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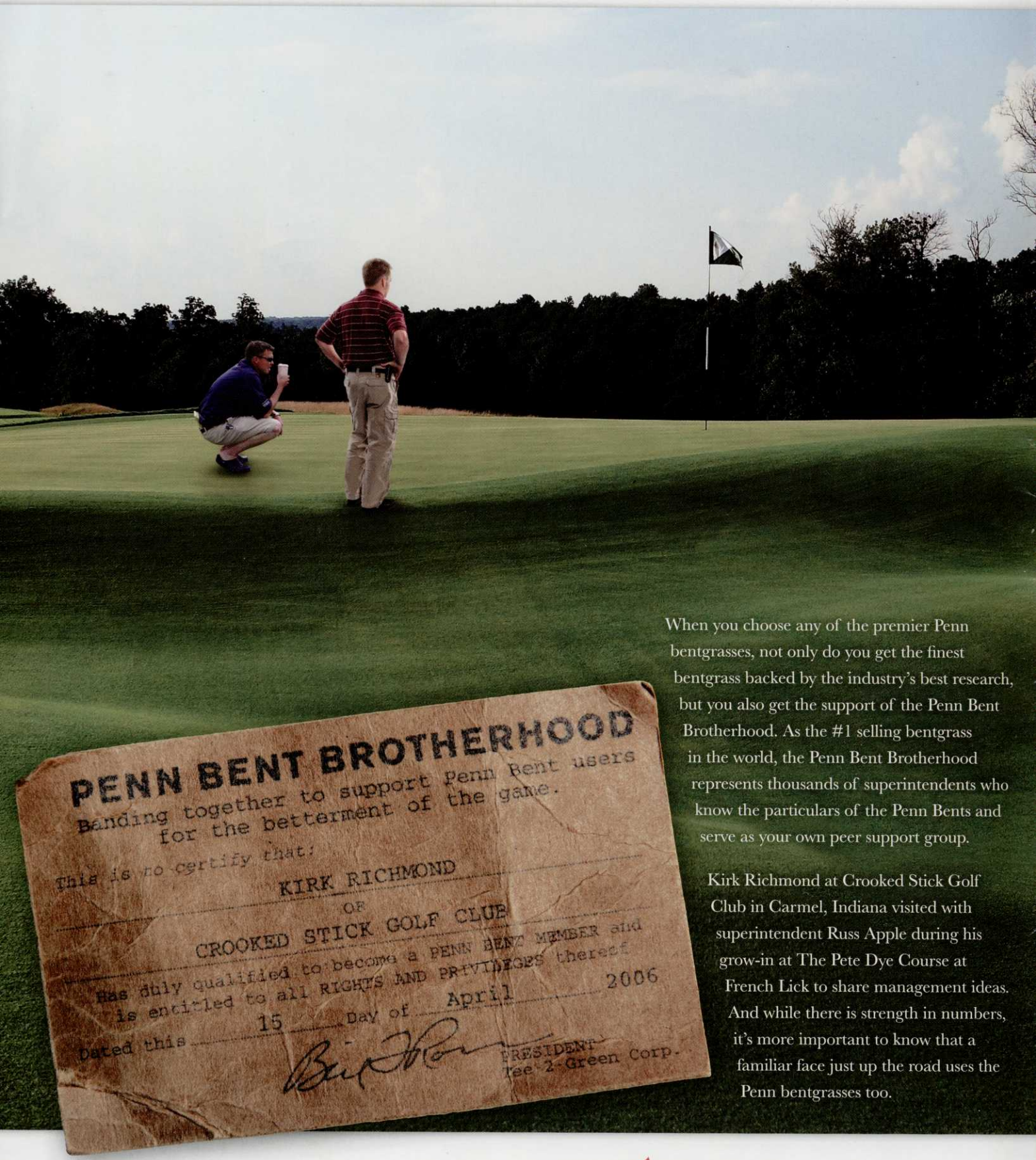

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Kirk Richmond at Crooked Stick Golf Club in Carmel, Indiana visited with superintendent Russ Apple during his grow-in at The Pete Dye Course at French Lick to share management ideas. And while there is strength in numbers, it's more important to know that a familiar face just up the road uses the Penn bentgrasses too.

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AMENDING FAIRWAYS

When blended with sand at 10 percent by volume, Lassenite Soil Amendment improved water-holding capacity of golf course fairways.

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NEVER SAY NEVER AGAIN...

There aren't many sure things in life. Some would cite the old "death and taxes" maxim. Others would remind us that, "The sun will rise tomorrow." Superintendents would, of course, moan: "Golfers will bitch no matter how perfect the course is." Everybody has their own take on it.

For me, the only absolutely sure, indisputable, unarguable fact in the world is that Sean Connery was the best James Bond ever. If you attempt to tell me differently, you will likely get a poke in the nose. Pierce Brosnan, my ass.

As Bond, Connery was, quite simply, the coolest guy ever. He drove amazing cars, frolicked with fabulous women and killed bad guys in a myriad of creative ways. Hell, he even still managed to beat Goldfinger at golf after the fat little jerk cheated.

Connery retired from the Bond role in1971 after "Diamonds Are Forever" and did some crappy movies before unretiring in 1983 to make "Never Say Never Again." The film's title comes from those who reminded him that he had repeatedly and loudly vowed to *never* make another Bond flick.

Well, I was thinking about Sean Connery's change of heart just a few hectic weeks ago when I found myself enthusiastically agreeing to become GCI's publisher and editorial director. For five years, I had also repeatedly and loudly vowed to anyone who would listen that I would *never* return to the corporate rat race. I would *never* go back to all the hassles of running a magazine. I would *never* give up being my own boss. And I would positively *never* give up the cushy consulting lifestyle that allowed me to lounge around all day in my flannel pajama pants and well-worn fuzzy slippers.

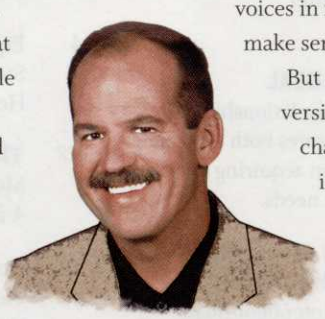
But I figured if Sean Connery – the coolest man on the planet – could eat his words then a bonehead like me certainly could, too.

That said, I do think hypocrisy of this magnitude begs a little explanation, so here goes:

GCI has grown and blossomed beautifully in a relatively short time. I'm jumping on the bandwagon just as the magazine is on the verge of greatness. Thus, I can take all the credit without having done any of the actual work.

Being your own boss sucks. There's no one to blame when the copy machine jams and this guy who claims to be my "Uncle Sam" calls constantly looking for money.

As much as I loved working solo at home, I began to realize that showering and shaving occasionally had benefits. Plus, all of the voices in my head were starting to make sense.



Pat Jones
Editorial director and publisher

But seriously folks…The short version is that I've had a lot of changes in my life – I'll be writing about those in my "Parting Shots" back page column in coming months – and I've made a commitment to reinventing myself. Lord knows I needed to. And, over the years, the owners of GCI have treated me like family. When they offered me a larger role with the magazine, it just felt right.

The other thing that felt right was the opportunity to help make GCI a publication that truly leads our industry. We're lucky enough to be able to send this magazine to 30,000 of our friends every month. We damned sure have an obligation to inform, stimulate, educate and even provoke you on every page of every issue. I promise you here and now we'll fulfill that obligation. And this time, that's a vow you can be sure I will never break. **GCI**

Pat Jones

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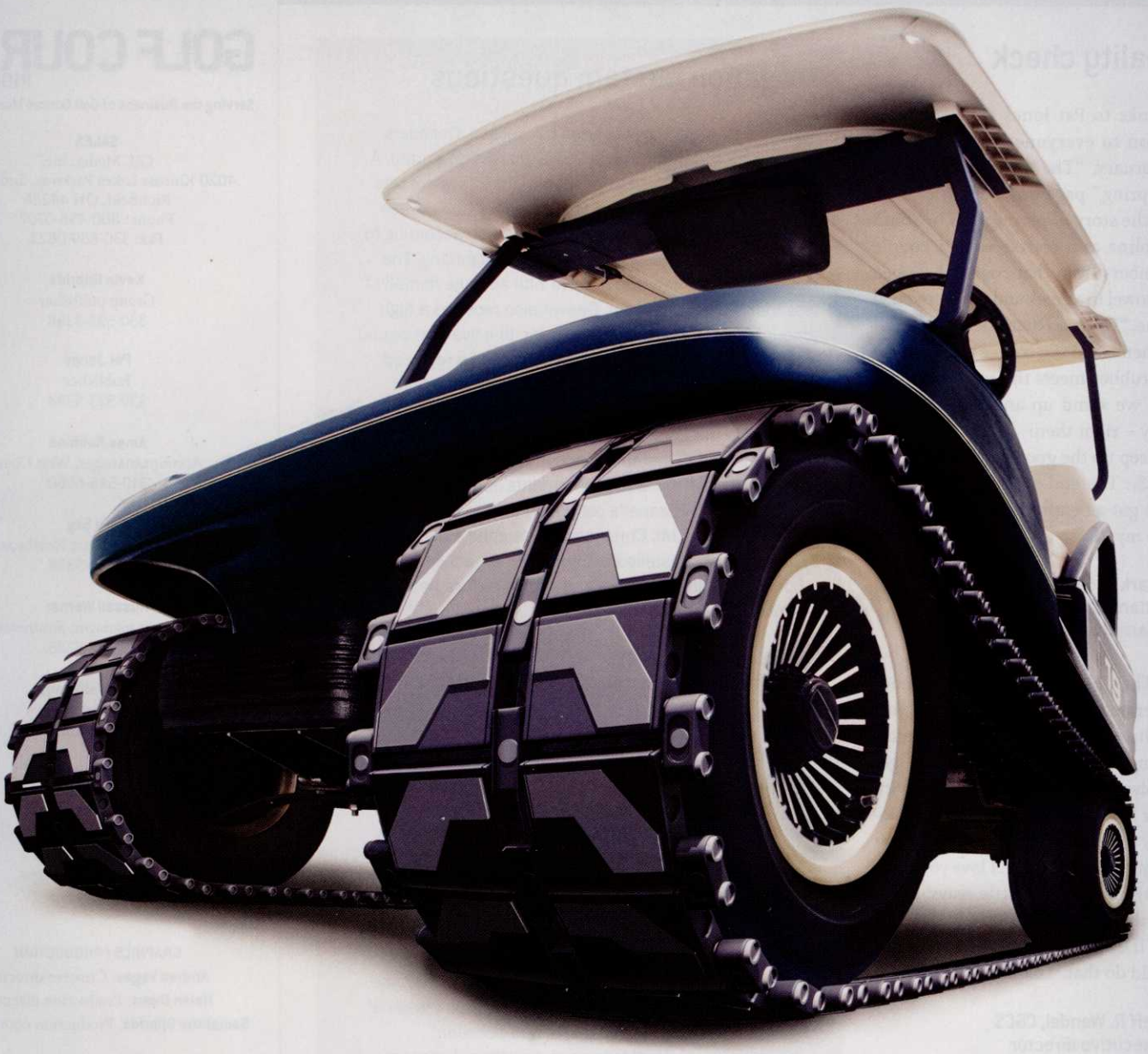

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We'd like to hear from you.

E-mail us at gci@gie.net with your thoughts and opinions.

Reality check

Thanks to Pat Jones for the call to action to everyone in the industry (February, "The Cold Hard Reality of Spring," page 66). Often I get to tell the story of playing golf in South Carolina at a course with a couple members from that course. I dipped my towel in a creek and they screamed at me, "Don't do that; the water is full of chemicals!" Of course this is where the rubber meets the road for us all. Can we stand up and tell the right story – right then?

Keep up the good work.

P.S.: The end of the story is those guys got an earful after they tried to save my life!

Mark Esoda, CGCS
Atlanta Country Club
Marietta, Ga.

"The Cold Hard Reality of Spring" is perfect and excellent timing. I just published an article in our newsletter asking Iowa superintendents to get involved at the grassroots level with their local and state 'politicians.' Nobody wants to do that, but we know it is critically important. I love your 'five relatively painless little ways' angle and think we could make huge progress if even 25 percent of our people would do that. Thanks, as always.

Jeff R. Wendel, CGCS
Executive director
Iowa Turfgrass Institute
Ames, Iowa

In response to Pat Jones' Feb. column, I'll give a shout for Mike Crawford, TPC Sugarloaf, Duluth, Ga. Yes, he is one of my peers in the TPC Network, but he is a 2010 EGR recipient for his tremendous work in Georgia with water issues. His work was extremely beneficial for superintendents in Georgia during the recent drought in that state.

Roger A. Stewart Jr. CGCS
Director of golf course maintenance
TPC Twin Cities
Blaine, Minn.

Irrigation system questions

I feel Erik Christiansen's column ("Satellites, Decoders and Disaster," January, page 23) is grossly inaccurate. A new 1,400-head, FD 101 decoder irrigation system was installed five years ago here at Aurora Hills Golf Course near Denver, Colo. The system was installed according to all manufacturer specifications including lightning. The Denver area is a very arid climate with average rainfall of less than 15 inches a year. Denver also receives a high amount of lightning strikes each year. In a five-year period less than 10 FD101 decoders have had to be replaced because of lightning. Christiansen's comments about decoder systems falling short in lightning protection and survivability are just not the case. The performance of our decoder irrigation system is second to none. I am a little confused by Christiansen's statements about decoders, as well. In Jeffrey Brauer's column in the same issue (page 18), he mentions Mr. Christiansen designed a decoder system that was installed at Firekeeper to reduce wire, labor costs, field controllers and should reduce potential for lightning strikes. What gives?

Michael P. Osley, CGCS
Aurora Hills Golf Course
Aurora, Colo.

Erik Christiansen responds

System users, irrigation designers and industry friends responded to my January column with an interesting mix of agreement, disagreement and personal experiences. As with many issues superintendents face daily, no one answer fits; nor does one professional's experience translate to all others. Both system types are proven successful, and both have been around for at least 50 years sporting a variety of brands, versions and applications. Users of each type have had good and bad experiences. Based on my experiences as a professional irrigation consultant, both satellite and decoder systems have very loyal followings. Irrigation designers, superintendents and sometimes even contractors tend to polarize toward one or the other.

Over the years, I've designed both types of systems and have seen both succeed. I openly discuss with clients the pros and cons of both system types and how they apply to their specific projects, site conditions, budgets, crews and other factors. My goal is to use all of the facts, experience and data to provide the absolute best advice to my clients, according to their needs and resources.

I stand by my recommendation under the scenario presented: For a large system in a hot, arid, lightning-prone area, where a lack of irrigation can damage turf within 24 to 48 hours, I would recommend a system that had the greatest back-up watering capability – a satellite system.

I enjoyed the feedback and appreciate everyone who took the time to write in or contact me. To me, this is what makes a great column topic – people openly sharing their depth of knowledge and experiences that offer practical benefits to current and future decision makers.

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6 REMODELING BLUNDERS TO AVOID

I recently saw a newspaper article titled, "The Top Home Repair Blunders." After a quick read, I realized that with minor tweaks, they are the same six blunders to avoid in golf course renovations. So, here we go…..

ACCEPTING THE LOWEST BID

I had a neighbor who continually used roving undocumented workers for home repair because they were cheap, and continually had to re-do work when they failed to show up after a few days on the job. He never learned.

In golf construction, low bids are great, and some great deals are out there right now, provided you prequalify the contractor. You can use references and research and/or limit bidders to members of the Golf Course Builders Association of America. If only qualified contractors who understand the work are bidding, then you should be happy with the low bid.

THE FRIENDS AND FAMILY PLAN

This may work for cell phones, but many reputable architects and contractors politely decline projects at their home clubs. The potential for hurt feelings is just too great. Many members will have some – but not all – of the expertise to be successful, raising chances of problems. And, while there have been some great deals from club members, there are enough bad ones to spawn jokes about the "brother-in-law" discount actually being 110 percent of the market price, too.

DIY SYNDROME

Some clubs work under operative phrases like "What could possibly go wrong?" and "How hard can it be?" to justify design or construction by themselves without outside help. But, they don't know what they don't know – until it's too late. Club members who are engineers feel they can design greens or irrigation, and contractors who "have put all kinds of pipe in the ground" except for the specialized golf course drainage and irrigation kinds feel they can build it, but there are little twists to everything.

Even when using your maintenance crews, which are qualified for some construction, a typical problem is that they aren't really equipped in machinery to handle bigger construction projects.

LETTING MAINTENANCE SLIDE

Adding to the problems of an underequipped maintenance staff is that you often expect them to be in two places at one time, which isn't possible.

Another aspect of this is thinking that the golf course is fixed forever after a renovation. In fact, it starts wearing out from the day it opens, and the best time to start saving for the next rebuild 15 to 20 years down the line is right now!

FOLLOWING EVERY TREND

If you have a harvest gold or avocado green appliance, you know how silly trendy things can look later. Some great courses have been disfigured with trendy design styles or features like waterfalls. Our currently trendy hairy fringed bunkers may end up as the beehive hairdos of the 2020s, when our retro-vision should be perfect, right? Past trend initiators had to be pretty sure their style was "last thing" in good taste, too, right?

Although there are exceptions, even if your course is a somewhat bland design, you are usually better off following its styling cues than reinventing it completely. Fix what you must, but be sympathetic to what is there for the best results.

ASKING QUESTIONS LATER

Renovations aren't "shoot first, ask questions later" situations. Determining style, budgets, construction techniques, etc., and picking golf course architects and contractors are best planned in advance, but a surprising number of projects rush to start (perhaps afraid members will change their minds) and leave key questions unasked and unanswered until after construction starts and changes get far more expensive.

I have seen projects spend twice what a contractor would have bid, all in misguided efforts to "save money by not using a contractor and golf course architect." Not realizing that golf courses require just as much expertise in maintaining, planning and building is perhaps the biggest blunder of all. **GCI**

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Tavis Horton has served for 10 years as assistant superintendent at Birmingham Country Club in Michigan. He can be reached at horton31@aol.com.

ASSISTANTS AND SOCIAL MEDIA

Today's career environment has evolved. What's different is that there are more ways to influence getting a job than in the past. We already know the saying is true, "It's not what you know; it's who you know." Well, the number of people you know has now expanded thanks to social networks. People are now able to learn more about you when you utilize and participate in the various social media tools.

LinkedIn has been around for a while as a professional online social network. It isn't an exciting network when you compare it with Facebook; however, it's useful to know that the LinkedIn profile pages are indexed in Google, allowing future employers to find your profile when they "Google" you.

LinkedIn can provide assistants with a new way to network with superintendents, fellow assistants and vendors in the industry and to find peers who share common interests. I have found many superintendents in my area who are on LinkedIn.

I have also found that another interesting aspect of networking exists with the members of golf courses who use LinkedIn. You just never know when your professional interaction with a member on LinkedIn might lead to an invitation for a job interview.

Blogging and sites such as Facebook can lead to hundreds of inquiries on who you are. Your blog is like a resume. The story of our work lives or the story of what we do after work expresses our passion and is now captured in ways we didn't have available before.

With free tools you can share your accomplishments with the world, and with Google's help your prospective employers can determine your Web presence and learn a lot about you before even meeting you.

Online social networks provide the opportunity to learn more about someone through repeated interactions. If you and I are friends on Twitter, I get to see what you consider interesting enough to post into a box. If we're friends on Facebook, I might learn a lot about your interests and the like from what you put on your profile or some of the other groups you belong to.

However, social networking tools such as Facebook and Twitter have the potential to be both a help and a hindrance. They are networking tools that allow you to get the word out to your network that you are looking for work, but they also allow companies to search social media sites and gather data that will help them make decisions about you with or without allowing you to present yourself formally.

Results will vary, but overall, an assistant is just as capable of finding and building networks as anyone else through various social media tools.

The use of provocative or inappropriate photos and poor communication skills will become a basis for judgment above all else.

With any new invention, nothing is guaranteed. What works for one assistant may not work for another, depending on the level of acceptance of social media today vs. the future.

Results will vary, but overall, an assistant is just as capable of finding and building networks as anyone else through various social media tools.

The point is you need to network to grow your career opportunities. Build and nurture your own network in a way that works for you. **GCI**

Sometimes you have to look at things a little differently...

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Erik Christiansen is a licensed irrigator and president of EC Design Group, an irrigation consulting and water management firm based in West Des Moines, Iowa. A board member for the American Society of Irrigation Consultants, Christiansen can be contacted at erik@ecdesigngroup.com.

PUMP SELECTION – FLATTENING THE CURVES

At the heart of every irrigation system beats the pump station. And from that heart flows water – the lifeblood of turf and landscape plants.

For every golf course there are several distinctive requirements – and opportunities – for creating the optimal pumping system. Water sources, power availability, operating window, design hydraulics, emission choices and more determine capacity needs and restrictions around which to actually design a pump station.

REVIEW THE TECHNOLOGY

Background information is always helpful when facing a pump station rebuild or replacement – or when increasing the performance of your existing system. Four basic types of pumps can be used in design to deliver the tremendous range of flows and pressures demanded by modern golf courses and country clubs:

- Centrifugal pumps used for surface or ground water sources are primary water suppliers (transfer pumps). Centrifugal pumps can lift water, but suction/lift capacities vary, usually ffl 10-foot maximum. This brings obvious limitations, along with reduced efficiency, and therefore is not common in today's systems.
- Centrifugal pumps with positive suction pressure are used as surface water boosters – most common in the boost of a water tank or city supply. These systems can be both constant-speed and VFD controlled.
- Vertical turbine pumps also are used as primary water suppliers, moving water from lakes, rivers or wells into irrigation systems. These pumps are most prevalent – often using multiple stages – and can run at lower RPMs. They are most common in today's systems, and when coupled with VFD controls, are the most efficient means of water delivery today.
- Submersible pumps, too, are used as primary suppliers, moving water from lakes, wells or rivers. Trash pumps could fall into this category as well, and are mostly used to transfer water. Said pumps have high initial costs and generally low efficiencies.

ASSESS RESOURCES AND GOALS

Pumps with a high efficiency at minimal flow rates obviously cost less to operate. Constant speed systems that utilize multiple pumps of various sizes are moderately efficient, while variable-speed drives (VFD) use fewer but larger pumps and enable the fluctuation of pump speed to match any oscillating flow requirements, thus producing the highest level of efficiency. Today, as costs go down and efficiency rates go up, about 90 percent of golf controls are VFD coupled with turbine stations. Of all the different combinations of controls and pumps, this is the most efficient for pressurized irrigation.

Proper pump and impeller selection up-front results in lower power costs, in addition to lower maintenance and repairs down the road. In theory, by selecting the most efficient impeller, less energy will be required at selected flow rates for either constant-speed or VFD systems.

> Because each golf course is one of a kind, engineering the perfect pump station takes a team.

ASSEMBLE YOUR TEAM

No single assortment of pumps and controls suits every application, nor is there a single manufacturer that can meet every customer's needs. Your type of source water and water quality should ultimately determine the optimum combination of necessary equipment. Because each golf course is one of a kind, engineering the perfect pump station takes a team. Those responsible for system cost, design, installation, operation and maintenance must contribute to make the best station selection. This includes owners and consultants, superintendents and irrigation technicians, certified manufacturer technicians/contractors and manufacturers.

There's a long list of considerations in engineering an efficient, durable pump station. Begin your quest with a strong knowledge of your site, sources and personnel. Formulate the necessary support team and ensure that all consultants, distributors and representatives speak your language. **GCI**

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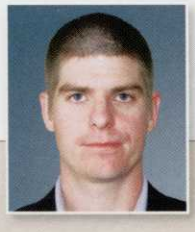

Stephen Tucker is the equipment manager at the Ritz-Carlton Members Golf Club in Bradenton, Fla., and past president of the International Golf Course Equipment Managers Assocation. He can be reached at 941-309-2913 or stephen.tucker@ritzcarlton.com.

HOW THE TIMES ARE CHANGING

A few years ago looking for an equipment technician was one of the toughest tasks to accomplish in our industry. Why? Quite frankly, because there were so few of them. I don't know if this has changed today, but one thing I am certain of is the role is attracting a new audience.

