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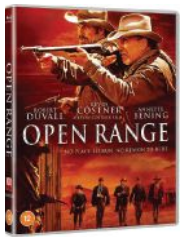

SUPER SCIENCE

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Golfdom

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

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"Trust me, if I get back … I will relish that egg salad sandwich, and I think that's the way a lot of people feel these days about things that went away during the pandemic."

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

Hanging up the high tops

Back in college, a group of us decided to put together a city league recreation basketball team. We weren't good enough to ever win the league, and after a while, we started struggling to get enough guys to show up for games. Eventually, we dropped out of the league.

We kept playing as a group and learned that we had more fun getting 10 to 15 guys together to play pickup basketball on Sundays. We all started growing up, getting married and having kids, but we kept the core together and played for more than 20 years.

As the original guys started dropping off, we replaced them with younger guys. I couldn't guard the young guys. There were only two of us originals left toward the end, both of us named Seth. Despite playing different positions, we made an agreement that the two Seths would guard each other and take it easy on each other.

The pandemic was the nail in the coffin for Sunday pickup basketball. We never had a formal going away game. We all walked off the court one day, and that was it. I'm glad I played OK on that last day and hit a few 3s. I can at least say I won the last battle of the Seths.

It didn't occur to me at the time that this was the end of my basketball playing career. And it made me wonder … how many times are we doing something we love for the last time and we don't even know it?

The last time I went to the Masters was in April of 2019, the memorable Tiger Woods victory. I plan on being back at Augusta in a few weeks, but I won't know for sure until I'm walking through the gates. It didn't occur to me in April 2019 … but what if for some reason that was my last trek to Amen Corner, my last egg salad sandwich?

Trust me, if I get back … I will relish that egg salad sandwich, and I think that's the way a lot of people feel these days about things that went away during the pandemic.

Recently, we hosted the *Golfdom* Summit again, back at Reunion Resort in Orlando. I remember the moment we made the decision to cancel the event in 2020. I considered how much work I had put into the event, only to see it all just go POOF! Gone. I remember sitting at my desk, breathing a heavy sigh and then getting back to work. There was nothing else I could do.

Bringing back the Golfdom Summit, which we recap in this issue, was a welcome revival of something that was temporarily on hold. It was such a great feeling to once again walk into a room of 75-plus people (including my team; to see the complete list of who was there, and who is on the cover, see page 10), a mix of people I knew and people I was excited to meet. Likewise, I feel excitement to get back to the GCSAA Conference & Show after a long time away. It took a year away to make me realize how much I cherish it.

Some things go away, and they're gone forever, like Sunday pickup. My knees don't ache on Mondays anymore, but I do miss the rewarding sound of the ball swishing through the net. I'm not totally out of basketball these days — I'm coaching my son's third and fourth grade city league team. I can still keep up with the 10-year-olds, at least.

These meetings that are coming back, these opportunities the game of golf brings us? I plan on taking full advantage of these moments because you never know when you're hanging up your high tops for good.

Email Jones at:
sjones@northcoastmedia.net.

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NEWS, NOTES AND QUOTES

//THAT'S A FIRST!

SUPERINTENDENT NOW PRESIDENT OF STATE GOLF ASSOCIATION

By Trent Bouts // *Tee Media Consulting*

Jeffrey Connell will head the South Carolina Golf Association over the next two years.

The South Carolina Golf Association (SCGA) might have established a national first by electing a career golf course superintendent as its new president.

Jeffrey Connell, who maintains 36 holes at Fort Jackson Golf Club in Columbia, will lead the association for the next two years. Founded in 1929, the SCGA governs amateur golf in the state, representing more than 270 member clubs and more than 50,000 individual members.

"To date, we do not know of any other state or regional golf association that has ever had a superintendent serve as their president," said SCGA Executive Director Biff Lathrop. "We are still asking around because there are dozens of associations like ours in the U.S., and most have long histories, but so far, everyone we've spoken to believes this is a first."

Connell, 51, joined the SCGA board of directors in 2010, following an eight-year stint on the board of the 1,800-member Carolinas Golf Course Superintendents Association. He was president of that organization in 2010.

"Whether this is a first or not, I'm proud to represent my profession and my industry as president of the South Carolina Golf Association," Connell said. "This association is one of the strongest and most active there is, and we're looking to build on that record. What I can say for sure is that I won't be the last superintendent to lead a state golf association. Today's superintendents have broad skill sets well-suited to organizational management, and many are also deeply vested in the health and well-being of the game itself."

Connell moved to Fort Jackson in 2009. Since then, he has worked closely with director of golf, Mike Casto, who went on to become president of the Carolinas PGA Section. Prior to Fort Jackson, Connell was superintendent at 27-hole Columbia Country Club and earlier at Northwoods Golf Club. He says he gained much of his interest in association service working at Florence Country Club as an assistant superintendent under Chuck Green, a Carolinas GCSA past president. He studied landscape architecture at the University of Kentucky and horticulture at Eastern Kentucky University. Connell and his wife, Michelle, live in Blythewood with their three boys, Cheney, Aidan Cooper and Grayson.

//A SIGNIFICANT MILESTONE

EWING CELEBRATES 100 YEARS

Ewing Irrigation & Landscape Supply marks 100 years of business in 2022.

"My grandfather instilled a simple yet effective philosophy for our company, 'treat your customers right.' That quote has been the foundation on which we've built 100 years of serving customers," said Douglas York, Ewing president and CEO. "And it's how we continue to serve our customers and industry now, inviting green industry professionals to lean on us for their business needs, support and success."

Ewing's journey began in 1922 when Atlas Lawn Sprinkler, an irrigation system installer, irrigation designer and distributor, opened in San Francisco. Ewing's founder King Ewing joined Atlas in 1938. He acquired Atlas' design and supply division in 1948, renaming it Ewing Turf Products. In 1963, the second generation of family leadership took the helm in King's daughter, Sue, and her husband, Ray York. A third generation joined the family business when Doug York and his brothers, David and Richard, came on board in 1976. Doug has served as president and CEO since 2001, while Richard has led Ewing's OEM business, Landscape Products, since 2016, as president and COO. In 2018, Doug's son, Jack, became the fourth generation to join the company.

//CHANGING THE GAME

U.S. WOMEN'S OPEN ADDS MAJOR SPONSOR

The United States Golf Association (USGA) and ProMedica entered into a long-term partnership that includes presenting partner rights for the U.S. Women's Open, elevating the championship through a $10 million purse, adding host sites and increasing charitable support to ensure its impact continues to set the standard in the women's game.

The USGA also named five U.S. Women's Open host sites: The Riviera Country Club in Pacific Palisades, Calif. (2026); Inverness Club in Toledo, Ohio (2027); Pinehurst Resort & Country Club in Village of Pinehurst, N.C. (2029); Interlachen Country Club in Edina, Minn. (2030); and Oakland Hills Country Club in Bloomfield Hills, Mich. (2031 and 2042).

PHOTOS BY: GETTY IMAGES / ISTOCK-GETTY IMAGES PLUS / WELLGLAD (GOLFBALL)

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Dr. Danneberger,

I read your column in *Golfdom* ("Inclusion in the workplace," January 2022 issue) and was extremely appreciative of the thoughtfulness of your words. Anything we can do to keep the momentum of advancing toward a more inclusive and diverse workforce is drastically needed right now. I don't even mean that in a self-serving manner because there are so many assistant jobs to fill but to help management teams become more "even" in their thinking. The women that worked with us for the U.S. Women's Open worked extremely hard, but aside from that, they brought an energy unlike anything I have ever been around. My team of mostly Hispanic workers (and all men) were embraced by the women more than any male volunteer group of supers/assistants I have ever been around, and they were there to show the world that they could do the job. I found out that many times, they have to prove themselves to gain respect.

Thank you for continuing to keep the momentum going!

Troy Flanagan
Director of Golf Maintenance
The Olympic Club, San Francisco

#TurfTweetoftheMonth

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Nathan Glaser
@NathanGlaser
Superintendent,
Iron Wood CC
Palm Desert, Calif.

There is something incredibly satisfying about this photo.

PHOTO BY: NATHAN GLASER

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Ask Thad

BY THAD THOMPSON
Superintendent
Terry Hills GC, Batavia, N.Y.

What was the best thing you saw at the 2021 *Golfdom* Summit?

—The Golfdom Staff

First off, the *Golfdom* Summit is intense! There is so much information packed into three days that it can seem overwhelming at first. Everyone is treated as a VIP customer and peer. Companies are very interested in who you are, where you're from and what can they do to make your job and life easier. There were myriad fantastic products and services represented in Orlando, and I was honored to be invited to hear about all of them. I have a backpack of information that I am still referencing as I think of course projects for the upcoming season. It is a tremendous resource to be able to meet with vendors in a laid-back setting. They get to connect with you, but you also get to connect with them. Win-win.

The *Golfdom* Summit is about business, but it is also about human connection and having fun. Superintendents, vendors, guest speakers and the entire *Golfdom* staff are all intermingled throughout the entire event. Whether it's during individual meetings with vendors, playing in the annual scramble golf tournament or having dinner, drinks and a laid-back evening to wrap up the day, everyone does it together. The friendships and conversations that spring up along the way are spontaneous and organic. The knowledge gained and the horizons broadened while listening to everyone's theories, methods and insights is invaluable. Then, there are the stories. To get together with a group of like-minded people is to be able to tell those stories that our normal friends just don't get.

So, the best thing I saw at the *Golfdom* Summit was the camaraderie. By the end of the event, it felt as we were all one. I left Orlando with new friendships and a sense of pride in our industry that was renewed by attending.

Got a question for Thad? Tweet to ***@TerryHillsMaint*** *and* ***@Golfdom*** *or email Thad at* ***thadthompson@terryhills.com***

Golfdom 10 YEAR ANNIVERSARY Summit

No. 7 at the Palmer Course is a beautiful drivable par 4, with a great view of Reunion Resort's Grande Tower in the distance.

A Super Summit experience

Our anonymous superintendent recaps the return of the *Golfdom* Summit

By An Anonymous Superintendent, with help of the *Golfdom* Staff

I had just gotten back to the shop after setting up for a late-season double shotgun when an unrecognized number popped up on my cell phone. Usually, I let those go to voicemail … too many robocalls. But this was a 785-number and I thought it might be GCSAA headquarters calling, so I took it.

To my surprise it was the familiar voice of *Golfdom's* Seth Jones on the other end, personally inviting me to the 2021 *Golfdom* Summit. I quietly told him I'd check my calendar and get back to him, but who was I kidding? Unless there was some major surgery I didn't know about in my future, I was going to accept that invitation and join the group at Reunion Resort in Orlando.

Here's my account of what happened, as best as I can recall, and with help from my new friends at *Golfdom*.

Ben McGraw, Ph.D., associate professor of turfgrass science at Penn State University, spoke to the group about developing sustainable turf pest management practices.

