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In an effort to increase play, variations of the standard golf cup have entered the game, causing traditionalists to cry foul and throwing superintendents another curveball.

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What's the next big idea at GIE+Expo?

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GOLFDOM (ISSN 1526-4270) is published monthly by North Coast Media LLC, IMG Center, 1360 East 9th Street, 10th Floor, Cleveland, OH 44114. **Subscription rates:** One year \$48, two years \$69 (U.S. and possessions), one year \$70, two years \$101 (Canada and Mexico) and one year \$105, two years \$152 (all other countries). Air expedited service is available in countries outside the U.S. and Canada for an additional \$75 per year. Current issue single copies (prepaid only) \$5 (U.S. and possessions) \$7 (Canada and Mexico) and \$8 (all other countries). Back issues (if available, prepaid only) \$10 (U.S. and possessions), \$14 (Canada and Mexico) and \$16 (all other countries) add \$6.50 per order shipping and handling for both current and back issue purchases. **Periodicals postage paid** at Cleveland OH 44101-9603 and additional mailing offices.

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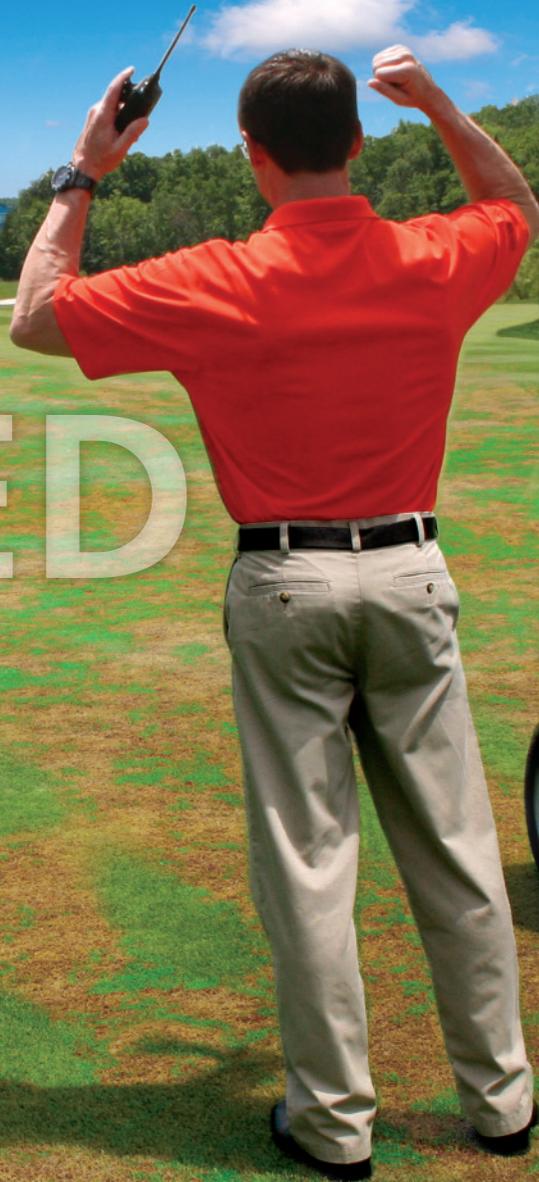
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“This social media minefield isn’t limited to Twitter. What about Facebook or your work blog? Can you imagine something you wrote on the Internet costing you your job?”

SETH JONES, *Editor-in-Chief*

The dangerous art of speaking your mind

I have been fortunate in my career. I’ve only made one move, and it was a decision I made for myself. ¶ At my previous job at GCSAA, I would occasionally ponder getting fired. Not because my performance was lacking, or because the boss had a beef with me. ¶ No, my concern was email.

I imagined that one day the human resources director would walk into my office and say, “Seth, we need to talk about the email you sent yesterday. Report to my office.” I imagined I’d grab my jacket and keys, just to be ready.

I wasn’t firing off beligerent emails all over the industry. But I was young and brash and I wasn’t always the politically correct, walk-the-association-line type of employee.

Keep in mind, email was still somewhat new then. I remember sending my first email in the mid-’90s, feeling like Alexander Graham Bell calling Mr. Watson for the first time. My email etiquette skills were still rough around the edges. They’ve been polished since.

My new fear? Twitter. One hundred and forty characters sent out for the world to see and judge.

Take, for example, former PGA of America President Ted Bishop. After sending “an insensitive” tweet about Ian Poulter last month, the PGA of America board removed him from office. His crime? Calling Poulter a “Lil girl.”

Was it wise for someone in Bishop’s position to call Poulter a ‘lil girl? No. But was there any real damage done? I say no. Just last week I shouted much worse things at San Francisco Giants right fielder Hunter Pence, and he’s A-OK.

Social media has made everyone lil girls — er, wimps — when it comes to speaking opinions. It used to be people

called each other names and it was over, you know, sticks and stones.

But now the wrong tweet spells doom. We must apologize for saying exactly what we meant. Meanwhile, it feels like the art of sharing a colorful opinion is on its deathbed.

There is an excellent essay on this topic by Gilbert Gottfried called “The Apology Epidemic.” Google it, it’s worth the read. His most profound thought: “You could slap somebody hard in the face and they’d say, ‘Well, that was weird. Can we discuss this further?’ But tell a joke on Twitter that somebody doesn’t find funny and they’ll howl for your blood.”

This social media minefield isn’t limited to Twitter. What about Facebook or your

work blog? Can you imagine something you wrote on the Internet costing you your job?

There is a steadily growing number of superintendents on Twitter, and I enjoy following them (follow me @Golfdom). Most of the conversation is pretty vanilla (apologies to vanilla) but sometimes it gets interesting. Some people who are popular on Twitter probably take it too seriously, while some of the unknowns probably don’t take it seriously enough.

I have heard — via good ol’ spoken word gossip — that there was a superintendent who lost his job this year because he was too vocal on Twitter regarding club policies. His membership didn’t like it, and he was soon looking for a new job.

Every superintendent is judged by the conditions of their golf course, especially the conditions of their greens. How silly would it be to be shown the door when the greens look great but last night’s tweet offended Miss Havisham and the bridge club?

I don’t know Ted Bishop personally, but I did see him address the crew at the 2014 PGA Championship at Valhalla. He was great. He’s a proud member of the GCSAA, and a former superintendent. And apparently he doesn’t think highly of Ian Poulter.

Sounds like someone, at the very least, whom I should be following on Twitter.

Email Jones at: sjones@northcoastmedia.net.

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Starter

NEWS, NOTES AND QUOTES



//SUMMIT



Doug Ferguson chats with Tiger Woods on the course.

AP WRITER FERGUSON TO KEYNOTE '14 SUMMIT

PROFESSIONAL GOLF'S MOST CONNECTED WRITER MAKING RARE SPEAKING ENGAGEMENT IN ORLANDO

BY SETH JONES // Editor-in-Chief

➔ Every Major, there's that one person who isn't a golfer, and isn't a caddie... yet he's walking stride-by-stride with the final group.

Who is he? He's Associated Press golf writer Doug Ferguson. He's also the 2014 *Golfdom* Summit keynote speaker.

Ferguson travels the world covering the game of golf. As of press time he was covering the HSBC Champions in Shanghai. Next month, he'll be at the Reunion Resort in Orlando visiting with a group of 50 superintendents and 15 manufacturers to share his insights on the the game.

"I'm excited to meet and address such an impressive group as the group of superintendents invited to attend the *Golfdom* Summit," Ferguson says.

"I'm fortunate that I get to see some of the most beautiful golf courses in the world as a part of my job... It'll be nice meeting some of the people responsible for those conditions."

Also on the *Golfdom* Summit bill will be Jim Rattigan of Schuylkill CC in Orwigsburg, Pa. Rattigan will be making a presentation entitled "Embracing Golf's Next 10 Years."

Other speakers include Bob Farren, Pinehurst Resort; Karl Danneberger, Ph.D., The Ohio State University; and *Golfdom* research editor Clark Throssell, Ph.D.

The *Golfdom* Summit brings superintendents and industry manufacturers together for education, networking and golf. For more information, visit golfdomsummit.com.

//OLD TOM MORRIS WINNER

DAN JENKINS TO RECEIVE 2015 OLD TOM MORRIS AWARD

Dan Jenkins, one of a handful of writers in the World Golf Hall of Fame and someone who covered each of the sport's Major championships for more than 60 years, will be honored by the GCSAA with their highest honor, the Old Tom Morris Award.

Jenkins, who wrote for *Golfdom* way back in 1956, will accept the award Feb. 25 at the Golf Industry Show (GIS) in San Antonio.

"I'm honored to win this award, especially named for a guy who I'm almost as old as," Jenkins said in a press release. "I didn't know a lot about grass, but I knew a lot of superintendents all around town. The profession has made a lot of progress. Courses nowadays are so consistently wonderful with all the things they can do with them."



Dan Jenkins

The award has been presented annually since 1983 to an individual, who through a lifetime commitment to the game of golf, has helped to mold the welfare of the game in a manner and style exemplified by Old Tom Morris.

//PHOTOBOMB

WANTED: YOUR CELEBRITY PHOTOS

We like to have fun in our December issue (and really in every issue, for that matter) and this December we want to run photos of our readers with celebrities on our *Golfdom* Gallery page. So send us a photo of yourself with Bill Murray, Bill Clinton or Bill Gates... That chance encounter with Arnold Palmer... Or the bad guy from that one James Bond film who just happens to be a member at your club.

Readers can email their celebrity photos to sjones@northcoastmedia.net, and those we run will get a new *Golfdom* hat to wear for their next celebrity encounter.



// HIGHER EDUCATION

Making connections at the 2014 Green Start Academy

BY MOLLY GASE // Associate Editor

➔ Assistant superintendents from across the country (and from our neighbor to the north, Canada) met last month in Raleigh, N.C., for the 9th annual Green Start Academy. Sponsored by Bayer and John Deere Golf, the event focused on education and networking.

The 52 attendees listened to words of wisdom from Chris Dew, superintendent at the National Golf Club of Canada; Chris Condon, superintendent at Tetherow Golf Club; Bryan Stromme, regional director of agronomy-Midwest/West, Billy Casper Golf; Bob Farren, director of golf course and grounds management at Pinehurst Resort; and Carol Rau, golf career consultant and owner of Career Advantage LLC.

The assistants weren't confined to

the classroom for the entirety of the event, however. A tour of the John Deere factory provided a different perspective as mowers were viewed in bits and pieces. Leaving the factory, everyone hopped on a bus to Bayer's Clayton facility where there was more education, games and a lot more networking.

Randy Gatlin, assistant superintendent at Turtle Point Yacht and Country Club in Killen, Ala., found the networking aspect of the event to be a major highlight.

"You get such a diverse set of views. From public to private, high-end to low-end, I've met guys from the West Coast and guys from the East Coast," Gatlin told *Golfdom*. "I love the opportunity to get to network with all of these people from all over the country."



L to R: Billy Weeks, Bob Farren, Chris Dew, Jeff Corcoran, Bryan Stromme and Chris Condon made up the superintendent panelist at the Green Start Academy.

GO FIGURE

1.3 MILLION

Size, in square feet, of last month's Green Industry + Equipment Expo, held in Louisville, Ky. It was the largest GIE+Expo show ever, and also boasted an 11 percent increase in overall attendance. For some intriguing products we saw at the show, check out the feature on page 26.

