during the day).
- We have not found alternative methods (e.g., Civitas or phosphites) to control snow mold in areas where snow cover persists.
- The combination of three or more active ingredients applied at Marquette, Wis., resulted in 16 of 63 treatments with less than 5 percent disease, and at Wausau, Wis., 28 of the 63 treatments allowed less than 1 percent disease to occur.
- Almost all effective mixtures included a DMI fungicide (tebuconazole or propiconazole), a contact fungicide (chlorothalonil or PCNB) and an additional active ingredient such as pyraclostrobin, azoxystrobin or iprodione.

This indicated that even with a short window of snow cover, the lack of turf hardening allowed for widespread snow mold to develop on nontreated turf. Turf hardening is a complex process that allows the turf to be ready for the winter ahead and is a critical component for snow mold resistance.

Fortunately, snow mold breakthrough on treated turf was very rare, suggesting that snow mold applications made in October and November knocked back the fungal population enough so that it couldn't recover and cause disease before the snow melted in spring.

Our changing winters make it difficult to consistently predict how climate change will impact future snow mold development. Prior to this year, most of the evidence I observed suggested that climate change was resulting in later and less snow cover and less disease development (Figure 2). But, 2019-2020 showed that warmer temperatures in late fall could lead to "dehardening" of the turf, which

FIGURE 4



I thought that repeatedly applying iron sulfate (Extreme Green) and potassium phosphite (Duraphite) throughout the fall would knock back the snow mold fungal population and provide significant disease control. As this photo from Timber Ridge GC in Minocqua, Wis., shows ... I was wrong.

results in widespread snow mold development on turf that is, for lack of a better phrase, “unprepared for winter.” How this plays out with further climate change in the years ahead will be interesting (and essential) to watch.

FUNGICIDE TIMING MATTERS

Timing of snow mold fungicide applications is something I have talked about before, but the 2019-2020 winter provided a great example of just how important it is. Applying snow mold fungicides too late (i.e., when snow is already on the ground) is bad. However, applying them too early is also bad, most likely due to a combination of product breakdown before snow cover *and* the snow mold fungi not actively growing (and not taking up) the fungicide at the time of application.

But what is too early, and how do you determine the optimal time to

FIGURE 5



Many treatments provide highly effective snow mold control despite really high disease pressure at our research site on Marquette GC in Marquette, Mich.

apply when the conditions fluctuate so much from year to year?

To investigate this, we have researched optimal snow mold fungicide timing for the past five years. The study is straightforward; we apply Instrata (combines the active ingredients chlorothalonil, propiconazole and fludioxonil) once at various times prior to “expected” snow cover for that particular site and then rate how much snow mold developed on the site the following spring. The application timings are eight, six, four, two, and zero weeks before the expected snow cover.

At our research site in Minocqua, Wis., in 2019-2020, the cutoff from almost no control (applied Oct. 14) to excellent control (applied Oct. 26) was only 12 days (Figure 3). The control increased dramatically over the same two application dates at research sites in Wausau in central Wisconsin and Madison in southern Wisconsin.

As part of this project, we have also researched various environmental measurements that can effectively predict the optimal timing. To date,

the most effective has been “heating degree days.” Heating degree days are the opposite of growing degree days because you set a base temperature (we use 50 degrees F), and beginning on July 1 of each year, record how much *below* 50 degrees F the average daily temperature was.

From our past research, we know that increases in snow mold control are seen when fungicide applications are made at heating degree day accumulations right around 100, and that is precisely what we saw at these three sites in 2019-2020. More research is needed across more locations. Still, we know that fungicide timing is essential for snow mold control, and we’re making progress on ways to predict when that optimal timing will be.

EFFECTIVE ALTERNATIVE SNOW MOLD PRODUCTS DON'T YET EXIST

There are a host of alternatives to traditional fungicides that have provided some level of efficacy against certain

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turf diseases. For example, iron sulfate can reduce dollar spot and phosphites are effective against *Pythium* blight. Even Microdochium patch that occurs in snowless areas of the Pacific Northwest and northern Europe can be controlled using combinations of iron sulfate, Civitas mineral oil and phosphites. However, we haven't yet found an alternative product that is effective against traditional snow molds.