PHOTO COURTESY OF: REUNION RESORT (OPPOSITE PAGE); THE *GOLFDOM* STAFF (RIGHT)

Day one

After checking in at Reunion Resort, I was greeted by the *Golfdom* team and given directions on how the event worked. Right off the bat, boardroom presentations would take place, short five-minute welcome speeches from all the partners, while we superintendents sat and listened.

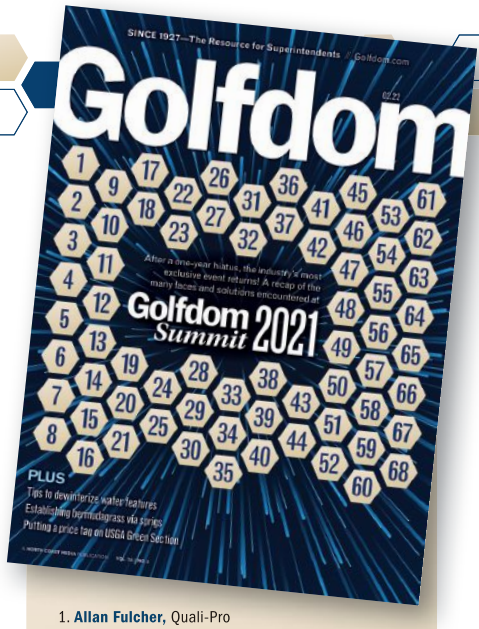
I thought this would drag on, but the quick-hit format was interesting. For example, the Hover Mower. I'm familiar with them, but it was my first exposure to Scott Sweeney, president and owner of Seago International, the company that manufactures the mower. It's a family-owned company based in Hickory, N.C. (I was reminded of the movie *Hoosiers*, but yeah, I know — that was Indiana), and Scott is a proud military veteran (of course, it's called the Air Force Hover Mower). The company makes smaller, lighter equipment and is working to make it even lighter … not something I typically would sit down and consider until now.

Another example, Justin Watts of Prime Source takes the stage, and I'm already looking to see who the next speaker is (sorry Justin), but then he starts talking about how the company was acquired by Albaugh recently and what that meant for the company … and also, their rewards program … and oh yeah, check out these six new products we're releasing in 2022. And suddenly I find myself taking notes!

The boardroom presentations were broken up by a putting contest outdoors, hosted by Sipcam Agro USA. I'd like to tell you I made my putt and made it to the finals, but no. Steve Shand, superintendent at the Cliffs at Walnut Grove in Asheville, N.C. (I bet that's near Hickory) took that honor. I hope he left all his putts short the next day in the four-man scramble, but I doubt it …

That night, there was an awesome presentation of the Legends Initiative (see

Continued on page 10



Continued from page 9

sidebar page 18), as well as a dinner and reception where we got to meet each other. I was able to meet a bunch of superintendents, most of whom I had never encountered before, outside a few on social media.

At dinner, Tiffany Koss, director of sales and marketing for Kafka Granite, sat at our table. She told me about how the company really took off when 12 years ago or so, it started developing paving alternatives at Whistling Straits. She said it then culminated into a renovation at Erin Hills GC prior to the 2017 U.S. Open. Kafka was tasked with coming up with a formulation for a walking path alternative that looks and feels natural but that's erosion resistant and simple to install and maintain.

"We're still relatively new to the industry, but we've tried to immerse ourselves in the golf industry, and it's been great," she told me. "We have been getting a lot of positive feedback on our erosion-resistant paving alternative. It's saving a lot of time and solving a lot of problems for superintendents."

Day two

Despite a busy day one, I woke on day two ready to see what else the *Golfdom* Summit had in store for me.

Before I even sat down to breakfast, I added to the stack of business cards in my wallet when I ran into John Ammons, vice president, Green Mountain International, who was at the Summit representing Klingstone.

Call it fate, but I ran into him at exactly the right time: I'd just finished reading an email from my club president about how several of our bunkers are in serious need of some TLC. Over coffee and eggs, he regaled me with tales of all the courses he's played, including the story of his 6-year-old daughter sinking a 40-foot putt her first time playing the Cradle at Pinehurst Resort. I'm sure Bob Farren also got a kick out of that one.

Soon, everyone at our table was reflecting on their best — and worst — golf moments.

Evan Parenti, golf and lawn market manager, at FMC Corp., Global Specialty Solutions, got us all nostalgic for some of the greatest moments in golf of all time and reflective on how many "legends" of golf were in attendance.

"There are so many well-respected and top name courses here that we felt we got great exposure to leaders in the industry," he said. "We've also seen some really great 'community moments,' reflecting how close-knit and passionate the golf community is about everything they do."

Speaking of top-name courses and lead-

Continued on page 12

1. **Allan Fulcher,** Quali-Pro
2. **Chris Zugel, CGCS,** Whistling Straits & Blackwolf Run
3. **Greg Jones, CGCS, MG,** Champions Run
4. **Joe Pantaleo,** Pine Tree GC
5. **Kyle Callahan,** Thornblade Club
6. **Matt Smith,** Steel Green Manufacturing
7. **Scot Jones,** Steel Green Manufacturing
8. **T.J. Shine,** Winfield United
9. **Andrew Scott,** PBI-Gordon Corp.
10. **Cory Griess,** Prairie Dunes CC
11. **Travis Moore,** Ridgewood CC
12. **Joe Sallustio,** PBI-Gordon Corp.
13. **Lee Frie,** Jacobsen/Cushman
14. **Matt Weaver,** Civitas Intelligro
15. **Scott Kinkead,** Turfco
16. **Darren Powers,** Redexim
17. **Jared Viarengo, CGCS,** Applebrook GC
18. **Damon Hitti,** Weissinger Hills GC
19. **Melissa McDonald,** PBI-Gordon Corp.
20. **Scott Sweeney,** Seago International
21. **Mike Thurow,** Spectrum Technologies
22. **Bob Farren, CGCS,** Pinehurst Resort and Country Club
23. **Don Smith,** Smithco
24. **Carmen Magro,** Pogo Turf Pro
25. **Shawn Marcellus,** Wanumetonomy G&CC
26. **Bob Harper,** Country Club of Coral Springs
27. **David Louttit,** The Andersons
28. **Nicholas Korthals,** Whitetail
29. **Shawn Emerson,** Ethos Club and Leisure
30. **Tommy Hewitt,** Windermere GC
31. **Brian Daigneau,** Shaker Hills CC
32. **Anthony Williams,** Danville CC
33. **Nicolaas Baard,** Jacobsen/Cushman
34. **Steven Bell,** Ballyhack Golf Club
35. **John Ammons,** Klingstone
36. **Brian Renschler,** Talisker Club at Tuhaye
37. **Eric Hindes,** Playa Grande Golf & Ocean Club
38. **Nikola Likenda,** Civitas
39. **Steven Johnson,** Smithco
40. **Tony Atchison,** Sipcam Agro USA
41. **Tom Brodeur,** TPC Boston
42. **Eric Tuchols,** Harvest Hill GC
43. **Patrick Hensley,** Towhee Club
44. **Steven Neuliep, CGCS,** Etowah Valley Golf & Resort
45. **Carrie Bergman,** PBI-Gordon Corp.
46. **Ben McGraw, Ph.D.,** Penn State University
47. **Jason Baker,** Twins Oaks CC
48. **Justin Watts,** Prime Source, a division of Albaugh
49. **Maricela Gamboa,** Spectrum Technologies
50. **Patrick Reuteman,** Westmoor CC
51. **Steve Shand,** The Cliffs at Walnut Cove
52. **Emil Miller,** Smithco
53. **Chad Yotter,** Mayfield CC
54. **Gary Cotton,** Winfield United
55. **Jason Fuertes,** Industry Hills GC at Pacific Palms Resort
56. **Ken Klopp,** The Andersons
57. **Mark Loos,** Sipcam Agro USA
58. **Paul Fox,** Quali-Pro
59. **Thad Thompson,** Terry Hills GC
60. **Gant Austin,** Pogo Turf Pro
61. **Christopher Garrett,** Quail Creek G&CC
62. **Glenn Kafka,** Kafka Granite
63. **Jeffrey Johnson,** The Minikahda Club
64. **Ken Rost,** Frost Inc.
65. **Matt Shaffer,** Merion GC
66. **Sam Wineinger,** Sipcam Agro USA
67. **Tiffany Koss,** Kafka Granite
68. **Drew Gerber,** Harper Turf Equipment

Bob Harper, superintendent, CC of Coral Springs (Fla.), lines up his putt during Sipcam Agro's putting contest. He made it to the finals where he was narrowly defeated by Steve Shand.

PHOTO BY: *GOLFDOM* STAFF

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Schedule your demo today at **www.turfco.com** or call **800.679.8201**

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Chris Zugel, CGCS, director of golf course maintenance for Kohler Co., recapped the successful 2021 Ryder Cup hosted at the Straits Course at Whistling Straits.

Continued from page 10

ers in the industry, that morning, Chris Zugel, CGCS at Whistling Straits in Sheboygan, Wis., gave a talk on hosting the 2021 Ryder Cup. Zugel was a great speaker and one of the most interesting points he made about the televised tournament is just how happy everyone seemed to be that the event was taking place with fans in attendance. He doesn't know if there was a single negative word spoken about the course. How great would it be if that became a tradition?

Now it was time for my first "one-on-one" meeting of the day, where a fellow superintendent and I would meet in a smaller group with just one of the partners, for 15 minutes. For us, our first meeting was with Carrie Bergman, senior director of marketing for PBI-Gordon Corp.

After hearing about the company's product line, she and I discussed some of the difficulties we superintendents have in today's age with having so much to do but so little time, especially with golf's growing influence among younger audiences and women.

She summed it up pretty well when she said, "It's about superintendents being able to be present and be there for their associates and also keep up with what's going on in the industry."

At our next meeting, I met with Dave Louttit, territory manager for The Andersons in the Great Lakes region. He brought us up to speed on The Andersons' Contec DG lineup and the company's line of humate products.

In creating its products, Louttit told me that The Andersons tries to help superintendents do more with less as fertilizer costs have gone up and supply chain issues have plagued the industry.

"The supply chain thing is for real," he told us. "Some of us tried to downplay it, but in the industry we're in, we're being hit a few different ways. One is the labor shortage, finding people to work in the fertilizer plant. Raw material pricing pressure have skyrocketed on us. Availability of certain product has become an issue and then there's also a tremendous trucking shortage in the U.S."

He encouraged me to order early to make sure I get whatever I need in on time.

After a handful of indoor meetings, it was time to go to the outdoor demo area. We headed over to see Harper Turf Equipment. Drew Gerber, vice president of product, was showing off the Harper Hawk (great name), a self-propelled sweeper concept to the golf market. As you can imagine, the Reunion Resort driving range was quite clean, so the Hawk couldn't show off its full capabilities, but later I checked it out on YouTube, and it seems like quite a powerful tool.