// HALL OF FAMERS

THREE NAMED TO GEORGIA SUPERINTENDENTS HALL OF FAME

Three superintendents will be inducted to the Georgia Golf Course Superintendents Hall of Fame next month. Bobby McGee, who died in 2005, will be inducted, along with William Shirley, CGCS at Peachtree GC, and Ron Sinnock, who retired after a nearly 40-year career in 2005.

McGee began in the industry as an assistant superintendent at East Lake GC in Atlanta, later becoming the superintendent at Atlanta Athletic Club. McGee prepared the Atlanta Athletic Club for the 1976 U.S. Open.

William Shirley is currently the superintendent at Peachtree. Shirley served on the Georgia GCSA board of directors and president in 1993-94. In 2011, he was named Superintendent of the Year.

Ron Sinnock served as a Georgia GCSA director during nearly 40 years as a superintendent in the state between Chattahoochee GC in Gainesville and Coosa CC in Rome. At Coosa, Sinnock was superintendent host for a number of GSGA events, including two State Amateur championships and the first State Mid-Amateur in 1982.



EMAILS @ TEXTS # TWEETS

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Seth,
I told myself I wouldn't read your story ("True Romance," October 2014, Seth Jones) until I got home tonight and I am glad I waited. You brought my emotions to tears as I basically relived my whole life. You are truly an amazing writer and I am speechless after reading it.

The two things I am most proud of that will come of this is that there will be more awareness for the Wee One Foundation and also my young kids will read this someday and realize just how lucky they are to have their mom. We have guarded them from

realizing any sort of reality of the situation, but soon they will be old enough to understand that our trips to Madison were much more than trips to the zoo and quick visits with the doctor.

I can't wait for my family and Cammie's to read it and realize what she has meant to me. Sincerely,

Matt Henkel, Superintendent
Prairieview GC, Byron, Ill.

Mr. Neff,

I wanted to send you a note of thanks from me and the crew on Course No. 2 for the kind words in your article ("Are you ready for some Fantasy Greenkeeping?," September 2014, Matt Neff.) For them to be ranked as the No. 1 crew in your list of Fantasy Crews meant a lot to them as I read them the excerpt this morning before they headed out to prepare the course. As you know, they rarely receive the praise they deserve in print but you surely made their day. Sincerely,

John R. Jeffreys III, Superintendent
Pinehurst No. 2, Village of Pinehurst, N.C.

TURF EXHIBIT UNVEILED AT U.S. NATIONAL ARBORETUM

➔ "Grass Roots" — a first-of-its-kind interactive outdoor exhibit at the U.S. Department of Agriculture's (USDA) National Arboretum in Washington, D.C. — had its grand opening recently. The exhibit is the centerpiece of a four-year initiative that focuses on the environmental, economic, aesthetic and recreational benefits of turfgrass in landscapes, golf courses and athletic fields.

The outdoor exhibit covers 1.3 acres and features 12 educational stations.



The outdoor interactive exhibit highlights the results of turfgrass research and

demonstrates that the best grasses are developed and managed with their purposes in mind: linking landscape elements, conserving soil and preventing erosion, managing stormwater runoff, providing safe places for recreation and green space in urban environments and beautifying landscapes.

The exhibit also features

agronomic grasses and research by USDA's Agricultural Research Service (ARS) aimed at sustaining the productivity of grain crops.

The outdoor "Grass Roots" exhibit is in a 1.3-acre space and features 12 stations, including a scaled down golf hole, irrigation and fertilizer displays, sports

fields, a kiosk featuring information about common turf diseases and pests, and a lawn display featuring swards of 12 different warm- and cool-season grass varieties. About 800 visitors attended the exhibit for opening weekend.

Approximately 800 visitors checked out the exhibit on opening weekend.



The exhibit highlights results of turfgrass research and provides a close look at various turfgrasses.



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Golfdom Gallery



1 Eagle eye on the GIE+Expo We spotted this beautiful bald eagle at the Dixie Chopper booth at GIE+Expo. For a rundown of some intriguing products we came across, check out our feature on page 26.



2 Pitch perfect? Assistant superintendent Cameron Watt, The Redwoods GC in Langley, British Columbia, tries to beat out fellow Green Start Academy attendees in a putting challenge. Close, but no cigar.



3 4th Street Live From left to right, Cale Bigelow, Ph.D., Purdue University; Jerry Corbett, Quali-Pro; and Kevin Stoltman, president and CEO of North Coast Media, enjoying a party thrown by *Golfdom*'s sister publication, *Landscape Management*.



4 Who are your running backs? Textron chairman, president and CEO, Scott C. Donnelly, with our own Seth Jones, at GIE+Expo. Seth considered putting in a good word for all the Textron people he works with... instead he decided to talk fantasy football.



5 So close! Bob Farren, director of golf course and grounds management at Pinehurst Resort, competed in a fierce corn hole tournament at the Green Start Academy.



6 C-Mac with the photobomb Leave it to NCM's Craig MacGregor to sneak into this shot of Brian Godwin, Jacobsen, Pat Roberts, *Golfdom*, and David Withers, president of Jacobsen.



7 Mr. October? Working for NCM comes with its benefits, including occasional sporting event tickets. Seth doesn't always go to baseball games... but when he does, he sits front row at the World Series.

PHOTOGRAPHY BY: SETH JONES (1, 3, 6); MOLLY GASE (2, 5); PAT ROBERTS (4); ERIC NEUTEBOOM (7)



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MARK WOODWARD, *Contributing Editor*

Is propane the answer?

As our industry gets more and more regulated each year it will continue to be important for golf course managers to look at new and creative ways to manage their facilities. Superintendents are constantly fine-tuning their maintenance practices and using techniques today that may have not been in the mainstream a few years ago.

Some golf courses are reducing the amount of turfgrass that has to be maintained at a high level, others are regularly using plant growth regulators to manage how much the turf grows, therefore reducing mowing and the many costs that go with it.

Another new strategy that is making some headway is the use of propane-powered equipment. One of the golf courses I manage in Tucson, Ariz., has been using experimental propane mowers provided by R&R Products for quite some time. It is my understanding that R&R is now partnering with the Propane Education and Research Council (PERC) to expand this experimental program to eight highly visible golf course operations in the United States over the next 12 months (“Golf piques PERC’s

interest,” page 8, August 2014 issue).

Although it’s still relatively early in the overall process of superintendents regularly using propane powered equipment, I personally think the idea has merit.

From our limited experience using this equipment in Tucson, we have found that there are pros and cons related to the use of propane-powered equipment.

Obviously, propane provides a cleaner fuel source compared to gasoline and diesel fuel sources, therefore reducing emissions. Also, the operators have fewer worries about leaks and spills on highly sensitive green surfaces.

I can’t speak on fuel savings just yet, but PERC indicates that the savings will be there — what those savings are will be an important fac-

tor moving forward.

Comparing our propane units with the three major equipment manufacturers in terms of design, the propane mowers are somewhat cumbersome and not as sleek. There is some design work that still needs to be done, in my view. The units R&R is using in this latest partnership with PERC may be different than the ones we have been using, but there are occasional issues with pressure spikes and the fuel-sending units freezing up.

There is also some different staff training that goes along with using propane, but for the most part it is minor. For example, the operators must shut the fuel systems down or bleed-off of the propane may occur.

One issue that you normally wouldn’t think about is the odor of the propane — it

has made some of our operators nauseous.

Another very important factor that needs consideration is that our society is getting more and more aware of the environmental impact of everything we do on our golf courses. The use of propane definitely sends a positive message that the golf industry is once again taking a proactive approach in being good environmental stewards.

With all this being said, those of us who manage and maintain golf courses must use the appropriate equipment on our facilities that will continue to provide the highest possible conditions that our members, golfers and owners have come to expect.

In some cases it makes no difference what the fuel source is: gasoline, diesel, electric or propane. All that matters is exceeding expectations.

I would be remiss if I didn’t acknowledge that all three of the major manufacturers of golf course maintenance equipment have made great strides in designing equipment that uses more traditional fuel sources that are more environmentally sound with fewer emissions.

It will be interesting to see the results of the PERC partnership with R&R products and see if this fuel source truly is applicable to the golf industry. Only time will tell.

Mark Woodward is a senior vice president for OB Sports, principal of Damarco Golf, president of Mark Woodward and Associates and a contributing editor for *Golfdom*. He can be reached at mwoodward@obsports.com.



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“All (spokes) are dependent on a healthy golf industry. However, falling participation, a sluggish economy and sometimes arbitrary regulatory actions nibble away at each spoke of the wheel.”

JOEL JACKSON, *Senior Contributing Editor*

Big wheel keeps on turning

Updates on the state of the golf industry keep coming from all facets of the game. I think of the industry as a big wheel and the spokes are made up of the many specializations that go into the single hub, the game of golf.

Make up your own list, but from the developer who finances a project to the groups who operate the clubs and maintain the grounds, there is an unmistakable link.

All are dependent to different degrees on a healthy golf industry. However falling participation, a sluggish economy and sometimes arbitrary regulatory actions nibble away at each spoke of the wheel.

One of the key spokes in the golf industry wheel is the golf course architect. Many are aware that new projects have been drastically curtailed because of the economy. Some architects have been able to land new projects in foreign countries to maintain revenue, but design associates of the major firms have lost jobs because of the economic slowdown.

No sector of the industry is immune.

I recently sat down with golf course architect Ed Beidel, who had worked primarily in the Pennsylvania/Maryland area before moving to Florida in 2008.

Beidel became a member of the American Society of Golf Course Architects (ASGCA) in 1988. He served as a committee member and chairman of the membership committee for six years. I wanted to discuss the current issues facing golf from a different perspective than the superintendent's because course design and the subsequent required maintenance has sparked many issues that our segment of the industry now faces.

“I had six projects lined up in 2007, set to begin that year and in 2008. The bottom fell out and all of them are

on hold. I keep in touch with them regularly to see if any have come back to life, and in the meantime I still do site assessment plans for courses looking to reduce costs and make effective changes to operations,” Beidel told me.

As for the key issues, Beidel says, “The water situation is scaring the (heck) out of me. American golfers have become so spoiled to expect wall-to-wall green, manicured courses. It's going to get really ugly when the water authorities finally turn off the spigot!”

Beidel said that most golf course designers appreciate and understand the environment they are building on. “In cases where it is already bulldozed and barren and the course winds totally through home sites, our creations become a thriving green space

for wildlife. In other settings we try to fit the golf holes into the natural settings with minimum impact.”

From my knowledge of the golf course architects I have met over the years, I would say that is a fair statement, but sometimes courses are built that tend to become real maintenance challenges. Beidel replied, “Architects work for the owners and customer satisfaction is mandatory. All I can do is offer up my professional opinion of what I see as aesthetically appealing, operationally sound and economically cost effective. If they want a waterfall, severe greens and steep bunker faces, they get it!”

We discussed different ways to grow the game, and Beidel says it's something he thinks about often. He says in recent years he's advocated for smaller, more affordable courses. Cheaper to maintain, cheaper to play.

“In order for a course to survive and prosper it must have an energetic staff, willing to think outside of the box. It must be willing during lean times and seasonal slow times to set aside nine holes and market 3-hole, 6-hole and 9-hole rounds appropriately priced and track the results to see if you get new and repeat business.”

I think Beidel is saying what many of us already know: we have to change the way we do business. Change is hard, especially in golf. But what is the alternative?

Joel Jackson, CGCS-Ret., is senior contributing editor for *Golfdom*. Email him at flrjn@aol.com.