Recently, I began searching for an assistant technician at our facility and anticipated a long process with one to four candidates. Well, it's still a long process, but made more challenging because the number of candidates has quadrupled. What's interesting is many of these candidates are superintendents. At least half of the 15 applications I received are from former superintendents. Most of them cite the economy and the tough job market and their desire to remain in the industry but go in a different direction.

Here's another good indicator of this trend. When the economy sinks, college enrollment spikes because more people seek training for new careers. This year, Florida's Lake City Community College has between 13 to 15 technicians enrolled in class, whereas a few years back they have had three to five students.

A few years ago the IGCEMA called for an industry meeting where we invited instructors, manufacturers, associations and equipment distributors to discuss the "future of technicians" program. This meeting, designed to compel the industry to push the equipment manager or equipment technician as a viable career path, was put together due to the severe lack of technicians in our industry. At that time we asked whether there were too many assistant superintendents in the industry, and was it possible to attract some of these individuals to the technician's field? While at the time this seemed unlikely, now it seems to have become a reality.

One thing is evident: Despite any change in the amount of interest in technician job openings, this side of our industry still needs qualified equipment managers. We still see more equipment technicians retiring every year then coming into the industry and the need for educated technicians is even greater. The transition from being a superintendent to an equipment technician is not a seamless process. Individuals must understand ever-changing technology and the expectation that doing more with less is now a requirement. It's important that proper training is available to ensure success. Employee numbers are dwindling and managers are taking on more and more responsibility to fill those gaps. Superintendents who decide to transition to the equipment side of our industry need to pursue the proper education and have the required interest level to succeed in the field.

With business models changing it's easy to get in the mind-set that the expectations are lower since we don't have the same budgets that we have had in the past. This is wrong – if anything expectations are much higher. Clubs today are struggling to find players. The most significant action we can take as an industry is to maintain or raise the quality of the product. People are spending money based more on what they need vs. what they think they want. Many people don't have the financial luxury they once enjoyed to buy the things they want. Instead, they look for better quality things that they need. People's mind-sets have changed – what sells now is quality conditions. The person who can afford to play needs to see the reason he should pay to play your golf course over the one down the road that doesn't look as well maintained. Today, people want to get every penny out of the money they're spending, and if the quality is off, the revenue will be, as well. And I don't need to say where that road leads to.

> Out of the 15 or so applications I've received for assistant technician, half of them are from former superintendents.

These last few years many articles have been published about how we need to cut back and do more with less. In some respects they are not wrong. However, if you choose to pursue that course of action, you must determine how to maintain the same quality to keep your business vibrant. Anyone can make financial cuts, but not everyone can reduce costs and ensure players won't notice. If you can find the balance between cuts and quality conditions, we will see you on the other side of this economic downturn. **GCI**

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A glimpse of how golfers' behavior affects the business of golf facility maintenance and management.

Mining for players

The golf industry faces a number of challenges, including a recovering economy, an oversupply of facilities and stagnant rates of player development. However, the National Golf Foundation offers a ray of hope: In the face of all of these challenges, a sizeable opportunity exists to convert infrequent and regular golfers into die-hard players. According to the NGF, these golfers are playing around, just not with a single course.

For example, according to NGF figures, 23 percent of all customers fall into the "regular" category and give a single course between 25 percent and 50 percent of their rounds, while playing an average of 17 rounds at other local competing courses.

Infrequent golfers represent the most opportunity, according to NGF data. These customers play 36 market rounds but only three at the subject course, resulting in a 10 percent wallet share and 33 rounds going to competitors.

Player type	% of customers	Average market rounds	Average wallet share	Average course rounds played annually	Number of customers	Number of rounds	% of course rounds
Die-hard	22	38.7	79	30.5	660	20,130	62
Regular	23	27.3	37	10	690	6,900	21
Infrequent	46	36.2	10	3.5	1,380	4,830	15
Transient*	9	1.9	n/a	1.5	270	405	2

*Transient players play three or less market rounds.

Source: National Golf Foundation

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By Pat Jones

They call me Ms. Turfhead

Michelle Feher's unique career and life journey speaks volumes about the state of the business.

Michelle Feher has never been a typical superintendent, but her story over the past few years is an all-too-familiar tale about how the economy has overtaken the golf industry and forced many to evolve into new roles.

Like many of her male counterparts, Feher was born into the world of farming. She worked her family's 10 acres of vegetable plots in Hartville, Ohio, enough to know that she loved being outdoors but didn't want to grow crops the rest of her life. Drawn to turf, she eventually enrolled at Virginia Tech. As an undergrad, she spent three summers interning under Brian Mabie at Akron's Firestone Country Club and, in 1992, became the first woman to graduate from the VT turf program. ("It was not a big deal," she recalls matter-of-factly.)

After a stint as an assistant under the legendary Dick Bator at Kirtland Country Club east of Cleveland, she heard about an open position at a modest little facility called Boston Hills Country Club 20 miles south.

"When I interviewed, they asked me how long I planned to stay," she says. "I said a couple of years because I viewed it as a stepping-stone job. That was 13 years ago."

Female superintendents are as rare as unicorns in the greenkeeping universe. GCSAA has just 279 female members. That means that only about 1 in 60 U.S. courses are maintained by a woman. Feher belongs to the even more elite group as one of just 18 CGCSs who happen to have two X chromosomes.

Over more than a decade at Boston Hills, she helped build the course's reputation as one of the best-maintained "affordable" facilities in the area. She also jumped into leadership roles with the Northern Ohio GCSA with gusto.

"Sheree Scarbrough (now with Silico Turf) was doing the chapter newsletter and I sort of volunteered to help her for a while," she says. "That was 15 years ago."

Along the way, she's amassed a goodly pile of GCSAA chapter publications awards and learned how to crank out copy, manage advertising and beat up on printers to get her newsletter out the door…all in her spare time.

Life was good at her little course and Michelle Frazier (her maiden name) became known nationally as a leading superintendent and, of course, a bit of a poster girl for the notion that superintendents didn't all have a Y chromosome. She met and married Chris Feher a few years back and she began to think about the daunting task of being a superintendent/mommy. (Their daughter, Isabella, came along a year ago.)

But, fate had a different plan for her. In the middle of the last decade, real estate values in the Hudson, Ohio, area around Boston Hills ballooned and the facility – which was already being eyed for development in the affluent area – faced major physical changes due to planned road construction nearby.

"We had plans in place to move holes around and continue on as a course, but it seemed far more likely to become condominiums or retail, so they closed up shop in 2007." Feher considered finding another superintendent position, but there were few openings. And then the economy tanked.

Fortunately, she was hired as a property manager by the company that owned Boston Hills. Now, she oversees buildings, offices and land – including her old course, which now sits fallow awaiting a new, post-recession use. But, she continues her involvement in the profession as the chapter administrator, editor, Web guru and head cheerleader for the NOGCSA. In short, some things never change.

I caught up with Feher to find out what her life's like these days, being a chick among guys in the golf business and what it's like to be in the ironic position of trying to sell a piece of land that you put so much TLC into for a decade.

WHAT WAS BOSTON HILLS LIKE?

It is – *was*, I guess – a neat little course built in the 1930s. It played to anyone's abilities.

It had tiny greens with a lot of character. We were a limited budget course – my budget for everything was $210,000 annually. It was quite a challenge, but we put out a pretty good product.

HOW DID YOU LEARN THE COURSE WOULD BE CLOSED AND SOLD?

Well, *everything* is for sale, so I wasn't shocked. Boston Hills was positioned in a perfect location for playing golf, but that same location made it prime real estate. We had seen the same decline in play everyone else had and lost outings, so revenue had flattened out. Then the state announced it was expanding and rerouting the highway that had been in front of the course to now run across several holes. Basically, the highway access that had helped us so much was now going to put us out of business. We had a good remodeling plan (to relocate lost holes), but the compensation the state offered versus the cost to make it playable was a bad deal. It was a business decision, plain and simple, at that point.

HOW WORRIED WERE YOU FOR YOUR JOB?

I kept thinking, "They're gonna make this right – we'll be able to work through this." The plan was in place for the new holes and it was feasible. But I slowly got this feeling of dread in my stomach that it wasn't working right. That was *not* a good feeling. I kept working. I've always been a company person, but it was hard to keep the staff focused. It was pretty difficult – we'd put our heart and soul into that place. Realizing it was going to close put a new perspective on life. It made me realize that life throws you curveballs and you have to find a way to hit them.

WHAT WAS THE PLAN FOR THE PROPERTY?

It would probably have been shops and houses, but zoning issues slowed it down and then the economy tanked. So it's sitting fallow, waiting for whatever comes along.

WHAT DID YOU DO WHEN YOU KNEW ABOUT THE CLOSURE?

The old owner told me he'd keep me on to do the shutdown of the course. Since I knew in advance, I put out feelers for another superintendent job but I didn't get any offers I liked, so I stayed on with the ownership group as a property manager.

WHAT'S THAT JOB LIKE?

My typical day is dealing with tenant requests, complaints, maintenance issues – it's different every day. I manage contracts for snow removal, HVAC repairs, lease renewals, vacancies … the whole shebang! I have three techs that work with me on maintenance for six properties. We also do construction when new tenants want to do build-outs.

SOUNDS A LOT LIKE BEING A SUPERINTENDENT.

It really is. I'm just not mowing or trying to keep grass alive. Otherwise it is a lot of the same stuff. I worry about weather, construction, aging buildings and equipment that need babying. Those things determine how my day is going to go instead of Mother Nature.

YOU MAY NOT BE A SUPERINTENDENT, BUT YOU'RE STILL INVOLVED WITH NOGCS AS THE CHAPTER ADMINISTRATOR AND PUBLICATION EDITOR, RIGHT?

As far as my chapter involvement, nothing's really changed from what I used to do. I'm not as involved with national activities and I don't serve on committees or do the chapter

JERMEY STUDIOS

Feher is one of 279 female members of the GCSAA and one of 18 female CGCSs – 13 of those are superintendents and five are retired or affiliate members.

delegate thing anymore. All the rest of the everyday chapter management stuff is the same, but I also now handle the books. It's a little challenging keeping up with member requests, but I try to give them the same service I give my tenants. I'm still pretty much a volunteer. It's just not viable for us to pay a chapter executive a full salary.

HOW'S THE CHAPTER DOING GIVEN THE TOUGH TIMES?

Membership is actually about the same. We've had a few guys who are out of work shift to retired status. Advertising in the newsletter has taken a huge hit. That's been extremely difficult financially, so we've scrambled to cut costs. We took the newsletter nearly 100 percent digital. We used to print 550 paper copies of each issue. Now there are just about 50 people that still want a printed copy and the rest get it online.

Sponsorships are down a little, but that hasn't hurt us as much as some chapters. Northern Ohio has always been fiercely independent about keeping business and sales pitches out of meetings, so we've never relied on sponsors for education. We opened the idea up for discussion, but decided to stay lean and not get into sponsorships. The companies actually seem to appreciate that. Affiliates shouldn't have to constantly reach into their pockets to underwrite things. It's not fair and many can't afford it now. In the long run, it makes us more of an equal-opportunity chapter.

SO, WHAT'S IT LIKE BEING A CHICK IN A DUDE'S WORLD?

(Laughs). It honestly was never an issue for me. Maybe that's part of growing up on a farm. There's no male/female distinction made. Everyone just works.

WAS IT UNCOMFORTABLE AT TIMES?

I occasionally got hit on at conferences or whatever, but I was almost always surrounded by a bunch of guys who just weren't going to let anything happen to me. It was like having a hundred overly protective older brothers around me all the time.

IS THERE SOME KIND OF EXCLUSIVE SECRET CLUB FOR FEMALE SUPERINTENDENTS?

I wish! GCSAA did hold a women's forum for a few years. We had about 50 women at the first one, and it immediately turned into a gripe session about sexual harassment, lack of respect and basically all the same darned issues that face any female in any workplace. I sat there and thought, "You've gotta be kidding me!" The solution is simple: You just have to take charge of your life and your career. It's not different in any other industry.

THEN WHY HAVEN'T MORE WOMEN COME INTO THE PROFESSION?

It takes a special breed of person to be a golf course superintendent. A lot of women – and men – just aren't cut out for it. When I started school, no one told me to get out or that I was crazy. Dave Chalmers at Virginia Tech thought it was great. I'm not going to say he didn't have concerns, so he did everything to help me make it. I was the first female turf graduate from VT, but I also got a bachelor's degree in horticulture and landscape contracting, so I had it covered if golf didn't work out.

SO WHAT ADVICE DO YOU GIVE TO YOUNG LADIES WHO ARE INTERESTED IN THE PROFESSION?

My first question is always, "Why are you doing this?" Are they just picking it for fun or are they really committed? Are they currently working at a course and do they understand the realities? Are they willing to have a strong personality? You just can't take any crap from anybody. The minute you show weakness they'll walk all over you.

I'm always happy to help girls, but I never felt any big responsibility to mentor them any differently than guys. But, in general, they need to understand that this business is not designed for all women. You have to have the work ethic and the physical strength. City girls aren't usually going to do as well as country girls. But, those things are true for guys too! It's a lifestyle. You're in charge of one very large living thing. You work, eat and sleep it. The Weather Channel becomes your "god." That drove my husband nuts!

SPEAKING OF WHICH, HOW'S MARRIED LIFE IN THIS WEIRD BUSINESS?

I'd dated before I met Chris, but whenever it started to get serious the guy would get jealous of the job or he couldn't handle my hours. Chris and I really got to know each other well before we married. Our schedules were really different – he's a laid-back restaurant manager and kind of a night owl and I'm a Type-A morning person – but we golfed together a lot and bowled in the winter and got comfortable with each other. I made it clear that, "Here's what I do, I'm around guys all the time, I have pretty rough hours. Take it or leave it." He took it!

HOW HAVE YOU MANAGED SCHEDULES SINCE YOUR DAUGHTER, ISABELLA, WAS BORN LAST YEAR?

He's now a regional manager for a pizza chain, so his job is more normal but he still works late sometime. We both get Sundays off together. Isabella's in day care but grandma helps, too.

SO, IS ISABELLA BEGINNING TO UNDERSTAND THAT HER MOMMY IS A TURFHEAD?

Not yet, but she will. I'll always be a turfhead at heart. I love this business. I love the people and the friendships. It's not something I can walk away from. So many people helped me along the way, personally and professionally, that I'm not going to throw that away. They're family, too. That's why I do it. **GCI**

CAN GOLF SAVE THE PLANET?

If courses correct their carbon footprints, could the momentum impact global climate change? By Mike Zawacki

Golf courses have a bad rap.

The average Joe drives by the pristine fairways and well-manicured greens of his local country club or municipal course and sees only a consumer of resources and a monument to an elitist culture.

But this could change when word gets out that golf courses could play a role in saving the planet.

OK, maybe "save the planet" is a bit extreme, but the culmination of extensive industry-based turf research, the rise in carbon aggregating consulting services, coupled with a cultural shift toward sustainability together support a movement that places the local 18-hole course, with some tweaks and modifications to its maintenance and operational philosophies, as an organic vehicle to sequester carbon, the alleged chief villain of climate change phenomena. More importantly, course superintendents will play a key role as change agents in this conversion process, not only driving change as environment stewards and turfgrass experts, but as promoters of the newly evolved, modern carbon-negative golf course.

On a golf course, carbon sequestration is the process of capturing and long-term storage of carbon in tree trunks and in the soil by turfgrass. Until recently the chief discussion of carbon sequestration has been global-centric and focused on curbing the burning of fossil fuels, halting rainforest depletion and planting fallow farm fields with tall-grass crops that not only capture carbon, but also serves as a component in the production of alternative fuels.

However, only recently has this discussion focused on golf courses as purveyors of a finely manicured, carbon-sequestering crop – turfgrass.

The data for golf's role as a carbon sequesterer are compelling. Research conducted by The Colorado Carbon Project, a collaborative effort among Colorado State University, the USDA and the Rocky Mountain Golf Course Superintendents Association and other entities, suggests that if the average fairway is 1.7 acres, then a single fairway will sequester .75 tons of carbon per year, which is equivalent of driving 6,500 miles with the average car. In addition, putting greens have the potential to sequester .40 tons of carbon per acre per year.

"We've found out that the turfgrass on golf courses, because it's so well-managed, typically takes in more gas than it emits – it's a net sequester, so to speak," says Bill Crispin, cofounder of Golfpreserves, whose consulting firm works closely with The Colorado Carbon Project. Historically, the golf industry has extensively documented the management of turfgrass, and it's these data that are driving golf's role as a carbon sequesterer. "In the carbon debate, we're saying that turfgrass is more important than just providing green color on a golf course," he adds.

Consider the potential in golf's green footprint to

THE CARBON-ZERO COURSE

To get to sustainability, golf courses will need to look different. And to do so, the modern course will need to take a cue from its past.

Perhaps courses like St. Andrews will dictate the standard for how the future golf course should be modeled.

"Look at the true links land philosophy of how a course can be managed, or should be managed, say Andrew Staples, president of the Phoenix-based Golf Resource Group. "You walk through the Old Course at St. Andrews and it looks like a goat ranch. But one will never argue how great that course plays regardless of the time of year or how much rainfall has taken place."

Staples argues that the course of the future needs to adapt to the time of year and what the weather provides. It'll be a return of the golf course back into a more dynamic living organism with more native areas and other areas going off color at various times of the year, instead of the exact same made-for-TV product year round, he says.

If this philosophy is adopted by the industry, then it relieves the pressure on the superintendent to maintain a certain aesthetic. Instead, he will have the freedom to pursue what he does best.

This doesn't mean it will be an easy transition and it'll take time to change attitudes, Staples concedes. "We're not there yet," he says. "But the golf course of the future will have more of an awareness of the environmental role it plays and players will acknowledge that and understand, maybe even embrace it."

CHANGE DRIVER

While environmental and financial reasons are forces contributing to the reduction of golf's carbon footprint, another is on the horizon – legislative.

Until the last few years, energy was so darn cheap that no one thought twice about its consumption. It's similar to how no one worried about water usage until drought and water restriction became headline news across the nation.

Attitudes toward golf's carbon footprint are following that same trend, and it's a trend superintendents, managers and owners must take seriously before they're forced to make changes.

"The various climate change bills on Capitol Hill only go down to 25,000 tons of carbon per year, which involves big manufacturing mills, power plants, that sort of thing," says Stuart Cohen, an environmental scientist and founder of Environmental and Turf Services, an interdisciplinary consulting firm whose area of expertise includes the turf and golf course market. "In comparison, a golf course may emit only 150 to 300 tons [of carbon] per year, so right now it doesn't apply to them.

"California, though, passed a bill [HB 32] in 2006 that is slowly being phased in and over the next year or two it may begin to have an impact on golf courses," he adds. "California typically is ahead of EPA efforts, so there may be regulatory drivers for golf courses to look at their total emissions, their total sequestration and their net sequestration in the near future."

ONLINE EXTRA

For more on the process of evaluating your course's carbon footprint, check out the March Online Extras.

influence or negate its carbon footprint and you begin to see a bigger picture. If you put all the U.S. courses together it would equal about 4,000 square miles, or take up space approximately the size of Connecticut.

Cultivating the average course's turf to serve as a carbon sequester is compelling, but the positive, though, is offset by the fact that the use of petroleum-based products and inefficient electrical practices makes the average nowhere near operating at carbon negative.

However, proponents argue that if operational and cultural changes could be made in these areas, then the impact on golf's role as a positive force in the carbon debate could be significant. For example, according to research cited by GCSAA's director of research, Clark Throssell, while the average 18-hole facility uses nearly 243,000 Kwh of electricity, less than 5 percent of golf facilities purchase green electricity. Likewise, only 6 percent of 18-hole golf facilities have a written energy conservation plan, and 15 percent have conducted an energy audit since 2004, according to Throssell's data.

"If a course can use less water and pump less, then you're using less electricity," Crispin says. "What we're all talking about is that all of these issues are connected in the discussion about carbon sequestration. All of these issues come to bear on a highly managed piece of property like a golf course."

FOLLOW THE MONEY.

Those involved in this discussion believe the industry needs to generate and disseminate information that shows the local course is a good partner in the community and that the industry is learning what it needs to do regarding sustainability and is going out and doing it.

"You talk to people in the industry about this topic and 100 percent of the people believe it's important, but 10 percent or less are really doing something about it, says Andrew Staples, president of Phoenix-based Golf Resource Group, who helped develop Carbonsave, a program that quantifies carbon-emission reduction via energy-use reduction as well as carbon sequestration.

But this makes sense for the golf industry because, ultimately, the issue of carbon use and sequestration – from the private facility to the municipal course – comes down to dollars and cents. While it's altruistic for a superintendent to pitch to his green committee, "Let's do this for the environment!" it's more realistic that a strong financial case will more readily loosen budgetary purse strings to fund capital improvements. "The approach I've always recommended to superintendents is that this is a financial decision," Staples says. "Taking on the carbon sequestering component is just a natural progression of reducing your facility's energy costs. It's a natural add on, but it's not the driving force."

Regardless of where individual beliefs lie in the climate-change debate, sustainability and carbon sequestration makes financial sense for golf courses because it forces resource efficiency.

"No question, there is controversy about global warming and the degree humans play a part in this issue," says Stuart Cohen, an environmental scientist and founder of Environmental and Turf Services, an interdisciplinary consulting firm whose area of expertise includes the turf and golf course market. Cohen also partnered with Staples on the creation of the Carbonsave program. "But whatever we do to reduce carbon emissions will reduce our ecological footprint and our dependence on foreign oil, which are two issues many of us are in favor of. And this is where a lot of people begin to see the light, because golf courses can save themselves money, and in some cases a lot of money.

It's not like golf courses are coal-fired power plants or the U.S. truck fleet, which are the two top contributors to carbon in the atmosphere. So by themselves, golf course may not have a direct impact in reversing climate change, however, their indirect impact on this issue could be significant.

"Golf courses touch on so many different things – electric power use, pesticide and fertilizer use, water usage and irrigation efficiency all the way to how a course manages its club house and maintenance facility," Cohen says. "If the industry starts down this path, then courses could be role models."

Change is happening. For example, Nevada's Edgewood Tahoe Golf Course reduced its CO_2 emissions by more than 75 tons by cutting its electrical use by about 11

percent – a roughly $12,000 annual savings, according to a recent news report.

Stuart and Cohen estimate courses utilizing some sort of energy or carbon auditing program could realize as much as $20,000 per year in savings. Industrywide, they estimate U.S. courses could save upward of $400 million per year.

Likewise, Throssell cites energy research that suggests an energy audit could lead to a 30-percent savings in energy costs for the average golf facility.

"From a business side, everyone is looking to conserve resources and dollars," says Crispin, whose firm facilitates the assessment, quantification and confirmation of sequestered carbon for golf courses and creates financial instruments from the sale of carbon credit to drive revenue, a portion of which is reinvested into turf research. It's a savvy business move since, in the wake of pending carbon emissions legislation (Change Driver, page 24), the price of U.S. carbon credits is expected to increase from about $5 per ton to as much as $50 per ton.

SAVING THE PLANET.

When you ask those around the carbon sequestering debate whether golf can save the planet, they tend to steer the discussion away from such an abrupt message.

"It's not because that message isn't there," says Golfpreserve's Crispin. "We just don't want to alienate anyone who takes an affront to such a very bold statement."

However, Staples believes the industry's ability to serve as a role model is within its grasp.

"Very rarely does an opportunity come around where you can, in five to 10 years, change an industry's reputation," he says. "Golf can use this topic and say, 'We know how we've been perceived in the past, but this is how we're going to be looked at in the future.'"

And why does it have to end with golf courses, asks Noble Hendrix, a Golfpreserves co-founder.

"What if we got all of the equipment manufacturers on board," he says. "How about the club and ball manufacturers and the other countless suppliers to the player? What would happen if we got Nike on board? Then, I think you'd begin to see substantial change."

Doubters, though, point to in the industry's inability to stay rallied behind a single cause, and many point to previous failures to continue the momentum of past issues very far after the initial call to action.

But when you look at the momentum being created at facilities in states such as Colorado, Florida and California, you begin to see it is possible generate enough enthusiasm for a segment of the industry to rally behind a single cause. "It's important for golf to have an active role in the carbon discussion," Hendrix says. "And I think it's within our grasp to follow through on this." **GCI**

SUPERINTENDENT AS CHANGE AGENT

As a golf course reduces its carbon footprint, the superintendent will play a vital role in communicating this image makeover to his community.

