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# Golfdom

02.24

## Chip Shots

Behind the scenes  
for what was said  
and seen at the 2023

**Golfdom**  
*Summit*



**PLUS**

Nematode 101

Cheers to Dr. Joe Vargas

Introducing the Super-Scratch Foundation





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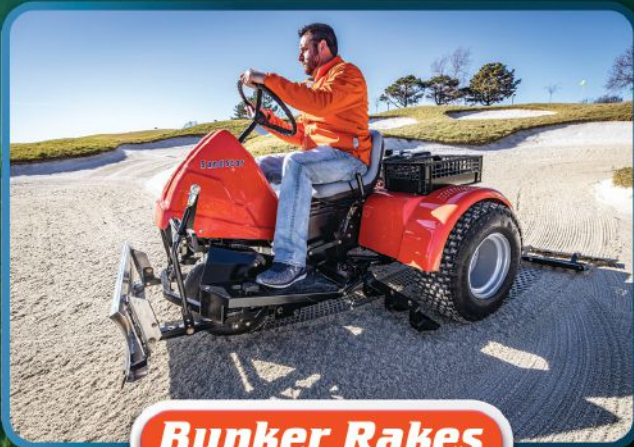


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## Golfdom Summit

2023 RECAP

# Chip shots

As told by the partners  
of the 2023 *Golfdom Summit*

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# Golfdom

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

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"Because I'm not the stealthiest person, I typically get noticed quickly. I say, 'Pretend I'm not here, I just want to observe for a few minutes.'"

**SETH JONES**, Editor-in-Chief & Associate Publisher

## Overheard at the *Golfdom* Summit

**I**t won't get me in the Guinness World Records, but I'm proud that I've attended every *Golfdom* Summit since its inception in 2011. Over the last dozen-plus years, I've met many people who have become friends. In general, spending a couple of days with a group of 70-plus industry professionals in Orlando every winter really does wonders for a guy's network.

My job at the *Golfdom* Summit is pretty cushy: I welcome everyone and then serve as the emcee whenever there is a reason to be on the microphone. This can be a dangerous proposition after the golf tournament, depending on how much fun my playing partners and I had. But I am still undefeated when it comes to anyone cutting the power to the microphone ... although I may have come close once or twice.

I also make it a point to swoop in on the one-on-one meetings between the superintendents and each partner just to get an idea of how the meetings are going and what they're talking about. I try to creep into the meeting unno-

ticed, when possible. But because I'm not the stealthiest person, I typically get noticed quickly. I say, "Pretend I'm not here, I just want to observe for a few minutes."

Listening in to these conversations superintendents have with our industry partners is always educational. It's a much different conversation than I find myself ever having with either party. I'm just a middleman. It's fun to see what happens and what's said when the rubber meets the road.

You can find a recap of the 2023 *Golfdom* Summit on page 14, where we gave each attending partner some room in the magazine to express one of their key messages to

you, the superintendent. And here, for my own entertainment, I'm going to share some excerpts of what I heard when I crept in on those conversations. I won't name names, but you might guess where some of these comments came from based on who is on the cover and who is in that cover story.

"According to Billy Crow, Mr. Nematode himself, it's the best root-knot nematode product on the planet. Period."

*'Mr. Nematode' might not be the nickname I would choose, but it does sound like someone I wouldn't want to mess with.*

"Do you remember that guy? He used to pull up to maintenance shops for his sales calls in a brand-new

Corvette ... he was a legend."

*As legendary as the one and only Mr. Nematode?*

"He said to me, 'I want to hear what you have that is new — and you better say the right thing.' I said, 'We have a new product for earthworm castings.' And he said to me, 'That is the right answer!'"

*Earthworm castings, FTW!*

"It comes down to product performance for me ... I don't care whose name is on the jug."

*I don't either, as long as it's spelled correctly.*

"We don't use that because the *Poa* just laughs at it."

*Only at a meeting of superintendents would grass get the anthropomorphic treatment.*

"I'm not giving out toys or T-shirts ... I'm giving actual products to try. I don't think there's anyone in this industry who really needs another Yeti mug."

*Finally, someone said it! Here, take ten of mine.*

"Their biggest client was the sugarcane industry ... We worked out a lower rate and saw that it dehydrated the turf."

*Sugarcane might be more lucrative, but superintendents have more fun.*

"I retired in February. They called me and said, 'What would it take for you to come back?' It's a family-owned business ... and now I'm back."

*Just when I thought I was out ... they pull me back in! ©*

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# **SGXL**

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# Starter

NEWS, NOTES AND QUOTES



## // FUNDING THE FUTURE

### INTRODUCING THE SUPER-SCRATCH FOUNDATION

The new foundation is raising money for students to pursue turfgrass degrees

BY GOLFDOM STAFF

➔ A group of industry professionals believe that the agronomy industry has been overlooked for too long, and now they're doing something about it. In an effort to create an easier path to education for future generations of superintendents and industry professionals, the Super-Scratch Foundation is awarding scholarships to turf students nationwide.

According to the foundation, over the past five years, it has given more than \$50,000 towards agronomy degrees, doubling its support each year. Foundation members say the lack of turfgrass students affects the feeder programs to other industries beyond golf courses, causing issues for clubs, superintendents and members.

A group of superintendents and

members at Huntingdon Valley (Pa.) CC launched the foundation in 2020. Super-Scratch receives its funding through donations from club members and courses around the U.S.

"All of us have posted jobs for assistants and interns over the past 10 years and noticed the decline in applications," says Scott Bordner, head superintendent, Union League National GC, Swainton, N.J. "If we don't have a louder voice, how are others going to know there is a shortage?"

Currently, the foundation is looking for groups to allocate \$1,000 from their operating budgets to help the cause. Courses that do will be designated as Advocate Clubs on the foundation's yearly communications and website.

For more information, visit <https://www.superscratchfoundation.org>.

In addition to scholarships, the Super-Scratch Foundation hosts a golf tournament for its members. The team that wins the Super-Scratch Championship, held at Huntingdon Valley (Pa.) CC, gets to allocate a portion of the National Agronomy Association Fund to universities of their choosing.



## // SCORE ONE FOR RALPHIE

### AUDUBON RECERTIFIES COLORADO'S FLATIRONS GC

Audubon International recently recertified Flatirons Golf Course in Boulder, Colo., as a Certified Audubon Cooperative Sanctuary through its cooperative sanctuary program for golf courses.

The golf course was initially designated as a Certified Audubon Cooperative Sanctuary in 2010 and has been recertified approximately every three years since then.

"Golf Course Superintendent Jake Jacobs and everyone involved with Flatirons Golf Course have shown a strong commitment to this environmental program," said Audubon International CEO Christine Kane. "They are to be commended for their efforts to provide a sanctuary for wildlife on the golf course property."

## // COMING IN HOT

### NUFARM UNVEILS NEW POA PRODUCT

Nufarm recently debuted its new optimized Poa management product, Velocity PM herbicide, to superintendents at the GCSAA Conference and Trade Show in Phoenix.

"Velocity PM is an important evolution for superintendents to gain Poa management that performs at their pace," Blaine Pinkerton, vice president of turf and ornamental sales for Nufarm, said.

According to the company, Velocity PM Poa Management herbicide is a Poa transition tool for both postemergence control and seedhead suppression to support an optimal transition program. Nufarm adds that the new product also provides dollar spot suppression.

Velocity PM utilizes the active ingredient bispyribac sodium and is recommended for use on fairways and tees.

According to Nufarm, the herbicide is for use on creeping bentgrass, perennial ryegrass, tall fescue, dormant bermudagrass and dormant bermudagrass overseeded with perennial ryegrass.

PHOTO BY: WELGLAD / ISTOCK-GETTY IMAGES PLUS / GETTY IMAGES (GOLFBALL); GOLFDOM STAFF





## // FAMILY BUSINESS

### HARRELL'S MAKES LEADERSHIP MOVES

Harrell's recently selected Jack Harrell III, the company's COO, as its new president. Harrell succeeds the current president of 20 years, Dave Schermerhorn, who is shifting to vice chairman of the board.



Jack Harrell III

Harrell steps into the role with 14 years of experience under his belt. Schermerhorn has been leading the charge with CEO and Chairman of the Board, Jack Harrell, Jr., for 19 years.

"It is an honor to take on this new responsibility," Harrell III said. "I've worked very closely with Dave for many years now and I look forward to working with him and my dad for years to come."

## // CRAB CAKES ANYONE?

### USGA AWARDS FIVE FUTURE TOURNAMENTS TO MARYLAND COURSES

The United States Golf Association (USGA) recently announced that Woodmont Country Club, in Rockville, Md., will host the 2025 and 2026 U.S. Adaptive Opens, and the 2028 U.S. Junior Amateur, and Columbia Country Club, in Chevy Chase, Md., will host the 2027 U.S. Senior Women's Amateur and the 2035 U.S. Senior Amateur.

Developed to follow through on a 2017 pledge by the USGA to establish a championship for the adaptive golf community, the U.S. Adaptive Open Championship is the association's newest championship. To learn more about the Adaptive Open, check out the 2023 *Golfdom* Tour Guide.

## // GRAND REVEAL

### FMC DEBUTS NEW INSECTICIDE

FMC recently received federal registration enabling the launch of Durentis insecticide. According to the company, the formulation provides superintendents season-long protection from above- and below-ground chewing pests, including all species of grubs and fall armyworms.