We have tested Civitas many times with poor results. This past winter, we tested a potential new biocontrol agent with poor results. We even tested applications of iron sulfate and phosphite applied six times on a two-week interval throughout the fall leading up to snow cover and still had poor results (Figure 4).

The bottom line is that there remains considerable interest in developing alternative methods to control snow mold in areas where snow cover persists, but right now, those options don't exist.

MIX THOSE ACTIVE INGREDIENTS


Every year, I talk about mixing multiple active ingredients for successful snow mold control, and our research this year once again showed how important that is. We conducted snow mold research at four sites in 2019-2020: Marquette GC in Marquette, Mich.; Timber Ridge GC in Minocqua, Wis.; Wausau CC in Wausau, Wis.; and the OJ Noer Turfgrass Research Facility in Madison, Wis.

Snow mold pressure was high at all four sites, and in all of them, the only products that performed well were those that had mixtures of three or more active ingredients. In Marquette, the main snow mold present was speckled snow mold (*Typhula ishikariensis*), and the amount of disease in the nontreated control was a whopping 87.5 percent. In Wausau, the main snow mold present was

Microdochium patch (*Microdochium nivale*), and the amount of disease in the nontreated control was high at 71 percent.

Even under these heavy disease pressures, there were plenty of treatments that provided highly effective control (Figure 5). At Marquette, there were 16 of 63 treatments that allowed less than 5 percent disease, and at Wausau, 28 of the 63 treatments allowed less than 1 percent disease to occur.

The common theme among all of these successful treatments is that they contained three or more active ingredients. While the specific mixtures varied, almost all of them included a DMI fungicide, such as tebuconazole or propiconazole, a contact fungicide such as chlorothalonil or PCNB, and an additional active ingredient such as pyraclostrobin, azoxystrobin or iprodione.

I strongly encourage you to view the full research results at the University of Wisconsin's Turfgrass Diagnostic Lab Fungicide Results page (<https://tdl.wisc.edu/results/>) and contact me with any questions you have. 

Paul Koch, Ph.D., is an assistant professor within the Department of Plant Pathology at the University of Wisconsin, Madison, Wis. Koch can be contacted at plkoch@wisc.edu.

Acknowledgments

I want to acknowledge and thank my field research manager, Kurt Hockemeyer, for organizing and implementing our research trials. Also, a huge thank you to the host superintendents that allow us to conduct this research and provide this great information to all of you: Craig Moore at Marquette GC, Jay Pritzl at Timber Ridge GC and Randy Slavik and Aaron Hansen at Wausau CC. Lastly, thank you to Adjuvants Plus, AMVAC, BASF, Bayer, Belchim, FMC, Nufarm, PBI-Gordon, Precision, PrimeSource, SePro, Simplot, Quali-Pro and Syngenta for supporting this research.

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“Nearly 100 years after Monteith named dollar spot, Koch and his colleagues are still finding ways to manage the disease efficiently.”

MIKE KENNA, PH.D., *Research Editor*

Wisconsin connection

I started thinking about an interesting connection between the past and present while reviewing the Microdochium patch article in this issue by the University of Wisconsin turfgrass pathologist, Paul Koch, Ph.D. For some reason, it reminded me of the USGA Green Section history about John Monteith Jr., Ph.D.

Born on Dec. 25, 1893, in Chatham, N.J., Monteith graduated in 1917 with B.S. and M.S. degrees from Rutgers University. He served in the Army at the end of World War I from 1917 to 1919. After his service, he went to the University of Wisconsin and received his Ph.D. in 1923. I would consider Monteith the first turfgrass pathologist in the United States. The U.S. Department of Agriculture employed him to work on turfgrass in 1924. Two years later, he named dollar spot, which was called small brown patch up to that time. Monteith wrote at length, providing experimental evidence that damaged turf often was due to fungal disease rather than insects or drought.

