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Turfgrass pathologists set the record straight on bacterial wilt.

inside:

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REASONABLE MINDS

I started in this crazy business back in the Cenozoic Age as a cub reporter at GCSAA. I knew bupkis about turf, golf or – god forbid – the science that drives our industry. I was just a \$16,000-a-year newbie in a cheap suit who was hired to edit press releases, write up little news items and maybe write a feature story or two. I was completely clueless.

My first couple of days on the job were largely spent trying to figure out where the coffee maker was and how to use this amazing new technology called a “facsimile machine.” I was very proud of my Tandy 200 laptop with the tiny LCD screen and a fancy dial-up modem attachment that supposedly allowed you to transmit documents over the phone. I say “supposedly” because, as I recall, it never once worked properly. There’s a good reason the Tandy brand doesn’t exist anymore.

Anyway, I was wet behind the ears and just getting started when my office phone rang. The gentleman on the other end of the line was Dr. Houston Couch, the legendary Virginia Tech plant pathologist. He warmly welcomed me to the business and offered to be a source for any story related to turf diseases. We talked casually for 20 minutes or so before I finally asked him if there was anything specific he wanted from me. His response – which I’ll never forget – was: “Yes... if you talk to a young whippersnapper named Joe Vargas, ignore everything he tells you.”

That was my introduction to the always-interesting and entertaining world of academic disagreements. Though usually not as colorful as the great Couch vs. Vargas debate, disputes over disparate views of the finer points of turf science – particularly about the source and nature of disease pathogens – are common. They are like goose turds around ponds – unavoidable, stinky and usually invisible until you step on them.

Well, we stepped into a steaming pile a few months ago with what we thought was a relatively straightforward piece about bacterial wilt. We knew that there’d been more than a little discussion and debate about the nature of the condition, what caused it and what to

do about it, so we did a short item on the topic.

A few days after publication, I was blithely scrolling through Facebook when I noticed that our newest columnist, Dr. John Kaminski, had posted something mentioning GCI. Oh goody, I thought, how nice that John is supporting us. Wrong. In fact, the good doctor was proclaiming how bad that bacterial wilt story was and publicly saying he was thinking of resigning. I got in touch with him right away and asked why he was throwing us under the bus. I learned that, a) there was nothing factually wrong with the story... he just disagreed with some of the other PhDs we quoted, and b) he had no intention of resigning... he just wanted to be provocative to get people talking about it.

Oh...er...thanks?

(Note: Although we sincerely congratulate John on earning his tenure at Penn State earlier this month, we do marvel a bit at what he’ll be like now that he is free to do and say whatever he wishes. Be afraid people, be very afraid.)

So, once again, we find ourselves at ringside as academia’s best and brightest minds duke it out over whose theory is right. And, that’s fine because reasonable minds will differ and the debate will, we hope, eventually lead to consensus and a solution – which is all superintendents want in the first place.

So, in that spirit, we asked our associate editor Kyle Brown to dig deeper into the differing views of bacterial wilt with an eye toward finding out if any consensus is developing. It turns out that reasonable minds are beginning to agree and things seem to be coalescing around work done by (surprise!) that whippersnapper Joe Vargas.

I suspect that our deeper look at the issue will probably generate even more discussion by the “reasonable minds” of research as the apparently shallow one we did earlier. And you know what? That’s good by me because, ultimately, Dr. Kaminski was right: the more it’s talked about the sooner we’ll have real answers to the mystery condition known as bacterial wilt. **GCI**



Pat Jones
Editorial director and publisher

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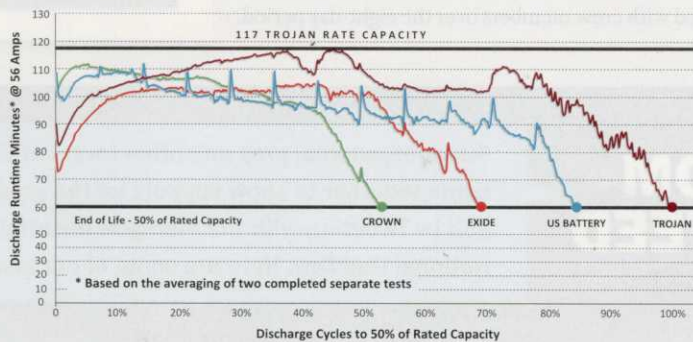




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Sharing supers



Tom Vlach, director of maintenance operations; Stadium Course

Pros come from all over the world to see TPC Sawgrass and admire the beauty of the course. A few superintendents, however, were paying as much attention to the bunkers as to the whole course.

Mark van der Linde, Johan Smit and Petri van der Walt visited the course as part of the club's exchange program to see how the course is prepared.

"They want to come before the tournament to learn what American superintendents do to get it ready for the event," says Tom Vlach, superintendent of the Stadium Course. "They wanted to see how we groomed the greens, how much verticutting we do, how much topdressing we do."