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“While the lack of a response can be incredibly frustrating and probably not the best form on the part of the employer, I think we need to look at the issue from both sides.”

MATT NEFF, *assistant superintendent, Wedgewood G&CC, Powell, Ohio*

The agony of the résumé black hole

So I’m just going to get it out of the way and ask now... did you receive my résumé? Yes? No? Maybe? ¶ During a recent conversation with a sales rep, I mentioned the surprising number of times, especially over the last few years, that I have not received any acknowledgment of the receipt of my cover letter and résumé, nor any indication as to the status of my application. He later sent me an article on the “résumé black hole.”

This term is self-explanatory, especially to those of us who have been sending out several résumés a year without receiving a response to at least a few of them. The résumé black hole is the netherworld into which an applicant’s résumé, once sent to a prospective employer, disappears, leaving the applicant unsure if their application materials have even been received, let alone reviewed by anyone involved in the hiring process.

While the lack of a response can be incredibly frustrating and probably not the best form on the part of the employer, I think we need to look at the issue from both

sides. On one hand, it doesn’t seem as though it would be that time consuming to create a mass e-mail to send out to all applicants confirming the receipt of their application materials.

On the other hand, like many maintenance staffs, other departments within the club are also dealing with time and manpower constraints. It stands to reason that between dealing with dozens, if not 100 or more résumés, on top of other day-to-day responsibilities, there might not be time to do things exactly as they would prefer.

It is what it is and there’s really no use getting bent out of shape about it. According

to a survey conducted by CareerBuilder, 75 percent of 1,083 respondents from across the occupational spectrum stated that they had not received any response from at least one employer over the last year. Clearly, it’s not an issue that is unique to golf course maintenance.

In my opinion, since the person or committee responsible for conducting a superintendent search have a vested interest in making sure they identify as many of the best candidates as possible, I think it’s unlikely that they’re choosing to just ignore dozens of résumés. However, going back to the time constraints that may be involved with the

hiring manager or committee, the importance of concisely stating your qualifications, experience and results relative to the requirements in the posting can’t be overstated and will drastically increase your chances of getting an interview. Résumés that are tailored to the position for which you are applying stand a far better chance at getting a serious look.

But an applicant can submit a well written and presented résumé that is specifically tailored to the position and still not get a response within a reasonable amount of time. At that point, it’s time to follow-up with the employer. This can be a bit of an awkward situation in that you don’t want to annoy the employer. But at the same time, we all know how fast the superintendent hiring process can move, especially if the search is occurring during the season. You need to know that your résumé is in the hands of the right people. Most hiring managers in this business understand that also and will respond to follow-up inquiries in a timely manner. In the event that they don’t, that’s pretty much all the answer you need.

If one of your résumés ends up in the black hole this winter, hang in there. More than likely, the right people will see it. After all, they care as much about learning if you’re the right person for them as you do.

Matt Neff (mneff4@yahoo.com) is assistant superintendent at Wedgewood G&CC in Powell, Ohio.

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The Golfdom



FROM THE ARCHIVE

At *Golfdom*, we always want to know what our readers are thinking. Sending out a quick survey is one way to take a snapshot of what is on the minds of many in the industry. It seems that *Golfdom* has been utilizing surveys for a long time now. ¶ In 1965 golf courses received unexpected good news when the Federal Excise Tax, a tax added into products or services before sales tax, was discarded. This hidden tax often went unnoticed by consumers. Once gone, clubs could keep prices the same and pocket the profit that normally would have been eaten up by the tax... or the more noble courses could provide a discount for golfers by cutting the price. ¶ The October-November 1965 issue of *Golfdom* utilized a survey to see what golf courses would do with this new tax break. Would they do course renovations they previously couldn't afford? Acquire new equipment? Add facilities such as pools or tennis courts? The possibilities opened up as the tax disappeared. ¶ To read the original three-page story, visit golfdom.com/category/online-exclusive.

Questionnaires were distributed to some 800 club presidents, managers and course operators on a basis that considered geographical location and the size and type of club.

Of the club officials responding, 64.1 percent indicated they will raise their dues to include the money formerly paid as tax; 22.2 percent will keep dues at the same level; and 13.7 percent had not reached a decision on the matter at the time of the survey. Numerous respondents in the last category, however, revealed that they were thinking in the direction of a 20 percent increase in dues although a final verdict had not been reached. Based on these actual survey figures and voluntary marginal notes, it appeared likely that nearly 75 percent of clubs participating in the poll would utilize the former tax money for the club treasury.

New bonanza in '66

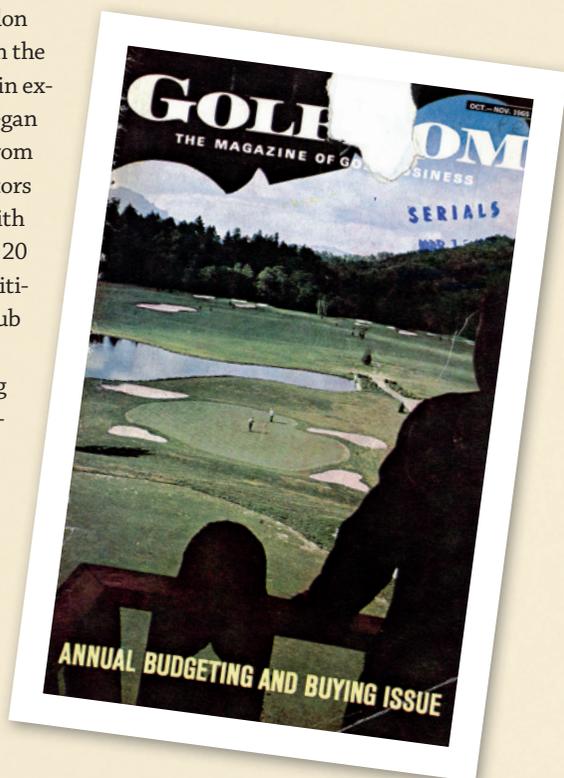
Golfdom's exclusive survey reveals that the majority of clubs will use the excise tax savings for major improvements

BY GOLFDOM STAFF

America's golf clubs are preparing for an all-time spending spree in 1966, and the new year should mark the beginning of one of the most prosperous eras the game has ever known. These factors were clearly indicated in a recent survey conducted by *Golfdom* among club officials and managers to determine how the repeal of the 20 percent Federal Excise Tax on club dues has influenced future planning.

The results of the nation-wide inquiry reveal that a majority of clubs are preparing their treasuries for a new bonanza on Jan. 1, when the tax bite is officially lifted, and the bulk of this money will be appropriated for expansion, renovation and new purchases. Other clubs indicate that the tax repeal will enable them to put their books in the black for the first time in years without levying a special assessment on the membership.

Shortly after President Lyndon B. Johnson put his signature on the massive \$4.8 billion reduction in excise taxes last June, *Golfdom* began to receive a flood of inquiries from club officials and course operators for advice on how to proceed with the collection of club dues. The 20 percent tax on club dues and initiation fees had been borne by club members for 22 years, and the total repeal came with startling suddenness. The most optimistic of those who had waged the campaign for its reduction had predicted that the Congress would, at best, cut it in half. Since the six-months interim period gave officials a chance to prepare for an orderly adjustment, *Golfdom* set out to take a sampling of reaction to the potential windfall.





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GOLF'S GOT 99 PROB BUT IS THE BIG CUP O

BY SETH JONES

In an effort to increase play, variations of the standard golf cup have entered the game, causing traditionalists to cry foul and throwing superintendents another curveball.

The golf gods were not smiling upon Pheasant Run. They may have even been angry this particular day.

Andrew Hardy, superintendent at Pheasant Run Golf Club, Sharon, Ontario, and his crew had just spent 10 hours putting out 15-inch cups for an event on nine of their 27 holes. Now all they needed were golfers to come out and give these big cups a roll.



Andrew Hardy

Tradition. The game is steeped in tradition. But what is it not steeped in these days? Rounds played. Revenue. Course openings.

Can tradition pay the water bill?

Size matters

The standard golf hole is 108 millimeters wide — approximately 4 ¼ inches. When it comes to playing golf, maintaining a handicap, bragging about a long putt for birdie, this is the only hole.

After all, no one has ever bragged with a straight face about a hole-in-one on an alternative cup, right?

In recent years, larger cups have entered the game. From a shade larger than the standard 4 ¼-inch cup to the whopper, a 15-inch hole (hard to call something 15-inches wide a 'cup'), the intentions are good. But the reaction is mixed.

"Some of the traditional golfers thought we lost our mind when we put the 8-inch cup in the ground, even though we had an 18-hole traditional option available right next door," says Anthony Williams, CGCS, CGM, Stone Mountain (Ga.) Golf Club, who happens to be recovering from open heart surgery apparently not caused by the new cup size. "We have to insulate the guys who have been teeing it up every Tuesday morning since 1969, because those traditionalists see it and they spit venom."



Anthony Williams

Steve Mona, CEO of the World Golf Foundation, on his way to Barcelona to speak to members of the European Golf Course Owners Association concerning, coincidentally, the perception of golf, says that he's never played on an alternative cup. That doesn't mean he's one of those traditionalists opposed to them.



Steve Mona

"I think as an entry point (alternative cups) are fine. For instance, people who have never played, or who have played and left the game. If they're more encouraged to come out and play 8-inch or 15-inch cups, that's good," he says. "My position is anything that creates more interest and activ-

Continued on page 24



LEMS, NE?



Nick Goettsche, assistant superintendent at Boone Creek GC, Bull Valley, Ill., cuts a 15-inch cup. Boone Creek was one of about 100 courses to test 15-inch cups this year as part of a pilot program.



More popular than the big cups with Mike Kearns' kids, Cameron and Aidan, was a FootGolf setup they helped with.

Continued from page 22

ity in the game is good, so long as it's not counter to the rules and the conventions of the game."

What about maintenance challenges? Is an oversized cup popular with superintendents and their crews?

"From a maintenance standpoint, (the plugs) are not easy to set back into the ground and level," says Michael Heustis, superintendent at Chicago Highlands Club in Westchester, Ill. "It seems like for weeks you can see where the big cup was cut. As a rule, the smaller the plug, the easier it is to match up."

"Getting the plugs back in is a battle. That's my biggest gripe," says Mike Kearns, superintendent at Crowne Isle Resort and Golf Community, Courtenay, British Columbia. Kearns has tried the 15-inch cups as well as FootGolf on his course, with some success.

"The men's/women's group wanted to play night golf on (the 15-inch cups)," he says. "They're labor-intensive (to install). If we're going to do it, we have to make sure it's worth it and we get enough golfers to make it work."

Heustis says that big cup events have done well at his course, but mostly, being a new course with a new membership, they're just trying to key in on what the membership likes.

"The thing they're going to remember is holing a 30-foot putt, or chipping in," Heustis says. "It's a fun event for the family. If you've got young kids, (big cups) are an easy way to get them more involved."

Point of entry

If you want a 15-inch golf cup and cutter, there's only one place to get it: Par Aide Products Co. The biggest of the big cups

"We're so caught up in tradition and golf being a certain way. It's not going to change."

came from an idea that started at the 2014 PGA Merchandise Show with TaylorMade golf.

"They approached us as experts and asked us if we could develop it," says Dan Brown, sales and marketing manager for Par Aide. "They weren't looking to replace the golf cup, but trying to find a way to get kids and novices involved in the game."

