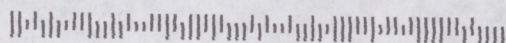


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ALMOST PARADISE

**ROOTED IN MEXICO'S BAJA
PENINSULA, TPC DANZANTE
BAY ADDRESSES DIVERSE
CHALLENGES TO MAINTAIN
PEAK PLAYING CONDITIONS IN
THIS TURFHEAD SHANGRI-LA.**



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ALMOST PARADISE

ROOTED IN MEXICO'S BAJA PENINSULA, TPC DANZANTE BAY ADDRESSES DIVERSE CHALLENGES TO MAINTAIN PEAK PLAYING CONDITIONS IN THIS TURFHEAD SHANGRI-LA.

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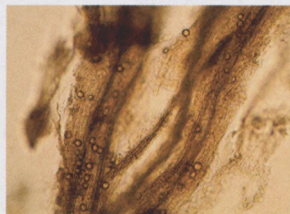
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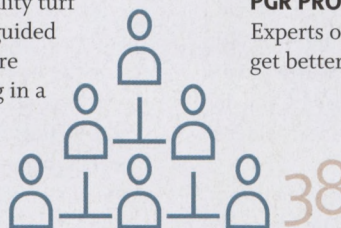
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DOG DAYS OF SUMMER

We had a sweltering start to the summer here in Northeast Ohio. Memorial Day temperatures topped out in the low 90s and coupled with the humidity the “real-feel” was somewhere near the surface of the sun.

But that didn't keep people from enjoying the outdoors, most of time accompanied by their four-legged friends. I expect the same was true for the nearly three-quarters of superintendents who are responsible for course canines. Primarily in service for pest control, course dogs are often seen enjoying rides around the facility in the superintendent's UTV or exercising their duties as the course's goodwill ambassadors.

But just like your maintenance force manicuring greens and fairways, it doesn't take much time or exposure under extreme summer conditions to put them into the danger zone for heat exhaustion, stroke and even death.

Dogs are no different and may even be more sensitive to the summer climate. If you want to test this theory, I'd suggest donning a full-length fur coat and walk your facility's cart path barefoot. The ASPCA.org is a wealth of great information and offers a lot of insight on how to keep your fur buddy healthy and safe. Here are some pertinent tips to consider for summer safety.

- First, start off with a trip to the vet for a quick checkup and a clean bill of health. Be sure to include a test for heartworms.
- When it's hot or humid, make sure your dog has access to plenty of fresh, clean water to prevent dehydration.
- Don't overwork them outside when it's hot. And if it's really hot, keep them inside the shop or office where it's air conditioned.
- And I don't need to say this, but never leave Fido in a parked vehicle while you run into a store for “a minute.” It doesn't take long for temperatures inside the vehicle,



Mike Zawacki
Editor

even on a warm day, to escalate into the danger zone.

- If your pooch shows signs of excessive panting or difficulty breathing, increased heart and respiratory rate, drooling, mild weakness, stupor or even collapse, then they're overheating. Get them someplace cool fast.
- When the temperature is high, keep your dog off asphalt surfaces. Not only do they risk burned paw pads, but the heat can start cooking their low-to-the-ground bodies very quickly.
- And while all dogs are at risk for overheating, keep a close eye on young, overweight or elderly canines, along with those sporting short muzzles or thick or dark-colored coats.
- Also, be mindful that

it's very easy to inadvertently expose your fuzzy friend to overspray from insect repellents and sunscreen, both of which can be poisonous. Call your veterinarian or the ASPCA Animal Poison Control Center (888-426-4435) if you suspect your animal has ingested or been in contact with a poisonous substance.

- Consider crating during the club's Fourth of July celebration, especially when you consider one in five dogs bolt at the sound of fireworks.
- Finally, food and drink commonly found at barbeques and cook outs can be poisonous to your pooch. Snacks enjoyed by your crew should not be treats for the course canine, no matter how sad, pathetic and starved he or she looks. Be vigilant during lunch breaks and cookouts that a kind-hearted soul isn't sneaking a grape from the fruit salad or the taste of a double-chocolate brownie (both extremely toxic to dogs) to their four-legged BFF. In fact, enter ASPCA Animal Poison Control Center's number (888-426-4435) into your cell phone in case you ever suspect your animal has ingested a potentially poisonous substance. **GCI**

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NO DAMPENING THE CHARITABLE SPIRIT

IF ANY GROUP UNDERSTANDS why carts and saturated turf don't mesh, it's golf course superintendents and their partners.

Following an early morning Detroit deluge last month, carts remained in storage as participants in the Wee One Foundation Michigan outing received an opportunity to lug their bags around Meadowbrook Country Club. A soggy morning turned into a sunny afternoon, making the event a memorable walk in a renovated park.

Meadowbrook, the site of the 1955 PGA Championship, underwent a bold transformation that resulted in new grasses, reshaped greens, rebuilt bunkers, fewer trees, more tee boxes and improved infrastructure. The 15 miles of drainage proved invaluable last month, allowing the club to host the Wee One Foundation outing despite receiving more than 4 inches of rain in a 2 ½-day stretch.

Superintendent Jared Milner and his team worked furiously before and after the storm

to prepare the course for industry colleagues. Meadowbrook reopened May 19, 2017 and the Wee One Foundation outing represented only the second outside event on the renovated course.

Architect Andy Staples returned to Meadowbrook for the outing. He enthusiastically explained his work, including the Willie Park Jr.-inspired green complexes, with participants and collaborated with Milner on ways to further enhance the course.

Founded in 2004 and named in honor Wayne Otto, the Wee One Foundation assists golf course management professionals or their dependents who incur overwhelming expenses due to medical hardship without comprehensive insurance or adequate financial resources. Otto, CGCS, died in 2004 following a battle with cancer. The foundation has gifted more than \$1 million since its inception in 2004.

Tartan Talks No. 23



Hail to the new chief!

Jeff Blume became ASGCA President earlier this year at the

annual meeting in his hometown of Houston – and he brought a finance-driven message to the podium. Blume explained his major objective for his tenure in a “Tartan Talks” episode.

“One of the things I mentioned in my presidential address is that there are economic models in golf that work and work very well,” he says. “We need to start publicizing those projects that are economic successes.”

Blume, the son of an Air Force fighter pilot, learned the business side of golf working for Jeff Brauer and Robert von Hagge before establishing his own Texas-based architecture firm in 1997. The business acumen has allowed Blume to pursue diverse projects, including partnerships involving golf courses and municipalities to improve stormwater storage and retention.

Enter <https://goo.gl/HJkvqQ> into your web browser to learn more about Blume and his recent work.



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Jeffrey D. Brauer is a veteran golf course architect responsible for more than 50 new courses and more than 100 renovations. A member and past president of the American Society of Golf Course Architects, he is president of Jeffrey D. Brauer/GolfScapes in Arlington, Texas. Reach him at jeff@jeffreymbrauer.com.

My favorite golf quote comes from golf architect Harry Colt, "In no case should a green be contoured so that a ball runs away from the putter like a swine possessed by the devil." As greens get faster, satanic swine are an increasing problem.

Many clubs try to resurface greens by using the no-till or minimal disturbance methods in place of full mix replacement. In so doing, it's possible to alter grades slightly by a trimming 1-2 inches off ridges and adding similar amounts of mix to swale bottoms, while still remaining within typical mix depth standards of 10 to 14 inches. Altering total grades by 4 inches over 50 feet reduces a 4 percent grade to 3.33 percent, which may be acceptable slopes for your green speed. If not, a full mix and tile renovation may

be required.

According to my survey of superintendents, today's typical green speeds are 9.5 to 10.5 on average courses (with seasonal or special tournament speeds of 10 to 12) but even greens built in the 1960s to 1980s (due for remodels now) can be problematic. Some courses keep greens at tournament speeds of 12 to 14 and have even more slippery slopes.

It's generally agreed a "fair" putting surface allows golfers to get even downhill approach putts within three feet of the hole and keeps break for short second putts "within the hole" to reward good shots. More importantly, flat areas around the hole location reduce time consuming green reads and three putts, thus keeping challenge reasonable for everyday play and reducing slow play.

The general industry recommenda-

tion is to keep cupping areas between 2 to 3 percent. However, two other sources suggest slopes might be slightly steeper:

1. A chart produced by Jerry Lemons, ASGCA, regarding "Putting Green Speeds, Slopes, and 'Non-Conforming' Hole Locations" published in the July 2008 USGA Greens Section Journal.
2. Dual reading method.

Based on empirical research, Lemons provides maximum, marginal and critical slope recommendations. He notes hole locations in marginal slope areas can't have any changes of grade right around the cup to be fair. He correlates decreasing slope to increased Stimpmeter readings, as shown in **CHART A**.

In the dual reading method, hole locations are placed only where digital level readings of both downhill and cross slope have a combined total slope of <5.5 percent (sometimes reduced to a combined limit of <5 percent on the front half of greens to reduce ball mark damage and make front cup locations less treacherous).

For comparisons, we must convert these combined readings to one actual downhill slope as used in the other guidelines. The Pythagoras theory indicates that the maximum downhill slope from a combined reading of 5.5 percent would be 2.82 to 3.88 percent. The maximum slope occurs when both downhill and cross slopes are 2.75 percent, whereas 1.75 percent and 3.5 percent yields "only" 3.17 percent actual slope.

Those slopes closely mirror Lemons' range of 2.9 percent for "recommended" and 3.85 percent for highest "marginal slope" at green speeds of 14. But Lemons' chart suggests higher slopes can exist where green speeds are more typical, if they can be counted on to remain so, and still be puttable.

At any course where I am renovating greens, I start by having golfers identify their toughest hole locations. At one club with daily Stimp-

AS PER LEMONS ASGCA

Recommended Stimpmeter	Marginal Max. Max. Downhill %	Stimpmeter	Max Downhill %
14	2.90%	14	3.85%
13	2.99%	13	4.20%
12	3.24%	12	4.55%
11	3.58%	11	4.90%
10	3.90%	10	5.42%
9	4.35%	9	5.95%
8	5.86%	8	6.65%

Chart A

(BRAUER continues on page 47)

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TPC DANZANTE BAY ADDRESSES DIVERSE
CHALLENGES TO MAINTAIN PEAK PLAYING
CONDITIONS IN THIS TURFHEAD SHANGRI-LA.

By Judd Spicer



DISE

Once the ribbon is cut, the tinsel dispersed, and the ceremonial shots struck, the daily operation of a new golf course isn't simply a rote matter of rolling out the green carpet.

Rather, the process of creating and maintaining peak course conditions and high customer expectations is a learning curve of continual education for maiden-breaking grounds.

At postcard perfect TPC Danzante Bay, situated amid the islands of Loreto and Sea of Cortez on the east coast of Mexico's Baja Peninsula, the challenges of echoing the idyllic course and Villa del Palmar resort setting can be drawn from design and build evolution, to grounds' maintenance and staff education.

Opened incrementally across 2014-17, the Rees Jones-designed course debuted in full bloom a few weeks shy of 2018. Routed through mountain, desert, valley and seaside terrain, the new kid on the Mexico block has received namely sterling reviews for its diverse topography and mellow vibe.

"This is a jewel in the desert, it's not a well-tracked place like Cabo," says Danny Garcia, head golf professional and director of golf at TPC Danzante Bay. "We're kind of hidden in the Gigante Mountains here in Danzante Bay. With the islands around us, it's almost like a place out of a fantasy."

For Garcia, fantasy meets reality when educating a golf-nascent staff from square one.

South of the Border, golf is almost entirely a game for the

affluent or vacationer, meaning that in remote locales like Loreto, cultivating a learned labor force is tricky.

"It's like raising a baby," Garcia half-smiles. "When I got here, nobody really knew anything about the game. So, I initially started working with the two staff members that they gave me, along with a girl that's a cashier. It can still be a challenge, because when I tell things to my (now larger) staff, they can have no clue what I'm talking about. But that does make things fun in a way; just explaining everything from the dress codes to the etiquette."

Garcia has taken it upon himself to provide crash course education of Golf 101 to his crew. "The staff I have now, I tell them they need to know everything I know – as soon as possible," he says.

From showing golf videos, explaining pro leaderboards and tournaments, detailing differences in equipment and taking resort staff members up to view TPC Danzante Bay's, cliffhanging par-3 17th, Garcia has made efforts to coach staff members ranging from grounds crew to resort housekeepers. As TPC Danzante Bay grows in full, the head pro aims for the present and future labor force to echo the cultivation.