This is the second year TPC Sawgrass has hosted South African superintendents before the event. Van der Linde, of Silver Lakes Golf Estate, was the first to make the trip. This year, he traveled along with Smit, of the Observatory Golf Club and van der Walt of the Centurion Golf Course.

"They wanted to look at the big picture, setting up the event," says Vlach. "It's a different culture here than in South Africa. Here there's a lot more intensity about the crew getting into it. Our staff is very motivated."

Throughout the eight-day stay, the superintendents followed along with the team and checked out cultural practices, equipment and even the turf and ornamental plants used throughout the course. Outside the course, they bonded with crew members over the eight-day period.

There's an app for grass

Ever had a quick question about turf while out on the course, armed only with your smartphone? Rather than searching out information, check out the North Carolina State University Lawn Care app. While it's geared a little bit toward homeowners, the database includes articles from professors, researchers and staff of NCSU helpful to any member of the turfgrass industry.

The app provides local weather and alerts for weeds, insect problems and disease warnings. It can be downloaded for free from iTunes at <http://bit.ly/JsX056>.



FROM THE FEED

Superintendents, pros and other lovers of the game came together to show support for the great game of golf by Tweeting with the #iamgolf hashtag April 18, National Golf Day. Here are some of our favorites:

Why is golf more than just a game for us? Golfers are generous! We raised \$3,000 at BCC for charity for National Golf Day!!

Brooklake CC @brooklakeCC



The golf course industry provides me - and 2 million others a job and 61 billion in total wage income.

Darren J. Davis @DarrenJDavisGCS



GOLF BEHIND BARS

Getting out of prison takes a complex plan involving patience, inventive digging tools and a poster of Raquel Welch.

Or maybe just a solid golf swing.

Jeff Donahue, a L.A. County sheriff's captain, is under investigation after escorting a prison inmate from the jail on Catalina Island last summer to a local hilltop golf course. The outing wasn't exactly an escape attempt: Donahue brought along former pro golfer/jewel thief Frank Carrillo along for some tips on improving his swing and reducing his handicap, Carrillo says.

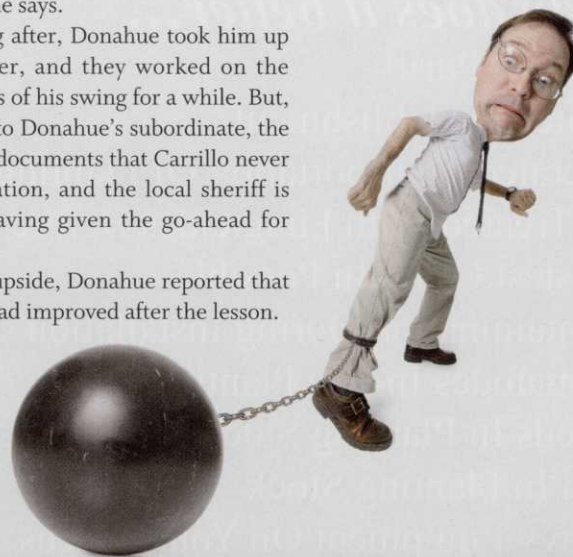
A subordinate lodged a complaint about Donahue's actions for an inappropriate relationship with an inmate, and Donahue is currently on medical leave.

After being transferred to the Catalina

prison, Carrillo found himself establishing a rapport with Donahue, and suggested they leave the prison to play some golf someday, he says.

Not long after, Donahue took him up on the offer, and they worked on the finer points of his swing for a while. But, according to Donahue's subordinate, the prison log documents that Carrillo never left the station, and the local sheriff is denying having given the go-ahead for the lesson.

On the upside, Donahue reported that his game had improved after the lesson.



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Today is National Golf Day. #iamgolf bc game teaches core values, is good exercise and enables me to spend time with my grandson.

James E. Clyburn @Clyburn



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the **WILT**  *that wasn't*

Turfgrass pathologists set the record straight on bacterial wilt.

Since it became a widespread nuisance at the Quail Hollow Club in Charlotte, N.C., the pathogen some call “bacterial wilt” has skyrocketed into the spotlight of turfgrass pathogens. It’s become one of the Ten Most Wanted for golf course superintendents and turf researchers alike.

But those researchers still haven’t even agreed on what it actually is. Though they sometimes disagree on findings, this pathogen has split some labs into camps.

DOES IT EXIST? “Bacterial wilt is a real disease,” says Dr. Lane Tredway, senior technical field representative for Syngenta. “It’s a documented disease on annual bluegrass caused by the bacteria *Xanthomonas translucens*. The same bacteria was implicated in the cause of the widespread decline of Toronto creeping bentgrass in the early 80s. What we’re seeing today may or may not be related to that.”