Brown raises a good argument when it comes to sports and entry points for kids. It seems like every other sport has an easier version for kids to learn before graduating to the normal game. In basketball, the rim is lowered and the ball is smaller. In baseball, a tee takes out the difficulty of a moving ball. Even bowling has bumpers in the gutters so kids can enjoy success despite having no control over a bowling ball.

"Golf has always had the same equipment for adults and kids. Same ball, same hole," Brown says. "Kids will spend eight strokes just getting the ball to the green before they can putt. That's no fun."

Lind Hunemuller, account executive with Standard Golf, says they offer customers 6-inch and 8-inch cups, and have had some success with both. Last year they sold just shy of 2,000 8-inch cups.

"Clubs want to know how to get more people involved," Hunemuller says. "It's fun for kids, for couples."

But he adds, they're not for everyone.

"I played on the 6-inch cups, I thought I'd make more putts, but I didn't," he laughs. "These cups aren't for me. I'm more old-school."

Breaking barriers

The big cups successfully brought Stone Mountain new business after their late summer/early fall aeration. Typically it's a challenge to get golfers at this time of the year, so the resort lowers rates.

"It helped us fill in some spots that are typically slow," Williams says. "Usually we just drop the rates way down and play it out for two or three weeks. This time, we dropped the rates but not as much, and encouraged people to come out, get in some golf, and still be home in time for the football game."

Kearns says what he thinks about most when it comes to business is overcoming the intimidation people may have who aren't familiar with his facility. Crown Isle is in a town of 40,000 people, it's located in an affluent area and the clubhouse is an eye-popping 48,000 square feet.

"People don't come to eat because they

think we're private. People don't golf because they think we're expensive or you need to be a member," he says. "We think of these problems quite often. If we can get 125 kids up here... maybe the kids don't play golf, but maybe their parents can discover what we have to offer."

To Kearns, it's not about an oversized golf cup. To him, it's about breaking down barriers.

"People think you have to be a really good golfer to come out here. We want people who don't even play to come out and see what we have to offer," he says. "Parents can let their kids hit the range while they see what we have, just to get a taste. I don't think (alternative golf) will stick, but maybe it can break down barriers."

Williams plans on bringing the big cups out again in the spring. He used the 8-inch cups on 18 of his 36 holes and left them out for six weeks. Williams says the crew didn't change cups daily because there is less wear around the cup. "People aren't grinding out the 3-footers on these cups," he says.

"We learned some things," Williams continues. "We'll be more successful next time. I had a lot of supers ask me if I lost my mind. We believe with 36 holes we have flexibility, whether we take nine holes or

18, to offer golfers variety. It's a viable way to introduce new business to the club. Maybe it'll lead to an occasional round, or channeling them to instruction. But the biggest thing is, we weren't doing enough to be a welcome mat. I want this place to be a 340-acre welcome mat. I want people feeling comfortable coming to the club."

A cup, not a windmill

The way courses utilize these alternative golf cups will continue to evolve. As Williams says, it's a learning process. Certainly, golf courses and golf accessory companies will strive to continue to find new ways to be successful.

"We're trying to do our part," Par Aide Products' Dan Brown says. "We've had some negative feedback on Twitter. We're not trying to change the game — we're not going to introduce a clown's mouth or a windmill to the game. We're trying to

help grow the game."

"We're so caught up in tradition and golf being a certain way. It's not going to change," Pheasant Run's Hardy says. "Golf costs too much. When you give families the option of a round of golf or spending some time at the lake, they'll always choose the lake over golf."

"We know we want more golfers," Williams says. "And I know the one place I'm not getting them is from the golfers we currently have. They're dying off. We have to do something to get the new breed in here."

Another thing Williams has learned: keep the big-cup golfers and the regular golfers separated.

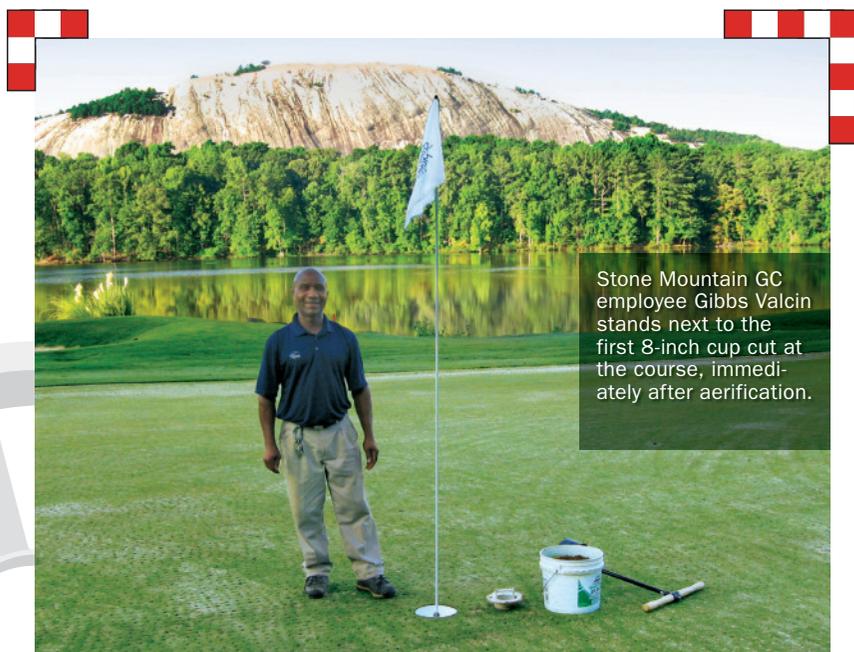
"If you mix rank amateurs with guys who know what they're doing, you'll have problems," he says. "The pace, the knowledge of the game, the etiquette is all different."

He says he's seen the old guard trying to talk newbies out of the big cups in the clubhouse bar. It's something that makes him cringe, because he just wants to see people at ease and enjoying themselves at the facility.

"The goal is to have the beginner come out and have this great experience and want to come back. You don't want to make this effort just to have them come in and get stressed out," Williams says. "We're so stuck on some traditions in our industry. Sometimes, I think we'd rather our ships sink than make adjustments." ©



Scott Melling of Par Aide displays the blade designed to cut the 15-inch cup.



Stone Mountain GC employee Gibbs Valcin stands next to the first 8-inch cup cut at the course, immediately after aeration.

PHOTO COURTESY: STONE MOUNTAIN GC; BY SETH JONES



What's the next **BIG**

Record-setting grounds maintenance conference shows

Last year we received a great response from our article detailing the next three 'big ideas' from Spectrum Technologies, Inc. So this year, I'm bringing it back. But instead of three ideas from one company, why not a handful of ideas from one trade show?

Enter last month's GIE+Expo in Louisville, Ky. The GIE+Expo drew 19,000 attendees to its biggest show ever — 1.3 million square feet, or the size of 23 football fields. Unfortunately, the golf industry isn't seeing the same boom with its big annual trade show, the Golf Industry Show, but maybe the GIE+Expo's numbers are a sign that things are slowly turning around.

Meanwhile, if you ever have a chance, GIE+Expo is worth checking out. Always held in late October, there are a lot of cool toys, with many of the same vendors as the GIS, while including a bunch of companies you won't find there, plus the ride and drive area is huge! Also, our sister publication, *Landscape Management*, hosts one heck of a party at Goose Island in the 4th Street Live party

district... where you'll find more than a few golf folks, including yours truly. Come see us there next year.

I love checking out new gadgets, and this is a snapshot of a few products I saw that might be interesting to you. Some of these you may roll your eyes at, but who knows, others might set off that light bulb.

Polaris GEM M Line Utility Vehicles

The Polaris outdoor demo area was packed, but I took the time to brave the line, and it was worth the wait.



PHOTO BY: SARAH PLEDDERER; SETH JONES



IDEA at GIE+Expo?

off some products that could be a fit for superintendents.

They gave me time on all six of the utility vehicles they had there, but two stood out for superintendents: the eM 1400 LSV and the eM 1400.

These are stylish vehicles, and I know a few superintendents who value style and a good looking ride (we've run photos of some of those rides in the magazine recently). Both vehicles are all electric (quiet!), and both have a range of 45 miles on a single charge. The 1400 LSV is street legal with a max speed of 25 mph, while the 1400 is fitted with turf tires and can carry a payload of appropriately 1,400 pounds. (The 1400 LSV can handle a max payload of 1,250 pounds. *Hmm.*)

BioPac'r

One of the busiest booths I saw was BioPac'r, right around the corner from the *Landscape Management* booth. It was one of those 10-foot-by-10-foot booths with only one product and one salesman, but it was never empty.

Maybe that's because Todd Graus, the inventor of the BioPac'r, has a machine that offers grounds managers an alternative way of making money. How? By selling grass clippings to farmers.

The BioPac'r, while complicated to spell, is simple in function. It takes grass clippings, compresses



them, and pushes the compressed block of clippings into a bag. One man's trash is another man's treasure. The resulting silage is valuable to farmers and dairy operators.

However, like Pee-Wee Herman says in "Pee-Wee's Big Adventure," "Everyone I know has a big 'but'... let's talk about your big but."

My big but is this: is golf turf safe for livestock? According to Graus, once the clippings go through the

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GIE+EXPO

THE GREEN INDUSTRY & EQUIPMENT EXPO



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silage process and cook for 14 to 28 days, it's good to go. He has further research available on his website, biopacr.com.

I brought this idea up with Cole Thompson, Ph.D., at Cal Poly State University, while we were discussing his research story in this month's issue (check it out on page 35.) He had never heard of this being done on a golf course before, but he found the idea intriguing, especially for courses who are already bagging clippings from some areas.

Frostbite Weed Control System

From cooking clippings for cash to freezing weeds to death — how's that for a segue?

The concept of the Frostbite is also simple. Take a canister of CO² and attach a blower to it. Then walk around and freeze weeds to death. No mess, all natural, with results in a matter of hours.

The product has been available for six months, and according to Rick Howerton, COO of the company, was doing well at the GIE+Expo show. They were selling the Frosbite for \$499 as a show special, with a regular price of \$599. He plans on exhibiting at the Golf Industry Show in San Antonio in February 2015.



"We have been talking to superintendents, and we have data from N.C. State that shows that we kill *Poa annua* in bentgrass, which is getting interest," Howerton told me. "We're finding a lot of traction in New England, the West Coast, the upper Midwest, and we started talking to people in Canada because they're herbicide-free."

Howerton says a half-second burst on the undesirable weed will do the

trick. With a common 20-pound CO² canister, a user can get 600 to 800 bursts. For more information, visit frostkills.com.

Hydretain

Hydretain has been around since the 1990s, but they're still hard at work getting their message out.

Hydretain is a liquid group of hygroscopic and humectant components that attract water like "tiny water magnets" and make available to plant roots microscopic moisture that would otherwise be lost to evaporation.

"We want superintendents to know that there is water conservation technology available that is quite different than wetting agents or super-absorbent polymers, (and) that have the ability to go down as a liquid or granular, and dramatically reduce watering," says Rick Irwin, president, Ecologel Solutions.

A recent success that caught my ear was the University of Texas Golf Club, which, according to the superintendent, cut their watering by a third, thanks to the technology. And as we all know... it gets hot down there in Austin.

Another benefit: according to Irwin, it's great before tournament play, because you can still allow the course to dry out to increase green speed, while maintaining color longer and accelerating recovery afterwards. You can learn more by visiting them at the GIS, or click over to hydretain.com.

