Daconil Action[™] fungicide combines the power of Daconil® with a revolutionary turf protein booster that helps turf activate its own natural production of PR proteins. The result is turf that is stronger, healthier, and better able to defend itself. When rotated with Secure, your turf gets complete inside-out protection from disease. To see what superintendents are saying about the turf-boosting power of Daconil Action, visit customer stories on GreenCastOnline.com/ DaconilAction.

If you're not rotating two multi-site contact fungicides year-round, you're leaving holes in your turf's defense.

, JAN	FEB	MAR	JAN	FEB	MAR
APR			APR +		
AFR					
JUL	AUG	ŞEP	JUL	AUG	SEP
ост	NOV	DEC	ост	NOV	DEC

Daconil Action rotated with a traditional fungicide

Daconil Action rotated with Secure fungicide

For more information on Daconil Action and Secure fungicides as part of a complete agronomic program, visit GreenCastOnline.com/programs.

©2013 Syngenta. Important: Always read and follow label instructions before buying or using Syngenta products. The label contains important conditions of sale, including limitations of remedy and warranty. All products may not be registered for sale or use in all states. Please check with your state or local Extension Service before buying or using Syngenta products. Daconil[®], Daconil Action,[®] the Alliance Frame, the Purpose loon, and the Syngenta logo are trademarks of a Syngenta Group Company. Secure[®] is a registered trademark of Ishihara Sangyo Kaisha, LTD. MW 1LGG3038-GCI 7/13

Secure® fungicide is the nextgeneration, multi-site contact and the first in the golf market in over 45 years. Secure is the ideal rotation partner with Daconil Action[™] fungicide for season-long protection against the toughest turf diseases, including fungicide resistant dollar spot. Secure is the only registered fungicide for turf in FRAC group 29, with no known resistance and low risk of future resistance. Now, your systemic fungicide no longer replaces your contact applications but rather complements for inside-out protection.



WHY IS LYNX' THE EASIEST IRRIGATION CONTROL SYSTEM IN THE INDUSTRY?

Simple. You helped design it. The Toro[®] Lynx[®] Control System delivers Precision[®] Irrigation easier and more intuitively than ever before. But don't take our word for it. See what superintendents are saying at toro.com/leaderboard.

The Leader in Golf.

Simplified decision making with Dynamic Drilldown.

lork Orde

Master Groups Watering Plan

shit

TORO

Lynx

With NSN' Connect, Lynx is with you when and where you want.

Integrated Turf Guard soil sensor helps you save water.

80.00 K

Flexible and editable map simplifies irrigation control.



Lynx Control System toro.com/leaderboard

©2013 The Toro Company. All rights reserved.





IN THIS ISSUE

COLUMNS

- 10 Outside the ropes Tim Moraghan: Turf's Most Important Challenge
- 16 Irrigation issues Brian Vinchesi: More or Less?
- 22 Johnny Turf Nerd John E. Kaminski: Combining The Art With The Science
- 51 Design Concepts Jeffrey D. Brauer: Water Starved Golf Course
- 56 Notes from the Republic Bill Brown: Node to Node to Today
- 60 The Monroe Doctrine Monroe Miller: Turf's Most Important Challenge

- 68 Game plan Henry DeLozier: 4 Ways to Control Water Costs
- 80 Parting shots Pat Jones: My New Bromance

DEPARTMENTS

- 6 Teeing off Carry the Torch
- 8 The Whiteboard
- 77 Travels with Terry

62

- Equipment ideas
- 78 Classifieds
- 79 Ad index

FEATURES

O&A

12 WATER PRESSURE

Irrigation is a complex issue on so many levels for superintendents. The industry's largest irrigation suppliers weigh in on future trends, availability issues and how this industry will be forced to cope.

Water Quality JUST THE FACTS, JACK

18

Depending on its source, water quality can be a real crapshoot. What you need to know about water monitoring that might just save your turf.



Construction

CRYSTAL CLEAR Golf course water usage is a lightning rod for controversy. Tips for successfully educating others about your course's water strategy.