Tredway, who headed the North Carolina State Turf Pathology program before recently joining Syngenta, says researchers are moving too fast when categorizing the pathogen.

“I think the mistake we’re making is we’re trying to put the story to rest too quickly,” he says. “It’s way too early to make any definitive conclusions as to how important these bacteria are, how widely distributed they are and, most importantly, how to diagnose them and manage them.”

But even at these early stages, the name doesn’t quite fit, says Dr. Rick Latin, professor of plant pathology at Purdue University.

“I’m not even sure I can call it bacterial wilt,” he says. “Bacterial wilt was identified as *Xanthomonas*, but here’s the issue: On creeping bentgrass, it’s caused by *Acidovorax*. They’re widely different pathogens and different species, so why would we call it the same thing?”

Latin refers to the disease as “bacterial decline,” differing from the original “wilt” and from the “bacterial etiolation” that Michigan State University’s Dr. Joe Vargas uses.

With any name, there’s no question that bacteria are involved. Turfgrass pathologists disagree on which is to blame, or how many could be. Vargas says the cause is *Acidovorax avenae pv avenae*, which he found in infected samples. But more important than the pathogen’s name is what it does to turf itself, and that can be backed up by observations.

“Where we have to start is with the symptoms,” says Dr. Nathaniel Mitkowski, associate professor of plant pathology at the University of Rhode Island. “The thing we know for a fact, that is undisputable, is that it seems to occur on creeping bentgrass greens. The symptoms include etiolation, thinning, typically shallow rooting and yellowing.”

Etiolation, or a general yellowing and elongation of the plant, plays a big part within that list of symptoms. The pathogen can strike anywhere there’s creeping bentgrass, but the symptoms tend to be more severe in areas with more heat.

“In cooler climates, these symptoms may pop up for a week or two weeks in August or July, and then it’ll recover and go away, and you won’t see it again until next year,” says Mitkowski. “In warmer climates, like the Southeast, the symptoms may pop up as early as April or May. They’re obviously worse when you get to June or July, but they can go for months, through the height of the growing season.”

Though researchers have had the pathogen on their radar for much longer, it’s really only exploded onto the scene within the past two to three years, says Mitkowski. That growth coincides with two of the toughest summers on record for many golf courses, a correlation that isn’t lost on researchers.

“It’s first important to keep in mind that the last two summers have been extremely difficult from an environmental standpoint for golf course superintendents with persistent heat and, in some areas, prolonged drought conditions,” says Tredway.

According to Vargas, the damage comes from bacteria preventing turf from getting the necessary water for growth, especially during these heat-stressed times.

“We have ... found xylem vessels clogged with bacterium,” says Vargas. “Xylem vessels conduct water from the roots up to the shoots. Clogged xylem vessels which limit the uptake of water, especially during warm weather of the summer, put the creeping bentgrass plants under tremendous stress and can result in their death.”

But the list of symptoms is almost the only thing on which researchers working on the pathogen can mostly agree. Only a few labs in the country are prepared to identify samples of the bacteria involved, and currently, the results are contested.

THE BATTLE FOR THE BACTERIA. Originally, the symptoms, including etiolation, were believed to be caused by a connection to applications of Primo to creeping bentgrass. As more research was completed, more clues about the pathogen came into focus, shifting away from that explanation alone. When Vargas found *Acidovorax* under an electron microscope, he named it as the primary pathogen involved.

“We have isolated *Acidovorax* into pure culture and inoculated healthy creeping bentgrass plants, placed them in growth chambers and we were able to infect the plants with *Acidovorax* showing it is a pathogen capable of attacking creeping bentgrass,” says Vargas.

But finding it capable of attacking the turf isn’t the same as actually finding the cause of the symptoms until testing can duplicate those findings. Turfgrass researchers check those results against Koch’s postulates to determine whether something involved is a pathogen.

“You have to isolate it from where you found it, and then you have to put it back on a new plant and determine that you get the same symptoms,” says Mitkowski. “We’re talking about the proof of concept. Yes, this

KEY POINTS:

- The cause of the symptoms associated with “bacterial wilt” is still being researched by turfgrass pathologists.
- The bacteria *Acidovorax* has been found in much affected turf, but other factors are still being determined.
- Stress caused by harsh summer weather and aggressive management practices could be a factor in the appearance of symptoms.
- Turfgrass pathologists are currently testing field applications to find effective responses to the symptoms.

thing causes disease when we put it on uninfected grass. And Vargas did that, with some stipulations.

“This bacteria he found was a pathogen, but it didn’t produce the exact same symptoms that we saw in the field. In the greenhouse, sometimes it would just kill the grass. Sometimes it would just do a little bit of damage and knock out some of the leaf blades and the plants would recover. This is really where all the controversy is, though. It’s a known bac-



Superintendents with creeping bentgrass have seen symptoms of etiolation, thinning, yellowing and shallow rooting.

terial pathogen in other plants, but it is not producing the same symptoms we see in the field.”

