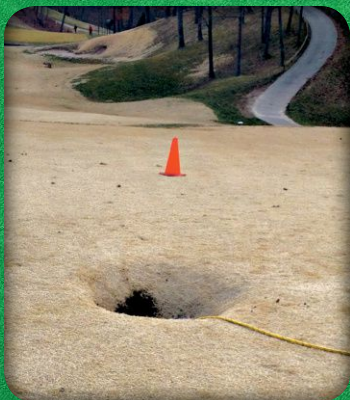


'13



In its first full year on a national scale, Rounds 4 Research collects nearly \$150,000 for turfgrass research.



At Annbriar GC in Waterloo, Ill., a golfer is swallowed whole by a 10-foot-wide sinkhole on the No. 14 fairway. Fortunately, the golfer is pulled from the hole with only minor injuries. Superintendent John Soetaert, CGCS, tells *Golfdom*, “I’ve been working on a golf course since 1986, and I’ve never seen anything like this.”

Moments before the golfer disappeared, he announced to his playing partner that he wished to “sink this in the hole.” Which leaves the question: what were his other two wishes?

We Are Golf coalition members (CMAA, NGCOA, PGA of America and GCSAA) along with other industry participants, visited Washington, D.C., April 15th to 17th, to meet with a variety of individuals in making the case for golf. The message was loud and clear — golf is annually a \$68.5 billion industry that employs more than 2 million people and generates \$3.9 billion dollars each year for charitable purposes. Golf facilities provide communities economic, environmental, recreational and social benefits.

Next year, maybe the group can help out with Obamacare?

Continued from page 21

The Toro Company extended its support of The Environmental Institute for Golf through its partnership with the “Rounds 4 Research” program. Toro presented a \$50,000 ceremonial check to the EIFG at the 2013 Golf Industry Show.

Frank Lamphier; Ken Mangum, CGCS; Dennis Lyon, CGCS; and Roch Gaussoin, Ph.D., were given the 2013 GCSAA Col. John Morley Distinguished Service Award at the opening session of the 2013 GCSAA Education Conference.

Billy Casper, who grew up putting for nickels and dimes and hitting balls off ant hills before becoming one of golf’s leading money winners and most respected champions, was the recipient of NGCOA’s 2013 Award of Merit.

*He also gets an honorary award from *Golfdom* for giving us a putting tip in 2013 that stuck with us all season long, earning us a few nickels and dimes.*



American Society of Golf Course Architects past president Rees Jones was given the 2013 Donald Ross Award in April during the 67th ASGCA Annual Meeting. The award is named for ASGCA’s honorary first president, and is presented to an individual who has made a positive contribution to golf and golf course architecture.

Nufarm Americas acquires Cleary Chemical Corporation, a marketer of fungicides, insecticides and plant growth regulators to the turf and ornamental horticulture industries. “We are excited about the synergy and opportunity this move will bring,” says Darryl Matthews, general manager for Nufarm in North America. Nufarm will offer the entire line of Cleary products under the Cleary brand name.

Environmental Science, a division of Bayer CropScience LP, launches Healthy Turf, Healthy Tomorrow, a multi-faceted program aimed at advancing plant health research and education for superintendents to help ensure the health of their courses — and the industry — for the future. The program includes in-person training for selected superintendent applicants, as well as plant health-focused demonstration courses, webinars and scholarships.

...and with this blurb, we’ve met our quota of “plant health” references for the issue. Sweet!

Eagles Pride GC on Washington state’s Joint Base Lewis-McChord is Audubon International’s 1,000th golf course to receive designation as a Certified Audubon Cooperative Sanctuary. The program provides technical assistance to help golf courses protect the environment, preserve golf’s natural heritage and gain recognition for those efforts. John Ford, CGCS, is the superintendent at Eagles Pride.

The 2016 Rio de Janeiro Olympic golf course commenced construction after numerous delays. Reportedly a dispute arose over whether the land would be used for a golf course or for housing. Once the dispute was settled, the necessary permits were issued and architect Gil Hanse began shaping course features for a course that will soon play host to the first Olympic golf competition since 1904. Because of the delays, Hanse estimates that construction will be done in the first half of 2014, and tournament-ready by 2015.

