

SINCE 1927—The Resource for Superintendents // Golfdom.com

Golfdom

01.16



THE GOLFDOM REPORT

Golf on the upswing in 2016

PLUS

GIS SNEAK PREVIEW

MANAGING HERBICIDE RESISTANCE

PRESIDENTIAL ELECTION'S IMPACT ON GOLF



Oh No, you're offline!

You're missing out on the full digital experience.

When you view this publication offline, you're not connected to everything this digital edition has to offer. Return to this edition online to enjoy the full interactive experience.

» Mobile and tablet reading

» Access to issues

» Searching capabilities

» Share with friends

» Video

» Contents Gallery

» [For publishers: learn more about digital publishing with Mozaic](#)

Go Online!

PLUS

GIS SNEAK PREVIEW

MANAGING HERBICIDE RESISTANCE

PRESIDENTIAL ELECTION'S IMPACT ON GOLF

**Partner with
VGM Club
and see the
savings
stack up.**



"Preliminary tests indicate increased

For years, rolling was just for greens. Today you could be in for a big surprise. Preliminary testing shows that rolling fairways suppresses dollar spot, reduces time spent cutting which in turn reduces wear and tear on machinery and cuts labor costs.

TEST SUMMARY TO DATE



Geunhwa Jung and **Jay Popko**, Stockbridge School of Agriculture

- Plots were unrolled
- Rolled 3 times/week
- Rolled 4 times/week (Double roll 2 days)
- Rolled 6 times/week (Double roll 3 days)

Initial Results: Increased rolling frequency reduced dollar spot (40-60% in 2015).

Clipping yields were reduced and positively correlated with increased rolling frequency.

Different fungicide spray schedules were also tested (Threshold vs Calendar at 21 days interval) and initial results indicate rolling can reduce fungicide applications if threshold based spray programs are used. This should be a major cost reduction if second year test plots confirm this.

We also observed less thatch depth where rolling was performed, again, directly correlated to frequency but wasn't quantified at this time. Soil penetrometer tests confirmed that rolled plots had higher resistance to penetration.

We presume ball roll will be increased, however further studies are needed to evaluate these affects. Additional studies will be performed next year.

FAIRWAY

NEW SMITHCO ULTRA 10 AND ULTRA 15 FAIRWAY ROLLERS

The new 5 gang Ultra 15 Fairway Roller has a balanced hydraulic system to keep ground pressure even over its 15' swath. At 10 mph, the



GREENS

NEW SMITHCO TOURNAMENT XL 70 GREENS ROLLER

Three articulating rolling heads give you a 70" wide rolling area. It's the widest, most productive greens roller available. Your rolling time will be reduced dramatically.

- 70" rolling width
- 3 roller independent driving system
- Direct drive eliminates the maintenance of chain or belt drive systems
- 16 hp Vanguard engine
- 14 mph ground speed for rolling
- Power steering
- Wider stance offers a safe and stable platform and ride

rolling frequency reduces dollar spot."

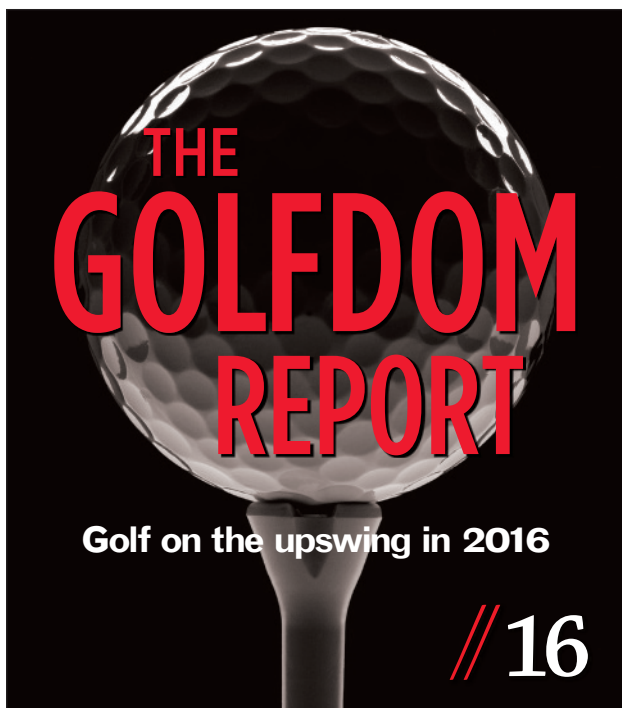
-University of Massachusetts, Stockbridge School of Agriculture

Ultra 15 will roll 18 acres an hour - three times as fast as mowing! Our 3 gang Ultra 10 Fairway Roller has a 10' swath to provide 12 acres an hour of productivity at 10 mph - twice as fast as mowing! Both units offer either tow vehicle remote hydraulics for wing roller fold/unfold and transport lift/lower or self-contained inte-

grated electric/hydraulic system for use with a wider variety of towing options. And to provide even more versatility, optional spiker units can be fitted in as little as 15 minutes, giving a 3" X 3" pattern that can go as deep as 1 7/8". The Ultra 15 has a 200-gallon water ballast tank while the Ultra 10 uses a 100-gallon tank.



**More rollers with
more features than anyone. *Smithco.com***



COLUMNS

- // 6 **Keeping up with The Jones**—Seth Jones
- // 14 **From the Back Tees**—Joel Jackson
- // 42 **The Turf Doc**—Karl Danneberger
- // 44 **Clark Talks Turf**—Clark Throssell

DEPARTMENTS

- // 8 **Starter**
- // 10 **Golfdom Gallery**
- // 46 **The 19th Hole**



SUPER SCIENCE

- // 37 **Simulated rainfalls influence on large crabgrass control with herbicides**
- // 38 **Annual bluegrass control**

Whether you're battling
SNOW MOLD
in the North...

or
DOLLAR SPOT
in the South...



Enclave® broad-spectrum,
flowable fungicide with
Quad-Control Technology® **delivers.**



A broad-spectrum fungicide with 28.7% Chlorothalonil, 9.4% Iprodione, 9.4% Thiophanate methyl, and 2.8% Tebuconazole. Enclave helps you **prevent** and **eliminate** anthracnose, brown patch, **dollar spot**, and **snow mold** among many other diseases on your course. The result: Healthier turf with a product that costs less and does more.

Enclave and Quali-Pro are registered
trademarks of ADAMA Group Company.

Call 800-242-5562

www.quali-pro.com



QUALI-PRO

Innovation you can apply.

Contact your local distributor or Quali-Pro representative for more information. This product may not be registered in all states, please check Control Solutions Inc. website or the state's department of agriculture for registration information.

EDITORIAL

EDITOR-IN-CHIEF Seth Jones
785-690-7047 / sjones@northcoastmedia.net
ASSOCIATE EDITOR Grant B. Gannon
216-363-7928 / ggannon@northcoastmedia.net

EDITOR-AT-LARGE Ed Hiscock
ehiscock@northcoastmedia.net

SR. DIGITAL EDITOR Joelle Harms
216-706-3780 / jharms@northcoastmedia.net

ART DIRECTOR Pete Seltzer
216-706-3737 / pseltzer@northcoastmedia.net

CONTRIBUTING EDITORS
Karl Danneberger (*Science*), Joel Jackson,
Clark Throssell (*Research*), John Walsh,
Anthony Williams, Mark Woodward

BUSINESS

CLEVELAND HEADQUARTERS
1360 EAST 9TH ST, SUITE 1070, CLEVELAND, OH 44114

PUBLISHER Patrick Roberts
216-706-3736 / proberts@northcoastmedia.net

ASSOCIATE PUBLISHER Bill Roddy
216-706-3758 / broddy@northcoastmedia.net

NATIONAL ACCOUNT MANAGER Craig MacGregor
216-706-3787 / cmacgregor@northcoastmedia.net

ACCOUNT MANAGER Jake Goodman
216-363-7923 / jgoodman@northcoastmedia.net

SALES ASSISTANT Petra Turko
216-706-3768 / pturko@northcoastmedia.net

MGR., GOLFDOM SUMMIT Ryan Bockmuller
216-706-3772 / rbockmuller@northcoastmedia.net

MARKETING MANAGER Scott Gebler
216-363-7932 / sgebler@northcoastmedia.net

MGR., PRODUCTION SERVICES Rhonda Sande
216-978-9778 / rsande@northcoastmedia.net

SR. AUDIENCE DEVELOPMENT MANAGER
Antoinette Sanchez-Perkins
216-706-3750 / asanchez-perkins@northcoastmedia.net

DIGITAL OPERATIONS MGR. Bethany Chambers
216-706-3771 / bchambers@northcoastmedia.net

WEB DEVELOPER Jesse Malmacher
216-363-7925 / jmalmacher@northcoastmedia.net

MARKETING/MAGAZINE SERVICES

REPRINTS & PERMISSIONS Brett Petillo
877-652-5295 / bpetillo@wrightsmedia.com

SUBSCRIBER, CUSTOMER SERVICE
847-763-4942 / golfdom@halldata.com

CORPORATE

PRESIDENT & CEO Kevin Stoltman

VP OF FINANCE & OPERATIONS Steve Galperin

VP OF GRAPHIC DESIGN & PRODUCTION Pete Seltzer

EDITORIAL DIRECTORS Marty Whitford, Marisa Palmieri

Golfdom does not verify any claims or other information appearing in any of the advertisements contained in the publication, and cannot take any responsibility for any losses or other damages incurred by readers in reliance on such content.

Golfdom welcomes unsolicited articles, manuscripts, photographs, illustrations and other materials but cannot be held responsible for their safekeeping or return.

North Coast Media LLC provides certain customer contact data (such as customers' names, addresses, phone numbers and e-mail addresses) to third parties who wish to promote relevant products, services and other opportunities which may be of interest to you. If you do not want North Coast Media LLC to make your contact information available to third parties for marketing purposes, simply call 847-763-4942 between the hours of 8:30 a.m. and 5 p.m. CT and a customer service representative will assist you in removing your name from North Coast Media LLC's lists.

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:** For US, Canada and Mexico, 1 year \$58.95 print and digital; two years \$88.95 print and digital. All other countries, 1 year print and digital \$109.95, 2 years \$169.95. For air-expedited service, include an additional \$75 per order annually. Single copies (prepaid only) \$10 plus postage and handling. For current single copy or back issues, call 847-763-4942. **Periodicals postage paid** at Cleveland OH 44101-9603 and additional mailing offices.

POSTMASTER: Please send address change to **GOLFDOM**, PO Box 2090, Skokie, IL 60076. Printed in the U.S.A. Copyright 2016 North Coast Media, LLC. All rights reserved. No part of this publication may be reproduced or transmitted in any form by any means, electronic or mechanical including by photocopy, recording, or information storage and retrieval without permission in writing from the publisher. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients is granted by North Coast Media, LLC for libraries and other users registered with the Copyright Clearance Center, 222 Rosewood Dr, Danvers, MA 01923, phone 978-750-8400, fax 978-750-4470. Call for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law.



TORRENT 2

DESIGNED TO BLOW YOU AWAY, TOO.

NEW OPTION — MagnaPoint™ Technology eliminates guessing with the optimum blower angle every time.



Industry's fastest nozzle rotation maximizes productivity.

Proven performance for ultimate air flow and backed by a 2-Year Warranty.



Instant Idle Down and Instant Resume runs only when you need it.



Optional Onboard Control keeps you running without the wireless controller.

Rugged hitch adjusts to fit all vehicles.



LEARN WHY ALL OTHER BLOWERS JUST BLOW.
DEMO A TORRENT™ 2 TODAY TO SEE THE DIFFERENCE.
Call 1-800-679-8201, or visit **WWW.TURFCO.COM**

THE LEADER. SINCE 1961.



THERE'S A NEW CHAMPION OF PLANT HEALTH



Signature[™] XTRA
Stressgard[®]



The **BackedbyBayer** app is available for download at the iTunes Store and Google Play.



Follow us on Twitter @BayerGolf

The **ALL-NEW** Signature Xtra includes a new Stressgard formulation with antioxidant properties, for enhanced plant health. Stress is no match for this level of strength — which optimizes turf quality, controls disease and improves playability, even in the toughest weather conditions.

See how the best just got better, at
backedbybayer.com/signature-xtra



"I asked Norman's media contact in advance if I could get some one-on-one time with the Shark before or after the media event. The answer was 'no.'"

SETH JONES, *Editor-in-Chief*

Chance encounters

In 2016 I'm going to try to attend as many events as possible, while at the same time not travel so much that I neglect my family. It's a delicate balance.

In chapter newsletters and magazines I always see chapter presidents pleading with their members to come to regional meetings. I'm a big believer in being there in person, meeting new people, shaking hands. There's a value to being there that pays off immediately.

Sometimes further down the road, it pays off unexpectedly.

In 2003 my Kansas Jayhawks made the Final Four. A group of us road-tripped to New Orleans for the event. Who knows how many people I met that weekend at the Final Four. It was fun meeting fellow KU fans and the fans of the other teams (Texas, Marquette and eventual champion Syracuse).

Fast forward five years. GCSAA named Greg Norman the 2008 Old Tom Morris Award winner. It was my job to get an interview with him.



During the 2008 Golf Industry Show, Jones (far right) got to introduce his then 18-month-old daughter Evey to Greg Norman and Chris Evert.

It wasn't easy. Norman is a busy businessman.

Norman came to Kansas City for a media event at Stone Canyon GC. I asked his media contact in advance if I could get some one-on-one time with the Shark before or after the event. The answer was "no."

I attended the media event hoping to talk my way into a one-on-one interview. I found the media contact and tried to convince him I was worthy of Norman's time. He tried to convince me I was not.

So I took a different route and asked him where he was from and where he went to

school. When he said Syracuse, I knew we had a talking point. I told him I'm a KU alumnus and about my hatred for the Orangemen. He laughed. I asked if he went to the '03 Final Four, and he said he did.

I looked a little harder at him, then asked him if he took a stuffed Syracuse Orangeman toy with a Natural Lite can duct-taped to his hand with him to New Orleans. He paused, gave me a look and said that he did. Then I asked him if he remembered playing three-on-three basketball one night against three similarly intoxicated Kansas Jayhawk fans.