"A year from now, the course will be more mature, and all our employees will be better versed on 'What is Golf,'" Garcia says. "Part of my agenda here is to teach all our employees across the resort about the game. Golf is kind of a closed culture here in Mexico, where you either have private clubs or you have resorts. And what I'm also trying to do is bring in the local kids from the fisherman's villages, to bring them up here,

teach them the game and teach them the etiquettes."

Along with helping staff to improve their English, Garcia is concurrently swinging to kick-start the region's laid-back milieu. "The culture here is very low key. There isn't anything to get too excited about," he says. "But, for example, when I have to tell one of my guys to set up the range right now and I come back outside and he's having coffee, it's like I have to explain the importance of now."

ROCK ON

From crew to construct, TPC Danzante Bay's unique, four-year buildout required a vision as singular as its terrain.

Randy Ruth, director of construction of TPC Danzante Bay and Villa del Palmar, has been building golf courses for 35 years, including the last 20 in Mexico. He's been involved in over 100 course projects, but sees TPC Danzante Bay as the jewel in his portfolio.

"This course has everything, between the dunes, arroyos and valleys," Ruth says. "But with the mountains and oceans here – you usually don't get both in one course. I've done a lot of courses, but this is the best."

Originally envisioned as a nine-hole layout to complement the region's fishing scene, the extended construction timeline provided levity to the project.

"Normally, you'd build 18 holes in a year to a year-and-a-half. I liked having more time. They paid me by the month," Ruth laughs.

Adds Garcia: "I've heard Rees comment that he was allowed to take his time with this course. And in that time, he worked with the land and

progressively went from six and seven holes, up to nine, then 11 and now 18. So, I've done a lot of scorecards."

In Ruth's experience, working closely with both the design team and course crew proved crucial in the build.

"I always like to bring the superintendent in long before you start planting grass," Ruth explains. "Like, on our second hole, we have these steep slopes, and I'd go out there with the super and ask how high I could go with these slopes so that he and his crew could still mow and maintain. It's all a team deal."

Garcia also found team coalescence a critical element prior to TPC Danzante Bay's debut.

"This grass does very well if it's kept under control," Garcia says. "Initially, I told the superintendent that I wanted the bunkers to be a bit 'rougher,' with more of a beard. But with this type of Paspalum grass, I found out that it gets very knotty, with balls and sections, so if the ball didn't sit on top of the knot, it would sink down and be hell to get it out."

Opportunity to test the course with the architect was an added factor in crafting prime playability.

"Rees finally said he thought we should shave down both the fairway grass and that grass around the bunkers, and I agreed," Garcia continues. "It was too penal. For resort players, the last thing I want to do is have people to come out here and get the heck beat out of them."

On several TPC Danzante Bay holes, routing is matched with a weather-proofing aesthetic.

"The big thing here is hur-

ricanes or a tropical storm," Ruth says. "And that's why we've got our arroyos filled with rock – it's there to slow the water down. That water doesn't hurt you as much as the velocity of the water. That's what really does all the damage. So that's why on seven of our holes you see all that rock; I had all that rock and needed to do something with it. It may not look like it, but there are a lot of holes in that rock where the water can go into the ground and slow down."

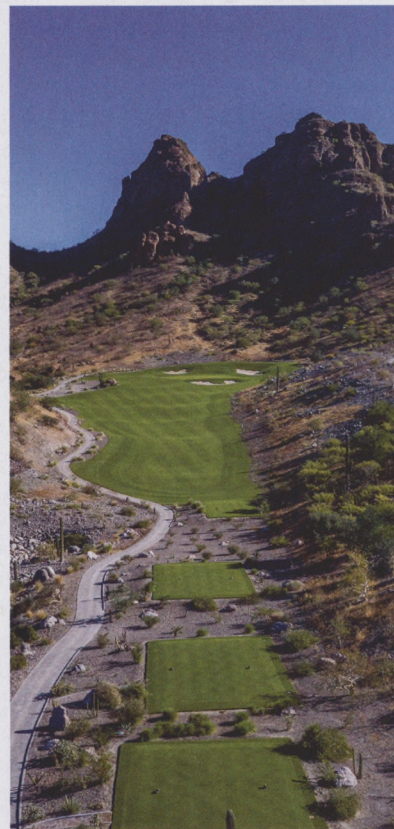
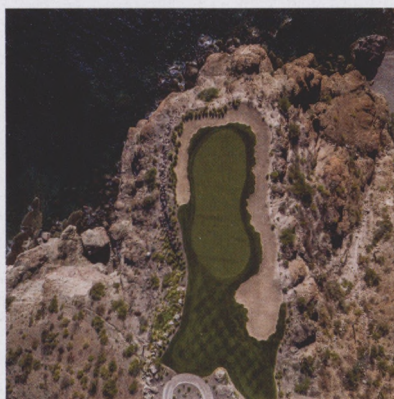
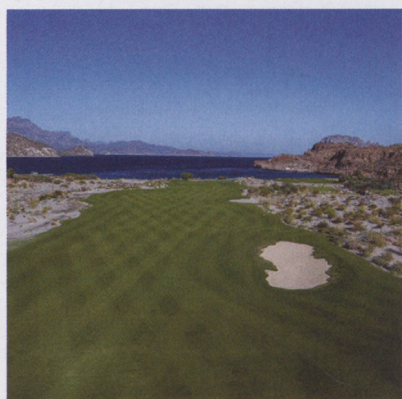
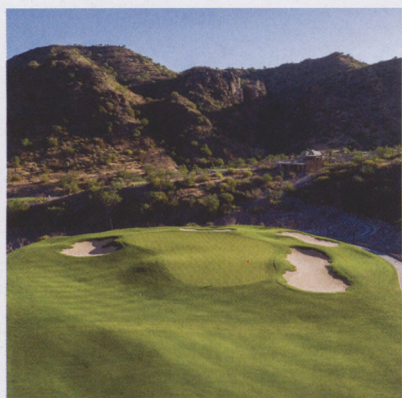
For Ruth, construction of the home hole required being a rock star.

"We had a tremendous amount of rock," he says. "On the 18th hole, we had a 60-meter cut. It took us a year to get the permits to dynamite, so, in the meantime, I used excavators with big hammers and just kept breaking."

The lone golf course in The Villa Group's nine property portfolio across five of Mexico's resort destinations, TPC Danzante Bay's level of success may soon dictate the construction of additional golf courses owned by Villa, including one new course currently in its initial design stages at the group's property in Puerto Vallarta.

"I think people should come here with high expectations," Garcia says. "There have been a lot challenges, but just to bring the course to where it is now is unbelievable. And that extends to impressing the importance of customer service, letting the staff know that we need to treat the guy who's here maybe once a month the same as a guy who comes here five times a week." **GCI**

Judd Spicer is a golf writer and frequent GCI contributor.



PHOTOS: JOANN DOST

AVOID CANINE BRUNCH



Henry DeLozier is a principal in the Global Golf Advisors consultancy. DeLozier joined Global Golf Advisors in 2008 after nine years as the vice president of golf for Pulte Homes. He is a past president of the National Golf Course Owners Association's board of directors and serves on the PGA of America's Employers Advisory Council.

Readers of this column know the value we place on plans that focus resources and actions against strategic goals and objectives. But too often our plans turn into something resembling a dog's breakfast: a mess of opportunity, necessity and happenstance. To avoid agronomic plans that are similarly inconsistent and random, here are three steps that will give an agronomic plan order and purpose while showcasing the author's professionalism.

1. EDUCATE

Golf course superintendents are agronomic experts with scientific training and specialized knowledge. Club and course managers are similarly well-educated professionals. They are keenly interested in the results supers produce, but not so sure how they pull it off. Therefore, superintendents' plans must educate, providing the knowledge and understanding that help course owners, club directors and fellow management professionals see the inherent logic and forethought.

An informative agronomic plan:

STATES STANDARDS OF EXCELLENCE. Mowing and trimming frequency, height of cut and fertility programs need to be explained beyond frequency or fertilizer blends so club and course managers understand

how the superintendent's tactics connect with the facility's overall goals and objectives. Once they do, they can become supporters of the plan.

Environmental objectives should be considered in this same context. Elements of the conservation plan should be described to help club managers understand the use of pesticides and standard practices for water taking. Information about beekeeping, bird and bat houses, and milkweed cultivation for butterflies, for example, also reinforces the facility's overall sustainability efforts that can be passed along to members and customers.

EXPLAINS IMPORTANCE OF STANDARDS. Many become confused when asked, "Why is that practice so important?" The superintendent who uses the agronomic plan to educate helps golfers be even more supportive and understanding.

QUANTIFY NEEDS. Measure everything and see that every line item in the budget is backed up with specific data points for acres or square feet being mowed, irrigated, fertilized and kept. Every number in the budget should have support tied to key data points. For example, labor – including wages and benefits – is increasing significantly in most markets across North America. Fuel prices are likely to remain volatile with the risk of sudden increases

driven by geopolitical events.

EXPRESS ASPIRATION. Describe your vision for the golf course. Be brave in setting higher standards for your facility. Describe improvements that can enhance the reputation and earning power of your course.

2. ORGANIZE

While there is the need to educate, club managers can become weary reading about unfamiliar agronomic standards and practices. Help hold their interest by organizing your plan. Starting from mission critical, first cover the most important topics – care and upkeep standards, expense and budget management, and expected outcomes. Then describe routine matters and needs that preserve working conditions and standards of excellence. Last, address matters such as storage needs and practices, staff training and break-room amenities.

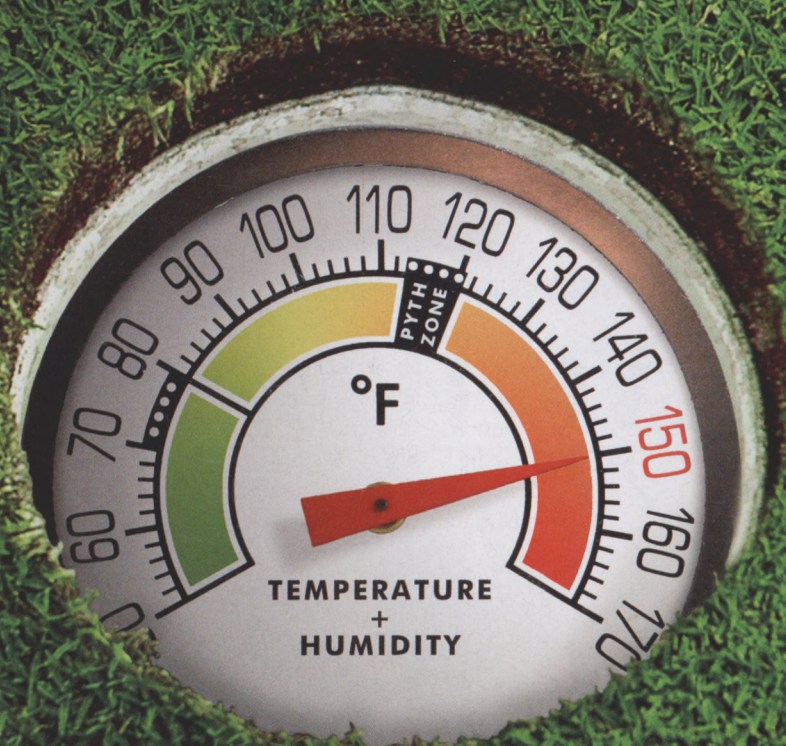
3. PAINT A PICTURE

Photography, video and other graphics can be highly valuable support tools for your audience. People who are not scientific experts need the additional understanding that imagery provides.