As many other people said, he noted, "Trying to find enough people to get all the tasks done on the golf course is tough, so it often comes down to multiple uses with equipment and trying to get more things done and adding some versatility to products."

It was Drew's first time at the Summit as well, and he praised the overall relaxed atmosphere at the Summit, saying it's so different from a traditional trade show

Redexim brought their Verticutter and Vertidrain to show attendees. "The labor shortage is the biggest trend in the industry," Darren Powers (far right) eastern regional sales manager for the company, told us. "What manufacturers are doing to help alleviate this is coming up with products that are more efficient. Because I don't know that the labor issue is going away any time soon."

PHOTOS BY: *GOLFDOM* STAFF

where it's just cycling people through and getting the generic same three or four questions and then moving on.

T.J. Shine, Winfield United sales rep., Southwest Florida, echoed that sentiment when I caught him in the hallway later on, saying, "It's a great setup, getting to know everyone a little bit, creating some new contacts, networking with many professionals in the industry and some legends."

Next, we saw Frost, where I met Ken Rost, president and CEO. He gave me the rundown on the company's Kubota-Powered Ninja GPS Sprayer and encouraged me to give it a spin. He also highlighted some of Frost's other technologies such as its mixing systems or even drone spraying equipment.

With technology being such a touchpoint in the industry these days, we've actually been thinking about adding some

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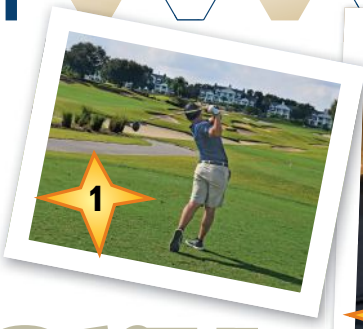
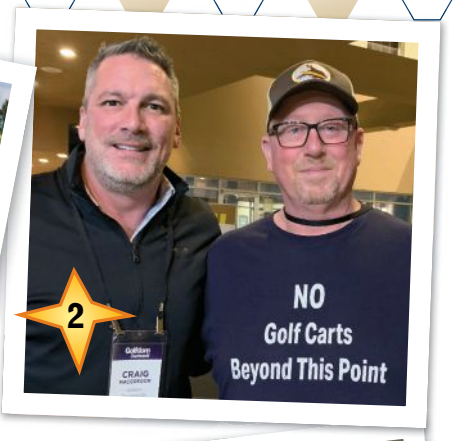
PHOTO BY: *GOLFDOM* STAFF

"Superintendents are under more strain, seeing an unprecedented amount of play," said Scott Kinkead, executive vice president of Turfco. "How are we going to free up the superintendent's time, because that's one thing they can't create … more time." Here, the Turfco team is visited by the Legends Initiative superintendents in attendance: Bob Farren, Matt Shaffer and Shawn Emerson.

Golfdom Gallery





PHOTOS BY: GOLFDOM STAFF

PHOTO BY: *GOLFDOM* STAFF

1 Grip it and rip it Jason Fuertes, superintendent, Industry Hills GC at Pacific Palms Resort, Fullerton, Calif., gets the 2021 *Golfdom* Scramble started off right with one right down the middle.

2 The dude abides *Golfdom* Publisher Craig MacGregor (left) abides by the rules on the T-shirt of Thad Thompson, superintendent at Terry Hills GC, Batavia, N.Y.

3 Guaranteed good time It's a guaranteed good time when you have any of these four in your foursome: (left to right) Turfco's Brian Godwin, Sipcam Agro USA's "Sipcam Sam" Wineinger, Jared Viarengo, CGCS, Applebrook Club, Malvern, Pa., and Thompson.

4 An editor among Legends After *Golfdom* Editor-in-Chief Seth Jones moderated the induction of Shawn Emerson into the Legends Initiative, Legends alumni Bob Farren, CGCS, Pinehurst (N.C.) Resort, and Matt Shaffer, superintendent emeritus, Merion GC, Ardmore, Pa., grabbed Jones to tell him that after three years of moderating that panel … he almost has the hang of it.

5 Big hitters Mark Koepsell, Frost, and Bob Harper, superintendent at CC of Coral Springs, Fla., discuss how Mark's team won the *Golfdom* Summit scramble. Congrats to Mark, Christopher Garrett, Andrew Scott of PBI-Gordon and Eric Hindes on the win!

6 Eyes on the line Christopher Garrett, Quail Creek G&CC, Oklahoma City, takes a roll during the Sipcam Agro USA putting contest.

7 Minikahda memories *Golfdom* Editor Christina Herrick and Jeff Johnson, superintendent, the Minikahda Club, Minneapolis, are all smiles after the cover story on Minikahda's regrassing story was deemed a success by all parties involved.

8 We'll get a rematch Seth's team, which included Ben McGraw, Ph.D., Anthony Williams, Danville (Ky.) CC, and Allan Fulcher (not pictured), lost the tournament on a scorecard tiebreaker, but as a consolation prize, they get this photo.

9 Last call! The group closing down the last day of the Summit included (clockwise from front left) Godwin, *Golfdom*'s Michelle Mitchell, Quali-Pro's Paul Fox, *Golfdom*'s Joey Ciccolini, Quali-Pro's Allan Fulcher, Nick Korthals, Whitetail Club, Redexim's Darren Powers and Cory Griess, Prairie Dunes.

10 The 18th hole Chris Zugel, CGCS, Whistling Straits, Kevin Stoltman, *Golfdom,* Scott Kinkead, Turfco, and T.J. Shine, Winfield United, round out our 2021 *Golfdom* Summit photo parade. Apologies to everyone we missed, we still have nothing but love for ya!

FMC

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> **"*Pythium* can be devastating and, until now, has been a disease with limited control choices. With Serata, superintendents can rest easy knowing they have a powerful option."**

Evan Parenti

Serata is from a new class of chemistry, the tetrazolyloximes. While the exact mode of action pathway is still being defined, it is theorized that picarbutrazox works by affecting the biosynthesis of phospholipids, which disrupts the normal function of the pathogen's cellular membrane. It will be listed as FRAC U17.

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FMC

Legends Initiative inducts Shawn Emerson

At the end of the first day of the event, we all entered a covered deck area near a pool where we knew we'd be having dinner that night.

What we *didn't know* was that we were all going to be treated to a Golf Channel-level production of the Legends Initiative, sponsored by Anuvia and presented in partnership with Audubon International and *Golfdom* magazine.

The stage was set, and after dinner, *Golfdom*'s Seth Jones introduced the panelists: Pinehurst Resort's Bob Farren, CGCS; longtime Merion superintendent Matt Shaffer; and this year's Legends inductee, Shawn Emerson.

The Legends panel (from left to right: Bob Farren, Matt Shaffer, Shawn Emerson and Seth Jones) get a laugh out of Shaffer telling everyone that his wife would discourage any turf professional from taking a look into the way his mind works.

A fun 45-minute panel discussion ensued where the Legends discussed advice they'd received, some of their more challenging moments in their careers (hosting back-to-back U.S. Opens is not on my bucket list) and what they foresee as the direction the industry needs to take moving forward.

I was really taken when Emerson thanked not only Anuvia for the honor, but everyone in the room, from the partners of the *Golfdom* Summit to the superintendents listening. He really wore his heart on his sleeve. And then he added how excited he was that we all were able to meet in such a format and encouraged us to take advantage of the moment.

"The presentations I saw today, I thought to myself, how stupid was I, not to talk to these people (before)?" he said. "These guys have made such advancements that we now have to come up with ways to decrease the cost of golf."

Editor's note: The entire Legends Initiative presentation is available at **Golfdom.com**

Continued from page 13

drone technology at our course, so his insights on that were much appreciated.

The afternoon of fresh air continued with a round of golf on the Watson Course. Hats off to Scott Scamehorn, CGCS, and his entire crew for maintaining such a beautiful course. Though I didn't play as well as I'd hoped I would at such a beautiful course, I still had fun and enjoyed playing with Lee Frie, product manager for Jacobsen and Textron, and Mike Thurow, president and CEO and founder of Spectrum Technologies.

Between holes, we got on the hot topic of industry trends, especially when it comes to technology. Frie said that he's seeing more movement toward electrification and autonomous equipment.

"I think you're going to see more au-

Continued on page 21

Steven Johnson (right), regional sales manager, Smithco, gave us a look at the company's Spray Star. Emil Miller, marketing manager, Smithco, said, "Our orders are through the roof, and we are doing well, but that means we need to buy more stuff, and it's getting tougher and tougher to find."

PHOTOS BY: *GOLFDOM* STAFF

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QUALI-PRO

WRECK RESISTANT ABWS WITH SUPRADO INSECTICIDE

Quali-Pro's new product, Suprado Insecticide, offers superintendents control of insecticide-resistant ABWs

For superintendents in the Northeast, the beginning of spring is the start of the busy season. As golfers begin to come out of hibernation, superintendents have to take a hard look at the turf to ensure it is ready for play. To make things just a little bit tougher, springtime also means the reemergence of annual bluegrass weevils (ABWs). When these pests emerge, they bring with them the destruction of *Poa annua,* creeping bentgrass and perennial ryegrass. Fortunately, Quali-Pro has the solution — Suprado Insecticide.

Prior to the introduction of Suprado, superintendents tried everything from insecticide applications to soap-and-water flushes to just sucking up the weevils with a reverse air flow leaf blower, but no option offered reliable protection. Ian Rodriguez, Ph.D., technical services manager at Quali-Pro, says the team is always looking for new applications for its active ingredient portfolio, and in turfgrass, Suprado has proven to be an excellent fit for ABW management.

> "(Suprado) has proven to be a game-changing option in ABW management. We are continuing to look at and refine uses for it and the active ingredient Novaluron against additional turfgrass pests."

Ian Rodriguez

Powered by insect growth regulator (IGR) Novaluron, Suprado is the long-awaited answer to ABW woes. In the past, overreliance on standard pesticide classes has led to the development of resistance in pests, according to Rodriguez.

"Resistance to more traditional ABW chemistries has been on the rise, and some are being phased out by regulations, so a new option like Suprado has been well received," Rodriguez says. "Anytime a new class of chemistry becomes available, it can open new approaches to pest management."

QUALI-PRO

> Novaluron, the active ingredient in Suprado, controls the ABW life cycle by inhibiting chitin synthesis where most other insecticides target the nervous system. Suprado has been shown to be effective when applied at multiple ABW life cycle stages — from adults to large larvae."

Ben Brace

Suprado works by interfering with chitin production, causing an interference in the molting process. When Suprado is applied at peak adult migration, it prevents successful reproduction. After eggs are laid or larvae have hatched, Suprado can stop them from molting from one growth stage to the next, so adulthood is not reached.