Just you wait: the villain of this story, the housing developer? He’ll still find a way to get invited to a luxury chalet to watch the tournament.

Toro unveils plans to expand its headquarters in Bloomington, Minn., with a

75,000-square-foot, three-story addition. The company reported profits of \$78.4 million in the quarter, up from \$68.8 million a year ago.

The expansion is scheduled for completion in the summer of next year. Toro moved to its Bloomington, Minn., location in 1952, opening a research and development facility, and later its headquarters in 1962.

Bob Blalock, superintendent at Lake Windcrest GC, Magnolia, Texas, and his wife diversified from the turf business by bottling and selling "Uncle Bob's" brand of barbecue sauce, rubs and seasonings.

We would be happy to give a complete review on this barbecue sauce, but until we get a free sample in the mail...

Smithco Founder Ted Smith died at age 98. In 1967, he launched Smithco with one product, the Red Rider utility truck. More than 45 years later, Red Riders continue to be used on golf courses and athletic fields.

The R&A and the USGA, golf's governing bodies, proposed changes to the Rules of Golf that would prohibit anchoring the club in making a stroke, beginning January, 1 2016. The proposed Rule 14-1b, which follows an extensive review by The R&A and the USGA, would prohibit strokes made with the club or a hand gripping the club held directly against the player's body, or with a forearm held against the body to establish an anchor point that indirectly anchors the club.

Don't feel bad for Adam Scott. He's still got that green jacket. And the cool Australian accent. And \$33 million in career earnings. And his good looks. And... you know what? Screw Adam Scott!

John Deere Golf and The First Tee launched a "Careers on Course" program. Teenage
Continued on page 24



Rain, rain and then more rain fell at the U.S. Open, contested at historic Merion GC in Ardmore, Pa. The first U.S. Open course to play at under 7,000 yards since 2004 (Shinnecock Hills,) many in the media feared golfers would go low. But Justin Rose won with a score of 1-over 281, with only five players in the 60s on Sunday.

With so much rain, the maintenance team, led my Matt Shaffer, found themselves thrust into the spotlight. "I feel bad for (the maintenance crew) because I know the worse the weather is, the more problems it causes for them," Jim Furyk told *Golfdom*. "I'm sure they're running 24/7 this week, trying to get this golf course in shape."

It looked like Woodstock '94 out there for a couple days. The other big winner, aside from Rose? Stores that had galoshes in stock.



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Continued from page 23

participants at three First Tee chapters got the chance to explore several aspects of a career in golf course management and the science of agronomy through a new program sponsored by John Deere, who in February announced a \$1 million commitment to The First Tee over a five-year period.

Golf Digest, the USGA and the PGA of America launch Time for Nine initiative to support more nine-hole rounds. "Five-hour-plus rounds of golf are incompatible with the compressed time that many of us have available for recreational activities," said USGA President Glen D. Nager. "Time

for Nine is a fun and creative start to promoting the nine-hole round of golf as a complete and enjoyable experience that is consistent with the traditions of playing the game."

After 33 years of service to the state of California and golf course superintendents, sports turfgrass managers, landscape professionals and homeowners throughout the U.S and in many other countries, Ali Harivandi, Ph.D., retires from the University of California Cooperative Extension.

Spectrum Technologies Inc. and the USGA launched the TruFirm turf firmness meter that measures the firmness of turf and bunker sands. The patented system utilizes an impact hammer that mimics the shape of a golf ball to better simulate golf ball impacts. The mass is dropped from a consistent height and the maximum turf penetration value is recorded and correlated to the surface firmness.

Finally, a product that helps with firmness that doesn't make us blush and blurt out, "I don't know anything about that..."

In September the turfgrass industry mourned the loss of two iconic figures.

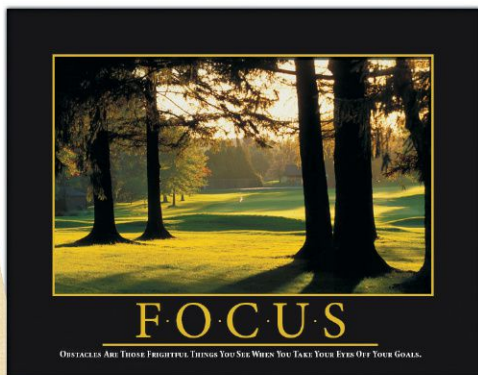
Dr. James Watson, who spent 46 years at The Toro Company and spearheaded significant turf and water management research, was 92. Charles G. Wilson, who pioneered the USGA Green Section, was 93.