In the May 1928 issue of *The National Greenkeeper* (now *Golf Course Management*), he wrote, “Frequently, we hear greenkeepers and members of green committees speak of grass diseases as something amazingly new. They regard them as pests recently invented with the sole purpose of adding to the worries of those men who struggle to keep the turf in perfect playing condition throughout the season.”

In 1928, Monteith was asked to

lead the USGA Green Section, and he served as the Green Section Director until 1942. He left to join the War Department during World War II, which developed a Turf Unit to construct tough, wear-resistant grasses for Army airfields. Before leaving, he developed the first effective chemical control for brown patch, dollar spot and snow mold, and he co-authored the classic *Turf Diseases and Their Control* with Arnold Dahl, Ph.D.

Why the connection between Monteith and Koch? In part, it is the University of Wisconsin, but more interesting is the leadership Koch has provided on dollar spot. In spring 2017, the USGA Turfgrass and Environmental Research Program invited several turfgrass pathologists to discuss dollar spot, new disease-resistant bentgrasses, forecast models, resistant strains of dollar spot and alternative management practices.

Koch then organized more than 20 turfgrass pathologists to attend a follow-up meeting at the 2018 Golf Industry Show and worked with attendees to develop a federal grant to continue the discussion.

In April of 2019, Koch and his col-

leagues received a grant from the National Institute for Food and Agriculture. The project title is “Biology, Etiology and Management of Dollar Spot in Turfgrass.” The first step is to review past and current dollar spot work, identify critical knowledge gaps and plan future projects collaboratively and strategically over the next five years. The first meeting was scheduled for late March 2020, but COVID-19 caused the cancellation of the event. The meeting was open to industry partners, golf course superintendents and other turf professionals. Overall objectives include:

① Improve our understanding of dollar spot biology and epidemiology through taxonomic analysis, molecular assay development and host-pathogen interaction research.

② Assess current dollar spot resistance among bentgrass cultivars and new selections, identify barriers to their utilization in golf course establishment and renovations and develop strategies for overcoming the identified obstacles.

③ Develop cultural-based dollar spot management strategies that combine various cultural practices (e.g., fertility, rolling, topdressing, irrigation) to limit dollar spot development in multiple geographic regions.

④ Develop integrated and targeted chemical dollar spot management strategies that maintain current levels of disease control, potentially reduce chemical inputs and limit the development of fungicide resistant populations.

⑤ Assess the ability of antagonistic organisms to suppress dollar spot when combined with those above cultural and chemical strategies.

Nearly 100 years after Monteith named dollar spot, Koch and his colleagues are still finding ways to manage the disease efficiently. Let’s hope they can meet soon and get the collaborative research rolling! ©

Mike Kenna, Ph.D., is the retired director of research, USGA Green Section. Contact him at mpkenna@gmail.com.

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RyanTurf.com

3 | True Surface Star Slitter

The **TRUE SURFACE** Star Slitter is a fast and easy way to aerate the greens' surface. It causes no disruption to the playing surface while penetrating the surface 0.75 inch or 20 millimeters. The unit also allows for oxygen and water exchange, removes harmful gases and aids in the reduction of algae when the green is hydrophobic, according to the company.

True-Surface.com



4 DryJect Service

The **DRYJECT** service's recent innovation allows users to use dry sand or wet sand and achieve the same results. Through extensive research and development, the company engineered a special hopper configuration that includes rotating agitation and staged screening with vibratory assistance to assure effective flow of slightly damp sand to wet sand. Key benefits are speed, labor savings and increased profitability for golf courses, DryJect said. Users can now aerate, amend and backfill the holes on 18 to 20 greens in one day with time to spare. Greens are playable one hour after the service is complete.

DryJect.com



5 John Deere Aerocore 2000 Aerator

Offering a 77.5-inch coring swath, the Flexi-Link coring system on the **JOHN DEERE** Aerocore 2000 aerator ensures the tines stay perpendicular longer for a higher-quality hole. Additionally, the belt-driven design is quieter and doesn't require lubrication. A tractor-mounted system, the 2000 model allows the operator to work efficiently, pulling as many as 30 cores per square foot depending on the ground speed of the tractor. The 6-inch-diameter roller offers better ground clearance and reduces the potential for turf scuffing. Four tine holder size options provide a solution for any type of turf.