Cultivars

58

52 SEEKING TURF'S HOLY GRAIL A look at some of the available turf types that offer playability, heat resistance and reduced water use.

Aquatic Management

IT'S NOT EASY BEING GREEN So your pond is overrun with algae. Don't fret. Here are three diverse treatments to bring your water back into shape.

Turf Health

Summer means overnight humidity, dew and disease pressure. Here are ways to prevent that morning moisture from destroying your turf.

Sustainability

69 PRESERVING HISTORY... AND WATER

Meadow Club's David Sexton details his high standards for water conservation.

Real Science

71 BUFFALOGRASS ON THE GOLF COURSE



3

GOLF COURSE INDUSTRY (ISN 1054-0644) is published monthly. Copyright 2013 GIE Media Inc., 4020 Kinross Lakes Parkway, #201, Richfield, OH 44286. All rights reserved. No part of this publication may be reproduced or transmitted by any means without permission from the publisher. One-year subscription rate, \$33 in the United States, \$42 in Canada and Mexico, and \$88 in other foreign countries. One year foreign airmail rate: \$102. Two year subscription rate: \$65. Single issue rate, \$10. Subscriptions and classified advertising should be addressed to the Richfield office. Periodicals postage paid at Richfield, Ohio, and additional mailing offices. Postmaster: Send address changes to *GOLF COURSE INDUSTRY* 4020 Kinross Lakes Parkway, #201, Richfield, OH 44286. Canada Post: Publications Mail Agreement #40612608 Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2



It's why Shawn Emerson uses us on every one of his 108 holes.

Six courses. 200 employees. To put it mildly, Shawn Emerson, Director of Agronomy at Desert Mountain, has a lot on his plate. Which is why he counts on John Deere to keep this collection of Jack Nicklaus courses in perfect shape. From our hybrid fairway and greens mowers to our heavy-duty utility vehicles, Shawn and his crew use only John Deere equipment, sun up to sundown. Says Shawn, "There's a lot of things I worry about. But John Deere isn't one of them."

Trusted by the best courses on Earth.



togon. I plan to tell fitm that the quid pro you for arcopying the scholardity is to do this our important thing: Correction works ter

JOHN DEERE GOLF

mally, situite on the plane on the way to the Open, in courted to me to ask, "Who would Stan pick?" Then realized, all other factors being equal, he'd pick the

timi bearrent troops. Corrette for involvation State Michine (unloss antiops, 615 Venues

> Coll Compa Indianay & a quantize ph Coll Compa Indianay & a quantize ph Ambriqued of America National Coll Formatizing Staff Compa Indiana America Staff Compa Indiana Staff Compa Indiana





JohnDeere.com/Golf

CARRY THE TORCH

A nother day, another media event. That's kind of what I was thinking as I drove through the sunny South Carolina morning to Greenville Country Club for Turf Science Live.

"He would have loved this more than anybody."

That's what Dr. Kimberly Erusha, national director of the Green Section, told me when I asked her what Stanley Zontek would think about the way things turned out at the U.S. Open at Merion.

Stan was there in spirit, all right. The week began with Matt Shaffer dedicating the turf team's work to his memory. The week ended with the American golfing public being reminded of the traditional values of the USGA that Stan loved so much.

As I looked around Merion's maintenance compound, I realized how many folks there had been close to Stan. His successor, Darrin

Brevard, obviously, and the rest of the Green Section folks like Chris Hartwiger and Kim who were there. Penn State faculty like John Kaminski, Andy McNitt and Tom Watschke. Trailblazers like Latshaw, Zimmers, Roney and Jennings. Penn State alumni too numerous to name. And dozens of other supers and assistants who've gained wisdom – both about turf and about life – from him. It was a celebration of Stan even though there was no shrine or no big deal made other than Matt's comments early in the week.

I showed up at Merion on Tuesday with a plan to somehow announce the winner of GCI's first Stanley Zontek Scholarship Award during the event. I had been carrying the entries around with me in my backpack for weeks, agonizing about who to choose and, on the plane out to Philly, I had finally made my decision.