Watson received GCSAA's Distinguished Service Award in 1983 and the Old Tom Morris Award in 1995. Wilson established the first regional Green Section office in Davis, Calif., in 1952. He was the first full-time turfgrass consultant.

California Golf Course Owners Association bestowed Canyon Lake resident Ted Horton with the inaugural "CGCOA Ted Horton Distinguished Service Award." The

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GCSAA CEO Rhett Evans reached the snow-covered summit of Mt. Kilimanjaro. For those who are counting, that is 19,341 feet above sea level. As promised, Evans brought a GCSAA Golf Championship flag to leave behind at the summit. He also hit some golf balls (with a GCSAA logo, of course) from, as he said “the roof of Africa.”

Evans joins the company of the Dalai Lama by hauling off and whacking one into a 10,000-foot crevasse. “Big hitter, Evans, long...”

award is the first honor in the history of the CGCOA that pays tribute in its title to a specific individual.

Our editorial director, Marty Whitford, has an award named in his honor. It’s given to the person who can eat the most funnel cakes in 10 minutes at the Uinita (Wyo.) County Fair.

Renowned turfgrass icon Joseph M. Duich, Ph.D., passed away Oct. 11 in State College, Pa.

Duich, recipient of GCSAA’s Old Tom Morris Award in 2006 and Distinguished Service Award in 1976, was professor emeritus of turfgrass science at Penn State.

A.J. Powell, Ph.D., a pioneering turfgrass researcher from the University of Kentucky and the driving force behind the uni-

versity’s turfgrass program passed away October 30. In 2011, the university named its turfgrass research center in his honor.

Talk about a good year: World Golf Hall of Famer Annika Sorenstam was named winner of GCSAA’s Old Tom Morris Award and also named “First Lady of Golf” by the PGA of America.

That’s cool and all, but we’re thinking her highlight might still be speaking at this month’s Golfdom Summit. OK, maybe that’ll just be our highlight of the year.



Bill Engvall, one of the world’s top and busiest comedians, was named headliner of the 2014 GIS Closing Celebration in Orlando.

We say bravo, GCSAA, for nabbing a speaker who will get people to stick around. Also, can you ask Mr. Engvall to help us with the jokes for this feature next year? G

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The Art of doing it cheap

BY CHRIS SORRELL

Without a doubt the golf course superintendent profession is demanding. In the best of situations a superintendent is forced to deal with things that are not within his control. Most notably there is Mother Nature... and the economy.

Most every golf course superintendent has felt the uncomfortable sensation of a tightening fiscal belt over the past few years. As the golf market stagnated and revenues decreased, what was available for course maintenance diminished. Superintendents had to closely reevaluate what practices they were committed to and what could be removed from their regime.

Without a doubt this was a difficulty for many superintendents . . . but not all. There are some who have struggled and fussed with a restrictive budget on a regular basis; each year looking at meager budgets, trying to determine how best to create something from next to nothing. The weak golf market has not impacted them as much as others because it is the same as before: doing the most with the little they have.

These superintendents manage courses with good conditions on budgets that are only a fraction of what is commonly considered the "low end." I speak from experience in this regard. My first superintendent posting, in 2007, was on a small course in north central Pennsylvania. During my 5-year tenure, I never had an annual budget greater than \$117,000.

This may seem extreme to many in the industry, but it is what there was to work

with and every effort was made to produce something outstanding. Though my greens may not have been the fastest, the rough might have gotten a little taller at times and the course might have suffered a bit more with the extremes of summer, the course still maintained a favorable comparison to others with substantially greater resources.

Taking our time

Of primary importance in trying to be frugal (aka, just plain cheap) is to understand the relationship between time and money.