Superintendents need to develop or engage in educational outreach programs to spread the message of how their courses are not only active as good environmental stewards, but they are having a positive impact in the overall carbon debate.

For example, Stuart Cohen, an environmental scientist and founder of Environmental and Turf Services, suggests superintendents reach out to state and local officials several times a year to educate them about the positive actions taken at their courses as well as throughout the industry. He also advocates working with local high school biology departments about the course's role in habitat preservation and rehabilitation. Lastly, he adds superintendents can engage in annual educational seminars at their courses about water and energy conservation and measures taken to meet efficiency standards.

"If golf courses, as an industry, begin to make a big push for this and they're able to attract media publicity, then they can serve as role models for everyone else," Cohen says.

SMALLER CARBON FOOTPRINT

While a course's pump station and clubhouse are responsible for the bulk of its energy use, overhauling those facilities would often require a significant, and impractical, capital investments. However, experts suggest some more attainable carbon-reducing measures a golf course can pursue.

Lighting. By far the easiest issue to address. Convert to energy-saving cfl bulbs and fixtures. Install motion-activated switches in restrooms or infrequently occupied places. Reassess the facility's lighting philosophy, especially at the clubhouse.

Materials. Make smarter purchasing practices to reduce the number of deliveries throughout the year, or buy from distributors located closer to the facility.

Fuel. Outside of converting to alternative-fuel equipment, reconsider usage and mowing patterns to reduce the amount of run time.

Water. Maximize your pump station's efficiency so that it uses the least amount of kilowatt hours. Make sure irrigation heads operate to their maximum efficiency.

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-Site of 2011 PGA Championship

The Golf Club at Ballantyne - Charlotte, NC
-No-Till conversion from Bentgrass to CHAMPION

Bay Hill Golf Club - Orlando, FL
-Replaced Tifeagle ultradwarf with EMERALD
-Site of Arnold Palmer Invitational

Beechwood Country Club - Ahoskie, NC
-No-Till conversion from Bentgrass to CHAMPION

Bermuda Run CC - Bermuda Run, NC
-No-Till conversion from Bentgrass to CHAMPION

Big Oaks Golf Club - Saltillo, MS
-No-Till conversion from Bentgrass to CHAMPION

Bloomingdale Golfers Club - Valrico, FL
-No-Till conversion from Tifdwarf to CHAMPION

Blue Heron Golf Club - Sandy Springs, GA
-No-Till conversion from Bentgrass to CHAMPION

Brookstone Golf & CC - Acworth, GA
-No-Till conversion from Bentgrass to CHAMPION

Calusa Lakes Golf Club - Nokomis, FL
-No-Till conversion from Tifdwarf to CHAMPION

Covington Country Club - Covington, TN
-Greens sodded with EMERALD

Eagle Watch Golf Course - Woodstock, GA
-No-Till conversion from Bentgrass to CHAMPION

Falcon's Lair Golf Course - Walhalla, SC
-Greens renovation, planted CHAMPION

Hawk's Point Golf Club - Vidalia, GA
-Complete renovation, planted CHAMPION

Hole In The Wall Golf Club - Naples, FL
-Complete course renovation, greens replanted with CHAMPION (previously planted 1998)

Holly Ridge Golf Links - Archdale, NC
-No-Till conversion from Bentgrass to CHAMPION

Hyland Hills Golf Club - Southern Pines, NC
-No-Till conversion from Bentgrass to CHAMPION

Jacksonville Beach GC - Jacksonville Beach, FL
-Greens renovation using EMERALD

Kiva Dunes Golf Club - Gulf Shores, AL
-No-Till conversion from Tifdwarf to CHAMPION

La Cita Golf & Country Club - Titusville, FL
-No-Till conversion from Tifdwarf to CHAMPION

Mirimichi Lakes Golf Course - Millington, TN
-Complete course renovation, greens replanted with CHAMPION (previously planted 1999)

Montgomery Bell State Park GC - Burns, TN
-No-Till conversion from Bentgrass to CHAMPION

North Hills Country Club - Sherwood, AR
-No-Till conversion from Bentgrass to CHAMPION

Ocala Golf Club - Ocala, FL
-Greens renovation using EMERALD

Old Waverly Golf Club - West Point, MS
-No-Till conversion from Bentgrass to CHAMPION

Orangeburg Country Club - Orangeburg, SC
-Complete course renovation, greens replanted with CHAMPION (previously planted 1997)

Pecan Grove Plantation - Richmond, TX
-Greens renovation using EMERALD

Pelican's Nest - Bonita Springs, FL
-Gator Course greens renovation, greens replanted with CHAMPION (previously planted 2001)

PGA National - Palm Beach Gardens, FL
-Squire Course greens renovation using EMERALD

Pine Forest Country Club - Houston, TX
-Greens renovation using EMERALD

Pleasant Valley Country Club - Little Rock, AR
-No-Till conversion from Bentgrass to CHAMPION

Rebsamen Park Golf Course - Little Rock, AR
-No-Till conversion from Bentgrass to CHAMPION

Sandridge Golf Club - Vero Beach, FL
-No-Till conversion from Tifdwarf to CHAMPION

Sea Trail - Byrd Course - Sunset Beach, NC
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Seminole Golf Club - Juno Beach, FL
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Shreveport Country Club - Shreveport, LA
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Spring Hill College Golf Course - Mobile, AL
-No-Till conversion from Tifdwarf to CHAMPION

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TPC San Antonio - Oaks - San Antonio, TX
-New Construction, CHAMPION greens
-Site of SBC Championship, Valero Texas Open in 2010

TPC San Antonio - Canyons - San Antonio, TX
-New Construction, CHAMPION greens

TPC Tampa Bay - Lutz, FL
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A GOOD COOLING

The methods to superintendents' syringing madness.

By David McPherson

Superintendents define syringing in different ways – including a quick misting with the irrigation system, a deeper hose watering or using equipment such as the MobileMist, pictured here.

KEVIN HUTCHINS

Think back to when you were a kid: The summer sun was sweltering down, sweat dripped from the end of your nose and all you craved besides a Popsicle was a misting of water to cool you down. Plants, just like humans, sometimes need a good cooling. When your turf's canopy gets too hot, a wee bit of water is sometimes all it needs.

We're talking about syringing – the technique superintendents use to add moisture to their greens and to cool the turf down and prevent dry wilt that leads to loss of turf if not controlled. It's also done to keep greens uniform.

Syringing is most often done when greens are under stress from high heat and windy conditions. The plant starts to wilt and some light watering is necessary. The key word is light. Most in the profession agree that hand watering is not syringing. That said, not all keepers of the green agree on a universal definition for syringing.

CREATING UNIFORMITY

For Andy Short, superintendent at Cherry Blossom Golf Club in Georgetown, Ky., the ultimate goal of syringing is uniformity. He says every green should react the same in regard to how an approach shot releases and how the ball rolls from a putt.

Tourney *syringing*

When it comes to a professional tournament, superintendents are often pressured to keep the greens dry and firm. This is something Scott Ebers, superintendent at Colonial Country Club in Fort Worth, Texas, is familiar with. Each May, his course hosts the PGA Tour's Crowne Plaza Invitational.

The first thing he observes about syringing is that there is no universally held definition of what it is.

"Some people might consider syringing a very fast, up in the air misting of the green in 15 seconds," he says. "Other people would consider the MobileMisting a light syringe and then others think a couple minutes of watering the entire green – starting on one side and going across the entire green is syringing."

Ebers is not a big fan of syringing in the theoretical sense of cooling the plant by putting water on the top.

"I don't think that is very successful," he says. "I am a huge fan of fans. I think they cool the canopy far better than syringing. What my guys do in the summer is syringing – misting the top. They water dry spots. They get on there and look for wilt. If it's dry, they water deeply; they puddle it up on that spot and drive the water into the root system. They will put the nozzle down. I don't ever put the nozzle up and give it a really good shot of water. I just hit spots to get water where it needs it."

During the PGA event, Ebers says he has guys who jump in with hoses down and water spots. This year will be his sixth tournament.

"Three years we have gone in at certain times and hit spots in play during the tournament," he says. "We also try to get the greens to perk so well that when we go in there it's not a wet surface when the players get to it."

Tim Moraghan, principal at Aspire Golf Consulting and former director of championship agronomy for the USGA, says when he was a superintendent, syringing was done to close the cells on the plant to keep the evapotranspiration to a minimum at high temperatures. Moraghan believes hand watering is a lost art.

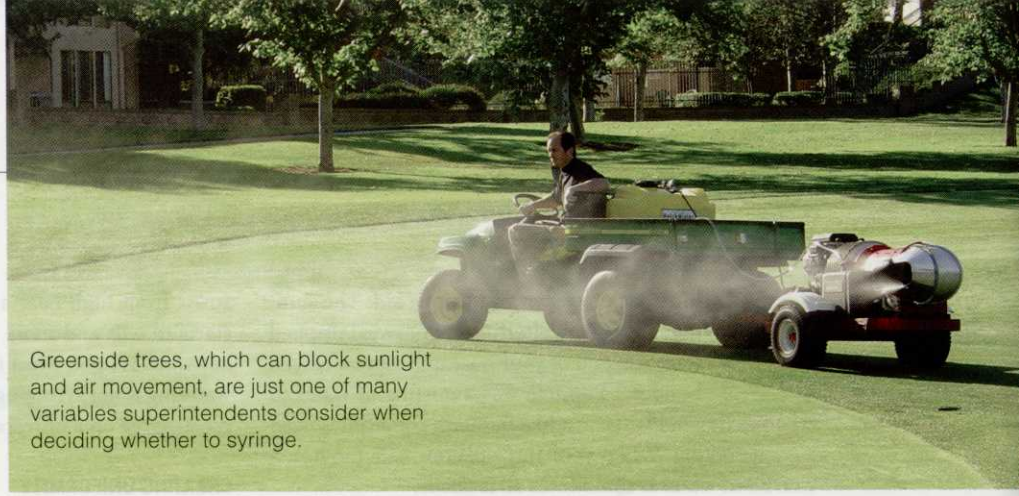
"Today, you have moisture sensors and hand-held digital units that give you an idea of moisture content in the soil, so it's a little easier, but it still takes time to learn how to do the process," he explains.

All the years Moraghan and his crew syringed greens during U.S. Open play, he says it was mainly due to stress because of heat more than anything else.

"There was not enough water put down to affect the firmness of the greens or to soften it up," he says. "I remember my first U.S. Open in 1987. The 18th green at The Olympic Club had a 7.5 percent slope, back to front, and the balls were running off the front. We syringed between groups just to keep the grass a little puffier and keep that speed down a little bit – that was a rare occasion, though. At Shinnecock in 2004, syringing was done strictly because of the wind because it was so hot and dry."

When to syringe during a big event comes down to a judgement call based on experience, says Moraghan.

"You need sufficient people to do the work," he explains. "One event, we had six groups of two – 12 syringers out there doing one or two greens apiece all afternoon, so the competition stayed the same for everybody. You need a hose man and somebody putting the hose into the snap valve. You need to coordinate with rules officials and get a feel of when to jump in or out between groups. Every green is different, every golf course is different, and you try not to get into the way. You could write a book on how to do it correctly." GCI



Greenside trees, which can block sunlight and air movement, are just one of many variables superintendents consider when deciding whether to syringe.

"A major factor in how that ball reacts is moisture level," Short explains. "The expectation level of the club or board will determine what's the acceptable amount of moisture to apply to the greens. Some clubs prefer 'firm and fast,' while others are happier being able to control and hold their shots into the green."

Cherry Blossom is a semiprivate club with most traffic coming from public players; Short says it's important that the greens are at a "comfortable" level so that players of all abilities can enjoy their round and move through the course in a reasonable time frame. After establishing what the acceptable level of moisture is, Short uses a combination of sight and feel to determine when and how much water to put down.

"For those of us who don't have moisture sensors, visual cues are the first clues to areas that may need more water," he explains. "Whether it's actually seeing the plant change color, or seeing your footprints, wilt is the first sign that the plant needs water. The severity of wilt and environmental conditions will determine how much water is put down. I use a soil probe to see/feel how deep and how much moisture is in the soil. I remove the soil from the probe and place it in my hand and make a fist. If the soil clumps and stays together I don't apply any water to that area. Conversely, if the particles don't bind together and fall apart, that area is in need of water."

Another – quicker – method Short uses to check moisture is with a knife. "I will go to different areas of the green and punch my knife into the soil and if the blade has soil particles stuck to it, there's moisture in the soil."

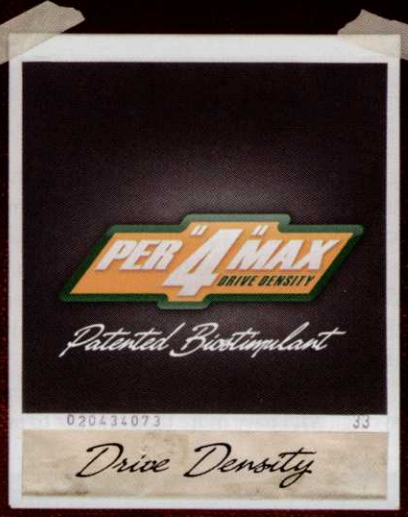
DETERMINING FREQUENCY

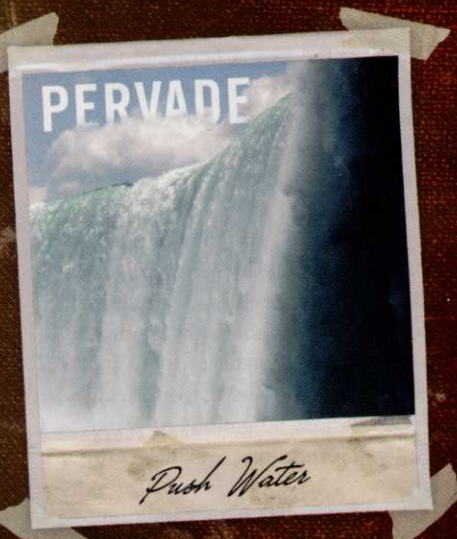
Short says determining how often to syringe greens is based on weather conditions and how the turf reacts to them.

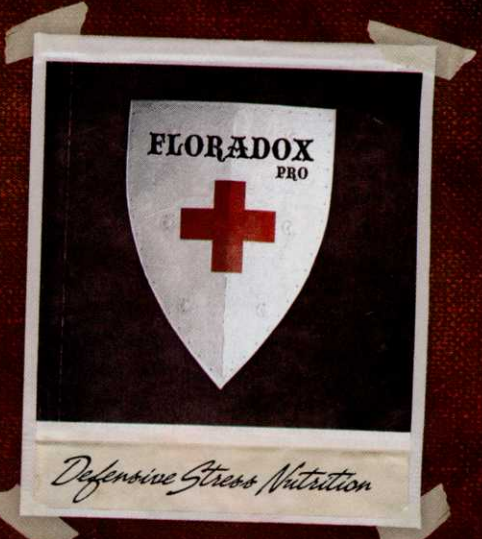
"Temperature, wind, humidity, type of turfgrass, soil type and thatch levels all play an important role in the level of moisture available to the plant," he says. "All must be considered when deciding whether or not to syringe and how much water to put down.

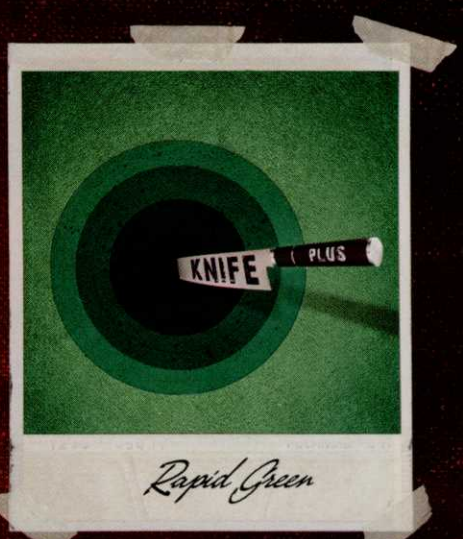
"Each green is checked because not every green is exposed to the same conditions or has the same contours," he adds. "Trees that are next to greens become a huge variable when it comes to syringing. Trees can block sunlight and air movement, restricting evapotranspiration levels. Depending on the size of the tree and its proximity to the green, the root

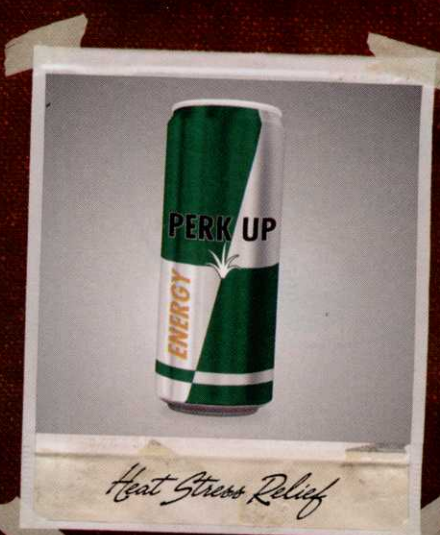
KEVIN HUTCHINS

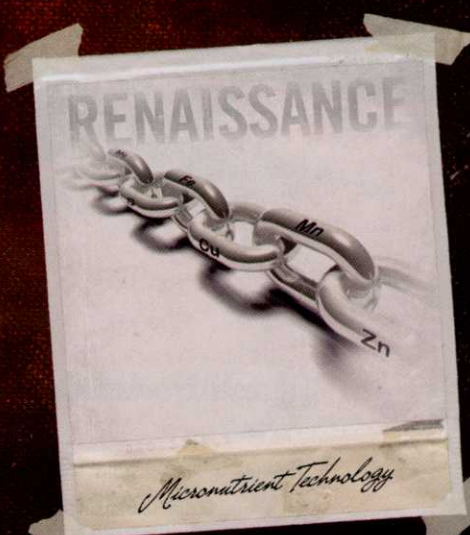












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structure of the tree also can rob the green of water and other essential nutrients."

Short and his assistant do all of the syringing at Cherry Blossom.

"I feel syringing greens is one of the most critical jobs done on a golf course and shouldn't be left to untrained hands," he says. "My staff is relatively limited and I would rather be in control of how much water is going down on the greens. I firmly believe that whoever is syringing must truly care about what they are doing and understand why they are doing it, as opposed to just doing a job."

Short typically tackles hot spots with hoses rather than the irrigation system or specialty equipment.

"The only time I'll use the irrigation system to syringe is if I have more than one fire to put out," he says. "I'll throw up the heads for just a minute or two to cool of the surface and hopefully keep things in tact until I can get to it."

A SYSTEMATIC WAY

Kevin Hutchins, superintendent at Mission Viejo Country Club in Mission Viejo, Calif., developed the MobileMist to a have a systematic way to measure temperature canopy on greens and an efficient, repeatable way to cool the temperature canopy of the greens.

"I found in the past that each employee monitored the greens in their own way and many times they would turn on the sprinklers or use a hose for too long a period of time when syringing the greens," he explains. "Many times the staff were actually irrigating the greens instead of syringing."

Hutchins was also looking for ways to conserve water.

"When you run the sprinklers for three minutes to syringe the greens you use 5,700 gallons of water each day," Hutchins says. "Over a 90-day summer, that is more than 500,000 gallons of water to try to cool the greens. With the MobileMist, on a really hot day, you use just 50 gallons of water, which is only 4,500 gallons over the entire summer."

The MobileMist comes with a laser temperature gun and a log book. Hutchins says each day a staff member shoots the green with the laser and records the temperature in the log. He uses 94 degrees as his trigger to start using the MobileMist to cool the greens.

What he loves about the system is that it's very repeatable and anyone can do it.

"If the temperature is above 94 degrees the staff member runs the MobileMist around the green in about two minutes," Hutchins explains about the system. "The temperature is measured again and recorded in the book. The average temperature drop is about seven to 10 degrees depending on the wind and the humidity. I start on hole No. 18 and go backwards until all the greens are checked and cooled as needed.

"I then go back to 18 and recheck the greens. If the temperature is above 94, I mist them again," he adds. "If 18, 17 and 16 greens are below 94 degrees, the employee can pack up and go home for the day. It is a repeatable system with little room for error." **GCI**

David McPherson is a freelance writer based in Toronto.

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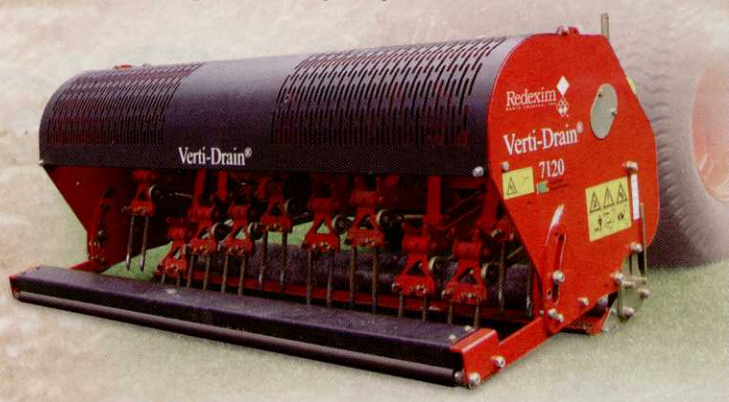

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RX FOR CONVENIENCE OR MULTIPLE DISEASES?

A LOOK AT FUNGICIDE COMBINATION PRODUCTS — THEIR BENEFITS AND PITFALLS.

SIGNATURE: BY DAVID MCPHERSON

Your nose is runny, your throat hurts and you're congested. Do you buy three medicines to treat each symptom, or will one drug do? Frank Wong, an associate specialist in cooperative extension at the University of California-Riverside, uses this analogy to describe the growing popularity among superintendents to use fungicide combination products to combat common turfgrass diseases.

"If you look at the number of active ingredients in cold medicine, you are going to see three or four different ones," Wong says. "That makes sense because you just don't want to get rid of your chest cough or your runny nose – you want to get rid of all the symptoms. The same can be said for prepackaged fungicide combination products: With one application you can treat several diseases."

Examples of diseases where fungicide mixtures are very effective include anthracnose, snow mold, gray leaf spot and dollar spot. Wendy Gelernter, co-owner of PACE Turf, a membership organization that provides research, education and information services to the turf management community, says fungicide combination products allow superintendents to avoid physical or chemical incompatibility problems and they target multiple diseases simultaneously, saving superintendents time.

"If you want to target a foliar disease such as anthracnose, as well as a root disease, such as summer patch, rather than worrying about compatibility issues and taking the time to separately measure out and apply chlorothalonil (Daconil Weather Stik) and propiconazole (Banner Maxx), it might be more convenient to apply a single product, such as Concert, which contains both of these active ingredients," Gelernter explains.

Besides convenience, fungicide combination products can be good for the superintendent's bottom line. For example, the fungicide Headway is practically a mixture between Heritage and Banner, so to buy this combination product may be cheaper than tank mixing the correct rate of these two active ingredients.

While it's difficult to argue the benefits of these fungicides, critics wonder if these combination products are merely a marketing gimmick by manufacturers to sell more. According to Wong, that's a possibility. However, the reality is since there are more government and environmental restrictions today on the use of fungicides, superintendents are constantly looking for ways to lessen their environmental impact while still treating multiple diseases and keeping the turf healthy for golfers.

"Back in the old days, when you had mercury salts, cadmium salts and even something like chlorothalonil, you didn't have to worry too much because you could spray with them and there was a good chance you could pick up a lot of different diseases," Wong says. "Now, with materials having to be extremely site specific, and have virtually no non-target effects, that's a tall order to engineer something that is going to kill fungi, but not affect birds, algae or earthworms, and also get past state and federal registration standards.

"So, all of a sudden you have materials such as Emerald from BASF. It's a really good

> **"The less you have to spray, the better off you are."**
>
> **–Mike Powers, Edina (Minn.) Country Club**

Table 1. Active ingredient levels in single-ai fungicides vs. combination products.