Whether or not it definitively meets that standard, Vargas sees the bacteria producing results similarly in the greenhouse tests.

“Some of these infected plants were also examined under the electron microscope and again the xylem vessels were clogged with *Acidovorax*,” says Vargas.

The concept of the bacteria as the primary pathogen is also supported by some testing that shows results with application of an antibiotic to the turf (though these products aren’t currently legally allowed to be used for turf outside of experimental testing). When it’s been done experimentally, according to Mitkowski, the symptoms go away.

Even if bacteria is to blame for the



Vargas found the *Acidovorax* bacteria in affected bentgrass.

symptoms, the disparity between what’s observed in the field and in the greenhouse means there’s another piece to the puzzle, says Tredway.

“There are a lot of possibilities,” he says. “There are bacteria that are known to induce these types of symptoms. There are fungi that cause etiolation in other crops. We’ve investigated the bacteria possibilities very heavily, and the problem is we cannot find any one particular bacteria that is consistently associated with these symptoms. We do find *Acidovorax* associated with the etiolated turf in a number of circumstances, but there are other occasions where we’ve not been able to find that particular bacteria and instead we find two or three others.”

Though there are other possibilities, *Acidovorax* is still a major player for Mitkowski.

“From my perspective, whenever I get samples of this etiolation, of this thing we call ‘bacterial wilt,’ I’d say 99.9 percent of the time I find this bacteria that Joe Vargas identified,” he says. “So that’s some empirical evidence, but it’s not experimental evidence.”

WHAT’S MISSING? “I definitely think it’s reasonable to assume there’s *Acidovorax* involved here,” says Latin. “But whether or not the *Acidovorax* is

Fighting the unknown

While research into the causes of the symptoms associated with “bacterial wilt” is ongoing, affected superintendents deal with the problem every day. Dr. Lane Tredway, senior technical field representative for Syngenta, reports some curative activity from Signature and Daconil Action, or copper-containing compounds – however, “none of these treatments are what we would call effective,” he says.

Another approach involves a focus on basic agronomic practices, says Dr. Rick Latin, professor of plant pathology at Purdue University.

“Do all of the agronomic practices to promote healthy root systems and vigorous turf, avoiding cultural stress during the summer wherever you possibly can,” says Latin. “That might mean backing off the aggressive grooming, raising the mowing height and working in some rolling.”

Keeping fans on turf to keep surfaces cool and dry and preventing nitrogen stress will also help plants navigate tough summer weather, he says.

Cultural practices aren’t definitive cures, but they do get results, says Dr. Nathaniel Mitkowski, associate professor of plant pathology at the University of Rhode Island.

“To date, those are the approaches that have been most effective,” he says. “People who have gone at it culturally have made some real strides in mitigating the disease.”

But the top tip Latin has for handling those symptoms is communication with the course’s membership.

“I think memberships by and large are understanding these things happen,” he says. “Right now I think there’s all kinds of information out there and all kinds of opinions. If I were a superintendent, I would say, ‘The first thing we want to do because nobody really knows whether this disease is a *bona fide* pathogen or the consequence of predisposing factors, let’s go back to our basic agronomy and try to relieve as much stress as possible.’”



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Taking sides

The academic discussion surrounding the “bacterial wilt” pathogen has created controversy between turf pathologists. It’s also left some superintendents feeling uneasy acting on advice when researchers can’t agree on a cause for the symptoms.

It’s additionally tough because the debate hasn’t created many alternatives to proposed responses so far, says Mitkowski.

“It does appear that there’s something we’re missing, but we don’t know what it is,” he says. “So far, no one has been able to say, ‘You think it’s this, but we say it’s that.’ There’s just been a lot of ‘You think it’s this, but we think you’re wrong.’ That’s frustrating because there’s no alternative hypothesis for what’s causing the problem.”

From outside the labs, it may sound like a more personal controversy, but the basis lies in exploring possible explanations and finding the correct diagnosis, even if the answer isn’t immediate.

“It’s just important to keep in mind that these things take time and they take money,” says Tredway.

It’s also not the first time in the history of treating turfgrass disease that a difference of opinion has led to arguments between researchers – and given reason to continue looking into other ideas.

“Doubt is not a bad thing,” says Mitkowski. “It’s just no one has been able to provide and substantiate any kind of alternate hypothesis. I’m not wedded to this bacteria. If someone can show me some experimental proof that it’s something else or there’s something else involved and it’s good data, that’s fine. I’m just trying to solve a problem, here.”

the aggressive primary pathogen that brown patch or pythium is? I would say no.”

Research into what role the bacteria (or another agent) plays in creating these symptoms is ongoing, but a few issues make study in the greenhouse difficult.