K100

From a product that acts like a water magnet... to a product that burns water. Today, I'm the segue king.

K100 is another product that isn't new, but it's getting a push right now in the lawncare and golf markets, and according to Lo-





retto Thompson, vice president of sales and marketing, they will be at the GIS in San Antonio to pitch to superintendents.

“(Users are) going to boost their octane, they’ll have cleaner fuel for their fuel injector, and if they’re not using their equipment for a long time, it has a stabilizer, (so stagnant equipment will) still start right up on the first try,” Thompson says. “We found that customers have lower maintenance, the equipment is running more regularly and their fuel is much more efficient.”

According to the company, K100 stabilizes fuel for up to 2 years, increases octane ratings by 1.5 to 2 points and replaces lost lubricity. And of course, their motto is “We make water burn!”

Thompson says the product, which comes in various formulations, has been catching on with universities. For more information, visit k-100.com.

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// INFESTATIONS

CONTROLLING LESSER SWINECRESS IN CREEPING BENTGRASS GREENS

By Jared Hoyle, Ph.D.

The prevalence of lesser swinecress (*Coronopus didymus* (L.) Sm.) on golf courses has increased over the last decade. Tolerance to close mowing, heavy traffic and the ability to reproduce under intense management conditions has led to infestations of lesser swinecress on creeping bentgrass putting greens.

Minimal research has examined the postemergence control of lesser swinecress in turf. Field experiments were initiated during 2009 and 2011 in Fort Stockton, Texas, on established lesser swinecress infestations present in an L-93 creeping bentgrass putting green. Treatments included three herbicides applied once and sequentially. Herbicide treatments were MCP + 2,4-D + dicamba (0.238 + 0.148 + 0.060 lbs. ae per acre), sulfentrazone (0.125 lbs. ae per acre) and carfentrazone (0.015 lbs. ae per acre). Treatments were applied on June 12, 2009 and May 31, 2011. Sequential applications were made five weeks after initial treatment on July 17, 2009 and July 5, 2011. A non-treated check was included for comparison.



Lesser swinecress growing in a creeping bentgrass putting green.

Creeping bentgrass phytotoxicity was ≤ 2 percent throughout the length of the trial, regardless of herbicide treatment. Plots treated with MCP + 2,4-D + dicamba resulted in 86 percent lesser swinecress control four weeks after initial treatment. Plots treated with sulfentrazone had 22 percent lesser swinecress control, while carfentrazone was ineffective four weeks after initial treatment. Single and sequential applications of MCP + 2,4-D + dicamba resulted in 91 percent and 99 percent lesser swinecress control, respectively, 10 weeks after initial treatment. Control with single and sequential applications of sulfentrazone was 14 percent and 31 percent respectively, 10 weeks

after initial treatment. No lesser swinecress control was observed 10 weeks after initial treatment in response to single and sequential applications of carfentrazone.

Sequential applications of MCP + 2,4-D + dicamba controlled lesser swinecress in this study without injuring creeping bentgrass turf. Thus, this herbicide may provide superintendents with a new option for lesser swinecress control in creeping bentgrass putting greens.

Jared Hoyle, Ph.D., Chase Straw, Gerald Henry, Ph.D., Tyler Cooper, Leslie Beck, Ph.D., and AJ Hephner. Jared Hoyle is a turfgrass extension specialist at Kansas State University and can be reached at jahoyle@ksu.edu for more information.

NEWS UPDATES

GCSAA REQUESTS SUPERINTENDENT PARTICIPATION IN GCEP SURVEY

The Golf Course Superintendents Association of America currently is collecting important data from superintendents nationwide regarding water use and conservation in the game through the Golf Course Environmental Profile (GCEP) Water Use and Conservation Practices Survey. The survey is funded by The Environmental Institute for Golf through sponsorship by the USGA. This survey is the first step in the second phase of the GCEP, an effort to help measure the industry's efforts over time.

The GCSAA is asking members and nonmembers to take the 15-minute survey at gcsaa.org.

The data gained from this survey can be used to respond to government inquiries and proposed regulations, support research and innovation, and provide education and resources for golf course managers. It also aids in creating a historical record of how management of golf courses has changed over time, demonstrating the game's environmental stewardship.



A MIXTURE OF BERMUDAGRASS AND ZOYSIAGRASS ON A FAIRWAY OFTEN RESULTS IN REDUCED TURF QUALITY AND PLAYABILITY..."

Enzhan Song and Xi Xiong, Ph.D.
(see full story on page 32)

// BERMUDAGRASS CONTROL

Selective postemergence herbicide control of bermudagrass in zoysia fairways

By Enzhan Song and Xi Xiong, Ph.D.

Bermudagrass (*Cynodon* spp.) and zoysiagrass (*Zoysia* spp.) are commonly used on golf course fairways in the warm season and transition zones (Shaver et al., 2006). In Missouri and neighboring states located at the northern transition zone, common bermudagrass (*C. dactylon* (L.) Pers.) cultivars such as Westwood, Quickstand and U3 were once popular grasses for fairways (Dunn et al., 2001). However, because of repeated winterkill in the 1990s, a majority of Missouri golf courses renovated fairways from common bermudagrass to Meyer zoysiagrass (*Z. japonica* Steud.) (Foy, 2001).

Despite the renovation efforts, many superintendents in this region report the encroachment of common bermudagrass, with its characteristics of coarse leaves, thick and long stolons, and an aggressive growth habit. A bermudagrass/zoysiagrass mixture on a fairway often results in reduced turf quality and playability because of incompatible color, texture and growth rate of the two species (Fig. 1).

Bermudagrass is a difficult weed to control. For non-selective control it typically requires three sequential applications of glyphosate to obtain satisfactory (>95 percent) bermudagrass control (Teuton et al., 2005). Alternatively, previous research reported that aryloxyphenoxypropionate (AOPP) herbicides such as Acclaim Extra (fenoxaprop) and Fusilade II (fluazifop) are promising for selective control of bermudagrass in various warm- and cool-season grasses (Johnson et al.,

FIGURE 1



Bermudagrass encroachment (darker areas) in zoysiagrass on the 9th fairway of the Falls Golf Club in O'Fallon, Mo. Photograph was taken in May, 2010.

1992). When tank-mixed with Turflon Ester (triclopyr), AOPP herbicides cause more injury to bermudagrass than to zoysiagrass, and up to 76 percent suppression of bermudagrass (McElroy and Breeden, 2006).

Tenacity (mesotrione) is an alternative tank-mix partner with AOPP herbicides for selective removal of bermudagrass. Willis et al. (2006) reported that Tenacity reduced bermudagrass cover by 45 percent to 98 percent when applied alone or tank-mixed with AOPP herbicides. Although the label indicates potential phytotoxicity to zoysiagrass, Huckabay (2008) reported three sequential applications of Tenacity up to 4 fl. oz. /A resulted in just a maximum of 15 percent injury to Meyer zoysiagrass. To date, there are no studies evaluating tank mixtures of Acclaim Extra and Fusilade II with

Tenacity on golf course fairways to determine long-term control of bermudagrass in zoysiagrass turf.

MATERIALS AND METHODS

Field plots were established on the ninth fairway of The Falls GC in O'Fallon, Mo. The fairway was established with Westwood bermudagrass in 1994 and renovated to Meyer zoysiagrass by sod in 2009, following three sequential applications of Roundup Pro (glyphosate) at 4 qt. /A applied four weeks apart.

Shortly after sodding, bermudagrass began invading fairways and becoming interwoven with zoysiagrass (Fig. 1). The fairway soil was a Keswick silt loam with a pH of 6.7 and 4.5 percent organic matter. The fairway was maintained at a 0.56 inch mowing height and received 3.0 lbs. nitrogen /1000 ft² fertilizer annually. Field plots measured 5 by 10 ft. and were established on two locations of the same fairway and arranged as a randomized complete block design with four replications for one location and

A majority of Missouri golf courses renovated fairways to Meyer zoysiagrass.

three replications at the second location because of space limitations. Locations were fairly uniform with the possible exception of one area that had heavy golf cart traffic.

Along with an untreated control, treatments included Acclaim Extra or Fusilade II tank-mixed with Turflon Ester or Tenacity and applied to the same plots over two years (Table 1). The initial application was made on June 9, 2010, with applications made three, six, eight and 10 weeks after initial treatment in the first growing season, and 52, 56 and 60 weeks after initial treatment during the second growing season. Treatments were tank mixed with a non-ionic surfactant at 0.25 percent v/v, and applied with a backpack sprayer.

Zoysiagrass injury was rated on a 0- to 100-percent scale with 0 being no injury and 100 percent meaning complete death. Bermudagrass coverage also was rated on a 0- to 100-percent scale, with 0 percent meaning no bermudagrass and 100 percent meaning complete bermudagrass coverage. Results were statistically analyzed and mean separation was conducted based on Fisher's Protected LSD ($P = 0.05$). Percent bermudagrass

coverage data were arcsine transformed prior to analysis. For clarity, non-transformed means were presented, as there were no differences in interpretations.

RESULTS AND DISCUSSION

Zoysiagrass injury data are presented separately for high traffic area (HTA; Fig. 2A) and low traffic area (LTA; Fig. 2B).

Treatments containing Acclaim Extra or Fusilade II and Turflon Ester resulted in 5 percent or less injury to zoysiagrass at both locations, regardless of the rates applied. These results agree with Lewis et al. (2010), who reported less than 7 percent

Continued on page 34

TABLE 1

Percent coverage (%) of bermudagrass after eight applications of herbicides over a two year period in two locations on a golf course fairway. No treatment-by-location interaction was detected; therefore, data were pooled across the locations.

Treatment ^a	Rate (fl. oz./A)	0 WAIT ^b	12 WAIT	52 WAIT	64 WAIT
		Percent bermudagrass cover (%)			
Acclaim Extra + Turflon Ester (low)	28.0 + 6.6	32.1 a ^c	1.8 bc	11.7 ab	0.8 b
Acclaim Extra + Turflon Ester (high)	24.0 + 24.0	12.4 bc	0.5 c	4.4 bc	0.1 b
Fusilade II + Turflon Ester	5.2 + 28.6	10.6 bc	0.2 c	2.0 c	0.0 b
Acclaim Extra + Tenacity	28.0 + 5.0	12.8 bc	1.3 bc	— ^d	—
Fusilade II + Tenacity	5.2 + 5.0	20.4 ab	6.8 ab	—	—
Untreated	—	6.6 c	10.8 a	14.9 a	19.2 a

^a Initial applications made on June 9, 2010, with sequential applications made 3, 6, 8, 10, 52, 56 and 60 weeks after initial application.

^b WAIT = weeks after initial treatment.

^c Means within the same evaluation date in each location followed by the same letters are not significantly different according to Fisher's Protected LSD ($P=0.05$).

^d Treatments containing Tenacity were not applied after 10 weeks after initial treatment due to severe injury to zoysiagrass.