- Show intended results. Teach readers of the plan and what they should expect in terms of denser turf, deeper color in maintained turf, reduced pesticide use and reduced water consumption.
- Provide graphics for such details as mowing patterns and explain why your crew mows greens from different alignments.
- Show how carefully your usage of manpower is planned. Help others understand that you command your category of expertise with knowledge and experience.
- Support budget projections and expense trends with graphs and third-party data sources. Show the actual expense history of your course and how your own trend tracks local, regional and national patterns. **GCI**

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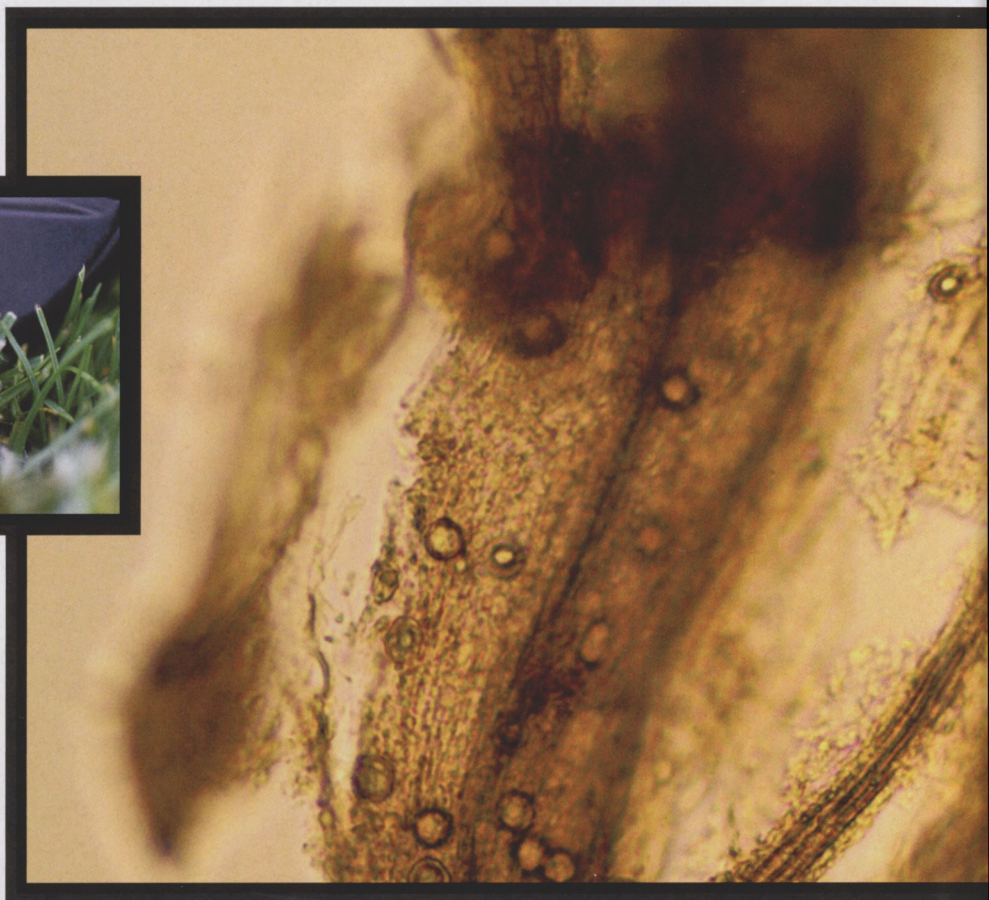
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KNOW YOUR PYTHIUM

YOU MAY THINK YOU KNOW ALL
THERE IS TO KNOW ABOUT THE
VARIOUS PYTHIUMS, BUT IT'S
WHAT YOU DON'T KNOW THAT
COULD KILL NOT JUST YOUR
TURF, BUT YOUR CAREER.

By **Rick Woelfel**

The word "Pythium" will instantly get a superintendent's attention because an outbreak, if undetected, can devastate a golf course in short order.

There are several diseases that are part of the Pythium family. Most superintendents are all too aware of Pythium blight, which was first observed in the 1930s. But other Pythium diseases are also a cause for concern.

PYTHIUM ROOT ROT

Pythium root rot is more likely to occur in wet soil conditions and areas of poor drainage. But while these are certainly contributing factors, those conditions are not essential for the disease to become problematic, particularly in the Transition Zone.

With bentgrass greens in the Transition Zone, Pythium root rot has become the major limiting factor to maintaining healthy turf in the summer regardless of whether the greens drain poorly, says Syngenta senior technical manager Dr. Lane Tredway. "Maintaining with regular aerification and topdressing is an important management tactic," he adds, "but that alone isn't guaranteed to solve the problem."

Pythium root rot is most prevalent on annual bluegrass, creeping bentgrass or ultradwarf Bermuda greens, although it can affect other turfgrass species. The symptoms start out small, typically areas less than 6 inches in diameter that are purple to orange brown in color, says Dr. Jim Kerns, assistant professor and extension specialist of turfgrass pathology at NC State University. "The symptoms enlarge into large irregular areas and rarely are in distinct patches," says Kerns, one of the nation's foremost Pythium authorities. "Roots are necrotic (rotten) and root depth is severely limited."

Pythium root rot is difficult to detect because other issues can mimic its symptoms, Tredway says. "They can show up as irregular areas, particularly, and as areas of stress from traffic or other mechanical injuries or poorly drained areas," he says. "The sense is they're just areas that are irregular or nondescript. So, the only dependable way to diagnose is by submitting a sample to a

diagnostic laboratory."

Turf managers are advised to time their Pythium root rot fungicide program with soil temperatures. "Applications for this disease should occur when average soil temperatures are between 65 and 70 degrees F at a 2-inch depth," Kerns says. "In our research, Segway alternated with Subdue MAXX, and a mixture of Signature/Appear/Alude + Banol or Stellar is effective. We have observed excellent suppression with Segway when applied at the low label rate of 0.45 fl oz. when in a rotation. In many climates, four to six applications of Segway may be necessary to maintain acceptable suppression."

Some 30 different species of Pythium may cause Pythium root rot, says Dr. Paul Giordano of the Bayer Green Solutions Team, and that each responds differently to fungicide treatments. "That's kind of where you need to understand your site and what has worked in the past, particularly if this is a chronic issue," he says. "Start developing your program around products that have shown success in the past."

PYTHIUM DISEASE

	"Pythium Blight (High Temperature)"	"Pythium Blight (Low Temperature)"	Pythium Root Rot	Pythium Root Dysfunction
Primary Species Involved	<i>P. aphanidermatum</i> , <i>P. myriotylum</i>	<i>P. graminicola</i> , <i>P. ultimum</i>	<i>P. graminicola</i> , <i>P. ultimum</i> , <i>P. torulosum</i> , <i>P. vanterpoolii</i> + many others	<i>P. volutum</i>
Typical Conditions for Disease Development	Daytime temps. of 85 - 100°F; nighttime temps above 68°F; hot and wet; problematic on newlyseeded turf in hot, wet conditions (damping off)	Daytime temperatures below 55 - 60°F; cool and wet	Low plant growth potential in hot or cold conditions and wet soils; worst on stressed turfgrass	Newly-established greens and/or stressed turfgrass; soil temps of 50 - 75°F (spring and fall) but damage can appear under summer stress conditions
Cultural Conditions Favoring Disease	Excessive nitrogen fertility, poor soil drainage and air movement		Poor soil drainage and air movement, plant stress	Low fertility, soil compaction and plant stress
Host Species	Primarily cool-season turf	Primarily warm-season turf	Cool- and warm-season turf	Creeping bentgrass only
Primary Location	Foliage and crowns	Foliage and crowns	Roots	Roots



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PESTS & DISEASE

PYTHIUM ROOT DYSFUNCTION

Found exclusively on new bentgrass greens five years old or less, Pythium root dysfunction has been most problematic in the Southeast and Transition Zone. However, it has been observed as far north as New England.

Pythium root dysfunction produces some distinct symptoms — patchy, circular areas from 6 inches up to several feet in diameter that begin to decline in the spring and summer when it encounters heat and drought stress, says Tredway. “Below ground, you’re not necessarily going to see a dramatic reduction in root depth,” he says. “Instead, what you’ll see is a lack of branching of the roots and oftentimes you’ll see that the sand doesn’t cling to the roots like it normally does. It just falls off and your left with two strings of unbranched bentgrass roots. That’s indicative of the fact that the fungus has killed off the root hairs and is causing that dysfunction of the roots.”

Pythium root dysfunction doesn’t completely kill the roots, instead it rots them back. As a result, it reduces the roots’ ability to absorb water and nutrients out of the soil.

The disease is most active when the soil temperatures are around 55 to 60 degrees, and symptoms don’t appear until mid-summer on higher, drier areas of the green surface, Giordano says. “That’s one kind of key indicator,” he says. “If you start to see these funky symptoms on dry, or knoll areas on a green, one suspect or culprit could be Pythium root dysfunction. Unfortunately, by the time the symptoms develop out in the field, it’s kind of already too late. Certainly, there are some remedial treatments that can go down, but in terms of identifying it, it needs to take place much earlier in the year.”

Superintendents maintaining bentgrass greens should be on high alert, Giordano says. “If it’s a newer strain of bentgrass and you get a particularly stressful springtime — especially if it’s wet in the springtime — and the pathogen can start to reproduce and infect roots, then this is the time where they



may be able to take samples, send them to a lab, get (the pathogen) identified and make applications prior to the symptoms expressing themselves."

Like dealing with Pythium root rot, application timing for Pythium root dysfunction is dependent on soil temperature, with effective preventative applications targeting soil temperatures of 55 to 75 degrees, Kerns says.

"Applications should start when soil temperatures reach 55 in the spring of the year," he says. "Three applications a month apart have been sufficient in our work. Fungicides that have been most effective are Insignia, Heritage, Fame, Segway and a mixture of Signature plus Banol. Our current suggestions for Pythium root dysfunction management are Insignia or Lexicon for the first and second application with the third application being Segway or Signature plus Banol."

Kerns adds it's possible for Pythium root rot and Pythium root dysfunction to exist simultaneously within the same green. In some cases, a superintendent might find themselves making applications for both diseases at the same time.

When treating for either disease, Kerns says fungicides need to be watered in with at least 1/8 inch of irrigation following application for maximum effectiveness. "Many superintendents ask, 'Can we water that night? The answer to this question is 'No.' It is best to water in immediately after application to ensure the greatest efficacy of the product."

Being on a consistent wet-

ting agent program and tank mixing the fungicide with a wetting agent will also aid in movement of the fungicide into the root zone. Kerns cites a study from Dr. Travis Gannon's group at NC State, which demonstrated that up to 50 percent of azoxystrobin was removed with mowing the day after application from tall fescue swards when the product was irrigated in.

"We suggest superintendents do not mow the day after fungicide to ensure the fungicide remains in the system," Kerns says. "It may also be beneficial to irrigate lightly again the next morning as the fungicides can re-solubilize in the dew. All of these will aid in the management of these diseases."

For Pythium root dysfunction, limiting moisture during the infection period limits symptom development during the summer months.

PYTHIUM PATCH

While relatively few turf experts are familiar with Pythium patch, Dr. John Kaminski, director of Penn State's Golf Course Turfgrass Management Program, has studied the disease extensively, which is found most commonly in Northeast *Poa annua* putting greens. Kaminski first detected the disease in the New York metro area during his time at the University of Connecticut.

The disease mimics summer patch — slow to develop and produces a yellow leaf. It is difficult to diagnose, and some turf experts consider it a variety of summer patch. Like Pythium Root Rot, poor drainage tends to increase the severity of the problem. **GCI**

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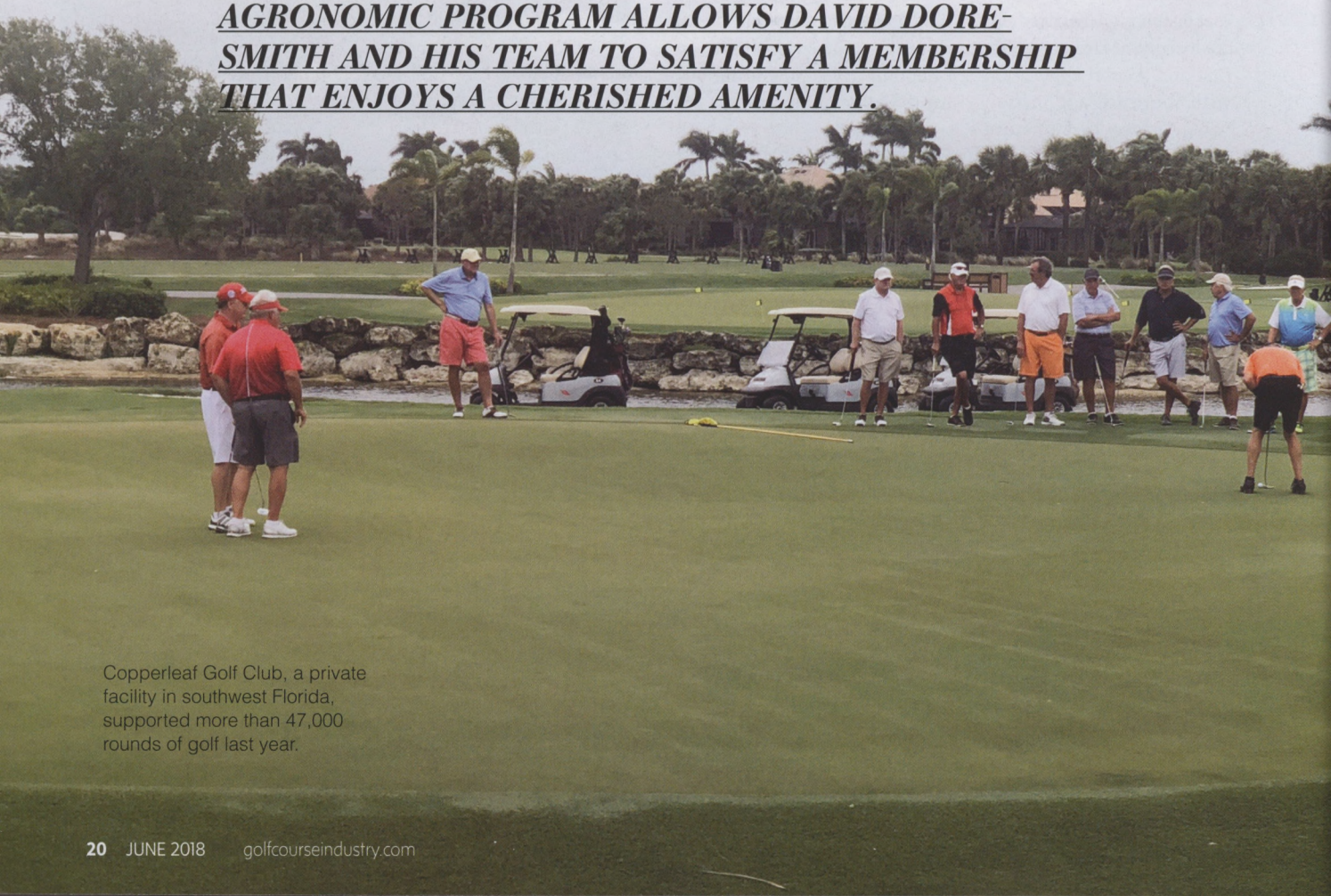
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ABUNDANT GOLF, DROUGHT AND HURRICANES. OH MY!

