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The pro shop at Sharp Park Golf Course in San Francisco is about as big as my 6-year-old’s bedroom. And there’s a locked metal gate instead of a regular door.

As soon as I saw this, I started walking away. Pro shop’s closed, no problem. But then a woman came hustling out of the bar and asked me if I needed something. “Not really,” I said. I’m the kind of person who doesn’t like to make extra work for people. If I was there at the wrong time to go inside the pro shop, that’s OK.

But she insisted. Before I could protest, she was sliding open the gate and flipping on the lights, inviting me to take a look around.

If you want an $80 golf shirt, you’re at the wrong place. Their hat selection is kind of like the Ford Model T — any color you want, as long as it’s white.

As I was paying for my Sharp Park hat (yeah, I chose white), the woman asked me, “Are you the writer from Golfdom?” I told her I was. “Thanks for coming out here,” she said.

It’s not unusual for me to get a warm welcome from the guys in the maintenance facility. But at Sharp Park, I got the red carpet treatment from the bartender, the cook, the starter, the golfers. These people were genuinely happy to see a reporter out on the golf course with a keen interest in the work of their maintenance crew.

Good on you, Sharp Park.

We didn’t choose Wayne Kappelman as the winner of our 2013 Herb Graffis Businessperson of the Year because his course is all organic. We didn’t choose him because he’s had environmentalists accusing him and his staff of everything from the Great Chicago Fire to Seattle losing the SuperSonics.

We chose Kappelman because he and his team believe in the life of a golf course. They believe that 50,000 golf rounds a year can’t be wrong. They believe that employing some 60 people in Pacifica, Calif., is a good thing.

One of my favorite movie quotes comes from Tim Robbins in “The Shawshank Redemption” when he tells Morgan Freeman that you either “get busy living or get busy dying.” At Sharp Park, despite their opposition, they’ve been busy living. They were in a life or death situation, and they chose life. And not just the life of the red-legged frog, but the life of a golf course.

When I first arrived at Sharp Park, I grabbed a seat at the bar and had a late break-fast. The buzz was that one of the regulars got “the call.” A 49ers season ticket holder, there were two tickets to the Super Bowl available if he wanted them.

I bought the regulars a round of drinks as I tabbed out, and was suddenly a friend of the gang. I chatted briefly before excusing myself in order to keep my meeting time with Wayne.

The next morning I was back in the bar, and the gang was back again too. It was quickly announced that the guy who bought a round of drinks yesterday was back, and hey, how are you today? I couldn’t have been any better. I was on a great assignment, and I was seeing firsthand what makes this game great — the people. People like Kappelman, like Lisa Wayne, like the regulars sitting at the bar, like the employee eager to open the pro shop doors (or gate) for a stranger.

I’ve been to some of the best pro shops in the nation. Sharp Park’s pro shop would get eaten in one bite compared to some of these places. And yet it’s one of the most memorable pro shops I’ve seen.

Just like this was a memorable trip. I want to thank the people at Sharp Park for being so welcoming, and I want to congratulate Wayne Kappelman for his hard work, and for being named the 2013 Herb Graffis Businessperson of the Year.

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The van rolls up to a house where a fugitive lives, and Chase Rogan sighs. “They could use some turf consulting,” he deadpans.

Rogan, star of the Spike Network reality series The Joe Schmo Show (airing Tuesdays at 10/9 p.m. CST), is the owner and head agronomist for Pittsburgh-based Pure Turf Consulting and a regional expert for ePar USA. Having received his masters in agronomy in 2011, his company is just starting out, just like his fame as a reality TV star.

“I was out having drinks with my in-laws a couple weeks ago, and a guy asked me, ‘Are you Joe Schmo?'” Rogan says. “My Twitter following has definitely increased.”

The premise of the show is unique: It’s a reality show that’s fake. Well, more fake than the others. On this show, only one person is participating with the belief that the show is legit (known as the “Joe,” in this case, Rogan). All the other participants are actors in on the set-up. The pretense is that the winner of this show will win $100,000 and a chance to become a professional bounty hunter.

“So did Rogan win the $100,000 on the fake show?”

“Sorry, I can’t comment on that,” he says.

“But does he still want to be a bounty hunter?”

“…No. I’m not sure how much I’m allowed to say,” he says.

Though we’ll have to wait to see how the show ends, Rogan does hope the show can help his turf business.

“I hope it has a big impact on my career. I’m hoping people will see it and at least want to talk to me so I can continue to broaden my network,” he says. “I’m all about meeting new people and I hope this opens some doors.”

---

JOE SCHMO IS A TURFIE

By Seth Jones // Editor-in-Chief

Nufarm last month acquired Dayton, N.J.-based Cleary Chemical Corp., a marketer of fungicides, insecticides and plant growth regulators for the turf and ornamental horticulture industries.

Nufarm stated its acquisition of Cleary, an $11 million company, will further strengthen its product offering as the third-largest plant protection provider in the T&O market.

“We are excited about the synergy and opportunity this move will bring,” stated Darryl Matthews, general manager for Nufarm in North America.

According to Nufarm, “Cleary’s extensive portfolio of fungicide brands will boost Nufarm’s market presence and make it an even more attractive supplier for golf and greenhouse/nursery customers.”

Under the agreement, Nufarm will continue to offer the Cleary line of products under the Cleary name, and customers seeking Cleary merchandise or information should continue to contact their Cleary representatives.

---

WHAT A DEAL

FMC LAUNCHES WINTER HERBICIDE PROMOTION

Superintendents can save when they stock up on select herbicides from FMC Professional Solutions from now until March 15.

Purchase one of seven herbicide products and earn sizable rebates, plus bonuses, based on purchasing levels. Eligible products include Quicksilver, SquareOne, Dismiss, Blindside and more. Rebates vary depending on product and container size.

FMC also has just launched a special Talstar Professional promotion, aptly called “Buy 3 Get the 4th Free.” The promotion runs now through Nov. 30 and applies to 1-gallon and three-fourths-gallon jugs of the liquid insecticide.

For full details on both of these promotions, visit fmcprosolutions.com.
AWARD GOES TO...

GCSAA AND GOLF DIGEST BESTOW ENVIRONMENTAL AWARDS

Steven Tierney, superintendent at Golfpark Nuolen in Wangen, Switzerland, and his course, are the big winners of the GCSAA/Golf Digest 2012 Environmental Leader in Golf Awards.

According to the GCSAA, Tierney earned accolades for overseeing a water-farming project that “featured seven miles of drains to divert runoff into irrigation ponds.” Consequently, the course has saved $20,000 in annual electricity costs.

Those in the United States who earned environmental honors include Matt Shaffer, superintendent at Merion Golf Club, Ardmore, Pa.; John Anderes III of Queenstown Harbor (Md.); and Joshua Kelley of the Ritz-Carlton Golf Club in Orlando.

GREAT GRANTS

WATSON FELLOWSHIPS AWARDED

The GCSAA has chosen three doctoral students as the newest recipients of its Watson Fellowship Program.

The $5,000 post-graduate grants went to Diane Silcox of North Carolina State; James McCurdy of Auburn University; and Joshua Friell of the University of Minnesota. The fellowships are funded through a partnership between the Toro Co. and the EIFG.