Suprado controls ABW life cycles, reducing the need for ongoing applications of multiple chemistries. Although Suprado's active ingredient Novaluron is not new to the industry — it has been used for years in crops and in a number of professional pest control products under the Control Solutions line — Rodriguez and his team saw an opportunity to use this IGR on ABW, since the pest has proven to be challenging to manage.

"(Suprado) has proven to be a game-changing option in ABW management," Rodriguez says.

A NEW CONTROL FOR ABW

Ben Brace, sales representative for Genesis Turfgrass, has seen the impact ABWs can have on turf. He began working on a golf course in his teens and later interned at Oakmont Country Club, where he worked the 2016 U.S. Open.

"Over three years of research, Suprado has provided equal or better control than the other insecticides commonly used for ABW management," Brace says. "Suprado is a completely new mode of action, which works by disrupting their growth cycle. This has the potential to be an effective way to reduce populations.

"Novaluron, the active ingredient in Suprado, controls the ABW life cycle by inhibiting chitin synthesis where most other insecticides target the nervous system. Suprado has been shown to be effective when applied at multiple ABW life cycle stages — from adults to large larvae."

According to Brace, Suprado even has the potential to reduce ABW populations. By disrupting the growth cycle, Suprado negates the possibility for larvae to become adults, effectively breaking the chain of reproduction.

"The way Suprado controls ABWs is completely different, and it has the potential to become the primary product for ABW programs," he says.

For more information, visit **Suprado.com**.

Scan the QR Code to learn more about Suprado, or visit **Suprado.com**

> Suprado is a completely new mode of action. The way Suprado controls ABWs is completely different, and it has the potential to become the primary product for ABW programs."
>
> — Ben Brace

Continued from page 18

tonomous mowers in the future to reduce cost and to have a consistent and repeatable product," he said. "On the electrification side, a lot of guys are wanting to use a quieter machine, where they can be closer to homes earlier in the morning, and then for environmental purposes, so they're not having the carbon footprint that they're having with the gas or diesel equipment."

He said a lot of it comes down to allowing the superintendent to use resources better and to put people in positions where they have more value in what they're doing.

Thurow jumped in to say, "We've heard consistently that the recovery and rounds of golf are great. The flipside of that is that it's put more challenges on the superintendents for their daily activities because the tee times are going throughout the day. They aren't getting the breaks to do hand watering or that kind of stuff."

He noted that Spectrum's soil moisture meters and other data tools aim to help superintendents do what they do more effectively with less time.

All in all, it was a good round of golf.

Day three

The last day of the Summit had already arrived. After an insightful (and hilarious, and sometimes blue) morning lecture by Penn State's Ben McGraw, Ph.D., we went back outside on the Reunion Resort driving range.

Like Ricky Bobby said in Talladega Nights, "if you're not first, you're last." I was thrilled to be among the first superintendents to see the new Steel Green's SGXL, a 120-gallon zero-turn sprayer that can be converted to a 350-pound spreader that can store an additional 10 bags of fertilizer (five bags each side) for the field.

"After we launched Steel Green, we noticed a large number of courses were buying our current models, and superintendents were asking for a larger hopper size," Steel Green co-founder Matt Smith told m. "We've gone through a bunch of changes, which is what we're known for — listening to customers and making changes until they're completely satisfied."

Christopher Garrett, superintendent, Quail Creek G&CC in Oklahoma City (far right) examines the Frost GPS Ninja Sprayer, while Ken Rost (far left), owner of Frost, gives the rundown.

Smith and his team used the *Golfdom* Summit as a testing site for the machine, hopeful to learn more about what superintendents like and don't like about the machine. Smith said the sprayer wouldn't be seen at the 2022 GCSAA Conference & Show, so this really was an exclusive demo for us at the Summit. Very cool.

At the Quali-Pro meeting, we sat down with Paul Fox, key account manager, turf and ornamental. He wanted to make sure we knew about Quali-Pro's new product called Suprado, an insect growth regulator targeting annual bluegrass weevil (ABW).

Tommy Hewitt, superintendent, Windermere GC, Cumming, Ga., hops on the Steel Green SGXL 120-gallon zero-turn sprayer. It made its industry debut at the *Golfdom* Summit.

The "growth regulator" part is what makes this product interesting. It can have an impact on ABW in multiple parts of its life cycle, making it flexible with timing. It can control ABW in all larvae stages, inside or outside the plant. For adults, it can inhibit the ability to lay eggs and prevent them from shedding their exoskeleton.

From there, we then met with Carmen Magro, president of Pogo Turf Pro. We said hello to Carmen the day before when we saw him out on the golf course taking measurements on one of the greens, that he could then show us this morning.

"We don't have the luxury of making mistakes with irrigation management, cultural management or even in communication to our members and those we report to," Magro said. "The importance of having information to make the decisions we were trained to do is higher today than ever."

He continued to say that the overall trend of practitioners in the golf industry is anything that increases superintendents' confidence to make the best decisions they can. While it may be intimidating at first, superintendents really want to embrace that technology and use it.

And that kind of sums up my *Golfdom* Summit experience in a nutshell ... from intimidation at first to a new way of meeting with folks in the industry that I really learned to embrace.

PHOTOS BY: *GOLFDOM* STAFF

Hosted by Mike Kenna, Ph.D. | *mpkenna@gmail.com*

Super Science

// **BETTERING THE GAME**

USGA RESEARCH IMPACT

By Mike Kenna

The USGA has invested more than $45 million in turfgrass and environmental research since 1983. Golf's governing body continues to provide $2 million annually on research that provides better playing conditions, significant cost savings and a more environmentally friendly game. The USGA program was recently renamed the Mike Davis Program for Advancing Golf Course Management.

Program accomplishments include research-based management practices that have contributed to the efficient use of water, fertilizer and pesticides on U.S. golf courses.

The USGA contracted Fleishman-Hillard's True Global Intelligence research division to conduct an online survey to estimate the research program's impact and to assess the golf industry's resource and economic benefits from the USGA's investment in water, fertilizer and pesticide management research.

The survey focused on the benefits associated with golf facilities' adoption of research-based management practices in six primary areas of interest: (a) ET-based irrigation scheduling (i.e., water budgeting), (b) soil moisture sensing, (c) best management practices (BMPs) that reduce nonpoint source pollution by fertilizers and pesticides, (d) putting green construction techniques, (e) naturalized roughs and (f) improved turfgrass cultivars.

The USGA's Cole Thompson, Ph.D., in cooperation with Donald Kridel, Ph.D., Department of Economics, University of Missouri, St. Louis, penned a peer-reviewed article for the *International Turfgrass Research Society Journal*. Because of length restrictions, the authors discuss the first three areas in their paper.

Based on data from the survey, they developed multiple econometric models for each management practice. The results indicate that the U.S. golf industry has widely adopted USGA research on water budgeting, soil moisture sensing and pollution BMPs.

Across the three management practices studied, modeling indicated a total annual financial benefit of $1.03 billion to the golf industry. This estimate compares well with the yearly Green Section budget of roughly $10 million, of which $2 million is for turfgrass and environmental research.

As golf's governing body, maintaining a leadership role in addressing turfgrass management and environmental issues is paying significant dividends. The USGA and its partnership with land grant universities and the U.S. Department of Agriculture will keep golf sustainable and enjoyable to those who play the game. G

Reference

Full article: Thompson CS, Kridel DJ, Kenna MP. Economic and sustainability benefits of the United States Golf Association's investment in water, fertilizer, and pesticide management research. *Int Turfgrass Soc Res J*, 2022;1–11. **https://doi.org/10.1002/its2.91**

MORE ONLINE
A graph depicting the average U.S. dollar savings per golf facility will be depicted in the online version of this article, visit **Golfdom.com**.

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

NEWS UPDATES

PBI-GORDON ADDS NEW SALES REP

The employee-owners of PBI-Gordon Corp. added Michael Johnson as a sales representative.

He is responsible for PBI-Gordon product sales to golf course and turfgrass management customers in Arizona, California, Nevada and Hawaii.

Michael Johnson

Immediately prior to joining PBI-Gordon, Johnson worked at FMC Professional Solutions as a market specialist, a position he held since June 2018. In that role, he supported sales efforts by working directly with customers, distributor representatives and end users.

During college, Johnson interned with the sales teams at Bayer CropScience and Valent USA. He holds a Bachelor of Science in agronomy from Auburn University.

"We are excited that Michael has joined the PBI-Gordon team of employee-owners," said Trevor Radford, regional sales manager for PBI-Gordon. "His focus, experience, and drive will be a great asset to our valued customers in Arizona, California, Nevada and Hawaii."

> "DORMANT SPRIGGING WOULD ALLOW SUPERINTENDENTS TO TAKE ADVANTAGE OF THE TIME OF YEAR WITH REDUCED OUTDOOR MAINTENANCE LABOR."
>
> **Matthew Herrmann, et al.**
> *(see story on page 24)*

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//SPRIGGING AHEAD

Dormant bermudagrass sprig establishment in the Transition Zone

By Matthew Herrmann, James M. Goatley Jr., David S. McCall and Shawn D. Askew

The Transition Zone of the United States is located in USDA-ARS Plant Hardiness Zones 6 to 8, where both cool-season and warm-season grasses are grown but not without concern for their performance and survival because of extreme environmental conditions (2, 11).

Establishing bermudagrass from vegetative stems (sprigs) during the standard planting times of midspring through to midsummer in the Transition Zone requires regular and frequent moisture after planting, essentially prohibiting the establishment of these grasses where supplemental irrigation is unavailable (3, 6, 8).

Latitude 36 hybrid bermudagrass provides desirable playing surfaces for golf courses in the Transition Zone because of its cold tolerance and exceptional density. Dormant sprigging would allow superintendents to take advantage of the time of year with reduced outdoor maintenance labor and fewer golfers using the course. If successful, dormant establishment might allow for earlier golf course use. The success of dormant sprigging may be limited by extreme cold or dry conditions, though there are few validated experiments in the literature (8).

The objectives of this research were to (a) evaluate the establishment success of four planting months (January, February, March and April) to determine if the planting date affected the time required to reach a target of 90 percent bermudagrass ground cover and (b) to determine if the use of a translucent turf blanket and/or a surface application of compost (0.25-inch depth) at sprigging enhanced sprig establishment.

PHOTO 1

Latitude 36 sprigs were row-planted in January 2018 at the Virginia Tech Turfgrass Research Center in Blacksburg, Va.

PHOTO BY: MIKE GOATLEY, PH.D.

DORMANT SPRIGGING EXPERIMENT

Field studies were conducted from January through July in 2017 and 2018 at the Virginia Tech Turfgrass Research Center in Blacksburg, Va. Glyphosate (5 pounds AI per acre) was applied with a CO_2 pressurized sprayer delivering 40 gallons per acre spray volume to the research sites in the fall preceding each year's dormant sprigging establishment site to control all existing vegetation.