The fact is that these sorts of courses have a lot more time than money, so maximizing the advantage time allows is only wise. As an example, when I took over my first course, there was a significant thatch layer present on the greens. As any formally trained superintendent would, my first impulse was to aerate the heck out of them. Unfortunately this approach was not permissible with our budget, so it was necessary to settle for a single aeration per year. In addition, frequent light verticutting during the season, light topdressing and an aggressive annual verticutting were employed.

Although the aggressive core aeration approach would have produced more immediate results, the availability of time was capitalized on and resulted in improved greens condition over time. Important to this approach is an understanding of what is expected by the clientele. Upon arriving at the course, I won great favor merely by mowing the greens on a daily basis. The member-

Continued on page 28

There are low-budget golf courses and there are no-budget golf courses. A superintendent veteran of both types tells how he still got it all done.

Continued from page 27

ship did not have high expectations for the course after seeing it disregarded for so many years. Realizing this, it was easy to recognize that slow and steady improvement would be appreciated. Although personally, this pace didn't always sit well, it taught me that meeting the patron's expectations was more important than meeting mine. The consequent monetary savings made the limited budget easier to manage.

Labor on a budget

Naturally, the single largest portion of a budget is labor expenses. To keep these expenses under control, the course would only employ a very small annual labor force. The crew was composed of three senior crew members (primarily adult laborers) and three high school crew members.

This design allowed the course to maintain a minimal exposure to labor overhead such as unemployment expenditures. Further, the crew was "phased" in and out during the season. The first employee would begin around the first of April, followed by the second employee around the first of May and the third employee in the middle of May. The three high school workers started after school ended around the first of June. This system resulted in a slow increase in labor costs during a time when revenues are only starting to trickle in.

The high school labor would end when school began, while the rest of the labor was released by the end of October.

Shopping around

When it came to chemicals and fertilizers, it was absolutely essential that the course got the most bang for each buck spent. To achieve this I took the unusual approach of "shopping" all the products needed each upcoming year.

This required taking stock during the late fall to determine what amount of individual products remained, and, by using past fertilizer/pesticide records, determining how much of each product would be needed the coming year. This developed into a "vendors need sheet" which was sent out to anyone who wanted to sell



me a product. The result was the ability to mix and match between dealers to get the best deal on price, terms and quantity discounts.

Although somewhat time consuming, the tactic maximized my control over the annual chemical and fertilizer dollar. Being blessed with a few vendors who would tolerate this unorthodox approach, it provided me with a very successful management tool.

Additionally, the use of chemicals and fertilizers were minimized by employing the advantages the course offered while maximizing cultural controls and a scouting program. The course was located on top of a mountain and as a result, the wind regularly blew. The resultant decrease in the duration of turf wetness suppressed disease.

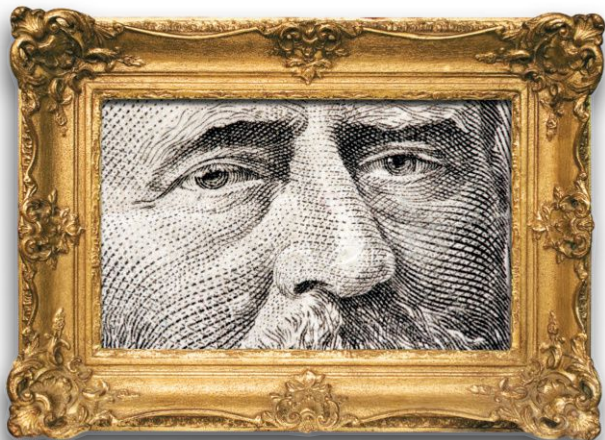
I maintained a fertilization regiment that was highly organic. All greens, tees, collars and approaches received only natural organic granular fertilizers (unless they required extra fertilization due to a particular issue). This was supplemented using foliar feeding products, but only to a small extent. The use of natural organic fertilizers aided in disease suppression and the reduction of chemical applications. This was all monitored by a scouting program that informed the curative use of pesticides.

Planning ahead

The final tool I used to make ends meet on this minimally budgeted course, was an expenditure calendar. Each year before the annual budget meeting I created an expenditure calendar which projected all the course's maintenance expenditures on a monthly basis. This tool was of significant importance for the owners so they could know how much money would be required each month to continue normal maintenance operations. This was particularly important when maintenance began in the spring during the time revenues were still low. Using this calendar allowed all the tools, parts and various other necessities to be spread out over a number of months and purchased at the latest date before they would be needed.