Durentis is a concentrated formulation of the active ingredient chlorantraniliprole requiring a single application for season-long control. Durentis' systemic properties allow upward translocation into turf.

## // EXTRA SALTY

### Point Hardy GC reopens following seashore paspalum regrassing

➔ The Point Hardy Golf Club at the Cabot Saint Lucia in the Caribbean recently held its grand opening following a renovation project where Pure Dynasty seeded seashore paspalum, developed by Pure-Seed Testing and supplied by Atlas Turf and Pure Seed, was used to grass the entire course.

Firm Coore & Crenshaw designed the project. The COVID-19 pandemic hit the world just after construction started, meaning that lead shaper Keith Rhebb remained on the island for more than 250 days, most of that time working alone on the course.

Along with Superintendent and *Golfdom* Editorial Advisory Board member Damon Di Giorgio, who had managed the grass previously at Playa Grande in the Dominican Republic, Coore & Crenshaw eventually selected Pure Dynasty.

Other courses featuring Pure Dynasty include Marco Simone in Italy (host of the 2023 Ryder Cup), Royal

Greens in Saudi Arabia, and Mont Choisy and La Réserve in Mauritius. The Casa de Campo course in the Dominican Republic is currently undergoing a renovation using Pure Dynasty.

"Paspalum was a natural choice here because of the course's proximity to the sea, the salt spray and the natural buildup of salts in the soil," golf course architect Bill Coore said.

According to the company, the fact that Pure Dynasty is the only seashore paspalum strain available as a seeded product was crucial, as Saint Lucia prohibits the importation of vegetative material, making sprigging or sodding impossible, meaning the entire course, including the greens, must use the same grass.

"Pure Dynasty is the result of 25-plus years of plant breeding and testing work to produce a blend of varieties that provide improved disease resistance and overall turf performance," Crystal Rose-Fricker, president of Pure Seed, said.



# Starter

## Friends in High Places

#THANKASUPERINTENDENT

### Larry the Cable Guy, Comedian

**JUST ABOUT ANY MALE** with cable TV in the 2000s knows the meaning of “git-r-done!”

Larry the Cable Guy — a wise-cracking, blue-collar, sleeveless comedian — has performed in sold-out theaters nationwide for decades. He’s appeared in numerous TV comedy specials and movies. His distinct voice brought the rusty tow truck Mater to life in the Disney films *Cars* (2006) and *Cars 2* (2011).

Larry the Cable Guy still performs his stand-up comedy when he’s not on the golf course. The funnyman also hosts his own golf tournament every summer, the Git-R-Done Golf Classic, which has raised more than \$7 million for charitable causes such as the Arnold Palmer Hospital, the Food Bank of Lincoln (Neb.) and the American Red Cross.

— **Seth Jones** // Editor-in-Chief

“When I’m in Florida I play Isleworth (G&CC, Windermere). It’s an awesome club, an awesome course. When I’m in Nebraska I play at Firethorn Golf Course (in Lincoln) and I also belong to the Dormie Network, which is an amazing bunch of courses. Victoria National (Newburgh, Ind.), Dormie Club (West End, N.C.) and I play Arbor Links (Nebraska City, Neb.) all the time. Hillcrest (CC, Lincoln), Prairie Club (Valentine, Neb.) — there’s a lot of great golf in Nebraska.

Conditions mean a lot. Edgewood (Tahoe GC, Stateline, Nev.) is one of my all-time favorite courses, it’s always in such great shape and you can’t beat the views. Half the fun of golf is getting out, getting away from electronics and walking and being with your buddies.



“Half the fun of golf is getting out, getting away from electronics and walking and being with your buddies. Get outside and get your Vitamin D! I love golf, it’s awesome.”

Get outside and get your Vitamin D! I love golf, it’s awesome.”

## X #TurfPostoftheMonth

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### //RUNAWAY TRAIN

## NGF REPORT SHOWS CONTINUED GROWTH FOR GOLF

According to the National Golf Foundation’s (NGF) newest Graffis Report — named after *Golfdom* and NGF founder Herb Graffis — the pandemic-induced golf boom is still going strong.

The NGF reports an estimated nearly 1 million more Americans played golf in 2023 than in 2022, the largest one-year jump in participants since 2001. Alongside the jump in player base comes near all-time record highs in rounds played, according to the NGF.

Other notable figures from the Graffis Report include:

- Total participation in golf (including facilities like Topgolf and indoor simulators) jumped to 45 million.
- The number of golf course closures continued to drop with levels reaching their lowest since before the Great Recession.
- More new golf courses opened in 2023 than any year since 2010.

PHOTOS BY: GOLFDOM STAFF (LARRY); DAVID CLOWERS (TURF POST)





The Venice Golf and Country Club. Photo by Nick Flynn, golf course superintendent.

# IN LIKE FLYNN

## Florida superintendent gets instant nematode control with Nimitz Pro G

**N**ick Flynn has been working on golf courses for over 25 years now. When he was 15, he joined his brother at his summer job and never looked back. “I was bored and couldn’t drive, so my options were very limited,” he laughs.

Although he initially never considered being a superintendent, he recalls an almost immediate change in perspective.

“It’s funny, before that summer, I wanted to go to law school and be an attorney. And then after that summer, I was asking my boss how to become a superintendent, how do

I get involved, and what was his path. I’m very fortunate I had a really good boss starting out who mentored me.”



**Nick Flynn**

Flynn went on to attend Ohio State and joined the school’s turfgrass program. “They’ve got one of the best turfgrass programs in the country and I was fortunate enough to get accepted. So, I’ve literally never done anything else.”

Flynn loves his career path and

being a superintendent. “I like to think my worst day on the golf course is better than my best day in the office.”

### INSTANT RELIEF WITH NIMITZ PRO G

Now as the Superintendent for The Venice Golf and Country Club in Venice, Fla., Flynn is always looking for the most effective ways to manage his course. He has been using Quali-Pro products for about 12 years now and swears by Nimitz Pro G for his course.

“I remember talking with one of my sales reps, Jeff Rampino, and he told me I needed to try it. So we did,” he says.

“It’s one of those products that the juice is worth the squeeze. You definitely see the results,” Flynn says. “There were products that I applied for years and never saw any results. With Nimitz Pro, we made one application and I saw instant results.”

One of the biggest challenges Venice G&CC faces are sting and lance nematode issues.

“Our sting numbers are about five- or six-times the threshold and our lance counts are about double or triple,” he says.




Flynn recalls feeling immediate relief after just the first application of Nimitz Pro G. The results spoke for themselves.

“Seeing those population numbers come down were a relief to me,” he says. “Nematodes are tough and never go away. We always just try to fight them, and I felt like for the first time in a long time we had more control because of Nimitz Pro G.”

Flynn applies 60 pounds per acre of Nimitz Pro G to his course four times per season.

“Nimitz is the only true systemic product on the market, and it does give you at least a 45- to 60-day window of control.”

His advice to other superintendents? “Stop wasting time and go buy it. You won’t regret it.” 



# Golfdom Gallery

**Golfdom  
Summit**  
EDITION



1

**1 Bagpipes and turf equipment** They go together like peanut butter and jelly. Thanks to Turfco for sponsoring the bagpiper as the group got ready to get out on the golf course.

**2 Homeward bound** Terry Negen, superintendent, Cimarron Hills G&CC, Leander, Texas; Troy Flanagan, director of golf maintenance, The Olympic Club, San Francisco; Matt Jones, CGCS, director of agronomy, Forsyth CC, Winston-Salem, N.C.; Ryan Blechta, superintendent, Spanish Peaks Mountain Club, Big Sky, Mont.; Michael Wolpoff, superintendent, Arroyo Trabuco GC, Mission Viejo, Calif.; and Michael Magnani, superintendent, Lakeside GC, Toluca Lake, Calif., as they prepared to head to the airport upon the conclusion of the 2023 Golfdom Summit.



2

**3 The 19th Hole** Glenn Matthews, CGCS, Stockdale CC in Visalia, Calif., and Negen catch up on shop talk during the post-golf barbecue.



3

**4 The champs are here** Golfdom's Seth Jones (second from left), and Jake Goodman (far right) handed the hardware to this winning foursome in the golf tournament: (left to right) Allan Fulcher, Quali-Pro; Jared Brewster, superintendent, Rolling Hills CC, Newburgh, Ind.; Scott Kinkead, Turfco; and Chad Oxenreider, superintendent, Lebanon (Pa.) CC.



4

**5 Fowler's laugh is contagious** Philip Linker and John Fowler of BioBoost Nest share a laugh with Mark Koepsell of Frost Inc.



5

**6 A special appearance by the host superintendent** Everyone was happy to welcome and say "nice job" to Reunion Resort's head superintendent, Andy Maguire (left), with Jeff Kerr, superintendent, CC of Peoria in Peoria Heights, Ill.



6





**7 A good game of bags** The golf scramble wasn't enough competition for these four, as they needed to also wage war in a game of bags. (Left to right) Blechta; Ken Rost, Frost Inc.; Brian Godwin, Turfco; and Michael Sonnek, superintendent, Royal GC, Lake Elmo, Minn.



**8 You know they've got game** (Left to right) Chris Navin, superintendent, the GC at P.B. Dye, Ijamsville, Md.; Bill Roddy, *Golfdom*; Fulcher and Paul Blodorn, *Quali-Pro*, await the winner of the bags game.