	Single ai Product		Combination Product	
Active ingredient (ai)	Product name	oz ai/1,000 sq. Ft.	Product name	oz ai/1,000 sq. ft.
azoxystrobin	Heritage	0.1-0.4	Headway	0.05-0.34
boscalid	Emerald	0.09-0.13	Honor	0.06-0.12
chorothalonil	Daconil	0.8-4.1	Concert Instrata Spectro	0.8-4.3 1.0-4.1 2.2-4.1
fludioxonil	Medallion	0.1-0.3	Instrata	0.04-0.17
flutolanil	Prostar	1.1-3.2	Systar	1.0-3.1
iprodione	26GT	0.75-2.0	26/36	0.5-1.9
propiconazole	Banner	0.08-0.65	Headway Concert Instrata	0.08-0.57 0.6-0.3 0.16-0.65
pyraclostrobin	Insignia	0.10-0.18	Honor	0.09-0.18
thiophanate-methyl	3336	1.0-3.0	Spectro Systar 26/36	0.5-1.0 0.6-1.7 0.5-1.9
triadmefon	Bayleton	0.13-1.00	Tartan	0.25-0.50
trifloxystrobin	Compass	0.05-0.13	Tartan	0.05-0.10

Source: Pace Turf, www.paceturf.org.

example, as it has virtually no non-target side effects. It's so specific, though, that it only works against one pathogen."

Mike Powers, superintendent at Edina Country Club in Edina, Minn., says his chemical program is pretty basic. He knows what works based on his 26 years of experience. Powers subscribes to the adage, "If it isn't broke, don't fix it."

That said, he's all about making his crew's job easier. Convenience and cost savings are the two main reasons he now uses a variety of fungicide combination products.

He uses some to save money and others to combat multiple diseases with fewer applications. Powers uses Instrata to specifically target snow mold. Instrata combines three different products that he would normally use to treat this perennial disease into one, substantially lowering his costs and reducing the amount of applications needed from two to one.

"The less you have to spray, the better off you are, whether it's for the environment

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or for the cost of running the equipment," says Powers.

Hedway is another fungicide combination product Powers uses; it gives him broader control to tackle a variety of diseases and also saves him money. Powers estimates fungicide combination products can save a superintendent $50 per acre.

"If you are spraying 25 acres of fairways, that's significant," he says. "The manufacturers are giving the cost savings to us. It could be a marketing tool, but it works for me. I don't think they are a gimmick because they are using proven fungicides."

OVERUSE

With the convenience these combination products offer, critics quesiton whether they encourage overuse. That's only a concern if the fungicides don't have the right concentration of ingredients to control your site-specific diseases, says Gelernter.

"If the component fungicides have been packaged in the right concentrations and

Table 2. Commonly available prepackaged fungicide combinations.

Active ingredient 1	ai 2	ai 3	Common brand names
azoxystrobin	propiconazole	-	Headway
chloroneb	thiophanate-methyl	-	Fungicide IX
chlorothalonil	propiconazole	-	Concert
chlorothalonil	propiconazole	fludioxonil	Instrata
chlorothalonil	thiophanate-methyl	-	ConSyst, Peregrine, Spectro
copper hydroxide	mancozeb	-	Junction
fluopicolide	propamocarb	-	Stellar
flutolanil	thiophanate-methyl	-	Systar
iprodione	thiophanate-methyl	-	26/36, Dovetail, Fluid Fungicide, Twosome
pyraclostrobin	boscalid	-	Honor
triadimefon	trifloxystrobin	-	Armada, Tartan

Source: Pace Turf, www.paceturf.org.

ratios for the pests you want to control, then you are in luck," she explains. "If not, then you run the risk of either poor control – if there isn't enough of one or more fungicides – or of overuse and unnecessary expense – if one or more of the fungicides is at a higher concentration than you need."

For fungicides such as chlorothalonil, which have restrictions on the annual amount that can be used, it's even more important to carefully calculate how much to apply in each application. See the sidebar for a reference chart PACE Turf developed on how to calculate application amounts.

A SOLUTION FOR RESISTANCE?

Manufacturers often claim fungicide combination products solve resistance. Wong says this is not always the case and there is no concrete evidence to support these claims. A combination product only reduces the probability of resistance occurring.

"There is a good chance that if you are making an application and you have two different classes of fungicides in that combination product, you may have resistance to one, but it's less likely you will have resistance to both," he says. "To illustrate, if there is a 1 percent chance of having resistance for product A and a 1 percent chance for product B, if you spray them out individually you have 1/100th chance you will have resistance to product A or product B. If you add both products together, the chances that you will have a complete failure are 1 percent of 1 percent, so the probability is much lower than if you use a single fungicide product."

While many of the fungicide tests in plant and disease management reports indicate combination products provide more control, Wong says it's still tricky to evaluate because if you're spraying on a site with a combination product, only one of the active ingredients may be doing the work for you.

"The presence of two active ingredients hides the fact that you have a resistance issue with one of the active ingredients," he says. "That's not a bad thing since a combination product often saves you from having a complete and total resistance failure."

Whether a superintendent chooses to use a fungicide combination product comes down to the turf manager's experience and judgment to select the most effective, most environmentally compatible and most economical measures for their site-specific diseases. **GCI**

David McPherson is a freelance writer based in Toronto.

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CALCULATING AIs

To calculate how much of each active ingredient is being delivered in a combination product, PACE Turf offers a calculation spreadsheet, downloadable at http://www.paceturf.org/index.php/public/fungicide_combination_products/

MEETING THEIR NEEDS

Golfer surveys reveal opportunities for better communications, long-range goals and easy-to-implement improvements.

By Marisa Palmieri

Across the country as superintendents head into spring, many of the programs they're implementing are based on the results of golfer surveys they conducted over the winter.

Referencing an off-season member survey, Jason Busch will be working with golfers to develop a formal golf course standards handbook this year. Busch is the superintendent at The Powder Horn, a 27-hole semiprivate golf course community in Sheridan, Wyo.

The goal of creating the document is to outline the standards the players expect within the budgetary and environmental/weather constraints under which he operates. It will include target green speeds, mowing heights and frequencies for various areas of the golf course – and anything else the membership would like to see included. His goal is to get as many members as possible involved in creating the document and reach a final consensus.

"The standards handbook talks about what we're going to do every year – the goals and how we're going to meet members' goals," Busch says. "Then we can be proactive with it and conduct a survey every year to see how we've met goals and develop a new set of standards."

More than anything, it's about meeting members' needs while providing them the facts about maintenance practices – especially unpopular ones like aerifying.

At The Power Horn, where Busch has been superintendent since 2007, the maintenance survey was conducted online via SurveyMonkey.com.

"We did it as a whole facility – not just the golf course," Busch says. "It went out to every member – I don't have the exact number, but the response rate was pretty high, so it was pretty effective."

On the maintenance portion of the survey, the goal was to get "as much feedback as possible," Busch says.

"I talk to them on a daily basis, but I wanted to see what the majority of people wanted as far as certain projects and the direction they want to see the club go," he says.

To elicit those responses, Busch used a mix of ranking-type survey questions, but also open-ended questions and two very targeted questions he was particularly interested in gaining feedback on:

1. What are the two things we could do to improve the golf course?

2. What's more important – a green golf course with wet spots or a fast and firm course with dry spots?

The results of question No. 1 didn't surprise Busch – he knew bunkers were going to be the issue. And he took steps in the off season to mitigate some of the problems and communicate to members that a complete overhaul isn't in the budget, but there are some things he has been able to do, such as eliminate and/or reduce the size of some out-of-play bunkers, add two mechanical bunker rakes to help soften bunkers on a daily basis and allocate more sand to be used in greenside bunkers to improve consistency.

But the response to question No. 2 surprised Busch the most. "They want the course to look good more than they want it to play well, which goes against everything we read as superintendents," he says. "So I was providing conditions they didn't necessarily want."

Busch was grateful for some small suggestions members made – these are inexpensive fixes he made right away to show he's addressing their needs. For example, one hole had a prism on it that measures distances, showing players how far they need to hit the ball to clear a creek.

"Some ladies asked for those on all the holes, which is something I hadn't thought of," he says. "I was able to order those for less than $100."

OPPORTUNITY TO COMMUNICATE

For Greig Barker, golf course superintendent at Highland Country Club in London, Ontario, some programs will be tweaked, but much of the focus is on ramping up his member communication efforts.

The greatest thing Barker learned from the survey his club conducted last fall is that he's already implementing many of the things his members want, but he isn't sufficiently promoting those efforts or explaining the club's policy on them.

For example, there was a comment in the survey that made him realize he needs to explain the process for practice facility maintenance.

"Someone said that every time they go out they're on the mats," he says. "We put the mats out one day a week and that day alternates between Mondays and Thursdays." So, the person with the gripe may be experiencing an unfortunate coincidence in routinely playing on the mats; Barker recognized it's an opportunity to better explain such processes.

The timing of the survey – late fall after the golf course was closed for the season – was such that a number of the requests were already taken care of but the members hadn't been on the course lately to know that.

A green speed survey By Marisa Palmieri

When superintendent Mike Morris, CGCS, came to Thom Nikolai with the question, "Is it possible to maintain a consistent green speed for an entire playing season?" that got Nikolai, turfgrass specialist at Michigan State University, thinking. He helped Morris implement a green speed program with a survey component, which he presented as part of the "You Asked for It... You Got It!" session at the GCSAA Education Conference last month.

Crystal Downs' green chairman asked the questions, "What are the speeds day-to-day?" and "What's the best speed for our golf course?"

To answer those questions, Nikolai and Morris developed a four-step process:

1. Determine daily speeds by collecting data;
2. Survey golfers to develop a target;
3. Evaluate maintenance practices; and
4. Communicate.

The first step, data collection, is typically easy to incorporate into the morning set-up process, Nikolai says. He recommends superintendents always measure the same area on the green. Morris collects data in both the morning and the afternoon, which is a great time to interact with golfers and get direct feedback from them.

The next step is surveying players. Nikolai advocates the "Morris Method," which entails selecting a pool of about 20 golfers from a variety of different demographic groups (high handicappers, low handicappers, ladies, etc.) and asking them to rate the green speeds every time they play on the following scale: too slow, slow/OK, OK, fast/OK or too fast.

Morris and his team discovered that 80 percent of their golfers thought the greens were either fast/OK or OK when they were in the 9.5-10.5 range. So, that's the a green-speed range they shoot for.

The third step entailed evaluating all the maintenance practices that would allow them to achieve the desired green speed and tweaking those practices as necessary.

The final step is communicating the results to players. The best way, Nikolai says, is a simple sign that says, "The established range of green speeds for this golf course is 9.5-10.5 or whatever it is." And then simply indicate whether the day's green speed is below the range, within the range or above the range.

"They don't need the actual numbers," Nikolai points out. He says many superintendents with members upset about green speeds begin this process and then stop several weeks in just because the members are satisfied that their needs are being paid attention to. Others follow through with all four steps and see great results.

"If you do it and they're happy then you're the hero," he says. "And that means you should make more money." **GCI**

USING FOCUS GROUPS

By Mike Vogt, CGCS

In combining focus groups with surveys, group members not only can help provide topics for surveys but importance rankings and survey question distribution. If you want to assess your members' needs beyond simple questions and answers here's how focus groups can help.

Focus groups are typically composed of four to five pre-screened members who meet criteria you specify. They are assembled in one room to discuss and react to specific topics relevant to your golf course business.

Consider this: You are planning your next year's annual budget and would like to learn what your members think about conditioning on the golf course before bring the plan to the board for approval. You could hire a company to conduct a survey beginning with a series of focus groups and a survey to follow but that can be very expensive. So how can you get this information more affordably? You can attempt to do it yourself.

Clearly, any research you do yourself will have limitations when compared to studies conducted by professionals, but if you are seeking some general guidance about important topics of interest, you can get good information for a nominal cost.

The goal is to explore the general attitudes of the participants to the topics selected for inclusion in the session and ultimately to aid in the construction of survey questions. Focus groups are intended to generate macro information, whereas quantitative survey research seeks to provide micro information. Use the focus group to help formulate your survey questions.

There is no rule as to the number of focus groups to be conducted on a specific topic but two or three groups of different age, handicap and gender usually will work fine. This raises one of the most important issues relative to the implementation of focus groups: the definition of the participants. In any focus group session it's vital that the composition of the group is as homogeneous as possible in terms of key demographic characteristics. For example, if course conditioning is the topic there would be major differences in attitudes between high and low handicappers, social and full golfing members, men and woman and participants who are under 35 compared to those over 65. Not only will the participants have different views on a topic, but getting participants to share their attitudes will be much easier if they are not placed in an environment where some might be intimidated by others due to age, skill of the game or gender. Therefore, it's important to conduct at least one group with each constituent group of the same gender and of different abilities.

Before the focus group's meeting, develop a very clear and precise written statement of the objectives for conducting the research. It's essential to have a well-thought-out target for the study, which will form the strategic basis for the project. It could be titled, "The Importance of Conditioning as It Relates to Annual Budget Preparation at Pleasant Fairways Golf Club." A brief explanation of the plan should accompany each written statement. Be sure to give these statements to each participant in advance of the meeting.

Create a discussion guide outline that contains all the topics you hope to cover in a focus group. The discussion guide is the most important tool in focus groups and is as vital to the novice as to the experienced moderator. The guide is intended to provide a logical flow to the discussion, so that all topics are covered and there is consistency across all the groups in a series relative to the information discussed. Golf course superintendents know the steps involved in different types of course conditioning, member golfers do not. Explanations of the differences in course conditioning and budget preparation are helpful in the discussion. To this end, it's helpful to provide a time estimate for each of the topics as a guide for the moderator and to ensure that everything gets covered, but also for those interested in the output of the research.

Ensure the group does not go off on tangents, wasting valuable time. It is the responsibility of the moderator to direct discussions so that all topics are covered.

View the group discussion as a way to obtain interaction among the participants. It should not be a series of questions directed at each individual. One of the key benefits of the focus group methodology is to have participants react to each other as ideas are presented, so it is possible to determine the differences in attitudes among participants.

Finally, use write-down exercises to initially lock participants into a position about a particular topic, so they are not swayed by the effects of group dynamics in which a dominant personality can influence the flow of the discussion. Essentially, a write-down exercise is a vehicle whereby the moderator raises a topic (e.g. reaction to increase in green speeds) and each person in the group is asked to write their point of view in 30 words or fewer on a piece of paper prior to discussing the topic. If this is done, the participants will be more honest about their responses than if they were asked to respond to the question without having written down their views first.

Focus groups are helpful because the participants can be probed for the reasoning behind their opinions, and conversations can be generated around a particular topic, giving you what's known as "rich data" as opposed to, for example, the finite answers you get from survey questions alone.

As the name implies, these are focus groups, keep the subject matter narrow to the immediate task at hand. For example, if you want the focus groups to guide you to areas on the course that need attention, in their opinion, ask the group a specific question and give them specific choices.

"In your opinion, what single maintenance item needs to be accomplished to help our club compete with other clubs in our region?"

1) Improve green speeds
2) Replace bunker sand
3) Add more cart paths
4) Renovate rest rooms on course
5) Level tees

Then, discuss these items and take copious notes. From the feedback you'll discover the "hot button" items that should be uncovered from the focus groups passion about the subject as well as the solutions these members might have. Remember, *bite your tongue*; this is not the forum to rebut criticisms and comments!

Equal weight should be given to each group; so often the low handicappers are the driving force for change on the course. The women, juniors, seniors and weekend-playing high handicappers must be involved in the process or the questions placed in the survey will not be appropriate or statically valid for the good of the membership as a whole. **GCI**

BLAJ GABRIEL

"Someone said the grass is very thin on some of the fairways and landing areas and that two dead trees needed to be taken out," Barker says. "We had sodded the problem areas after the golf course was closed and we already had those trees marked."

Similarly, a number of commenters asked about recycling – why aren't there recycle bins on all the tees?

"Well," Barker says, "We do recycle, we're just doing it behind the scenes.

"I'd say 50 percent of the things we got suggestions about we're already doing – they just don't know about it," Barker says.

Overall, the survey showed Barker there was an opportunity to improve communications. To do so, he's planning a series of posts on his blog, highlandccgroundsdept.blogspot.com, to directly address comments and complaints that arose in the survey.

"I'm going to start explaining all of our processes for everything now," he says. "Maybe all of these people aren't reading the blog yet, but at least the information will be out there."

When questions arise Barker, staff members or other club members can point them to the blog to see what the policies are.

Highland's survey takes place facility-wide every three years. A third party conducts the survey online, tabulates the results and formats report cards for each department. For golf course maintenance, 10 categories were evaluated. Barker's not sure of the exact costs because it doesn't come out of his maintenance budget.

BLIND SURVEY?

"I give our GM a lot of credit," Barker says. "When they launched the survey they said for members' comments to be included, they had to attach their member number to the comments. So I can see who it's coming from and say, 'I noticed you commented about X, and this is why we do things this way.' It keeps people from putting ridiculous comments and you can take them into context. We have over 500 members. If we make everyone happy, we're probably in more trouble than we know. A private club does require a lot of communication – it really helps to know if that one person is never going to be happy. They could ruin your day every day."

At the Powder Horn, the survey was completely blind – with no members' names or numbers attached to the results.

"I think it gave them a chance to be anonymous and voice concerns without us thinking less of them," Busch says. He adds that the open-ended survey questions likely got a better response because of their anonymous nature. "I thought there were some things people would just go off about, but everything was really constructive. Surprisingly, there was nothing rude at all."

All in all, Barker applauds Highland's board for conducting the survey. "Our club is doing relatively well for these times," he says. "Our board is doing what they should be doing – working for the membership." GCI

For a sample copy of a golf course conditions survey from consultant Mike Vogt, CGCS, visit, scribd.com/doc/27353301/Golf-Survey-Conditions

A question of QUALITY

How carrier water quality influences pesticide stability.

By Dara Park, Ph.D. & Juang-Horng 'J.C.' Chong, Ph.D.

Tank-mixing pesticides and fertilizers is a convenient and cost effective way to apply two or more chemicals at once. When done appropriately, tank-mixing can reduce labor and equipment costs, and save time and energy. Carrier water is the water you put in the tank to dilute your chemicals and to apply them with. Carrier water makes up about 95 percent of what you apply. Certain water chemistry can potentially react with, and change the efficacy of, pesticides in both positive and negative ways. This article will discuss the origins of water chemistry, and how to take a water sample and determine the water quality. This article will also discuss the influence of and the remedies for common problematic water components.

ORIGINS OF WATER CHEMISTRY

The chemical and physical properties of minerals (i.e. mineralogy) and weathering influence water chemistry. Weathering is the decomposition process of rocks, minerals and soils by physical (for example, degradation by microorganisms and cracking by ice formation) and chemical (reactions between water and minerals) processes. Weathering results in different compounds as solutes and/or particulates within the water column.

Here is an example of how mineralogy and weathering may influence water chemistry in South Carolina: Limestone, composed of mainly calcium carbonate ($CaCO_3$), is the underlying bedrock along coastal South Carolina. During each rain event, water combines with carbon dioxide in the atmosphere to form a weak acid called carbonic acid. As rain water passes over and through the limestone, the acid combines with the calcium carbonate to form calcium bicarbonate ($Ca(HCO_3)_2$), which is dissolved in the water. Calcium carbonate and calcium bicarbonate are the two principal causes of hard water.

Water chemistry is also influenced by the sources of water. Saline aquifers, tidally influenced streams and rivers, reclaimed stormwater runoff, and reclaimed wastewater have a considerable amount of salts and other particulates.

HOW TO TEST WATER SOURCES

Use opaque plastic containers to collect your water sample. Rinse out the bottle three times with the water you will be sampling before you take the actual water sample. Place your name, location, and date on the sample bottle with a permanent marker. Place the water sample in a cooler or refrigerator until delivering to the laboratory. Make sure to submit the sample within 24 hours of collection. Regardless of which laboratory you send your sample to, you should receive an interpretation of results as part of your report. Some water components can be determined on site with relatively little expense and will be discussed in the following sections.

COMMON PROBLEMATIC WATER COMPONENTS

PH

What is it?

pH or Potential of hydrogen is the measure of the concentra-

CLARKE ROBERTSON

tion of hydrogen ions (H+) and hydroxide ions (OH-) in a solution. It is measured on a logarithmic scale of 1-14 with 1 = acidic (dominated by H+ ion), 7 = neutral, and 14 = alkaline (dominated by OH- ions). Water pH fluctuates diurnally (from photosynthesis and aerobic respiration) and seasonally (from increased rainfall, leaf litter, etc.). Over long periods of time, water pH tends to become more alkaline.

How does it influence pesticide efficacy?

Certain pesticides undergo chemical breakdown in alkaline water (pH more than 7). The reaction is termed alkaline hydrolysis and the severity and speed in which it occurs is dependent on the pesticide, the alkalinity of the water, the length of time the pesticide is in contact with the water and the water temperature. Insecticides, particularly organophosphates and carbamates, are more susceptible to alkaline hydrolysis than other pesticides. In comparison, sulfonylurea herbicides are more susceptible to acid hydrolysis at pH less than 6.0.

How to keep it from becoming a problem?

Check pH regularly and add buffering agents to carrier water whenever necessary. A pocket pH meter is relatively inexpensive and easy to operate. Test the water pH before adding any chemicals. Always read the pesticide label and check the pesticide MSDS for the recommended pH range. If correction is needed, add a buffering or acidifying agent before adding the pesticide. The acidifying agent may include acid-forming nitrogen fertilizers, straight acids and may or may not be used in conjunction with surfactants. Always apply the tank mixture as soon as possible. Buffering agents should not be mixed with fixed copper and lime fungicides; otherwise, plant damage will occur.

SALINITY

What is it?

The concentration of mineral salts (for example, $MgSO_4$, MgCl, CaCl, $NaHCO_3$, NaCl, KCl) dissolved in water. It is measured by electrical conductance (EC) and is commonly reported in either dS/m or mmhos/cm.

How does it influence pesticide efficacy?

Salty water is alkaline and more resistant to pH changes, making adjustments with acids more difficult. Salinity of over 0.75 dS/m can stress sensitive plants and reduce absorption of systemic pesticides through plant roots. Besides what has been mentioned, not much is known about how salinity influences pesticide efficacy, or if it does at all. However, we are aware of instances in which a pesticide failed and the only water problem possible was salinity.

How to keep it from becoming a problem?

Check the salinity in your carrier water if you use water from reclaimed or tidally influenced sources. Pocket EC meters are inexpensive and easy to use. Combination Temperature/pH/EC pocket meters are slightly more expensive but still reasonable. Always read the pesticide label and check the pesticide MSDS

Table 1. Recommendations on the uses of selected fungicides, herbicides and insecticides in carrier water of problematic quality. The effects of water hardness and salinity on fungicides and insecticides are poorly studied; thus, the compatibility should be tested before mixing.

		Water Quality				
Common Names	**Brand Names***	**Acidic (pH < 6)**	**Alkaline (pH > 8)**	**Muddy**	**Hard**	**Saline**
Fungicides:						
azoxystrobin	Heritage	✓	✗	NR		
chlorothalonil	Daconil	✓	✓	Test		
ethazole	Terrazole	✓	✓	Test		
fenarimol	Rubigan	✓	✓	✓		
fosetyl Al	Aliette	✓	✓	✗		
mancozeb	Manzate	NR	NR	Test		
mefenoxam	Subdue Maxx	✓	Test	Test		
PCNB	Terracolr	✓	Test	NR		
propiconazole	Banner Maxx	✓	✓	Test		
thiophanate methyl	Cleary3336	Test	✗	Test		
trifloxystrobin	Compass	Test	Test	NR		
Herbicides:						
2,4-D amine	2, 4-D Amine	Test	NR	✓	✗	✓
atrazine	AAtrex	NR	✗	Test	✓	✗
chlorsulfuron	Corsair	✗	✓	✓	✓	✓
clopyralid	Lontrel	Test	✗	✓	✗	✓
dicamba	Vanquish	✓	NR	✓	NR	✓
diquat (& paraquat)	Reward	✓	✓	✗	✓	✓
glyphosate	RoundUp	✓	Test	✗	✗	✓
halosulfuron methyl	SedgeHammer	✗	✓	✓	✓	✓
MCPA	MCPA	Test	NR	✓	✗	✗
metsulfuron	Manor	NR	✗	✓	✓	✓
sethoxydim	Vantage	✓	✓	✓	✓	✓
simazine	Princep	Test	NR	✓	✓	✗
Insecticides:						
acephate	Orthene	✓	✗	✓		
bifenthrin	Talstar	✓	✓	✗		
carbaryl	Sevin	✓	✗	NR		
chlopyrifos	Dursban	✓	✗	✗		
clothianidin	Arena	✓	✓	✓		
fipronil	TopChoice	✓	✓	NR		
imidacloprid	Merit	✓	Test	✓		
indoxacarb	Provaunt	✓	✗	Test		
λ-cyhalothrin	Scimitar	✓	✗	✗		
spinosad	Conserve	✓	Test	Test		
thiamethoxam	Meridian	✓	Test	✓		
trichlorfon	Dylox	✓	✗	✓		

*Brand names are provided as examples. Mentioning of any products should not be considered as an endorsement.
Key: ✓ = OK. ✗ = Do not use. NR = Not recommended but use soon after mixing if there is no alternative. Test = Test for compatibility.

to see if any precautions should be taken. Sometimes salinity is reported as total dissolved salts (TDS). Most pocket EC meters will give you the option for either an EC or TDS readout. If a saline water source is used, an alternative water source should be identified for permanent use or for blending with the saline water.