This is how I did it in the leanest of situations. Sometimes it is not pretty, other times it is not exactly what we want. Without a doubt it can be tedious and difficult, but it will work. With artful approach and diligent effort, cheap can be achieved! ☺

Chris Sorrell is the superintendent at Silverhorn GC in Edmond, Okla. This is his second story for *Golfdom*. We're happy to report that his maintenance budget has increased since the last time he wrote for us.





Super Science

// TURF'S SHADY SIDE

BERMUDAGRASS: LIGHT INTEGRALS FOR GREEN ESTABLISHMENT

Benton Hodges, Ph.D.

In the transition zone, many superintendents are considering a putting green cultivar conversion. Whether the conversion is from creeping bentgrass to bermudagrass, upgrading from an older bermudagrass cultivar, or early adopters of the ultradwarf bermudagrasses, they are looking to renovate. A major constraint will be the successful establishment under reduced light environments due to the poor shade tolerance of bermudagrass. Currently, no research studies exist determining the light requirement for bermudagrass putting green establishment. Therefore, the objective of this research is to quantify a daily light integral requirement for successful bermudagrass putting green establishment.

A daily light integral is the amount of photosynthetic light a plant receives each day, measured in moles of light per day (mol/d). A field trial was initiated



Shade tents on the research green at the Foil Plant Science Research Center in Starkville, Miss.

in June 2013 in Starkville, Miss. Four bermudagrass cultivars (Champion, TifEagle, MiniVerde and MS-285) were established under full-sunlight, 30 percent, 55 percent and 80 percent shade using a neutral density, polyfiber black shade cloth. Using data loggers and quantum light meters, daily light integrals were calculated for each shade level. Full-sunlight plots received 40.7 mol/d, while 30 percent, 55 percent and 80 percent shade received 31.3, 19.7 and 10.2 mol/d, respectively.

At the conclusion of the study, using statistical regression analysis, the amount of daily light required to reach 70 percent cover was determined. MiniVerde required the least amount of light with 26.9 mol/d, followed by Champion with 29.9 mol/d. Meanwhile, TifEagle and MS-285 required 30.1 and 31.3 mol/d, respectively. When comparing full-sunlight and 30 percent shade to 55 percent shade, a 25 percent reduction in chlorophyll, a 45 percent reduction in clipping yield, a 28 percent reduction in color, and a 90 percent reduction in percent cover was noted.

The results noted above only represent 2013. This research will be repeated in summer 2014.

Benton Hodges, Christian Baldwin, Ph.D., Barry Stewart, Ph.D., Maria Tomaso-Peterson, Ph.D., and Gene Blythe, Ph.D., Mississippi State University. Benton Hodges can be contacted at bphodges@gmail.com for more information.

NEWS UPDATES

KREUSER TO JOIN UNIVERSITY OF NEBRASKA FACULTY

Bill Kreuser is set to join the faculty as an assistant professor at the University of Nebraska-Lincoln this January. He will follow in the footsteps of Dr. Roch Gaussoin and serve as the Turfgrass Extension Specialist with a focus on soil and water management and plant physiology.



Kreuser graduated with a B.S. in 2009 and M.S. in 2010 from the University of Wisconsin-Madison where he studied Soil Science. During his M.S., Kreuser developed a GDD model for plant growth regulators and evaluated

fertility requirements of creeping bentgrass putting greens.

He is set to earn his Ph.D. from Cornell University in December where he evaluated the effect Civitas and plant colorants have on turfgrass growth and physiology. Kreuser plans to use his research background in soil management and plant physiology to understand how nutrient cycling, water use and cultural practices affect turfgrass growth and stress tolerance. Additionally, Kreuser and his graduate student, Glen Obear, look to understand why iron oxide layers can form in sand putting greens and investigate methods to manage iron layer formation.

“TO OUR SURPRISE, TOPDRESSING EVERY WEEK DURING THE SUMMER REDUCED DISEASE SEVERITY EVEN UNDER CONDITIONS OF INTENSE DAILY FOOT TRAFFIC.”