GOLFDOM WISDOM

It’s OK if the course dog is your best friend. It’s not OK if the course dog is your only friend. #Golfdomwisdom

READER JOKE

One day a golfer accidentally overturns his cart. Elizabeth, a very attractive former LPGA golfer who lived in a villa on the golf course, heard the noise. She called out, “Are you okay? What’s your name?” “It’s Jack, and I’m OK,” he replied. “Jack, forget your troubles. Come to my villa, rest a while, and I’ll help you get the cart up later.” “That’s mighty nice of you,” he answered, “but I don’t think my wife would like it.” “Oh, come on,” Elizabeth insisted. She was very pretty and persuasive. “Well, okay,” he finally agreed, and added, “but my wife won’t like it.” After a restorative brandy, and some driving and putting lessons, Jack thanked his host. “I feel a lot better now, but I know my wife is going to be really upset.” “Don’t be silly!” Elizabeth said. “She won’t know anything. By the way, where is she?” “Under the cart!”
1 **Built Ford tough** The crew at Meadow Club in Fairfax, Calif., including superintendent Sean Tully with course dog Bode, pose for a photo with their 1951 Ford truck. But don’t be fooled, we saw more BMWs in that maintenance parking lot than we’ve ever seen before!

2 **Pump up the jam** GCSAA Director of Environmental Programs Greg Lyman shows his audience at the Rain Bird Intelligent Use of Water Summit one crucial technique — how to raise the roof.

3 **Fit to be tied** When Michigan State turf professors discussed the dress code for the Intelligent Use of Water Summit, one of these seniors was absent. Can you pick him out? (It’s OK, we heard he had the best GPA, so he can get away with it.)

4 **We’re in it together** While at the Sports Turf Managers Association meeting in Daytona Beach, Golfdom EIC Seth Jones caught Russ Nicholson, agronomist for Pennington Seed, for a quick video interview. The topic of conversation? The Turfgrass Water Conservation Alliance. That’s right, we want to take the power back!

5 **SPF 0** Golfdom publisher Pat Roberts (R) looks all the more red next to the golden tan of Julio Diaz, superintendent at Punta Cana Beach and Golf Club, Dominican Republic, as the two pose for a public service announcement on the benefits of sunscreen.
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JEFF PLOTTTS, superintendent at TPC Scottsdale, is eerily calm as he and his team prepare to host the Waste Management Phoenix Open this month. It’s one of the most attended tournaments in the world, so one might think Plotts would be a bit frantic behind the scenes in his second office. Especially since when we toured his office, the tournament was a mere two weeks away. But Plotts is confident. “I don’t know that you’re ever ready, but you’re close, and we’re close,” he says of the tournament. “We have a good team here and we’re clicking right along and should be right on schedule.”

“I think the biggest thing is, enjoy what you’re doing. I do this because I love the game of golf, I love being involved with the team. If you really enjoy what you’re doing, it really isn’t work.”
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Most everything I learned about golf I learned from my grandfather, Jay. Well at least the important stuff. Jay started in the golf business in 1938. He was a golf course superintendent for many years, from the 1940s all the way through the late 1970s. I worked for my grandfather for six summers while I was going to school.

During those six seasons, I never once saw or heard him raise his voice, no matter how important or tough the situation was. Once, a fellow worker was mowing roughs, pulling a gang mower. He lost control, and the tractor slid into the lake. When I say “slid into the lake,” I mean it was completely submerged.

When my grandfather found out about it, he didn’t get mad or raise his voice. The employee was so shocked at my grandfather’s calm reaction he asked him, “Why aren’t you yelling at me?” My grandfather calmly said, “Will you get the tractor out of the lake?” He instinctively knew that the employee felt bad enough as it was and there was no sense in piling it on.

As an impressionable teenager, it was a turning point in how I viewed my grandfather. By his actions, without even knowing it, he taught me to have an intense respect for the game of golf, the golf industry and my fellow superintendents.

Respect for others seemed to come easily to him. It didn’t matter if he was dealing with the club president, a club member or an entry-level employee — he made everyone feel important. He made me truly understand the meaning of integrity and honesty and doing the right thing.

He also inspired in me a strong work ethic. He taught me no matter what the setback, you can rise above it. He showed me firsthand the value of getting up early, working hard and then doing it again the next day — and the next.

Family was very important to my grandfather. He loved being around all of us. We celebrated many holidays at my grandparents’ house when I was growing up, and many of my most cherished memories are from those occasions.

One of my biggest concerns about our society today is that we seem to have lost the close connection with family — a connection wherein you made every effort to eat dinner together every night, regardless of what was happening in your life.

For the most part, dinner was at 6 p.m., no questions asked. You ate with the family, and you ate what was served, with no complaints. Today, meanwhile, we are constantly bombarded with things that somehow far too easily conflict with spending dedicated time with our families. It’s a shame.

I was one of the lucky ones — I not only had a grandfather who was around and who lived a very honorable life, but I also had a father who lived by exactly the same tenants.

Telling you everything my dad taught me would take too long. Perhaps that’s a story for another day.

For now I’ll just say that I’ve been fortunate enough to have had two incredible mentors and heroes.

Yes, I learned everything about golf from my father and grandfather. But even more so, I learned everything about life from them.

The golf industry, too, is known for teaching some valuable lessons, and the lessons of the game run parallel to those we learn off the course. That’s one of the cool things about golf.

Mark Woodward is president of Mark Woodward and Associates, principal of DaMarCo Golf, CEO of MasterStep Golf Group and a contributing editor for Golfdom.
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*Gross vehicle weight for standard configuration, including five 18-inch cutting units, with no optional accessories.
Moments to remember

We all have memories of good and bad days in the business, and when 2013 got under way, well, it put me in a nostalgic mood. So here’s a look back at some of my favorite memories on the job, in no particular order. I’m looking forward to adding to this list in 2013.

The day I made Bob Hope laugh. While working at Disney’s Lake Buena Vista Club, I met Mr. Hope, who just happened to be playing the course. As his group was readying their carts, he needed to return to the main level of the clubhouse. I gave him a ride in my cart, we exchanged pleasantries, then we parted ways.

Later in the day, I was riding with a crew member out on the course when we came across Hope and his group on #13. I had a badly cut golf ball in the dash compartment, so, as a joke, I scribbled “Bob’s Ball” on a piece of paper, attached it to a “smiley” ball and teed it up on the 14th tee. Then I ducked out of sight. When Hope got to the tee, we heard him laugh and utter something like, “Would you look at that!”

Working with Arnold Palmer. If you were lucky enough to hear Peter Jacobsen’s keynote speech at the GIS last year, you got a humorous and heartfelt sense of the famed Palmer personality which, having worked with him for three years at the Isleworth G&CC near Orlando, I can attest to.

Back then, in the late ‘80s and early ‘90s, 10 to 12 courses were on suicide missions to grow Penncross bentgrass in Florida, including Isleworth. I was Isleworth’s superintendent at the time, and I used to routinely check in with Palmer as he played the course.

One day, he looked at the greens and casually said, “This is the way I always hoped they could be.” Looking back, that moment is one of the highlights of my tenure with “The King.”

(Of course, during the summers Palmer spent in Latrobe, Penn., the greens at Isleworth were maybe 85 percent to 90 percent good. Eventually, year-round expectations drove the renovation to Bermudagrass — a much wiser choice for central Florida.)

One funny lowlight of my association with Palmer came when I was interviewing for that superintendent position. The interview was great. Palmer’s superintendent at the time, Jim Ellison, and I were good friends. And since Palmer and I had both been in the U. S. Coast Guard, we had a common link.