Agitators and injection tanks can be installed for water treatment with calcium or sulfur. Ask your extension agent for more information.

WATER HARDNESS

What is it?

Hard water contains a high concentration of magnesium (Mg^{2+}), calcium (Ca^{2+}), and Ferric ions (Fe^{3+}). Water hardness is reported in ppm of $CaCO_3$ equivalent. Water <50 ppm is considered "soft," 50-100 ppm is considered "medium hard," and 100 – 2000 ppm is considered "hard."

How does it influence pesticide efficacy?

Hard water won't lather with soap. The cations in hard water bind with the pesticide molecules (one cations can bind more than two susceptible pesticide molecules) to form insoluble salts and precipitate out of solution. 2,4-D, dicamba, glyphosate and clopyralid are susceptible to binding with hard water. Hard water can also reduce the efficacy of some surfactants and agents added to clear turbid water. Precipitates and scales formed in the sprayer can clog the nozzles and filters.

How to keep it from becoming a problem?

You will have to submit a water sample to a laboratory to test for hardness. Always read the pesticide label and check the pesticide MSDS for any precautions.

If correction of water hardness is needed, add an agent such as those containing sulfate, organic acids and non-ionic surfactants. Sulfate (SO-4) and organic acids are often used to bind with the hard minerals. Non-ionic surfactants are commonly used to enhance herbicide efficacy but it should be noted that these will not correct the problem, and another agent still needs to be used. The agent should be mixed with the carrier water before adding the pesticide. Other options are to decrease the volume of carrier water and to use a higher label rate. Spray the tank mixture immediately.

SOLIDS

What is it?

Particulates of clay, silt and organic matter that are disturbed by water movement and brought into the column. Large particulates will eventually settle to the bottom but small particulates can suspend in the water column. Collectively, the total amount of particulates is known as turbidity and is commonly reported in Nephelometric Turbidity Units (NTU). The small particles that remain suspended are referred to as total suspended soilds and are reported in mg/l.

How does it influence pesticide efficacy?

These particles are both chemical and physical nuisance. Clay and silt can bind with pesticide molecules.

The organic particles not only bind with pesticides but also harbor microbes that naturally degrade pesticides. The particulates can also clog filters and nozzles.

How to keep it from becoming a problem?

To get an actual value of turbidity, a water sample will have to be submitted to a laboratory. The easiest way to test for a problem is to drop a quarter at the bottom of 5-gallon bucket of the water. If you cannot see the coin, then the water must be treated. Always read the pesticide label and check the pesticide MSDS for any precautions on using dirty water. An in-line filter can be installed to remove suspended solids. If the pump is within a surface water body, make sure that the location of the intake is not at the very bottom or close to the top of the water column. Locate an alternative water source for permanent use or to blend with turbid water. Additionally, agents can be added to help precipitate and clear the water.

IRON

What is it?

It is the sixth most abundant element in the universe and is the fourth most abundant element in the earth's crust (although not commonly found in the free metal form). Iron is dissolved as water passes through the underlying rocks. The concentration of iron is reported in mg/l.

How does it influence pesticide efficacy?

In the air or water, iron reacts with oxygen to form rust (oxide and hydroxide forms of iron). Rust forms faster in the presence of salt (as in certain pesticides or within the carrier water). The rust can cause reddish-brown staining. Iron also combines with organic materials and bacteria to produce slimes. Rust flakes and slimes can clog nozzles, filters and lines.

How to keep it from becoming a problem?

A water sample will have to be submitted to a laboratory to get an actual value of iron concentration. Stains can appear at concentration as low as 0.3 mg/l. Treatment for excessive iron will depend on the type of problem that exists (stains, deposits, or slimes). The most common techniques include aeration followed by filtration, the use of a water softener (caution: these usually use sodium), and the use of potassium permanganate and chlorination followed by filtration. Contact your extension agent to help decide which is best for you.

Tank-mixing pesticides and fertilizers is a convenient and cost effective way to apply two or more chemicals at once.

TAKE PRECAUTIONS

Always check your pesticide label and MSDS for recommendations and guidance. If you still have a question, contact the company representatives or county extension agents. Table 1 summarizes the effect of water quality on the most commonly used and more recent pesticides.

If the irrigation source exhibits one of the above-mentioned water problems, and the pesticide requires water-in after application, the irrigation water should be treated as well. This can be done by installing inline injection tanks. **GCI**

Dara Park, Ph.D., and Juang-Horng 'J.C.' Chong, Ph.D., are assistant professors at Clemson University's Pee Dee Research and Education Center in Florence, S.C.

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(continued on page 75)

A NEW WAY TO MEET

How to fix common meeting pitfalls to make your team more productive. By Kimberly Douglas

It's Friday afternoon, and your team is filing into the conference room, mumbling and grumbling as they take their seats for yet another meeting. An hour passes and the meeting comes to a much-anticipated end, leaving everyone involved wondering why the meeting was held in the first place.

In these tough economic times, every second of the work day is valuable. None of it should be wasted in meetings that seem to go nowhere or that are plagued by conflict or lack of participation.

If leaders know how to conduct better meetings, those meetings can actually become time well-spent – time that increases employee productivity, participation and innovation.

Meetings have become a way for leaders and their employees to simply go through the motions. Having a meeting, in and of itself, is not a bad idea. In fact, meetings can be the most engaging and thought-provoking times of the day for team members.

The key is avoiding those pitfalls that sink a meeting's productivity.

WHAT'S THE POINT?

A common problem with many meetings is that they're scheduled with seemingly no clear objective in mind. Run through a pre-meeting checklist before putting it on everyone's schedule. First, ask yourself whether the meeting is even necessary. Could the information you want to provide be just as easily presented in an e-mail? What do you want to accomplish with the meeting? Will reaching that accomplishment really require a group decision? If you ask yourself these questions and decide that you do need to have the meeting, next consider who should attend. Design an agenda for the meeting, and clearly communicate any prep work that needs to be done by the participants beforehand.

WHERE'S THE AGENDA?

Remember the last time you actually received an agenda in advance of a meeting? Likely, you immediately had a higher perception of whether that meeting was going to be a waste of time or not. Once you know who will be attending the meeting, you need to finalize the agenda. A quality meeting agenda includes:

- The date, time and location of the meeting;
- The meeting's objectives;
- Three to six agenda items, accompanied by how long they'll take to discuss and who the discussion leaders will be; and
- A clear explanation of the prep work that should be completed before the meeting.

It is OK to use standing agenda items from meeting to meeting – such as company overview, industry trends, strategy discussion, review of metrics, results and problem solving – as long as you also include the length of time allotted for each item and who will be leading the discussion.

Send the agenda out as far in advance of the meeting as possible, and then re-distribute an agenda/meeting reminder 48 hours prior to the meeting.

CONFERENCE ROOM OVERCROWDING.

Would you attend a meeting if you didn't know why the meeting was being held and why you, in particular, were invited? Often, too many people who don't have a clear understanding of what role they are supposed to play are invited to meetings. Those in attendance need to know if you want them to be an expert, an influencer or a decider.

Keep the number of "required" attendees as small as possible. And if critical members can't attend, consider postponing the meeting until they can. Having a meeting without all of the right brains present can cause just as many delays and productivity problems as postponing the meeting a couple of days.

Finally, use the following litmus test. Ask yourself: Will this meeting be the best use of this person's time, given our objectives? If you answer yes, then it's highly likely that person should be there.

Or, use a meeting cost calculator, which allows employees to privately enter in their salaries and the meeting length to calculate how much it is costing the company for them

For many organizations, meetings have simply become something that employees feel like they have to get through.

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to be in a given meeting. It is a powerful tool that can promote individual productivity because it reminds everyone involved of the financial significance of the time spent in the meeting.

THE MEETING LASTS FOREVER.

Now, that might be an exaggeration, but that exact thought will be crossing the minds of those attending a meeting that seems to be going nowhere. When the eyes of attendees start wandering to watches in an attempt to see exactly how much time they've spent in the meeting and to estimate how much more time will elapse before they can get back to their long to-do lists, you're in trouble.

Providing a meeting agenda will go a long way toward solving this problem. When attendees know exactly when a meeting will be over, they won't spend their time internally speculating about when they can leave.

Create a reputation for yourself as being a meeting leader who starts and ends on time, every time. And if you do need to extend the meeting's length, ask the group's permission before doing so. The ideal maximum meeting length is 60 minutes.

Use time boxes for each agenda item. That means a certain amount of time is allotted for each agenda item. Bring a kitchen timer that you can use to enforce the time limits.

THE MEETING IS A FREE-FOR-ALL.

Anyone who's ever attended a meeting or led a meeting knows that it doesn't take long for things to get off track. The best way to avoid losing control of the conversation and the meeting as a whole is to set some conversational ground rules – everyone participates, or don't ramble – right away.

Make it clear to those in attendance that the ground rules will be used to ensure that everyone's time is well-spent.

BIG TALKERS EAT UP ALL THE TIME.

Every meeting has them: those people who love to let everyone know they are the most important people in the room, have the best ideas and have a comment to make on every subject. Your conversational ground rules should help keep your big talkers in line, but there are other ways to ensure that one person doesn't dominate.

First, don't let big talkers sit at the front of the room or the back center of a U-shape. This definitely gives them a feeling of being on stage. In fact, you may even want to use assigned seating for the meeting.

CONFLICT KILLS PRODUCTIVITY.

Keep in mind is that effective meetings aren't necessarily free of conflict. In fact, conflict can be a good thing, and it should be valued by those attending any given meeting. The key is not letting it get out of hand.

Try viewing conflict as "creative abrasion," a phrase coined by the president of Nissan Design International, Jerry Hirshberg. Here's a metaphorical explanation of how it works: Picture two tectonic plates on the Earth's surface – your way and my way, perhaps – grating against each other. Many people know that when this kind of friction occurs between plates, earthquakes often ensue. But what happens when these two plates – or viewpoints – come together? If the environment is right, they create a mountain – a third viewpoint that is a product of the first two approaches and that is grander, loftier, and more powerful than either one was on its own. In other words, conflict is turned into synergy.

If – or when – things do get heated, ask everyone to take a break for a couple of minutes to think things over. Reinforce the ground rules and ask team members to listen to each other and consider what a possible compromise might be. Remind everyone of the meeting's ultimate goal and ask, given that goal, how you all can move forward to achieve it. You might hear from your team that more information needs to be gathered. That would make for a good reason to stop the meeting right then and set a date for a future meeting.

If the knowledge is in the room, it's likely people just aren't listening to each other.

WHO'S MAKING THE DECISIONS?

So your meeting is nearly over, you've discussed everything on the agenda and you're ready to send everyone on their ways. Unfortunately, no one is quite clear about what they're supposed to be doing. As the leader, you don't have to be the one making all of the decisions, but you do have to make sure the decision-making process is clear to everyone.

Make sure everyone understands who will be making the final decision from the get-go. The quickest way for a leader to lose his team's respect is for him to make a decision that his team thought they would be making. If you just want your team's input and will be making the final decision on your own, let them know that ahead of time. They will be happy to weigh in and will feel good that you respect and want their opinions.

NO DECISIONS ARE CAPTURED.

Too often, meetings end and everyone simply goes back to business as usual without putting anything that was discussed in the meeting into action, or without even knowing what they personally should do.

If you keep the format for capturing what went on in the meeting simple, you have a much greater likelihood of getting it done and getting it distributed quickly. There is no simpler way to record what went on than by writing on a flip chart the who, what and by when outcomes of the directives discussed in the meeting.

EVALUATIONS ARE NOT DONE.

For many organizations, meetings have simply become something that employees feel like they have to get through.

They think that all they need to do is sit through the meeting, and then they can get back to the task at hand. A great way to ensure that this isn't the mindset of those in your organization's meetings is to do proper meeting evaluations.

Have everyone assess the four Ps:

- Progress. Are we achieving the goals we set out?
- Pace. Are we moving too fast or too slowly to achieve those goals?
- Process. Are we using the right tools/methods?
- Pulse. How is everyone feeling – frustrated, satisfied, energized?

By implementing a few key tools, you can breathe life back into your meetings. **GCI**

The author is president of FireFly Facilitation and author of "The Firefly Effect."

A common problem with many meetings is that **they're scheduled with seemingly no clear objective** in mind.

STORIED GOLF COURSE trees

WITH GOLF COURSE TREES, THERE'S A STORY IN EVERY BRANCH – AND SOMETIMES A PUTTER.

By Paul Hughes

Mark Twain infamously called golf "a good walk spoiled." Maybe his course never had any trees. If Twain had tried one with tree-lined fairways, he'd have heard more than his share of stories – and how could the American fiction master have resisted that?

Because, for the layout with trees, or ones that used to have a few, or even those with one lonesome pine (or oak, cypress or willow), a tale of how they got there, how they're cared for or how they went the way of all flesh are as common as the weekend duffer dreaming of the Amen Corner or the bonnie links o' Scotland.

Twain might have especially liked the one about the putter that fell to earth. So read on for a variety of tales at some sweet layouts. The real story of trees on golf courses is, well – the trees.

PRESIDENTIAL PRIVILEGE

Augusta National, Augusta, Ga.

Augusta's Big Oak

Augusta's 17th hole, Eisenhower Pine

Augusta National Golf Club is arguably the most storied, exclusive and tree-story-laden golf course in the world. The permanent home of The Masters tournament begins and ends in tree lore.

Augusta opened in 1933, reportedly built on grounds formerly housing a tree farm. Each of the 18 holes is named according to a tree or shrub. Since The Masters is played in the spring, these are often fully flowered during the event.

A tree known simply as "the big oak" stands near the clubhouse, and is approximately 150 years old.

But perhaps the most famous tree is the "Eisenhower Pine," a loblolly pine on hole 17, some 200 yards from the tee box. President Dwight D. Eisenhower, who often played and stayed at Augusta, hit into the tree almost as often, and the pine has long been called in his honor.

There is also a pond, named Ike's Pond, in honor of Eisenhower. Ike reportedly told Augusta Chairman Clifford Roberts he'd found the ideal spot for a dam, if the club would like a fish pond. The dam was immediately built, and the pond was born.

Augusta is reportedly getting more tree-like recently as well – news reports noted that as of 2007 the course had added more than 250 trees, to create new angles on shots and make some holes more difficult.

ICONIC GRANDEUR (OR THE "CHARLIE BROWN")

Chambers Bay, University Place, Wash.

Chambers Bay's Lone Fir

Vandalism at Chambers Bay

For 110 years it was a sand and gravel pit – reportedly the most productive one in the country in the 1970s – so you wouldn't expect many trees in the area. Now a top-flight golf course called Chambers Bay, there still aren't many trees. In fact, there's one. Folks around there are growing fond of it, too.

"During construction the golf course architect loved it and threatened the lives of any worker who damaged it," says David Wienecke, director of golf course management at the course. "It's not a specimen tree. I call it the 'Charlie Brown' tree."

The Douglas fir is upward of 40 feet tall, Wienecke figures, growing in a hilly dune section on the Puget Sound side of the course, behind the 15th green. It's become an icon for the golf course itself.

"It's in the ads and articles, and almost every photo has that tree," he says. "That tree has become the image of the course in everyone's mind."

But not everyone likes it. Or perhaps some people are just jerks. In April 2008 vandals hacked portions of the trunk with an axe.

Wienecke says people have significant access to the area because a public walking trail runs through the course.

"We are in the public eye," he says. "It makes security hard."

In the aftermath of the attack, he received e-mails, calls and even letters advising him how to care for the tree. He brought in an arborist, putting in braces to support the tree but opting against a fence to prevent access. "The wounds weren't life-threatening, and we didn't want to harm the aesthetics," he says.

Instead, there is now an 8-foot-tall, black, cyclone-fence wrapping padlocked to the tree. Wienecke can unlock it to care for it, but it is invisible to the eye from a distance.

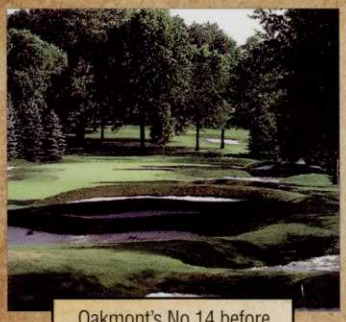
"It's near the championship tees on the 16th," he says. "You won't even know it's wrapped."

Wienecke figures the fir is only 50 to 75 years old – but may not have many years left. It grows where trees don't, and it's been attacked.

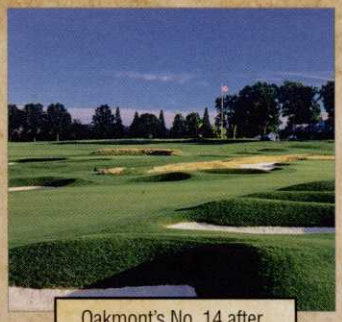
"The growth rings are compact so we know it's been stressed," he says. "There's a lot of cone production – so it might be saying it won't be around much longer."

TWO TREES (OR "RETURN TO HISTORY")

Oakmont Country Club, Oakmont, Pa.



Oakmont's No.14 before



Oakmont's No. 14 after

"They started planting trees here in the 1960s and 1970s," John Zimmers says. He's superintendent at Oakmont Country Club, which, beginning in the 1990s, started removing those same trees.

He figures plantings began as part of a "beautify America" program following the post-WWII building boom that saw functional but ugly buildings thrown up all over the country to accommodate the fast-growing population. Further impetus came from club members to "beautify Oakmont" – and the club added several thousand trees – some 40 years ago.

They were indeed beautiful trees, and it was a nice, shady course. But it was wrong for the golf course long-term.

"It was way overgrown," Zimmers says. "There were more than 5,000 trees on the course. It affected how it looked and how it played."

The trees had been a big problem for the greens, he says.

"Trees and grass don't grow well together," Zimmers says. It also wasn't true to Oakmont history. Henry Fownes drew it in 1903 as a links-style course with windswept greens and grasses – no trees. "We were trying to restore the golf course to its original design."

Oakmont started removing evergreens in the mid-1990s, he says, just to "clear some space." As work progressed, they got more aggressive.

"They realized, 'The more we open it, the better it looks and plays,'" Zimmers says.

Because the membership at the time liked the trees, a lot of the work had to be done in the early morning or late at night.

"At the beginning, it was a sensitive issue," Zimmers says. "Now if you surveyed the membership, 98 to 99 percent would approve."

Trees that had overgrown bunkers and greens – gone. Trees for an idea, someone's idea, of beauty – gone. Nearly all the trees – gone. By 2005, they were done.

"It was a big undertaking," he says. "Now the course is restored."

So much so, that Oakmont hosted the U.S. Open in 2007. The course, brand new and wonderfully old at the same time, wowed the observers, players and attendees who came to the Open – with an estimated 10,000 more of the latter able to come because removing the trees added so much room. Oakmont's revivalist return to tradition raised the club into the top echelons of Golf Digest's Top 100 courses, and the USGA advised golf courses that were considering tree removal and course restoration to visit Oakmont to see how it's done.

Only two trees remain: at the third tee and near the 4th and 5th holes.

"They're staying for now," Zimmers says.

A SHORT CUT (OR "NO SLOW GROWTH")

Inverness Club, Toledo, Ohio

Designed in 1903 by Donald Ross, it was 75 years later that Inverness became known for "the Hinkle tree."

Courses are often changed and improved in various ways prior to major golf events; all are spruced up, dressed to the nines, to accommodate excellent golfers, galleries of spectators and television cameras. In 1979, Inverness hosted the U.S. Open, and something one golfer did is remembered today.

Lon Hinkle studied the course intently during a practice round, and noticed the 8th had been changed from a long par-three to a par-five, to make room for spectators. He saw that by playing the 17th fairway instead (it ran next to the 8th), he'd get a 50-yard shortcut.

It wasn't against any Rules of Golf, and the fairway in question was clear of golfers, so during the first round he nailed his shot just that way. He birdied the hole, gaining a stroke on his competition.

Overnight, the USGA fixed his caddy wagon. They planted a 25-foot spruce to block the route.

Several golfers that second day, including Hinkle, nonetheless tried the same strategy as before. Some didn't make it over the tree, some did, and one did – only to land in the ravine opposite. Hinkle found the green in two that second round – another good performance.

In the final two rounds Hinkle played the 8th the conventional way. The tree still stands.

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TREES GROW IN OKLAHOMA

Southern Hills Country Club, Tulsa, Okla.

Tree removal at Southern Hills

Conventional images of Oklahoma suggest the place where God decided to collect all the dust from creating the world. In fact, the state is heavily forested – not to mention mountained and laked – and very little is the "Dust Bowl" of old.

"This is green country," says Russ Myers, CGCS, former superintendent at Southern Hills Country Club.

It's a native oak area, he notes, along with sycamore, and the private club has a full-time horticulturist on staff.

In fact, Southern Hills has some 4,000 trees on its 27 holes. It's a far cry from the two dozen first planted near five greens – for shade – when the course was built in 1936.

Occasionally, the trees cause trouble. A state champion American elm on the second green was one of them. About 150 years old, Myers had to remove it in February 2007.

"It was either the largest or the oldest in the state," he says. "But we battled with that green for years."

Myers worked with a tree care company to survey the course, mapping each tree in a shade analysis study to find which ones were causing problems. He found the green in question was getting less than an hour of sun per day.

The choices were to move the green, accept the poor grass or remove the tree.

"The membership did not want the tree removed," Myers says. "It was a whole mind-set to go through, and it truly took facts and data to show them the need."

When they took it down – the elm was at least 5 feet in diameter – Myers learned the tree was almost entirely hollow inside from disease.

The result since its removal? "It turned that green into one of our strongest," he says.

Myers also lost about 100 trees to an ice storm in winter 2007-2008, and has replaced many. In fact, the club, with just fewer than a thousand members, is working on its vision of what the course will look like for the next 30 years.

MEASURE ONCE, PUTT TWICE

Wilson Golf Course, Los Angeles

Blue gum trees at Wilson

People usually throw their clubs into the lake. James Ward, golf manager for the Los Angeles department of parks and recreation, was managing one of the city's golf courses, Wilson, in 1997. A popular layout at Griffith Park, Wilson Golf Course plays more than 90,000 rounds a year. After one of those rounds, Ward says, a golfer came up to the starter with an odd request.

"He said, 'I need your help recovering a putter,'" recalls Ward.

At the par-5 15th, the golfer had quarreled with the foursome playing behind him. Golf balls were tapped out of the way, tempers flared – and a player in the foursome threw the man's putter into a eucalyptus globulus (blue gum).

"It was 80 or 90 feet tall," Ward says of the tree. "The putter was 30 feet up."

The golfer explained the putter – a BullsEye, with a brass blade – had been his father's; he needed it back.

He left his name and number, and the next day, a tree crew knocked a putter out of the tree: a BullsEye with a brass blade. "We called him, he came down, looked at it, and said, 'This is not my putter.'"

Yes, when the crew went back into the tree, they found another putter – a BullsEye with a brass blade. "One tree on one hole had two putters in it," Ward says. "Nothing that crazy has happened since."

The man retrieved his dad's putter. But, Ward says, "I still have the other one."