It was then that he realized I was his next-door neighbor at that fleabag hotel we stayed at in New Orleans. "I warned you about Carmelo Anthony!" he shouted. We laughed about the small-world moment we were experiencing.

Finally I said, "Hey man, can you please help me out on this Greg Norman interview?" He smiled and said, "Sure... we can work it out."

Strange to think that a chance encounter five years earlier is what made the interview happen. Was it luck? Yes. But I made a little of my own luck by taking the time to be there.

You never know whom you'll meet when you're out attending events, from the Final Four to the Golf Industry Show. But you know exactly whom you'll meet if you don't attend: no one.

Email Jones at:
sjones@northcoastmedia.net



EVERY COURSE. EVERY HOLE. EVERY DAY.

ONE BRAND OF TURF EQUIPMENT

Pebble Beach uses *only* Jacobsen turf equipment on *every* inch of every hole. From ECLIPSE2® and ECLIPSE® 322 walking and riding greens mowers to LF550™ fairway mowers and AR522 and AR722T contour rotaries, the five courses of Pebble Beach trust Jacobsen to maintain all its precious turf.

So why does one of the world's most famous golf destinations choose Jacobsen turf equipment year after year? It's quite simple: Jacobsen is the only turf equipment that can provide the world-class conditions Pebble Beach is known for.

For more information about Jacobsen or to find a Jacobsen dealer near you, visit jacobsen.com.

1.888.922.TURF | www.jacobsen.com

Pebble Beach Golf Links® is maintained by Jacobsen equipment. Pebble Beach®, Pebble Beach Resorts®, Pebble Beach Golf Links®, The Lone Cypress™, The Heritage Logo and their distinctive images are trademarks, service marks and trade dress of Pebble Beach Company. Use is by permission.

©2016 Jacobsen division of Textron. All rights reserved.

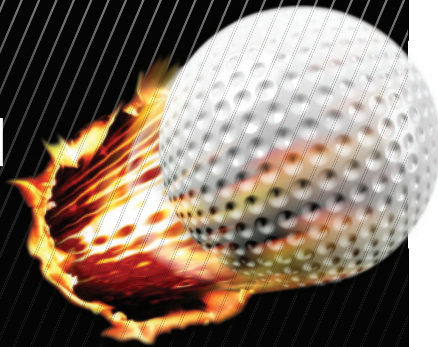


PEBBLE BEACH
RESORTS



Starter

NEWS, NOTES AND QUOTES



// MUST-ATTEND MEETINGS



Attendees of the 2015 Syngenta Business Institute, recently held in Winston-Salem, N.C., squeeze in for a group photo.

2015 SYNGENTA BUSINESS INSTITUTE COVERS THE CUTTING EDGE

BY ANTHONY L. WILLIAMS CGCS, CGM



The 2015 Syngenta Business Institute (SBI) was held Dec. 7-10 at the historic Graylyn International Conference Center at Wake Forest University in Winston-Salem, N.C. The event brought together 25 standout superintendents from across the country, all with a drive for excellence and a commitment to lifelong learning.

Ken Middaugh, Ph.D., director of Wake Forest's School of Business, led the program along with colleagues William Davis, Ph.D., Sherry Moss, Ph.D., and Amy Wallis, Ph.D. The content of the program was cutting edge, covering everything from accounting to generational management skills, with a spirited dose of "one-on-one" negotiations training that has become part

of the folklore of SBI.

One thing that stood out as an attendee is the unique mix of green industry media personalities, superintendents and the Syngenta/SBI team. There is plenty of time to network, study and reflect throughout the program. The synergy of the event is far-reaching, and the learning and social experiences are bigger than the items on the agenda.

You hear past attendees rave about the program, but until you have had a midnight Graylyn/SBI ice cream experience you still have room to grow personally and professionally. If you are a superintendent looking for a one-of-a-kind learning experience, attending a future SBI event should be on your bucket list.

// SLAP OF THE HAND

EPA VIOLATED PROPAGANDA LAW

Playing with social media can be like playing with fire sometimes, and it recently burned the Environmental Protection Agency (EPA).

A social media effort by the EPA to support the Waters of the United States (WOTUS) rule was found to have violated federal laws, according to a report from the Government Accountability Office (GAO) released Dec. 14, 2015.

The EPA's social media push on Twitter, Facebook, YouTube and Thunderclap violated two federal laws, "covert propaganda" and the use of federal resources to conduct grassroots lobbying.

The GAO suggested in its report that the EPA should calculate how much money the staff spent on the social media campaign and include it in a report to President Obama and Congress acknowledging the violations.

// JOIN THE TEAM

McHUGH JOINS FLORATINE STAFF

Floratine has named Pat McHugh, CGCS, as its corporate agronomist for the Southeast U.S. region.

McHugh has more than 41 years of turfgrass experience and will be responsible for evaluating customers' turfgrass and soil conditions to help them develop customized nutrition programs that best fit their specific needs.

McHugh has been a certified superintendent for more than 27 years. He also is the founder of North Carolina Turf Support, an organization that specializes in providing services for turf nutrition, physical and chemical properties of soil and water analysis.

"We are extremely proud to have Pat join our team," said Kevin Cavanaugh, CEO of Floratine. "Pat's skills and knowledge have been trusted by turfgrass professionals around the world for decades. I am confident that combining his expertise with our innovative turf solutions will have a positive impact on both our products and our customer experience."

PHOTO COURTESY: SYNGENTA / ISTOCK.COM (WELGLAD)

//MANY HANDS MAKE LIGHT WORK

USGA, ASGCA team up to improve public golf facilities

➔ The USGA and the American Society of Golf Course Architects (ASGCA) have launched a collaborative program to help publicly accessible golf facilities improve their design and maintenance practices.

ASGCA member architects and USGA agronomists, scientists and researchers will provide pro bono consulting services to facilities that need assistance in order to make course layouts more enjoyable and to reduce maintenance costs.

“Course design and maintenance form the foundation of a golf facility’s operations,” says Mike Davis, USGA executive director. “With the knowledge that the ASGCA and USGA can offer, more publicly accessible facilities will be able to strengthen this base while promoting resource efficiency, a better golf

experience and a stronger connection to the local community.”

Facilities can submit an application for the service, which includes an on-site evaluation, professional analysis and a report outlining recommendations for improvement. Recommendations can cover course design, agronomy, environmental stewardship and golf course operations, with the goal of lowering costs while improving the golfer experience.

Interested facilities must submit an application by one of three deadlines in 2016: March 15, Aug. 15 or Dec. 15. Selected facilities must express a willingness to carry out the recommendations from the USGA and ASGCA. Facilities will be expected to track and report the effectiveness of their improvements based on specific metrics.

//WELCOME WAGON

GRAVES, BEVARD JOIN MUSSER COMMITTEE

The Musser International Turfgrass Foundation’s executive committee has appointed Dean Graves, CGCS, and Darin Bevard to its board of directors. Graves and Bevard replace Tom Burrows and Keith Happ, who both passed away in 2015.



Dean Graves

Graves, golf course manager at Chevy Chase (Md.) Club, has been with the club for 15 years and is a past president of the Mid-Atlantic GCSA. Bevard has been with the USGA for more than 19 years and is the Green Section’s director of championship agronomy.

The Musser International Turfgrass Foundation has recognized and honored doctoral graduate students in turfgrass science and related disciplines since 1989. The board consists of 24 directors representing the diverse aspects of the turfgrass industry.



Darin Bevard

//AND THE WINNER IS...

NORTH CAROLINA SUPER NABS \$4K FROM VGM

Time to stop waiting for that call from the VGM Club saying you are the winner of its “\$4K Giveaway.” All golf course employees were eligible to enter the random drawing launched Oct. 15, 2015, with entries accepted until Nov. 15, 2015.

On Dec. 1, Chris DeVane, superintendent at Forsyth Country Club, Winston-Salem, N.C., was named the winner of the sweepstakes in the VGM Club December newsletter. DeVane, president of the Piedmont GCSA, took home \$4,000 in prizes from sponsors Grainger, HD Supply, John Deere, Standard Golf and Sunbelt.



Mike Davis, USGA executive director, (center) visits Chambers Bay in 2015. “Course design and maintenance form the foundation of a golf facility’s operations,” he says.

Golfdom Gallery



1 Flag Swag (L to R) Mike Posey (Hoover [Ala.] CC); Tyler Andersen (University of Texas GC, Austin) and Kyle Johnson (Inverness CC, Birmingham, Ala.), show off their swag with Golfdom's Grant B. Gannon.



2 The Blues Brothers (L to R) Smithco's Jim Block and Don Smith and Golfdom Publisher Pat Roberts were on a mission — a mission from Golfdom.



3 Relaxin' Is it just us, or does it look like North Coast Media's Craig MacGregor (front row, relaxed) has done this before?



4 Not-so subtle Seth With Royals cup in hand, (L to R) Seth Jones reminds Grayson Grainger (St. James Plantation, Southport, N.C.) Jeremy Booth, CGCS, (Willow Oaks CC, Richmond, Va.) and Cam Copley (Nufarm) — and everyone else — that the Royals won the World Series.

5 Photo op Andy Bates (Nemacolin Woodlands Resort, Farmington, Pa.) and Linda Wheeler (Sipcam Advan-Rotam) pose for a photo.



6 Turf-father (Center) Mark Kuhns (Baltusrol, Springfield Township, N.J.) with fellow Jersey supers (L to R) Jeremy Batz (Trump National GC-Colts Neck, N.J.); Tyler Otero (North Jersey CC, Wayne, N.J.); Russ Harris (Galloping Hill GC, Kenilworth, N.J.) and Mike Brunelle, CGCS, (Upper Montclair CC, Clifton, N.J.)



Continued on page 12

BROUGHT TO YOU BY

**STANDARD
GOLF** COMPANY

PHOTOS BY: PETE SELTZER

THE FREIGHT IS OVER



SEE WHAT FREE FREIGHT CAN DO FOR YOU!

Visit us at the **GIS Booth #4041** to learn more about our free freight program, see all of our new products and participate in our #TALESFROMTHECOURSE campaign!

**STANDARD
GOLF** COMPANY

FREE FREIGHT

Setting the standard in golf accessories since 1910.

866.743.9773 • StandardGolf.com

© 2015 Standard Golf Company. All rights reserved.

Golfdom Gallery

Continued from page 10

7 Most fun foursome They might not have shot the best score, but (L to R) Alex Stuedemann, (TPC Deere Run, Silvis, Ill.); Woody Moriarty (Blue Hills CC, Kansas City, Mo.); Gary Myers (BASF) and Mike Posey (Hoover CC) may have had the most fun of any golf group.

8 Winner's circle Speaking of the best score, the team of (L to R) Chris Zugel (Whistling Straits, Kohler, Wis.); Kevin Blanton (Cushman); Matthew Wharton (Carolina Golf Club, Charlotte, N.C.) and Johnny Walker (Bentwater Y&CC, Montgomery, Texas) went low, shooting a 58.

9 Straight outta Scotland While warming up for the tournament on the driving range, Summit attendees listened to the sweet sounds of the bagpipe.

10 El Niño Scott Kinkad (left), vice president at Turfco, and NCM President Kevin Stoltman enjoy the Florida weather. December usually means snow for these two, who live in Minnesota and Ohio, respectively.

11 Open minds (L to R) The 2016 U.S. Open host, John Zimmers (Oakmont [Pa.] CC) sits down with *Golfdom's* Pat Roberts and the 2014 U.S. Open host, Kevin Robinson (Pinehurst [N.C.] Resort).

12 Red or blue Kyle Johnson (left, Inverness CC) during a friendly game of cornhole against Josh Lewis (Almaden Golf & Country Club, San Jose, Calif.)

13 Steroids? Cornhole got a little intense when a high-arching toss was caught in a chandelier. The solution? Throw another to knock it down. The result? Two bags in the chandelier.

14 Superstitious supers Johnny Walker (Bentwater Y&CC) lines up a putt while his teammates assume their lucky "lean-on your putter" pose.



"IT WORKS NONSTOP."

TOM HUESGEN, CGCS | Sahalee Country Club | Sammamish, WA

"EXTREMELY EFFICIENT."

MARK KUHNS, CGCS | Baltusrol Golf Club | Springfield, NJ

"VERY POWERFUL."

RALPH KEPPEL, CGCS | East Lake Golf Club | Atlanta, GA

"BIG-TIME PRODUCTIVITY."

LEE MCLEMORE, CGCS | The Country Club of Birmingham | Mountain Brook, AL

"IT'S EXCELLENT."

NEIL PACKARD, Superintendent | Dallas National Golf Club | Dallas, TX



THE SKEPTICS HAVE SPOKEN.

Superintendents everywhere have put it to the test with steep hills, heavy loads and long days — and the results are in. The 72-volt AC Hauler® PRO is changing the way the industry thinks about electric power.

Learn more at the 2016 Golf Industry Show — Booth #3340



CUSHMAN®
LET'S WORK®





“Isn’t the EPA the party responsible for the disastrous polluting of the Animas River with waste from an abandoned gold mine in Colorado, which also affected water use downstream in New Mexico and Arizona?”

JOEL JACKSON, *Senior Contributing Editor*

2015: The good, bad and ugly

I am not naming names, but this column title almost sounds like it could be a slogan for the 2016 presidential nomination race. Or maybe it’s just an evaluation of the whole field. It’s unfortunate that 2015 ended on such a negative note, with terrorism reminding us that we need to stick together to survive and prosper.

Our industry, the sports and recreation industry, creates environmental, economic and social impacts, and we need to focus on doing all the right things to make sure the livelihoods of hundreds of thousands of people, as well as our natural resources, are protected forever.

Evidence of our overall continuing stewardship was revealed recently when the Golf Course Superintendents Association of America reported that data compiled by the United States Golf Association in a survey funded through the Environmental Institute for Golf showed that from 2005 to 2013 courses used 22 percent less water, and that golf used only 1.44 percent of all irrigation water in the United States for course maintenance. So much for the “big water waster” claims

from some so-called environmental groups.

And here in California, golf clubs, with the expertise of golf course superintendents, have formulated various water conservation measures. These have ranged from the types of water sources used to turf reduction and native plant programs, as well as cultural management programs that include wetting agents and penetrants.