Frankly, the entrants were all great. I mean great. Outstanding grades, amazing recommendations and essays about Stan and what he meant to our community that brought tears to my eyes. (Several of them ended with Stan's trademark "Go Golf!") I narrowed the list of finalists for the \$2,500 scholarship down to three and just couldn't decide. They all de-

served the award.

Finally, sitting on the plane on the way to the Open, it occurred to me to ask, "Who would Stan pick?" Then I realized, all other factors being equal, he'd pick the Nittany Lion.

So, it is with great pleasure that I announce that Collin Harley, a second-year student in the Penn State two-year program, is the first recipient of the Stanley Zontek Schol-

arship. Collin is #1 in his class with a 3.89 GPA, a leader in the school's turf club and is currently interning at Aronimink GC. Prior to that, he worked for several years at Linfield National GC.

Mostly, what caught my attention in reviewing his essay that he really went out and learned about Stan. He talked to alums and folks around the school to capture the essence of the man: humor, common sense and a passion for the pure joy of golf.

I look forward to meeting Collin in person soon. I plan to tell him that the quid pro quo for accepting the scholarship is to do this one important thing:

Carry the torch. GCI

Finally, sitting on the plane on the way to the Open, it occurred to me to ask, "Who would Stan pick?" Then I realized, all other factors being equal, he'd pick the Nittany Lion. GOLF COURSE

Serving the Business of Golf Course Management

Vol. 25 No. 7

GIE Media, Inc. 4020 Kinross Lakes Pkwy, 2nd floor Richfield, OH 44286 Phone: 800-456-0707 Fax: 330-659-0823

EDITORIAL

Pat Jones

Publisher/Editorial director pjones@gie.net

Mike Zawacki Editor mzawacki@gie.net Kyle Brown Associate Editor kbrown@gie.net

Bruce Williams Senior contributing editor Katie Tuttle Assistant Editor ktuttle@gie.net

SALES

Russell Warner National account manager 216-236-5802

Maria Miller Conferences manager 330-523-5373

Martha Corfman

Manager, books 330-523-5366

Ted Schuld Account manager 216-236-5937

Jodi Shipley Marketing coordinator 330-523-5368

Bonnie Velikonya Classified sales 330-523-5322

GRAPHICS / PRODUCTION

Andrea Vagas, Creative director Jamie Winebrenner, Graphic Designer Helen Duerr, Production director Cara Clark, Production coordinator

CORPORATE STAFF

Richard Foster Chairman Chris Foster President and CEO Dan Moreland Executive Vice President James R. Keefe Executive Vice President Marco Urbanic Director, Integrated Data Systems Andrea Vagas Director, Creative Helen Duerr Director, Production Lindsey Betzhold Audience Development Maria Miller Manager, Conferences Kelly Orzech Director, Accounting Irene Sweeney Manager, Corporate Communications Kevin Gilbride Business manager, GIE Ventures

Golf Course Industry is a member of: Golf Course Superintendents Association of America National Golf Foundation Golf Course Builders Association of America The Irrigation Association Responsible Industry for a Sound Environment







Editorial director and publisher

Discover exactly what's in the bag ... next month



www.whatsinthebag.pro

LebanonTurf

Best of All Worlds™

THE WHITEBOARD

[WATER MANAGEMENT]

Reduce, Reuse, Recycle

To curb its water woes, Pasatiempo Golf Club is negotiting with its water district to access unused, reclaimed water being sent to the Pacific Ocean. by Katie Tuttle

w ater is a big part of maintaining courses' pristine esthetics, especially in the stress of summer heat and drought. So what happens when water restrictions in your area prevent you from irrigating as often as you need?

A lot of California courses use recycled water as part of their irrigation regimen. In the past, this water was just piped out to the ocean. Now, it's being used to replace fresh water.

Pasatiempo Golf Club hopes to join the ranks or recycled water users in late 2014. Currently, the California course gets its water from the city of Santa Cruz, and is under a constant threat of a water shortage. Because of this, Pasatiempo is seeking an alternative that is both environmentally friendly, as well as the best choice for the course.