“It’s virtually impossible to mimic the stress and the conditions on a golf course putting green in a growth chamber environment,” says Tredway. “Even though we have control of the temperature, humidity and lights, we can’t do the close mowing and apply a lot of the stresses that a golf course superintendent does.”

That’s a problem for Mitkowski, as the most heavily affected turf he sees on courses is under multiple stresses.

“It may be the stress in-

involved in a golf course,” he says. “They’ve got constant management; they’ve got lots of different fertilizers going on. When I go out to golf courses, almost always the bacterial wilt symptoms are occurring on the plants that are in the worst conditions: there’s too much shade, it’s too wet, there’s too much traffic.”

That stress is a possible missing piece, according to Latin – he argues there’s another factor that predisposes turf to infection by *Acidovorax*. As his research has continued, he’s observed high concentrations of the bacteria are required in turf to get some symptom expressions.

“Of course, you don’t need those types of populations when you’re wounding plants and likely introducing bacteria when we mow every day,” he says. “We’ve

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had two very stressful summers here in the Midwest, and that's when the reports starting coming in."

Stress could be a factor, but it's not the only possibility, according to Mitkowski.

"The other explanation is there's something else going on in the field that we're missing in the greenhouse," he says. "There's a chemical that's been applied, there's been some suggestion that certain plant growth regulators or biostimulants that golf course superintendents use which aren't being applied in the greenhouse are actually stimulating the bacteria to cause disease.

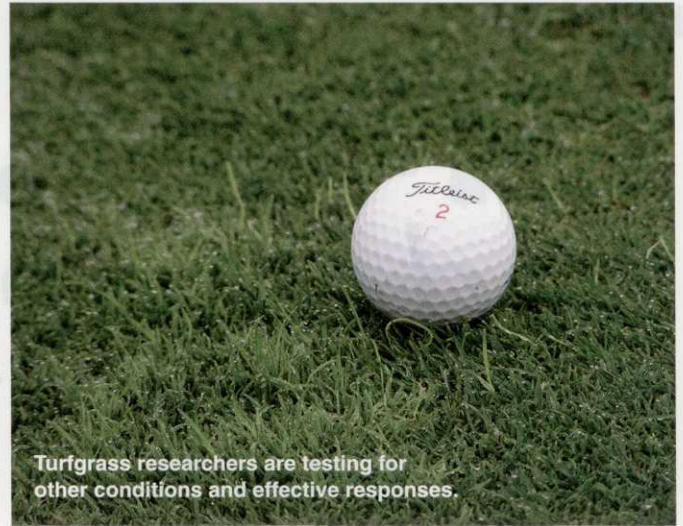
"It's possible that there is another agent – that this isn't one bacteria causing this disease and the bacteria is one piece of a multipiece complex."

The question remains, but probably not for much longer. As more research is being done by the labs equipped to handle identifying the bacteria, researchers are actively testing in the field, where other possible conditions can be observed and applications tested.

"Hopefully, by the end of the summer, we'll be able to say, 'These are the applications we made that worked, these are the applications that had no effect and these are the applications that made it worse,'" says Mitkowski.

With the additional testing, more questions will be answered – whether it means *Acidovorax* will remain a top threat to creeping bluegrass or another factor is implicated.

"No one has observed these



Turfgrass researchers are testing for other conditions and effective responses.

symptoms, isolated the bacteria in pure culture and put them back and recreated those symptoms in the field," says Latin. "Once we're able to do that, I think we're going to learn a lot

more about this particular pathogen and the extent to which this bacteria is a pathogen. GCI

Kyle Brown is GCI's associate editor.

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TIME... *and money...* FLIES

As you approach the later years of your career it's prudent to evaluate and prepare for life's final act.

by Bruce R. Williams, CGCS

Sometimes it takes the loss of a loved one or friend for any of us to understand the harsh reality that we won't live forever. Unfortunately, most of us would like to believe we will live forever and there is no real need to get our house in order. Often we see families left in disarray due to a lack of planning.

There is no exact age for retirement these days, but suffice it to say 65 is no longer an exact number for most to retire. As we all approach the later years of our careers it is a good thing to evaluate the next steps of our lives.

I'd like to share the sage advice passed on to me by my parents, estate planners and financial planners. First, I need to clarify that I am neither a financial planner nor a lawyer, so my comments are from a former golf course superintendent who has learned a few valuable lessons along the way. I strongly advise everyone utilize the proper pro-

fessionals who can help you plan ahead to prepare for retirement and to provide for your family after you pass on.

PLANNING AHEAD. This advice isn't just for the geriatric crowd. In fact, planning should start as soon as any of us take on the responsibility of a family. A plan developed 30 years ago will need some adjustments over time, but the core plan should serve you well most of your life.

Experts say it will take about 60-80 percent of your current income to maintain your employed lifestyle after retirement. Unless you win the lottery, this requires a lot of saving and wise 401(k) investments or other retirement vehicle.