SEASONAL FLORIDA PLAY? NOT AT COPPERLEAF
GOLF CLUB. HOW FOLLOWING A RELIABLE
AGRONOMIC PROGRAM ALLOWS DAVID DORE-
SMITH AND HIS TEAM TO SATISFY A MEMBERSHIP
THAT ENJOYS A CHERISHED AMENITY.



Copperleaf Golf Club, a private facility in southwest Florida, supported more than 47,000 rounds of golf last year.

By Guy Cipriano

H

easy play and intense drenching. Copperleaf Golf Club experienced a pair of extremes in 2017 that tested every acre – and employee.

Located in Florida's golf-rich southwest coast, where private golf course communities are as common as basking alligators, Copperleaf supported a record 47,000 rounds last year, according to David Dore-Smith, the club's director of golf course and grounds maintenance since 2003.

Pushing 50,000 rounds at a private club is more startling when considering Hurricane Irma roared through the region last September, causing widespread damage to the course and grounds. Dore-Smith orchestrated a furious in-house cleanup effort and the course reopened two weeks following the hurricane. Members admired how Dore-Smith and his team handled a year that included drought conditions from January to June, followed by more than 70 inches of rain during a 3 ½-month stretch that culminated with Irma.

"We cleaned everything up in-house, which was an extraordinary amount of work," Dore-Smith

says. "When we opened up, the members that were already here were extremely thrilled the golf course was unscathed and the turf was in great condition. People were back playing golf and spending money. And members that then came down from the North were like, 'Where did the storm hit? We heard it was bad.'"

Copperleaf quickly dried out. The course has received just 4 inches of rain since Irma, according to Dore-Smith. Low lake levels and a high volume of golfer activity defined the start of 2018. "That's the challenge," Dore-Smith says, "keeping up with the high expectations and still trying to fit in your agronomic and cultural practices."

CONDITION

The Copperleaf team, which includes assistant superintendents David Forrey and Tiny Fry and mechanic Roman Gomez, consists of 22 workers when fully staffed. But the current southwest Florida construction boom makes assembling a complete roster challenging, even at a club with a supportive membership such as Copperleaf, which offers what Dore-Smith calls "competitive" pay, "excellent" benefits and perks ranging from employer-provided lunches to a member-driven

item donation program.

The crew is responsible for maintaining 85 acres of golf turf, common areas, and Har-Tru tennis and bocce courts. The daily rush to complete tasks and support abundant play requires Dore-Smith to use industry contacts and resources as time-saving tactics.

This year's plan involves following a fungicide program for ultradwarf Bermudagrass greens in Florida created by Syngenta senior technical representative Dr. Lane Tredway. Copperleaf has slightly over three acres of TifEagle greens.

The program, which can be found at www.greencastonline.com/programs, operates on two-week application intervals using a rotation of fungicides, including Apear, Secure, Daconil Action, Heritage Action, Briskway, Velista and Medallion. "You can't be expected to be everywhere at every time," Dore-Smith says. "If there is a way to try to simplify what I'm doing, I'm going to use that resource."

A proven agronomic program and spraying preventatively helps Copperleaf present tidy playing surfaces for events and regular play, Dore-Smith adds. "It's much easier to prevent a disease than cure it. The program has been working

great. The rates are very low, it's cost effective and it can be mixed easily with the products that I'm already putting into the tank."

PERFORM

Copperleaf features a blend of homeowners. Some members stay in their homes year-round; others spend cool-weather months in Florida before returning north for spring and summer. The dichotomy means summers are anything but blasé. "What has made us competitive is that we provide a very high-end product year-round," Dore-Smith says. "We really don't let it slack off during the summer months."

Almost all of Copperleaf's 570 homeowners spend winter in Florida, a tough growing period because of limited turf growth. "It's the busiest time and the grass literally just slows down," Dore-Smith says. Easter represents a crossroads. If temperatures warm elsewhere, a group of members return to their northern homes. But cool temperatures in the Northeast and Midwest yielded a hectic April and May this year. The snowbird portion of Copperleaf's season concludes with a massive member-member classic. The 2018 event, which Dore-Smith says turned out



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“phenomenal,” attracted 300 participants.

Intense agronomic practices and projects are completed May-September. The club closes the golf course on Wednesdays during the stretch. The Plant Growth Regulator Primo Maxx is a staple of Copperleaf's agronomic program and usage increases with the expedited

**Condition.
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body.**

Copperleaf Golf Club's David Dore-Smith offers four tips for protecting employees from extreme heat.

1. TEACH IT

The topic of a recent Copperleaf safety training seminar? Heatstroke and heat stress

2. HYDRATE, HYDRATE, HYDRATE

Copperleaf provides one-gallon water coolers for employees to use on the course.

3. THINK TEAM

Dore-Smith typically sends employees out in groups during the summer. “There’s always somebody looking out for someone else,” he says.

4. ALTER SCHEDULES

Numerous summer shifts begin at 6 a.m. and end around 10 a.m. Wednesdays are an exception because the course is closed, allowing the crew to complete intense cultural practices and projects. “The heat is one thing, but it’s the humidity,” Dore-Smith says. “It’s stifling. You get here at 6 a.m., you start walk mowing a green and by 6:15 a.m. you’re just soaking wet.”

spring, summer and early fall Bermudagrass growth.

“We use it year-round on greens anywhere from 2 ounces per acre during the cooler months every week and up to 4 ounces twice a week during the summer months when things are actively growing,” Dore-Smith says. “We spray it on tees, fairways, rough. We spray it everywhere. It not only reduces mowing, but it helps primarily with clippings and cleanup. We don’t have to send another employee or machine out there to vacuum it up or blow it around.”

CONDITION TO RECOVER

Even 15 years into his Copperleaf tenure, Dore-Smith walks on greens daily. The timeless tactic helps determine which greens require more attention. “You get taught on your first day of agronomic school that healthy turf makes everything easier,” he says.

A scare this past March reaffirmed Dore-Smith’s confidence in his observations and programs. After hearing compliments about the greens from an industry contact on a Thursday and observing the vibrancy again on a Friday morning, Dore-Smith left the area for a short weekend trip. On Sunday, while out of town, he received text message photos of stressed greens from a co-worker. One of Dore-Smith’s assistant superintendents and irrigation technician hand watered the greens between shotgun starts. Dore-Smith returned to the course Sunday afternoon and discovered a computer update had shut down the irrigation system both Friday and Saturday night.

Irrigation cycles resumed following the Sunday play.



▲ Following Syngenta's agronomic program helped Copperleaf Golf Club's roots remain strong despite an irrigation scare earlier this year.

Dore-Smith checked the roots Tuesday. He was impressed by what he saw and sent a photo of the roots to the industry contact who praised the greens the previous Thursday. Following the Syngenta program, Dore-Smith says, allowed the turf to withstand the stress caused by the ordeal.

“We had quick recovery because the fundamentals were there,” he adds. “I had the protection in the soil and in the roots. Once that stress did occur, there was no water for two nights and no rain prior to that. With the dry air temperatures that time of year, any turf is going to stress out. But once you put back that missing element, which was water, then the response was extraordinary.”

The volume of play Copperleaf has supported this year also has been extraordinary.

Members enjoyed more than 25,000 rounds through the first four months. For Dore-Smith, the year has been especially busy. The club named him interim general manager in May. Dore-Smith says the business skills needed to succeed as a superintendent, many of which he further honed at the 2012 Syngenta Business Institute, are helping him handle the interim role.

“We are the Copperleaf Golf Club,” he says. “People join here and people buy homes here because they want to play the golf course, which is evident by the 47,000 rounds last year. I get the big picture, so I need to keep this golf course in as high condition as possible because it reflects on how nice the hamburgers taste at lunch, how nice the steaks were at dinner, the home sales and increase in property values.” **GCI**

More Condition. Perform. Recover.

The Ohio State University's Dr. Karl Danneberger offers hurricane preparation and recovery tips on Syngenta's Field Insights Blog. Enter <https://goo.gl/szNjWa> into your web browser to read his strategies.

TO BE OR NOT TO BE



Tim Moraghan, principal, ASPIRE Golf (tmoraghan@aspire-golf.com). Follow Tim's blog, Golf Course Confidential at www.aspire-golf.com/buzz.html or on Twitter @TimMoraghan

This column is for all the assistant superintendents who are wondering if they have what it takes, and are ready, to be the top dog. When is it time to think that you should be a head superintendent?

There's no easy answer, so what follows are mostly questions that you should be asking yourself — and answering brutally honestly.

Start with this: What is your motivation? Why do you want to move up? Is it ego? Pressure from what you see around you in the industry or with guys you started out with who've moved up? Is being the head guy the only way you feel that what you're doing is "legitimate?" Or are you tired of where you are, either stuck in the same job or at the same course, or both?

The next question might seem to be an easy one, but dig deep: Is this the profession you want to make your living in? I got into the business because I enjoyed being outside and working hard. But it's way more than that today.

Remember why you got into the business in the first place. Are your career objectives still valid? Look around. Many courses have closed in the last few years and there are some important people (with jobs) in the industry saying that more must close before the industry stabilizes. Do you

have what it takes in a shrinking market to rise to the top and stay there?

Again. Are you ready? That's the question many assistants have trouble answering faithfully. If you're not 100 percent committed to moving ahead, then you may be better off remaining an assistant: Working for a good leader, getting great training and valuable experience, and being backed by an ample budget.

There's no shame in admitting — or better yet, understanding — that it isn't your time yet. A good assistant's job can be better than being the head guy at a "typical" club. There's always more to learn and more opportunities to improve, chances that might not exist if you move up too early. Are you ready to teach and control your own destiny? The price of failure at the top level is high.

Also, there are other options, different scenarios and chains of command. One of my clients is an affluent club with multiple courses. Each one has a "head" superintendent, but they all report to the vice president of agronomy. So, in reality, the VP is the top dog. The supers are really assistants, but it's a superb, high-profile training ground with abundant resources, educational opportunities, televised tournaments, constant construction projects, and both warm- and cool-season grasses.

I'm not saying you have to stay put. But there are some very good reasons to. Here are a few:

- **Education.** Keep learning without the pressure of being in charge.
- **Flexibility to go off course.** Travel, seminars, see other golf courses, volunteer at championships.
- **Experience.** Continue to gain it, learn under a self-assured leader who lets you manage a crew, assist with budgets, attend meetings, make presentations and prepare long-range plans.
- **Economic reality.** The salary may appear higher than what you are currently making, but tax implications and other factors may even it out.
- **Cost of living.** The head job may not be in synch with what you anticipated when you drill down on the numbers of the offer and area to live.
- **Family matters.** If you must relocate, consider your spouse's job, the kids' schools and other off-course, everyday life issues.
- **Do more with less.** You may get the title, but along with it comes a steep learning curve and maybe without the resources to make it work.
- **Age.** Don't move if you are too young; it's hard to move if you are too old.
- **Tournaments.** If your club is on the verge of hosting a major tournament, it might be worth staying for the experience.
- **Getting lost.** If you take the leap, you probably then drop under the radar for future opportunities. Is the first head super job that comes along the right one? Will it allow you to reach your full potential?
- **Hone other skills.** It's OK to look around, interview and hone your skills even if it's a job you don't want.