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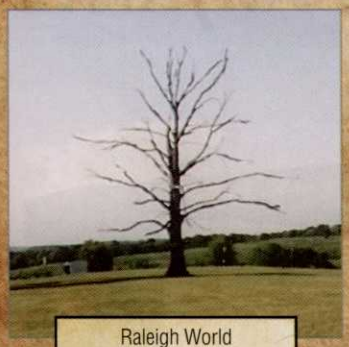
THE OLD OAK TREE (OR "IF YOU BUILD IT – DON'T TOUCH THE TREE")

Raleigh World Golf Course, Norwood, Iowa



Raleigh World

Raleigh Dunston has spent the better part of 20 years building his golf course. He started it in 1990, opened it in 2002, and improves it a little bit every day.

"I'm trying to make it a full-time thing, but it's not yet," he says.

But Raleigh World is more than just "pasture golf," with a few holes in a field and a box to collect greens fees on the honor system. Dunston has a full 18 holes, flags, rental golf cars, a 3,000-square-foot clubhouse (a converted barn) – even advertising. The greensmower goes out every day.

"The only difference is I don't have bentgrass," he says. "So it's more like early golf."

It plays about 5,000 to 8,000 rounds a year – he's not quite sure, since it's more a labor of love than a labor of economics and spreadsheets. But his wife loves the tree.

It was there, on his family's land, when he was 5 years old; it was there when he was building the golf course and it's there now, right on the 14th green.

"That tree has been standing for about a hundred years," Dunston says. "My wife kind of adopted it when I was working on the course, and she wouldn't let me cut it down."

An old oak tree, sans yellow ribbon, it doesn't bloom or grow or die.

"It doesn't do anything," Dunston says. "It just stands there."

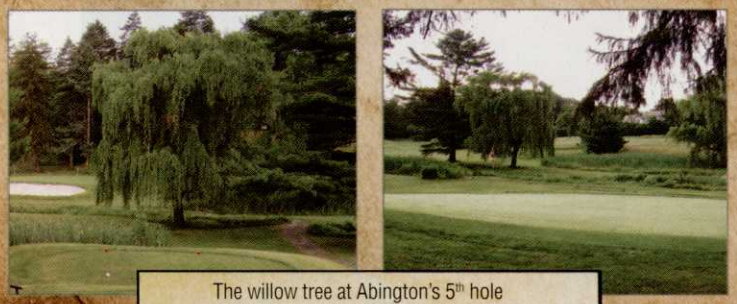
Right in the middle of play.

"That just makes it a little bit more fun," he says. "We put up a sign that says if you hit the tree, it's a three-stroke penalty."

This article originally appeared in Tree Care Industry Magazine. It's reprinted here with permission from the Tree Care Industry Association.

TREE HUGGER

Abington Country Club, Jenkintown, Pa.



The willow tree at Abington's 5th hole

You can't miss it, much as they'd like to. The 5th hole at Abington has a willow tree on it – right on it. The tree, about 40 feet tall, is smack dab in front of the green. It blocks at least one-third of the landing area at the hole, making viewing it – let alone access to it – a challenge, to say the least.

"It's a par 3," says Timothy Walker, superintendent. So, on such a short hole, "You have to go over it or around it. And, in the evening the hole plays right into the sun."

The owner won't cut it down, he says.

"He's not into cutting trees down," Walker notes nonchalantly. "He just likes trees."

The course was built in 1913 and Walker believes the tree was there at that time, though he's not sure of the history of the tree itself. Complicating matters is that the course owner is actually long-term leasing the land from a Pennsylvania Quaker group, he says.

"It's the Abington Friends," Walker says. "Maybe we can't actually do anything with the tree."

It's a nice looking tree, he notes, that presents a practical problem.

"It's funny to have it there," Walker says. "Golfers actually like the tree; I have no idea why." **GCI**

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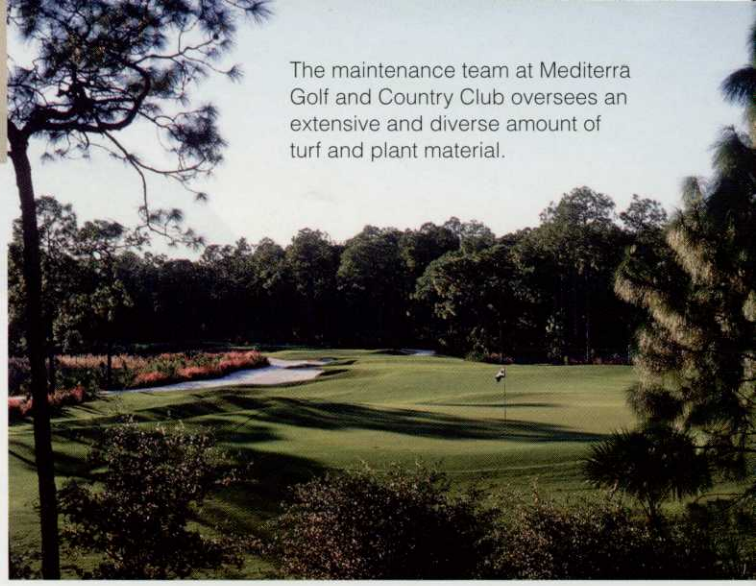

The maintenance team at Mediterra Golf and Country Club oversees an extensive and diverse amount of turf and plant material.

BROKERING A DEAL

Scott Whorrall's relationship with a plant broker ensures both efficiency and quality when acquiring his facility's unique needs. *As told to Mike Zawacki*

Scott Whorrall requires a lot of plants.

As the director of golf course and grounds operations at Mediterra Golf and Country Club in Naples, Fla., Whorrall not only oversees the maintenance of the facility's two 18-hole, Tom Fazio-designed championship courses, but also 100 acres of plantings around the residential community and its common grounds. This translates into $1 million in plant material purchases annually.

Whorrall

Whorrall reconciled this need two years ago by forging a business relationship with a local plant broker who scours the nurseries around South Florida for the unique, hard-to-get plant material Mediterra needs to maintain the upscale, gated golf course community's Mediterranean theme.

"Working with a plant broker saves me a lot of time and hassle when it comes to purchasing our plant materials," Whorrall says. "It's been a good relationship and I'd say working with a broker has exceeded our expectations."

Whorrall shares with GCI the process of forging that relationship and the advantages of working through a plant broker.

"Both of our courses are 18 holes with 419 bermudagrass everywhere except on the greens, which are ultradwarf bermudagrass. From an aesthetic point of view, these two courses are polar opposites. One course is about 80 percent native plants – everything from Mersin plants to pines and cypresses. The other is more ornate with 122 acres of maintained landscape beds, about half of which are ornamental plants like jasmines, arboricolas, viburnums and green island ficus. These courses project a tropical, South Florida kind of feel with a lot of annual flowers and flowering shrubs – just a lot of flowers. I'd say our annual budget for plant material and color is more than $1 million.

FIRST CONTACT. To be honest, I don't remember if I sought out the broker or if he sought me out. Actually, I may have just stumbled across the guy two years ago. We'd been dealing with two different nurseries in the area, but they couldn't find the odd, unusual plants we were looking for. They could supply us with the basics and they had good prices, reliable delivery and good customer service, but they just couldn't find the specialty items we were looking for.

GOOD BUSINESS SENSE. We're planting 12 months out of the year and we're bringing in new plant material all of the time. It's not practical for us to go out to the local big-box store for our plant needs. First of all, those are retail prices and we're buying at wholesale prices. This alone is important to us because we're buying plant materials in large quantities. So we're looking at a cost savings of more than 50 percent in most cases.

Also, the plant broker we use will find the things that you usually can't find, or in the quantities that we need, at your typical big-box or retail outlet. This is a huge asset to us.

It's a unique theme here – a Mediterranean theme – and the residents and members bought into that theme. So not all of the plants needed to complete that theme are readily available to us. Our broker seeks out those types of plants that you don't see very often. For example, our broker has been able to track down very large agave plants and very large bromeliads and anthuriums, which allow us to complete that Mediterranean-style look.

SOLID RELATIONSHIP. We spent a lot of time together at first. I showed him various areas of our property that we wanted to address with certain types of plantings, and I even showed him pictures of looks that we were trying to accomplish on the property and around the courses.

Our broker makes regular trips two to three times a week to Homestead and South Miami where he finds that strange stuff at those little nurseries tucked away down there. Over two years of working together, our broker has gotten a really good feel for the types of plant material that we're looking for, even if we haven't requested it. He comes in a few times a month with plant samples and to see what I think. Sometimes they work and sometimes they don't, but that's the best part of our working relationship. He has a really good sense for what we're looking for and when he comes across some unique material he knows to pick it up and to see what we think. **GCI**

Scott Whorrall provides tips for forging a relationship with a local plant broker. Find them at the March Online Extras section of golfcourseindustry.com.

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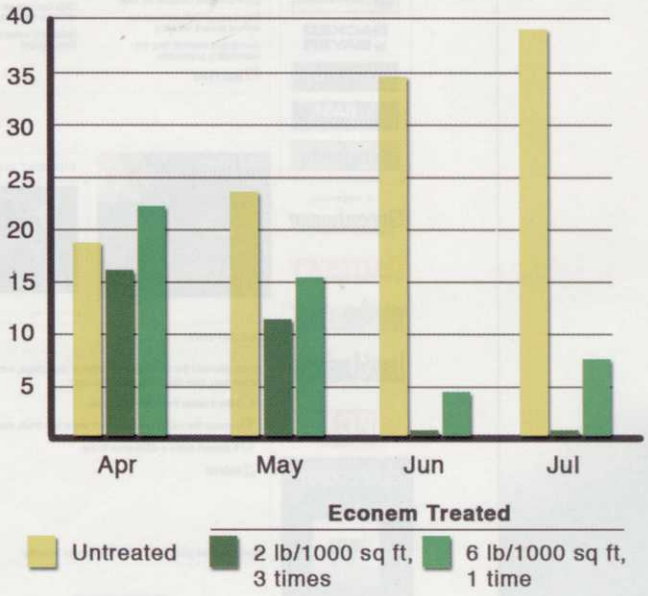

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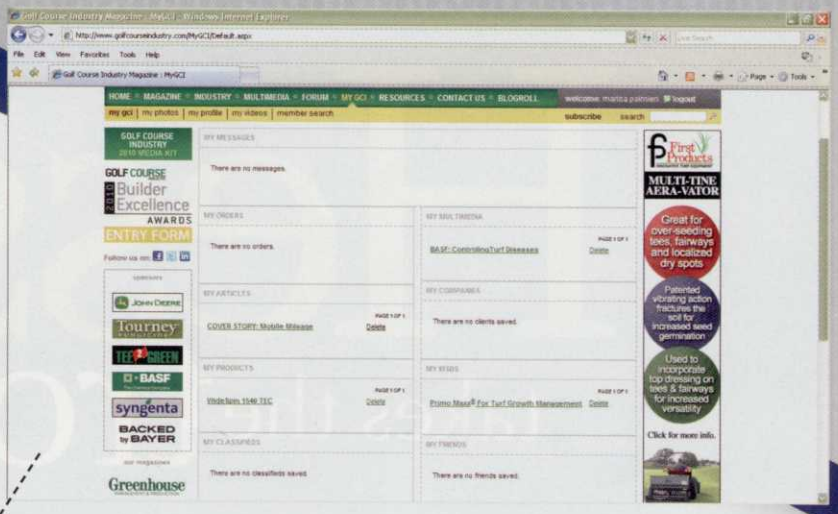

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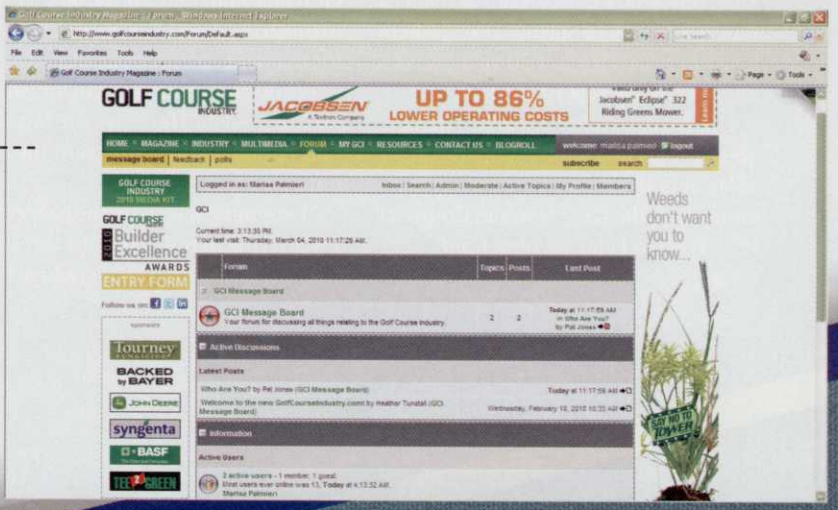

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By Marisa Palmieri

Hess takes the trophy

Assistant superintendent Adam Hess, son of 30-year GCSAA member Alan Hess, won the GCSAA National Championship at the Greg Norman Course at PGA West in Palm Springs, Calif., last month.

On the surface, Adam Hess is like many assistant golf course superintendents: He's the son of a superintendent; he grew up working summers at the golf course and, upon high school graduation, wanted nothing to do with a career in golf course maintenance.

And, like many others, he tried a few career paths in college before realizing the allure of a 9-to-5 job wasn't all it's cracked up to be.

"I eventually realized I did want to get into the golf business, and with a little maturity, I've loved it ever since," says Hess, who's the assistant at Augusta Pines Golf Club in Spring, Texas, where his father Alan Hess, a 30-year GCSAA member, is the superintendent.

Unlike many other assistants, though, 26-year-old Hess is the youngest winner of last month's GCSAA National Championship at the Greg Norman Course at PGA West in Palm Springs, Calif.

ON THE GOLF COURSE

Playing in his first National Championship, Adam Hess parred the first playoff hole to defeat Tim Scott, the CGCS at Stony Creek Golf Course in Oak Lawn, Ill., who missed a five-foot putt for a par of his own on the hole.

Hess began the final round of the tournament three shots behind first-round leader Danny Fielder, CGCS at Creekside Golf Course in Modesto, Calif. Hess had a rough start to his day, with a double bogey on No. 3 and a bogey on No. 5, but settled down to birdie the seventh hole and then par the next 11 holes to finish the day at 2-over-par 74 and the tournament at 1-over-par 145.

While the sudden-death finish was exciting, Adam Hess says the last three holes of regulation play were the most difficult.

"I was more relaxed in the playoff then I was trying to finish the last three-hole stretch," he says. "That's when I had most of my adrenaline pumping, knowing I needed to par it out. On the 16th hole, I drained about a 16-foot putt – that was probably the most exhilarating part of the tournament."

Several weeks after the tournament, Adam Hess was still in disbelief.

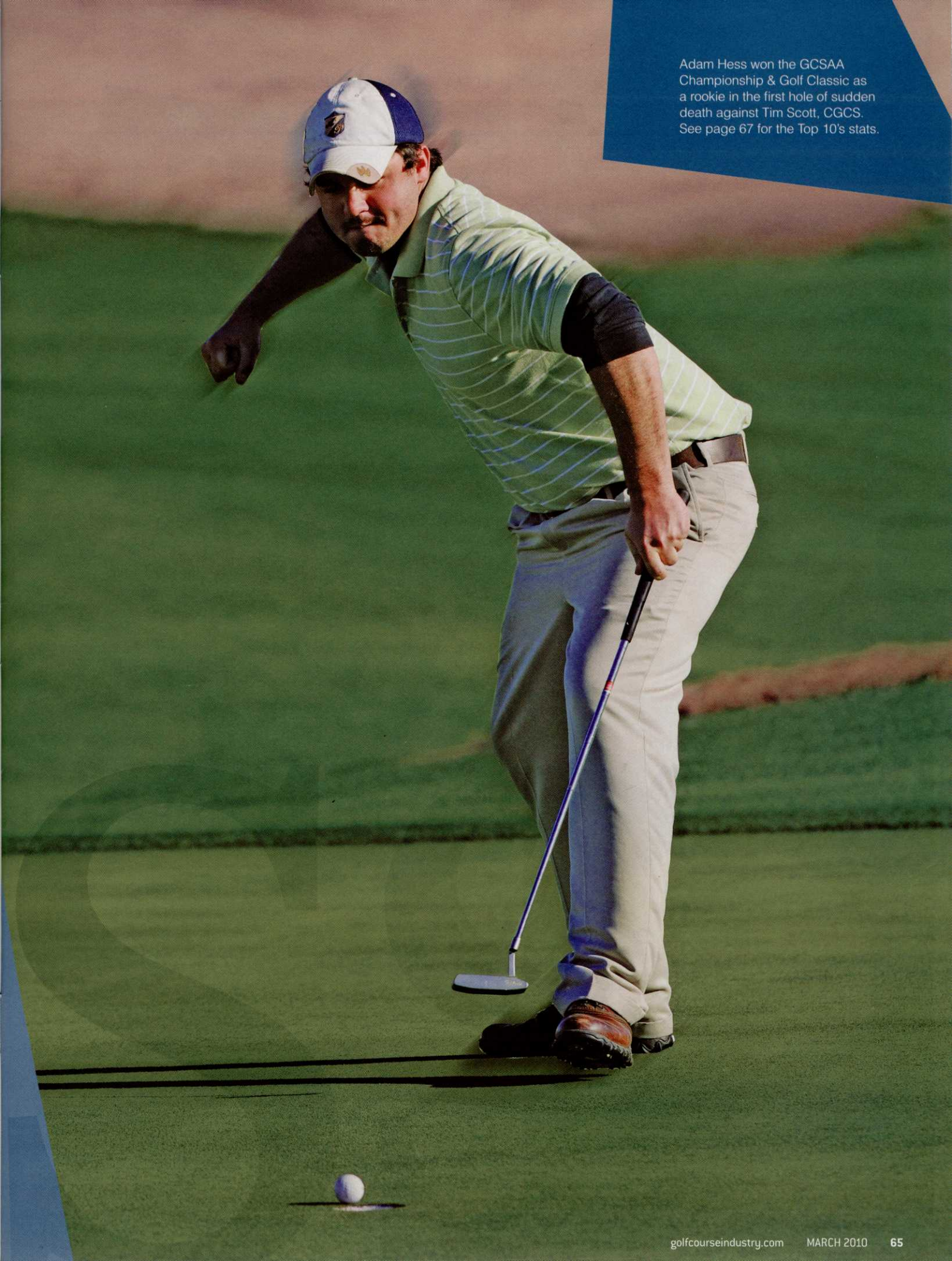
"It's still kind of unbelievable that it actually happened," he says. "Every day it sinks in a little more."

His dad agrees, saying he was probably more excited than his son was.

"I think it took him a while to settle in and realize what he accomplished, but I was probably more excited than he was. He seems pretty well under control."

Adam Hess, who played golf in high school, says the tournament reinvigorated his interest in competitive golf. In addition to a $250 purse, a lot of positive press and messages from friends and family who didn't even realize what he'd accomplished until they saw him in the Houston Chronicle, he received an exemption to play in the Trans-Mississippi Amateur tournament, and he's looking

GARY NEWKIRK/COURTESY OF GCSAA



Adam Hess won the GCSAA Championship & Golf Classic as a rookie in the first hole of sudden death against Tim Scott, CGCS. See page 67 for the Top 10's stats.

Adam Hess and his father, Alan Hess, a 30-year member of the GCSAA, with the trophy.

forward to it – and to next year's GCSAA National.

"Next year I'm going to have more pressure on me, but I'm pretty psyched," he says. "I haven't come down from the high of winning and holding the trophy yet. It's a really good feeling."

Alan Hess, who one time aspired to be a golf professional, says he's played in the tournament about 20 times in his career, finishing in the top 10 a few times. This year he won the Senior II Gross Division. He calls the experience of playing in the Championship along with is son a special one.

"It just adds to the overall enjoyment of the experience not only being with friends and colleagues, but with a member of your family," he says.

Who's the better golfer when it comes to family match-ups?

"Adam comes out on top more than he used to," Alan Hess says, laughing. "I can't hit the ball as far as he can."

But who has the better short game?

"That would be my dad," Adam Hess says.

AT WORK

No matter where his amateur golf career takes him, Adam Hess is the assistant golf course superintendent at Augusta Pines, which is owned by Tour 18, the company for which his father is the agronomist. Alan Hess hired his son several years ago as a full-time assistant after Adam Hess completed an internship under superintendent Kevin Hicks at Coeur d'Alene Resort in Idaho.

In addition to his full-time assistant duties, Adam Hess is wrapping up his advanced certificate in turfgrass management from Penn State's World Campus. He'll graduate in the fall and soon after he hopes to pursue a full-time superintendent position.

As for working for his father, Adam Hess likes it.

"It's very open around here," he says. "My suggestions are listened to and taken into thought and consideration. Also, there's a bit of flexibility involved, which is nice when you have the stresses of both work and school."

Alan Hess agrees. "We have our routine and we work very well together. He's familiar with me and my peccadilloes – my expectations.

GARY NEWKIRK/COURTESY OF GCSAA

He knows how I think, and he's able to deliver pretty much on everything I ask him to do."

Like many superintendent/fathers, Alan Hess is happy his son is following in his footsteps as long as Adam is happy.

"I never wanted to pressure him into the business," he says. "I wanted him to come to the business only if he wanted to and was going to be happy. I've seen a lot of parents expecting and demanding too much from their children – forcing them into their careers when maybe it wasn't necessarily the right fit or wanting them to play golf all the time.

"I always wanted Adam and his two brothers to have golf as an outlet, but I never wanted them to feel that they had to play," Alan Hess says. His sons Stephen and Nicholas are also both in college.

Did his pressure-free strategy work – are they golfers? "We make a good foursome," Adam Hess says. GCI

GCSAA National Championship & Golf Classic Top 10 at PGA West - Greg Norman Course

		Scoring to par	Round 1	Round 2	Total	Purse
1	**Adam Hess** Augusta Pines Golf Club, Spring, Texas	+1	71	74	145	$250
2	**Tim Scott** Stony Creek Golf Course, Oak Lawn, Ill.	+1	76	69	145	$125
3	**Daniel Fielder** Creekside Golf Course, Modesto, Calif.	+3	68	79	147	$75
T4	**Justin VanLanduit** Briarwood Country Club, Deerfield, Ill.	+4	79	69	148	$65
T4	**Jonas Conlan** Desert Princess Country Club, Indio, Calif.	+4	75	73	148	$65
T4	**Michael Stieler** Riverbend Golf Club, Madera, Calif.	+4	73	75	148	$65
T7	**David Brown** Flatirons Golf Course, Boulder, Colo.	+6	74	76	150	$50
T7	**Chris Webster** Braeburn Country Club, Houston, Texas	+6	72	78	150	$50
T7	**Shawn Westacott** Jackson Country Club, Jackson, Tenn.	+6	72	78	150	$50
10	**James Rattigan** Schuyhill Country Club, Orwigsburg, Pa.	+7	77	74	151	$40

BY BARRY STEWART, PH.D.

Amending fairways

When blended with sand at 10 percent by volume, Lassenite Soil Amendment improved water-holding capacity of golf course fairways.

This study was conducted to examine the properties of Lassenite Soil Amendment (LSA) for use in golf course fairways to improve water relations and examine plant-water relationships with water that is fairly high in soluble salts.

The LSA improved water-holding capacity (field capacity) compared to other amendments, when blended with sand at 10 percent by volume.

Materials were tested using a modified double wash cation exchange capacity (CEC) procedure to determine the CEC of each material using sodium (Na) as the ion being exchanged. Since Na would probably be the ion of interest, the usual magnesium for calcium procedure was not used. Instead, the samples were saturated with Na and then potassium (K) was used as an exchanging ion.

The LSA had a higher CEC than was anticipated, after examining a chemical analysis provided by Western Pozzolan, entrained sodium and soluble sodium components were ruled out. It is speculated that the source of the CEC is amorphous (without form) minerals present in the pozzolan. Amorphous materials are common in volcanic deposits. Amorphous materials also have been shown to have significant CEC values. This could be either a good thing (the amendment provides some nutrient holding) or not so good (the amendment becomes saturated with Na and this hurts the plants). Further CEC testing may be warranted to better define this property.