While golf rarely is in the public eye except for high profile USGA and PGA tournaments, the GCSAA took steps in 2015 to make sure our good work gets the attention it deserves. The hiring of Bob Helland, formerly with Washington D.C. lobbying firm Reed Smith for more than 10 years, as the director of congressional and federal affairs, will advance our presence

when legislative boondoggles like the Environmental Protection Agency’s Waters of the United States (WOTUS) bill come to the attention of Congress.

I really don’t mean to be snarky, but isn’t the EPA the party responsible for the disastrous polluting of the Animas River with waste from an abandoned gold mine in Colorado, which also affected water use downstream in New Mexico and Arizona? Wasn’t that river part of WOTUS?

I hope that Helland’s presence will also help develop the fledgling GCSAA Grassroots Ambassadors program. This is exactly the type of approach that we have needed to help make that transition from local grassroots issues to federal legislation. I see that the initial startup includes 24 volunteers in 14 states. It’s

a start, but supers in all 50 states need to step up. Regulatory issues are only going to expand in this hyper-environmental climate-changing atmosphere we’re quickly entering.

I know the call for volunteers to serve at the local level is like a broken record, but I do have a slightly different spin on this call to arms: Put your mouth where the money is!

The biggest missing piece of the advocacy puzzle is the golfers and club members who enjoy and benefit the most from having healthy, thriving golf clubs. These are the folks who rub elbows with the movers and shakers at all levels of government. We need to enlist them in the cause of advancing sound best management practices to protect golf and the environment.

We don’t need to continuously mount counter-attacks against poorly researched legislation like WOTUS. EPA already keeps cancelling pesticides, which keeps challenging superintendents to come up with new practices to control pests and diseases.

The folks at Pellucid, a golf business solutions and data analysis company, have constantly reported on the slow-but-sure recovery of the golf industry after the recession. Now is the time to raise your hand, step up and volunteer with your local chapter or the GCSAA. Your livelihood might depend on it!

Won’t you be seen in 2016?

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



MEET THE ROUGH MOWER THAT'S BETTER BY A WIDE MARGIN.

With the new John Deere 9009A TerrainCut™ Rough Mower, you can now mow more rough in less time without sacrificing cut quality. The 9009A features five, 27-inch decks for a nine-foot cutting width. Each deck has a unique, deep shell design with an innovative rear discharge chute. Height-of-cut can be set instantly using no tools. And the 9009A comes with the TechControl Display, letting you make precise settings of mow, transport and turn speed, as well as weight transfer, LoadMatch™ and cruise control.

The time has come for a wide area rough mower to do more. So don't just mow wide. Mow wide better. With the new 9009A TerrainCut Rough Mower.



JOHN DEERE
GOLF

Trusted by the Best

JohnDeere.com/Golf

In December of 2015 we reached out to our readers and asked them what they thought about the industry going into 2016. We received nearly 500 responses to our survey, revealing opinions on everything from the presidential election and WOTUS to cell phone usage on the golf course.

Thank you to everyone who participated in our survey, and congratulations to Angelo Tozzi, owner of Pearl Lakes GC & Driving in Skaneateles, N.Y., and Michael Sonnek, superintendent at Spring Hill GC in Wayzata, Minn., who were randomly selected and received \$100 gift cards for their participation.

Continued on page 18



THE GOLFDOM REPORT

Golf on the upswing in 2016

BY SETH JONES
AND
GRANT B. GANNON

PHOTO BY: ISTOCKCOM (DANIEL BARNES)

Air2G2 is the truest form of aeration, supplying what soil needs....**AIR.**



SportsTurf

Managers Association
2015 Innovative Award

NO SURFACE DISRUPTION



REDUCE COMPACTION & INCREASE POROSITY IMMEDIATELY...

The Air2G2 is a one-of-a-kind aeration machine that can be used every day, rain or shine. It injects compressed air into the soil below the turf surface at depths up to 12 inches. The unique aspect of the Air2G2 is that it reduces soil compaction immediately while leaving the turf surface ready for play, with almost **NO SURFACE DISRUPTION**.

Enjoy the benefits of reduced compaction, increased porosity and improved gas exchange, which leads to better rooting, healthier turf, and improved stress resistance.

For more info visit us on the
web @ www.air2g2.com



SWEET '16

A few years of moderate growth in golf has given readers high hopes for the new year.

The first neighborhood around The Club at Strawberry Creek in Kenosha, Wis., is developed to capacity... finally.

For Strawberry Creek Superintendent Matt Kregel, this is a good sign of things to come. Strawberry Creek opened 10 years ago, when the housing market was faltering. The golf product was good, says the current president of the Midwest Association of Golf Course Superintendents, but the market was wounded.

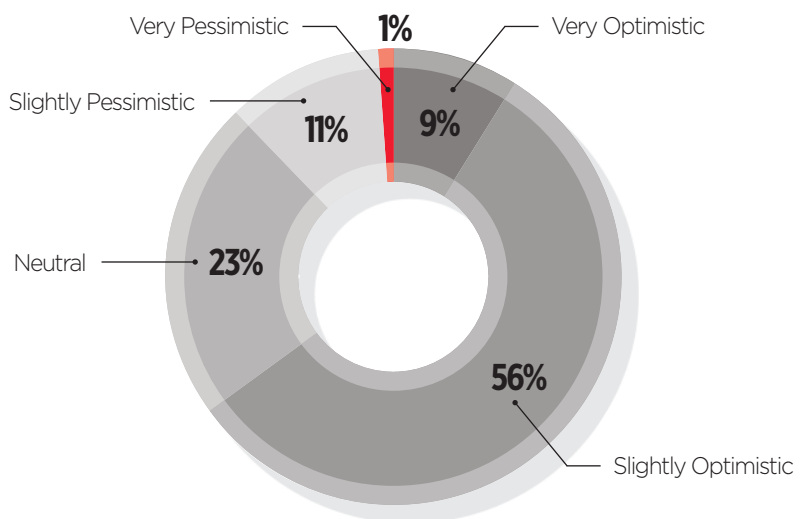
"We're rebounding now. We're getting into the development phases of some of the land that's just been lying around for the last five years," he says. "We're looking at releasing some new properties, more single-family housing, which in turn should bring new members to the club, because the club is the epicenter of the community we've established."

At Mountain Ridge CC in West Caldwell, N.J., the course is coming off a season in which it hosted the most rounds ever.

"We're growing at a rate where we need

"We've got new members on the horizon, new events on the schedule — I'm extremely excited about 2016."

HOW WOULD YOU DESCRIBE YOUR EXPECTATIONS FOR THE GOLF ECONOMY IN 2016?



to stop," says Cliff Moore, superintendent. "We have too much play. We've got new members on the horizon, new events on the schedule — I'm extremely excited about 2016."

Moore says courses in his area, both public and private, are packed.

"They're not just playing on weekends... they're playing on weekdays," he says. "I think the years when golf built all these courses and couldn't facilitate them, they've gone away."

It seems many of *Golfdom's* readers are as enthusiastic as Kregel and Moore. Of

survey respondents, 9 percent reported being "very optimistic," and a whopping 56 percent said they were "slightly optimistic" about the golf economy in 2016. Only 12 percent were negative, while 23 percent were neutral.

Of course the economic outlook for any golf facility depends on the view right outside the clubhouse window to the first tee. Justin May, superintendent at Shangri La Golf Club in Afton, Okla., predicts a flat 2016 because of the low price of oil, which heavily dictates his local economy. Meanwhile Cypress Lakes Golf Course in Muscle Shoals, Ala., finds itself without a superintendent and a head pro, as well as an overall payroll cut of 10 percent across the board, according to the *Times*

Continued on page 21



Cliff Moore



VGM Club clients from *coast to coast* enjoy *exclusive benefits* from John Deere Golf and over 100 other *industry-leading suppliers*. Partnering with VGM Club will *save* you *time and money* from the first tee to the nineteenth hole, but don't take our word for it, *take a look at what clients have to say...*

Check out the SAVINGS...

Savings and rebate amounts for the last 5 years



"I wonder if superintendents don't really understand the benefit of VGM like club managers do. The membership is a benefit to superintendents when purchasing everything from turf equipment to smaller items like flags and cups."

Owen Coulson, Superintendent
Vestavia Country Club, Birmingham, AL

"We are extremely pleased with our partnership with VGM. The last two seasons at Castle Pines Golf Club have been banner years for us and a large part is due to the savings we get from VGM Vendors. Couldn't be happier!"

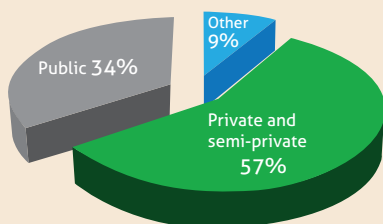
Don Hurter, Golf Professional
Castle Pines Golf Club, Castle Rock, CO

"We closely examine our expenses and services every year to be good stewards of our members' money and add value wherever we can. We save at least tenfold on our investment in VGM each year – not just from a return on investment perspective, but also a return on experience."

Marcus King, PGA, CCM, CCE, General Manager
Overlake Golf & Country Club, Medina, WA

3,485

VGM Club clients in the United States.



97%

overall satisfaction as ranked by a recent member poll.

97%

To BECOME A PART OF VGM CLUB, contact us today:

www.vgmclub.com/golfdom | 800-363-5480

NEW YEAR, NEW CONNECTIONS THROUGH \$4K GIVEAWAY

Superintendents are always gearing up and looking forward to see what opportunities await for the new year. For one lucky superintendent in North Carolina, an opportunity has already been created to help lead his club into 2016.

Chris DeVane, superintendent at Forsyth Country Club received the ultimate gift package by winning the \$4K Giveaway contest.

The gift package included an assortment of prizes as well as gift cards to be used towards products or services from Grainger, HD Supply, Standard Golf, Sunbelt Rentals and John Deere Golf.

"The gift cards will allow me to save some money on my 2016 budget and will enable me to purchase some items we were not able to include in the budget," said DeVane. "With these savings, we will be able to give the membership at Forsyth Country Club a better product and experience."

Located in Winston-Salem, N.C., Forsyth Country Club has been part of the golfing landscape in the Southeast for over one hundred years. DeVane has overseen the 172 acre course since 2008, and appreciates the opportunity to not only save on existing purchases, but to be introduced to other opportunities.

"In the past, we have purchased various items from Grainger and currently purchase parts and various irrigation system components from John Deere Golf," said DeVane.

"With these savings, we will be able to give the membership at Forsyth Country Club a better product and experience."

"Winning will not only build on existing vendor relationships, but will also be a great way to make a contact with the participating suppliers that I am not familiar with."

Looking for a fun and interactive way to introduce readers to a sampling of their vendor partners, the month-long contest was a collaborative effort between VGM Club and Goldom magazine. The contest encompassed a social media campaign where followers of Goldom's social media pages could register to win and kick off 2016 by saving money.

"We are always looking for ways to connect our club members with our vendor partners for a mutually beneficial experience," said James Hockman, VGM Club's Southeast territory representative. "The \$4K Giveaway was a way for us to

work with some of our vendor partners to introduce them to the many readers of an industry-leading publication like Goldom - and give away four thousand dollars in the process."

For more information about how VGM Club membership can improve your club's bottom line, visit them during the 2016 Golf Industry Show at the San Diego Convention Center in San Diego, Calif. in booth #2316.

This success story brought to you by



James Hockman of VGM Club, presents Forsyth Country Club's superintendent Chris DeVane with a portion of the winnings from the \$4K Giveaway.



Continued from page 18

Daily. The paper reports the course lost \$339,000 in 2013-2014, compared with \$188,000 last year.

Still, Cypress Lakes General Manager Scott Arndt remains upbeat, and includes himself among those who think 2016 will be a good year for golf. His hope is the course comes close to break-even in 2015-2016.

"It's cyclical. There was a boom, then there was a drop-off," Arndt says. "I see golf growing here. Is it where we want it? No. But it's trending the right way.

"It's all about getting the people on the fence," Arndt continues. "We can do that by having a good, friendly place to play. We're not selling anything but fun and memories — what can we do to increase that?"

Brian Burke, superintendent at Sycamore Creek CC in Springboro, Ohio, says he is optimistic following three consecutive years of an uptick in business in southwest Ohio.



Brian Burke

"We've had more members and more involvement," Burke says. "I hope that we'll continue to see positive movement forward in 2016."

Jordan Booth, CGCS at Willows Oaks CC in Richmond, Va., thinks the incremental improvements he's seen over the last few years will continue. His reason: golf is responding by exposing more people to the game, as well as becoming more laid-back.



Jordan Booth

"You've got guys in shorts and jeans learning the game and having fun, you've got speakers in golf carts, people having fun with their buddies," he says. "That's what golf is about: interacting with other people."

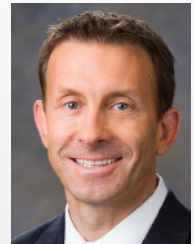
Continued on page 22

SAN ANTONIO PAYS OFF FOR GCSAA

Forget the weather — GCSAA employees will remember their 2015 trip to the Alamo fondly.

In 2015 the Golf Industry Show took a departure from its regular slate of cities with a trip to San Antonio, Texas. While the weather was awful, causing a cancellation of the final round of the golf championship, revenue created by the new location created some sunny skies at GCSAA HQ in Lawrence, Kan. (The GIS will return to San Antonio in 2018.)

"San Antonio was an extremely strong show for us. (San Antonio) was a very aggressive city in that they wanted our business," GCSAA CEO Rhett Evans tells *Golfdom*. "There were a lot of concessions made (by the city), for now and in the future, that bodes very well for us."



Rhett Evans

Evans says the success of the 2015 show, adding the equipment managers into GCSAA's membership and the beginning of the Grassroots Ambassador program made for a good year for the association. The association saw growth in their membership numbers, and revenues came in above projections.

So what about 2016?

Things are looking good so far, according to Evans. The 2016 Golf Industry Show heads west to San Diego

— always a popular destination — and registration numbers are 10 percent ahead of where they were at this point in 2015. The association has added an additional hotel, as the bookend hotels to the San Diego Convention Center already have sold out. (For our preview of the 2016 Golf Industry Show, check out pages 30-34.)