FIGURE 2A & 2B

Bermudagrass control in the Falls

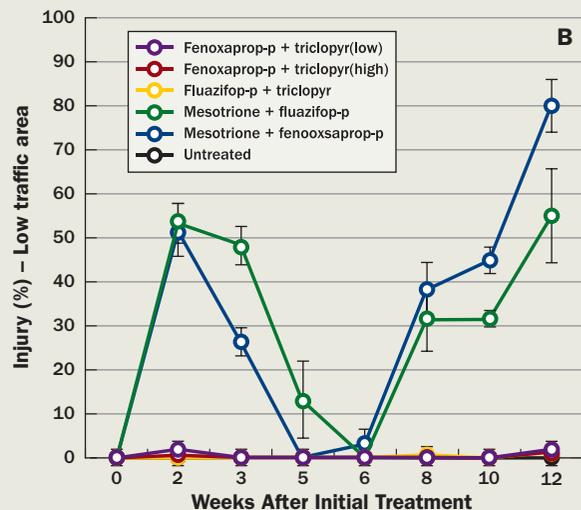
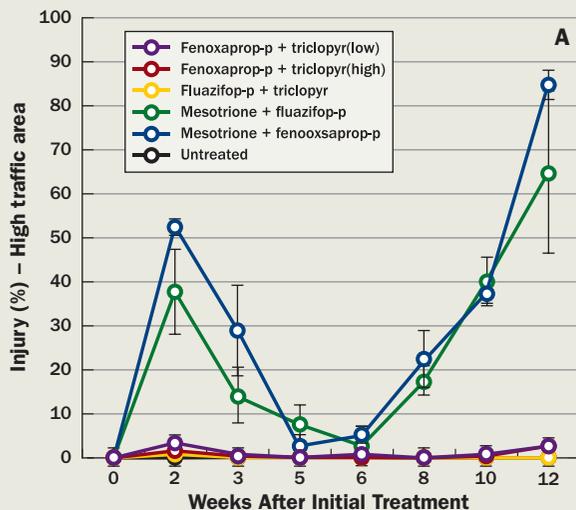


FIGURE 3



Zoysiagrass injury caused by treatments containing Tenacity in tank-mixture with Acclaim Extra or Fusilade II. Photograph was taken two weeks after the initial application. Zoysiagrass in the highlighted plots showed stunted growth and chlorosis.

Continued from page 33

visual injury to zoysiagrass following three applications of Acclaim Extra or Fusilade II tank-mixed with Turflon Ester at monthly intervals. However, Tenacity tank-mixed with Acclaim Extra or Fusilade II resulted in unacceptable injury to zoysiagrass within 2 weeks after initial treatment, and showed 80 percent and 60 percent injury respectively at 12 weeks after initial treatment. Injury symptoms to zoysiagrass were characterized as chlorosis and stunted growth (Fig 3). Subsequently, treatments containing Tenacity were not applied during the second growing season.

There was no treatment-by-location interaction in percent bermudagrass cover, and data were pooled across the two locations. At 12 weeks after initial treatment, all treatments with Acclaim Extra or Fusilade II tank-mixed with Turflon Ester or Acclaim Extra tank-mixed with Tenacity significantly reduced bermudagrass cover to 2 percent or less, compared with the untreated control (Table 1).

The Fusilade II plus Tenacity treatment resulted in statistically similar bermudagrass cover compared with control plots. Prior to herbicide applications in the second year (52 weeks

after initial treatment), bermudagrass coverage in the treated plots increased slightly, indicating the need for multiple years of applications. However, all treatments with Acclaim Extra or Fusilade II plus Turflon Ester resulted in less than 1 percent bermudagrass cover by 64 weeks after initial treatment.

In comparison, bermudagrass cover in untreated plots increased to nearly 20 percent, a threefold increase during the two-year period. Plots that received Fusilade II tank-mixed with Turflon Ester showed 100 percent bermudagrass control at the end of the two-year period.

CONCLUSION

Our data suggest that even though Tenacity tank-mixed with Acclaim Extra suppresses bermudagrass similarly to Turflon Ester mixed with Acclaim Extra or Fusilade II, tank mixtures with Tenacity lead to unacceptable zoysiagrass injury and therefore should be avoided. Furthermore, multiple applications of Turflon Ester plus Acclaim Extra or Fusilade II can provide almost complete suppression of bermudagrass with minimal injury to zoysiagrass, but applications may be needed over multiple years to maintain suppression.

Acknowledgment

We would like to thank Rob Schaff, superintendent at The Falls Golf Course, for providing the experimental site. We also thank MVGCSA and HAGCSA for their financial support of this research.

Enzhan Song is a graduate research associate and Xi Xiong, Ph.D., is a turfgrass scientist at the University of Missouri. Xiong can be contacted at xiongx@missouri.edu for more information.

This article is adapted from a publication in the online journal *Applied Turfgrass Management*.

References

- Dunn, J.H., Warmund, M.R., and Fresenburg. 2001. Bermudagrass cold tolerance. Pages: 28-29 in: University of Missouri Turfgrass Research Report. University of Missouri, Columbia, MO.
- Foy, J. H. 2001. Bermudagrass fairway renovation — why it is being done and the results that have been achieved. USGA Green Section Record, 39(4): 13-15.
- Huckabay, G.H. 2008. Tufted lovegrass (*Eragrostis pectinacea*) and dowweed (*Murdannia nudiflora*) control in warm-season turfgrass. M.S. Thesis. Auburn University.
- Johnson, B. J. 1992. Common bermudagrass (*Cynodon dactylon*) suppression in zoysia spp. with herbicides. *Weed Technol.* 6:813-819.
- Lewis, D. F., McElroy, J. S., Sorochan, J. C., Mueller, T. C., Samples, T. J., and Breeden, G. K. 2010. Efficacy and safening of aryloxyphenoxypropionate herbicides when tank mixed with triclopyr for bermudagrass control in zoysiagrass turf. *Weed Technol.* 24:489-494.
- McElroy, J. S. and G.K. Breeden. 2006. Triclopyr safens the use of fluzafop and fenoxaprop on zoysiagrass while maintaining bermudagrass suppression. Online. *Appl. Turfgrass Sci.*
- Shaver, B. R., Richardson, M. D., McCalla, J. H., Karcher, D. E., and Berger, P.J. 2006. Dormant seeding bermudagrass cultivars in a transition-zone environment. *Crop Sci.* 46:1787-1792.
- Teuton, T. C., Unruh, J. B., Brecke, B. J., Miller, G. L., and Mueller, T. C. 2005. Hybrid bermudagrass (*Cynodon dactylon* (L.) Pers. x *C. transvaalensis* Burtt-Davy) control with glyphosate and fluzafop. Online. *Appl Turfgrass Sci.* doi:10.1094/ATS-2005-0119-01-RS.
- Willis, J.B., D.B. Richer, and S.D. Askew. 2006. Selective bermudagrass control in cool-season turfgrass with mesotrione, triclopyr and fenoxaprop. Proceedings: Northeastern Weed Science Society, Vol. 60:90.

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PHOTO COURTESY OF: XI XIONG, PH.D.

// GETTING RID OF ROUGH BLUEGRASS

Controlling *Poa trivialis* with glyphosate

By Cole Thompson, Ph.D.; Jack Fry, Ph.D.; Megan Kennelly, Ph.D.; Zac Reicher, Ph.D.; and Matt Sousek

Rough bluegrass (*Poa trivialis* L.) is a cool-season perennial turfgrass commonly encountered in temperate climates because of years of intentional and unintentional propagation. The major commercial uses of rough bluegrass have been for winter overseeding of warm-season turfs in the southern U.S. and for establishment in shaded, moist sites. Unintentional rough bluegrass propagation is thought to occur vegetatively during routine cultivation and from seed lot contamination of desirable species (Reicher et al., 2013).

Regardless of commercial uses, rough bluegrass is most commonly described as a persistent weed in cool-season turfgrasses because of its color, sensitivity to heat and drought stresses compared with other turfgrass species and invasive, stoloniferous growth habit.

CURRENT APPROACHES

Currently, Velocity (bispyribac-sodium) is the only product labeled for selective rough bluegrass control in cool-season turf and is registered for use on sod farms and golf courses only. Multiple applications may reduce rough bluegrass groundcover, but can also injure desirable species (McCullough and Hart, 2011).

Nonselective herbicides are the only other reliable rough bluegrass control options for cool-season turfgrass managers, and the only option in home lawns. Late-summer or fall glyphosate applications would be most practical as they are commonly followed with overseeding. However, rough bluegrass persistence is anecdotally reported after glyphosate application in late-summer, and effective control of other cool-season turfgrass species with glyphosate varies.

Recent research suggests that

FIGURE 1



Laser Rough bluegrass growing adjacent to annual bluegrass.

Kentucky bluegrass (*Poa pratensis* L.) is best controlled with glyphosate in spring, but tall fescue (*Festuca arundinacea* Schreb.) control is best following summer glyphosate application (Adkins and Barnes, 2013).

Because glyphosate is currently the most accessible herbicide for rough bluegrass control, the objective of this project was to refine application timing to optimize control.

THE EXPERIMENT

Replicated field studies were conducted from 2011 to 2013 on rough bluegrass maintained at 2.5 inches at the Rocky Ford Turfgrass Research Center in Manhattan, Kan., and the John Seaton Anderson Turf Research Center in Mead, Neb. Two separate studies were conducted in Manhattan (2011 and 2012) on Laser rough bluegrass. A third study was initiated in Mead on Winterstar rough bluegrass in 2012.

The objective of this project was to refine application timing to optimize control.

In each study, Glyphomate 41 (glyphosate) was used at 3 lbs a.i. per acre in spring, midsummer, or late-summer. Percent green rough bluegrass cover was visually estimated monthly and analyzed statistically during the growing season and approximately one year after initial spring treatments.

EFFECT OF GLYPHOSATE TIMING

In each study, all glyphosate application timings initially reduced green rough bluegrass coverage to 0 percent, but rough bluegrass recovery varied among application timings.

Continued on page 36

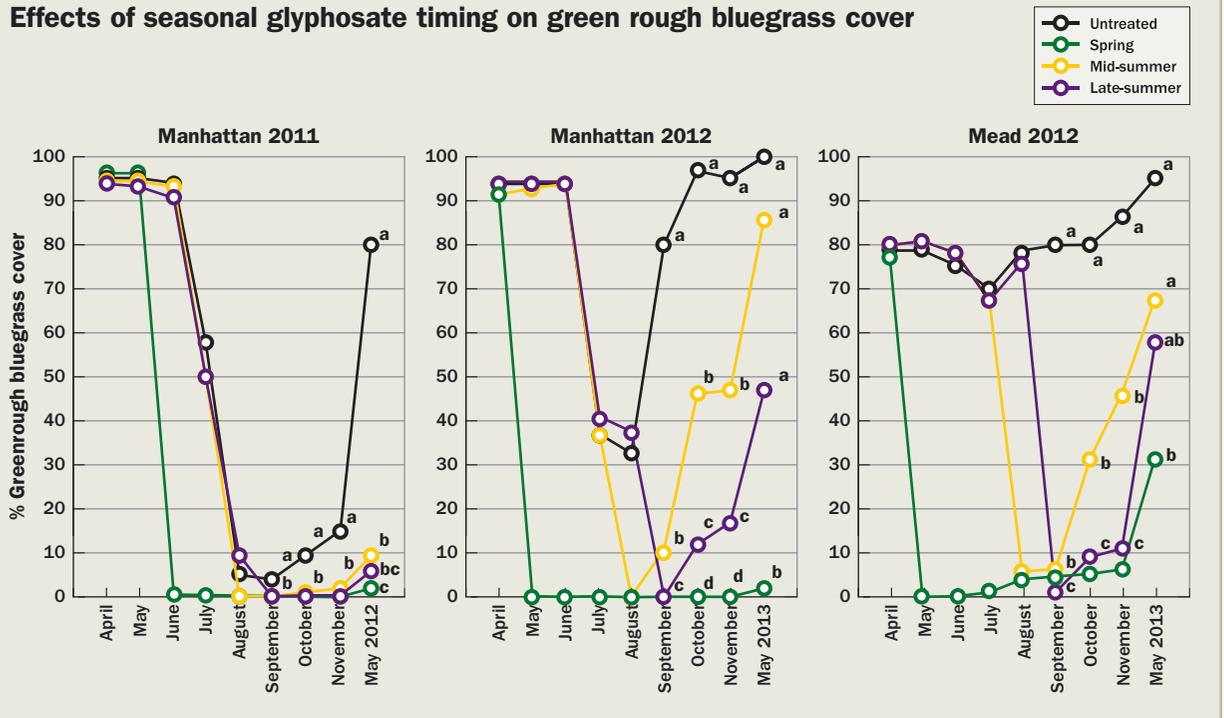
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In Manhattan (2011), glyphosate was applied on May 21 (spring, 96 percent green coverage), July 26 (midsummer,