Deere.com



6 GT AirInject Aeration Equipment

AIR2G2's GT AirInject, a nondisruptive piece of turf aeration equipment, features a lateral air-injection process that will also now be offered in two new products, the Air2G2 336 and the Air2G2 436R. By laterally injecting pressurized air up to 12 inches beneath the surface of the soil, in a diameter of up to 9 feet, the equipment fractures compacted layers formed by daily wear and tear and enables airflow without surface disruption or without causing root damage.

Air2g2.com

The 19th Hole

Kevin Banks

SUPERINTENDENT // Vineyard GC, Edgartown, Mass.



After 18 holes, what can I get you? Pretty simple. Any IPA. I'm not picky.



Tell me about your family. I met my wife back in high school, but it wasn't until two years after college that we hit it off. We've been to two islands and through various jobs, and now here we are with three kids, ages 4, 3 and 8 months. It's been a really fun ride.

It's probably an ideal time to live on an island ... Yeah, it's not bad. Most people aren't traveling much. We feel safe on our island; (coronavirus) cases are low here. Since March, we've had 44 cases, and most of those were earlier. The community has done a great job trying to prevent the virus from coming here. We feel lucky being here.

Tell me about Vineyard ... We're a very unique property. The course opened in 2002. We're known to be the organic golf course. We have to go before a review board for any products we want to use here. For example, Zio, a new product produced by SePro, has the OMRI stamp, but we still have to go through the committee and establish what the product is and why we want to use it.

What's your favorite tool in the shop? At Vineyard Golf Club, we can't use herbicides. Every year, we see thresholds of crabgrass or goosegrass where we have to resod. We always ask the interns, the new faces, to go find the sod stretcher. We get the mechanic on board. They eventually find out it doesn't exist.

What about at the house, any new favorite tools there? I've turned into a huge germaphobe. Sanitizer, wipes, everything. My hands have never been cleaner, but they're extremely dry now too. Seems like I buy sanitizer at eight different stores.



What golf experience stands out to you? I've played some great golf courses ... the best experience was when my wife and I went to Ireland five years ago. I made a point, I wanted to see Old Head Links. We went there, they were closed. I called the number on the gate, I said hi, I'm from America, I'm in the golf business, I would love to see the course. Before I even stopped talking, the gate was opening. I got to drive around the entire property, got to see the clubhouse, the suites ... I left with four golf hats and a sleeve of balls.