After handshakes and farewells out in the Bay Hill parking lot, however, I noticed something on the sleeve of my brand new Hart, Schafner & Marx navy blazer — bought just for the occasion. There they were, four small words emblazoned on a fabric tag for all to see: “Jack Nicklaus — Golden Bear.” I was mortified.

I eventually went back to Disney, finished my 20-year hitch and got my gold watch. During that time, I was privileged to work on many Disney Classic PGA Tour events and with Tour officials John Brendle and Mark Russell, who were Disney golf operations supervisors with me before joining the Tour.

I’ll close with a wildlife story. One evening I got a call from the Lake Buena Vista pro shop about a leaking pipe under the bridge on No. 13. Sure enough, a compression coupling on the 10-inch pipe was loose.

As I finished the repairs in the dark, helped only by my car’s headlights, I stepped back to survey the repair. I looked up and discovered a curious bobcat cub sitting six feet from my head, watching me.

Ask me again why I love this business!

Thanks for sharing your stories and thanks for giving me so many wonderful memories so far in my career. I’m looking forward to many more wonderful times sure to come in the new year.

Joel Jackson, CGCS-Ret., is director of communications for the Florida GCSA.

“Palmer looked at the greens and casually said, ‘This is the way I always hoped they could be.’”

JOEL JACKSON, Contributing Editor
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MATT NEFF, assistant superintendent, Wedgewood G&CC, Powell, Ohio

From great heights

Here we are in the middle of winter and those of us in the northern part of the country are in the midst of our usual winter work — equipment maintenance, reconditioning golf course accessories, snow removal and probably a lot of other projects that you either couldn’t or didn’t get done during the season. There’s a good chance that high on your list of priorities this winter is some type of tree pruning or removal. While there’s no question that this is a necessary and often beneficial task from both a golfer safety and agronomic standpoint, it can also be extremely dangerous.

From 2003 to 2011, The United States Department of Labor reported a total of 575 tree care worker fatalities. Eighty-two of them occurred in 2011 alone. The 2011 total exceeds the number of fatalities in both commercial fishing and logging, which are commonly known as two of the most dangerous occupations in the world.

The vast majority of tree care industry fatalities were the result of falls or “contact with objects and equipment,” such as saws, chippers and falling trees and limbs. According to The Tree Care Industry Association (TCIA), the fatality rate among tree care professionals is approximately 40 per 100,000 workers, making it one of the most dangerous professions in the United States.

These statistics are based on incidents that occurred in the arboriculture industry to people who work in trees regularly and have more exposure to the dangers associated with that work. It’s fair to assume that they also have more experience and training than most of us do, yet there are still a staggering number of injuries and deaths every year.

When it comes to tree work, the danger is everywhere — falling trees, flying debris, chain saws, chippers, you name it. There are a hundred ways to get hurt. You’re standing at the base of what could possibly be a several-ton slab of wood with a chain saw running at a few thousand RPMs. It doesn’t get much more dangerous, especially in our line of work.

And once the tree is on the ground, the danger isn’t past. All it takes is one cut on a weight-bearing branch or a branch under tension to cause the tree to shift suddenly or the saw to kick back. Training, experience and safety are absolutely imperative to minimize risk when dealing with something that can be as unpredictable as tree work.

Just as dangerous as inexperience is overconfidence. You may have dropped hundreds of trees over the years, but all it takes is one mistake to become a statistic. You may have a particular drop all figured out. You know without a doubt exactly which way the tree will fall, you have a clear landing area free of obstructions and people, you’ve checked for overhead obstacles, and your escape route is planned.

But maybe you overlooked the signs of rot or insect damage in the trunk in an otherwise normal appearing tree that will cause the tree to fall uncontrollably.

Anyone who has done tree work knows not to take anything for granted, but it certainly bears repeating as even a momentary lapse of attention can have serious or even fatal consequences.

People in our business are “do-ers.” That’s an admirable quality. However, it’s important to know where to draw the line when it comes to tree pruning or removal.

When it comes down to it, we’re grass growers, not tree cutters. While there is tree work that we can safely handle, there also are situations that exceed our expertise.

If you don’t feel comfortable with a certain situation, go with your gut. Is saving your ego by not asking for help from a more experienced coworker or professional arborist really worth the risk?

Matt Neff is assistant superintendent at Wedgewood G&CC in Powell, Ohio, and Golfdom’s newest columnist.
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A SHARP MIND AT SHARP PARK
There are frost delays, and there are fog delays. But frog delays?

San Francisco’s Sharp Park Golf Course has no problem delaying golfers from teeing off on the back nine in the early morning hours. That’s because the red-legged frog is a threatened species, and that’s the time they sometimes emerge from the lagoon on No. 12, especially in the winter months.

Sharp Park Golf Course is familiar to many in the golf industry, but not for the right reasons. The focus hasn’t been on the course being an Alistair MacKenzie design, or one of San Francisco’s affordable municipal courses, host to 50,000 rounds a year. Most disappointing, the Herculean efforts of the crew to keep the course harmonious with nature is rarely brought up.

No, the headlines that Sharp Park makes regard the lawsuit the course has been embroiled in for the last several years. Misguided environmentalists — who won’t get much space here — have tried shutting the course down because the endangered California garter snake and the threatened red-legged frog both live on the course. But on Dec. 6th, 2012, Judge Susan Illston dismissed “Wild Equity Institute, et al v. the City and County of San Francisco, et al” after reviewing a Biological Opinion and Incidental Take Statement issued by the U.S. Fish & Wildlife Service.

Though the environmental groups have filed an appeal, it seems that this match play has at least gone dormie in favor of Sharp Park Golf Course. The battle has been fought valiantly in court rooms by such groups as the San Francisco Public Golf Alliance. But there is a front line to this battle, and the man leading that charge is the man on the ground, Wayne Kappelman, superintendent at Sharp Park Golf Course, winner of Golfdom’s Herb Graffis Businessperson of the Year award.

You’ve read all about the case. You know about the red-legged frog and the California garter snake. Now meet the man behind Sharp Park Golf Course, superintendent WAYNE KAPPELMAN, our winner of the 2013 Herb Graffis Businessperson of the Year Award.

BY SETH JONES
PHOTO BY TOM ADAMS

The HERB GRAFFIS BUSINESSPERSON OF THE YEAR award is named in honor of Golfdom’s founder, World Golf Hall of Fame member Herb Graffis. Graffis was one of the first people to look at golf as a business when he and his brother Joe founded Golfdom in 1927. With his foresight, Graffis helped advance the game in numerous ways, from co-founding the National Golf Foundation and founding the Golf Writers Association of America to his work advocating on behalf of superintendents and helping elevate their profile.

The award includes a Golfdom cover story celebrating the person’s accomplishments, as well as expenses-paid trips to both the Golfdom Summit and the Golf Industry Show. It is in all due respect that we present this award in Mr. Graffis’ honor.
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★★★

Decision for environment

The Herb Graffis Businessperson of the Year Award is named in honor of *Golfdom*’s founder, Herb Graffis, who began the magazine in 1927 (see sidebar, page 23). Now in its second year, the award coincidentally goes to another Dr. Alister MacKenzie course, and another course in Northern California. (Last year’s award went to Paul Chojnacky, then at Pasatiempo Golf Club in Santa Cruz.)