"The success of GCSAA is directly related to the success of the game," Evans says. "We're projecting '16 to be stronger than '15. Not by a large stretch, but any percent upwards, based on this economy and based on the golf industry, is a positive thing."

"THE SUCCESS OF GCSAA IS DIRECTLY RELATED TO THE SUCCESS OF THE GAME. WE'RE PROJECTING '16 TO BE STRONGER THAN '15."



GOLF PREPARES FOR CHANGE AT THE WHITE HOUSE

Will a new Commander-in-Chief make a difference in golf's progress?

When Barack Obama took office in 2008, an avid golfer took control of the White House.

But was that avid golfer an advocate for a game he clearly loves? And what will a new administration mean for the game?

Our survey results were split 50/50 as to whether the results of the election will make a difference for the business of golf. The superintendents we asked were also split.

Rodney Crow, CGCS at Battleground Golf Course in Deer Park, Texas, thinks a change of administration is something that could help golf.

"Look back at the last eight years: The EPA has become more stringent; this whole 'Waters of the U.S.' is off-the-charts stringent; we're seeing everything being constricted in terms of new products being approved; old products that have been in use for years are being ratcheted down,"

he says. "If we continue the agenda the current administration has, it's going to greatly impact the golf market."



Rodney Crow

"I don't think (the election) will have any effect at all," says Jimmy Alston, superintendent at Eagle Creek G&CC in Naples, Fla. He says the area where he lives is extremely conservative, and despite the difference in politics of his area and the White House, golf is thriving. "The Naples market is booming like it was in the early 2000s."

"I don't think the upcoming election will effect us one way or another," says Woody

Moriarty, superintendent at Blue Hills CC in Kansas City, Mo. "I think the golf industry is pretty strong right now, and we are coming out of the recession."



Woody Moriarty

Jordan Booth, CGCS at Willow Oaks CC in Richmond, Va., mostly worries about the perception of golf when it comes to the environment.

"I do think there is a more pro-golf party, just in terms of environmental regulations. I think people in golf are very proud of how environmentally friendly we are," he says. "We need to keep communicating what we're doing now, and not be targeted as the bad guys. When people have an environmentally minded agenda without all their facts, that's dangerous."

Booth mentions the Chesapeake Bay, which was named a national treasure in 2009.

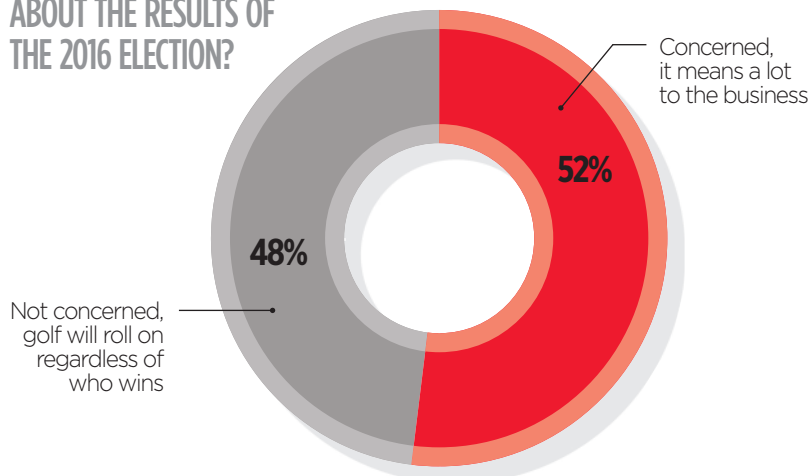
"It's awesome. It's important to keep that bay clean and protect the wildlife," he says. "We just need to be sure to do our research and know where the problems are coming from, and not target golf as part of that problem."

For the sake of golf, Crow hopes to see a major change in Washington.

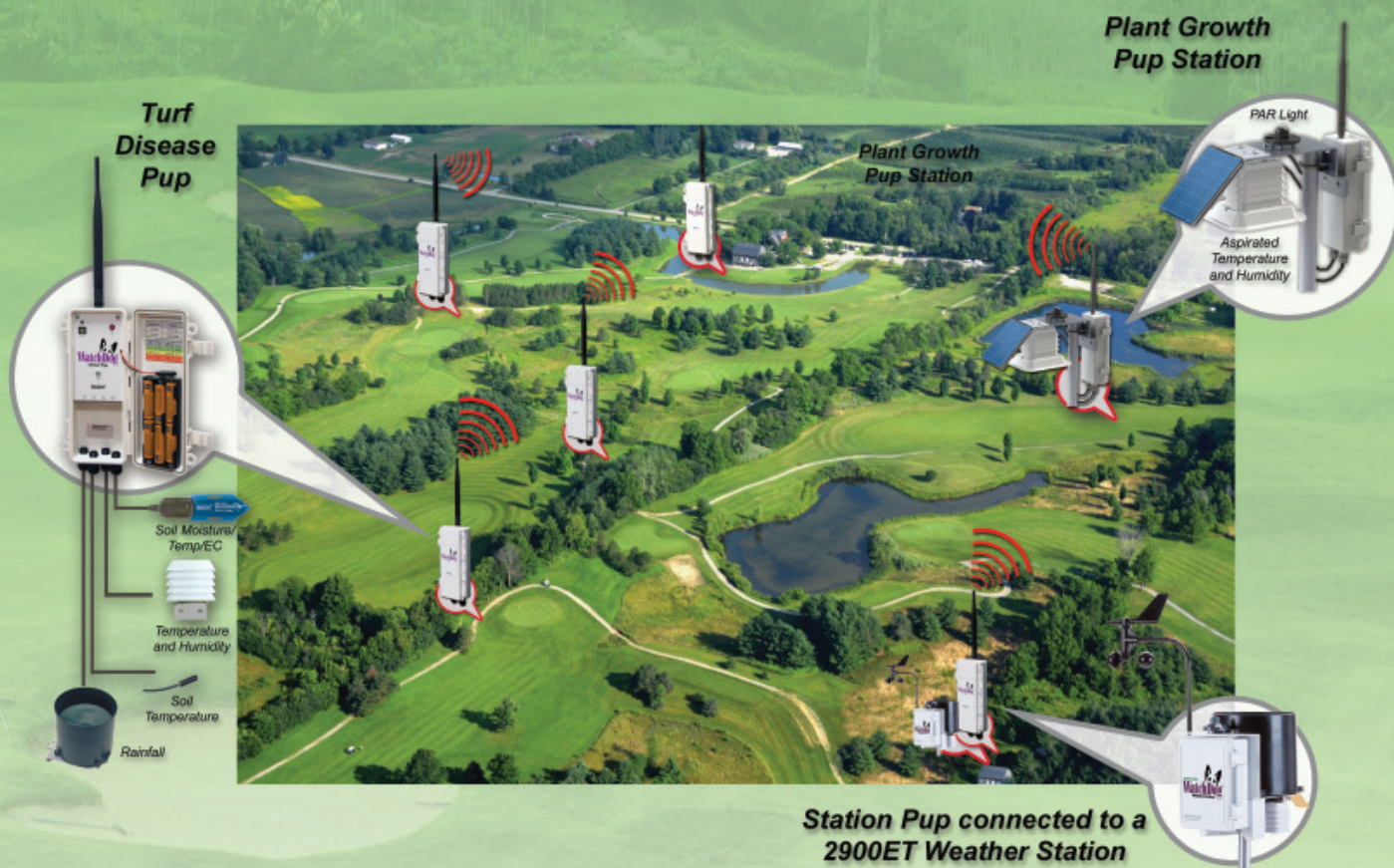
"If we have our choices of either side of the coin, it's prudent for us to try to push to the conservative," he says. "If we continue the route we're on now, golf is going to have its wrists handcuffed."

Continued on page 24

HOW CONCERNED ARE YOU ABOUT THE RESULTS OF THE 2016 ELECTION?



Your Turf. Your Data. Better Decision\$



SpecConnect Wireless Agronomic Solution

See us at
The Golf Industry Show
Booth #4925

A powerful solution for:

- ✓ Site Specific Microclimate Monitoring & Management
- ✓ Turf Disease & Insect Pressure
- ✓ ET Measurement – Irrigation Scheduling
- ✓ DLI – Daily Light Integral measurement in shade conditions

Spectrum
Technologies, Inc.
"To Measure Is To Know"

3600 Thayer Court
Aurora, Illinois 60504
Toll Free: (800) 248-8873
Email: info@specmeters.com

Learn more at
www.specmeters.com

WORRIED ABOUT WOTUS?

Our survey found readers split, but our sources consider its threat as real.

Huge. Enormous.

Those were the first two words Jimmy Alston used in describing how big a concern Waters of the U.S. (WOTUS) is for him.

The superintendent at Eagle Creek G&CC in Naples, Fla., Alston says he



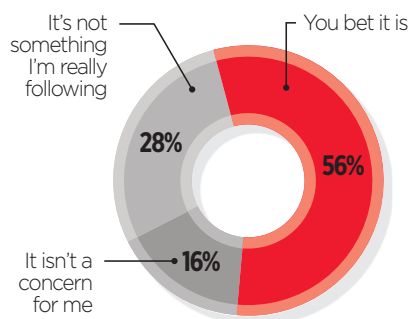
Jimmy Alston

has been following WOTUS closely — maybe even obsessively — since 2006. Back then, he says, the Florida Department of Environmental Protection kept a website with regular updates. He could read the memos between the different state and federal departments. “It was a back and forth, you could see these conversations... some of them were almost arguments,” he says.

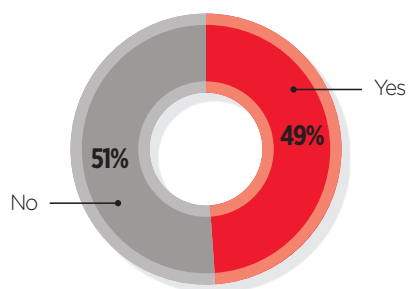
In 2012, the website disappeared. Alston called to see where the page went but got nowhere. He feels similarly lost today and believes he’s not alone.

“I’ve got DEP and EPA guys in all the time, and they can’t explain to me what (WOTUS) is.”

IS WATERS OF THE U.S. (WOTUS) A REAL CONCERN FOR YOU?



HAVE YOU TAKEN THE TIME TO READ THE WOTUS RULE?



“I think we as superintendents don’t have a clue as to what (WOTUS) really is,” he says. “Our course abuts a federal estuarine preserve, so I’ve got DEP and EPA guys in all the time, and they can’t explain to me what (WOTUS) is. I ask them all and they literally have this puzzled look. And these guys are supposed to be telling us?”

Shangri La GC in Afton, Okla., sits on Grand Lake O’ the Cherokees. They have

an island green. And now they also have an independent contractor who monitors WOTUS for them.

“It’ll be a huge deal — our entire water source comes from Grand Lake, and of course everything drains into Grand Lake. Our whole course is in that area, the 100-year floodplain and 4,000 feet from the lake,” says Superintendent Justin May. “It’s going to be a huge part of our club, depending on how far it goes. It’s another hoop we’ll have to jump through. It’ll probably be for the good somewhere, but it’s going to make our lives difficult for a while.”

Rodney Crow, CGCS at the Battleground GC, Deer Park, Texas, is a part of the GCSAA’s Grassroots Ambassador Program. He says the group is trying to educate the general public that WOTUS isn’t just bad for golf courses, but for municipalities and the general public as well.

“It’s going to affect not only what we do, but how we do it and the costs associated with it,” Crow says. “It’ll drastically change our fertilization practices, even the way we mow. And the rancher or the homeowner, if they have a pond on their property, it’s going to impact them directly as well.”

Alston is still seeking out education on the topic anywhere he can find it. He relies on GCSAA as well as *Golfdom*, and was thankful to see the topic on a recent cover of the magazine.

“Superintendents need more education about what it is and what it is not,” Alston says. “I think it’s going to get bigger and bigger and bigger.”

Continued on page 26

SensiPro™ Granules are a revolutionary delivery method for pond colorants and spray pattern indicators that break surface tension immediately and disperse color rapidly eliminating surface clumps. SensiPro is 90% pure dye with no dispersing aids, fillers or unnecessary surfactants making it two to three times stronger than competitive powders. And, it's lightweight, easier to pour and measure compared to liquids. This allows increased convenience, accuracy, efficiency and savings. SensiPro Granules are non-toxic and made in the USA with food quality dyes. With SensiPro Granules, your sales team has more tools, more excitement and real innovation.



Don't settle for less. Go with the pro. SensiPro.

Sensient Industrial has been a global leader in color innovation for over 100 years. If we don't already have a solution for your color needs, we will develop one.

SENSIENTINDUSTRIAL.COM | 800.325.8110

SENSIENT®
INDUSTRIAL COLORS

See us at the Golf Industry Show in San Diego,
February 10th and 11th, in booth #933.

DESIGNS ON GETTING MORE GOLFERS

Readers weigh in on what they think can help get more golfers on the course

Chris Zugel, CGCS at The Straits Course at Whistling Straits, Kohler, Wis., likes to golf with his wife, but she doesn't always like to play with him. Not because her husband is apt to chuck his 3-iron into Lake Michigan like John Daly at last year's PGA Championship, but because she gets nervous.



Chris Zugel

"The whole experience needs to be less intimidating," says Zugel. "My wife doesn't always like to go because she feels like she won't play well, and that people are

going to judge her."

If golf is going to continue to bounce back, people like Mrs. Zugel are going to have to play more rounds in 2016. Zugel adds that he is interested in simulators and Topgolf because they can help people become more comfortable on a golf course.

"There's a lot of self-consciousness that occurs in golf when you're out there doing a skill for four hours, and things like (simulators, Topgolf) get people interested in the game," Zugel says.

Superintendent Rod Johnson, CGCS at Pine Hills CC in Sheboygan, Wis., thinks that once novice golfers are on the course it's imperative that they have at least some

success while playing.

"We need more people to experience that 'shot euphoria' when they come to the course," Johnson says. "That doesn't mean making golf courses more difficult. Sometimes we might be maintaining and designing for the wrong people."