**9 Caddyshack crew** (Left to right) Dan Johnson, superintendent, Old Hickory CC, Nashville; Eric Gerhartz, Sipcam Agro; and Craig MacGregor, *Golfdom*, discuss their real-life *Caddyshack* moments.



**10 A new Legend** Matt Shaffer (left), superintendent emeritus, Merion GC, and Shawn Emerson (right), Ethos Club and Leisure, welcome the newest Legend to the group: Dan Dinelli, director of agronomy, North Shore CC, Glenview, Ill.



**11 Par is their friend** Jones' foursome of (left to right) Graham Edelman, superintendent, Wolf Creek Golf Links, Olathe, Kan.; Godwin and Patrick Affolder, superintendent, McAllen (Texas) CC, didn't win any hardware but they had a great time playing a relaxing round on Reunion Resort's Palmer Course.





# The Golfdom

## FILES

FROM THE ARCHIVE

As Pinehurst No. 2 prepares to host the 2024 U.S. Open, take a trip back a decade to 2014 as *Golfdom* Editor-in-Chief Seth Jones checked in with the Pinehurst crew as they prepared to host the both Men's and Women's U.S. Open just a week apart from each other. For the full article, visit [Golfdom.com](https://www.golfdom.com).

## Back to back

BY SETH JONES, EDITOR-IN-CHIEF

Right here on No. 18, at about this time, in only 44 days, a champion will be crowned.

Right here on No. 18, at about this time, in only 51 days, another champion will be crowned.

And right here, on No. 18, at about this time, Kevin Robinson, CGCS, superintendent of Pinehurst's famed No. 2 course, will have made golf history by having successfully played host to the USGA's U.S. Open and U.S. Women's Open in back-to-back weeks.

Yes, it will be hard work ... but the reward will be a memory for a lifetime.

### THE RENOVATION

Before even considering the logistics of hosting the U.S. Open (June 12-15) immediately followed by the U.S. Women's Open (June 19-22), consider what this course has gone through in the past five years.

The No. 2 that hosted the 2005 U.S. Open and the No. 2 of 2014 barely resemble each other. If it were a high school reunion, No. 2 is that friend who lost so much weight he is only recognizable by the sound of his voice. But instead of pounds, No. 2 dropped bermudagrass rough. Lots.

The renovation by Bill Coore and Ben Crenshaw, now widely celebrated, was a culture shock at first. The idea was to take away all the bermudagrass roughs

and bring back the sweeping white sand and a selection of native vegetation that was present when Donald Ross designed the course in 1907. Fairways went from an average width of 27 yards to an average width of 46 yards. The course went from 1,150 irrigation heads to 450 irrigation heads, from using 55 million gallons of water annually to 12 million gallons.

"What Donald Ross had here is one of the best natural landscapes for golf in America. That landscape included sand hills and wiregrass," says Bob Farren, CGCS, director of maintenance at Pinehurst Resort. "Coore and Crenshaw knew that was the identity of the course. And frankly, we had covered a lot of it up in my 31 years here."

The practice of overseeding was also eliminated. That means diesel rough mowers now get parked in November

and don't get fired up again until the spring, saving on gas. It also saves on water, fertility and labor.

The process of bringing in native vegetation — some of which other courses might call weeds — was keyed in on with the help of the turf program at N.C. State University. Tom Rufty, Ph.D., and Danesha Seth Carley, Ph.D., helped Pinehurst identify what plants would thrive and be favorable, and what plants would be invasive.


Now vegetation with common names like horseweed, carpetweed and crowfoot grass are prevalent throughout the course.

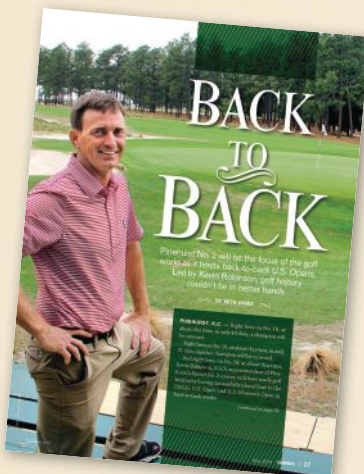
"We're redefining what people call weeds. It's only a weed if you don't want it there," says Seth Carley. "Bob and Kevin would take us around the course and point something out. They'd say, 'We love this. How do we get more of it and spread it?'"

The crew planted 20,000 Carolina wiregrass sprigs by hand.

"Think about planting all this wiregrass and not knowing if it would live or not," laughs Robinson. "When we first started I thought, 'Golly, is this stuff going to make it?' I would have been happy with a 60 percent success rate. But shoot, every one of them made it."

John Jeffreys, assistant superintendent on No. 2 says that though this new look is more sustainable, it's not necessarily easier to maintain.

"It takes skilled labor to manage the wire grass areas," Jeffreys says. "Anyone can hop on a rough mower and mow rough — just don't put it in a bunker. But to tell someone to selectively remove these plants, those plants, but not these plants? It's a difficult method. We manage this course completely different now. There was rough, pine straw, clear wooded areas, no pinecones. It's almost like going to two different properties... even on different sides of the country." 







"I am proud to announce that one of my former superintendents from Merion, Scott Bordner, has decided to tackle this labor shortage problem head-on."

**MATT SHAFFER**, *director of golf course operations emeritus Merion Golf Club, Ardmore, Pa.*

## Are you part of the solution?

**W**hen there are more people leaving the profession than entering, you will have a crisis.

I know many of you have had a difficult time finding assistants. And many of you complain about the quality of the assistants that are out there. Once again, when there are fewer and fewer people in a market it becomes a buyer's market. The big clubs have big budgets and can pony up the big bucks for the best assistants. The reality is that there remains a need for assistants at smaller clubs and the middle layer of golf course management is also the largest.

How long do you think it will be until there is a superintendent shortage? Lots of people think that when the shortages get significant enough it will attract more people into the industry. That is how it worked in the old days. Today's world is much different. Face it, what is fantastic about

this job can be viewed by others as a detriment.

### Help wanted

Here's a positive description of what we do: A golf course superintendent's job is never boring and always interesting! The challenges are numerous and diversified, requiring you to use all your resources to devise solutions.

The opportunity persists to develop people and help them reach their potential. Your interaction with your owners will put you in front of the most successful people in your community, helping you to achieve your best results. Of course, there is much more.

If I were a superintendent working in a large golf market right now, I would manage several clubs in one area. This would allow you to consoli-

date specialized equipment, move labor around at critical times, give you greater buying power and allow you to make more money.

There are several very good software programs that allow you to keep your eyes on the prize. In fact, when you become very familiar with the data and learn to interpret the finer points, you'll be amazed at how informed you can stay.

The club gets a superintendent that would be out of their price range and their costs would go down as a result of the buying power and consolidation of resources. There is just one big problem: You need a great right-hand person to run each of these facilities and now we are right back to the original problem.

### The Super-Scratch Tournament

I am proud to announce that one of my former superintendents from Merion, Scott Bordner, has decided to tackle this labor shortage problem head-on. Scott is the Director of the Union League Golf properties, he is a can-do, solution-minded person.

Scott is a large part of a tournament called the Super-Scratch Invitational (Editor's note: for more on the Super-Scratch Tournament, see page 6) that raises scholarship money for future turf students. Scott's dream is to have this tournament held in every area of the USA and beyond. I can assure you he will get it done. As always, it's easier to have a huge movement when you have support from the industry, so please reach out to Scott ([bordners@unionleague.org](mailto:bordners@unionleague.org)) to find out how you can get involved.

When you can stand in front of an FFA class to sell them on this profession and inform them that there is scholarship money available, it becomes very compelling to enter the great brother and sisterhood of golf course superintendents!

And therein lies the solution to yet another problem. That is who we are — problem solvers. **G**

**Matt Shaffer**, a longtime superintendent, is the owner of Minimalistic Agronomic Techniques (M.A.T.). He was previously the superintendent at The Country Club in Cleveland and is director of golf course operations emeritus at Merion GC, Ardmore, Pa., where he hosted the 2013 U.S. Open. Reach him at [matthewgshaffer@gmail.com](mailto:matthewgshaffer@gmail.com).

# *Chip shots*

As told by the partners of the 2023 *Golfdom* Summit



PHOTO BY: GOLFDOM STAFF



**T**he format is unique to any other event in the industry: For two-and-a-half days, around 45 superintendents from around the country (this year, as far as Hawaii) come to Reunion Resort near Orlando. Over those 60 hours, each superintendent meets individually with

each Summit partner. (We also sneak in a round of golf and a poolside barbecue dinner, among other activities.)

Before the one-on-one meetings begin, partners make presentations to the group. What follows are some of the key messages from each partner.

*Continued on page 16*

“The *Golfdom* Summit is always a highlight of my year. It’s exciting to connect our readers directly with our advertising partners and then sit back and watch the action. And it’s a thrill to build friendships along the way.”

— Craig MacGregor  
Publisher, *Golfdom*

Continued from page 15

**The company:** FMC

**What:** Durentis Insecticide

**Who:** Kyle Richards, Pest & Nursery/Greenhouse Market Manager

**What he said:** “FMC has a nice and robust fungicide portfolio that we’ve come out with over the past couple of years, but we are really turning our focus to insecticides now. Our newest insecticide, which will be coming out in Q1 of 2024, is Durentis Insecticide. The active ingredient (chlorantraniliprole) in Durentis was discovered by scientists at our Stine Research Center (in Newark, Del.) It is an FMC-proprietary technology. The molecule was discovered way back when by FMC scientists. We’re really excited to bring this to the industry in 2024.”