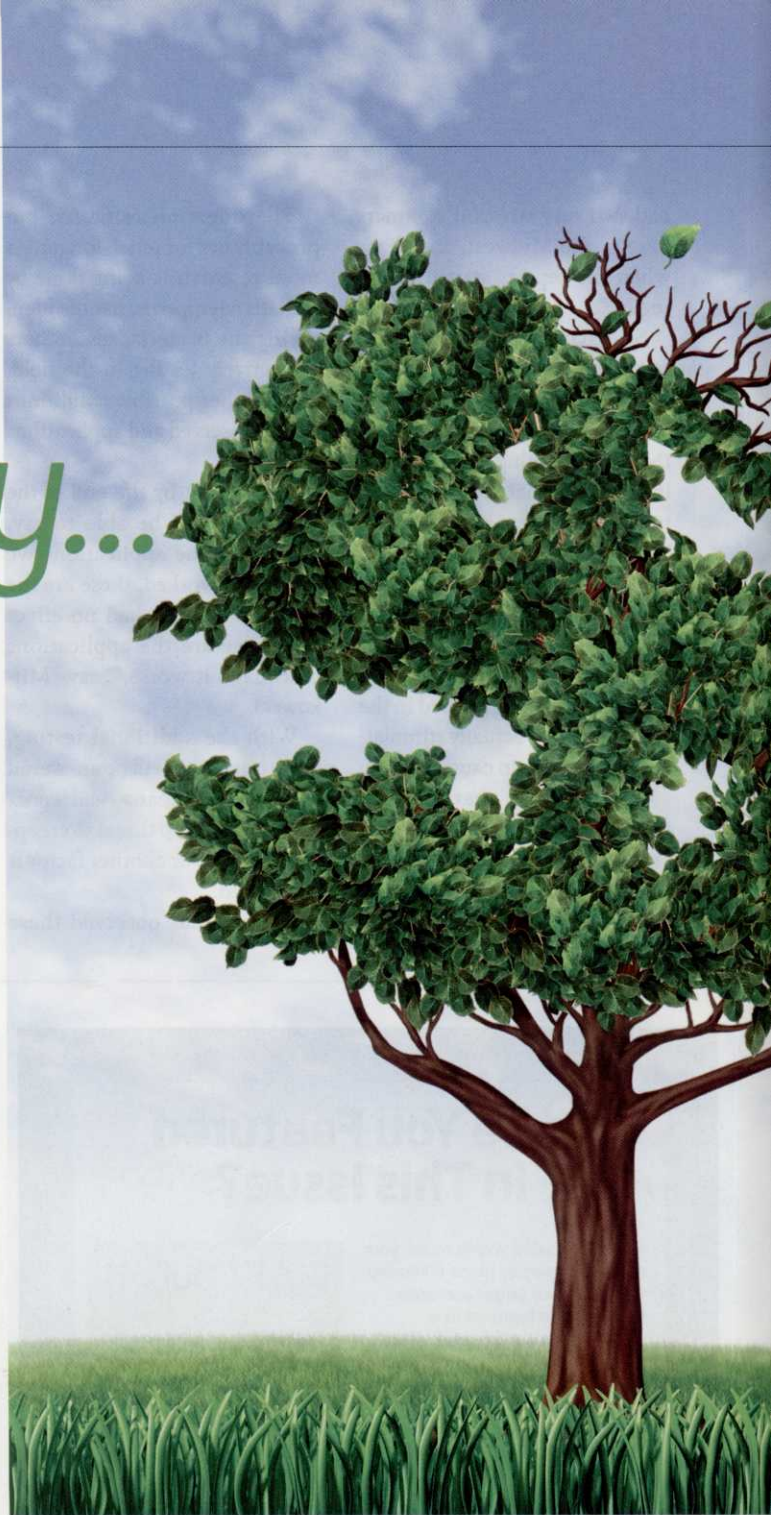
The recent recession reduced a lot of people's net worth and this will likely create unforeseen financial issues. Adjustments may include downsizing your house, working longer and taking a long hard look at a reasonable

budget you can live with on a fixed income.

HAVE YOU PREPARED FINANCIALLY? There are a variety of tools out there today that can help you plan for retirement. All one has to do is conduct an Internet search for a retirement calculator and a variety of websites will show up. These are great generalized tools to assist you in planning. Numbers will still need interpreta-

tion, as there are so many factors involved in retirement planning and family support.

Previous generations have depended upon Social Security as a significant component of retirement income. While there are debates as to whether Social Security will be there in the future we have to deal with the system as we know it today. Every few years we receive information about the likely amount we



5

Ways You Can
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1- Offset Cutting Units Are The Answer For Triplex Ring.



Offset cutting units help reduce Triplex Ring.