PLANT GROWTH. Seashore paspalum (*Paspalum vaginatum*) variety SeaDwarf was established on 6-inch (diameter) pots filled with sand mixed with no amendment (control), 10 percent (v/v) LSA or 10 percent (v/v) clinoptile zeolite (Z). The variety Seadwarf was used and the pots were established using washed sod. Sixteen pots of each treatment were established. After one month of growth to get acclimated, the pots were broken into four water regime treatment groups (12 pots per group) with four pots of each soil amendment per treatment. The water regime treatments were:

- Tap water – plants maintained at field capacity (no stress);
- Tap water – plants watered when they showed drought stress;
- Salt water (1000 ppm Na) – plants watered to field capacity; and
- Salt water – plants watered when plants showed signs of drought stress.

Plants watered with salt water at field capacity looked the best. These plants had better color and few if any brown leaves compared to other treatments. It appears that some sodium is essential for this seashore paspalum cultivar to have its highest quality.

Plants watered with tap water at field capacity looked the next best.

ROOTING STUDY. After more than three months of growth in 6-inch pots in the greenhouse, the pots were dismantled to examine root growth. There were three factors being evaluated in this study:

Water timing – maintaining water at field capacity by watering every day or watering just before the plants began to wilt, which was determined to be every two to three days depending on sunlight conditions. We found that water timing did not have a significant influence on root mass in this study.

Water quality effects were also examined and we found that 1,000 ppm salt (as NaCl) produced a small but significant decrease in root mass per pot (Table 1). The decrease was 1.4 grams per pot.

Soil amendments were also evaluated and found to significantly affect rooting across water timing and water quality (Table 2). The control pots (straight USGA sand) had the highest root mass but did not produce a significantly different root mass than a 90 percent USGA sand/10 percent LSA (LSA) mix. The 90/10 zeolite amendment produced a statistically lower root mass than did the other treatments.

It is logical that the straight sand might produce the highest amount of root mass as it was the droughtiest treatment (always the first to show signs of water stress). This would stimulate root growth to keep up with water demand.

The salt treatment always resulted in a decrease in rooting across all treatments, but this difference was not always statistically different. The zeolite pots showed

Material	Field capacity water (% water by mass)
Sand	21.9
LSA	27.8
Calcined Clay (fine)	26.4
Calcined Clay (coarse)	24.7
Calcined diatomite	23.3
Zeolite	22.2

Material	CEC cmol+/ kg material
Sand	0.3
LSA	25.9
Calcined clay (fine)	2.7
Calcined clay (course)	7.2
Zeolite (fine) (clinolite)	68.6
Zeolite (course) (source not known)	10.4
Calcined diatomite	10.5

Figure 1. The best pots (out of 4) for the salt water field capacity pots. C = control, P = LSA, Z = zeolite

Plants watered with tap water at field capacity looked the next best.

Figure 2. The best pots (out of 4) for the tap water field capacity pots. C = control, P = LSA, Z = zeolite

Plants watered with salt water under drought conditions are doing slightly better than those under drought conditions and tap water.

Figure 3. The best pots (out of 4) for the salt water drought pots. C = control, P = LSA, Z = zeolite

Figure 4. The best pots (out of 4) for the tap water drought pots. C = control, P = LSA, Z = zeolite

In most cases the LSA pots looked better than the other two treatments.

Table 1. Soil amendment effects on mean root mass of seashore paspalum.

Treatment	Root mass (g) in 6 inch pot
Control (USGA Sand)	10.4 a
LSA (90:10 mix with USGA sand)	9.2 a
Zeolite (90:10 mix with USGA sand)	6.6 b

Means followed by same letters are significantly different at the $\alpha = 0.05$ level of significance.

Table 2. Comparison of the effects of 1000 ppm NaCl water and tap water on the mean rooting mass of seashore paspalum.

Treatment	Mean root mass (g) in 6 inch pot
Tap water	9.44 a
1000 ppm NaCl	7.98 b

Means followed by same letters are significantly different at the $\alpha = 0.05$ level of significance.

Table 3. Comparison of all treatment combinations for mean root mass of seashore paspalum.

Treatments	Mean root mass (g) in 6 inch pot
DWP	10.9 a
FCWP	10.9 a
FCWC	10.7 a
DWC	10.5 a
FCSC	10.3 a
DSC	10.1 ab
DSP	7.9 abc
DWZ	7.1 bc
FCSP	6.9 c
FCWZ	6.6 c
DSZ	6.5 c
FCSZ	6.2 c

D = drought, FC = field capacity, W = tap water, S = 1000 ppm NaCl, C = control (USGA sand), P = 90:10 mix of USGA sand and LSA, Z = 90:10 mix of USGA sand and zeolite. Means followed by same letters are significantly different at the $\alpha = 0.05$ level of significance.

Table 4. Electrical conductivity values of various treatments. EC was determined using a 1:1 soil to water ratio.

Treatment	EC reading (mS)
LSA Field Capacity	1.56 a
Zeolite Field Capacity	1.22 b
Zeolite Drought	1.22 b
Control Drought	1.06 bc
LSA Drought	1.00 bc
Control Field Capacity	0.87 bc

larger decreases in root mass than did the other soil treatments (Table 3).

It appears that the LSA adsorbs less sodium than the zeolite and its incorporation has less effect on root mass in salty conditions than zeolite. LSA also enhances water holding so treated areas would require less water compared with straight sand.

To gain further insight into the plant growth, the amount of salts held in the pots at the end of the experiment was examined. The grass and pots were dried down and soil samples were taken. The grass roots and rhizomes were extracted from the soils samples by hand. For electrical conductivity (EC) determination 20 grams of soil was mixed with 20 ml of isopure water, stirred and allowed to stand for 30 minutes. The electrical conductivity was measured with a Field Scout conductivity meter (Table 4). The 1:1 soil to water ratio is reported to produce results similar to saturated paste conductivity. No treatment showed an EC value that would affect plant growth of salt tolerant plants.

Since the LSA held more water at field capacity, it seems logical that when the pot was dried down more salt would be present in that soil and therefore it would have a higher EC value. The sand would have the lowest water-holding capacity and little CEC, therefore its EC readings should be low and they were. It is interesting that the 10 percent LSA pots under drought conditions (watered every 3 days) fell into this group. The 10-percent zeolite pots show identical readings for field capacity and drought treated pots. We think we saw equilibrium with the exchange complex in these pots, and the EC value represents the 1,000 ppm salt solution we were watering with, coming to equilibrium with cation exchange of the zeolite. If the EC of the droughted LSA pots represents equilibrium, then it is at a lower level indicating that LSA does not hold onto salts as strongly as the zeolite amendment.

CONCLUSION. There did not appear to be any drawback to using the Lassenite Soil Amendment (LSA) under these conditions – a sand fairway watered with 1,000 ppm salts (as NaCl) water. As long as the soil on the site is able to drain away excess water, the seashore paspalum should perform well. If drainage were to be poor and the water began to move upward in the profile rather than downward, a salt accumulation could affect the grass. The LSA increased the water-holding capacity of the soil and that resulted in needing to be watered less frequently than sand-alone pots.The difference was that the sand pots needed water every two days while the LSA- and zeolite-amended pots needed water every three days. In the field these intervals would more likely be three days for sand and four to five days for the LSA. This would be a significant change in the amount of water needed to maintain turf on a yearly basis. **GCI**

Barry Stewart, Ph.D., is associate professor in the Department of Plant and Soil Sciences at Mississippi State University.

Championship cut

Chambers Bay is pleased with the results of its grinders.

BY ALYSE LAMPARYK

For superintendent David Wienecke, the quality of a clean cut is important as he prepares his facility for the U.S. Amateur Championship this August. In turn, the grinder he uses to maintain his mowers' blades is just as critical.

Chambers Bay Golf Course in University Place, Wash., has been open since 2007, but Wienecke purchased the grinders for the public 18-hole course in February 2006.

"We actually looked at three different manufacturers' grinders and tried them out and talked to people that used them and came up with Foley after that experience," Wienecke says, adding he purchased the Foley United ACCU-Master spin grinder and an ACCU-Pro bedknife grinder for just under $52,000.

Wienecke had used Foley United grinders for 20 years, but he listened to his mechanic and did his due diligence about the product options in the market before making that purchase.

Four years later, Wienecke is still pleased with the grinders and their consistent performance and believes he has received a solid return on his investment.

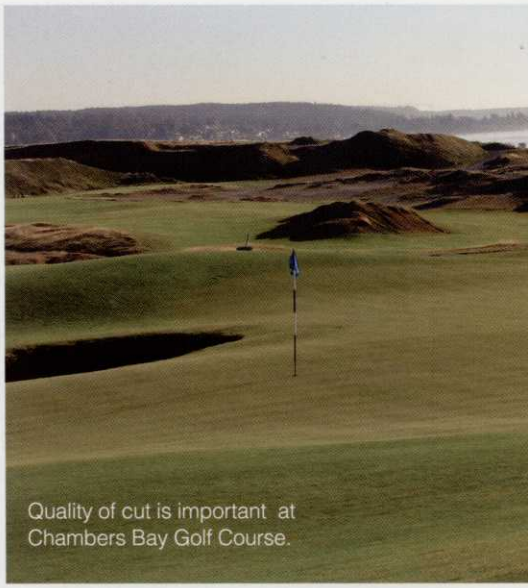
"There's no way that we could produce the quality of cut that we demand and that our golfer's expect and that the championships will need to have without having the quality of cut that we're able to achieve," Wienecke says of his grinders.

Considering it is the first public-access golf course to host a U.S. Amateur, appearance and cut are essential. Along with hosting the 2010 Amateur Championship in August, Chambers Bay Golf Course will be the site of the U.S. Open in 2015.

With about 30 staff members and a $1.5 million annual maintenance budget, Wienecke does not seem unsettled by the upcoming high-profile events.

"We're really oriented towards a very high-quality of cut and so we use our grinders all the time," Wienecke says. Two of the employees work solely with the grinders, a skill that takes time to acquire.

"In terms of learning the operation of the machine, I think if you know how to use a grinder and how to set up reels then the learning curve is fairly easy, but the process of learning how to set up proper release angles and other things take time," Wienecke says.



Quality of cut is important at Chambers Bay Golf Course.

In anticipation of the Amateur, Wienecke has asked Foley for a whole new set of grinders to help them continue to keep the course in top condition. Wienecke experienced some problems with the computer-control components. The course's grinders are used at least once a week, year-round, so wear and tear happens.

While at the Golf Industry Show in San Diego last month Wienecke spoke with Foley representatives who assured him they were working on straightening everything out. The only concern Wienecke had with the repair process was on the local level.

When it comes down to it, he is pleased with Foley United products. "I have had no problem, no concerns with the equipment and our service level from the manufacturer has been great. I'm fully satisfied with that," Wienecke says.

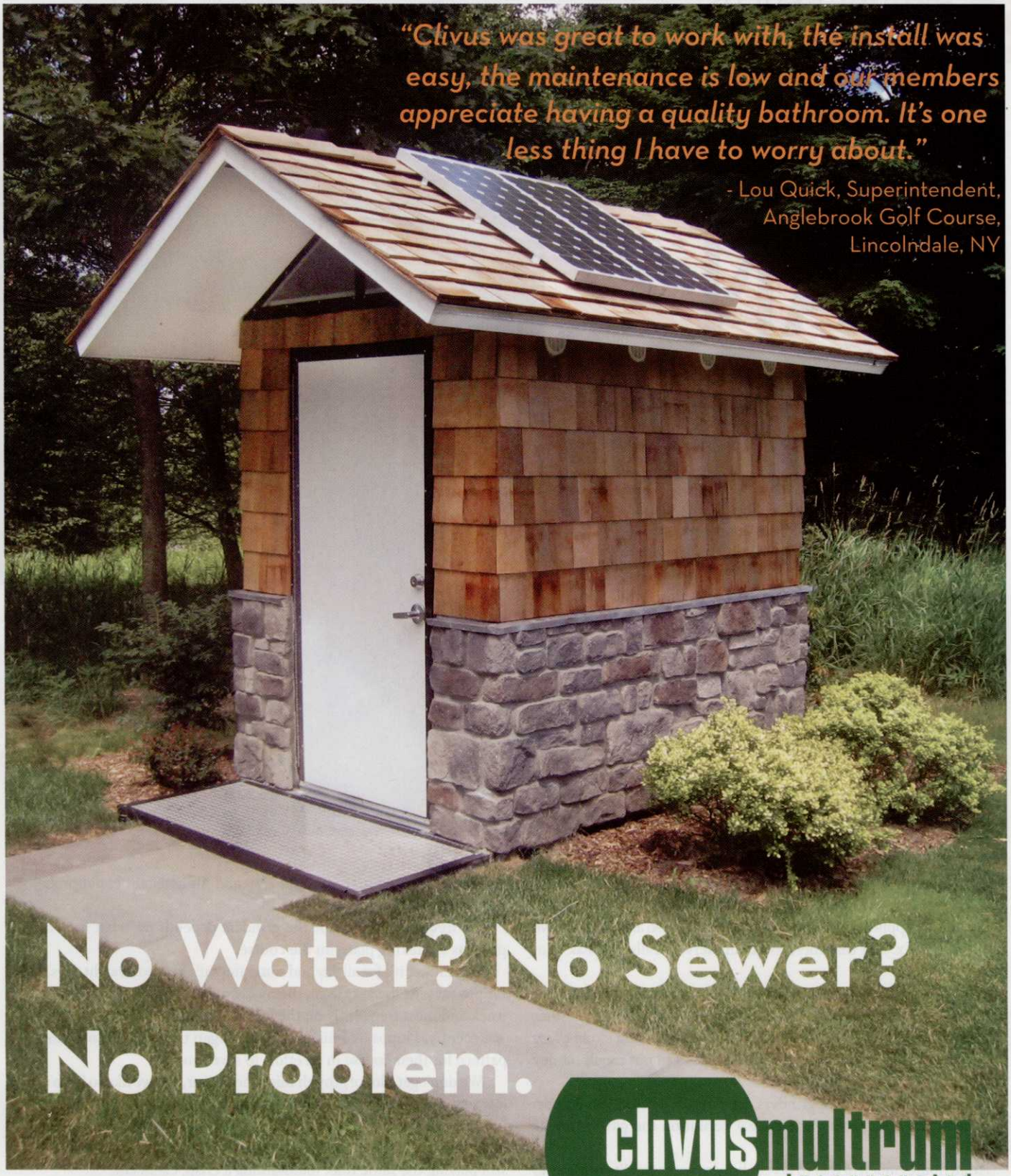
For now, the Audubon International Silver-Certified course will prepare for its national debut. As a public course it has high standards to live up to, but Wienecke is not worried.

"We act like and are maintained like a private golf course. So our standards are private, country club level," Wienecke says. **GCI**

Alyse Lamparyk is a freelance writer based in Athens, Ohio.

The University Place, Wash.-based course is preparing for the U.S. Amateur Championship in August.

CHAMBERS BAY GOLF COURSE



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PART OF THE PLAN

A solid set of grinders keeps maintenance costs in check at Stone Creek Golf Club.

BY ALYSE LAMPARYK

Equipment manager Steve Mathre takes a lot of pride keeping the mower reels sharp so they get a quality cut and a good roll on the green.

It has been a smooth ride for superintendent David Phipps ever since he purchased grinders for his course a decade ago. A 20-year golf industry veteran, Phipps knows how important a clean cut is for his course.

Phipps first encountered Bernhard & Co. grinders while working as an assistant superintendent at Oregon Golf Club. The course hired a new superintendent and with him he brought Bernhard Express Duals to replace another brand of grinders. Interested, Phipps and the course's mechanic fiddled around with the machine and were pleased with its ease and design.

When Phipps was hired as superintendent at Stone Creek Golf Club in Oregon City, Ore., he remembered how pleased he had been with the Bernhard product and purchased the first grinders for Stone Creek from the company. He chose the Express Dual 3000 and Anglemaster 3000 Bedknife Grinder for about $35,000.

"It's all pros," says Phipps of the tool's versatility and reliability. "I have no problems with it at all."

Bernhard supplies are sold at a nearby location, so any repairs have been a quick fix. Not that there are many service calls to speak of at Stone Creek.

When Phipps was in need of a new vacuum cleaner for the unit, Bernhard sent it for free, as it was covered by the warranty. Other than that, Phipps has simply had to replace the grinding stone every once in a while. In the long run he has not had to put much money into the machinery.

Results of the Bernhard grinders are not just noticed by Phipps. "We're always being told what a great condition the golf course is in," Phipps says.

He attributes much of that to his equipment manager, Steve Mathre, who Phipps says is a fanatic about keeping the reels sharp so they get a quality cut and a good roll on the green. The mechanic takes conditions on the golf course seriously as they reflect his work, something he takes quite personally.

In addition to the equipment manager, Phipps has eight other employees. The annual maintenance budget of about $627,000, allows for 12 or 13 employees during Stone Creek's peak season. While only the mechanic works with the grinders, Phipps feels that the learning curve for the machinery is quite easy and his assistant could probably easily do it.

The frequency of use for the grinders depends on what type of projects are taking place on the course.

"Sometimes it's for all day and sometimes it's for two straight days," Phipps says. At the very least, the mechanic uses the grinders once a week and most frequently on the fairway or trim mowers.

Recently, Phipps and his employees began trying a new mowing pattern for their course in an effort to save time.

"We don't get a lot of growth this time of year, but we like to keep it low so we're not overtaken with growth during spring," Phipps says. For now the grounds are still working off the slow-release fertilizer and the grass is growing in slowly. Through it all, the grinders are still playing the same role: maintaining a crisp, clean cut.

Phipps acknowledges that a critical part in maintaining a golf course is having sharp reels. He finds it important to keep the turf clean because then less water is necessary, saving money and alleviating a lot of frayed edges.

Ultimately, Phipps says, "Keeping sharp equipment is all part of the plan." **GCI**

Alyse Lamparyk is a freelance writer based in Athens, Ohio.

DAVID PHIPPS

Tank-mixing tactics

To get the most mileage out of your pesticides and fertilizers, follow these tank-mixing principles.

by Dara Park, Ph.D. and Juang-Horng 'J.C.' Chong, Ph.D.

Tank-mixing pesticides and fertilizers is a convenient and cost effective way to apply two or more chemicals at once. When done appropriately, tank-mixing can reduce labor and equipment cost, and save time and energy. However, chemicals can potentially react with each other and/or change the characteristics of the carrier water. These interactions can change the efficacy of pesticides in both positive and negative ways.

POSITIVE EFFECTS

Enhancement occurs when an additive is mixed with a pesticide to provide a greater response than if the pesticide was applied alone. Adjuvants are common enhancements added to tank-mixes. Adjuvants include spreaders, stickers and other materials.

Additive effects result from the addition from each chemical added. The additive effect simply equals the sum of the effect if the chemicals would have been applied alone.

Synergism is when the product of two chemicals interacting with each other provides increased efficacy (control). This may allow for lower rates of chemicals to be used.

NEGATIVE EFFECTS

Antagonism is the opposite of synergism. The components react chemically with each other so one or both chemicals are rendered less effective than if they were applied separately. In addition to poor performance, an increase in plant phytotoxicity may occur.

Incompatibilities can occur from chemical reactions as mentioned above, or as the physical product of mixing chemicals. For example, if flocculants form, screens and nozzles may be clogged and the desired rate of chemical may not be applied. Flocculants and precipitants also can leave a residue on leaf surfaces. Other chemical incompatibilities occur from mixing chemical(s) with inadequate carrier water. Also, carrier water that is too low or high in pH and temperature, contain salts, or organic particulate can chemically alter the compound that is to be applied.

Pesticide resistance to two or more chemicals within a tank-mix may develop if the same chemical combination is used repeatedly over a long period of time. Pests may develop resistance faster when the chemicals used in the same tank-mix are of the same mode of action (for example, cyfluthrin and bifenthrin are both synthetic pyrethroids and target the activity site in an insect's nervous system). Resistance also may occur when the chemicals are of different modes of action if they are used frequently.

To make sure that only positive effects occur when tank-mixing, follow these guidelines for developing new tank-mixes:

1 Know the temperature, pH and salinity of your carrier water. Adjust your carrier water temperature and pH to the optimal range of each chemical before mixing in a tank or for a jar test.

2 Read the label of all chemical products considered to be tank-mixed. The product labels will give you information on what type of chemical and carrier to avoid and potential problems that may occur. If you are still unsure about a mix, contact the manufacturer.

3 Perform a jar test following proper mixing procedures (see sidebar). This will determine physical incompatibilities.

4 Many chemicals require constant agitation; be sure to follow all label instructions. Many labels will instruct you in the sequence for adding products to the tank mix.

5 Tank-mix enough to make a test application on part of the target site (preferred) or on a non-target site. Schedule the application to allow enough time for any negative effects (chemical incompatibilities) to be apparent before the actual application is made.

6 When making an actual application, spray as soon as possible. Do not use a spray solution that has been sitting for a long time. Some chemicals may degrade in spray solution after several hours. **GCI**

Dara Park, Ph.D., and Juang-Horng 'J.C.' Chong, Ph.D., are assistant professors at Clemson University's Pee Dee Research and Education Center in Florence, S.C.

Reprinted with permission from "2009 Clemson University Pest Control Guidelines for Professional Turfgrass Managers."

If you have photos you've taken of your course and would like us to consider featuring them for a future issue, e-mail them as high-res .jpg or .tif files to gci@gie.net.

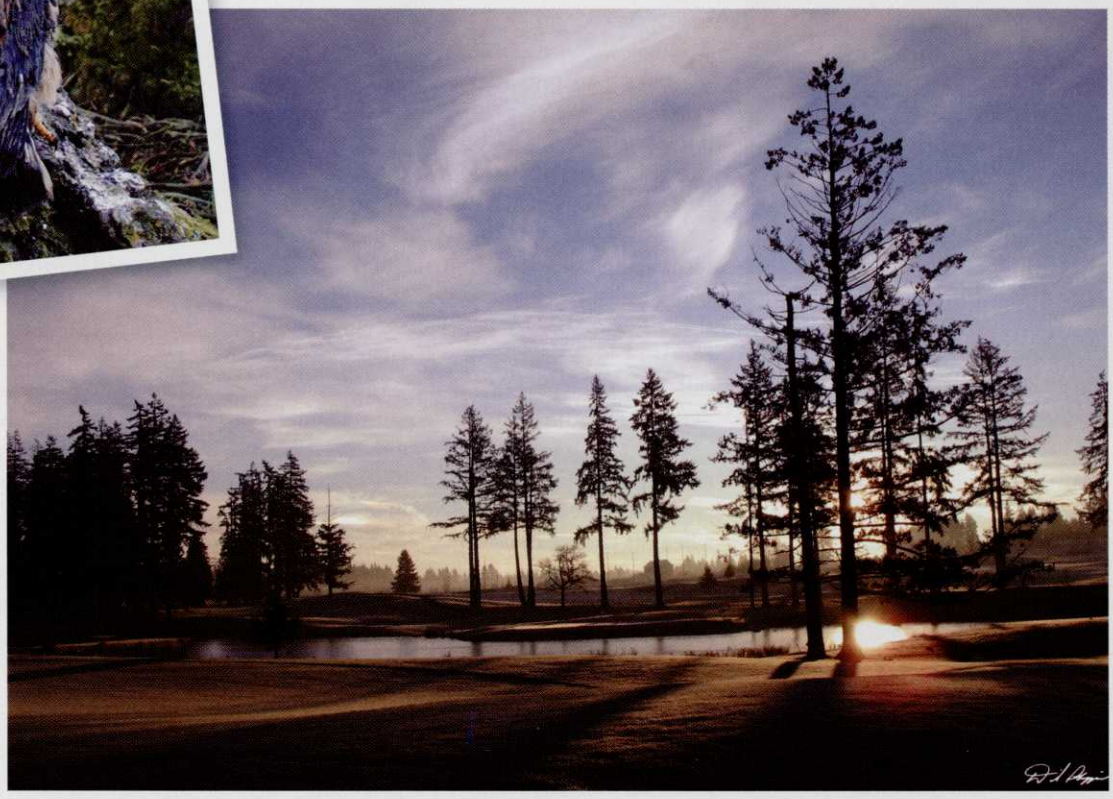
Photos by David Phipps

Superintendent, Stone Creek Golf Club, Oregon City, Oregon.