**For more:** [FMCProSolutions.com](https://www.fmcpro.com)

**The company:** Frost

**What:** Cloud Connectivity

**Who:** Ken Rost, President and CEO

**What he said:** “We’re proud to introduce, in this upcoming season, the addition of Cloud Connectivity, a system you can



Ken Rost, president and CEO of Frost Inc., gives a demonstration of the Ninja GPS spray control system.

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SpeedPro XT.



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PHOTO BY: GOLFDOM STAFF



retrofit to any of the existing Ninja (GPS spray control) systems, to connect that machine to the cloud so that you can manage it either on smartphone or PC. You can look at the data to see what that machine is doing. You can look at the jobs and see where that machine is on your property. If you have more than one machine and it finishes a job that you want to pass to another machine, you can do that. It creates new opportunities.”

**For more:** [FrostServ.com](https://www.frostserv.com)

**The company:** **Husqvarna**

**What:** Robotic mowers

**Who:** Brandt Thacker, Commercial Robotics Sales Manager

**What he said:** “When you get into robotics, we truly believe that we are making a better experience — not just for the golfer or the member, but also for the superintendent. That starts with the fact that they are fully automated — not remote-controlled. You don’t need in-person supervision since the mowers are programmed. We drive them around and create a geo-fence around the service area. Then, you program the mow height and schedule. After that, the mowers are almost ‘set it and forget it.’ The mowers will go out on a schedule of your choosing. Want to mow the fairway at night? The rough during the day? Just program the different heights, and the mower will make the adjustments on its own.”

**For more:** [Husqvarna.com](https://www.husqvarna.com)



Attendees got up close with Husqvarna’s Automowers and saw them work on an area of Reunion Resort’s driving range.

**The company:** **Jacobsen**

**What:** Eclipse 360

**Who:** Lee Frie, Product Manager

**What he said:** “The Eclipse 360 has been out for a number of years. It’s the second iteration of what started as the 322. With (the Eclipse 360), I’ve mowed as many as 72 greens on one charge.

*Continued on page 19*

# THE TRAIL IS BLAZED. TAKE IT.



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for sedge and kyllinga control**



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Jason Chilson and Tiffany Koss discuss the strengths of Kafka Granite pathways with Chris Navin, superintendent at the Club at P.B. Dye, Ijamsville, Md.

## Great Starts Make All The Difference

Apply in **Spring** for more **consistent** transition

Regain **infiltration** and soil moisture

**Maximize** Spring rains, maintain surface firmness

Applying **OARS** technology **early** will insure **less** LDS once **Summer stress** arrives

PHOTO BY: GOLFDOM STAFF



Continued from page 17

I've been able to verticut as many as 36 greens. The technology has finally hit the spot where we can provide you with a machine that actually does the day's work that you're looking for. That's really what we've been waiting for."

**For more:** [Jacobsen.com](http://Jacobsen.com) / [Cushman.com](http://Cushman.com)



The Jacobsen demonstration area draws a crowd during the Summit.

**The company:** Kafka Granite

**What:** Wax Polymer Bunker Sand

**Who:** Tiffany Koss, Director of Sales and Marketing

**What she said:** "After we had initially developed our product for paths, Chris Zugel, CGCS, (Director of Golf Course Maintenance at Destination Kohler) came back to us and said, 'Why can't you use this stuff in my bunkers? I have a thousand bunkers at Whistling Straits, and I can't keep up on the maintenance.' So, we took our wax polymer technology, blended it with the bunker sand and started using it in highly-erosive faces — primarily out-of-play target bunkers and waste bunkers. After getting two inches of rain, it did not budge."

**For more:** [KafkaGranite.com/Golf](http://KafkaGranite.com/Golf)

**The company:** PBI-Gordon

**What:** Arkon Herbicide Liquid

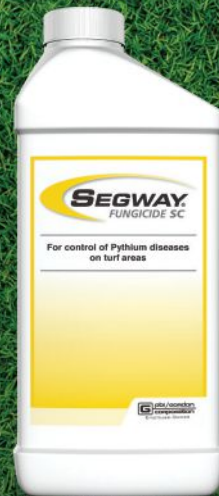
**Who:** Lyndsie Balstad, Product Manager

**What she said:** "One of the things that I'm really excited to share with you all is a new product called Arkon Herbicide Liquid, (which) just launched (in 2023). The first-ever sale of it went out in September. Maybe you've heard about it, or maybe this is the first time, but we are excited to tell you more about it and see how it could fit into your operation. It's a new, innovative solution for sedge and kyllinga control in a liquid formulation."

**For more:** [PBIGordonTurf.com](http://PBIGordonTurf.com)

Continued on page 20

## Superintendents Agree: Segway® Fungicide SC is reliable, proven, and trusted.



*"Segway is a trusted partner  
through the summer months,  
keeping all of our cool season  
surfaces in great shape."*



— Pete Wendt, CGCS  
Director of Golf Course  
and Grounds,  
Congressional CC

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Carmen Magro, CGCS, Ph.D., vice president of POGO Turf Pro, addresses the entire group during his boardroom presentation.

Continued from page 19

**The company:** POGO Turf Pro

**What:** The POGO Platform

**Who:** Carmen Magro, CGCS, Ph.D., Vice President

**What he said:** "The POGO Platform has become a household name in the turfgrass industry. It gives you the ability to see an overview of your property. Not just moisture but many other variables that you choose and set up. Just a couple of minutes a day will give you insight that otherwise would never happen on your property. The POGO platform is not a piece of software. It's a very powerful, global system driven by cloud computing. The second you enter data and hit 'analyze,' there will be a complete analysis of your property."

**For more:** [PogoTurfPro.com](https://PogoTurfPro.com)

**The company:** Albaugh Specialty Products

**What:** Quintessential

**Who:** Russ Mitchell, Segment Director

**What he said:** "We pride ourselves on continually developing new products and mixtures. Quintessential is our liquid quinclo-rac that we've had for years, but (recently) we've found an additive

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Russ Mitchell gives a quick history of Albaugh Specialty Products, an American-owned company based in Ankeny, Iowa.

we call H-value technology. Long story short, this is a quinclorac that will get to that three to five-tiller stage. It is also rainfast much quicker and works better under drought conditions. It really plugs the gaps.”

**For more:** [AlbaughSpecialty.com](http://AlbaughSpecialty.com)

**The company:** Quali-Pro

**What:** Nimitz Pro G, Suprado and Doxem Plus Fire Ant Bait

**Who:** Jeff Rampino, Florida Territory Manager

**What he said:** “In the past few years, we’ve become more of what you would call a hybrid company. Our past is definitely in post-patents. That’s where we came from and is something we hold near and dear to our hearts. But we are starting to move into a hybrid space where we are creating our own active

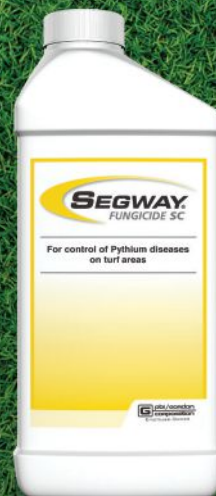
*Continued on page 22*



Graham Edelman, superintendent, Wolf Creek Golf Links in Olathe, Kan., lines up his putt.

PHOTOS BY: GOLFDOM STAFF

# Superintendents Agree: Segway® Fungicide SC is reliable, proven, and trusted.



*“With Segway, we really have a go-to product that’s going to allow us to sleep at night.”*



– Paul Dotti  
Superintendent,  
Arcola Country Club,  
Paramus, NJ

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Continued from page 21

ingredients to make proprietary products. So, it's a really exciting time for us."

**For more:** [Quali-Pro.com](https://Quali-Pro.com)

**The company:** Smithco

**What:** XL 70E Greens Roller

**Who:** Steven Johnson, Sales

**What he said:** "One of the new products that you guys are going to have an opportunity to look at is our XL 70E. We've been building it now for about seven years. It's definitely our top-selling roller. There's been a great demand for us to bring out an electric version. Going all-electric is very expensive. (The cost of) those components are coming down, but they are not where they need to be for us to feel comfortable building a fully electric system. What you're going to see with our unit is that we've incorporated the hydraulic systems that we use for our rollers and incorporated our electric system from our electric bunker rakes."

**For more:** [Smithco.com](https://Smithco.com)



Alan Hollen discusses the science behind The Andersons' Dispersing Granule (DG) Technology.

**The company:** The Andersons

**What:** Carbon Coat Technology

**Who:** Alan Hollen, Territory Manager, and David Louttit, Territory Manager

**What Alan said:** "Last year, when I was here, I asked (attendees), 'What's something that you really need? What's a product that you would like developed?' A number of people came to me and said, 'We need this,' and (what they mentioned) was something that we were already developing. A lot of the ideas that we come up with spawn here."

**What David said:** "Carbon Coat Technology is part of our new flagship here. The original product was HCU 44-0-0. You can put this product into a spray tank. It's very popular for use on fairways. The next one that came along was HCAS 20-0-0-235, which has an ammonium sulfate and potassium humate coating. Finally, we came up with PCHCU 40-0-0. These products are all good. They're all going to do the job, but it's all about using the right product at the right time of the year."

**For more:** [AndersonsPlantNutrients.com/turf](https://AndersonsPlantNutrients.com/turf)



Don Smith, president of Smithco (right) listens in on a discussion about the company's battery-powered bunker rake.