Rod Johnson

Kasey Kauff, director of grounds at Trinity Forest Golf Club in Dallas, agrees with Johnson that it's not the players' mentality that needs to change, but how golf courses are designed.

"The No.1 thing is making golf courses easier to play because golf shouldn't be hard, and people come back to the game if they play well," he says.

Kauff adds that making golf courses easier could also help the bottom line, because a course with fewer bunkers and less-maintained rough would be cheaper to maintain.

That concept is being translated to Kauff's course. The currently under-construction Trinity Forest GC is being fitted with no maintained rough. The outlying areas have been seeded with Blackland Prairie, a native-blend turf that is the most endangered ecosystem in North America, according to Kauff.

"With that outlying area we are restoring prairie but we're not maintaining it. There's no irrigation or fertilizer," says Kauff. "It's very sustainable, and that's what we are looking for."



Kasey Kauff

EarthWay
EV-N-SPRED
FLEX-SELECT

FLEX-SELECT® F80S
You've never seen
anything like it!

EarthWay
EV-N-SPRED

MADE IN THE USA

**For information call 1-800-294-0671
or visit www.earthway.com**
patents pending

13

Snow mold's unluckiest number.

TURFCIDE®. 13 field trials. At least 94% control. 100% of the time.

Recent field trials compared the performance of TURFCIDE, as part of AMVAC's recommended fairway snow mold control program, to competitive programs.

The results proved that the AMVAC program was not only more effective than the competition, but it also provided excellent snow mold control. In all 13 trials.

SEE THE DATA. Visit amvac-chemical.com to learn more.

TURFCIDE provided at least

94% control in

100%
of the trials.

Contact your AMVAC/AEP distributor or
call AMVAC at 1-888-GO AMVAC (1-888-462-6822).
Learn more at amvac-chemical.com.

*AMVAC recommended snow mold control program includes TURFCIDE® at 8 fl. oz. and Concert® II at 8.5 fl. oz.

© 2015 AMVAC Chemical Corporation. All rights reserved. AMVAC, TURFCIDE, the AMVAC and AEP logos are trademarks owned by AMVAC Chemical Corporation. Concert II is a trademark of Syngenta Group Company. Always read and follow label directions. www.amvac-chemical.com. AV-2015-TURFCIDE100WS



JUST FOR KICKS

Alternative forms of golf are out there, but readers seem doubtful of their usefulness.

Alternative forms of golf to get consumers on the golf course — like FootGolf and oversized cups — have been popping up in recent years as a way to “save” golf.

Some courses have seen numbers increase while others have not tried the new ideas. But do superintendents think they can help the game?

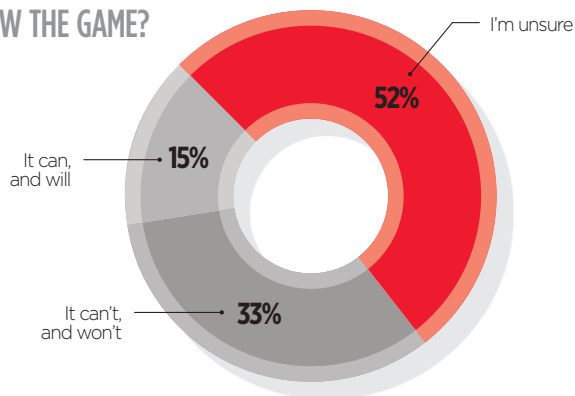
According to our survey,

only 15 percent of *Golfdom* readers believe that these spin-offs of golf will help grow the game.

Brian Burke, superintendent at Sycamore Creek CC, Springboro, Ohio, thinks that FootGolf and oversized cups can help grow the game, because getting a person on the property is never a bad thing.

“We can’t be closed-minded,

FOOTGOLF, TOPGOLF, FLINGGOLF...
WILL ANY OF IT HELP
GROW THE GAME?



and we have to look outside of the box,” says Burke. “That is why FootGolf and 15-inch cups are out there as an option for golf courses. It’s about getting people excited to come to the property.”

Topgolf is on Burke’s mind too, because one of the newest locations will be opening this summer about 30 minutes away from Sycamore Creek CC in West Chester, Ohio. He’s excited to see people experience the game outside of a golf course and hopes it can take away the stigma of how stuffy the game can be.

“More people with a golf club in their hand cannot be a bad thing, and I think it’s going to take off when it comes to my area,” says Burke.

Mike Bremmer, superintendent at Milwaukee’s Wisconsin Club, says that attention

should be paid to these new forms of the game.

“I think these alternate forms are bringing in more golfers to the game. To



Mike Bremmer

the game’s traditionalists they are bizzare, but who cares if more people are playing,” says Bremmer. “I’m also wondering if the National Golf Foundation is tracking rounds from these people who are coming into the game because of FootGolf and oversized cups. The only way we will ever know is if you can track and analyze it.”

Jim Campbell, superintendent at Prairie Dunes CC, Hutchinson, Kan., says that he is with the 52 percent of professionals who are unsure

Premium Liquid Fertilizer

Experience The Difference

PLANT FOOD COMPANY, INC.

www.plantfoodgolf.com

800-562-1291 | pfc@plantfoodco.com

if they can help. He brings up the golf introductory program being implemented in schools



Jim Campbell

across Kansas called Starting New At Golf (SNAG). In partnership with the Kansas Golf Foundation, a golf unit can be added to a physical education program at no cost to a Kansas school. It's a program that he

believes will be good for the game.

As of fall 2015, more than 150,000 students in the state are learning golf in physical education class in grades K-12, according to the Kansas Golf Association.

"That program is reaching thousands of kids in Kansas that might have never touched a golf club before," Campbell says. "That has to be huge for the future of golf."

READY FOR TAKE-OFF

We asked survey respondents what it would take for golf to take off again. Here are some of their answers:

"WE NEED TO FIND A WAY TO MAKE THE GAME MOVE FASTER. THE YOUNGER GENERATION HAS LESS TIME TO DEVOTE TO GOLF."

"KEEP BUILDING JUNIOR PROGRAMS, REACH OUT TO WOMEN AND MINORITY GOLFERS."

"WE MUST SUPPORT SMALL COURSES WHERE THE GROWTH OF THE GAME IS MOST LIKELY TO OCCUR. EACH LARGE, PRIVATE, SUCCESSFUL FACILITY COULD ADOPT A FEEDER COURSE TO GET THE GROWTH OF THE GAME GOING AGAIN."

"WE NEED TO ACCEPT THAT LIFESTYLES WILL NEVER BE WHAT THEY WERE WHEN GOLF WAS BOOMING. WE NEED TO MODIFY OUR THINKING AND ACCEPT DIFFERENT PEOPLE AND THEIR NEEDS."

"A MIRACLE."

98

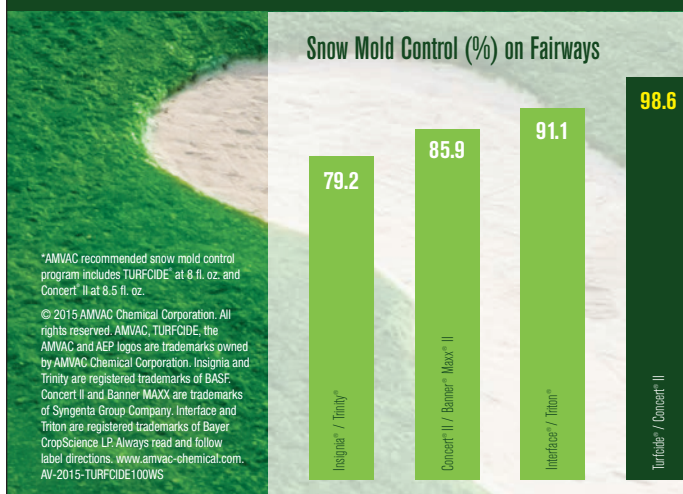
Percent Control

Zero Competition

In 13 field trials, TURFCIDE[®], as part of AMVAC's recommended fairway snow mold control program, proved to be more effective at controlling snow mold than the competition.

SEE THE DATA. Visit amvac-chemical.com to learn more.

Contact your AMVAC/AEP distributor or call AMVAC at 1-888-60 AMVAC (1-888-462-6822). Learn more at amvac-chemical.com.



It doesn't take super-strength to get the most out of the annual Golf Industry Show, just proper planning. We did some of that planning for you already, with...

THE FANTASTIC



AT GIS

BY GRANT B. GANNON

The 2016 Golf Industry Show (GIS) is set to take place in San Diego from Feb. 6 to Feb. 11. It will be the third time since 2010 that “America’s Finest City” will be teeming with golf industry professionals ready to learn, network and tee it up.

With more than 82 seminars to learn from and more than 500 exhibitors on the trade show floor, the whole GIS experience can get overwhelming (not to mention distractions like 70 miles of beaches, a world-class zoo and plenty of food and drink in the nearby Gaslamp Quarter). Here are five events we believe qualify under the “can’t miss” category:

5 Gadgets and Gizmos — How to Best Use Measurement Technology (8 a.m. to 5 p.m., Tuesday, Feb. 9)

If you are a techie or superintendent interested in learning more about soil, plant and environmental measurement devices, this one-day seminar is for you.

Golfdom contributor and University of Arkansas Professor Michael D. Richardson, Ph.D., will be joined by his colleague Douglas Karcher, Ph.D., to lead the seminar. Join this geek squad as they travel to a local golf course to demonstrate and discuss

Continued on page 32



WORST WEED. BEST PICK.



THE ANDERSONS PROVIDES THE BEST SOLUTIONS FOR PREVENTING GOOSEGRASS ON GREENS.

Goosegrass can spoil a putting green surface. So start the season off right with an application of Goosegrass Crabgrass Control or one of our Fertilizer + Dithiopyr products. Labeled and formulated for use on bentgrass and bermudagrass greens, these are the most effective preemergent controls for goosegrass and other stubborn grassy weeds.

Make the right pick today for a clean putting surface this summer!

| PRODUCT | SGN | BAG WT. |
|------------------------------|-----|-----------|
| Goosegrass/Crabgrass Control | 80 | 28.8 lbs. |
| 0-0-5 + 0.103% Dithiopyr | 100 | 50 lbs. |
| 0-0-20 + 0.164% Dithiopyr | 100 | 50 lbs. |
| 10-3-10 + 0.164% Dithiopyr | 100 | 50 lbs. |
| 18-6-15 + 0.164% Dithiopyr | 100 | 50 lbs. |



www.AndersonsPro.com

Quali-Pro's Jeremy Moore (center) takes in the action on a busy day at the 2015 GIS.



Continued from page 30

drawbacks, cost and diagnostic capabilities of more than 20 devices. Buses will leave the convention center at 8:10 a.m.

4 Syngenta defining success, Yeti and GoPro giveaway (booth #2641)

GIS attendees entering the Henry B. Gonzalez Convention Center last year were greeted by 50-foot banners featuring close-ups of superintendents from around the country.

That caught us off guard, so this year we asked our friends at Syngenta what they will be doing to follow the “Many Faces of a Superintendent” campaign. They told us they’ll be celebrating the different ways that superintendents define success. Syngenta is inviting superintendents during the GIS to share their definition of success on Twitter or in the Syngenta booth using the hashtags #SuccessOfASuper and #GISContest for a chance to win a Yeti cooler or GoPro camera.

So now you’re tipped off. Start thinking of something clever and take one of those prizes home.

3 Managing Cool- and Warm-Season Native Grasses (1 p.m. to 3:30 p.m., Monday, Feb. 8)

The 2015 majors included two U.S. links-style golf courses that incorporate native grasses like those found across the pond in the U.K. Superintendents interested in learning more about the maintenance of these native grasses need to attend this Monday afternoon session.

Speakers include an all-star lineup of Chris Haspell, superintendent at Castle Stuart Golf Links, Inverness, U.K.; Josh Lewis, superintendent at Almaden G&CC, San Jose, Calif.; Eric Johnson, director of agronomy at Chambers Bay, University Place, Wash.; Chris Zugel, CGCS at Whistling Straits, Kohler, Wis., and Bob Farren, CGCS, director of golf course management at Pinehurst (N.C.) Resort.

Continued on page 34

// **JUST SAYING**

CALIFORNIA DAY TRIPPING

BY STEVEN WRIGHT, CGCS

GIS 2016 is almost here. “San Diego” is written on several calendars around my home and office. I can’t wait. Anytime the “show” goes west it opens up opportunities to travel and explore California.

I highly recommend a couple of extra days to make some memories. Exploring in and around San Diego allows you to find some pretty unique beach towns, great parks and fantastic views, all on a day trip. I have to admit that the thrill of no plan and a rental car to make it happen might be the best part.

Go all the way south to Point Loma on the Pacific for some spectacular views of cliffs and the ocean. If you can’t do the trip up to Pebble Beach, for sure drive around Sunset Cliffs Boulevard and enjoy the views. Some quirky beach towns can be found just a little north of San Diego.

Another great day trip is up the coast from Pacific Beach, where you can stop and watch some locals surfing. In Pacific Palisades you can find many beachfront parks and spots to park and enjoy the coast, especially as you drive up that part of the coastline that leads to La Jolla. The La Jolla area alone is worth the day trip. Find an ATM and enjoy yourself.

Further north along the coast is Torrey Pines State Park. You can find a golf course with the same name nearby, but I would recommend going out to the cliffs of Blacks Beach to watch the hang gliders perform. Blacks Beach is also known for something else, but I won’t spoil the surprise.