Thanks to an exclusive offset cutting unit design, the 2500E E-Cut™ Hybrid Riding Greens Mowers greatly reduce “triplex ring” caused by tire wear-in. It’s a simple solution but remarkably effective. By alternating the direction of the clean-up cut every day, you can dramatically reduce the number of times the tires run over the same turf. This gives the turf an extra day to recover before being driven on again, which minimizes compaction.

2500E E-Cut Hybrid Riding Greens Mower. The only greens mower everyone can appreciate.

This offset design and durable ball-joint suspension that reliably follows contours make for a consistent putting surface that will roll true and smooth all season long.

Then, there’s the advantages of surprisingly affordable E-Cut Hybrid technology. Which eliminates the possibility of a hydraulic leak from the reel circuit. Allows the mower to run at reduced throttle to lower fuel consumption and noise. And keeps reel speed running at a consistent clip.



The 2500E’s 22-inch Quick Adjust 5 cutting units allow height-of-cut to be adjusted in seconds with a cordless drill.

Best of all, when it comes to maintenance, the 2500E is serviced like a normal triplex greens mower. So your technicians won’t need to master any additional steps. And they feature labor-saving conveniences like Quick Adjust cutting units and white-box diagnostics.

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Improved grass catcher design offers even easier access than ever before.

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Soon to be available in both 18- and 22-inch width-of-cut, E-Cut Hybrid Walk Greens Mowers offer an unparalleled ability to follow contours and steer around the clean-up pass.

Thanks to the signature ball-joint mounting system, the cutting unit can rotate in any direction with limit chains to adjust to your green’s conditions.

Frequency of clip can be precisely set, and then is monitored by a controller to ensure consistency no matter the traction speed of the machine.



Coming this summer, the 180 E-Cut Hybrid Walk Greens mower joins the 220 E-Cut Hybrid to offer the advantages of a narrower width of cut.



There’s virtually no mechanical linkage to restrict cutting unit movement with the ball joint design and freedom of connecting the reel drive to a wiring harness.



Dial in the ideal frequency of clip for your course conditions with a straight-forward rotary dial that’s secured by a locking cover.

3- Put Proven Hybrid Technology To Work On Your Fairways.

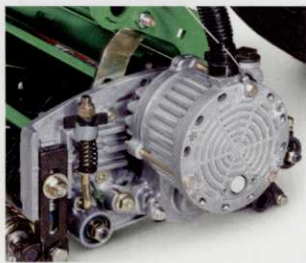


The industry's only hybrid fairway mowers.

No fairway mowers generate more confidence than our E-Cut™ Hybrid models.

And eliminating the possibility of a hydraulic leak in the reel circuit out on your fairway is just the beginning.

The engine can be throttled down to save fuel – savings that add up over the cutting season. Plus throttling the engine down has the added benefit of significantly reducing noise.



You can have total confidence in our E-Cut Hybrid technology that's been in the field since 2005.

maintain than conventional models for technicians. Thanks to maintenance-free brushless electric motors, no hydraulic lines in the reel circuit, and all the standard benefits of our mowers like Quick Adjust cutting units and white-box diagnostics.

So switching to hybrid technology is a breeze, with little to no learning curve for your staff.

The reel speed always stays rock steady for a consistently ideal frequency of clip. So your fairways always look pleasing to the eye and play evenly as well.

And these mowers are even easier to

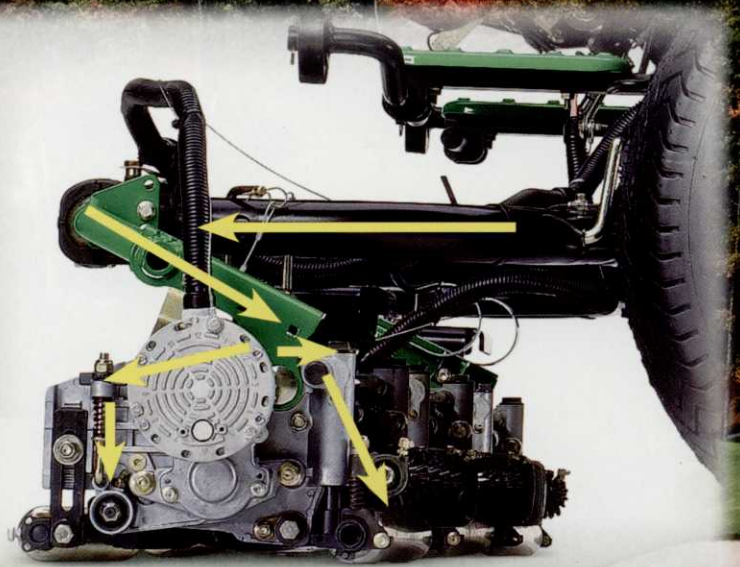
And of course, we're no Johnny-come-lately to hybrid technology. Our hybrid mowers have earned the trust of courses all over the world since 2005. And they incorporate lessons learned like second-generation motors and design features like separating controllers from the motors to prevent possible overheating.