**The company:** Steel Green Manufacturing

**What:** SGXL

**Who:** Caleb Myers, Sales Representative

**What he said:** "(The SGXL) is a 120-gallon stand-on, zero-turn sprayer. It features a 14-foot rear boom and comes standard with a 2.5-gallon foam marker; a 100-foot hose reel; a pressure control system; an 18-inch LED light for early morning applications; and a hillside assist system. This machine isn't strictly limited to being a sprayer. We have a 350-pound hopper attachment that is interchangeable with the tank. We have GPS technology available for this machine as well. This system has full individual nozzle control, shut-off and full tracking technology. It's plug-and-play. You just drive the machine and it does everything else for you."

**For more:** [SteelGreenMfg.com](https://SteelGreenMfg.com)



PBI-Gordon hosted a barbecue dinner and games at the Seven Eagles Pool Pavilion at Reunion Resort.

PHOTOS BY: GOLFDOM STAFF

Continued on page 24

# THE TRAIL IS BLAZED. TAKE IT.



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Arkon is labeled for use on both cool- and warm-season turfgrass across a wide variety of sites, including greens. Arkon controls sedges, kyllingas, and listed broadleaf weeds, and it's proven to reduce the number and viability of nutsedge tubers.

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sedge and kyllinga control. Join us.**



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Scott Kinhead, executive vice president of Turfco, shares how his company's equipment helps superintendents be more productive.

Continued from page 22

**The company:** Turfco

**What:** Widespin 1550 Broadcast Topdresser

**Who:** Scott Kinhead, Executive Vice President

**What he said:** "Not everything has to be high-tech. Some of it can be simple things that are pretty obvious, like, 'Wow, let's


have a hopper that takes an 80-inch bucket.' *That's crazy.* That's high-tech right there (laughs). Now, you don't have this pile of sand dropping off the back or the front that you'll have to clean up later or that's dripping into your spinners. We even designed (the Widespin 1550) so sand can't get into the spinners. It'll drop right off. That's a key thing, simple stuff, like, 'How do we make sure that this process is as efficient as possible?'"

**For more:** [Turfco.com](https://turfco.com)

**The company:** Nufarm

**What:** Anuew PGR, Tournery EZ, Allstar and Velocity PM

**Who:** Chris Fronczek, Golf Market Manager

**What he said:** "We have new formulations (for products) such as Anuew EZ, which is a liquid formulation now. It's the same product as before, a great growth regulator for both cool- and warm-season turf. With Tournery EZ, we have a liquid formulation now. It's great for fairy ring, other pests and diseases and if you're treating your landscape or ornamental plants too. Allstar is a product we hope to get (registered) in 2024 for crabgrass, nutsedge and broadleaf weeds. Finally, we're bringing Velocity — a product we discontinued four years ago — back by popular demand for *Poa* removal." 

**For more:** [Nufarm.com/USTurf](https://nufarm.com/USTurf)

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**IN CASE YOU MISSED IT!**



## Will you be in this photo next year?

### New attendees wanted! Here's how to apply

If you're reading this, you're interested in learning more about the tools available to superintendents to help them get the job done. Instead of reading about the tools discussed at the Golfdom Summit, why not attend and see them yourself?

For more than a dozen years, Golfdom has brought 45 superintendents to Reunion Resort for this event.

Accepted superintendents only need to give us their time and attention — airfare, accommodations, food, beverage and golf are all covered.

To apply to attend, visit [Golfdom.com](https://Golfdom.com).



PHOTO BY: GOLFDOM STAFF



# SuperScience

## // POLICE STING NEMATODES

### CAN BIOCHAR CONTROL STING NEMATODES?

By Mike Kenna, Ph.D.

**A**t Clemson University, MS graduate student Malone Thomason, under the direction of Joseph Roberts, Ph.D., examined the effect of topdressing or soil-incorporated biochar amendments on sting nematodes (*Belonolaimus longicaudatus*).

The sting nematode is a prevalent plant parasitic nematode associated with common and hybrid bermudagrass. They are very persistent, and the research sought a long-term management solution. Previous studies in various crop systems indicated that biochar and compost amendments reduced nematode populations.

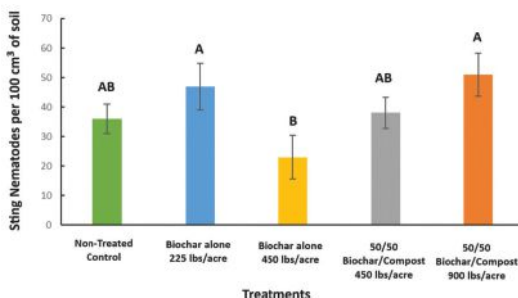
Thompson wanted to see if biochar and amendments would work in turfgrass. In the first of two multiple-year field experiments, he examined five treatments on bermudagrass maintained as a golf course fairway.

The treatments were: none, 50/50 biochar/compost blend used at 360 pounds per acre, 50/50 biochar/compost blend applied at 900 pounds per acre, biochar alone applied at 225 pounds per acre, and biochar alone applied at 500 pounds per acre.

Data collection included turfgrass visual quality (i.e., one to nine scale, where nine is the best), turfgrass color (i.e., NDVI), and monthly soil samples for monitoring nematode populations. The high-rate biochar/compost and biochar applications improved turf quality compared to untreated control.

However, while there were some differences in nematode populations among the treatments, Thompson's research shows sting nematodes in the soil are unaffected by the topdressing amendments.

In the greenhouse, Thompson conducted a grow-in experiment examining the incorporation of biochar with other amendments into root zones. He established Mini Verde sprigs within pots containing the following four rootzone media: 20 percent red sedge peat/80 percent sand mixture; 20 percent biochar compost blend/80 percent sand mixture; 10 percent biochar compost blend/10 percent red sedge peat/80 percent



The sting nematode population in bermudagrass fairway turf as impacted by amendment topdressings from Sept. 2020 through July 2022. Treatment columns sharing the same letter are not significantly different.

## NEWS UPDATES

### ALBAUGH SPECIALTY PRODUCTS ADDS RADFORD TO WESTERN STAFF

Albaugh Specialty Products recently named Trevor Radford as territory manager, representing the Western U.S.

Radford brings more than 25 years of experience in agronomy, turf and



**Trevor Radford**

ornamental sales, including distributor sales, national accounts management and ownership and management of a lawn care and pest control business. "He brings a tremendous amount of industry experience, not only in turf and ornamental sales, but also in agronomics, entrepreneurship, and strategic account management," Justin Watts, national sales manager for Albaugh, said. "He is a great fit with our customer-focused approach that will allow us to better understand and achieve our customers' goals and build upon the successful relationships that we have in the Western U.S."

sand mixture; and 100 percent sand.

The grow-in experiment found that the mixed soil amendment that included biochar led to a significant increase in turf growth compared to the sand treatment. However, Thompson found limited evidence of the effect of biochar reducing nematode populations. 📍

### Reference

Thomason, Malone, "Evaluating the Effect of Biochar Soil Amendments on *Belonolaimus Longicaudatus* Populations Damaging Bermudagrass in South Carolina" (2023). All Theses. 4125. [https://tigerprints.clemson.edu/all\\_theses/4125](https://tigerprints.clemson.edu/all_theses/4125)



This project was funded in part by the USGA Green Section.



## // NEMATODE 101

# Nematodes and their control

By John Rowland, Ph.D., Agronomist, East Region

**P**lant-parasitic nematodes, ranging from 0.5 to 4.0 mm in length and thinner than human hair, require a live host plant to survive and complete their life cycle. They use a stylet to feed on plants by penetrating living cells, injecting digestive juices and consuming cell contents. Ectoparasitic nematodes puncture root endodermis and cortex, while endoparasitic nematodes can be migratory or sedentary within roots.

Nematode infestation in turfgrass leads to shortened, darker roots lacking fine feeder roots, compromising the plant's ability to absorb nutrients and water. Cellular damage weakens the plant's defense against soil-borne pathogens, leading to thin, weedy and necrotic turf with potential widespread loss.

This damage poses challenges on golf course greens, affecting ball roll, and may require regrassing in more severe cases. Managing nematode issues involves identifying the species causing damage to implement an appropriate control strategy.

### SOIL SAMPLING METHODS

Proper sampling is necessary to determine if plant-parasitic nematodes are present in sufficient numbers to cause damage. When roots become inactive in winter, nematodes primarily overwinter as eggs and nematode assays will not count them.

Avoid sampling dead grass, as it will

**FIGURE 1**



Nematodes are a concern for golf course superintendents in many parts of the U.S. and can be challenging to control.

not have many live nematodes. Instead, take cores from stressed areas when the turf is actively growing. Collect an aggregate sample from an area without symptoms for comparison.

A single cup-cutter sample may give misleading results. It is better to collect 10 to 20 smaller samples — approximately 1 inch in diameter — to root depth and combine them in a sealed plastic bag to retain moisture (1).

Hand deliver or ship the samples overnight to a nematode testing lab early in the week so they can process them before the weekend. Consider using a cold pack to keep nematodes cool enough to survive. It is also essential to check with your testing lab to see if they have other requirements or recommendations for sampling.

### THRESHOLD LEVELS

Utilize tolerance thresholds to identify when populations of various nematode species become problematic. Remember that these thresholds are estimates and may not account for

factors like other nematodes present, turfgrass cultivar, cutting height, soil compaction, root depth and health, fertilization, time of year, growing zone or disease pressure (7). Some thresholds are established in greenhouses by inoculating sterilized soil with a specific nematode to eliminate other variables.