The underlying soil was not tilled and was left fallow until winter sprigging. The soil used for the trials was a Groseclose loam with 3.8 percent organic matter and a pH of 6.3. The Virginia Tech Soil Testing Lab performed soil tests that indicated that all nutrient levels were sufficient, so no additional nutrients were applied except for nitrogen.

The experimental layout was a 3×4 factorial, split-plot design with whole plots being the monthly planting dates of January, February, March and April each year. An April planting date was included in both years' trials, although April-planted sprigs failed in 2018; therefore, the data gathered for the April 2017 sprigging date were excluded from this report.

Latitude 36 hybrid bermudagrass sprigs were harvested 18 to 24 hours in advance of planting from the production fields of Oakwood Sod Farm (Delmar, Md.) and were installed during the respective planting months by a commercial contractor (Game Day, Chantilly, Va.) with a custom row-planting machine at a sprigging rate of approximately 800 bushels per acre. Our physical count of stems distributed by the machine observed this planting rate to deliver around 25 sprigs per feet^2. Immediately before planting, oxadiazon was applied at 4 pounds AI per acre as a preemergence herbicide to suppress weed seed germination.

Within the 6-by-24-foot whole plots (sprigging month), four 6-by-6-foot subplots were arranged in a randomized complete block across four replications with treatments of a surface application of a commercially available

composted cow manure (Black Kow, Black Gold Compost Co., Oxford, FL; 0.5–0.5–0.5 N– P2O5–K2O) at a 0.25-inch depth, an Evergreen (EG) turf blanket (Covermaster, Rexdale, Ontario, Canada), a combination of the compost and EG and an uncovered control.

Natural precipitation was the only moisture received by the plots during the trial. The EG blankets were removed from the treatments on May 10 in both years. This date is approximately one week after the average frost-free date at this location, and we wanted to initiate regular nitrogen fertilization and mowing of the bermudagrass.

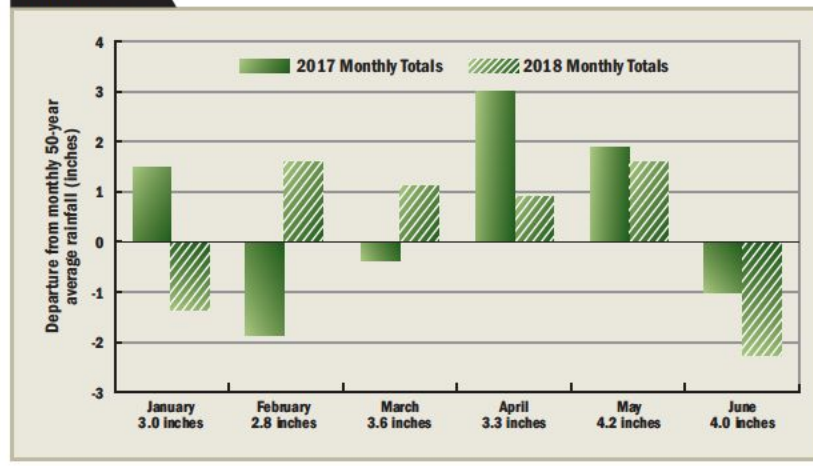
As establishment progressed, postemergence applications of foramsulfuron at 0.4 ounces AI per acre and quinclorac at 32 pounds AI per acre were applied for weed control in mid-May of both years with a CO2 pressurized sprayer delivering 40 gallons per acre spray volume.

The plots were fertilized with water-soluble nitrogen urea (46–0–0 N–P–K) at 39 pounds N per acre monthly from mid-May through mid-July, and there was no adjustment of nutrient levels for plots that did not receive compost. Mowing was initiated after removing the blanket treatments in mid-May, with all the plots clipped to 1.5 inches twice weekly with a rotary mower and all clippings returned to the turf.

A 90 percent bermudagrass coverage (BC90) rating was chosen as the required establishment threshold for turfgrass density that would be acceptable for use as a golf turf fairway. The percentage of green cover within subplots was assessed weekly beginning in mid-May after blanket removal with Canopeo version 2.0 application software (4). Canopeo was calibrated on a nearby mature stand of Latitude 36 bermudagrass to establish a baseline of 100 percent cover. Data collection continued until 90 percent turf coverage was achieved within the subplot treatments.

Bermudagrass cover was modeled over time, beginning at the point of turf blanket removal and until BC90 was achieved within subplot treatments by nonlinear regression. The number of weeks to reach BC90 was determined by custom inverse prediction of the Gompertz equation (JMP, Version 15. SAS Institute, Cary, N.C., 1989–2021). The equation parameters were used to estimate initial bermudagrass green coverage following turf blanket removal on May 10 of each year.

FIGURE 1



Departure in monthly rainfall totals (inches) for the duration of the 2017 and 2018 dormant bermudagrass establishment trials from 50-year monthly rainfall averages as per U.S. Climate Data (2021a, 2021b).

Research Takeaways

- Dormant sprig date did not impact the long-term success of bermudagrass establishment.
- Turf blanket and/or compost had a short-lived impact on bermudagrass establishment.
- Sprigs harvested during spring transition may be sensitive to late freeze events.

ENVIRONMENTAL CONDITIONS DURING ESTABLISHMENT

Departures in monthly precipitation totals for 2017 and 2018 during the January to June study periods were compared against the 50-year monthly historical averages for January to June (Figure 1). Monthly rainfall totals were highly variable across the two seasons, with notably low rainfall totals of 0.8 inch in February 2017 and 1.5 inches in January 2018.

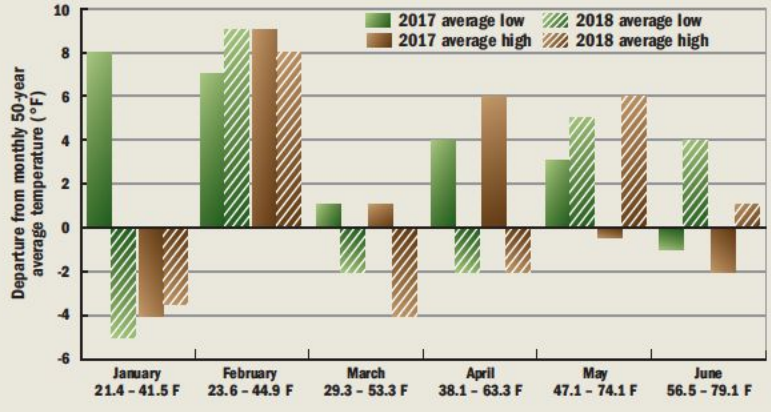
Rainfall totals were close to average in March of each year, above average for April and May and below average in June of each year. A proposed advantage of dormant sprigging in the Transition Zone is to utilize naturally occurring winter and spring precipitation events to provide enough moisture to establish sprigs in nonirrigated settings successfully.

A concern with dormant sprigging was expected to be damage or death of sprigs because of the likelihood of extremely cold temperatures after planting. Figure 2 details the departure from the monthly 50-year average high and low temperatures for the duration of the trials in 2017 and 2018. The three planting months detailed (January, February and March) all had average lows below freezing, and the departures from average varied greatly within months and years.

January 2018 had particularly below-average temperatures, with an average low temperature of 17 degrees F for these trials, whereas February's average high and low temperatures were well above the average each year (9). The lowest single-day temperatures

Continued on page 26

FIGURE 2



Departure in monthly average low and high temperatures (°F) from 50-year averages for the duration of the 2017 and 2018 dormant bermudagrass establishment trials as per U.S. Climate Data (2021a, 2021b).

TABLE 1

Sprigging Month	Coefficient of Determination	Initial Coverage	Lower Standard Error	BC_{90}	BC_{90} Standard Error
	r^2	% BC[a]		week	
January	0.81	29	3.0	4.7	0.16
February	0.87	25	1.9	4.8	0.15
March	0.83	27	2.7	5.0	0.33

[a]BC, Bermudagrass Coverage

Estimated bermudagrass coverage at blanket removal and the number of weeks after removal to reach 90 percent Latitude 36 bermudagrass coverage (BC_{90}) as predicted by four-parameter nonlinear regression for various sprigging month treatments.

Continued from page 25

were recorded in January for both years at –0.9 degrees F for 2017 and 5 degrees F for 2018 (9). February had single-event low temperatures of 12.9 degrees F in 2017 and 10 degrees F in 2018 (data not shown) (U.S. Climate Data, 2021a).

DORMANT SPRIGGING RESULTS

Treatment differences of bermudagrass canopy coverage were significant ($P \leq .05$) for some data collection dates by planting month, cover treatment (blanket and/or compost), year and their interactions. Annual precipitation and temperature contributed to yearly interactions. For instance, rainfall totals for January and February in each year were highly variable, either above or below the 50-year averages (Figure 1). In 2018, average high and low temperatures for February were higher than those for March (Figure 2).

Planting month and cover treatment impacted initial bermudagrass coverage but had no long-lasting impact on establishment. Therefore, data were modeled using a four-parameter nonlinear regression to estimate bermudagrass coverage influenced by both factors. The coefficient of determination was high for both planting month ($r2 \geq 0.80$) and for cover treatment ($r2 \geq 0.80$), making it an appropriate model for estimating bermudagrass coverage over time (Table 1 and Table 2).

Although bermudagrass coverage was influenced by sprigging month for some early assessments, differences in coverage ratings were small (<10 percent) and were not considered of practical importance to the end user. Estimated initial bermudagrass coverage (range: 25 to 29 percent) after turf blankets were removed was not influenced by sprigging month (Table 1). Similarly, the time required to reach BC90 was 4.7 to 5 weeks after blankets were removed in May, regardless of the initial sprigging month.

Sprig cover treatments influenced initial bermudagrass coverage when turf blankets were removed but had no long-term impact on establishment through to the study's conclusion (Table 2). The EG turf blankets alone and in combination with compost increased initial bermudagrass coverage after removal by 9 and 16 percent, respectively. The addition of compost alone did not enhance initial green bermudagrass coverage. The estimated time to reach BC90 was approximately five weeks after blanket removal, regardless of cover treatment at sprigging.

The cover treatment responses as determined by bermudagrass coverage were not impacted by the variability in winter moisture in these studies in Blacksburg, Va. In this experiment, the initial growth impacts of the blanket and/or compost treatments on bermudagrass establishment were short-lived. The temporary improvement had no long-term biologically significant implications on bermudagrass establishment. However, we expect that leaving the EG blankets in place beyond May 10 would have continued to accelerate bermudagrass greening based on previously reported spring bermudagrass greening responses to blankets from (1). Other research reported negative effects on turf growth from surface-applied compost treatments, but we observed no visible response

TABLE 1

Cover treatment	Coefficient of Determination	Initial Coverage	Lower Standard Error	BC_{90}	BC_{90} Standard Error
	r^2	% BC[a]		week	
Uncovered	0.88	20	2.4	5.1	0.22
Compost	0.83	24	3.4	4.8	0.20
Evergreen Blanket	0.86	29	2.2	4.9	0.21
Compost + Evergreen	0.80	36	3.0	4.7	0.17

[a]BC, Bermudagrass Coverage

Estimated initial bermudagrass coverage at blanket removal on May 10 and number of weeks after removal to reach 90 percent Latitude 36 bermudagrass coverage (BC_{90}) as predicted by four-parameter nonlinear regression for various cover treatments.

in bermudagrass coverage from the addition of compost (7). Further research with compost topdressings is warranted because of the highly variable physical and chemical aspects of compost sources.