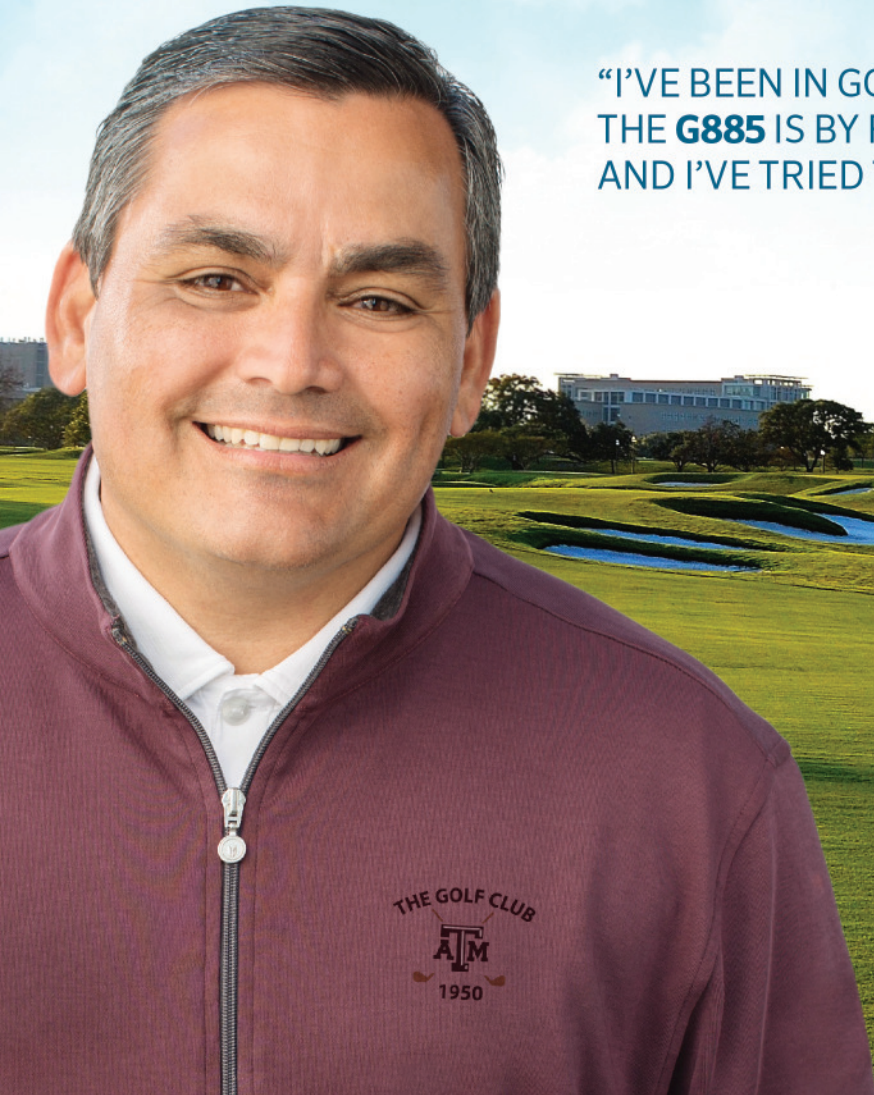
If you want to do some serious cruising, go for the drive up the Pacific Coast Highway north of Los Angeles. My wife and I made this journey the last time GIS was in San Diego. We went from San Diego up the coast through San Francisco to Napa. Our extra days were spectacular. A trip through Big Sur, with its breathtaking coastline and cliffs, will leave you speechless and probably white-knuckled.

But back to the GIS... I really am looking forward to seeing all the new gear this year!

"I'VE BEEN IN GOLF FOR OVER 25 YEARS.
THE **G885** IS BY FAR THE **BEST ROTOR EVER**,
AND I'VE TRIED THEM ALL!"

René Rangel

RENE RANGEL - STERLING GOLF MANAGEMENT



THE GOLF CLUB
AT TEXAS A&M
UNIVERSITY

G885
DECODER-
IN-HEAD
ROTOR

THE PERFECT COMBINATION OF POWER, PERFORMANCE, AND SERVICEABILITY.

Powerful - patented gear drive offers the highest torque output of any rotor on the market



Total Top Service - access every component through the top without disturbing the playing surface



21 Nozzles - precision, versatility, and wind-fighting efficiency



GOLF IRRIGATION | Built on Innovation

Learn more. Visit hunterindustries.com/golf
Visit us at Golf Industry Show, Booth 4031

Hunter®

Continued from page 32

2 **Practical Turfgrass Microbiology (8 a.m. to noon, Tuesday, Feb. 9)**

More and more products using microbes are being released, so it's important that superintendents know what these microorganisms can do for them and their turf. *Golfdom* research contributors James Kerns, Ph.D., assistant professor and Extension specialist at North Carolina State University, and Doug Soldat, Ph.D., associate professor at the University of Wisconsin, are scheduled to lead this Tuesday half-day seminar.

Get ready to learn. After this seminar, attendees will know the main types of soil microorganisms and their functions in a turfgrass ecosystem and will be able to understand the probable result of using soil microbiology enhancing products. They will also be able to evaluate their current

// **TURF'S UP!**

TURF LIFE TO LAUNCH AT 2016 GIS

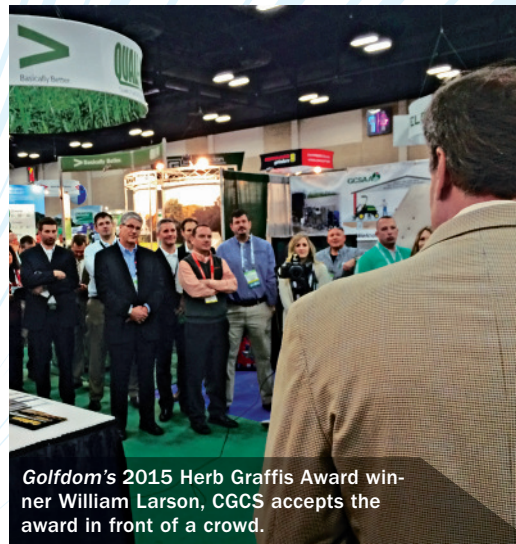
Meant for people who make a lifestyle out of spending time on the rolling fairways — either maintaining them or playing them — Turf Life wants you.

Started in 1999 in the pages of *Florida Golf Central* magazine, Turf Life started out as "Live Golf," a monthly column penned by *Golfdom* senior contributing editor Joel Jackson, CGCS-Ret. Now it's grown into stickers, T-shirts and other merchandise that turf professionals can proudly wear to show they are living the Turf Life.

"I felt there was a profound need for a symbol of pride in our profession," says Terrie Purdum, publisher of *Southern Golf Central* magazine. "It's all about growing pride, respect, and awareness... that is what Turf Life is all about."

Stop by the *Golfdom* booth to learn more about Turf Life.

management practices to better wield soil microorganisms.



Golfdom's 2015 Herb Graffis Award winner William Larson, CGCS accepts the award in front of a crowd.

1 **2016 Graffis Award unveiling (2 p.m., Wednesday, Feb. 10th, booth #2941)**

Last year when Rees Jones introduced William Larson, CGCS, as the 2015 Herb Graffis Businessperson of the Year Award winner, the crowd was too large for the humble *Golfdom* booth to handle.

So this year, at 2 p.m. on Feb. 9, we'll make the announcement at the spacious booth of the award's sponsor, Jacobsen. Stop by to hear Rees Jones, "The Open Doctor," say a few words about Graffis and meet the 2016 Graffis Award winner in person. Then stick around to learn about Jacobsen's expansions of its offering of fairway mowers, rough mowers and aerators. (Company representatives tell us that one of the most exciting new products it's launching at this



The LF557/LF577 fairway mower

show is the LF557/LF577 fairway mower. The all-new mower will serve as the only Tier 4 Final 7-reel fairway mower on the market, and offers a massive 139-inch cutting width. The mower will be offered with either 5-inch or 7-inch reels.) ©

THE WAY WATER WAS INTENDED:

CLEAN, HEALTHY, SUSTAINABLE.



Achieve a balanced aquatic ecosystem with water movement and proper aeration. Air-O-Lator has been the leader in pond and lake management for over 40 years. We manufacture eco-friendly, high performance products that provide high oxygen transfer rates as well as moving large volumes of water -- keeping your ponds clean and sustainable and only hazardous for wayward golf balls.

Backed by outstanding customer service, Air-O-Lator aerators and fountains are easy to install and maintain.

www.airolator.com
800-821-3177



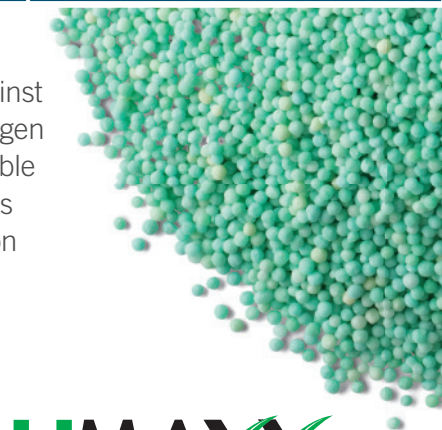
THE POWER TO MAKE THINGS GROW



Mother Nature. Nitrogen loss. HANDLE BOTH.

UMAXX® stabilized nitrogen contains dual-inhibitor technology that protects against nitrogen loss due to volatilization, denitrification and leaching, making your nitrogen fertilizer more efficient. With this enhanced efficiency fertilizer, nutrition is available almost immediately after application, and turf is fed for up to 12 weeks. Since it's completely soluble, you can spread, spray or tank-mix it with other turf protection products. UMAXX® fertilizer, with its unique mode of action can't control Mother Nature, but will stand up to what she dishes out.

Visit KochTurf.com and stop by booth 2714 at GIS to learn more.



UMAXX
STABILIZED NITROGEN

UMAXX® and the UMAXX logo are trademarks of Koch Agronomic Services, LLC. KOCH and the KOCH logo are trademarks of Koch Industries, Inc. © 2016, Koch Agronomic Services, LLC. T&O-15-11568.

Golfdom Summit

2015
Highlights

"The Golfdom Summit was very well organized, professional and very educational. I think it was one of the best continuing education conferences I have attended."

—JOHN F. ZIMMERS, JR., SUPERINTENDENT, OAKMONT CC

"Great resort, best networking opportunities I've ever had, informative, innovative and an all-around great time for everyone. It was a fantastic event, and will be one of the most memorable in my career."

—KYLE JOHNSON, SUPERINTENDENT, INVERNESS CC

"Many thanks to Golfdom for a fantastic and well planned Golfdom Summit. A must-attend for all golf course superintendents."

—ALEX J. STUEDEMANN, SUPERINTENDENT, TPC DEERE RUN



Thank You to Our Sponsors



Pin Flag Sponsor **STANDARD GOLF COMPANY**



Golfdom Summit 2016
December 6–9, 2016
www.GolfdomSummit.com



Super Science

// NEW WINDOW TREATMENTS

SIMULATED RAINFALLS INFLUENCE ON LARGE CRABGRASS CONTROL WITH HERBICIDES

By Jim Brosnan, Ph.D., Greg Breeden and Javier Vargas

Large crabgrass (*Digitaria sanguinalis*) is a widespread turfgrass weed throughout the Transition Zone southward. Herbicides containing quinclorac (Drive XLR8, Solitare) often are used for selective large crabgrass control. Current labeling indicates that foliage must remain dry for 24 hours after applying these herbicides. Because quinclorac enters susceptible weeds through both foliar and root tissue, rainfall within this 24-hour period may not negatively influence efficacy, so turf managers may have a greater window of opportunity to make applications for large crabgrass control.

Research conducted at the University of Tennessee at Knoxville from 2011-2013 evaluated effects of simulated rainfall timing on the efficacy of Drive

XLR8 and Solitare for large crabgrass control. Plants were propagated in greenhouse culture and treated with Solitare (1 and 1.3 lb./acre) or Drive XLR8 (64 fl. oz./acre). Per label instructions, Solitare was applied with no surfactant and Drive XLR8 included a methylated seed oil surfactant at 1.5 pint/acre. A non-treated check was included for comparison. Applications were made using a CO₂-powered boom sprayer calibrated at 30 gallons/acre. Large crabgrass



Large crabgrass (*Digitaria sanguinalis*) is a common weed of warm- and cool-season turfgrasses.

plants were at the 1-3 tiller growth stage on the day of treatment. An enclosed spray chamber applied about 1 inch of simulated rainfall to treated plants over the course of 5 minutes. Rainfall was applied at 0, 0.5, 1, 2, 4, and 12 hours after treatment.

Under the conditions of these experiments, heavy (about 1 inch) simulated rainfall as soon as 0.5 hours after application had no effect on large crabgrass control with either Drive XLR8 or Solitare. However, when averaged over all simulated rainfall timings, Drive XLR8 efficacy for large crabgrass control exceeded Solitare.

Our findings show that a heavy (about 1 inch) simulated rainfall as soon as 0.5 hours after application had no effect on large crabgrass control with Drive XLR8 or Solitare. This information could provide turf managers a greater window of opportunity to apply these herbicides for large crabgrass control.

Jim Brosnan, Ph.D., Greg Breeden and Javier Vargas, University of Tennessee. Jim Brosnan can be reached at jbrosnan@utk.edu for more information. This article is adapted from an article first published by the authors in *Applied Turfgrass Science*.

NEWS UPDATES

TPI NAMES MILLER TURFGRASS EDUCATOR AWARD OF EXCELLENCE WINNER

Turfgrass Producers International has named Grady Miller, Ph.D., professor and Extension turf specialist at North Carolina State University's College of Agriculture and Life Sciences, its Turfgrass Educator of Excellence winner. The association noted his personal commitment, dedication and positive influence in helping to educate consumers, turfgrass producers and industry professionals.

Before starting at N.C. State, Miller spent 11 years with the turfgrass faculty at the University of Florida. During his career he has taught 65 university course sections in subjects related to turfgrass culture, golf and sports turf management and research methodology.

Miller is active with a number of state and national associations and works closely with the sod, sports turf and golf course industry to address issues and find solutions to common turf problems. His latest collaboration is a new USDA-funded project with four other universities to study the persistence, survival and recovery of warm-season turfgrasses for sustainable urban landscapes under limited irrigation and long-term drought.

Miller will be honored Feb. 23 at the TPI 2016 International Education Conference & Field Day in Houston.

SUPERINTENDENTS NEED TO DEVELOP MANAGEMENT PROGRAMS THAT DELAY THE ESTABLISHMENT OF HERBICIDE-RESISTANT ANNUAL BLUEGRASS."

Patrick McCullough, Ph.D.

(see story on page 38)

Annual bluegrass control

Herbicide selection and resistance management

By Patrick McCullough, Ph.D.

Annual bluegrass (*Poa annua* L.) is the most problematic winter weed in golf course turf. Plants have a light green color, coarse leaf texture and unsightly seedheads that reduce turf aesthetics (Figure 1). Annual bluegrass also has poor tolerances to heat, disease and other stresses that compromise turf quality.