Kappelman, going on his fourth year as the superintendent at Sharp Park, is an introspective, humble, soft spoken man with a Wisconsin accent. To give an idea of the character of Kappelman, realize that he took six weeks off work after hosting the 2009 President’s Cup at Harding Park Golf Club to teach English to Buddhist monks in Laos.

“I’m very proud that the course has been all organic since before the environmentalists started their court case against us. Most of our decisions are based on the environment more than the golfing public, but we have a good balance between the two,” Kappelman says. “We provide good playing conditions while still protecting the environment.”

The work of Kappelman and his colleagues, including Lisa Wayne, Open Space Manager for San Francisco’s Recreation and Parks Department, has ensured a win for Sharp Park, but perhaps also golf in general. Had the tide turned the other way, it could have set a dangerous precedent for not just other golf courses, but other green spaces, says Mark Dwayne, owner of Sharp Park’s clubhouse and pro shop.

“You don’t expect to go to work one day, find a red-legged frog, then there are suddenly environmental groups, committees, groups of people every week wanting to go out on the golf course interrupting play,” Dwayne says. “I’m glad this didn’t go any further than it did,
because I think it would have set the precedent that if you find an endangered species, then agencies can come in and shut you down, whether it be a municipality, someone’s private property, a farm or a vineyard.”

★★★
Friends of frogs
Neither Kappelman nor Dwayne has ever seen the endangered California garter snake on the course. The threatened red-legged frog is a different story.

Near No. 12, one of the most scenic holes on the course, is Horse Stable Pond and Laguna Salada. All of the water on the course — there is no man-made drainage — flows to this area. After any winter rain event, Lisa Wayne and her staff are on their way to the course.

They’re on an egg hunt.

“It’s a moment’s notice kind of thing, drop everything,” she says.

That’s because if frog egg masses are found, the water level must then remain static to ensure their survival. No more pumping water off the course into the ocean until the eggs

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have hatched.

“Two years ago we had a huge rain event. The whole valley flooded,” Kappelman recalls. “Once it got to that level, the frogs laid their eggs, then we can’t pump. No. 14 fairway was underwater for three or four weeks. We had to route people around that area of the fairway.”

Once they hatch, it’s not uncommon to see the frogs on the area of the course along the sea wall, says Felipe Ochoa, who is the closest person Kappelman has to an assistant superintendent on his staff of six.

“Lisa Wayne has trained us,” Ochoa says. “Now I know that on this area of the course, it’s something to look out for. We communicate about it first thing in the morning.”

Kappelman will personally walk the areas near Laguna Salada to make sure it’s safe to mow, or even operate equipment.

“We’ll either not mow, or I’ll walk in front of the mower, I’ll check an entire area to make sure it’s safe to operate a mower or even have golfers in the area,” he says. “If we see any frogs, we’ll stop play for an hour or two. The frogs usually move out by sunrise, but I want that cushion of 30 minutes, 45 minutes, so they’re well on their way back to the lagoon and not in harm’s way.”

Sharp Park roadmap
Lisa Wayne oversees 32 green spaces for San Francisco, but none are as large or as unique as Sharp Park. The course itself is 150 acres. The entire park, which includes hiking, a beach and an archery range, is 430 acres.

Wayne says that there has been a lot of misinformation about how the course operates.

“I still have people ask me, ‘Why are you draining the marsh?’ and we haven’t done that in years,” she says. “There are a lot of things that are routine here, things that Wayne implemented — there are no chemical inputs on the golf course, there are more than five acres that we’ve stopped mowing. The golfers

Continued from page 25
Kappelman made the decision that the course would only fertilize tees, greens and green surrounds, and only organically. The crew regularly brews compost tea to meet these demands.

"Organic fertilizer is more expensive, but we don’t fertilize fairways or rough at all,” Kappelman says. “That decision has saved us tens of thousands of dollars. We made that decision for the environment, and for budgetary reasons, but mostly for the environment.”

“Wayne’s an educated man, and I believe he’s an environmentalist as well. On his days off, he and his wife come out here and take wildlife photos,” says Dwayne. “He has a work ethic that carries through to the rest of the crew.”

Rustic beauty

Around the clubhouse bar, the regulars are buzzing about the San Francisco 49ers being in the Super Bowl. The course may know, but not so much the environmental community. It’s a long process to inform such a massive amount of people.”

With the creation of the Biological Opinion, there is now a roadmap to what the federal government expects from Sharp Park in terms of mitigating impact. “We have a lot to do here in these next three years to meet those requirements,” Wayne says.
have endangered species hiding in its lagoons, but in here, there's no danger of any kind. Just good common folks.

"It's very blue collar. We have all ages, nationalities. They try to push that this is a rich white man's golf course, but the green fees are no more than $40. For resident seniors, the price is $15," says Dwayne. "We get 50,000 golf rounds. That's a lot of people to turn away. The environmentalists argue that there are other places to play, but not like this and not at this price."

Ask Kappelman about his biggest challenge maintaining the course, and there is no talk of environmentalists, red-legged frogs, or snakes.

"We're short-staffed. We don't have enough people to maintain the course," he says. "We have an old infrastructure, an old irrigation system, an old computer system. Not a lot of money has been put into modern equipment. But when a new irrigation system costs $2 million or $3 million, that's a lot of money when you don't know who is going to own it because of the court cases. I understand why the city has been reticent to invest the money."

Yet the course is popular. And even more important, profitable. Duncan Schlicht drives over an hour, over the Bay Bridge, from LaFayette, Calif., to get to Pacifica to play the course.

"I love everything about it, especially late in the afternoons when the shadows get long," Schlicht says. "Hopefully they've found a compromise, because shutting it down wouldn't be the answer, it'd be a disaster."

Connie Chan, deputy director of public affairs for San Francisco Recreation and Parks, hopes that more people can understand the effort that goes into maintaining Sharp Park.

"The majority of the media has covered the lawsuits, which has short-changed (Kappelman and Wayne)," she says. "They don't get to talk about their management and coordination because of the lawsuits."

Kappelman says he has learned to accept that because of the way they manage the course, perfection is something he'll never achieve.

"I've had to mellow out a little. I'm a little more easy-going. Some things you just have to live with and be patient," he says. "Weeds are going to occur. I just hope the golfing public understands that we're not seeking perfection, we just want a good value and a decent golf course."

"I think most of the regulars know the balance we're trying to strike," Lisa Wayne says. "Wayne's not operating this like a normal golf course with the level of chemical pesticides and herbicides. Consequently, it's a little more... rough around the edges."

"Rustic!" Kappelman exclaims with a smile.

It's the first time Kappelman has gotten excited. Working in such circumstances, having to constantly defend his work, his demeanor might be perfect for Sharp Park.

"I'm a public spokesperson for the course a few times a week," Kappelman says. "Some people ask why we do this, why we mow that. Most of the regulars understand. But for example, there's no drainage on the course; it just drains naturally. When it's raining, it's wet. Sorry. We work through it."

'When it's raining, it's wet. We work through it.'

Makes one wonder, if Kappelman taught the Buddhist monks English... what all did they teach him?
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Imagine being present at the “aha!” moment when fiberglass woods were dreamed up. Or when the internet was invented. Or, if you’re Lee Kozsey, when Daconil fungicide was in its first days.