Possible concerns with the earliest planting dates in our research trials include more prolonged periods in the field for the sprigs to be exposed to environmental extremes in temperature, moisture, possible wash or movement from the soil and increased weed pressure arising from the loss of preemergence herbicide residual activity.

Previous research in Texas under irrigated conditions indicated that sprig survival in winter establishments was affected by severe cold (5). A concern observed in our study was the inconsistency in bermudagrass establishment across both years from an April sprigging date. Our analysis excluded these data because of an April 2018 establishment failure. We hypothesize that an extreme weather event compromised sprig viability just before sprig harvest at that time.

Weather data for the sod farm that provided the sprigs indicated dramatic temperature fluctuations at their site before the sprig harvest in 2018. The high air temperature on April 4 was 75 degrees F, and bermudagrass was mainly green and actively growing (Gary Wilber, owner of Oakwood Sod Farm, personal communication, 2018). However, with extremely cold temperatures followed by the nighttime low on April 5 reaching 0 degrees F (10), it is possible that the dramatic drop in temperature damaged the grass in the area that was harvested for sprigs.

The same plant material source that failed in the April 2018 establishment was planted in another research trial at the nearby Virginia Tech golf course. The similar failure at both sites suggests that sprig viability might be a concern for planting success, especially when sprig harvests are made during transitional periods from winter dormancy to active growth.

Golf courses in locations with suitable temperature and moisture levels for dormant grass establishment might be able to take advantage of earlier establishment techniques, particularly if supplemental irrigation is required for a standard late spring/early summer establishment. Future research evaluating different bermudagrass cultivars and dormant sprigging establishment versus standard bermudagrass planting dates is needed, as well as studies to evaluate establishment success potential in climates with seasonal temperature and moisture expectations that differ from those of this region of the Transition Zone.

Acknowledgments

The authors acknowledge the support of Game Day (Chantilly, Va.) for its custom bermudagrass row-planting services, Oakwood Sod Farm (Salisbury, Md.) for providing the sprigs, Covermaster (Ontario, Canada) for the turf blankets and the Virginia Agricultural Experiment Station. Mention of trade names or commercial products in this publication solely provides specific information and does not imply a Virginia Agricultural Experiment Station recommendation.

Article adapted from Herrmann M., Goatley J., McCall D., Askew S. Establishment of dormant Latitude 36 bermudagrass sprigs in the Transition Zone. Crop, Forage & Turfgrass Mgmt. *2021;7:e20087. https://doi.org/10.1002/cft2.20087*

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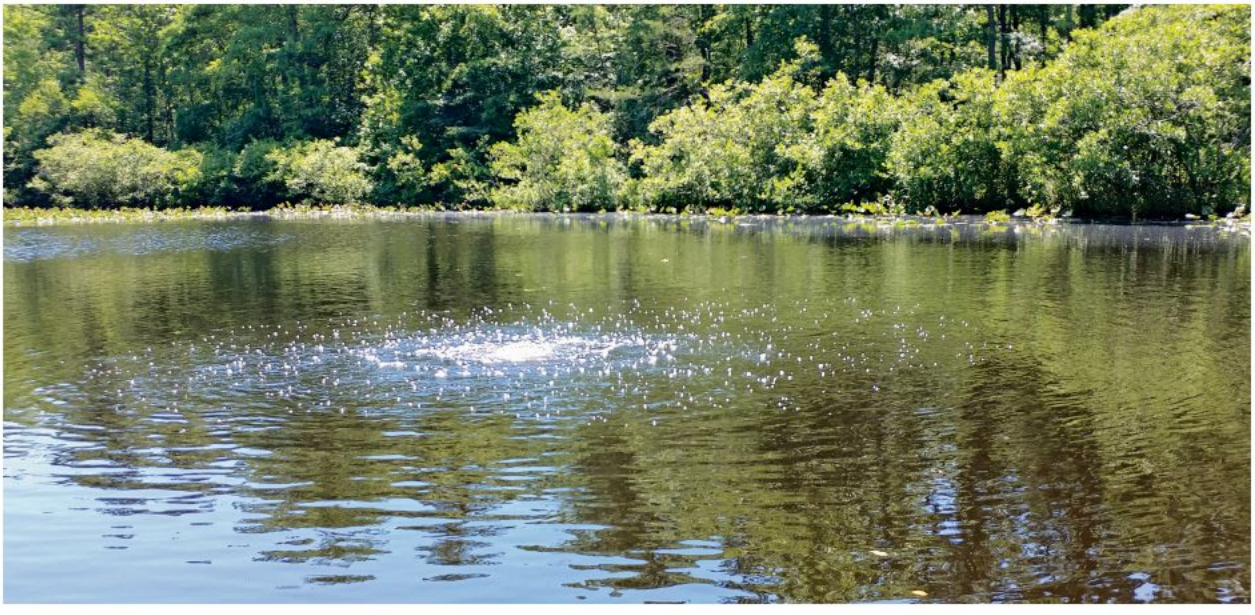


To dewinterize ponds, superintendents should perform diffused aeration and add beneficial bacteria products.

Keeping Old Man Winter at bay

TO TREAT THEIR WATER FEATURES' MUCK DURING THE WINTER, SUPERINTENDENTS MUST OXYGENATE THEM

By Chris Lewis

As superintendents prepare to winterize and then dewinterize their courses' water features, the most important aspect of their maintenance processes is consistency. To ensure consistency and, in turn, long-term success annually, age must be the first characteristic they consider as they plan their winterizing and dewinterizing strategies.

"Superintendents must consider age, especially in regard to large lakes and ponds," says Brandt Reynolds, sales manager, Blue Thumb. "Generally speaking, as a lake or pond ages, it will need more and more attention if it hasn't been properly cared for previously."

Brandt Reynolds

He continues, "This is, in part, due to nitrogen and phosphorus levels, which increase over time, as a result of agriculture fertilizers, animal waste and sewage runoff, along with other factors."

Each year, this type of matter will continue to build up, especially in the bottom of a pond (and, at times, even a lake), thereby creating muck. If left untreated, the muck will increase every year, as ponds, in particular, are unable to clear this material quickly on their own, primarily because of anaerobic bacteria. After all, this type of bacteria exists in low oxygenated areas of ponds, along with some lakes, and does not work as quickly to digest organic material as other types of bacteria do.

According to Reynolds, in order to ensure anaerobic bacteria becomes more active, superintendents must oxygenate their ponds on a consistent basis. He believes the best method is diffused aeration, which thoroughly adds oxygen to bodies of water, leading to the generation of aerobic bacteria.

In addition to diffused aeration, the introduction of beneficial bacteria products to bodies of water also increases water quality and clarity considerably.

"This combination of treatments and aeration will help stave off algae and weed growth," Reynolds says. "However, when these nuisances start to show, additional algaecides and/or weed control products will be needed, based on superintendents' courses' climates, especially the average length of their winters."

He adds, "And, at the same time, in preparation for dewinterization, superintendents should also order beneficial bacteria and supplies now — as they look forward to the warmer months ahead."

PHOTO COURTESY OF PONDHAWK BY LINNE INDUSTRIES

Air-O-Lator Corp.

ROY WATKINS
President

Remember to keep an eye on your equipment. The shifting weather can sometimes affect your equipment. The colder months are a great time to bring your equipment out of the water and clean it before winter comes. Clean and inspect your fountain for nicks and wear. Pay attention to the power cable attached to your fountain and consistently monitor the water levels. Examine the clarity of your water and check for insufficient oxygen levels. Watch for visible signs of unhealthy water, such as the presence of algae, odor or sediment buildup. Any time is a great time to order replacement parts, but it's an especially good time after you've inspected your fountain. If you're in an area that does not get below freezing, this is a good time to clean and inspect your fountain and replace any worn or damaged parts, prior to storing them for the winter.

PondHawk by Linne Industries

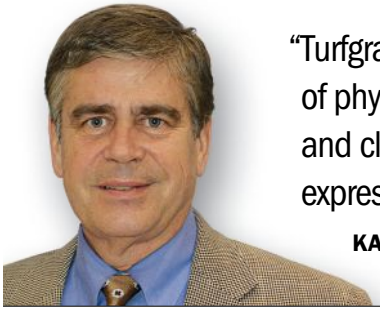
SANDRA BURTON
CEO and founder

Superintendents should be mindful that not all water features require winterizing, storage and reinstalling during springtime. Superintendents that use PondHawk solar-powered water aeration have none of the annual weatherizing hassles that are common with electric water features. PondHawk's electrical and mechanical components are located safely in the enclosure behind the solar panel. Only the rugged freeze-safe diffuser and weighted airline are in the water. Since it doesn't have any winter removal needs, PondHawk remains operational throughout the winter months, delivering the benefits of increased dissolved oxygen and circulation year-round, while also improving water quality and reducing the need for other treatments. Additionally, winter operation decreases ice cover, which reduces the risk of thin ice. However, if a frozen pond is desirable, simply turn off the power switch. No more winterization hassles.

Atlantic-Oase

DEMI FORTUNA
Director of product information

In warm areas, winter is a good time for unobtrusive maintenance. In cooler water, it's time to rebuild compressors, replace seals or diaphragms and clean diffusers. Ponds, streams and falls may benefit from a good cleaning, but in year-round resort areas, it can be a challenge to schedule. In areas that do freeze, remove surface aerators for maintenance and cleaning, prior to storing them dry. Move submerged diffusers from deep spots during the summer to the shallows to keep small areas ice-free, ensuring good oxygen levels and preventing buildup of toxic gases. Discontinue beneficial bacterial applications when water temperatures drop and bacterial decomposition slows. Blow out fountain and plumbing lines, along with the irrigation lines. Finally, trim marginals along edges and aquatic plants now, as they'll sprout fresh and attractive foliage in the spring.



"Turfgrasses face a collection of physiological, pathological and climatological factors that express themselves in maladies."

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

Eclectic look at early spring

Spring reminds me of the start of a sports car race. From a standing or slow speed start, the rapid or instantaneous increase in speed results in a frantic, dramatic, mismatch-looking scene of cars out of position. Early spring when turfgrass growth is just starting looks much like the start of a race, a mess that quickly accelerates to high speed.

The result is that turfgrasses face a collection of physiological, pathological and climatological factors that express themselves in maladies. The turf tends to struggle along during this spring start until temperature and moisture become ideal at which the turf growth and health become more predictable. Below are just a few of the early spring issues that add drama.