If your turfgrass is declining and a nematode species approaches or exceeds local thresholds, it may necessitate action. However, if you submit seasonal samples for monitoring purposes and encounter no issues with turfgrass quality, those numbers exceeding the threshold may not be a genuine cause for concern.

When uncertain, apply treatments — such as fertilizer, fungicides or nematicides — individually to small, well-defined areas. This approach allows you to assess product effectiveness, as biotic issues rarely exhibit clear boundaries. If treating on a larger scale, endeavor to leave some untreated areas for comparison.



Research provided and funded by USGA.

PHOTO PROVIDED BY THE USGA



**FIGURE 2**

The green strip on this bermudagrass putting green was treated with fluopyram once in the fall before overseeding. In the untreated areas, there is extensive sting nematode damage.

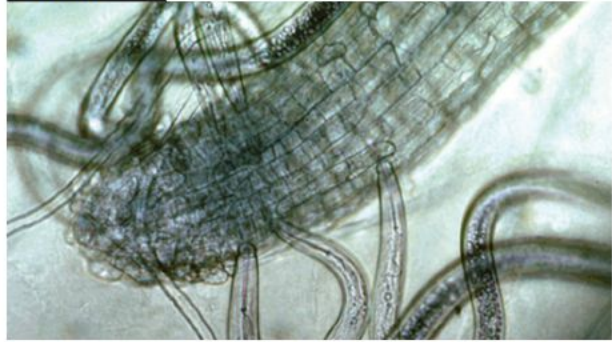
An initial small-scale treatment approach is beneficial if you think nematodes are responsible for turf damage at your course because it:

- Helps confirm whether nematodes are causing the issue.
- Allows testing to determine whether control products are effective.
- Prevents large applications of ineffective products.
- Can save money, time and minimize unwanted impacts.
- Allows you to dial in treatment rates before making larger applications.

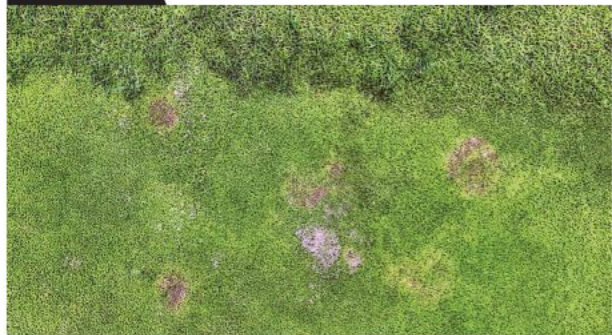
### CULTURAL MANAGEMENT

Limiting nematode damage does not necessarily require chemical control. Cultural practices can play an essential and influential role. Here are a few suggestions to consider:

- Planting into sterilized soil and using “nematode-free” sprigs or sod gives you the best chance for success since effective nematicides are very limited, and some species are challenging to control (3).
- Proper irrigation may be the most effective way to manage light-to-moderate nematode infestations. Wilting is usually the first symptom to develop as root systems become compromised, and syringing during hot days can sometimes be enough to manage marginal nematode levels.
- Proper fertilization is also very important. Too much nitrogen can cause succulent growth and allow nematode numbers to rise excessively, while too little nitrogen will not be sufficient to feed the turf when its root system is compromised. Light and frequent nitrogen applications help improve turf quality even though nematode numbers may rise due to increased rooting (1).
- Foliar fertilization is more efficient when applying micro-nutrients — particularly when roots are compromised and soil pH is high — and can complement soil applications of nitrogen, phosphorous and potassium. Organic nitrogen derived from sewage — e.g., Milorganite — reduced sting nematodes and increased root and leaf growth (6).

**FIGURE 3**

The sting nematodes in this photo are feasting on root cells.

**FIGURE 4**

This is an example of pitting on a *Poa annua* putting green from stem-gall nematode damage.

- Mechanical practices like aerification and verticutting create a healthy environment for turf growth by reducing soil compaction and thatch concentration.
- Adding soil amendments that have either clay-containing colloidal phosphates or organic matter — e.g., Comand compost — increases nutrient- and water-holding capacity, which helps turfgrass tolerate nematodes (3).
- Raising mowing height also helps increase tolerance; even a slight increase on golf greens can make a visible difference.
- Overseeding can increase nematode numbers and transition problems if not properly managed. (4).

### CHEMICAL CONTROL

Nematicides may be needed when cultural practices are insufficient to manage nematode stress adequately. Chemical nematicides for use in turf are limited, and effective biological products are even scarcer. Any product claiming to be a nematicide requires an EPA registration number and approved label.

Chemical control of nematode populations is generally best done early in the year when numbers are lower. Some endoparasitic nematodes are outside roots, juveniles are more abundant, and sting nematodes are closer to the surface.

Bionematicides, such as Albaugh Specialty Products' Zelto

Continued on page 28



**TABLE 1**

## Nematicides and species controlled

Biological a.i. <sup>1</sup>	Product	Sting	Lance	Root-knot	Cyst	Spiral	Ring	Stubby-root	Stunt	Needle	Anguina
<i>Burkholderia</i> spp. Strain A396	Zelto	x	x	x			x	x	x		
Chemical a.i.											
1,3-dichloropropene	Curfew	x	x <sup>2</sup>	x <sup>2</sup>	x <sup>2</sup>	x	x	x	x	x	
Abamectin	Divanem, Todal, Nemalectin	x	x	x		x	x				
Fluopyram	Indemnify	x		x	x	x	x	x	x	x	x

<sup>1</sup> Provides some level of control and/or is on the product label

<sup>2</sup> Biological pesticides with EPA labels have submitted efficacy data showing control of nematode species listed on their labels.

<sup>3</sup> Controls these nematodes when sufficiently contacted outside of roots.

<sup>3</sup> Effective on *Helicotylenchus pseudorobustus* Type E.

Continued from page 27

and Crescendo, will also typically have the most significant impact at this time (3). Nematode control programs often start with biologicals around egg hatching and chemical nematicides are applied afterward if conditions warrant.

Current chemical nematicides (Table 1) contain one of these active ingredients: 1,3-dichloropropene, abamectin, fluensulfone or fluopyram, and they all belong to different chemical classes (3). Check labels for efficacy on specific nematode species and rotate products to prevent resistance.

A sound fungicide program can complement nematode control programs by reducing the chance for soil-borne diseases to enter damaged roots and infect turfgrass. Fungicides that are effective on pythium and take-all root rot are particularly beneficial.

Iprodione and thiophanate-methyl have low levels of nematicidal activity and are helpful in disease-control programs at a timing similar to biological products. Be cautious using SDHI fungicides if nematodes are an issue since fluopyram is also in Group 7 as nematicide resistance may become an issue.

## PLANT-PARASITIC NEMATODES AND THEIR CONTROL

The following is a list of the primary

plant-parasitic nematodes that concern golf course turf managers and recommendations for control (Table 1). Control products and strategies differ considerably depending on the nematode species, so proper sampling and identification are critical first steps in successful management.

**Sting** — “Sting nematodes” in the United States are typically *belonolaimus longicaudatus* and are considered the most damaging to turfgrass. They are native to the sandy coastal plains of the Southeast but are also currently

found in Kansas, Ohio, New Jersey and Southern California, in soils containing at least 80 percent sand and less than 10 percent clay.

**Lance** — These semi-endoparasitic nematodes tunnel in and out of roots and are major pests of both warm- and cool-season turf. *Hoplolaimus galeatus* is found in the northern U.S. and is the most common species in Florida (3,12). Lance nematodes and their eggs are protected from contact nematicides when inside roots. They are most exposed just before spring greenup when bermudagrass starts to produce new roots (8).

**Root-Knot** — *Meloidogyne* spp. are in the top three most concerning significant plant-parasitic nematodes for turf, along with sting and lance. They are initially slender and motile but grow fatter as they mature. Females migrate until they find a feeding spot within a group of root cells, creating swollen roots, and then they become sedentary. Roots typically die off below infection sites and do not go much deeper than the thatch layer. The University of Florida developed a mist-extraction method for identifying these nematodes in turfgrass, but it requires a slightly different sampling method (3).

**Cyst** — The endoparasitic cyst nematode (*heterodera* spp.) is similar to root-knot nematodes and creates

## Research Takeaways

- Not all nematodes found in the soil are detrimental. Some feed on soil pests, mineralize nutrients and decompose organic matter.
- If you think nematodes are responsible for turf damage, proper sampling is essential to determine the species present and the population sizes.
- Tolerance thresholds for plant-parasitic nematodes can vary greatly depending on the species of nematode, turf species and variety, soil type and condition, location and climate.
- Cultural practices — particularly adequate irrigation and fertilization — may allow you to manage nematode issues under light-to-moderate pressure without chemical applications.
- Test control products on a small scale first to determine their effectiveness to avoid wasting time and money on larger applications that may not work.





galls when they settle in root cells. Thresholds and control are also similar for cyst and root-knot nematodes.

**Spiral** — This nematode has numerous species commonly found on plants. The main criterion is that they curl into a spiral when relaxed or dead. Spiral nematodes found in the northern U.S. typically only cause droughty symptoms. However, *helicotylenchus pseudorobustus* 'Type E' can cause significant damage to Tifdwarf bermudagrass and seashore paspalum.