Don't be afraid to stay, improve, learn the aspects of club life and politics that are vitally important, and then reach for that better job. There is nothing wrong with being No. 2 if it's truly preparing you to be a great No. 1. **GCI**

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By John Torsiello

**ANOTHER
TOOL FOR
QUALITY TURF
MANAGEMENT,
GPS-GUIDED
SPRAYERS
PROVIDE MORE
BENEFITS THAN
DRIVING IN A
STRAIGHT LINE.**



▲ GPS-guided spraying has developed into a tactic for golf courses looking to reduce inputs and improve labor efficiency.

Superintendent Sean Reehoorn was looking for another tool to provide quality turf conditions at Aldarra Golf Club Sammamish, Wash. In July 2016, he began using a GPS-enabled sprayer. It's proven to be a wise investment.

"The results have exceeded my expectations," Reehoorn says. "We sprayed fairways with a 300-gallon conventional sprayer. We mixed 960 gallons at one gallon per thousand square feet. If we started spraying at 6:30 a.m., we would finish around 1:30 p.m. Our GPS

sprayer is a 200-gallon unit. We now mix up 900 gallons at one gallon per thousand square feet. Our overall fairway acreage with precision mapping went from 22 acres to 20.6 acres. If we start spraying at 6:30 a.m., we are done by 11:30 a.m. This is all traveling at the same speed."

In other words, superintendents using GPS-enabled sprayers are finding encouraging results speak.

Count Adam Mis as another true believer. "Our results over the last four years have been amazing," says Mis, the superintendent at Brookfield Country Club in Clarence, N.Y.

"Using the GPS technology has saved the club conservatively upwards of \$60,000. It's a no-brainer. It pays for itself."

Brookfield Country Club also uses GPS in the application of granular fertilizer, and Mis says the results have been impressive. "Environmentally, applying the correct nutrient in the correct location is better than anything I could ever ask for," he adds. "We have seen tremendous turf health using these tools."

Data from golf course superintendents like Reehoorn and Mis don't surprise those bringing GPS-enabled systems to the turf market.

"We commonly run across superintendents who have claimed they will never go back to spraying without a GPS system," says Jace Bertsch, Toro's global product marketing manager for application products.

Since each golf course is different, and superintendents have a wide range of goals in their turf management programs, there are factors to consider before investing in GPS-enabled sprayers.

Precision and consistency – applying chemicals to the exact areas that need to be treated – are key when considering GPS-enabled sprayers, says Andy Billing, vice president of

EQUIPMENT

sales and marketing at Turflux. "There will be no growth regulators being over sprayed in bunker banks, intermediate areas and fescue areas," he says. "There will be no overlap of product on green surfaces where sprayers need to drive on and off a green."

Assisting in the precision, individual nozzle control means sprayer operators will only spray inside designated boundaries, without wasting chemicals on non-targeted area, says Brooks Hastings, product manager for John Deere.

"Additionally, since you know your exact area to spray, you will know how much is needed for that last partial tank

to finish up," Hastings says. This increased pass-to-pass accuracy decreases the time spent spraying. "Just drive over the areas that the coverage map shows unsprayed and let each

individual nozzle do the work," he adds.

Since each nozzle is individually controlled, Hastings adds the operator no longer is forced to turn on and off

boom sections when spraying. Just move into the spray zone, engage the system and the sprayer does the rest.

Advanced spray nozzle technology gives the operator more



▲ John Deere Golf previewed the GPS PrecisionSprayer for the ProGator earlier this year at the Golf Industry Show.

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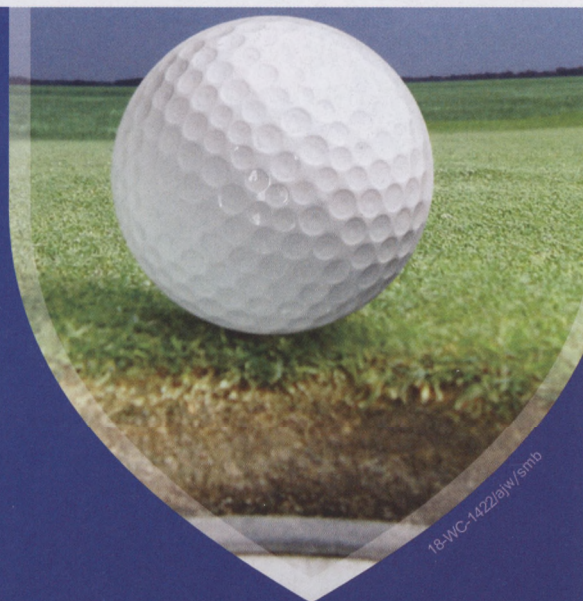
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flexibility for travel speeds that react to pressure spikes in the system, says Matthew Koester, product manager for Jacobsen turf care equipment. "This ensures sprayer pressure is constant, and there is proper application droplet size and coverage, at greater speed ranges, with the results being greater productivity and proper application," he says.

Individual nozzle control means there's less spray outside of defined boundaries, and pass-to-pass overlaps are "virtually eliminated," Bertsch says.

GPS's ability to correct over spraying/over application brings additional benefits, says Koester. "There are environ-

mental benefits because of reduced usage of chemicals on environment."

Billing agrees: "Any time you can reduce inputs and be more exact it is going to be a win-win for the environment and the end user."

Since the GPS-enabled system will not let an operator spray areas not pre-defined as target areas, dependence on the operator's skill level is reduced, Bertsch says. Even new, less-experienced operators can deliver quality results, he says.

And a GPS-enabled sprayer allows courses with multiple spray technicians to be more consistent with sprays. "We always hear that one spray tech



▲ Mapping to ensure accuracy and prevent over spraying is a key component of GPS-guided spraying.

sprays 2.5 acres and the other sprays three," he says. "GPS keeps both the same."

In addition, superintendents can electronically capture and analyze spray data — date, time, temperature, rates, chemicals and geolocation of applications — all of which streamlines the documentation process and allows robust analytics of the spray data, Hastings says.

Billing agrees, "Advanced computers on the sprayers and Cloud-based recordkeeping make logging applications a lot easier. We are able to track amount of product, volume, pressures, speed of sprayer during and after the application."

More precise applications with fewer operator errors and less wasted product all lead to cost savings,

And cost savings is a huge consideration when investing in a GPS-enabled system, Billing says.

While results may differ when using spray booms on larger areas compared to smaller ones, Bertsch says superintendents may see an average 14 percent product savings. His calculations are based on wall-to-wall coverage at Toro beta test sites.

Analyze the cost of the technology versus the amount of money the facility spends on

fertilizer, pesticides and fungicides each year, Koester says. Annual savings of 20 percent are possible, he says, but if a course has a smaller than average chemical budget, return on investment becomes much longer, in most cases.

The bottom line is that superintendents must convey the value proposition a GPS sprayer system will bring to the facility. "Labor savings, decreased cost of inputs, automated steering, electronic documentation and ease of use are all important, and each club will develop its own sense of how these issues affects operations," Hastings says.

Billing adds, "If the club/owner wants to strictly save on chemical, it's perfect. If they want to move the savings into another budget line, it's perfect. The intangible never talked about [cost savings] is reduced labor. If the operator makes his first tank go further and finishes sooner, he is on to his second job quicker."

Lastly, some superintendents vying for the addition of GPS-enabled spray systems are motivated by another not-so-apparent benefits — peace of mind. "Having peace of mind has been a common thread among superintendents that we have spoken with about GPS sprayers," Bertsch says. "When asked, many superintendents claim there is a relatively high turnover for spray technicians, and a GPS-enabled spraying unit ensures the same consistent coverage regardless of the operator's skill level." GCI

John Torsiello is a turf writer based in Torrington, Conn., and a frequent GCI contributor



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1
THE COURSE

THE COURSE

One of five founding member clubs of the USGA, Shinnecock Hills Golf Club formed in 1891. The current golf course, designed by William Flynn, opened in 1931. The club is hosting its fifth U.S. Open, with the previous four being contested in 1896, 1986, 1995 and 2004. Shinnecock will also host the 2026 U.S. Open.

2
THE ENVIRONMENT

2

THE ENVIRONMENT

Located in Southampton, New York, Shinnecock rests in a golf-rich part of Long Island. The nearby Atlantic Ocean dictates air temperatures and wind direction. Sandy soils produce firm playing conditions on bentgrass/*Poa annua* playing surfaces. Sitting near an ocean means plenty of fog and rain, which makes turf susceptible to dollar spot outbreaks. The intense dollar spot season begins in early June and extends into July.



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3 THE PROGRAM

3

THE PROGRAM

Shinnecock has developed a comprehensive plant protection program. The program is evaluated and tweaked after each season. "It's a solid, preventative-based program," assistant superintendent Bobby Bolin says. "There's no room for error out here. One spot of dollar spot is one too many." The Shinnecock team treats 70 acres of championship playing and practice surfaces, including seven acres of greens and collars.

4 THE SOLUTIONS



4

THE SOLUTIONS

BASF products are the backbone of Shinnecock's plant protection program. A fall application of Emerald® fungicide starts the treatment program for the following season. As the season approaches, Honor® Intrinsic® brand fungicide is applied to greens, tees and fairways, and Insignia® fungicide is used to prevent soil-borne diseases on greens and tees.



5 THE TRUST

5

THE TRUST

Preparing a historic course for a major championship requires unwavering confidence in every aspect of an operation, including a plant protection program. "BASF brings the products, not only with what they have on the market but what they're bringing down the pipeline," superintendent Jon Jennings says. "And they bring individuals that are keeping us apprised of what developments are happening in the area. They are the complete package. It's not just delivering a product. They are standing behind it and they are assisting us to shine in our best light."

MAUKA TO MAKAI

Part 3: Malama 'aina (To care for the land)

By Guy Cipriano





Mauna Kea Resort now houses more geese than golf holes, causing a surge in morale among the workers responsible for maintaining the 36-hole facility.

Viewed as a turf-stomping, feces-dispersing nuisance at many mainland golf courses, geese are desired residents at Mauna Kea. What's good for business at the patriarch of resort golf on Hawaii's Big Island is also positive for what Hawaiians deem sacred.

Malama 'aina, which means "to care for the land," drives management decisions on the island – and makes stopping to appreciate geese an acceptable practice.

Hawaii's state bird? Yes, it's a goose. Hawaiians consider nene in a class of its own. Nene measure 24 to 27 inches and use partially webbed feet to skirt along lava rock. Fewer than 2,000 reside in the state, according to the U.S. Fish & Wildlife Services' Pacific Islands Fish and Wildlife Office.

Mauna Kea had four resident nene three years ago. By the end of 2017, the population eclipsed 40. The GPS system in the resort's carts even alerts golfers of their presence. More nene means more evidence Mauna Kea, which hugs the Pacific Ocean, is protecting the land.

The Federal Endangered Species Act listed nene as an endangered species in 1967, the same year Lady Bird Johnson called Mauna Kea developer and businessman Laurance Rockefeller "America's leading conservationist." If Johnson and Rockefeller were around today, they would be delighted by the work of Big Island superintendents and their teams.

Mauna Kea released a sustainability case study last year. The

The third installment of a four-part series looking at the people, practices and partnerships behind the stunning golf on Hawaii's Big Island.

report determined baselines, documented successes and established benchmarks after conducting interviews and collecting consumption data from 2015-16. The report entails all divisions of the resort, including golf course maintenance. Former director of golf course maintenance Scott Main and his team demonstrated a leadership role, removing wayward turf, converting playing areas to less-thirsty paspalum grasses, switching to energy-efficient John Deere hybrid vehicles, conducting regular water quality testing and trapping invasive species such as mongoose to create nene-friendly habitat. "Culturally, the environment is huge, especially with the ocean being here," says Main, who became director of golf course maintenance at another Big Island gem, Nanea Golf Club, last December.

The ocean drives numerous golf course maintenance decisions at Kohanaiki, the newest – and perhaps most scrutinized – course on the island. After stalling during the Great Recession, the anticipated development opened in 2013.

The private residential community featuring an 18-hole Rees Jones-designed golf course sits adjacent to a public beach park. Visitors to the beach park travel through the same entrance gate as

members of the exclusive club. The beach park borders the green of the par-5 12th hole.