The appearance of annual bluegrass (*Poa annua*) on creeping bentgrass turf, especially on greens, is one of the most striking signs of early spring. This can be especially disconcerting if the creeping bentgrass greens were "clean" the previous fall. Annual bluegrass germinates in the fall and often is not observed due to the existing turf cover. The appearance of annual bluegrass can be enhanced from winter golf play. Wear to the turf can result in thinner turf or gaps that can enhance annual bluegrass colonization.

If there is any good news, the annual bluegrass that has appeared and was not apparent in the fall will be mostly annual in nature and should disappear with the arrival of summertime temperatures.

Early spring is a time when variation in color is evident. Although we and most golfers want the turf to be a uniform green color on the first real warm day of play, in many instances, this is not the case because of microconditions (soil temperature variation, shade, temperature) that can result in various stages of dormancy being broken. Outside of the normal color tones of dormancy, color variation is a sign of potential issues.

If the turf appears orange or even bright orange in early spring, basal anthracnose occurs on both annual bluegrass and creeping bentgrass at this time of the year. Basal anthracnose appearing in the early spring is often due to superintendents not getting complete control of the disease in the fall. Usually, the pathogen ends up overwintering in a significant amount to cause infection in late winter/early spring.

Purple patches are a common sight on creeping bentgrass. The purpling is a physiological response to warm sunny days followed by a rapid drop in temperature at sundown. The result: anthocyanin in the leaves is expressed. The purpling should disappear once warmer temperatures arrive later in the spring.

From an early spring perspective, is there nothing better to describe spring than crabgrass germination? In some instances, we use physiological events, specifically plant phenotypic keys, to time preemergent crabgrass herbicide treatments. The full bloom of the eastern redbud tree and forsythia bloom are often used to make preemergent crabgrass applications.

In the northern U.S., one of the most disturbing sights of early spring is the appearance of the annual bluegrass weevil. The annual bluegrass weevil continues to expand in both geography and severity. The presence of the adults occurs in early spring and requires immediate attention. Where other early spring maladies — either physiological, pathological or weather — tend to disappear as spring proceeds and summer arrives, the annual bluegrass weevil can continue to persist.

In the southern U.S., early spring is the time warm-season turfgrasses break dormancy. At about the same time, large patch is caused by the pathogen *Rhizoctonia solani*. Specifically, the strain for large patch that separates it from brown patch on cool-season turfgrasses is described as *Rhizoctonia solani* AG 2-2 (LP), while the pathogen for brown patch is *Rhizoctonia solani* AG 1-A.

Large patch attacks with varying degrees of severity on seashore paspalum, centipedegrass, zoysiagrass and St. Augustinegrass. Bermudagrass is the least susceptible of the warm-season turfgrass mentioned. Once temperatures rise into the 80s, large patch often disappears.

There is little doubt that early spring is an exciting time in the golf course world. It is the time for turfgrass rejuvenation and a new start to the year. However, with any new start, it is often bumpy.

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

No match for nematodes

EXPERTS EXPLAIN HOW A COMBINATION OF A SOIL SURFACTANT AND NEMATICIDE HELPED WARD OFF NEMATODES

By Sarah Webb

What do you get when you mix a nematicide and a soil surfactant?

That's exactly what Bruce Martin, Ph.D., CEO of Turf Research and Diagnostics and retired professor of plant pathology from Clemson University, sought to discover by setting up a study on a golf course that had a history of sting, root-knot and lance nematode infestations.

The study looked at bermudagrass plots with a mixture of nematicide Divanem and wetting agent Excalibur, Divanem by itself and Excalibur by itself. The study included four applications of each at recommended label rates on a monthly basis.

"The use of a surfactant in a nematode management program is not new," Martin says. "(We knew) it helps if we fertilize properly, if we get better water distribution, if we don't allow drought stress, etc. So, we were using the soil surfactant as another component in a nematode control program."

The idea to combine the two came about because, Martin says, the nematicide by itself often binds to soil organic matter pretty tightly, and it's difficult to get it down through the soil profile, where the roots are extending and where the nematodes may be concentrated and feeding on the roots.

A look at the combination of Divanem and Excalibur on June 4 after two applications.

PHOTO BY: BRUCE MARTIN, PH.D.

"If we can't get the pesticide to the pest, we're going to get poor control," Martin says. "We try to get around that by using a lot of water in post-application irrigation so that we can move it down with water, and that's somewhat effective. That's also where the addition of a soil surfactant would presumably help in moving the nematicide down deeper in the soil profile so that we get better contact of the nematicide with the nematode."

All told, Martin says the combination of Excalibur and Divanem provided the best treatment.

"The interesting thing was that the Excalibur by itself was actually better from the standpoint of turf quality improvement than the nematicide by itself. So that was telling me this surfactant is a very powerful tool for managing the stress," Martin says. "It's allowing the water to be used more efficiently in a more uniform distribution, deeper in the soil profile."

Sam Green, president at Aqua-Aid Solutions, cautions that the wetting agent is not a nematicide nor is it labeled as such.

"The wetting agent itself is not affecting the nematode, but it is exponentially helping the nematicide Divanem work better in the soil to combat the pest," Green says.

However, Martin says that as summer temperatures increase and many parts of the U.S. contend with higher nematode populations, this technique could prove to be useful.

"A soil surfactant on greens is fundamental, whether it's cool-season grasses or warm-season grasses," Martin says. "It just gives superintendents a tool crucial for improving the outcome of a nematode control program."

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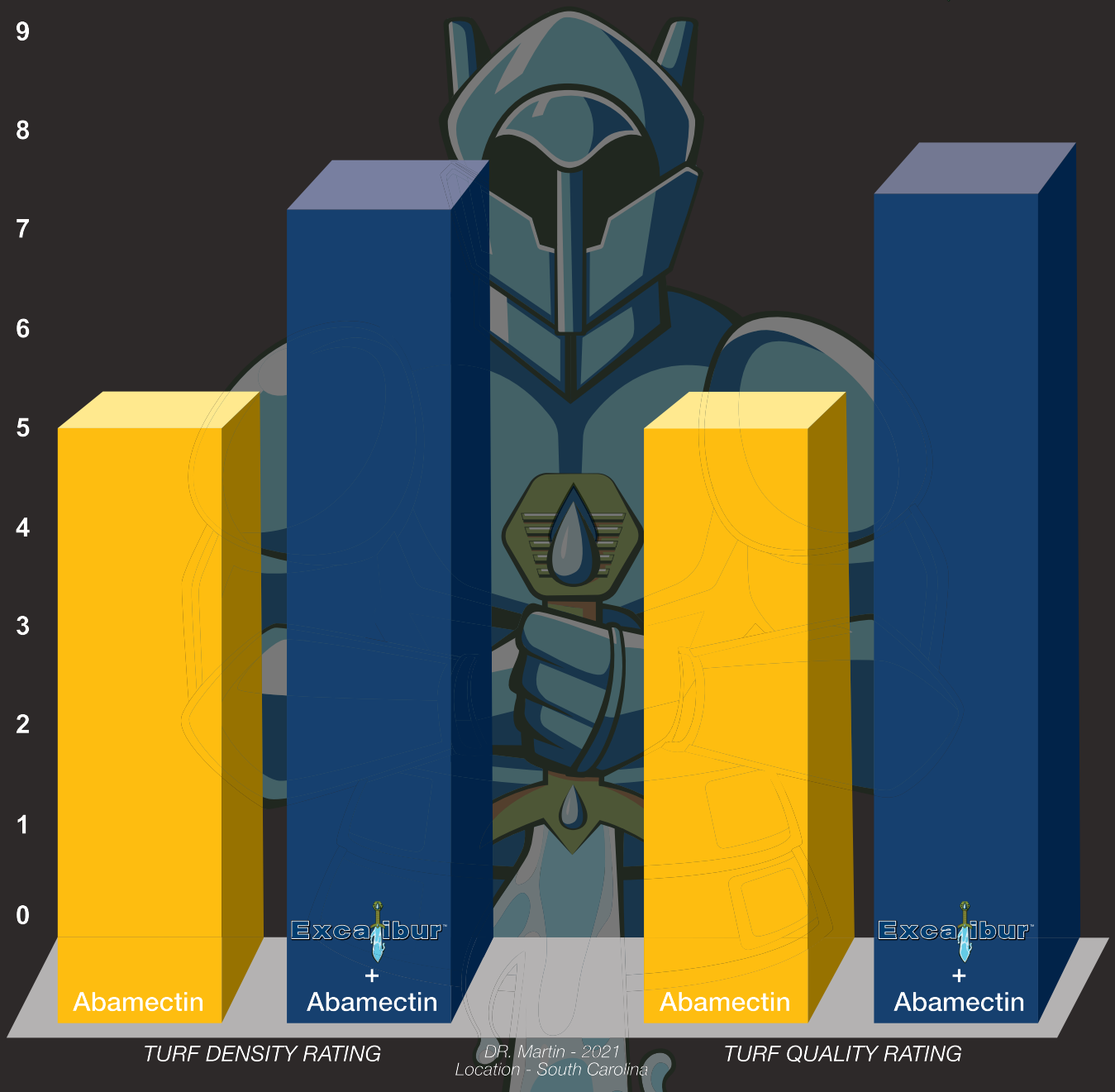
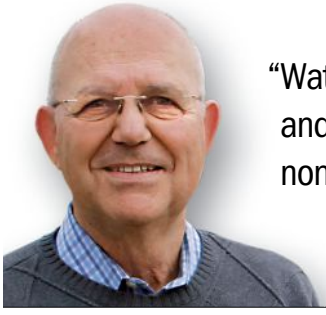


"What I see is that Excalibur has a stronger influence on turf density and quality than Divanem alone. The combo is superior and is the strongest treatment effect I have ever seen from Divanem and a wetting agent" **- Dr. Bruce Martin**

AQUA·AID SOLUTIONS



"Water budgets, ET-based scheduling and soil moisture meters were all nonexistent before the 1980s."

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

Worth the investment

Many have asked about the economic benefit of the USGA Green Section's research program during my 30-year tenure as the director of research. Unfortunately, I never had a solid answer but saw firsthand the implementation of research results on golf courses.

For me, the most direct benefit to talk about is new turfgrass cultivars developed at universities with USGA funding support. We could see the grasses on golf courses and many professional and university sports fields. An annual royalty income of $200,000 to $300,000 totaled more than $6 million by 2019.

Water conservation, primarily in the Southwest, was another successful adaptation of research in the 1980s and 1990s. Water budgets, ET-based scheduling and soil moisture meters were nonexistent before 1980.

I know that the research on the fate of pesticides and fertilizers helped quiet environmental critics of the golf courses. The USGA-funded scientists contributed significantly to revised modeling of the pesticides and nutrients leached to groundwater or runoff into surface water.