James A. Murphy, Ph.D.
(see full story on page 30)

// **COMBATTING ANTHRACNOSE**

Topdressing versus anthracnose

A look at the best topdressing practices for preventing anthracnose in annual bluegrass.

By James A. Murphy, Ph.D., James Hempfling, Ruying Wang, and Bruce B. Clarke, Ph.D.

Anthrachnose, caused by the fungal pathogen *Colletotrichum cereale*, can be a devastating disease of annual bluegrass (*Poa annua*) putting greens in temperate climates throughout the world. The pathogen lives in diseased plant tissues and on organic residues in the thatch and usually infects older senescing leaves and tillers, although younger plant tissues can be infected. The disease can be observed at any time of year as either a foliar blight or a basal rot of crown tissue, but is generally most destructive during the hot, humid conditions of summer. Symptoms of the disease often start as a “firing” of individual leaves (a



change from green to a yellow-orange leaf color) that can progress to death of tillers and crowns and eventually severe thinning of the turf.

Anthrachnose is often more severe on turf that is challenged by extremes in soil water, low nitrogen fertility and above optimal temperatures. Optimum conditions for pathogen development

include temperatures between 77 to 91° F and long periods, 12 hours or more, of leaf wetness. Spores are easily dispersed by splashing raindrops and maintenance equipment. Reduced light intensity is thought to also favor disease development. Thus, warm, overcast and excessively wet or dry soil conditions can encourage development of this disease.

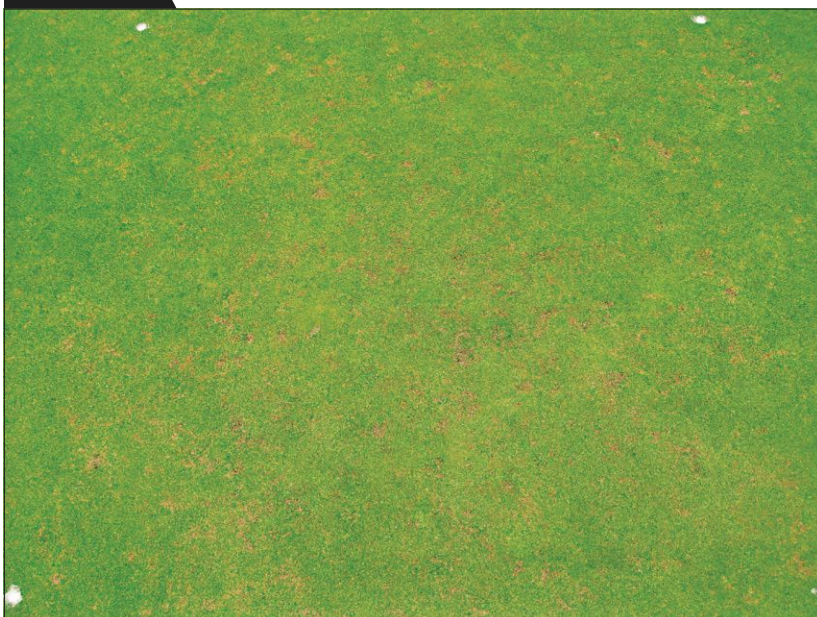
Research has shown that damage from anthracnose will be more severe on turf that is stressed by drought, low nitrogen fertility and low mowing. Mechanical injury from play and cultural practices is often speculated as a factor involved with outbreaks of anthracnose. However, factors that are likely to physically injure turf (for example, foot traffic, light-weight rolling, brushing and double-cutting) have not increased anthracnose severity in our research trials. The effect of vertical cutting on anthracnose is less clear, but research findings suggest that this practice may not be as problematic as once feared (Hempfling et al., 2012; Inguagiato et al., 2008).

REDUCING THATCH

Survival of the *C. cereale* in the soil is heavily dependent on environmental conditions. Cool temperatures favor survival of the pathogen on plant debris in the thatch but the fungus may be a poor competitor with other soil organisms when plant residues are limited. Thus, management practices to reduce thatch may be a useful strategy for suppressing anthracnose.

The practice of topdressing putting greens, believed to be invented by

FIGURE 1



In this untreated check plot 44 percent of the plot area was thinned by anthracnose (image captured on June 6th, 2010).