Seeds germinate in late summer or early fall once soil temperatures drop below 70 degrees. Annual bluegrass matures in fall and overwinters in a vegetative state. Plants resume active growth in spring and can produce hundreds of viable seeds. Annual bluegrass is competitive with turfgrasses and may lead to significant stand thinning by early summer.

Plants may survive in regions with

favorable growing conditions if they are irrigated and pests are adequately controlled. Superintendents can reduce populations through several cultural practices that limit annual bluegrass growth. However, cultural management often does not provide acceptable control, and herbicides are needed.

PRE-EMERGENCE: ALTERNATIVES TO DINITROANILINE

Pre-emergence herbicides applied in late summer or fall may prevent annual bluegrass establishment from seed. Dinitroaniline (DNA) herbicides are widely used for pre-emergence control of grassy weeds in turf. The DNA herbicides include pendimethalin (Pendulum, others), prodiamine (Barricade, others) and oryzalin (Surflan). These herbicides

are absorbed from the soil by weed seedlings immediately after germination. Susceptible biotypes of annual bluegrass are controlled through mitosis inhibition in roots and shoots.

The DNA herbicides are relatively cheap, broad spectrum and safe for most established turfgrass species. However, exclusive use of DNA herbicides over the years has led to resistant biotypes on many golf courses. Dithiopyr (Dimension) is a pyridine herbicide that has a similar mode of action to the DNAs. Annual bluegrass with resistance to DNA herbicides is not generally controlled by dithiopyr, so selecting herbicides with an alternative mode of action may be critical for successful pre-emergence control.

Resistance develops from selection pressure by repeated use of the same herbicide or mode of action over years. Many biotypes of annual bluegrass may be present in a population. Genetic differences among biotypes contribute to levels of susceptibility to herbicides. The most common mechanisms for resistance are through an altered target site or enhanced metabolism. Other resistance mechanisms may include reduced absorption, herbicide sequestration or overproduction of the target-site enzyme. The resistant biotypes continue to reproduce and spread seed in these areas as susceptible biotypes are controlled by a particular herbicide over years. This type of selection pressure shifts an annual bluegrass population from susceptible to resistant biotypes over time.

Turfgrass managers have several options for delaying the development of resistance to DNA herbicides.

FIGURE 1



Annual bluegrass (*Poa annua*).

PHOTO BY: PATRICK MCCULLOUGH

TABLE 1

Herbicides for annual bluegrass control in golf course turfgrass

| WSSA Group | Mode of Action | Chemical Family | Application Timing | Active Ingredient | Trade Name (Examples) |
|------------|--|---|---|---|--|
| 2 | Acetolactate synthase (ALS) inhibition | Pyrimidinylthiobenzoate Sulfonylurea | Post-emergence | bispyribac-sodium flazasulfuron foramsulfuron foramsulfuron + halosulfuron + thiencarbazone rimsulfuron trifloxysulfuron | Velocity Katana Revolver Tribute Total TranXit Monument |
| 3 | Microtubule assembly inhibition | Benzamide Dinitroaniline Pyridine | Pre- + Post-emergence Pre-emergence | pronamide benefin oryzalin pendimethalin prodiamine dithiopyr | Kerb Balan Surflan Pendulum, others Barricade, others Dimension |
| 5 | Photosynthesis inhibition at photosystem II | Triazine Triazinone Triazolinone | Pre- + Post-emergence Post-emergence | atrazine simazine metribuzin amicarbazone | Aatrex, others Princep, others Sencor Xonerate |
| 8 | Lipid synthesis inhibition | Benzofuran Phosphorodithioate | Pre- + Post-emergence Pre-emergence | ethofumesate bensulide | Prograss Betasan, others |
| 9 | EPSP synthase inhibition | Glycine | Post-emergence | glyphosate | Roundup, others |
| 10 | Glutamine synthetase inhibition | Phosphinic acid | Post-emergence | glufosinate | Finale |
| 14 | Protoporphyrinogen oxidase (PPO) inhibition | N-phenylphthalimide Oxadiazole | Pre- + Post-emergence Pre-emergence | flumioxazin oxadiazon | Sureguard Ronstar, others |
| 22 | Photosystem-I-electron diversion | Bipyridylum | Post-emergence | diquat | Reward |
| 27 | Inhibition of 4- hydroxyphenyl-pyruvate- dioxxygenase (4-HPPD) | Triketone | Pre- + Post-emergence | mesotrione | Tenacity |
| 29 | Cellulose biosynthesis inhibition | Alkylazine | Pre-emergence | indaziflam | Specticle |

Indaziflam (Specticle) is a cellulose biosynthesis inhibitor that provides pre-emergence and early post-emergence control of annual bluegrass in warm-season turfgrasses. Indaziflam is not labeled for cool-season turfgrasses and may cause significant injury to susceptible species. Indaziflam may also cause unacceptable injury to turfgrasses grown in stressful conditions such as shade or traffic stress. Therefore, only use indaziflam on established turfgrasses under optimal growing conditions. There also is increased risk

of turfgrass injury from use on sandy soils with low organic matter. Adjusting the application rate or making split applications reduces potential turfgrass injury from treatments.

Oxadiazon (Ronstar, others) is a chlorophyll synthesis inhibitor that effectively controls annual bluegrass in fall. Oxadiazon doesn't generally inhibit turfgrass rooting because of the herbicidal activity in shoots of susceptible plants. This is advantageous for golf courses with a history of disease (such as spring dead spot

and winterkill), or if grasses need to be sodded or sprigged in treated areas. Oxadiazon controls DNA-resistant annual bluegrass, goosegrass and weeds with resistance to other modes of action.

Superintendents should use only the granular oxadiazon formulations on actively growing turfgrass. Use sprayable formulations on dormant warm-season grasses because applications during active growth cause significant turf injury.

Continued on page 40

Continued from page 39

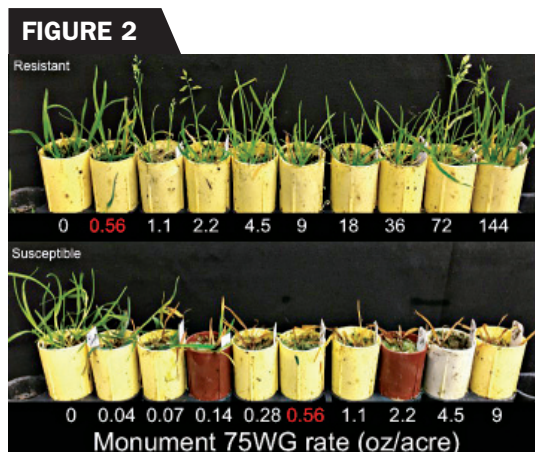
Bensulide (Betasan, Bensumec, others) also is an alternative mode of action to the DNA herbicides. Make applications alone or in combination with oxadiazon to enhance the spectrum of weeds controlled. Pre-packaged combinations or tank mixtures of two pre-emergence herbicides with different modes of action enhance the potential to control biotypes of annual bluegrass with suspected resistance.

Bensulide, ethofumesate (Prograss) and oxadiazon offer alternative modes of action to DNA herbicides in most cool-season turfgrasses for pre-emergence control of annual bluegrass. Ethofumesate inhibits lipid biosynthesis in susceptible species. Sequential applications in fall provide pre- or early post-emergence control of annual bluegrass.

Superintendents also may use ethofumesate during establishment of perennial ryegrass and tall fescue to control seedling annual bluegrass. Most warm-season grasses such as bermudagrass are susceptible to ethofumesate injury, and discoloration is a risk if it's used during fall overseeding. Mesotrione (Tenacity) is a carotenoid synthesis inhibitor that may control annual bluegrass during establishment of tall fescue or Kentucky bluegrass from seed. Applications at seeding provide a competitive growth advantage of tolerant turfgrasses over annual bluegrass during establishment.

POST-EMERGENCE: ALTERNATIVES TO SULFONYLUREAS AND TRIAZINES

Herbicides may control annual bluegrass after emergence in many turfgrass species. Triazines, sulfonylureas and several other post-emergence herbicides that control annual bluegrass are used in warm-season turfgrasses only. Superintendents may use amicarbazone (Xonerate), ethofumesate (Prograss) and bispyribac-sodium (Velocity) in several



Resistant and susceptible biotypes of annual bluegrass treated with trifloxysulfuron (Monument) at three weeks after treatment in a greenhouse experiment. Note the highest labeled rate is highlighted in red.

cool-season turfgrasses for post-emergence control of annual bluegrass. In the Southern United States, late fall applications of these herbicides provide more consistent control than spring timings. This is because most post-emergence herbicides are more efficacious on annual bluegrass prior to seedhead development or when daytime temperatures are consistently 50 degrees F or higher.

Atrazine (Aatrex, others) and simazine (Princep, others) are used in warm-season grasses in fall for early post-emergence control of annual bluegrass. These herbicides inhibit photosynthesis at Photosystem II (PSII) in susceptible weeds, and provide about six weeks of residual control, depending on application rate. Acetolactate synthase (ALS)-inhibitors are widely used in golf course management for annual bluegrass control in tolerant turfgrasses. These herbicides include bispyribac-sodium (Velocity), flazasulfuron (Katana), foramsulfuron (Revolver), rimsulfuron (TranXit) and trifloxysulfuron (Monument). Tribute Total is a combination product that contains multiple ALS-inhibitors, including foramsulfuron, that provide post-emergence control of annual bluegrass in bermudagrass

and zoysiagrass.

Resistance to ALS and PSII-inhibitors has increased exponentially in turfgrass. These herbicides have been overused, especially in warm-season turfgrasses, and this has shifted many annual bluegrass populations to resistant biotypes. Figure 2 shows the tolerance of a resistant biotype to an ALS-inhibitor, trifloxysulfuron, compared to a susceptible biotype at three weeks after treatment. In warm-season grasses, pronamide (Kerb) is used

for annual bluegrass control as an alternative to these herbicides. Pronamide is a mitotic inhibitor that must be absorbed by roots. A concern with pronamide is the potential for lateral movement to susceptible (cool-season) turfgrasses. Avoid treatments on slopes or to saturated soils if cool-season grasses are adjacent to targeted areas. Efficacy of pronamide on annual bluegrass also is slow, and treatments may take six to eight weeks to obtain acceptable control.

Flumioxazin (Sureguard) is another alternative to ALS and PSII-inhibitors for annual bluegrass control. Flumioxazin is a chlorophyll synthesis (PPO) inhibitor -- similar to oxadiazon -- that is labeled for use only on dormant bermudagrass. Applications in late fall provide early post-emergence control of annual bluegrass plus residual pre-emergence control in winter. Turfgrass injury is a major limitation to flumioxazin use. The herbicide must be applied to dormant bermudagrass to avoid discoloration during green-up. Late fall applications of flumioxazin to bermudagrass have induced early winter dormancy. These flumioxazin effects may be beneficial for improving turfgrass aesthetics without inhibiting bermudagrass green-up in spring.

In cool-season turfgrasses, etho-

fumesate (Prograss) may provide an alternative mode of action for controlling annual bluegrass with suspected resistance to DNA herbicides, ALS-inhibitors and PSII-inhibitors (triazines). Apply sequential ethofumesate applications in late fall at a three-week to four-week interval for best results. However, applications in spring often provide erratic levels of annual bluegrass control. Ethofumesate applications after overseeding perennial ryegrass in fall also may injure bermudagrass prior to dormancy.

Amicarbazone (Xonerate) provides post-emergence control of annual bluegrass in all major warm- and cool-season turfgrasses. Amicarbazone's mode of action is the inhibition of PSII, similar to the triazines. Amicarbazone doesn't control annual bluegrass biotypes resistant to atrazine or simazine, which is a major efficacy limitation. However, amicarbazone may be effective for annual bluegrass control in turfgrasses that don't have a history of triazine herbicide use or if resistance is suspected from other modes of action.

Superintendents in the southern United States use amicarbazone on bermudagrass or zoysiagrass collars because of the limited injury potential from drift onto creeping bentgrass golf greens. Seashore paspalum also is tolerant to amicarbazone applications, and may provide an effective tool for post-emergence annual bluegrass control.

Selective annual bluegrass control options in cool-season turfgrasses are limited. Ethofumesate controls established annual bluegrass in several cool-season species, St. Augustinegrass and dormant bermudagrass. Low rates of ethofumesate applied sequentially are helpful in seashore paspalum for controlling seedling annual bluegrass in fall.

Course managers may treat dormant bermudagrass with non-selective herbicides such as glyphosate (Roundup,

others), glufosinate (Finale) or diquat (Reward). These herbicides provide alternative modes of action to many other herbicides for annual bluegrass control. However, only spray at peak dormancy when no green turfgrass foliage is present. Glyphosate-resistant annual bluegrass has been confirmed on golf courses in several states in the southern United States. Tank-mixing glyphosate with simazine or another herbicide with a different mode of action enhances the potential for controlling populations with suspected resistance.

RESISTANCE MANAGEMENT PROGRAMS

Annual bluegrass resistance to DNA herbicides, ALS-inhibitors, triazines and glyphosate are concerning in golf course turfgrass. The repeated use of these herbicides over years exacerbates the spread of resistant biotypes. Superintendents need to develop management programs that delay the establishment of herbicide-resistant annual bluegrass. As alternatives to DNA herbicides, consider using indaziflam (Specticle) or oxadiazon (Ronstar) for pre-emergence control of annual bluegrass in warm-season turfgrasses. Consider ethofumesate (Prograss) or oxadiazon in rotation with DNA herbicides for cool-season turfgrasses in fall. Alternative herbicides to the DNAs may have significant limitations for use such as cost, turfgrass injury and restrictions on labeled areas. Selecting the appropriate pre-emergence herbicide may be critical for controlling annual bluegrass and minimizing the spread of resistant biotypes.