“It’s been exciting,” Kozsey says. “Daconil has been the mainstay in my life for almost 50 years.”

“Customers can use Lee’s history to understand the whole chlorothalonil franchise,” says Bob Goglia, Daconil brand manager with Syngenta. “Lee worked with it when there wasn’t a professional division. He worked with it in multiple markets like potatoes and other crops, as well as turf and ornamentals.”

Diamond Alkali Co. was the outfit that developed Daconil (see sidebar). Kozsey worked with the product as it passed through many firms, including Diamond-Shamrock, SDS Biotech, Fermenta Plant Protection, ISK Biosciences, Zeneca and eventually Syngenta.

“I tease him telling him that he’s the only guy I know who has worked for nine companies but has never had to submit a resume,” Goglia laughs.

How dedicated to Daconil is Kozsey? His truck has personalized “Daconil” vanity plates. Last year he celebrated 50 years shepherding Daconil for Syngenta and its legacy companies.

“Dr. Robert Batershell developed the molecule in 1961,” recalls Kozsey, who was asked to work on a “special project.” Little did he imagine that it would become his life’s work. Diamond Alkali specialized in products such
as chlorine, soda ash and cement. “At that time, most plant protection products were in the chlorinated hydrocarbon family,” Kozsey points out.

Although agriculture was the big market for plant materials, golf was in Daconil fungicide’s DNA from the get-go. The lab where Kozsey and Batershell worked was in Concord, Ohio, across from Quail Hollow Country Club. Some of the basic field testing was done with Al Brozman at the Erie Shores Golf Course in Madison, Ohio. The first approval for the product’s use was for turf, not agriculture.

In 1963, in Lab 13, a six-person team, including Kozsey (whose formal turf education is based mainly on short courses at Purdue, Ohio State and Florida) was trying to make the material in large quantities. They used a one-foot-long capillary tube and figured how to make the basic material. They graduated to a two-foot reactor to produce material for a worldwide screening of Daconil. Soon they graduated to a 10-foot reactor.

Daconil was produced at the research site until after it had produced 100,000 pounds of material. By 1973, production moved to Greens Bayou, Texas, where it is still made today.

Kozsey moved out to the Research Farm in Ohio in 1967 and in 1984 was transferred to Naples, Florida, to manage the research farm there. He moved up to Pennsylvania in 1988 when the farm was sold and eventually went into sales. As the product was sold from firm to firm, it eventually found a home with Zeneca. “They had Heritage fungicide — Heritage and Daconil were complementary to one another,” he notes. “I was fortunate enough to make the cut when Syngenta was formed,” he says.

Looking forward
Kozsey says he “absolutely” would encourage any young person to get into the Green Industry. “Improving plant health, yields on crops, turf… these needs will be here forever. We need green. Without scientists helping develop things to make life better in the plant world, we could be lost.”

When he plays Canterbury Golf Club in Cleveland with his grandsons, he points out the Poa, the bentgrass, and other things. “It is important to know what’s going on below your feet,” he says.

Kozsey says, “Whether a youth goes into the turf business as a scientist or marketer, it is important to deliver the best product you can. Do something that will improve the situation,” he adds.

“You have to think ahead. We have problems out there,” Kozsey continues. For example, he notes that people used to think Poa died because it is an annual grass. But after years of research, it was discovered that in fact, it gets a disease called summer patch. “You have to get out there, get involved a little deeper in things to correct them. The challenge to young people is to get into things and to research them more,” he urges.

“We’re continually trying to improve the product line to suppress or control dollar spot and other diseases a bit more so they do not take out the turf,” he says. “We’re always trying to drop a new engine under the old hood,” Kozsey chuckles.

The average superintendent is 37 years old and was not working prior to 1996. They don’t know a world before Daconil Ultrex and Daconil Weather Stik. “If you asked most of them, they would think

“The challenge to young people is to get into things and research more.”

– Lee Kozsey

WHY DACONIL-2787?
For 40-plus years, superintendents have applied Daconil fungicide to their turf. But we’re willing to bet that you don’t know why the compound is called Daconil-2787.

The DAC part comes from the original developing company’s name: Diamond Alkali Co. The ONIL is from the end of the technical name of the product: chlorothalonil. The 2787 simply means it was the 2787th molecule the lab made.

PHOTO COURTESY: LEE KOSEY

Curt Harler is a freelance writer.
Dave Johnson, Rain Bird’s director of corporate marketing, took the stage on the Michigan State University campus to launch the Intelligent Use of Water Summit XIII.

With the theme “Play on: Playability in water-sensitive environments,” this year’s agenda was geared toward the golf course and athletic turf industries. And several superintendents and Michigan State University turf students gathered for the occasion.

“The Intelligent Use of Water is a company philosophy that we came up with about a dozen years ago that really describes the principles the company was founded on — using water wisely and intelligently and efficiently,” Johnson said in his opening remarks.

This year’s summit assembled some of the country’s top researchers to talk about the scientific side of water management, as well as superintendents to discuss the practical side.

Getting practical
Speaker Shawn Emerson, director of agronomy at Desert Mountain Club, Scottsdale, Ariz., relies heavily on the newest water management technologies at Desert Mountain. In such an arid climate, he has no choice.

But at a time when pressure is mounting in the U.S. to conserve water and irrigate responsibly, Emerson told the audience that conserving water doesn’t have to mean brown turf.

“If there’s one thing I cannot stand and that I can’t get my hands around it’s the statement ‘Brown is the new green.’ Where
**The science side**

Summit attendees also got a huge lesson in alternative irrigation techniques from some of the country’s top scientists.

Dr. Ali Harivandi, regional specialist in turf soils and water at the University of California, talked about the small amount of quality water readily available for use throughout the world, due to a global population now numbering 7 billion. And you can expect that number to rise to 8.5 billion by 2025, he said.

“Drought has become part of our life,” he warned the audience. “For that very reason we have to look into other sources of water if we want to survive as an industry.”

That message may abound with doom and gloom, but courses in metro areas are using it as motivation, increasingly turning to recycled water to irrigate their courses. About 12 to 15 percent of golf courses are using reclaimed water, and that number jumps to 37 percent in the Southwest, Harivandi said.

Assistant superintendent Andrew Harrell, Peck’s coworker at the Country Club of Detroit, said Harivandi’s message made an impact. “I’ve dealt with reclaimed water before, and it’s something that everybody in this industry is going to have to deal with sooner or later,” he said. “It’s going to be a necessary step that you’re going to have to address.”

Speaker Carol Colein, executive director of the American Society of Irrigation Consultants (ASIC), said in her position she is “seeing irrigation through a larger lens” than she ever has before. “This water shortage,” she stressed, “is something that we have to put our hands around and embrace.”

The ASIC will devise a plan to do just that at its 2013 national conference, where water reuse strategies will constitute 25 percent of the program.

Colein also drove home her point that in places like the Great Lakes region, so abundant with water, it’s a challenge to convince golf course decision makers to invest in efficient water systems. Too bad, she said, because “if you’ve got more uniform water application, if you’ve got the proper water management tools, you’re going to be able to provide more consistent and better playing conditions. Now that rings a bell with golfers.”

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did they get that from?” he said. “That’s not what I’m about. I’m about green grass. What I want to do is be more efficient at it. What I want to do is be more practical with it. And what I want to do is be educated on it.

“If I’m going to relent and turn back the clock and say, ‘Brown is the new green,’ then we might as well go back to 1963 when my father was a golf course superintendent,” he added.