51 percent green coverage) and August 25 (late-summer, 9 percent green coverage). Untreated rough bluegrass declined to <10 percent cover in September, recovered to nearly 20

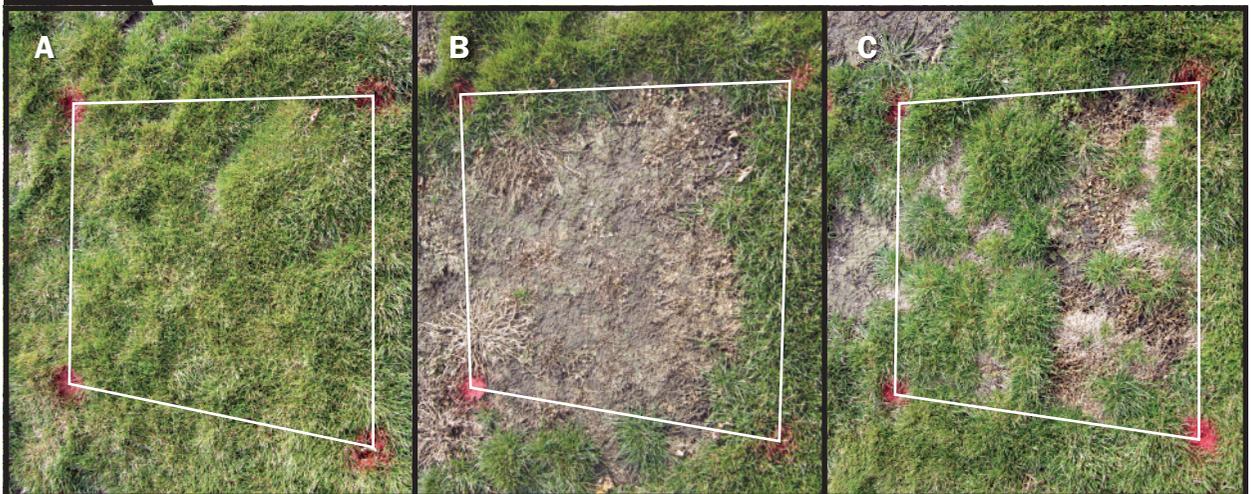
FIGURE 2

Effects of seasonal glyphosate timing on green rough bluegrass cover



Effects of seasonal glyphosate timing on green rough bluegrass cover in Manhattan, Kan., in 2011 and 2012 and in Mead, Neb., in 2012. In Manhattan (2011), applications were made on May 21 (spring), July 26 (mid-summer) and Aug. 25 (late-summer). In Manhattan (2012), application dates were April 23 (spring), July 27 (mid-summer) and Aug. 30th (late-summer). In Mead (2012), application dates were May 4 (spring), July 31 (midsummer), and Sept. 6 (late-summer). On individual dates, means with the same letter are not statistically different according to Fisher's protected LSD ($P \leq 0.05$).

FIGURE 3



Effects of seasonal glyphosate timing on green rough bluegrass cover the spring following treatment in Manhattan, Kan., on May 30, 2012. A) Untreated rough bluegrass; B) rough bluegrass treated with glyphosate in spring; C) rough bluegrass treated with glyphosate in mid-summer.

PHOTO COURTESY: COLE THOMPSON

percent green cover by the end of the growing season, and averaged nearly 80 percent green cover by the next spring.

All glyphosate timings reduced green cover to <10 percent in the spring following treatment and spring-applied glyphosate resulted in lower green rough bluegrass cover (1 percent) compared with that applied in midsummer (9 percent) (Figures 2 and 3).

Greater rough bluegrass recovery was observed in the studies in Manhattan and Mead. In Manhattan (2012) glyphosate was applied on April 23 (spring, 95 percent green cover), July 27 (midsummer, 38 percent green cover) and August 30 (late-summer, 37 percent green cover). Untreated rough bluegrass declined to approximately 40 percent green cover in August, but had completely recovered by the end of the growing season. The following spring, untreated plots still averaged 100 percent green cover, and only spring applied glyphosate significantly reduced green rough bluegrass cover (1 percent) compared with untreated turf (Figure 2).

In Mead (2012) glyphosate was applied on May 4 (spring, 80 percent green cover), July 31 (midsummer, 70 percent green cover) and September 6 (late-summer, 75 percent green cover). Untreated green rough bluegrass cover never fell below 70 percent and green cover reached 95 percent in the spring following treatment. Only spring-applied glyphosate reduced green rough bluegrass cover (31 percent) compared with untreated rough bluegrass in the spring following applications in Mead (Figure 2).

PRACTICAL IMPLICATIONS

In this study, glyphosate application in mid- and late-summer temporarily reduced green rough bluegrass cover, but recovery ultimately limited the efficacy of these timings. Mid- and late-summer glyphosate applications may seem effective shortly after application, but results from these studies suggest that glyphosate most effectively controls rough bluegrass when applied in the spring.

Acknowledgments

We appreciate contributions from the Kansas Turfgrass Foundation and the Nebraska Turfgrass Association that partially funded this experiment.

Cole Thompson, Ph.D., is a turfgrass scientist at California Polytechnic State University, San Luis Obispo, Calif.

References

- Adkins, J. K. and Barnes, T. G. 2013. Herbicide treatment and timing for controlling Kentucky bluegrass (*Poa pratensis*) and tall fescue (*Festuca arundinacea*) in cool season grasslands of central Kentucky, USA. *Nat. Areas J.* 33(1):31-38.
- Beard, J. B. 1973. *Turfgrass: Science and culture*. Prentice-Hall, Englewood Cliffs, New Jersey.
- Hurley, R. H. 2003. Rough Bluegrass. Pages 67-75 in: *Turfgrass: Biology, Genetics, and Breeding*, in: Casler, M. D. and R. R. Duncan, eds. John Wiley and Sons, Inc, Hoboken, NJ.
- McCullough, P. E., and Hart, S. E. 2011. Multi-year roughstalk bluegrass control in creeping bentgrass with bispyribac-sodium and sulfosulfuron. *Appl. Turfgrass Sci.* 2011 doi: 10.194/ATS-2011-0425-01-RS.
- Reicher, Z. J., Nees, L. W., and Levy, M. D. 2011. Roughstalk bluegrass contamination in creeping bentgrass seed lots. *Appl. Turfgrass Sci.* 2011 doi:10.1094/ATS-2011-0422-01-BR.

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“Metrics are underutilized in the hiring of crew members. Often times the hiring process is haphazard, consisting of running an advertisement in the local newspaper, or calling friends.”

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

The answer is (and isn't) on the clipboard

When my son was in second grade I had the opportunity to coach his soccer team. We were playing a team that was much better than us, but we were only down 2-1. ¶ As I was standing there, clipboard in hand containing all of the team's stats, the wife of my assistant coach walked straight past me to her husband and lectured him on how badly the team was playing and as coach, he should do something about it. Once finished she turned and began stomping back to where the other parents were standing. ¶ As she walked past me I looked down sheepishly at my clipboard. I still remember her growling, “Karl, the answer isn't on that clipboard.”

Metrics are a set of measurements that quantify results. There are performance metrics, project metrics and business metrics, to name a few. To organize our data, sophisticated tools (KPIs, Scorecards, Gantt charts, etc.) exist.

On the opposite end, and much cruder in comparison, my clipboard was a source of quantifiable information that I could use to make soccer decisions. Goals, assists, blocks, saves, minutes played — metrics were what I used on the soccer sideline back then, and they have grown in use to dominate much of the decision-making we do today.

Social media companies gather vast amounts of data from users that is

quantified in such a manner that advertisers can target the desired category or group of individuals. At universities, we use metrics extensively to determine if faculty or programs pay for themselves. Superintendents use metrics all the time to balance budgets, determine what duties cost and calculate the time required to complete them.

But where metrics are underutilized is in the hiring of crew members. Often times the hiring process is haphazard, consisting of running an advertisement in the local newspaper, contacting university turf programs, posting on the Internet or calling friends.

Do you know how effective each recruiting tool you use is? Metrics like: number of hires; time to fill a position;

offer to acceptance ratios; background (college/non-college); longevity; provide valuable information. As the cost of attracting and retaining good people increases, hiring metrics provide return on investment information and in some cases lead to some surprising conclusions.

Take, for example, financial companies that targeted their hiring practices to the top MBAs from elite business schools. They found those hires tended to leave the company quickly, resulting in considerable turnover costs. These companies have since targeted graduates at the next (lower) level of business schools, which happens to produce qualified students who tend to stay longer.

Although I believe golf courses could become more efficient by incorporating hiring and retention metrics, I also realize that metrics alone do not give all the answers. They can't measure the personal attributes of loyalty, dedication, trust and creativity that must be valued in successful hires — just like my soccer clipboard couldn't measure hustle. Those attributes are often found and measured through continual personal interaction and observation.

Another example: I was a kid walking down a street with a friend in Champaign, Ill. We passed a house with a rock band practicing in the garage. As we stopped and listened I said to my friend, “Why don't those guys go out and get real jobs?” (Yes, even as a child I was extremely practical, and metrics-based.)

Metrics alone supported my comment that these guys were wasting their time, given data based on the success of garage bands. But, much like my clipboard, the answer isn't always in those metrics.

The band? It was REO Speedwagon.

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

Winter weed control in dormant bermudagrass

Patrick McCullough, Ph.D., is an extension turfweed scientist at the University of Georgia. He conducts numerous weed control trials each year to help him make weed control recommendations to superintendents. McCullough can be reached at pmccull@uga.edu for more information.

Q What winter weed control strategy do you recommend for dormant bermudagrass greens?

In Georgia, one application of a preemergence herbicide such as bensulide or oxadiazon in mid or late September, will control the major flush of annual bluegrass (*Poa annua*) seed germination that occurs from early October to early December. Bensulide or oxadiazon are recommended because they are safer than other preemergence herbicides on ultradwarf bermudagrass.

TranXit (rimsulfuron) or Revolver (foramsulfuron) can be used for postemergence annual bluegrass control later in the winter or early spring. Other postemergence herbicides used for annual bluegrass control on bermudagrass greens should only be used at your own risk.

Q What strategy do you suggest for a creeping bentgrass green and collar with bermudagrass surrounds?

Use caution when making any herbicide application to dormant bermudagrass surrounds so overspray,

drift, tracking or lateral movement of the herbicide doesn't reach the creeping bentgrass turf. Many superintendents will leave a 20- to 30-foot untreated buffer zone around the creeping bentgrass green and collar to provide a margin of safety.