**Stubby-Root** — Found in most states and named for the damage they cause to turfgrass roots, stubby-root nematodes (*nanidorus* spp.) are the only plant-parasitic nematodes with a solid, curved stylet. Current nematocides are not as effective as older chemistries, and populations often rebound after fumigant applications since they can be deep in the soil (2).

**Ring** — Although damage from ring nematodes (*criconebella* spp.) is relatively rare, they are often found in damaged areas with spiral, stubby-root and stunt nematodes in the Midwest and with stunt, spiral and lance nematodes in the Northeast (8,15). Distinct rings around their body are what give them their name.

**Stunt** — Ectoparasitic stunt nematodes (*tylenchorhynchus* spp.) are mostly a problem when turf is under stress, but significant damage can occur when found with lance nematodes in northeastern putting greens (10).

**Needle** — Only 30 ectoparasitic needle nematodes (*longidorus* spp.) per 100 cubic cm of soil can prevent turfgrass seed from establishing (10). Sometimes found in finer native soil, needle nematodes can cause significant damage alone or when found with ring and lesion nematodes (9).

**Stem-Gall** — *Anguina pacifica* are found on *Poa annua* greens near the coast of California from the Monterey Peninsula to San Francisco on some very high-profile golf courses. Stem-gall nematodes occur at the base of the turf

crown, and symptoms usually become noticeable around midsummer. Damage from these nematodes can create pits in the putting surface that greatly affect ball roll.

## SUMMARY

Correct sampling and identification of nematode populations help determine the best management practices. Use thresholds to guide and choose the best action by evaluating the situation. Sometimes, reducing stressors can be enough to manage nematode infestations.

If not, small-scale treatments can confirm whether nematodes are causing an issue and which products are effective. If nematicide treatment becomes necessary, try to rotate products to avoid developing resistance. ©

*Adapted from Rowland, John. 2023. Best Management Practices for Controlling Turfgrass Nematodes. USGA Green Section Record, April 7. 61(06).*

John Rowland, Ph.D., is an agronomist from the East Region for the USGA Green Section. Please refer to his more comprehensive article or contact him at [jrowland@usga.org](mailto:jrowland@usga.org).

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**Fire ants can be a challenge** as there is no surefire way to prevent them from establishing colonies on the golf course.

## How to keep fire ants under control

Know the danger, to both you and your equipment, that fire ants present

By Rob DiFranco

As the name suggests, the bite of a fire ant is less than pleasant, presenting issues for golf course superintendents and golfers alike.

When provoked, fire ants will swarm and latch onto their target. According to Wizzie Brown, senior Extension program specialist at Texas A&M University, unlike more common ant species, they're not easy to shake off either.

"They are actually holding on to you with their mandibles and will continue to sting until you brush them off," Brown says. "(After the bite) you'll get an immediate burning sensation in the area, and it will eventually redden and swell."

Fire ant mounds are large and easy to identify, as they often appear in sunny, low play areas of the golf course. As the seasons begin to shift, Brown adds that the ants may migrate to new areas of the course, potentially closer to in-play areas.



Wizzie Brown

"When it starts to get cooler, (fire ants) may gravitate toward paved areas and use those as a heat sink," she says. "When you get into the warmer time of the year, especially if you have little rainfall, they will often move near irrigation heads. So, if a sprinkler breaks, that can make things interesting."

As for treatment, Brown says there are three main ways superintendents can target this pest. Individual mound treatments are the most labor-intensive option for treatment and would be a good option for courses with only a few mounds.

The other two treatment options, broadcast bait applications and broadcast granular applications, are more cost- and time-effective options.

"Those are more common (modes of application)," says Brown. "I find those tend to work best when it's early in the season. You want to have the product out in the soil when those fire ants start tunneling and building mounds, so when the weather starts to warm up it's already there and will start to kill them off." ©

PHOTOS COURTESY OF: WIZZIE BROWN



## FMC

### BRIAN MOUNT, M.S., B.C.E.

Technical Service Manager



Fire ant control on a golf course can be accomplished in several ways. Existing mounds can be treated with properly labeled insecticides via mound drenches. Mound drenches are done by applying one to two gallons of insecticide solution directly into the mound and treating about 3 ft. out from the mound. These treatments will only control the mounds that are directly treated. Fire ant baits are another great choice for keeping fire ant numbers down. Baits can be broadcast over large areas and will help keep new colonies/mounds from developing as foraging ants pick up the bait and bring it back to the colony, ultimately killing the queen. Lastly, insecticides may also be broadcast over large areas to keep fire ants at bay. Insecticides are most effective in late spring and summer when ants are more active and likely to contact the treatment.

## Quali-Pro

### HEATHER PATTERSON

PCO Technical Service Manager



Red imported fire ants (RIFA) pose a significant challenge in maintaining turfgrass areas across the southeastern U.S. With an ideal combination of well-maintained turfgrass, moist soil and warm air, golf courses are prime locations for RIFA activity. As temperatures rise in spring, mounds start appearing, and fire ant workers actively forage for food to share with their nestmates. This is a good time to make granular bait applications. Another effective strategy involves bait applications in the fall, as it targets colonies when they are in decline. This proactive approach helps to reduce the population and mounds the following spring, ensuring a more enjoyable golfing experience. When it comes to controlling fire ants on golf courses, Quali-Pro offers several products. These include specially formulated bait granules, mound drench products and granular insecticides, offering a superintendent multiple solutions to combat fire ants.

## Syngenta

### LANE TREDWAY, PH.D.

Technical Services Manager



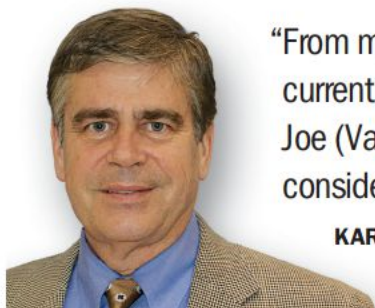
Superintendents can control fire ants with products such as Advion fire ant bait. The active ingredient indoxacarb means superintendents no longer have to choose between fast-acting mound treatments, that leave the probability that colonies will re-emerge, or complete Broadcast insecticide treatments that can provide colony control but could take weeks to kick in. Advion fire ant bait controls foraging worker ants within 12-48 hours and can provide complete colony control within 72 hours. Superintendents can apply Advion as a broadcast application at 1.5 lbs per acre or as a mound treatment at 4 tablespoons per mound. Syngenta guarantees season-long control of fire ants with two broadcast applications, typically in May and September when fire ants are actively foraging.

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"From my days as a student, to my current title, I have always respected Joe (Vargas) and, at the same time, considered him to be pretty cool."

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

## Celebrating the career of a turfgrass icon

A significant end to an era is coming to turfgrass research, teaching and extension with several recent retirements among university turfgrass professors. One of the most recent is Joseph Vargas, Ph.D., professor of turfgrass pathology at Michigan State.

Vargas was among the generation of turfgrass pathologists that included icons like Houston Couch, Ph.D., Noel Jackson, Ph.D., Richard Smiley, Ph.D., and Peter Dernoeden, Ph.D., to name a few. All were well-known figures in the golf industry for decades. Attending a professional meeting — like the American Phytopathological Society meeting or a turfgrass conference — with one of these researchers was an experience you wouldn't want to miss.

Vargas was a prodigious researcher who could relate his research results to the golf course industry better than most. Because of that, he became one of the most iconic figures in our industry.

### MAKING WAVES

Vargas' research has been on the cutting edge and has often been seen as controversial over the years. For example, his early research on anthracnose as a major disease of *Poa annua* refuted the dogma in the industry at the time that *Poa annua* died in the summer from high temperatures.

His work led to revolutionary changes in how we managed golf course turf. Vargas identified the first bacterial disease of creeping bentgrass, known as bacterial wilt. His research led to new control methods and green renovation strategies for dealing with the disease.

To name a few more, Vargas' research into fungicide resistance and product evaluations has continued to address questions facing the industry. This led to Vargas being in constant demand as a conference speaker.

Vargas is often introduced with few words. His reputation spoke for itself.

### MAN OF THE PEOPLE

In turfgrass diagnosis, turfgrass pathologists are the tip of the spear. They are often the first contacted regarding turfgrass decline on a golf course.

Vargas was one of the best — if not the best — on-site diagnosticians I have known. His ability was due, in large part, to his work on golf courses and responsiveness to golf course superintendents. Being out there in the

field contributed considerably to his support within the golf industry.

Well-recognized here in the United States, Vargas also had a great reputation internationally. His influence globally is reflected in his 3.5 million plus frequent flyer miles on Delta Airlines.

Vargas' trophy cabinet showcases his career accomplishments well. He received many awards including the USGA Green Section Award in 2007 and the Col. John Morley Award from the GCSAA in 1997.

Of the more unique awards Vargas ever received speaks to his international influence and respect within the golf industry. Vargas was the first American to receive the title of Honorary Portuguese Golf Course Superintendent from Associação Portuguesa de Greenskeepers.

### CRUISIN' INTO RETIREMENT

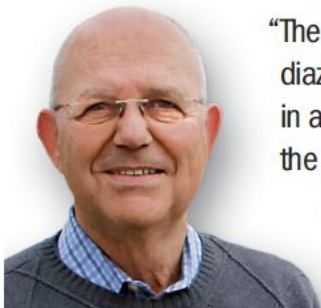
Vargas was a committed teacher and lecturer in the classrooms at Michigan State University. He brought a thoroughness and expertise of his subject to the classroom. Often, his lectures were brought into clarity by his uncanny ability to summarize a topic or thought in a single saying or sentence.