Ken Mangum, CGCS, director of golf courses and grounds at the Atlanta Athletic Club, explained how irrigation design upgrades at AAC enhanced roughs and fairways, bringing a “wow factor” to the complex that members appreciated.

Kevin Peck hadn’t heard of some of the technologies the day’s speakers discussed, so the assistant superintendent at Country Club of Detroit was inspired by what he learned. “It’s a good perspective on how to manage water, and it’s helpful to hear how courses in different regions are using the technology that’s available,” he said.

And superintendents weren’t the only turf managers taking the podium. Mike Boekholder, head groundskeeper for the Philadelphia Phillies and a part-time consultant, told the audience he is amazed by how many times clients complain of problems on their fields yet don’t have irrigation.

“The first question out of my mouth is, ‘Do you have irrigation?’ and they say, ‘No, we don’t have that. It’s expensive to put in.’ You have no grass!” he exclaimed.

Boekholder said simply “praying for water” doesn’t help anything. What does help is having a well-designed water system and knowing your water window.

“If you’re looking to build (a watering system) from ground up, you better think water window on day one,” he said. “Because it’s great that you have a well-designed irrigation system, but if it takes 10 hours to water everything out there, you may not have the opportunity to actually do that every night. That water window really should, in my mind, drive the entire design of the system.”
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DAYTONA BEACH, Fla. — A town best known for rowdy spring breakers and race cars temporarily became sports turf managers central, as turf pros from around the country flocked to the annual STMA show.

As the Sports Turf Managers Association’s 24th Annual Conference and Exhibition in Daytona Beach, Fla., wrapped up, the news was all good. The 1,600 people in attendance made the conference trade show one of the most well attended in STMA history, and with nearly every booth filled, attendees had no problem browsing products from the 168 exhibitors on hand. Most important: They all seemed ready to do business.

Peter Moeller, director of marketing, The Toro Co., noticed an uptick in attendees as well as in overall optimism. Toro was showing off its new Tier 4-compliant engine, as well as new rotors on the irrigation side.

“I’ve felt a renewed buying interest from the customers who are here,” Moeller said. “I’ve talked to many in the municipal sector who have seen their buying budgets come back a little bit. In general I feel like there’s some optimism. It feels like attendance is up, and a better mood than in some of the recessionary times.”

Chris Vernon, vice president of marketing and product management for Jacobsen, echoed Moeller’s thoughts. He said he was “thrilled” with the crowd they saw on Thursday, the first day of the show. Jacobsen was unveiling its new 5-gang fairway mower, the LF510, and that

Continued on page 36

The first major trade show of the year adds more education and sees an immediate uptick in attendees, optimism and buying interest.

SPORTS TURF SHOW COMES OUT SWINGING

BY SETH JONES
event “brought a lot of people” to the Jacobsen booth, Vernon said. “I think last year wasn’t quite as good,” Vernon told Golfdom. “I think last year’s show wasn’t as well attended, so I think they’re recovering and getting more attendees.”

This year’s conference offered more educational opportunities, and that may have helped numbers. More than 90 hours of education were available, including two new tracks. Tracey Hawkins, market development manager, sports, for Profile Products, heard good things about the increase in education. “They’re really pushing the new educational speakers they’re having,” she said. “I think (the STMA is) learning from the GCSAA and local chapters that education is important, and it’s been well received.”

Kimberly Heck, CEO of the STMA, was pleased with the results. “The attendance level at this year’s STMA conference — both for the increasing number of educational sessions offered and our trade show — underscores the continuing strength of the association and the industry,” she said.

Zach Holm, head groundskeeper for the York (Pa.) Revolution, was attending his sixth STMA conference and said the show was going in the right direction. “It seems like there’s a few more (people), but not terribly bigger, but bigger than my first year, when it was in Phoenix. And there seems to be more and more students,” Holm said.

Will Wolverton, general manager, North America for Wiedenmann, said his booth had a huge influx of people when the show’s doors opened. One of his products was discussed at a seminar that day, and he said that may have boosted his traffic. “We got two new products for synthetic turf. The Terra Clean 100 is a pull-behind, it sweeps debris up, separates the rubber crumb and collects the debris and puts the rubber crumb back on the ground,” Wolverton said. “The STMA is a really good organization, they’ve always been fair to the vendors,” Wolverton concluded.

Blair Elliot, who works for the City of Aspen, Colorado’s Parks and Recreation department, serves on the STMA’s environmental committee, and says education is definitely the biggest draw to the STMA conference.

Elliot, who was attending the conference for the 15th time, said he was most intrigued by Netherlands-based company Campey and its verticutters. “They get a lot of people, from NFL and Major League parks to local ball fields, they get everyone here,” Elliot observed. “Is it growing? No, I don’t think so, but I think it is stable. I would say that this year’s show is bigger than last year’s.”

Interested in checking out some of the STMA’s educational sessions? These seminars are available online for $10 to $20 each:

- “Making Plant Growth Regulators Work for You” — Thomas Serensits
- “The Reality of LEED Certified Landscape and Site Management” — Larry DiVito
- “3 Keys to Providing High Quality, High Traffic Athletic Fields” — Jerad Minnick
- “Back To Basics: Getting the Most from Your Granular Fertilizers” — Brad Jakubowski and Dr. Tom Samples

Click on http://stma.peachnewmedia.com/store/provider/provider09.php to access the seminars.

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DORMANT GREENS

I had the good fortune of playing 18 great dormant bermudagrass greens recently. The ball rolled great, tracked well and the greens were plenty fast. The hole locations had been changed regularly to reduce wear, and rolled/mowed frequently enough that the putting surfaces were smooth. The bermudagrass greens I played were still dormant, with maybe a hint of green low in the canopy. No painting (dyeing to be technically correct) on the greens I played.

My round of golf on dormant bermudagrass greens illustrates that golf can be played under all sorts of conditions with many different playing surfaces and still be fun. When deciding which winter playing surface is right for your course start by determining the amount of play you expect during the winter and the revenue associated with that play. If you are expecting a high volume and winter golf is a large portion of your yearly revenue, overseeding is probably the best option.

One of the limitations of dormant bermudagrass greens, painted or not, is their susceptibility to traffic damage if the volume of play is high. If the number of rounds is expected to be modest, playing on dormant bermudagrass greens, painted or not, is a great option.

— C.T.

“GLYPHOSATE-RESISTANT ANNUAL BLUEGRASS IS OF CONCERN GIVEN THIS SPECIES’ PROLIFIC SEED PRODUCTION AND LONG-TERM SEED VIABILITY.”

James Brosnan, Ph.D.
(see full story on page 38)
The prevalence of herbicide-resistant weed biotypes is an issue challenging all agricultural producers. Currently, there are 396 biotypes across 210 weed species that exhibit some degree of herbicide resistance (Heap 2013) and the rate at which herbicide-resistant biotypes are emerging is increasing. To date, 19 different species with glyphosate resistance have been identified, all resulting from widespread use of glyphosate for broad-spectrum weed control (Heap 2013).