Agronomy manager Joey Przygodzinski, a Big Island native, heard whispers from friends that the club

would change the dynamic of the beach park, one of the best public access areas on the Kona (west) side of the Big Island. Przygodzinski and his team help maintain the public beach park.

"A lot of my friends were opposing the project when they found out that they were going to be changing the beach park around and having this private residential community with a golf course," he says. "It was a tough position to hold. But I think, in the end, the project has always created jobs for the community and what we have done to preserve the natural resources here goes beyond what they were prior to just having the land be stagnant."

The 14th hole, one of six with ocean views, demonstrates how caring for the land coincides with golf course maintenance. Two of the course's 14 Ahu – sacred rock shrines – are found on the hole, one positioned between the forward and back tees, another one behind the green. The hole meanders through lava rock, which supports anchialine ponds. Przygodzinski oversees a team responsible for maintaining the more than 200 protected ponds. The work is grueling because machines aren't permitted in the ponds. But

pond management is a critical element of what Przygodzinski calls Kohanaiki's "natural resource plan."

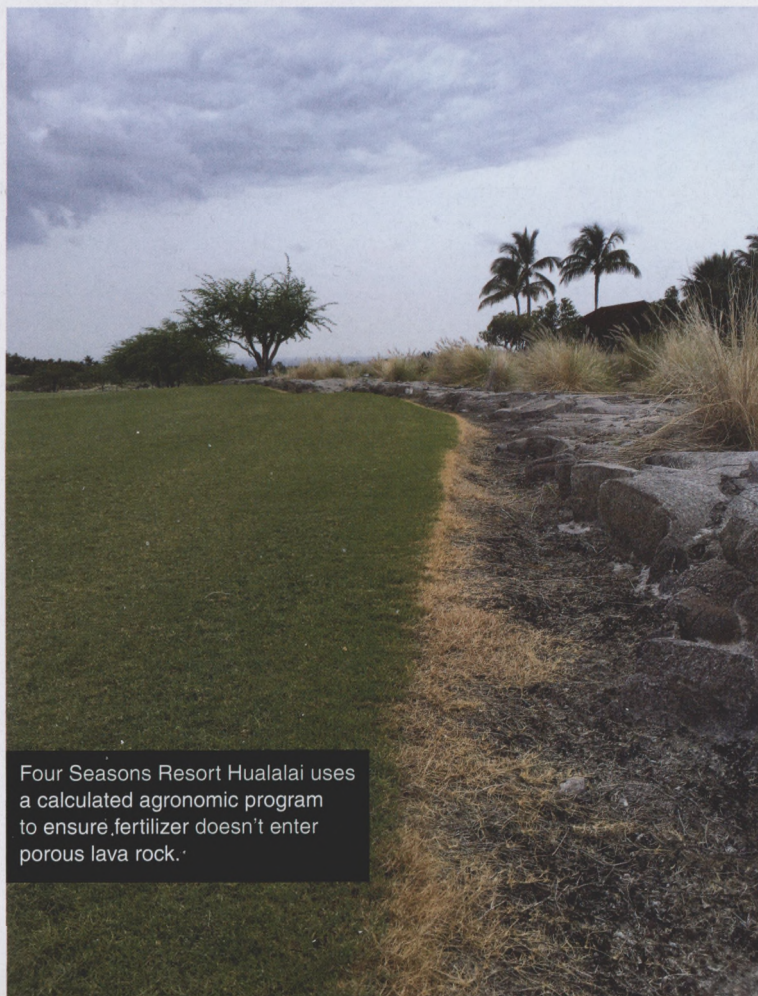
Workers are responsible for pond remediation and restoration. This means using their hands to remove invasive plant species such as pickleweed and mosquito fish. The results of the work are becoming evident this year, Przygodzinski says. The ponds not only sparkle – members often comment on their beauty – but native birds flock to them.

Hawaiian stilt, known on the island as the ae'o, live on the Kohanaiki grounds. Although they aren't residents, nene visit Kohanaiki. When the course opened, the birds didn't know how to react to humans, says Joey Kaeka, a member of the

Kohanaiki crew since 2013. "But now they feel comfortable here," he adds. Kohanaiki workers have created nest sitting sites for ae'o.

Indigenous species comprise 90 percent of Kohanaiki's plant and tree material, according to Przygodzinski. Coconut palms, for example, dot both sides of the 14th fairway. Przygodzinski counts 10 different species among the more than 1,400 coconut palms on the grounds.

The turf on the 14th hole, along with the other 17, is SeaDwarf paspalum. Instead of irrigating turf via water received from one deep well, Kohanaiki pulls water closer to the surface from eight wells. The water is then processed in a Reverse Osmosis system, which produces multiple blends. For-



Four Seasons Resort Hualalai uses a calculated agronomic program to ensure fertilizer doesn't enter porous lava rock.



MORE MALAMA 'AINA: NEVER ON AN ISLAND

Switching to John Deere 8000A E-Cut Hybrid fairway mowers has helped Mauna Kea Resort reduce fuel usage.

Protecting the land factors into every decision at Mauna Kea Resort, including golf course maintenance equipment selection.

The resort uses John Deere hybrid technology to maintain its famed Robert Trent Jones Sr.-designed course along the Pacific Ocean. "One of the reasons we went to John Deere was because we were able to get hybrid equipment in there and were able to reduce our oil and fuel," says former director of golf course maintenance Scott Main, who oversaw acquiring a fleet that includes 8000A E-Cut Hybrid fairway mowers and 220 E-Cut Hybrid walking greens mowers.

Mauna Kea has already documented the savings as part of its sustainability case study released in 2016. Shifting to John Deere hybrid vehicles has reduced fuel consumption from five gallons per day to five gallons per week, according to the "Embracing Sustainability at Mauna Kea Resort" report. Main became the director of golf course maintenance at Nanea Golf Club last December. Nanea also uses the 8000A E-Cut Hy-

brid and 220 E-Cut Hybrid.

Released in 2014, the 8000A E-Cut includes a three-wheel configuration. John Deere Golf manager, product marketing Tracy Lanier says the mower leaves an after-cut appearance comparable to a triplex while offering increased productivity associated with an 80-inch width of cut. The mower receives extreme tests on the Big Island, where severe fairway and green contouring is common among courses constructed on hilly terrain and lava rock such as Mauna Kea and Nanea.

"One of the reasons it does so well with hill climbing is that you are driving the reel circuit electrically," Lanier says. "You're not using a lot of power from the engine to drive the cutting units, so basically your hydraulic drive for your wheels have plenty of power, because the reels aren't taking it. It does a great job with hill climbing and following contours."

The electrification of the reel circuit helps courses looking to reduce their environmental footprint. The series of E-Cut mowers, first released by John Deere in 2005, removes 100 to 120

potential leak points, Lanier says. "They are still using some hydraulics, but normally probably 90 percent of your leaks occur in the reel circuit because that's the system that's moving the most over the time things happen," Lanier adds.

A mower in the E-Cut series can offer "up to 30 percent" fuel savings compared to a mower with a hydraulically-driven reel circuit, according to Lanier. The ability to reduce throttle and run an engine at a lower RPM also decreases noise levels.

"It's real important for us to have energy efficient machines," Lanier says. "It's something that our customers ask for as budgets get scrutinized. It's not only good for the environment, but it's also budget friendly. We try to do as much as we can to make our machines as productive as well as energy efficient as possible."





Signage to guide visitors is placed throughout the grounds at Four Seasons Resort Hualalai.

mer University of Hawaii professor and anchialine pond specialist Dr. Richard Brock frequently tests Kohanaiki's water.

"As a superintendent, just talking about watershed in general is huge," Kohanaiki superintendent Luke Bennett says. "We are always concerned about water. But when you are this close to the ocean, every drop of water that is coming down the hill and through your golf course and migrates toward the ocean is your responsibility."

"And it's not only how we apply water. It's how we



Kona Country Club has implemented an extensive recycling program as part of its resource protection efforts.

manage stormwater, how we manage our pumping, so the aquifers are sustainable. Water management is critical for

any golf course superintendent. I think it's just much more critical when you are on a property that's much closer to the ocean."

Mauna Kea also has implemented a water quality testing program, partnering with the University of Hawaii at Hilo to monitor conditions in the Puako, a coral reef network along the Kohala Coast. A combination of water quality testing and adopting a slow-release fertilizer program helped Mauna Kea prove it wasn't the source of an algae bloom discovered last August.

Documenting progress and inputs, both externally and internally, is a major component of Mauna Kea's sustainability plan, says Gina Rizzi, principal of Radius Sports Group, which works with Mauna Kea to develop and implement sustainability initiatives. Documentation is especially important in an environmentally sensitive region such as Hawaii, where locals establish deep personal and economic connections to the land.

"When you are transparent with the data and transparent with the processes and show that there are families employed there, plus people in the community who are

being served by what you do, it establishes a level of trust,” Rizzi says. “From an internal perspective, it’s important because it shows employees how they can continuously improve. When we determine the data and share it not just with the management team, but with the employees, it gets everybody aligned around a common goal and then it makes them feel good. It’s inspiring to employees when they can see the good their

inspection when visitors depart.

Protecting land represents a major legislative emphasis, with elected officials formally beginning the Aloha+ Challenge in 2014. The effort identifies six lofty goals to be achieved by 2030 in clean energy transformation, local food production, natural resource management, solid waste reduction, smart sustainable communities, and green workforce and education. The state

but really all the people in Hawaii,” she says. “They just absorb that sense of respect for the land.”

Malama ‘aina factors into every decision Dan Husek makes as director of golf course maintenance at Four Seasons Resort Hualalai, a coastal facility with 18 resort and 18 private holes. Both courses were constructed on porous lava rock, meaning inputs can potentially enter groundwater and reach the ocean.

Defined brown lines, signifying borders between turf and lava rock, illustrate the result of a calculated fertilization program. Three spreaders are used to disperse granular fertilizer in fairways and rough, including a walking rotary spreader along edges. The process might be labor intensive, but it’s crucial to protect what separates the Big Island from other places.

When discussing his management programs, Husek, an Illinois native who has lived on the Big Island since 2004, uses slightly different vernacular than mainland superintendents. He refers to a spray technician, for example, as an integrated pest manager. “The land is special,” he says. “That’s why this property is so unique. The land is a big part of it. We want to try to maintain it the right way and make sure we are doing things

the right way.”

Kona Country Club superintendent Der-

rick Watts also hails from the mainland, but he’s spent the past 14 years living and working in Hawaii. His management program at Kona Country Club involves displaying extreme caution when operating around course borders, monitoring wildlife and implementing a comprehensive recycling program.

Watts has a letter to editor from a local newspaper, *West Hawaii Today*, hanging in his office. The letter, published on April 11, 2016, three months after Kona Country Club reopened following a lengthy renovation, raises questions about noise and increased resident green fees, yet praises efforts made by Watts early in his tenure to communicate with neighbors, improve aesthetics along course borders and adjust irrigation patterns. Two years later, the letter still motivates Watts and his team. “PR is especially important around here,” Watts says.

Whether it’s a public course, resort facility or private development, malama ‘aina guides golf course maintenance decisions on the Big Island. Given the land’s value as a provider for residents and indigenous species, superintendents hold tremendous responsibility.

“We don’t want to do anything that’s unrighteous,” Przygodzinski says. “Anything we do or say, anything we preach or practice, is always to preserve our culture and natural resources out here.” GCI



Agronomy manager Joey Przygodzinski helps oversee Kohala’s natural resource plan.

organization does.”

How important is land in Hawaii? Visitors are required to sign a state Department of Agriculture Declaration form when flying into the state. The form is designed to prevent visitors from bringing invasive animals and pets into Hawaii. Luggage and carry-on items then undergo an agriculture

created an Aloha+ Challenge web dashboard to document progress respective to each goal.

When conducting her research at Mauna Kea, Rizzi immediately noticed a land ethic that doesn’t exist in many other places. “It’s really part of the DNA of the people, not just the native Hawaiians,

ABOUT THIS SERIES

GCI is partnering with John Deere to tell the story of the people, practices and partnerships that make golf on Hawaii’s Big Island special. As part of the project, video tours of the courses will be available via newsletters released at the end of the next four months. Enter <https://www.golfcourseindustry.com/form/1/GCI/newsletter> into your web browser to subscribe to GCI’s free newsletters. The series will also include Hawaiian-themed Twitter tours. Follow along @GCIMagazine.

MAUKA TO MAKAI | APRIL: ALOHA | MAY: ‘OHANA | JUNE: MALAMA ‘AINA | JULY: KOKUA

Guy Cipriano is GCI’s senior editor.