"If we have another drought year, we'll be in a fairly severe water restriction next year," says Scott Hoyt, Pasatiempo general manager. "It will definitely affect the condition of the course."

In steps Scotts Valley. The city produces more reclaimed water than it has customers for, so the access water is sent out to the Pacific Ocean. Pasatiempo is already in the position to have the water piped to the course for irrigation, but there is still one big step they have to take first.

"We have to put in an underground tank to store the water," says Hoyt. The underwater storage tank will have three separate chambers: one for the fresh water from Santa Cruz, one for the recycled water from Scotts Valley, and one for the well water from the well on the course. "To ensure our long term future, we want to use all three sources and mix them, depending on the exact quality of the water, and where it's being put: on the greens or fairways or roughs. No matter what happens, meaning if one of our sources has a problem, we're still in good shape to keep the golf course in the type of condition we need to keep it in."

Another step the course needs to take is to negotiate a final price on the recycled water.

"We have not finalized any kind of negotiating with the [Scotts Valley Water District] relative with the price they want to charge us, or guarantee of supply," he says. "If we're going to spend all this money and go through all of this, obviously we want a fair price. We need them to guarantee supply for 50 years, meaning if they expand their system and decide they have other customers, they can't cut us off."

Money seems to be the only downside of the project. The club has currently invested five million dollars in the project, meaning they have had to cut back on money being spent elsewhere.

"[It] hinders us from making any further improvements and it slows down any other necessary improvements. We need to focus on this; we need to figure out how to pay for it," Hoyt says. "It's going to take us 10 to 12 years to pay it off, so it certainly hinders any future improvement."

Still, there's no reason for anyone to be against the project.

"There's no reason not to be supportive of the idea," says Hoyt. "There can't be one person that's not supportive of the idea. We want to take something that's currently being shipped out into the Pacific Ocean, that [Scotts Valley] is getting zero dollars for. We're going to save fresh water. We could save 40 million gallons a year of fresh water for the city of Santa Cruz."

Katie Tuttle is GCI's assistant editor.





From THE FEED

G CI had the U.S. Open covered from every angle last month. Of course, Matt Shaffer got to show off Merion Golf Club from the cover of our June issue (and if you haven't gotten to see it in motion, now's the time to check out the GCI app!) but our own Pat Jones was also reporting live from the ground. Though superintendents had plenty of nice things to say about the course, not as many thought enough recognition was given to the crew's hard work.

Jerry Coldiron@CaribeTurfman

Seriously, Johnny Miller & his grain comments are so ridicules!! He made this marathon US Open nearly unbearable. Will be muted tomorrow!!

1 Tim Walker@timwalkercgcs

I think it's funny everyone is killing miller - Matt shaffer has been bragging about the old bent grain

L Jerry Coldiron@CaribeTurfman Matt knows his greens Just seems on TV more inconsistent grass types & soils leading to dry/wet areas, Not grain

Pat Jones@GCIMagazine

"Superintendents make choices on a daily basis" affecting pace but "sometimes their hands are tied" - Rand Jerris of #USGA

1 Sean Wilson@mseanw67

The superintendents' hands are always tied. They set the course up the way they are told.

Mr. O'Mell@spartygrad95 OK. Berman IS WORSE than Miller.

1 Pat Jones@GCIMagazine Tough choice...equally awful?

> 1 **Mr. O'Mell@spartygrad95** I'd rather listen to stories of 63s. Anne grain than stupid nicknames





JUST ANOTHER TOOL The next time you're about to throw away an old set

of blades, stop and ask yourself "could these still be useable?" If the answer is yes, you could be able to make some money off of them, while also helping out someone who needs them.

Back in May, Stephen Tucker started partschanger.com, a site similar to ebay, where superintendents can sell old parts, equipment, build a store, or put up wanted ads, among other things.

"I think we are all trying to find ways to not just save money but be more economical," Tucker says. "I am always trying to figure out better ways to do things, and so I figured maybe this could help some of us get rid of some clutter, put a few dollars back into the budget and in the end help another club who may need it."