Glyphosate is labeled for broadleaf and grassy weed control in dormant bermudagrass turf at rates of 5 to 44 fl. oz./A (Anonymous 2010). Glyphosate is commonly used to control annual bluegrass in dormant bermudagrass fairways and roughs, as efficacy with other herbicides, particularly those inhibiting acetolactate synthase (ALS) such as foramsulfuron (Revolver) and bispyribac-sodium (Velocity), can be negatively affected by cold temperature conditions in winter and early spring (Lycan and Hart 2006; Hutto et al. 2008; Willis 2008).

Additionally, glyphosate applications provide turf managers with a more economical option for broad-spectrum winter weed control than the aforementioned ALS inhibitors. Thus, many annual bluegrass populations on golf courses are under yearly glyphosate selection pressure, and superintendents have limited the diversity of herbicides used for control; both of these phenomena have been identified as principal factors in the development of glyphosate-resistant weeds (Duke and Powles 2009). That being said, only a single biotype of annual bluegrass found in golf course turf has shown resistance to glyphosate applications (Binkholder et al. 2011).

Glyphosate-resistant annual bluegrass is of concern given this species’ prolific seed production and long-term seed viability (Roberts and Feast 1973). Moreover, annual bluegrass biotypes resistant to atrazine, prodiamine, simazine and diuron have also been reported (Heap 2013). A biotype of annual bluegrass at Humboldt Golf and Country Club (Humboldt, Tenn.) was not controlled following treatment with glyphosate at 32 fl. oz./A during bermudagrass dormancy.

The golf course superintendent made...
Alternative modes of action need to be used in regular rotation to guard against resistance development.

A single application of glyphosate at 32 fl. oz./A every year from 1990 to 2009 to control weeds during bermudagrass dormancy (David Green, personal communication). The objective of this research was to determine the sensitivity of a potentially glyphosate-resistant annual bluegrass biotype collected from this location.

**MATERIALS AND METHODS**

Three standard golf course cup cores were removed from the third fairway at Humboldt Golf and Country Club on February 17, 2010, using a cup cutter. Each core contained mature annual bluegrass plants suspected to be glyphosate resistant.

These glyphosate-resistant plants had not been treated with any herbicide after emerging in the fall of 2009. A biotype known to be susceptible to glyphosate was harvested in the same manner from the East Tennessee Research and Education Center (Knoxville, Tenn.)

Considering that annual bluegrass is a self-pollinated species (Ellis 1973) and seed was limited, individual tillers of the glyphosate-resistant and glyphosate-susceptible biotypes were used in greenhouse experiments. Individual glyphosate-resistant and glyphosate-susceptible tillers were removed from cores harvested in the field and transplanted into containers filled with a peat moss growing medium.

Tillers of the glyphosate-resistant and glyphosate-susceptible biotypes were maintained under controlled greenhouse conditions for five weeks prior to initiating research. During the five-week acclimation period, plants were irrigated to prevent the onset of wilt and clipped daily at a height of ~2 in. Plants were fertilized with a complete fertilizer to promote active growth.

**GREENHOUSE EXPERIMENTS**

Both glyphosate-resistant and glyphosate-susceptible plants were treated with glyphosate (Roundup ProMax, Monsanto) at 0, 8, 16, 32, 64, 128 and 256 fl. oz./A using a CO2-powered backpack boom sprayer containing flat-fan nozzles calibrated to deliver 30 gpa of spray volume. Annual bluegrass control was evaluated visually on a 0 (no injury) to 100 percent (complete kill) scale at 7 and 14 days after treatment. Measurements of photochemical efficiency were made on each evaluation date to provide a quantitative assessment of plant response to glyphosate treatment.

Experimental design was a randomized complete block with four replications that was repeated in time. I50 values were calculated for each biotype to determine the rate of glyphosate giving a 50 percent response (i.e., 50 percent annual bluegrass control).

**RESULTS AND DISCUSSION**

Responses of the glyphosate-resistant and glyphosate-susceptible biotypes to increasing rates of glyphosate varied (Figure 1, pg. 38.) At 14 days after treatment, glyphosate controlled the susceptible biotype >95 percent at rates greater than 16 fl. oz./A. Comparatively, the resistant biotype was only controlled 76 percent with glyphosate at 256 fl. oz./A. I50 values for resistant and susceptible biotypes were 107 and 9 g a.e. ha⁻¹, resulting in a resistance factor (RF) of 12.

Moreover, photochemical efficiency values on resistant plants were not significantly different from the untreated control with glyphosate rates ≤ 32 fl. oz. Continued on page 40
/A by 14 days after treatment, suggesting that photosynthesis was not affected by glyphosate at these rates. Susceptible plants treated with glyphosate at > 8 fl. oz./A yielded photochemical efficiency values of 0.000 by 14 days after treatment, indicating that plants had been killed (i.e., no photosynthesis was occurring).

**MOVING FORWARD**

This research represents the first instance of a weed species having glyphosate resistance in bermudagrass turf. While not compared directly, the level of resistance in the glyphosate-resistant biotype from Tennessee is greater than that reported for a glyphosate-resistant annual bluegrass biotype infesting zoysiagrass turf in Missouri (Binkholder, 2011) and higher than what has been reported for many other grassy weeds in non-turf settings.

Transfer of resistance traits through pollen dispersal or seed movement is not likely in self-pollinated species such as annual bluegrass, where gene flow in managed turfgrass settings is limited (Ellis 1973; Ng et al. 2004; Sweeney and Danneberger 1995).

Rather, glyphosate-resistant biotypes may emerge at specific locations after repeated use of glyphosate for weed control in dormant bermudagrass turf. Such was the case at Humboldt Golf and Country Club, where the golf course superintendent regularly applied glyphosate at 32 fl. oz./A for nearly 20 years. Superintendents should rotate herbicidal modes of action used to control winter annual weed species in dormant bermudagrass turf.

The golf course superintendent at Humboldt Golf and Country Club was able to control this glyphosate-resistant biotype of annual bluegrass with the use of a photosystem II inhibitor (simazine) the following season. It should be noted, though, that continued use of simazine alone would just increase selection pressure for simazine-resistant annual...
bluegrass biotypes.

Alternative modes of action need to be used in regular rotation to guard against resistance development. This will involve using different chemistries at both pre- and postemergent timings. A list of herbicidal modes of action with activity against annual bluegrass is presented in Table 1 (pg. 40). In addition to rotating herbicides annually, tank-mixing active ingredients varying in mode of action can help mitigate the onset of herbicide resistance. However, modes of action included in these tank mixtures should also be rotated regularly.

Weed management programs focused on preventing the onset of herbicide resistance may be more costly than historical maintenance practices of applying the same product year after year. However, the investment in a rotation program will pay off in the long run as weed management costs have been shown to increase dramatically in crop production due to the evolution of herbicide-resistant weeds (Norsworthy et al. 2012).

Future research will evaluate programs for managing herbicide-susceptible annual bluegrass and other weeds in turf with alternative chemistries in rotation to prevent the evolution of new herbicide-resistant biotypes.

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**References**


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When discussing whether golf courses are sustainable or not, the focus is almost always on the putting green. The putting green quality expected by golfers requires an intensive level of management. In temperate regions, creeping bentgrass is the putting green turfgrass of choice. It is the most intensively managed of all the turfgrass species. Subjected to low mowing heights, frequent mowing, rolling and intensive grooming under a variety of environmental conditions, creeping bentgrass is under environmental stress for most of the growing season. Given the constant or chronic stress, creeping bentgrass is predisposed to frequent attacks by pests.