“MANY SUPERINTENDENTS WILL LEAVE A 20- TO 30-FOOT UNTREATED BUFFER ZONE AROUND THE CREEPING BENTGRASS GREEN AND COLLAR TO PROVIDE A MARGIN OF SAFETY.”

In recent years, many superintendents have applied Specticle (indaziflam) to the bermudagrass surrounds. Specticle is a good preemergence herbicide and provides good early postemergence control of annual bluegrass, giving superintendents a little more application timing flexibility in the fall. Xonerate (ambicarbazone) can be applied to the untreated buffer between the collar and the untreated part of the surround to control annual bluegrass and other annual winter weeds. Xonerate is fairly safe on creeping bentgrass, so any drift or tracking to the green would be less injurious than most other herbicides used for

postemergence annual bluegrass control in bermudagrass.

Q What winter weed control strategy works well in dormant bermudagrass tees and fairways?

First, apply a preemergence herbicide in September. A dinitroaniline (DNA) herbicide will work well for this application. Many superintendents in Georgia follow

up with a single application of simazine, atrazine or simazine plus glyphosate, as needed, in December to March. These herbicides are inexpensive and provide good control of emerged winter weeds. They control many winter broadleaf weeds and annual bluegrass.

There are a few things to consider when using simazine, atrazine or simazine plus glyphosate in winter. Simazine can be applied when the bermudagrass is nearly dormant, but atrazine and glyphosate must be applied when the bermudagrass is 100-percent brown and dormant, or injury may result that will affect spring green-up.

Another factor to con-

sider is annual bluegrass resistance to simazine and atrazine. On some courses in the South, annual bluegrass biotypes have shown resistance to simazine and atrazine due to their use year after year. In these situations do not use simazine or atrazine alone for postemergence control of annual bluegrass. Tank-mixing triazine herbicides with other modes of action, such as glyphosate, could improve the potential for control if resistance is suspected.

Also, don't apply Xonerate if you suspect your annual bluegrass biotype is resistant to simazine or atrazine. Xonerate has the same mode of action as simazine and atrazine, and an annual bluegrass plant that is resistant to them will also be resistant to Xonerate.

If annual bluegrass resistance to simazine, atrazine or Xonerate is suspected, consider using sulfonylurea herbicides, Kerb (pronamide), or SureGuard (flumioxazin) for postemergence control. These herbicides have a different mode of action than simazine, atrazine or Xonerate and will improve your potential for success.



Clark Throssell, Ph.D., loves to talk turf. Contact him at clarkthrossell@bresnan.net.

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NEW PRODUCT HIGHLIGHTS // LABOR-SAVING EQUIPMENT

WORKING TOGETHER

MANUFACTURERS CONTINUE TRYING TO BUILD A BETTER MOUSETRAP

BY SETH JONES // Editor-in-Chief

1. Club Car Carryall VersAttach bed-based attachment system

CLUB CAR's VersAttach bed-based attachment system for its new Carryall turf utility vehicles replaces bungee cords, ropes and zip ties to organize equipment in the beds of utility vehicles. Designed in response to customer requests, the system accommodates 10 VersAttach tools. These tools were specifically designed to organize equipment and gear and let crews move quickly from job to job. Tools include standard, ratching and long tool holders; backpack blower racks; ladder racks; short and long bed dividers; cargo tie downs; water cooler and fuel-pack holders. Carryall utility vehicles are available in electric, gas and diesel; two-wheel and automatic all-wheel drive; and two- and four-passenger models with extended beds. clubcar.com

2. TL-80 and TL-80SS Electric-Powered Push Sprayer

TURFEX'S TL-80 and TL-80SS electric-powered push sprayers are capable of spraying all liquid solutions. The TL-80 comes with a powder-coated frame, while the TL-80SS features a stainless steel frame. Both sprayers include 12-gallon tanks, which are constructed of lightweight, corrosion-resistant polyethylene. A front-mounted, adjustable-height boomless nozzle is capable of spraying between 48 and 72 inches wide. Each unit is also equipped with a professional-duty, variable-tip spray wand on an 8-foot hose. A convenient switch toggles between nozzle and spray wand operation. All functions of the push sprayers are powered by an electric pump and 12-volt rechargeable battery. A unit can spray approximately 120 gallons per charge. Other features include inline filtration in the tank and large pneumatic tires for easy pushing over any terrain. turfexproducts.com

3. E 400 Trimmer

The E 400 Trimmer from **CORE OUTDOOR POWER** is a gas-free, lightweight piece of equipment. The E 400 features up to a 16-inch swath, 0.095-inch diameter trimmer line and torque equivalent to a 45cc gas engine. The trimmer weighs 11 pounds with the power cell attached. The soft grip molding on the handle offers durability and comfort for operators. coreoutdoorpower.com

4. UltraMax Red

UNDERHILL INTERNATIONAL'S UltraMax Red is a custom-engineered, heavy-duty hose. Featuring Goodyear technology, the UltraMax Red is constructed from EPDM rubber and reinforced with spiral synthetic yarn construction. The Underhill hose is ideal for high working pressures and has burst strength up to 800 psi. UltraMax Red can be used for watering down turf and for equipment clean-ups and site wash-downs. It is kink-, tangle- and abrasion-resistant, and has machined brass couplings. UltraMax Red is available in 25-foot, 50-foot, 75-foot and 100-

foot lengths and 5/8-inch, 3/4-inch and 1-inch diameter sizes. Custom lengths and sizes also are available. underhill.us

5. Adaptable Spreaders

The Flex-Select Series spreaders from **EARTHWAY PRODUCTS** have added two new hopper sizes, 80 and 130 pounds, and three different broadcast application configurations to its lineup of commercial and professional spreaders. The Flex-Select models feature easily interchangeable shut-off trays. These can easily convert the spreader from the EarthWay EV-N-SPRED, capable of spreading all fertilizers and free-flowing granular products, to the EarthWay high-output rock salt/pelletized high-SGN material spreader, or to a new very low application rate fine-chemical/fine-grass seed spreader. earthway.com



CONTINUED ONLINE

For more listings of labor-saving equipment, go to golfdom.com/category/products



1



2



3



4



5



1



2



3

1. Legacy Turf Growth Regulator

Legacy Turf Growth Regulator from **SEPRO CORP.**, integrates patented synergistic plant growth regulator (PGR) technology to reduce stem elongation and leaf blade length in perennial cool- and warm-season turfgrasses on golf courses, resulting in a more compact and dense growth habit. Legacy uniquely suppresses Gibberellic Acid (GA), the plant hormone responsible for cell elongation in most plants, which leads to its unsurpassed growth regulation. Legacy's synergistic growth regulation, resulting from its dual sites of action and plant uptake, leads to en-

hanced growth suppression, improved turfgrass color and quality, extended spray intervals, discouragement of *Poa annua* and more uniform growth regulation in mixed turfgrass stands.

sepro.com/turf

2. Duration fertilizer

KOCH AGRONOMIC SERVICES, LLC's Duration family of controlled release fertilizers features advanced polymer-coated technology that reliably releases nitrogen, continually feeding turf for up to 180 days per application. Duration CR fertilizer eliminates plant stress and produces healthy, green turf that resists weeds and diseases, according to the

company. Its annual cost per square foot is less than conventional fertilizers, and with fewer applications, nitrogen use is reduced by up to 40 percent. Fewer applications leave more time to tackle other jobs around the course. And, because plants take up more nitrogen, less is lost to leaching and volatilization, making Duration CR an environmentally friendly option, the company says.

KASTurf.com

3. TurfTech Bio-Min

This easy-to-use bio-fertilizer spray is a cost-effective tool for improving soil fertility and tilth. **TURFTECH's** biological components

increase soil aggregation and add nearly 1 pound of slow-release N per 1,000 square feet. The product also inhibits turf pathogens (so fewer fungicide sprays are needed) and adds over 60 minerals from volcanic deposits. According to research done over the past 25 plus years, Bio-Min treatments provide faster recovery from turf damage, increased hardiness and outstanding color.

soiltechcorp.com



CONTINUED ONLINE

For more listings on turf technologies, go to golfdom.com/category/products

Always Looking Out for Issues Affecting Your **BUSINESS**



RISE Grassroots Network

When issues about pesticides and fertilizers pop up in your neck of the woods, you don't have to address them alone. Join the free RISE Grassroots Network at pestfacts.org/grassroots or scan the QR code below. Access resources you can use on the local, state and federal levels with customers, neighbors, community leaders and policy makers to communicate the benefits of your

services and the products you use. Keep up-to-date on policy and regulations running the gamut from private and public pesticide property bans to specific restrictions on sales, use and display of fertilizers and pesticides. RISE is a national trade association of pesticide and fertilizer suppliers serving as a resource to help you keep these products in your toolbox and you out of the woods.

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The 19th Hole with...

Todd Fyffe

SUPERINTENDENT // Westmoreland Country Club, Wilmette, Ill.



What are you drinking?

It's a Half Acres' Daisy Cutter — try one! When I was living in Chicago, I had a short walk through an alley to get to the brewery. Now I live on the course, but when I was an assistant, it was right there, so it became my favorite.



I'm coming off the high of attending Game 1 and Game 6 of the World Series in Kansas City. What's the biggest sporting event you've been to?

There are two. I was in attendance at the Ohio State/Michigan game in 2002, a 14-9 OSU win. After that OSU went on to

win the national title. I was also able to work during the 2003 ALCS, Red Sox vs. the Yankees at Fenway Park, Game 4 and 5. I was an intern on the grounds crew for the Red Sox that summer. Both of those games were amazing rivalry games.

So you're a Red Sox Fan. Who else?

Ohio State football and Blackhawks hockey. Ever since I've moved to Chicago I've tried to be a Bears fan, but I haven't fully committed yet.

And you're married, with children?

I've been married for six years, and we have two kids — a daughter named



Rowan, she's 3 and loves coming over to the shop to look for Lucy, the shop cat. And our son Henry is 1.

Read any good books lately?

Basically, no. My latest book purchase is, "Plant Microbe Symbiosis: Fundamentals and Advances" (by Naveen Kumar Arora.) It's definitely a tough book, but it's got some really good technical information on understanding how microbes communicate with the plant. Unfortunately I don't have time to read the actual good stuff.



Tell me some advice that has stuck with you. When I was the interim superintendent, Mr. Paul Latshaw Sr. told me how critical my first season was. He said, 'If you fall during your first season, you might not have another opportunity at the superintendent position.' It set me in place. I asked myself if I was really ready for this, and if I wasn't, I needed to get ready.

Definitely good advice from a turfgrass legend. OK, I like Daisy Cutter but I want to switch it up. Is there a house drink? Yeah, it's called Rum Stone Sour. It's our signature drink, it comes in a pretty cool copper cup. Sometimes people take the cups as souvenirs, so even if you have a couple, make sure your cup stays here and doesn't end up in your golf bag.

As interviewed by Seth Jones, November 3rd, 2014.

"THIS FALL THE CHICAGO DISTRICT GOLF ASSOCIATION UPDATED OUR COURSE RATING AND SLOPE, WHICH WENT UP .04 AND 4 POINTS, RESPECTIVELY. THERE WAS NO CHANGE IN YARDAGE OR ARCHITECTURE... THAT SPEAKS TO THE CHALLENGING CONDITIONS OF THE GREENS AND GREEN COMPLEXES, WHICH I'M PROUD OF."



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