When I started as construction manager at Stone Creek Golf Club I knew it was important to document what was happening. I soon found out that my course was quite photogenic and I started using the pictures for gifts and our Web site.

I photographed these kestrels with my first digital camera. Sometimes shooting a good photo is simply about being in the right place at the right time.

I shot this picture after a snow storm dropped 5 inches of snow one morning. It's an Oregon White Oak and has a real typical shape. These trees were once abundant in the Wilamette Valley, but have been lost to development and farming. When I took the picture it was very foggy, but when I put a little Photoshop to it the haze went away and the branches came out.



I took the sunrise picture on a cold December morning when it was about 25 degrees. There was just enough light fog in the background to give it a misty appearance and the wispy clouds against the blue sky really caught my attention. The sun was reflecting off the pond and gave a nice silhouette of the fir trees.

Photo Tip

It's good to shoot in thirds. Divide your shot in three sections with your subject lining up on the dividing line. I also like to see the shot lead your eye in a certain direction, whether it's a row of trees or a fence line that can give the shot dimension.

Monroe Miller is a retired golf course superintendent. He spent 36 years as superintendent at Blackhawk Country Club in Madison, Wis. Miller can be reached at groots@charter.net.

A FRIEND YOU MAY NOT HAVE KNOWN

One of the great pleasures of my career as a golf course superintendent was the fraternal feeling among us. I always felt that if I was a long way from home and had some kind of trouble or problem, help was as close as one of my colleagues was. All it would take would be a phone call.

That extended to Green Section agronomists I knew, land grant faculty whose paths I may have crossed, and some guys who ran the turf equipment manufacturing companies. These warm relationships gave me a sense of security and were a very rewarding part of my working life.

One of those industry men whose friendship was a treasure to me, and to other superintendents all across the country as well, was Ralph Nicotera. He joined the ranks of the retired after the GIS in San Diego last month.

Ralph spent his entire career with Jacobsen, going back to when the company was in Racine, Wis. Jake was founded by a Danish immigrant to Racine, Knud F. Jacobsen, in 1920. It remained in the family for 49 years until Allegheny Ludlum acquired it in 1969. The company was under this ownership when Ralph was hired in the mid-1970s. Ralph was raised in Racine and his parents still live there. He graduated from the University of Wisconsin-Oshkosh, returned to his hometown and started his career in turf equipment manufacturing.

Like most new hires, he started his career on the bottom rung of the corporate ladder, not unlike the way most golf course superintendents learn all of the practical aspects of golf course management – mowing greens and tees, raking bunkers, mowing around trees, repairing irrigation leaks and all the rest. What this gives you, and gave Ralph, is up-close knowledge about how things really work. We grow up in the business. He knew all the basics of manufacturing and marketing, and by the time of his retirement he was Jacobsen's vice president of sales.

I first got to know Ralph in the 1970s when I would drive from Madison to Racine to participate in the annual college student seminars in early June. He wasn't directly involved, but I quickly figured out that if I needed to use a phone, park a vehicle or whatever, he would help me out. He was friendly, helpful and reliable; he built trust, and after those early years anytime I needed help or information, Ralph was only a call away. As one of his longtime distributors said to me, "His word was golden."

> The golf turf business has avoided much of the suspicion about corporate America because there are so many quality people managing the companies we do business with.

Textron bought Jacobsen in 1978, and Ralph worked for lots of different executives over his corporate career. Some may have been excellent bean counters or engineers, but had less than full knowledge about golf turf. I have been told that educating them about our world was a responsibility that fell heavily on Ralph Nicotera.

The most important thing people learned from Ralph was that the customer – you and me – was all important, and his career is replete with instances of his going the extra mile to help out superintendents who may have needed a critical repair part in an emergency or early delivery of a machine or any of hundreds of other circumstances. Distributors absolutely depended on him. When the company moved from Racine to Charlotte their biggest concern was that the hometown Racine guy wouldn't make the move. There was a collective sigh of relief when he moved, too.

Jacobsen President Dan Wilkinson also knows why so many people respect Ralph. Dan relied on him heavily when he assumed the reins of Jacobsen and was on a steep learning curve. Dan's an early bird and was relieved to see that Ralph was also; when Dan needed him, he was already there. Ralph's unofficial role as company historian was useful, too. Like so many who have worked with Ralph, Dan respected his humility and his complete dedication to golf course superintendents because they were his customers, and has been impressed with his willingness to work behind the scenes and pass credit due on to others.

Conversations I've had with sales staff reporting directly to him were the same – a tough taskmaster who was eminently fair, a total team player who was a professional's professional. His appeal went beyond respect for his skills; he was genuinely well liked and appreciated.

Ralph has seen a lot of change in our business – dramatic change, actually – and he has survived it all with his great attitude and dedication in tact. We are in a period in our country when there is a lot of suspicion about corporate America. I think we have been lucky in the golf/turf business to have avoided much of that suspicion because there are so many quality people managing the companies we do business with. Ralph Nicotera is one of the best of them. GCI

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DR. BEARD IS IN

During a recent visit to the Desert Mountain golf complex in Arizona, I had the opportunity to discuss the state of the industry with the eminent turfgrass scientist James B. Beard, PhD., president and chief scientist of the International Sports Turf Institute. His insights and evaluations of our sport's affairs – both at home and abroad – should serve as a primer as the industry slowly emerges from its financial and agronomic woes.

Presently, Dr. Beard is focused on his second love (wife, Harriet, being the first!), which is writing books. He is the author of "Turfgrass Science and Culture" and "Turf Management for Golf Courses." His newest project is a complete examination of turfgrass and soils history at the St. Andrews' golf courses and their maintenance dating back to the 1800s. The Royal & Ancient Golf Club and St. Andrews' library have opened up their archives, Green Committee transcripts, notes and letters, including photo documentation of practices and maintenance dating from 1840 to 1940.

In comparing maintenance of yesteryear and current cultural practices, Dr. Beard points out several areas that have never changed and should remain a focus for the future:

- 50 percent of the game is contested and played within the putting green. Therefore, 50 percent of maintenance efforts should be placed there.
- Hole maintenance was always key, including proper selection, cutting, flag placement and debris removal from the area adjacent to the primary target. In the early days sweeping of rabbit pellets was practiced much earlier than grass cutting.
- In 1830 Edward Budding introduced the mower, but its use at St. Andrews' Old Course did not occur until the late 1880s. Today, we are intent on a quality cut for turfgrass health and playing quality.
- Fertility was created from manure composted into organics. Similar to today, the odor was a concern. The use of the first artificial product – ammonium sulfate – occurred in the 1920s.

Traveling the world as a consultant and researcher, Dr. Beard has noticed our foreign brethren are focusing on quality maintenance and agronomics with an emphasis on gathering as much information as is available to enhance quality.

- The industry should not overthink issues. Instead, we should concentrate on the scientific process of realizing the problem, identifying the cause, researching the control and implementing cultural practices to minimize occurrences.
- Try to produce a healthy plant, relying less on pesticides. Environmental forces have and will restrain use of many products and as we lose these products, turfgrass quality eventually could suffer.

> As an industry, we should accept a less-than-perfect lie.

Good lessons for us to follow include:

- Be hungry for *science-based information* and proven research to produce a better quality product.
- While turfgrass perfection is a goal, it's seldom achieved. When it is occasionally attained, it's fleeting. The closer to perfection, the more obvious the *imperfections* appear.
- As an industry (on and off the golf course) we should accept a less-than-perfect lie. Most 20-handicap players could not handle a perfect lie anyhow. Why stress our turfgrass and ourselves trying?
- Consider the rising costs of maintenance, environmental pressures, governmental impacts and the need for conservation as a guide for your maintenance plan.
- Water is the next oil. Be wary of governmental interference or future city planning where water may not be available for golf courses.
- Turfgrass research must be ongoing and supported by all within the golf world. Fundamentals of turfgrass growth and basic maintenance should be the focus.
- Implement quality and properly-timed cultural practices to enhance healthy turfgrass and soils.
- Beyond turfgrass science, we all should be open to bringing more people into the game. Endorse programs that encourage growth of the game, especially those that encourage young people to pursue roles in the business of golf.
- There should be a focus on *fun* – whether playing the game or working within the industry.
- We should be careful not to make courses too hard and do our best to make golfers come back again because they enjoyed their day.
- Be cautious of the rising costs that make the game unaffordable and too elitist.

In closing Dr. Beard expressed his gratitude for all he has received from golf, including a remarkable set of friends and associates around the world.

We should offer him a huge thank you, as well. **GCI**

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Terry Buchen, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or terrybuchen@earthlink.net.

Travels With Terry

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares helpful ideas relating to maintenance equipment from the golf course superintendents he visits – as well as a few ideas of his own – with timely photos and captions that explore the changing world of golf course management.

GREENS BLOWER

Chan Yen Hung, golf course manager at the Discovery Bay Golf Club in Hong Kong, China, built a greens blower system for blowing and dragging dry topdressing sand into the cored aerifier holes. A used Rogers Windfoil Sprayer Boom Shroud measuring 80-inches long was modified to 60 inches by cutting 10 inches from both sides. Two-inch high aluminum angle bars (1/4-inch thick, costing $20) are used to construct the platform frames holding the two Maruyama backpack blowers (along with bungee cords) in place. Two 3-inch diameter holes were drilled in the top of each end of the shroud and two 3-inch diameter PVC 90-degree elbows were installed for each blower discharge hose to fit into. Underneath, four pieces of 1-inch by 55-inch (1/4-inch thick) aluminum angle bar ($20) were used to install/bolt the two 54-inch Standard Golf Replacement Topdressing Drag Brushes ($80) after the sprayer wheels had been removed. The two backpack blowers are used for other normal duties when not being used on this implement. About 16 labor hours were used to modify the unit and some of the materials were already in stock. This invention, now called Aerobrush, is being manufactured by Premier Turf of Hong Kong. It was displayed at the Golf Industry Show in San Diego.

CURB APPEAL

At the Chevy Chase Club in Chevy Chase, Md., Dean M. Graves, CGCS, golf course manager, and greenkeepers Kebede Mezmur and Benjamin Torres built these decorative flagstone curbs along their cart paths to control vehicular traffic wear on the turf when making turns. The flagstone pieces are approximately 12 inches by 12 inches by 2 inches, where a 12-inch-deep trench is dug then filled with pea gravel to give support and to prevent winter heaving. Then the flagstone is placed vertically 4 inches in the ground. The cart path is 4-inches thick and it sticks 4 inches above the cart path and both ends are tapered to the ground contours. Topsoil is then placed up against the flagstone and then sodded over the top; a mower deck can mow over the top of the flagstone. If a piece of flagstone breaks from being hit by a vehicle, it can be easily replaced and it will match the surrounding stones. The flagstone looks very natural next to the concrete cart paths and it blends in nicely.

The flagstone is approximately $3.75 per foot, the pea gravel is already in stock and it's a nominal cost. It takes two staff members about eight hours to build a 50- to 75-foot curb depending upon the soil conditions and cart path edge. **GCI**

COMPANY	WEBSITE	PAGE	RS
BASF	www.betterturf.basf.us	17	17
Bernhard and Co.	www.bernhard.co.uk	15	16
Campion Turf	www.championturffarms.com	26-27*	19*
Clivus Multrum	www.clivusmultrum.com	73	38
Converted Organics	www.convertedorganics.com	59	33
John Deere Golf	www.deere.com	84	42
DuPont Professional Products	www.proproducts.dupont.com	37*	24*
Floratine	www.floratine.com	31	22
Flowtronex PSI	www.flowtronex.net	83	41
Foley United	www.foleyunited.com	43	43
Hustler Turf Products	www.hustlerturf.com	49	37
Irrigaiton Consulting	www.irrigationconsulting.com	67	35
Jacobsen	www.jacobsengolf.com	55	31
John Deere Golf	www.deere.com	84	42
JRM	www.jrmonline.com	30	21
JWB Marketing	www.birddamage.com	36	26
Kalo Inc.	www.kalo.com	26-27*	20*
Lebanon Turf Products	www.lebanonturf.com	11,13	14,15
Milliken & Co.	www.sandmat.com	32	23
Neary Technologies	www.nearytec.com	46	44
Pasteuria Bioscience	www.pasteuriabio.com	61	34
Penn State World Campus	www.worldcampus.psu.edu/	39	29
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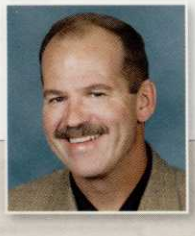

Pat Jones is editorial director and publisher of Golf Course Industry. He can be reached at pjones@gie.net or 330-523-5384.

DEFINING NORMAL

Every February for 24 years, I've jetted off to the national (or the GCSAA conference or the GIS…or whatever the hell we're calling it this week), excited to see old friends, learn new things and do some "bidness." Over the decades, it's become a normal part of my life. But, there was very little "normal" about this year's big (sort of) event in San Diego. Allow me to count the ways.

MY SO-CALLED LIFE

OK, let's get this out of the way first. Here was the typical conversation I had with many pals at the show:

Pal: "Hey Jonesy! You're looking skinny. How'd you lose all that weight?"

Me: "It's called the 'divorce diet.' It's a very effective way to shed fat, but the side effects include abject poverty and loneliness."

Pal: "Oh, sorry to hear that. Let's go get a cocktail or 12 and commiserate about it."

Me: "I quit drinking, too."

Pal: "Oh jeez, look at the time…I'm late for…er…being someplace else."

Actually, that's weakly funny but not fair. Yes, it was the first time I attended a national as a skinny, single, sober schmoozer. But, all of you were amazingly supportive and I'm extremely grateful for the wonderful things going on in my new life now. More about all that later in this space.

THE SHOW

The business engine that powers the GCSAA and its partners was leaner and meaner this year, as exhibit space and exhibitor attendance was down. That was no surprise given the economy. What was surprising was the claim that there were more "qualified buyers" this year than in New Orleans. The nice folks from GIS proudly announced that there were 7,000-plus people registered for the show who were authorized to buy stuff.

I'm not going to win an argument with their bean counters about this, but I polled a bunch of chapter leaders and *not one of them said more of their members made the trip*. I know for a fact that the number of superintendents from the largest chapters (except, of course, California) was waaaaay down. And, when I asked big exhibitors whether they felt superintendent traffic was better than last year, they just rolled their eyes.

The bottom line is that show organizers can pretend that the national is still a must-attend annual event for everyone, but it just isn't. Regional shows offer nearly all the same products and technical insights. Plus, there's this thing called the Internet that's open 24/7/365 to answer questions, kick virtual tires and provide education.

Sure, I talked with superintendents who were there to take courses that are only offered at the national or who had specific products they wanted to research, but the vast majority were there primarily to see their buddies, quietly poke around for a better job and have some fun on the club's dime. Sue me for telling the truth, but that's why most people still go.

THE HOT TOPIC

The No. 1 question I was asked in San Diego was, "When will things get back to normal?" The answer I gave was, "Define normal."

Was it normal to build 400 courses a year? Was it normal for clubs to have hundreds of wealthy people literally waiting for someone to die so they could enjoy the privilege of paying $50,000 to join? Was it normal for every technical school in the nation to start cranking out kids with turf degrees, flooding the market with job seekers? Was it normal for a zillion little companies selling some secret-recipe bio-potion or magic labor-saving widget to start throwing money at trade shows and sponsorships? Was it normal for golf to be immune to the same chemical industry devaluation that hit agriculture years ago? Was it normal for so many high-end courses to blindly pursue a damn-the-torpedoes, money-is-no-object, green-at-all-costs philosophy about maintenance?

Last month, I interviewed Bruce Williams and something he said struck me. He noted that many courses were struggling to find a "new sense of normal" given the current climate. That's a pretty succinct way to put it, but I'll take it one step further by saying that there is no "normal" in our lives anymore. Change is the only constant. The only thing you can do is keep your eyes wide open, assess everything that comes your way and watch out for the newest sense of normal to come slinking over the horizon.

SPEAKING OF CHANGE

You may have already noticed one change this issue: The folks at GCI have put me in charge of the magazine. Yes, the lunatic is once again running the asylum.

I tried to put my intentions for GCI into words in my editor's note at the front of this issue, but here's the skinny version: We're only as good as the feedback we get from you. Call me, write me, buttonhole me at a conference, hit me with a stick. I don't care how you do it; I just want to know what you think. My job is to try to make a really good publication into a force that leads the market and makes your life easier and better. Your job is to tell me how.

The bottom line is simple: There's no room for a normal magazine in this very abnormal world. And I'm just abnormal enough to relish the challenge of giving it to you. **GCI**

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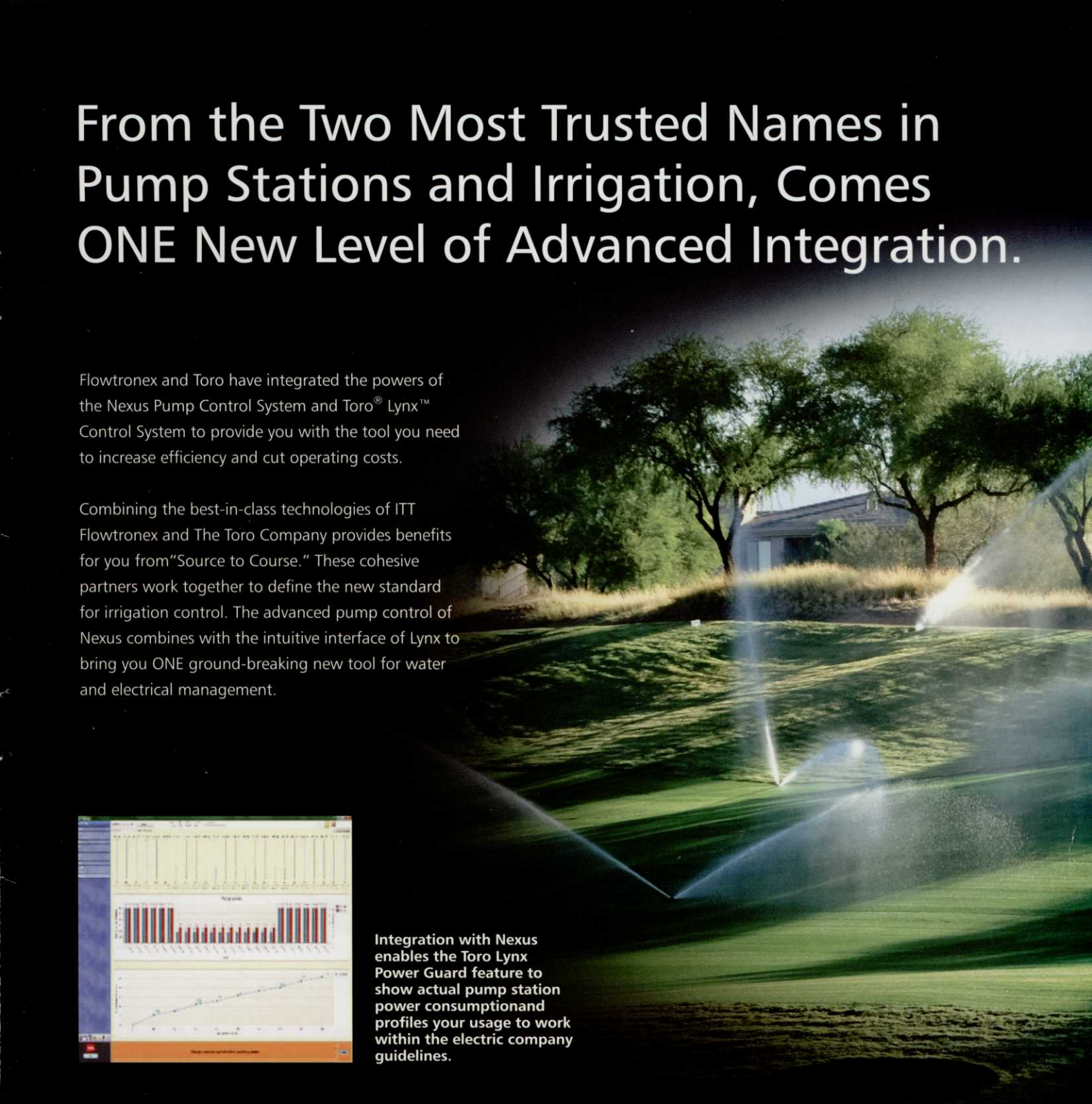

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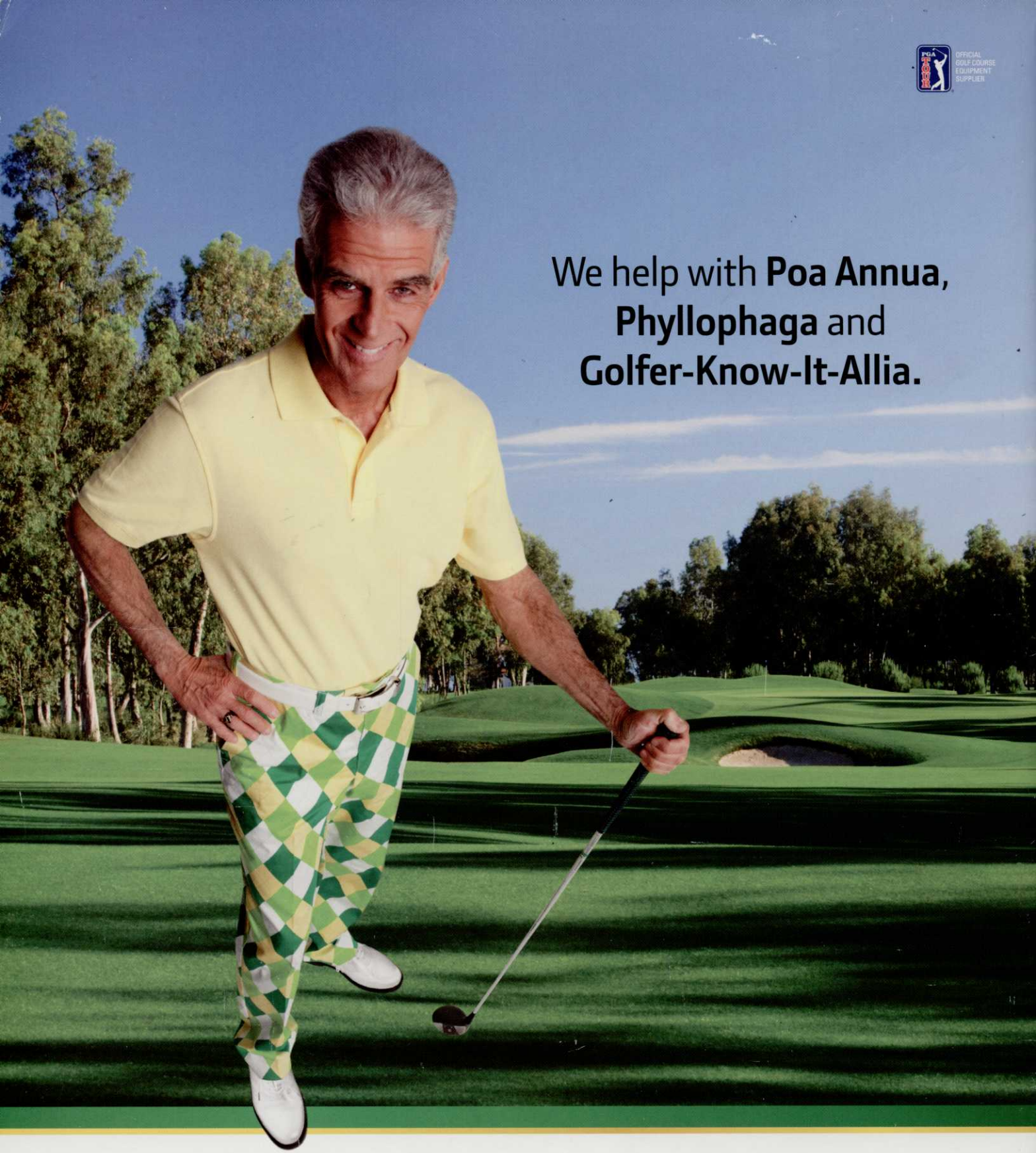

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