These are just a few benefits of the research, yet what was the economic impact? Did the USGA's millions of dollars spent on research return a significant financial benefit? I certainly thought it did, but it was not a budget priority for years.

As time went on, the focus on metrics, return on investment and all the other measures of an economic impact needed examination. It was essential to get answers, and funding was available for work to begin in late 2018.

Interestingly, Turfgrass Producers International (TPI) wanted to know more about how people view turfgrass. In 2018, the results of their survey became available. Casy Reynolds, Ph.D., executive director, presented what consumers know about turfgrass. There was some excellent information, but the two takeaways for me were people confuse turf or turfgrass with artificial turf and that natural grass was a better name. TPI now uses the motto "Keep it Real" and includes "Natural Grass" in its logo.

Fleishman-Hillard conducted the survey and analysis for TPI, and I asked Casey Reynolds for a contact. Cole Thompson, Ph.D., was finishing his first year as the assistant research director with the USGA and initiated the economic impact project. He started working with Kim Funcik and Eric Rydell, Fleishman-Hillard True Global Intelligence.

Phase one of the project included in-person interviews with USGA Green Section staff and 12 superintendents to make sure the questions were sensible. By winter 2019, the online survey started with superintendents, and a lot of the data was collected just as COVID hit the country. The GCSAA was a great partner in helping with the survey distribution.

The data collected from the survey focused on the benefits associated with golf facilities' adoption of research-based management practices in six primary areas of interest: (a) evapotranspiration-based irrigation scheduling (water budgeting), (b) soil moisture sensing, (c) best management practices that reduce non-point source pollution by fertilizers and pesticides, (d) putting green construction techniques, (e) naturalized roughs and (f) improved turfgrass cultivars.

Thompson and Don Kridel, Ph.D., worked with the survey results and developed economic models to estimate the economic impact of the USGA investment in research. The first peer-reviewed article appears in the *International Turfgrass Society Research Journal* (see **https://doi.org/10.1002/its2.91**) and focuses on the first three areas.

The golf industry has adopted all three research-based management practices with an estimated annual financial benefit of $1.03 billion. The benefits of the research were made possible by the dedicated service of the Turfgrass and Environmental Research Committee, the countless scientists who have tirelessly conducted experiments, the USGA Executive Committee and senior leaders, Green Section staff and, of course, the companies and golf course superintendents who apply research and ultimately reduce resource use on golf courses.

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

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MulchMateUsa.com

3 | Jacto PJB-16 Battery-Powered Professional Sprayer

The 4-gallon **JACTO** PJB-16 offers consistency, accuracy and efficiency for on-target delivery of spray solution, according to the company. Using a rheostat type controller, this model offers fingertip pressure adjustments to deliver material in the right pressure and volume. Jacto's PJB is equipped with an easy-to-change rechargeable lithium-ion battery. Typical battery run times per charge average 35 to 40 tanks of spraying.

Jacto.com

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4 | Stihl FSA 135 and FSA 135R battery-powered string trimmers

Part of the new **STIHL** 135 professional battery platform, the FSA 135 (pictured) and FSA 135 R battery-powered trimmers feature an on-board battery slot that can support both an on-board battery or a backpack battery for longer run times. Paired with a brushless motor and the same drive and cutting components used in Stihl professional gas trimmers, these units deliver professional cutting performance comparable to Stihl gas units with zero exhaust emissions and low noise.

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5 | Atlantic Deep Water Aeration Systems

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6 | Kioti K9 2400 Cab

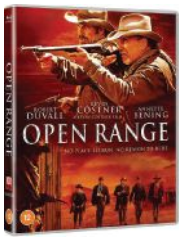
For superintendents in search of a fully featured, tough and reliable companion that's ready to work year-round, **KIOTI**'s K9 2400 Cab UTV is just the machine. The soon-to-be-released model will join Kioti's popular K9 Series of utility vehicles, with a factory-installed full-size cab featuring air conditioning and heat. With a 24-hp, three-cylinder diesel engine reaching speeds up to 31 mph, operators can work with efficiency and ease.

Kioti.com

The 19th Hole

Cory Griess

SUPERINTENDENT // Prairie Dunes CC, Hutchinson, Kan.



Cory, drinks are on me — what can I get you? I'll take a Coors Light … 16 ounces.

Tell me about your family. My wife is Abbey, and we've been married seven years. We've got two boys, Heath and Graham, and another boy on the way in April. And we have a 6-year-old wirehaired pointer named Doc. We'll be a busy house.

How long have you been at Prairie Dunes? Six years. I started in 2014. I was on the team for the NCAA Championship. I was here for four years, left for two to be the assistant at Ballyneal (GC, Holyoke, Colo.) and then I came back and took over for Jim (Campbell) in June of last year.

Next time I'm down there at Prairie Dunes, where are we going afterward? We've got to grab a beer at the Rusty Needle. Coors Light, Bud Light pounders, $2 apiece. You can't beat it.

What are your sports teams? I grew up a Husker, so I bleed red. And I'm a Chicago Bears fan, do or die.

OK, you can only pick one: favorite Kevin Costner movie? *Man…* I'd say "Open Range." Kevin Costner, Robert Duvall? That's as Western as you can get for modern movies right there.

What's your favorite tool or piece of equipment to get the job done? My guys! We dub them 'The Dunes Crew,' and that's myself included. The assistants, the AITs, the crew, the mechanics … they're the biggest assets anyone could have. These guys and gals grind it out every day. They'd do anything for me, and I'd do anything for them.

Thanks for coming to the 2021 *Golfdom* Summit. Any surprises there? I'd say the networking. I had heard it was good and that I'd meet a lot of guys, but the networking blew me away. It's way more intimate between vendors and superintendents. I'm still talking to guys I met. I think there were lifelong relationships that were forged.

Speaking of lifelong relationships, it's my understanding that you fell in love with and married your assistant pro? We met in Omaha at a club up there, she moved here first, then we got engaged and I followed pretty quickly. Jim had a spot for me, and the rest is history. She was a scratch golfer — she'll say she's a 3 now, but I think she's sandbagging.

Did it get awkward when you and Abby were making the guest list for the wedding? Were you nervous about getting the front of the house and the back of the house together? No, they get along so well. The wedding was a great time … some people had too much of a good time, but there's nothing wrong with that.

As interviewed by Seth Jones, Jan. 20, 2022.

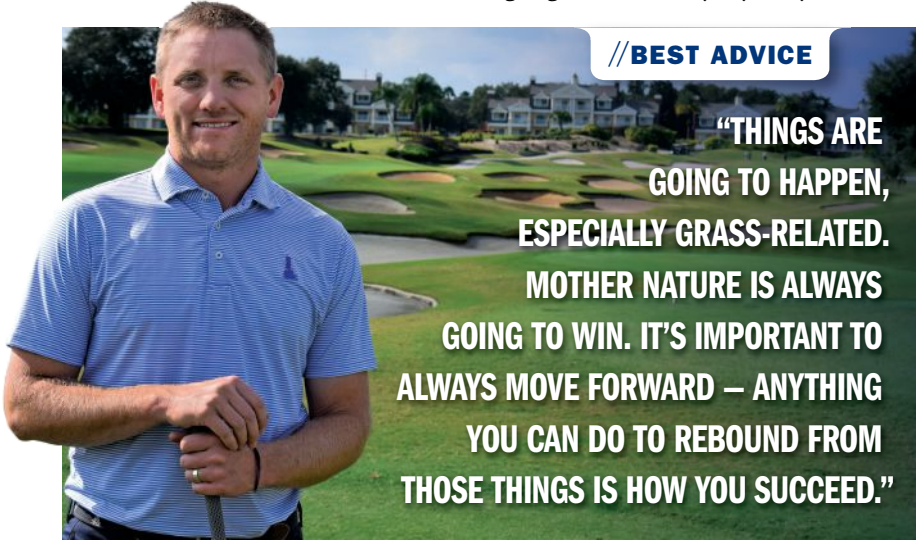


PHOTO OF CORY BY: *GOLFDOM* STAFF

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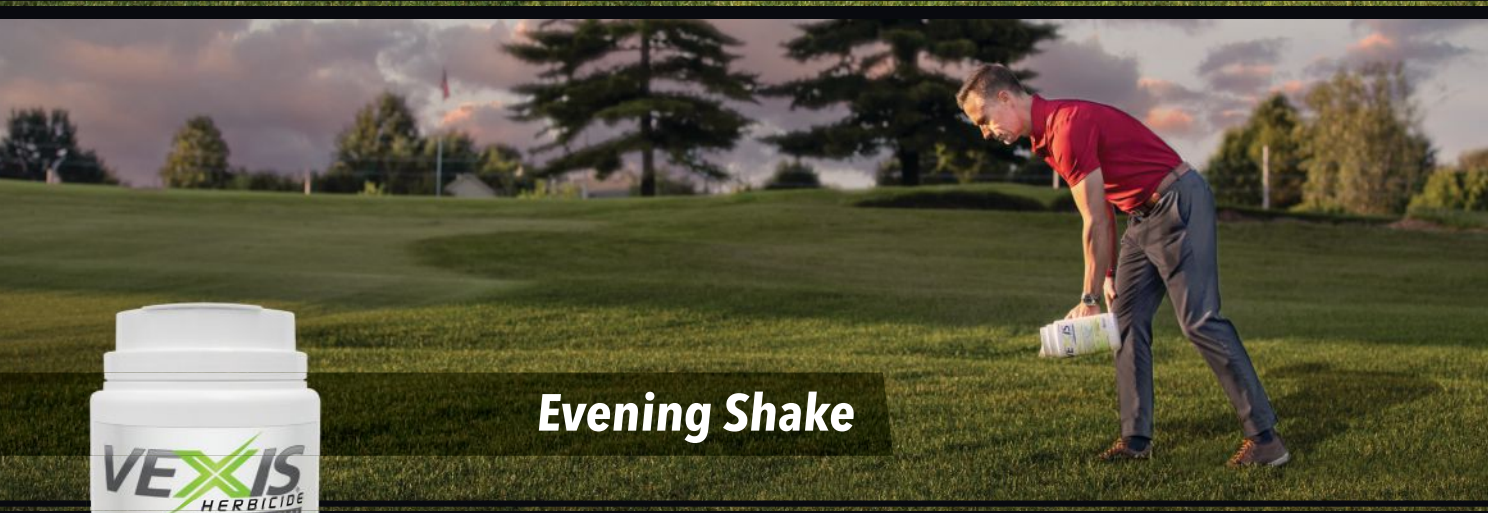

Whether it's a dewy morning, a dry afternoon, or before the sprinklers turn on at night, **Vexis® Herbicide Granular** revolutionizes sedge and kyllinga control. Vexis offers:

- Turf safety: Labeled for the most sensitive turf species
- Flexibility: Apply to wet or dry turf
- Simplicity: Granular formulation reduces drift

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