COORDINATION



Brian Vinchesi, the 2015 Irrigation Association Industry Achievement Award winner, is President of Irrigation Consulting, Inc., a golf course irrigation design and consulting firm with offices in Pepperell, Massachusetts and Huntersville, North Carolina that designs golf course irrigation systems throughout the world. He can be reached at bvinchesi@irrigationconsulting.com or 978-433-8972 or followed on twitter @bvinchesi.

I have been designing golf course irrigation systems for about 35 years and today's systems are extremely complex when compared to those that I was designing in the 1980s and '90s. They are also much more expensive as complexity comes with a cost. Today's golf irrigation systems are manufactured and designed to interact with more equipment, including critical asset protection, pump stations, various water supplies (primary and backup) and auxiliary equipment such as fans, aerators and fountains.

These complex systems require a great deal of coordination among golf course staff, design professionals, manufacturers and possibly outside government agencies. Coordination is time consuming. Without it, though, an irrigation project can very quickly turn bad and become very expensive.

Here is a short list of what needs to be coordinated:

- Power to controllers
- Power to pump systems (exterior)
- Power to wells
- Power to transfer pumps
- Well piping to the storage pond
- Transfer piping to the storage pond
- Weather station location, power and communication type
- Asset protection equipment (lightning detection/horns) location,



“The first task in coordination is to determine who is responsible for what. To be honest, the more responsible parties there are, the more possibilities for mistakes.”

- power and communication
 - Landscape irrigation (clubhouse, entrance road, pool area)
 - Tennis irrigation
 - Drinking fountain power
 - Drinking fountain piping
 - Fan power
 - Pump house size and pump system configuration
 - Pump house electric (interior)
 - Pump house doors and hatch locations
 - Fertigation/injection requirements
 - Golf course renovations
 - Erosion control
- The first task in coordination is

to determine who is responsible for what. To be honest, the more responsible parties there are, the more possibilities for mistakes. For example, all the electrical design should be completed by the electrician or electrical engineer even if it includes irrigation, pump house and power supply instead of separate for each.

Coordination takes time and requires attention to detail. For example, you may put a central control interface in your pump house to save on wire. As a result, you will need to coordinate the power supply to it (120 volts), the communication path out of it, the antenna location and wiring for it, and if it has asset protection for the power and wire antenna. Where does the power come from, how many conduits are needed out of the building and how many conduits up to the roof? On top of that, who does what? Where does the irrigation contractor's work start and the electrician's end, or vice versa?

The other reason that coordination up front is so important is that when, not if, something goes wrong, it will most likely be the superintendent's responsibility to figure out the issue and solve it. If everything is sorted out before construction with the superintendent involved, many issues can be avoided. Many times, a contractor will go to install a piece of equipment and the superintendent will say, "I don't want that there. I want it over here." Avoid those issues by being involved from the start with all aspects of the irrigation project so you always know what is proposed. Just because it may not directly impact the turf, it does indirectly, so do not hesitate to weigh in on all the type of equipment being installed and its location. As with everything, careful planning and "coordination" is the key to a successful project without surprises and being on budget. **GCI**



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Evaluating the Pros and Cons of Preventative vs Curative Fungicide Applications

By Paul Giordano, Ph.D.
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Technical specialist on the Bayer Green Solutions Team, which offers holistic agronomic advice to Bayer customers as part of its commitment to healthy turf.

Although not a plant pathologist, Benjamin Franklin famously proclaimed to his fellow Philadelphians that “An ounce of prevention is worth a pound of cure” when it comes to fire safety. This can also be applied to the health of the plants we manage, especially when using fungicides for the control of destructive turfgrass diseases.

The Numbers Game

Let's consider the notorious dollar spot pathogen for this example. As a prolific foliar disease, dollar spot symptoms can occur under a wide range of environmental conditions (i.e. temps from 50-85°F) and persist throughout the growing season (April through October) in many regions of North America. Pathogen populations expand unnoticed and without symptoms during cool spring weather and can grow exponentially under humid conditions (>70%), resulting in rapid turf infection and extensive damage. Thus, keeping these populations low is crucial for consistent disease control.

Cultural practices and adequate nutrition should serve as the foundation for any disease management program. Sound IPM can help mitigate plant stress to improve dollar spot tolerance, but inoculum is still likely building – and when environmental pressure mounts, intervention with fungicides is usually required.

Allowing pathogen populations to build to a critical mass of disease-causing levels will require higher rates and more frequent applications of fungicides. Additionally, when inoculum levels are high, the likelihood is much greater for fungicide-resistant pathogen populations to develop.

Thus, when designing an effective disease management strategy, the goal should be to target the pathogen when it is known to be metabolically active, but not yet inflicting symptoms on the turfgrass. This may require a change of mindset, focusing on the unseen inoculum rather than the onset of first symptoms.

In the case of dollar spot, an initial spring application will reduce inoculum and delay subsequent symptom expression. The timing of this initial dollar spot application varies from region to region

and year to year. Studies have shown that superintendents can help limit future epidemics throughout the season by making applications when air temperatures average 60°F or when certain phenological indicators (e.g., lilac bloom or the second true mowing) have appeared. Subsequent applications can be scheduled with a variety of predictive algorithmic systems, such as the Smith-Kerns model.

Preventive vs Curative – A Classic Case of Risk vs Reward

Whether you follow a calendar scheduled spray program, use weather-based predictive support systems, or have a “wait and see” damage threshold approach, there are inherent risks and potential rewards associated with each. The table below highlights some of the key considerations:

Management Approach	Inherent Risks	Potential Rewards
Damage-Threshold (Curative)	<ul style="list-style-type: none"> Higher fungicide costs (high rates, more frequent applications) Unexpected or uncontrollable damage Development of fungicide-resistant pathogen populations Less than intended days of control 	<ul style="list-style-type: none"> Reduction in fungicide expenditures (if weather cooperates)
Weather-Based Predictive Model	<ul style="list-style-type: none"> Greater costs – shorter intervals of application Disease outbreaks, remedial applications – model accuracy 	<ul style="list-style-type: none"> Reduced costs and inputs – spraying only when necessary IPM, environmental, regulatory stewardship – justification for applications
Calendar-Scheduled Program	<ul style="list-style-type: none"> Excess costs – spraying unnecessarily Disease outbreaks – end of interval epidemics 	<ul style="list-style-type: none"> Predictable budgeting and scheduling Cost effective Limits disease damage Resistance and regulatory benefits

Some of the newer fungicides on the market offer unique benefits that extend beyond preventive disease control. Exteris® Stressgard® has shown to provide excellent preventative and curative efficacy in university field trials. This flexibility allows it to be used effectively regardless of the application model you choose for managing troublesome foliar diseases. As mentioned above, however, it's essential that superintendents remember Mr. Franklin's wise words from the 1700's and utilize smart and strategic preventive approaches to ultimately save some “Benjamins.”

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GET MORE OUT OF YOUR PGR PROGRAM

**EXPERTS OFFER SEVEN KEYS TO CONSIDER TO
GET BETTER RESULTS AND HEALTHIER TURF.**

By **Rick Woelfel**

Plant growth regulators (PGRs) are useful components of a turf management program and offer significant benefits. The turf becomes greener, texture improves, and leaf density and stress tolerance increase. In addition, the plant requires less nutrient to thrive.

But if used improperly, PGRs may not deliver the desired result and may cease to be cost effective. Here are a few steps for superintendents to get the most out of their PGR of choice — and their budget.

HAVE AN OBJECTIVE

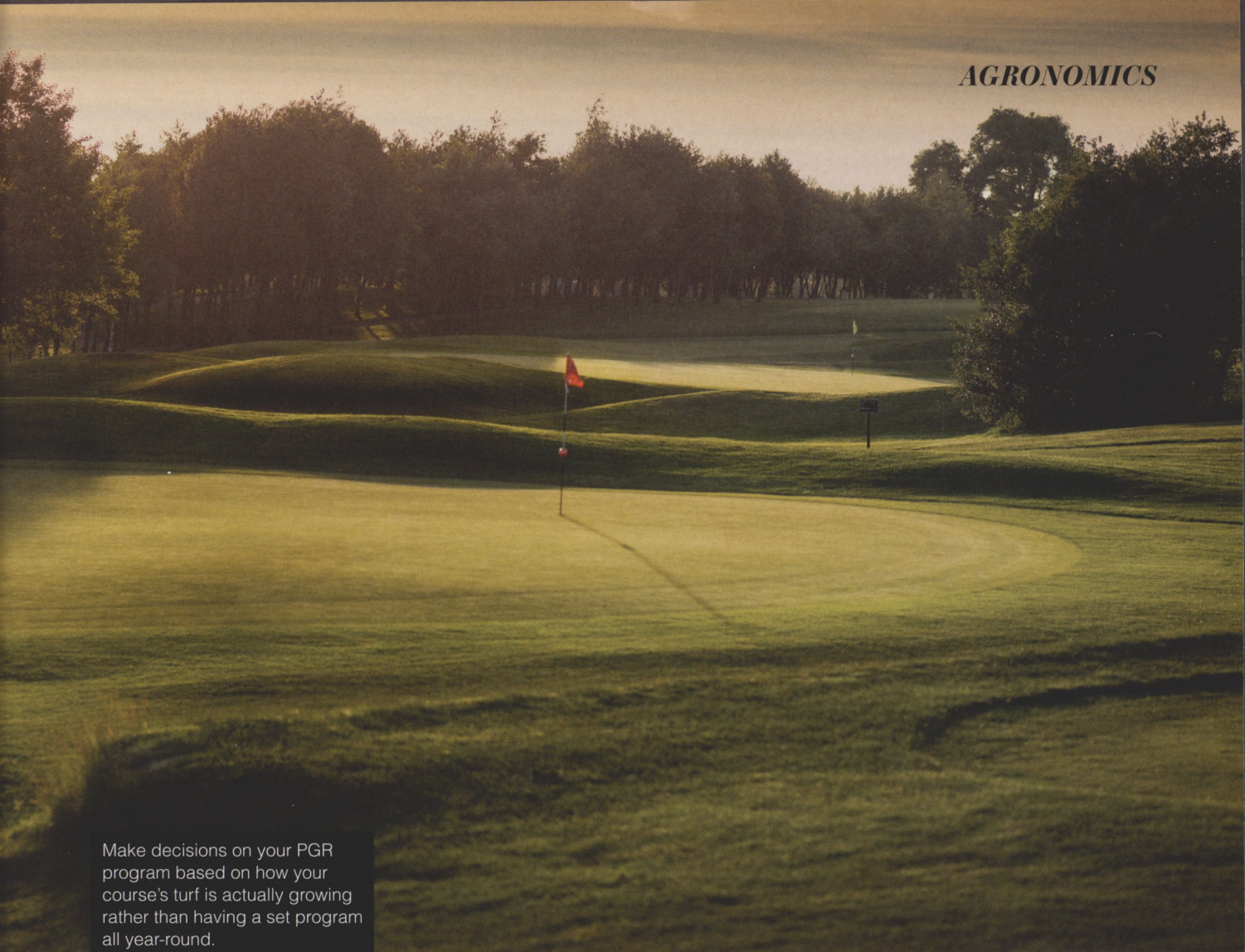
It's important to have a clear idea of what a PGR program needs to achieve, says Dr. Dean Mosdell, a technical manager for Syngenta.

"What's the objective of your PGR program?" Mosdell says. "Are you trying to regulate growth? Are you trying to improve

playing conditions? Are you trying to differentially suppress one grass over another, *Poa* control or *Poa* suppression, for example? Have an objective and design your program around the best way to meet that objective."

CHOOSE THE RIGHT PGR

Superintendents must choose a PGR that is appropriate for their particular facility, says Dr. Bill Kreuser, assistant professor of agronomy and horticulture at University of Nebraska-



Make decisions on your PGR program based on how your course's turf is actually growing rather than having a set program all year-round.

Lincoln. "If you have a lot of annual bluegrass or you have ultradwarf Bermudagrass greens, you're pretty much limited to Primo and Anuew," he says. "If you have (cool-season grasses) then the Class B PGRs – Cutless and Trimmit – and the combos come into play."

Conduct a trial with a PGR before committing to it, Mosdell says. "Just like any other plant protection product, the superintendent should probably trial the material first and see what response they're getting. Are they seeing the clipping reduction they're looking for? Are they seeing the color and the density?"

The choice of product should be determined in large measure by the program objective, says

Dr. Zac Reicher of Bayer's Greens Solutions Team. "If you're after annual bluegrass seedheads, that's Proxy. That's a no-brainer," he says. "If you're after annual bluegrass management, that's either Trimmit or Cutless. If you're after growth regulation, clippings, things like that usually that's either Anuew or Primo, but then sometimes Cutless, Trimmit and Legacy also work."