Tucker doesn't just see the site as a resource for superintendents. He also sees people such as technicians,



dealers and sports turf managers using it as a place to sell and buy cheaper products. "With parts prices going up, equipment prices going up, etc, I think any way we can save money we should do it. It's just another

U.S. Open Photo Recap

tool for the tool box."

G CI's Pat Jones and John Kaminski were on the ground at Merion CC and behind the scenes during last month's U.S. Open. Check out the iPad or iPhone app version of the July issue for a candid look at the big event.



OUTSIDE THE ROPES



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

H₂OH, NO...NOT AGAIN

hat more is there to say about water? We know that we need it, that there's not enough of it, that our profession depends on it, and that we get charged for it so it has tremendous impact on owners, members, and golfers.

Why don't I like water? Because as important as it is to what we do, it is fickle.

When there's too much water, a golf course becomes too wet, creating a fertile breeding environment for insects and diseases.

Ask Matt Schaffer, the superintendent at Merion, if he's a fan of water. After seven inches of rain fell during the week of the U.S. Open, probably not. I'm fairly sure Matt and his crew didn't sleep much that week, working non-stop to save the course.

When there's not enough water, turf won't grow, bare batches of dirt are unsightly and hard to play from, and golfers complain that they want Augusta - not Arizona desert. Those of us in charge of keeping courses playable prefer to keep golf courses a little dry, so they are healthier while actually aiding golfers who benefit from a playing field that is "firm and fast." I don't think we've done a very good job explaining that truth to golfers. But even if we did, it takes just one freak storm (a more and more common occurrence these days) to wash that philosophy down the drain.

No matter what we do, no matter how much planning and preparation, ultimately we are all victims of water. Watch the news and you're guaranteed to see back-to-back stories about floods in one part of the country while other areas parch. The recent rash of tornadoes doesn't help, nor do the ongoing battles with farmers, environmentalists, government agencies, and amateur gardeners.

There is only one thing we can all

agree upon regarding water: There's not enough of it to go around. As natural resources go, it is most important. And most in trouble.

I also don't like water hazards, especially when they're on the right side of a course because I occasionally fade the ball. Okay, that's a little per acre, including a calculation of the actual annual percentage of ET replacement.

Keeping accurate records may save you someday when asked to prove if your course is as efficient as our industry claims. In my travels around the country working with courses

Why don't I like water? Because as important as it is to what we do, it is fickle.

personal, but most golfers regularly fade – make that slice – the ball, and seeing water down the right side of a hole is frightening.

But you know what I really don't like about water? How much we talk about it. I'm tired of the conversation, of the hand wringing, of having to explain to those same owners, members, and golfers that water is mostly out of our control.

And yet we have to keep telling them, again and again, just how important water is. Educating the golf audience about water's uses and abuses is one of our most critical tasks. Just because you and I know that water is our most valuable resource does not mean everyone does. So keep saying it. Keep talking about water. And keep educating yourself on better ways to live with water where you are, whether it's in short supply or overabundance.

Here are a few ideas for superintendents everywhere to better manage the water they have.

Take the guesswork out of your water use. As management consultant Peter Drucker said about the business world, "If you cannot measure it, you cannot manage it." Those words are especially relevant to water. Measure what you use, factoring in ET and rainfall. Keep a record of use in inches and superintendents in different climate zones, I'm amazed how many courses irrigating with groundwater and surface water don't keep accurate measurements of their water use or only meter at their water source. That's just not good enough, and at the risk of trying to be funny, someday that lack of evidence will leave you high and dry.

When you do keep records, remember to account for lake, pond, or water feature evaporation. Water features generally evaporate at almost the same rate as turf covering the same area (factors affecting evaporation include climate, wind, temperature, and lake depth). If you're not sure about evaporation rates, hire an expert to help.

If you're drawing water from an aquifer large or small, you need to be concerned with groundwater overdraft and subsidence. Once settling from subsidence occurs, that storage space is gone forever.

I know you probably don't want to attend any more conferences, but I've been to a number of irrigation and water-management meetings lately and a prime topic is long-term groundwater management. I guarantee the golf industry will be in the middle of this discussion very soon.

(MORAGHAN continues on page 79)