It's difficult to capture the full scope of Vargas' career in just one column. For the many who came in contact with him, he's become a friend not to be forgotten. From my days as a student, to my current title, I have always respected Joe and, at the same time, considered him to be pretty cool.

If I had one wish for Joe in retirement, it would be for him to be cruising in a 1955 Fleetwood Series 60 Cadillac with the radio playing Elvis Presley's *Heartbreak Hotel*. Viva Joe. 🇵🇹

Karl Danneberger, Ph.D., *Golfdom's* science editor and a professor at The Ohio State University, can be reached at [danneberger.1@osu.edu](mailto:danneberger.1@osu.edu).





"The analysis suggested that exposure to diazinon, chlorpyrifos and isazophos, even in a worst-case scenario, would be below the acceptable limits the EPA set."

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

## Changing nematode management

**I**n 1990, the USGA Green Section started investigating what happens to pesticides and fertilizer applied to golf course turfgrass. We did not know what to expect from the research results but maintained an honest reporting of the results.

Projects started in 1991, by George Snyder, Ph.D., and John Cisar, Ph.D., focused on investigating the mobility and persistence of organophosphate (OP) pesticides in a USGA green. The groundwork for this study involved installing lysimeters in a Tifdwarf bermudagrass USGA green at the Ft. Lauderdale Research and Education Center (FLREC). Analytical methods were developed at the Pesticide Lab in Belle Glade, Fla., to determine OP pesticides in soil, thatch, plant tissue and water moving through the green (e.g., percolate).

By 1993, Snyder and Cisar completed studies on OP-pesticide losses in percolate, soil and thatch retention, and clipping removal. The pesticides studied included fenamiphos (Nemacur), fonofos (Dyfonate), chlorpyrifos (Dursban), isazophos (Triumph), isofenphos (Oftanol) and ethoprop (Mocap). They found less than 0.2 percent of the applied pesticide in percolated water and less than one percent in clippings.

These results were good news, but leaching was more significant for the sulfoxide-sulfone metabolite of fenamiphos and chlorpyrifos recovery in

clippings exceeded seven percent for a granular application. However, most of the applied OP pesticides seemed to be retained in the thatch layer, undergoing microbial degradation over time.

Snyder and Cisar found the residues of fenamiphos and fonofos to reside primarily in the thatch layer. In contrast, the sulfoxide+sulfone metabolites were in the soil to a greater degree. Also, they observed a considerable amount of the metabolite in percolated water, especially following the first application of fenamiphos.

An average of 17.7 percent of the applied fenamiphos was found as metabolites in the percolated water following the first application, whereas there was only 1.1 percent after the second application. They believed the difference was due to increased microbial degradation after the first application.

Nevertheless, both percentages are high relative to the fenamiphos parent compound or fonofos, for which a maximum of 0.06 and 0.02 percent of applied were obtained in percolated water following any one application. Excessive irrigation appeared to contribute to the

leaching of fenamiphos metabolites.

They could remove less than one percent of diazinon, chlorpyrifos and isazophos applied to a bermudagrass green onto cotton cloth rubbed on the surface immediately after pesticide application. However, after a 0.2-inch irrigation, dislodgeability increased to approximately 15 percent of the pre-irrigation measurement. 24 hours after application, about three percent of the pesticide was dislodged compared to the immediate post-application measurement.

### THE RESULTS

Collaborating with the University of Florida Center for Environmental and Human Toxicology, Snyder and Cisar made a preliminary pesticide risk assessment analysis based on dislodgeability data collected in their experiments. The analysis suggested that exposure to diazinon, chlorpyrifos and isazophos, even in a worst-case scenario, would be below the acceptable limits the EPA set.

Snyder and Cisar published dozens of publications and presentations on their research, contributing valuable insights into the mobility, retention and potential risks associated with organophosphate pesticides in golf course environments. Unfortunately, soon after this research, Nemacur became unavailable for nematode control on golf courses.

John Rowland, Ph.D., agronomist, USGA Green Section, provides current information on dealing with nematode problems on golf courses in this issue (see page 26).

Bionematicides, such as Zelto and Crescendo, should be applied around nematode egg hatching and chemical nematicides are used afterward if conditions warrant. Rowland lists the current chemical nematicides, their different chemical classes and their efficacy on specific nematode species. **©**

Mike Kenna, Ph.D., retired director of research, USGA Green Section. Contact him at [mpkenna@gmail.com](mailto:mpkenna@gmail.com).



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## 3 Featherweight UltraMax

The Featherweight UltraMax from **UNDERHILL** is a one-inch hose that features NPSH threads. For use on the golf course, the hose has an outer fabric designed to not scuff the turf on greens. It boasts a working pressure rating of 300 psi and a burst pressure rating of 1200 psi.

[Underhill.US](http://Underhill.US)





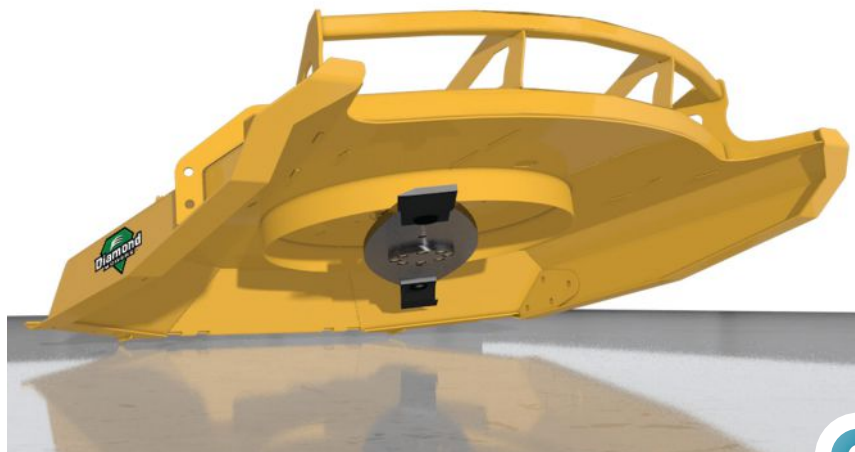
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#### 4 | Motorola MotoTRBO R2

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#### 5 | 185 and 225 E-Cut Electric Walk Greens Mowers

The 185 and 225 E-Cut Electric walk greens mowers from **JOHN DEERE** are powered by a 58-volt, 3.56-kwh maximum lithium-ion battery and feature a floating cutting unit on the front. These models can mow 50,000 square feet on a single charge and have controllers that control the gear transmission and reel.

[Deere.com](https://Deere.com)

#### 6 | Brush cutters

Brush cutters from **DIAMOND MOWERS** help to slice through shrubs, grass, trees and branches to keep the golf course neat and prevent weeds. The company's brush cutters feature a disc mulcher to help with speed, storing energy and combining it with hydraulic power. For heavy-duty land management, an Excavator Disc Mulcher Pro X is available in 36 or 48-inch cutting widths.

[Diamondmowers.com](https://Diamondmowers.com)



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## Grant Suderman

**GOLF COURSE SUPERINTENDENT** // Loch Lloyd CC, Village of Loch Lloyd, Mo.



### Grant, drinks are on me ... what are you having?



I'm a social golfer, so I've already had a solid day. I'm due for a Liquid I.V., or, if we're still going, I'll have a Busch Light.

**Tell me about your family.** Me and my wife, Blake, have been married for two years now. We have one son, Tatum, who just turned one. And we have another one, a girl, on the way this summer. We enjoy sports. We're both Kansas State people. We enjoy golfing whenever we have time as well. Tatum is into everything; he's learning to walk; climbing up the stairs; throwing his food everywhere.

**What would you like us to know about Loch Lloyd CC?** We're a thriving, younger community when it comes to the private club side of things. I'm

biased, but I would play our championship course over any other area course. We have a really great layout. It's a Tom Watson redesign and it's a really special spot to be.

**Who are your teams?** I grew up in Garnett, Kan., so I associate with Kansas City. K-State, Chiefs, Royals and I root for Team USA when they're playing.

**What is the best thing about being a Wildcat?** There are no seasons off for us — we're pretty good all-around with basketball and football. The best thing about us is our future. You look at our coaches and who we have at quarterback? It's a great time to be a 'Cat.

**Do you have a most memorable day at work?** I was the assistant at Kansas City CC for seven years prior to coming

here. I remember coming into the golf course pretty early in the morning, and there were lights out on the course. I knew it wasn't a golf cart. All of a sudden it took off. It's a car! I jumped in my cart to go after it. Someone had stolen a vehicle and they were joyriding across the course. They couldn't get out because (the course) is all fenced in. They went over a green, then wrecked through a bunker and crashed into a bridge. By then, the cops showed up and he's on foot. Let's just say I didn't need a coffee that morning.

**Next time I'm in your area, aside from seeing the course, what should I do?** Grab drinks at Martin City Brewing Co. That's a fun spot. They have some great stouts. And there's a Joe's KC over here, so you have to grab barbecue.

**Who would be in your dream foursome?** It would be so much fun. I got into golf because I grew up around golf. It was my dad who got me into the game. It would have to be my dad. And then I'd say Patrick Mahomes and Tiger Woods. Those are my guys. That would be a good day.

As interviewed by Seth Jones, Jan. 17, 2024.

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