DON'T JUMP THE GUN

Superintendents, to their credit, are often anxious to implement a program at the start of the season. But Mosdell says holding off a bit may be more beneficial in the long run.

Don't start too early when the grass isn't growing actively,

he says. And you may want to start with a lower rate in the spring because spring could be late and you could have variability in temperature. It could get really warm and then get cold for a while.

"A good indication as to the amount of growth is the clippings you're getting in the baskets," Mosdell says. "That's an indication of (proper) PGR rate and frequency."

"The same thing in the fall. If you get an early fall and growth slows down, and you can see that change in clipping production, that's an indication you may want to skip an application or reduce your rates. Obviously, you want to stop applications in the fall as we head into the cooler times of

the year."

DETERMINE THE APPROPRIATE APPLICATION RATE AND INTERVALS

It's not uncommon for superintendents to apply too much or two little PGR, Kreuser says. "If you're under applying, you're pretty much wasting money because as soon as the PGR wears off, all that growth suppression you're going to get back and it's actually going to rebound," he says. "The grass will actually grow faster than grass that wasn't treated."

So, if you under apply, or apply too infrequently, the turf bounces back and forth and it's undo stress on the turf. "While it's not a huge concern, it's kind of inefficient" he says.

On the other hand, applying too much PGR can also lead to difficulties, Kreuser says. "That's going to arise in two different ways," he says. "One, we don't look at our growing-degree day accumulations. So, we're not timing our applications based on how fast the PGR (is being absorbed).

"So, if it's cold in the spring, you're applying the PGR faster than the plant can break it down," he adds. "It's kind of a stacking effect. You're applying it faster can either have it mowed off or it breaks down."

The other way it happens is the intervals are much shorter on greens, Kreuser says. "They're mowed more

“If you're under applying, you're pretty much wasting money because as soon as the PGR wears off, all that growth suppression you're going to get back and it's actually going to rebound. The grass will actually grow faster than grass that wasn't treated.”

—Dr. Bill Kreuser

frequently, they're mowed shorter than the collars," he says. "So, when you're spraying the greens, you're over spraying the collars. Even though the

interval might be appropriate for the green and it's promoting good plant health, the collars are getting over applied while the greens are doing just fine.”

As a result, with the traffic on them and mechanical damage and poor soil and irrigation coverage the collars start to die, Kreuser says.

Some superintendents determine their application rate by the calendar; making weekly or biweekly applications at a low rate, Mosdell says. "Maybe you'll want to follow a regular schedule," he says. "But if you're not getting any clipping production, you may want to skip a week. To me it always comes down to clippings and how the grass is growing."

"I talk to a lot of superintendents who are using low enough rates or they've figured out a system," Reicher says.



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AGRONOMICS

"They've been doing it for long enough that they somehow can use the calendar very well.

"There are so many ways to skin this cat. There's lots of art to this science, so far be it from me to judge the guys who are doing it right by the calendar," he adds. "But by and large, most of the guys now are going toward some aspect of growing degree days."

BE CAREFUL OF GREEN COLLARS

As mentioned above, green collars are often at risk from what might be termed an overdose of a PGR, simply because collars don't require as heavy an application as the putting surface itself.

The majority of the collar decline Reicher sees is caused by PGRs. "When you move (off the green) out into the collars and even first cuts of rough, you run into different species or different mowing heights," he says. "And those growth regulators will be more active or potentially more injurious with higher mowing heights.

"A great example of that is if they're using Trimmit, which is great for controlling and minimizing annual bluegrass. If you take that into the collar at a higher height of cut, you end up with what superintendents here in Nebraska (where Reicher is based) proudly call The Ring of Fire; the turf turns yellow."

USE CAUTION WHEN INCREASING GREEN SPEEDS

PGRs are an effective tool for superintendents in search of faster greens (or whose mem-

bers are demanding them), but Reicher says it's possible to go too far.

He sees superintendents pushing greens so far that growth is virtually stopped. "And I understand, part of it is labor management, part of it is green-speed management," he says. "But the last time I checked, these grasses still have to grow to recover from ball marks and traffic."

Reicher has worked in the turf industry for more than three decades. He notes that over the course of his career he has increasingly seen superintendents lower mowing heights in response to the pressure to produce faster green speeds.

"It makes for a lot of sleepless nights for superintendents," Reicher says. "When I started this, they were mowing greens at a quarter-of-an-inch. It was a lot easier to manage grass back in those days. Some guys now are down near 1/10 inch," he says. "A lot of guys are still at 1/8 inch and some guys who are using aggressive growth regulators are a little bit higher than that."

ADJUST WHEN NECESSARY

All competent superintendents are adept at making adjustments on the fly and Mosdell emphasizes that should be the case when it comes to a PGR program. "I always recommend not having one program all year-round," he says. "Make adjustments based on what you see, if it's color, if it's clipping production. Make decisions on your PGR program based on how the turf is actually growing rather than having a set program all year round." **GCI**

(BRAUER continued from page 8)

meter readings of 13, every hole location mentioned as "borderline unfair" had a combined reading of 5.6 percent or greater, mirroring championship standards. However, conditions and golfer preference at your course will vary and may be set by management at public courses without golfer input.

Then, we must consider your course's presentation philosophy and anticipate future conditions, including:

- Will your course follow the long-term trend towards ever faster greens via improved agronomy?
- Will your maximum speed be a result of annual seasonal conditions or periodic annual events?
- Will the role of your course change, for example, from private to public, or ultra-private "player's" club to family club?
- Is your course a probable tournament site?
- Above and beyond specific hole location complaints, do your everyday golfers:
 - Like the challenge of your greens as is?
 - Or do they favor more (or less) challenge?
- Will your new grass type and/or construction method increase green speed?
- Does slow play affect the enjoyment of your course?

With a consensus on how these questions affect green slope, you probably should allow for construction error, because grade changes of just an inch can put you over your desired maximum slope. Further, contractors from company to company (and even from crew to crew within one good company) vary in their precision.

My takeaway of suitable green slopes? Every course is unique but they need to get their greens right when undergoing renovation. And getting green slopes right involves considering both the big picture and the slightest of details. **GCI**

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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.



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.

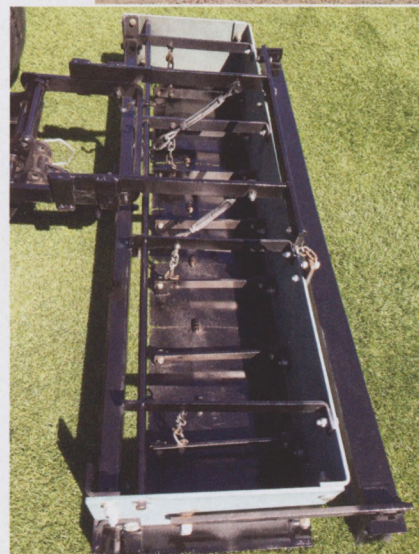
TRIPLEX GREENS MOWER BRUSH

This simple, but effective, brush attachment for older John Deere 2500A models uses the existing metal bracket that holds the grass catchers in place. The metal triangle portion from the bracket is removed and a 5-inch long chain is inserted to raise and lower the brush at the same time as each cutting unit. The 21-inch long brush can be acquired anywhere after deciding the desired firmness of the bristles. A small piece of 1-inch angle iron is welded onto each end of the bracket and two bolts on each side hold the brush in place. The grass catchers cannot be used any longer once the brackets are modified for the brushes. It took less than two hours to mount the brushes and it costs less than \$50 for the brushes. The angle iron was in inventory. Kirby Putt, superintendent, at The Arizona Country Club in Phoenix, conceived this great idea. Jorge Munoz, head mechanic, and Chuck Gherke, assistant mechanic, developed Putt's idea.



F1 CORE COLLECTOR

One of the best, if not the best, implement for removing aerifier plugs from putting surfaces attaches to the back of a riding bunker rake. The F1 Core Collector attaches easily to the rear of Toro 3000 & 5000 Series Sand Pros, John Deere 1200H, and some Smithco bunker rakes. The operator lowers it down and drives rapidly back and forth across each green. When it is raised after each pass, the bottom metal plates that keep the aerifier plugs inside the hopper change from a horizontal to a vertical position and dumps them in nice piles on both sides of the green. When the implement is lowered, the bottom plates go back to the horizontal position. Knobby tires are mostly used, but smooth triplex greens mower-type tires are also used. The brush on the rear cleans-up the surface and some of the soil is placed back into the aerifier holes. I saw the F1 Core Collector at The Arizona Country Club in Phoenix, where Kirby Putt is the superintendent and they have significantly reduced the labor time to remove the aerifier plugs. It is distributed by Dynamic Turf.



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THE RETURN OF MAYOR MCTURF



Pat Jones is editorial director and publisher of *Golf Course Industry*. He can be reached at pjones@gie.net or 216-393-0253.

A few years back, I elected myself Mayor McTurf of Poaville. With this office comes great responsibility. For example, I am required to make fun of Johnny Miller at least six times a year. I'm also required to pretend to be able to tell the difference between side-by-side test plots of two new herbicide compounds. I will nod approvingly and say something like "it definitely smells efficacious" and hope it sounds smart.

But, as Mayor, I'm also authorized to issue proclamations and declarations to celebrate achievements or other notable moments in our happy little industry. Here are a few examples.

I hereby proclaim the Monday after the Masters as "Fuhgeddaboutit Day" in Poaville. In short, any golfer asking about green speeds, azaleas, divot-free fairways or otherwise unrealistically perfect conditions can be told to "Fuhgeddaboutit" without any fear of repercussion. You are encouraged to say it with a heavy Sopranos accent for extra impact.

The third week of July will henceforth be known as "Millennial Awareness Week." This is when we all become better aware that Millennial employees are a huge pain in the ass. You can celebrate by giving out an award for the most creative "I can't make it to work today because..." text or by calling their moms up to tell them their kids are not particularly

exceptional and will probably never be good at anything unless they actually put out some effort. Ironically, I picked the third week of July because you will have already fired all your Millennials by then.

The Tuesday after Labor Day is now officially "Thank Your Best Salesperson Day." Seriously, all of y'all have that one rep who always goes above and beyond for you. They're the ones who always listen to your gripes. They're the ones who will assess your agronomic problem and prescribe a solution that they don't even sell because it's the right thing to do. They're also the ones supporting your chapter and you. There are, like it or not, way too many folks trying to sell stuff in this industry right now. Recognize the best ones, say thanks and vote for them with your budget.

February 30th will forever more be "Superintendent Bonus Day" when all of you Poaville citizens get that well-deserved fat bonus check that puts you on the same financial footing as the guys folding shirts. Make sure to watch your bank account closely on that very special day!

The month of November will now be known as "Holy Crap There Are Way Too Many Turf Conferences Month." This proclamation recognizes the fact that trade shows – even the weakest, worst planned and execrably executed of them – never seem to die. Here's the problem: we've created a

business model that relies on selling trade show booths to fund lots of important stuff you want and need but you guys don't go to the shows. I'm not kidding people. Either take these trade shows seriously and invest your time and attention in them or stop doing them and find a better way. And a note to trade show organizers: stop scheduling education and other activities during trade show hours. If you're going to demand funds from exhibitors in return for the time and attention of your attendees, deliver the goods.

Every December 31, all golf facilities shall be required to Tweet, Post, Insta, Publish or otherwise Share how much they lost on Food & Bev operations for the year. This shall be known as "Reality Bites Day."

February 13 is "You Damn Well Better Remember Valentine's Day Day." February 14 is "It's a Trap! Don't Believe Her When She Says Not to Get Her Anything Day."

February 7 is "Everyone Is At GIS Day!" And by everyone, I mean about 2,000 supers and 10,000 people trying to sell them stuff.

Every other Wednesday shall be "Assistant Superintendent Appreciation Day." Superintendents are reminded to show their appreciation by saying things like "I'd appreciate it if you'd go fix the broken head on 12 fairway" or "I appreciate you not sucking at your job."

June 22 shall now be "Female Turf Professionals Day." But the official day only lasts 18 hours instead of 24 because women usually only make 75 percent of what male counterparts get.

The second week of December shall be "For God's Sake Take Care of Yourself Week" during which you're required to get a physical, a skin cancer screening and (if you're old like me) a colonoscopy. Not kidding.

Finally, today – June 1 – will eternally be known as "Jonesy Invents Another Column Out of Thin Air Just as the Magazine Goes to Press Day." Celebrate accordingly! **GCI**

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