Tank-mixing two herbicides with different modes of action will enhance the potential to control annual bluegrass with herbicide resistance. For example, a superintendent who needs to control annual bluegrass with suspected resistance to ALS-inhibitors in bermudagrass could apply a sulfonylurea (ALS-inhibitor) with simazine (PSII

inhibitor) or glyphosate (EPSP synthase inhibitor). The additional mode of action in tank mixtures increases the potential of controlling resistant biotypes while controlling the susceptible population. Incorporating other modes of action in sequential programs delays the onset of resistance to multiple modes of action as well. Most labels have the herbicide Group Number on the front page to identify the mode of action. Table 1 lists the Group Number, mode of action and chemical family for herbicides discussed for annual bluegrass control. Superintendents should have an appreciation for the herbicide mode of action when selecting products for annual bluegrass control. However, costs, efficacy and turfgrass injury potential may be significant challenges or limitations to rotating modes of action in many turfgrass species.

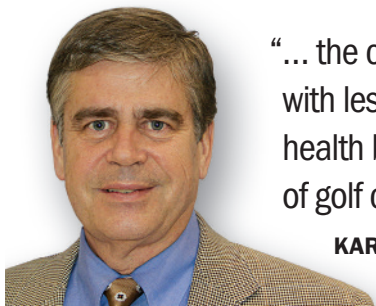
Patrick McCullough, Ph.D., is an associate professor of turfgrass weed science at the University of Georgia. Reach him at pmccull@uga.edu for more information.

Ad Index

Companies featured in this issue

| ADVERTISER | PAGE |
|--------------------------------------|--------|
| Air-o-Lator Corp | 34 |
| AMVAC | 27, 29 |
| The Andersons | 31 |
| Bayer | 5 |
| Control Solutions | 3 |
| Cushman | 13 |
| Earthway Products Inc | 26 |
| GT AirInject Inc | 17 |
| Hunter Industries | 33 |
| Jacobsen | 7 |
| John Deere | 15 |
| Koch Agronomic Services | 35 |
| Nufarm | 43 |
| PBI/Gordon | CV4 |
| Plant Food Company Inc | 28 |
| Sensient Industrial Colors | 25 |
| Smithco | CV2-p1 |
| Spectrum Technologies Inc | 23 |
| Standard Golf | 11 |
| Stevens Water Monitoring Systems Inc | CV3 |
| Turico | 4 |
| VGM Club | 19-20 |

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.



“... the concept of increased frequency with less intensity to achieve significant health benefits is analogous to a number of golf course management practices.”

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

Practice what you teach

Another holiday season is over and we have months of winter to look forward to. That means this is a lethargic time for me. My time is mainly spent eating too much, combined with a real lack of healthy activity. Invariably at year's beginning, I decide to activate my fitness center membership. With the same dedication I've shown in previous years, I travel to the fitness center with the goal of getting myself back in shape as soon as possible. Unfortunately, the same outcome occurs — the commitment to my exercise routine is short-lived.

As I lay on the couch this past Sunday watching a non-descript movie and eating popcorn, I began reading a journal article, which usually is a precursor to my Sunday nap. This journal article, however, piqued my interest. It was entitled, “Adherence to Exercise Prescriptions: Effects of Prescribing Moderate Versus Higher Levels of Intensity and Frequency,” published by University of Florida medical researchers in the *Journal Health Psychology*.

The introduction of the article mentioned, either reassuringly or disturbingly, that 75 percent of American adults do not achieve a sufficient level of activity. This inactivity may in part be due to the public perception that frequent vigorous exercise is required to achieve a health benefit. I would have to say I include myself in that public perception.

The researchers involved with this

study found that the greatest adherence (defined as completion of the study) was the greatest with the populations under moderate-intensity conditions and higher frequency. Higher intensity actually decreased adherence to the exercise program.

My take-home message from the article is that I would become healthier if I worked out by walking every day or every other day, rather than what I normally try to do, which is pound out a marathon run. I would, according to this study, be a healthier person by simply sticking with a semi-regular routine of walking.

I'm not at the moment trying to change my career path and write a column for the magazine *Fitness*. The likelihood of this occurring is about the same as the song “Thank God I'm a Country Boy” again reaching No. 1 on the *Billboard* Hot 100 charts. However,

the concept of increased frequency with less intensity to achieve significant health benefits is analogous to a number of golf course management practices.

For example:

Light, frequent sand topdressing.

The frequency of the treatment is high (as in applying weekly), but the intensity is moderate (as in a light amount of sand). The health benefit is that less anthracnose will develop (demonstrated by research at Rutgers University). The adherence or loyalty to the practice of light, frequent topdressing is higher than a heavy, infrequent topdressing program because a heavy (intense) topdressing is more likely to be cancelled or skipped because of environmental or golfer pressure.

Using plant growth regulators.

Plant growth regulator programs, especially on putting greens, have evolved over the last two decades from intense (higher rate) with less frequency (monthly) to less intense (lower rate) but more frequent application (weekly or biweekly). The evolution of more frequent but less intense applications has led us to observe greater health benefits to the turf. This has been documented by several researchers.

I can think of several other management practices that fit into the frequent-and-moderate intensity category. These examples and others conceptually provide the framework for two principles I teach: Small changes in management practices can greatly impact turf health; and management practices accumulate. When you think about it, these principles follow the concept of improved human health through frequent-but-moderate exercise and staying loyal (adhering) to the routine.

Regarding my own health, maybe it's time to practice what I teach.

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

WISE TODAY. WOW TOMORROW.

SEE US AT GIS '16
NUFARM BOOTH #3333

At Nufarm, we're committed to your growing success. That's why we've made our plant protection product line for turf and landscape ornamentals better than ever.

Learn how we can help you grow a better tomorrow.

NUFARM.COM/USTO



ANUEW BREAKTHROUGH

Anuew™ Plant Growth Regulator slows vertical turf growth resulting in less mowing, less clippings and improved quality.

OFFERING COMPLETE PLANT PROTECTION

including

**3336® / ANUEW™ / AFFIRM™
MILLENNIUM™ ULTRA 2
STELLAR® / TOURNEY®**



©2015 Nufarm. Important: Always read and follow label instructions. 3336®, Anuew™ and Millennium™ are trademarks of Nufarm. Affirm™ is a trademark of Cleary Chemical, LLC. Stellar® and Tourney® are trademarks of Valent U.S.A. Corporation.



Grow a better tomorrow.

Maintenance money matters

How much are the greens fees or membership dues at your golf course? What portion of the greens fee or membership dues is attributable to the cost of maintaining the golf course? My guess is that almost everyone in the business knows the correct answer to the first question, but few people know the correct answer — or have even a ballpark answer — to the second.

The high cost of playing golf has often been cited in the last few years as one of the primary reasons the game is not attracting more new golfers, why some current golfers leave the game and why rounds played are shrinking. In response, reducing golf course maintenance costs has been targeted as a way to make golf more affordable. To make that happen, superintendents have reduced spending on golf course maintenance.

University and industry scientists are conducting research that will help superintendents provide quality playing surfaces while reducing or holding the line on maintenance costs. These are important efforts that the maintenance side of the golf industry must continue to pursue.

But what about the other expenses that a typical golf course funds through greens fees or membership dues? Let's assume the greens fee or guest fee at a hypothetical golf course is \$50 for 18 holes. How much of that \$50 fee is directly attributable to golf course maintenance costs? I don't know the answer to that question — I don't even have a good guess — but before we jump to the conclusion that golf course main-

tenance expenses are driving up the cost of playing golf, we should conduct a detailed accounting of what it costs to keep the entire facility operating.

“Before we make the jump and assume that the high cost of golf course maintenance is the sole reason for the high cost of playing golf, we must scrutinize all costs at the golf facility.”

How much of the \$50 greens fee goes to operate the pro shop and pay the pro shop staff? How much goes to administration costs, the general manager and the staff necessary to keep the club functioning? How much goes to debt service? How much winds up as profit? How much goes to the operation of the clubhouse and other recreational amenities? Does the greens fee help subsidize the food and beverage operations?

Let's be perfectly clear: All the expenses I mentioned above are needed for a prosperous golf facility. But before we make the jump and assume that the

high cost of golf course maintenance is the sole reason for the high cost of playing golf, we must scrutinize all costs at the golf facility.

In the discussion of the high cost of playing golf and the associated maintenance costs, we've lost sight of the fact that the golf course is the driver of the vast majority of revenue at all golf facilities. Rounds played, the greens fee or guest fee charged, initiation fees, membership dues, golf car revenue and food and beverage revenue are all driven by the quality of the golf course. There is nothing like closing the golf course for renovation to quickly show what happens to all revenue streams.

I do not advocate for wall-to-wall manicured turf conditions on every golf course. I believe in the philosophy of spending your maintenance dollars “down the middle,” and in spending every maintenance dollar like it was your own. The maintenance side of the golf industry should do everything in

its power to make golf affordable, but golf course maintenance should not be singled out as the sole reason for the high cost of golf.

Let's not paint ourselves into a corner and assume that the high cost of golf is all attributable to golf course maintenance costs.



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



Who will be the next Herb Graffis Businessperson of the Year?

Now accepting nominations at Golfdom.com/Graffis

The Herb Graffis Business Person of the Year Award, presented by *Golfdom* and sponsored by Jacobsen, is awarded each year to a person in the golf industry who is making a positive impact on the bottom line of his or her facility with outside-the-box, cutting-edge thinking and overall business acumen.

Winner receives:

- » A cover story in *Golfdom*
- » An expenses-paid trip to the 2016 Golf Industry Show
- » An expenses-paid trip to the 2016 Golfdom Summit

The award is named in honor of Herb Graffis, one of the first people to look at golf as a business when he founded *Golfdom* in 1927. With his foresight, Graffis helped advance the game in numerous ways, from co-founding the National Golf Foundation and the Club Managers Association to his work advocating on behalf of the superintendent and helping elevate their profile. In 1977 he became the first journalist to be elected to the World Golf Hall of Fame.

2015 winner »

William Larson, CGCS, Town & Country Club, St. Paul, Minn.



*« 2012 Winner
Paul Chojnacky*



*« 2013 Winner
Wayne Kappelman*



*« 2014 Winner
Jim Rattigan*

**Know someone who deserves
this recognition?
Nominate them today at
GOLFDOM.COM/GRAFFIS**

Sponsored by

JACOBSEN

The 19th Hole with

Cliff Moore

SUPERINTENDENT // Mountain Ridge CC, West Caldwell, N.J.



What can I get you to drink?
Tito's and club.

I can't believe we let you take all those dollar bills off us at Pinehurst during the putt-off (see November 2015 *Golfdom* Gallery). How much did you rake in? I think it was about

\$85 to be honest with you. And there were only about nine of us in it. If I hadn't made that last putt I don't think we would have finished. We were lighting the green with our phone flashlights!

Are you married? Kids? I have a beautiful wife, Laura, and son Michael, 6 years old. Right now he's big into football, but he's a big (New York) Rangers fan... he's going to want to learn to skate, I think that's our next adventure.

That leads into my next question: What team do you root for? The University of Notre Dame.

How did you become a Notre Dame fan? Originally I'm from South Haven, Mich., on the Indiana/Michigan border. My grandfather retired early and stumbled onto Notre Dame. He became

friendly with the landscapers and the people in the kitchen, the guards there — he knew everybody. So he got season tickets



"I'VE GOT A GOOD CREW. THEY HIT THE GROUND MOVING AS SOON AS THEY GET IN — SOMETIMES THAT'S 4:30 IN THE MORNING AND SOMETIMES WE DON'T LEAVE UNTIL 9 AT NIGHT."

and took me to all the games. We were there for every game in 1988 when they won the national championship.

How did you get into this business?

I've always golfed, my dad was a huge golf fan. When I was 14 I started working at Kalamazoo (Mich.) CC with John Fulling (CGCS-Ret.) I went to Western Michigan University for a degree in finance. Every summer I went back to work for John, and he finally said, 'Why don't you go to the 2-year program at Michigan State after you graduate?' I said 'OK.' The rest is history.

I bet the finance degree comes in handy. Absolutely. There's a lot more to this business than just growing grass.

You recently re-contoured a couple greens? Our 18th green used to have some big slope from front to back. We used GreenScan. We dropped 1.75 degrees

in pitch. Now 60 percent of that green surface is cuppable, as opposed to 30 percent.

Would you like to do more? As old as this course is (1932, Donald Ross), there are still six greens (where) I'd like to reduce the slope. There were two things I was told would never happen at this club; rebuilding the greens and cutting down the oak tree on No. 18. So far we've done one out of the two.

Should the old oak tree be nervous?

It's funny, it's the most loved/hated tree on the golf course. If I ever do get the OK to do it, I want to make sure the board members and everyone are present so they don't think I did it on my own.

Last question: What thought is going through your head when there's \$85 laying on the green, and you have the putt to win? "Please go in."

As interviewed by Seth Jones, Dec. 14, 2015.



Superior insight | Better decisions | Healthier turf

See it at
GIS
#4251

Nothing else gives you this level of analysis and insight.

Only the portable POGO system simultaneously measures all of the most influential factors that govern turf performance with a patented sensor and science-based analysis.

Plus, continual accuracy with **no calibration.**



MOISTURE



**EC AND
SALINITY
INDEX**



**CANOPY
TEMPERATURE**



**PRECISE
GPS
MAPPING**

**Consultant-level,
detailed analysis
and reporting at
your fingertips...
for every important
impact on turfgrass
performance.**



With POGO's precision and unique visual insight analysis, make the best decisions to optimize the rootzone and turfgrass performance, preventing problems from developing.

The included POGO Turf Pro app utilizes the power of your Apple or Android device to capture and analyze data easily, while you are on the turf.



pogoturfpro.com/gcm
1.800.452.5272

IT'S YOUR CHOICE



PYTHFUL **or** BLISSFUL?

Segway® Fungicide SC makes Supers smile.



It's hard to be happy when Pythium disease damages your turf. So don't let it. Segway® Fungicide SC delivers outstanding protection against Pythium root dysfunction, Pythium blight, and Pythium damping-off. Segway works fast and lasts up to 28 days for healthier turf. Healthier turf means happier golfers, and happier golfers mean happier Supers.

For more information on Segway Fungicide SC, visit: GordonsProfessional.com



Always read and follow label directions. Gordon's® is a registered trademark of PBI-Gordon Corp. Segway® is a registered trademark of Ishihara Sangyo Kaisha Ltd. 12/15 04140