Breeding efforts have brought us creeping bentgrass cultivars that are dense, fine textured, and have greater disease resistance than the previous generations of cultivars.

Most of us would welcome a creeping bentgrass cultivar that was resistant to dollar spot. We could eliminate the need for dollar spot fungicides and enjoy a more sustainable putting green. The putting green quality expected by golfers requires an intensive level of management. In temperate regions, creeping bentgrass is the putting green turfgrass of choice. It is the most intensively managed of all the turfgrass species.

(Koch and Kerns, 2012) reported that dollar spot-resistant cultivars exhibited partial resistance to dollar spot in comparison to older cultivars like Penncross. The authors concluded that the resistant cultivars might reduce, but not eliminate, fungicide applications.

At first glance one could dismiss the new resistant cultivars as just another folk tale, or account for the breakdown based on a wide geographical and climatic range that we are trying to grow the cultivars. I think, however, the study brings into focus what resistance and tolerance mean.

Plant resistance is defined as host traits that reduce pathogen infection, host contact with the pathogen and pathogen growth rate, in case infection occurs (Kover and Schaal, 2002). Visually, resistance would be a symptom-free turf.

Plant resistance places strong selection pressure on the pathogen. In response to plant resistance, the pathogen will eventually evolve and use a different means to attack the plant. In response to the new and improved pathogen, we breed a cultivar that has improved plant resistance to the new or evolving pathogen.

The relationship of plant resistance to the pathogen is like an arms race. Tolerance is defined by how much the plant can endure in the face of a pathogen attack. In agricultural crops, tolerance is often defined as the level of disease the crop plant can sustain without any measurable effect on yield. In turf, since we don’t measure quality in yield, tolerance is a level of disease expression somewhere between immunity and full susceptibility.

In natural systems, plants and pests tend to develop a tolerant relationship. They may not like each other, but they put up with each other. Tolerance should be an important aspect of achieving the goal of sustainability.

From a management perspective, the introduction of a creeping bentgrass cultivar that is tolerant of dollar spot would likely maintain the desirable cultivar characteristics along with a certain level of disease. The impact, too, would reduce the genetic pressure on the plant and pathogen. We would avoid an arms race between the plant and the pathogen.

If tolerance exists in the turf community, management practices could be used to reduce the level of disease, too. Management practices could be timed along with an appropriate fungicide treatment when needed to maintain the acceptable threshold of putting green quality with minimal disturbance to the plant/pathogen relationship. Bottom line, we need more tolerant turfgrass cultivars to address a wide range of stresses.

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Recovering from spring dead spot damage

Dennis Martin, Ph.D., is a professor of turfgrass science at Oklahoma State University and is well versed in spring dead spot through his more than 20 years of research and extension activities addressing the disease. Martin can be reached at dennis.martin@okstate.edu.

Q Is there any way to predict during the winter or spring if the turf will suffer spring dead spot damage?

I am not aware of any method. While microscopic examination of plant parts can spot the fungus and damage on an individual plant basis, sampling on a large scale is impractical.

Q What is the general biology of the spring dead spot fungus?

In fall, the fungus causing the disease invades stolons, rhizomes and lower portions of aerial shoots. Tissue not killed outright is predisposed to the effects of freezing temperatures. The fungus grows radially, resulting in circular patches of dead turf seen in spring.

Q Outline the strategy you recommend to recover from spring dead spot damage.

When a superintendent first sees the symptoms at spring green-up, map the damaged areas through photography and in written form. Try to correlate damaged areas with suspect factors on the site. Usually damage is worse on north-facing slopes, highly susceptible varieties, fine-textured soils, heavily compacted areas and thatchy areas. Shade or sun seems to have little effect on occurrence.

Second, if a pre-emergence herbicide has not already been applied by the time spring dead spot symptoms are seen, a decision on product use is needed. With the exception of oxadiazon (example Ronstar), all other pre-emergence herbicides may damage new roots produced by stolons, slowing recovery in damaged areas. Use of other products depends on the extent of disease damage and how rapidly a superintendent wants the turf to recover, as well as tolerance of possible weed invasion.

Third, cultivation is often necessary. If compaction is present, an aggressive aerification program is a good idea. On the other hand, if the damaged area has a thatch build-up, aggressive verticutting is a good idea. Scout the damaged area, look at many turf cores and decide which cultivation technique fits best for the circumstances. With all cultivation techniques, golfer satisfaction has to be factored in to the decision.

Soil test and make decisions on phosphorus, potassium and pH additions based on soil test results. My experience is that bermudagrass grows best at a pH of 6.0 to 6.8, but some varieties can differ. Below a soil pH of 5.9 it’s advisable to lime to raise the pH. Most bermudagrasses tolerate soil pH values well into the upper 7s, so sulfur addition is generally not needed.

Apply 0.5 lbs. of soluble nitrogen per 1,000 sq. ft. in late March to early April in Oklahoma to damaged areas to promote early growth. After this application, monitor the weather and adjust as needed. After this early nitrogen application, continue with your normal nitrogen fertility program.

On our research plots and on some golf courses we have observed much less spring dead spot damage when the total yearly nitrogen application rate is 4.0 lbs. nitrogen per 1,000 sq. ft. or less. I recognize that this is a lean program and may not work in certain high traffic areas, but staying below 4.0 lbs. nitrogen per 1,000 sq. ft. per year is a good goal to pursue.

Q Anything else you’d like to add?

Start the recovery program early. It gets warmer much earlier in the spring than ever before. Promote stolon growth early in the spring, induce the turf to recover and then shift to a holding pattern throughout the rest of the growing season.
What can I get you? A cold beer. Any kind.

Seen any good movies lately? I saw Ted, it’s hilarious. It’s not one to watch with your kids.

How old are your boys? Jack is 14 and Sam is 13. Jack is big into baseball, science and fish. Sam is into football. He’s an offensive lineman, he’s built like his dad.

It seems like the time commitment of having kids in sports is different than when we were kids. Doesn’t it though? I go to every game. Go to a baseball or a soccer field and it’s not hard to figure out why there aren’t as many people on the golf course on a Saturday as there used to be.

Do you take more after your mom or your dad? Both. Dad was in the highway landscaping business, so that’s how I got into what I do. When they built a new road, he’d go in and plant the grass. Dad was a get-it-done type person, which I think I am. My mom is a retired English teacher and I’m a fanatic for spelling. I think I got good parts from both of ’em. And probably some bad parts!

What do you mean by ‘get-it-done’ type person? Well, if something doesn’t work, just get on with it. For example, my older brother is a CPA. Back before he was, he was doing some paperwork, and he was using an adding machine. Something was different about the adding machine, and he kept hitting the wrong key, and he was swearing at it. So my dad took it, unplugged it, stomped on it and shouted “Now go buy one that works!”

How long have you been at RTJ Golf Trail at Oxmoor Valley? For 15 years. My wife was pregnant with my older son when we moved here. And then also going from 18 holes to 54? No stress there!

Why not make a bunch of major life changes at once, right? How’d you handle it? It went well. I’ve got the best superiors. We’re owned by the teacher’s retirement fund. I don’t work for doctors and lawyers, and people that grow a lawn so they think they know how to grow grass. I work for golf people.

What’s your favorite tool in the shop? Chain saw comes to mind, but any power tool, really.

Kind of like your choice of beer — anything cold, right? Yes. Anything power.

As interviewed by Seth Jones on January 30th, 2013.
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