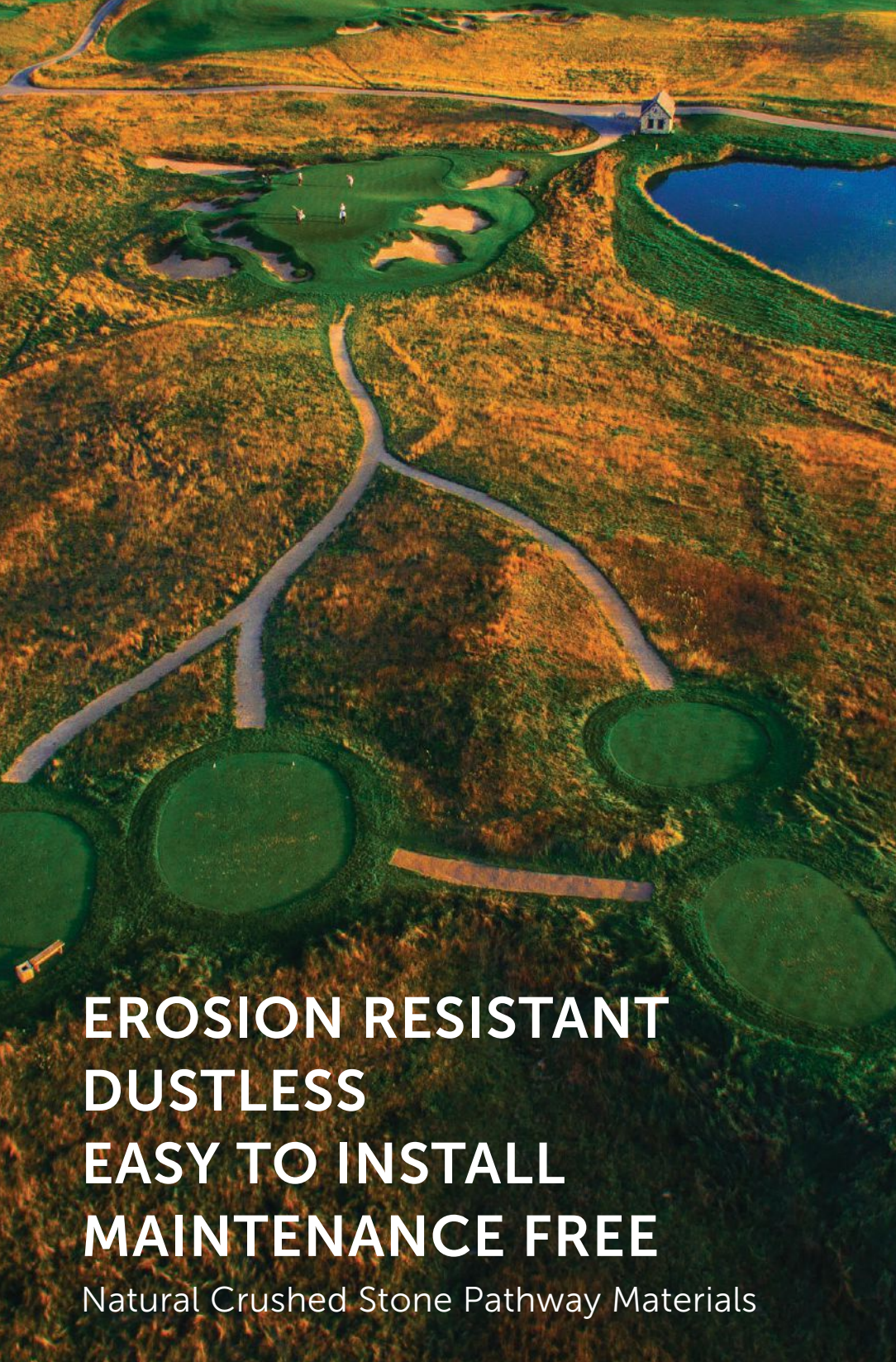
Do you ever wish you could just put on a Tyvek suit and a respirator, and sling some chemical out there? I'd be lying if I said no ... I spent a lot of time as an assistant trying to learn all these chemistries, then you come to a place like Vineyard ... you have to mentally prepare yourself to see some weeds and disease. Each year, we've gotten so much better. The team is committed. We might have a bad day, but we don't give up. At the end of the day, we're excited and proud about what we can do with limited resources — it's a rewarding job to be in. As interviewed by Seth Jones, June 20, 2020.



// BEST ADVICE

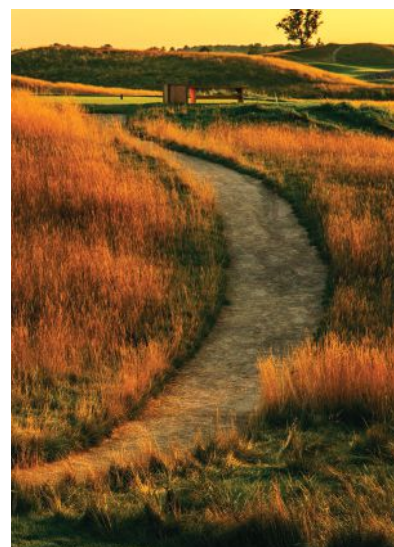
"THINGS CAN LOOK GOOD AT 5 P.M., BUT ONE BAD RAINSTORM FOLLOWED BY HIGH HUMIDITY ... YOU COME IN THE NEXT DAY AND JUST HAVE TO ADJUST. AT THE END OF THE DAY, IT'S A MARATHON, NOT A SPRINT."





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