Quick Adjust 5 cutting units' Speed Link™ height-of-cut adjustment system makes it possible to adjust height-of-cut to both sides of the reel in seconds with a cordless drill.

On all our fairway mowers, like the 7500 and 7700 PrecisionCut™ models, there are 2 exclusive designs to give you the best cut on your fairways. The first is the rear attaching point yoke system (versus a front attaching system) that keeps the rear roller engaged with the turf. The second is the hydraulic down pressure that can apply additional force to the rear roller. These two features work together to prevent the unit from bouncing, which can cause ripples in the turf.

The result: A consistent cut. Every time.



4- The secret to a perfectly cut fairway? Attach the yoke at the rear of the cutting unit.





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This Gator has been designed to handle the heavy stuff on a daily basis with 7-gauge steel frames, and auto-like fully synchronized manual transmissions (so there's no stopping to change ranges). And its new heavy-duty hydraulic

disk brakes lets you stop on a dime, even with a full load of over two tons.**

*The engine horsepower and torque information are provided to be used for comparison purposes only. Actual operating horsepower and torque will be less. Refer to engine manufacturer's web site for additional information.
**2WD or 4WD with heavy duty front and rear suspension, wide rear tire kit, and 4-post ROPS. Payload includes 200 lb. (90.7 kg) operator, 200 lb. (90.7 kg) passenger, and loaded attachment.



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would receive each month from Social Security, when we retire. I recently read these mailings may be discontinued to cut costs, but the info is available from the Social Security Administration.

Social Security provides a lot of options. People used to be able to receive their full benefit at the age of 65, but the age for full benefits will be increasing in the next five years to 66 and even higher beyond that. Those who choose to receive the benefits early have options at reduced rates. My suggestion is to do the math and see what works best for you. The good news is if you work longer than the age of 65, you will receive a higher monthly benefit, which could be quite helpful.

For those who have contributed to Social Security at the highest level for their entire careers they can expect about \$2,400 per month. This may seem like a lot but after taxes are taken out (yes, the IRS does tax you on that money) it may barely cover your real estate taxes and homeowner's insurance.

So what else do we need to consider as an income source after retirement or for those who survive us? Many of us once participated in a defined benefit program that would pay us a certain monthly rate if we worked for our employers until we were 65. Most of the defined benefit programs were converted to defined contribution programs

by the mid-1990s. Those retirement plans contribute a specific amount of money each year to your 401(k) plan. It is up to each of us to see that those 401(k) plans are managed properly with the right allocation of bonds, stocks, cash, etc. There are a few rules with the 401(k)s when it comes to withdrawals. You must start withdrawing a certain percentage of the 401(k) funds when you reach a certain age. Check with your financial planner and accountant to make sure you follow the rules to the letter of the law. Also take advantage of any plan that has your employer match your contribution as it is like doubling your money that you will need in retirement.

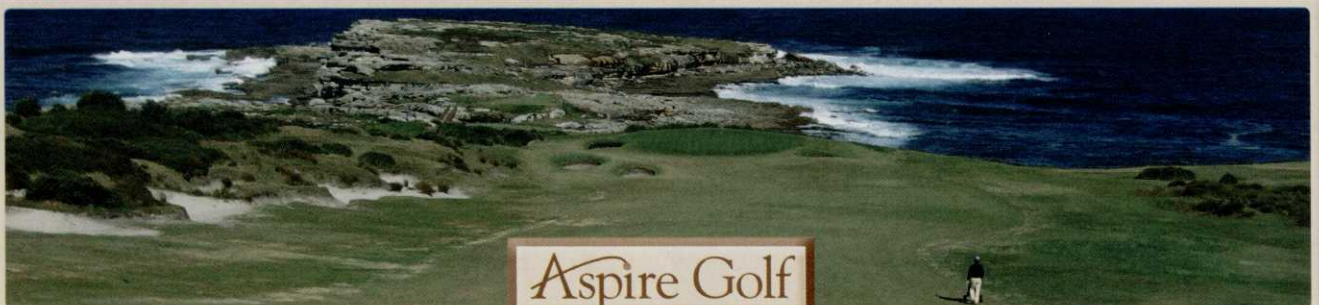
BUDGETS. Every golf course superintendent has developed numerous budgets over the years.

Just like a golf course budget, we need to develop a family or household budget for the working years and also for retirement. I would add another component to that and suggest adding a budget for your family or spouse in the event you pass on suddenly. We owe this to our families and this is the right thing to do!

INSURANCE. Life insurance is provided by some employers, and that is a good thing. But what happens when you retire? Now is the time to see if any and all life-insurance policies are transferrable to you as an individual. You may believe when you retire you won't need life insurance because you have covered the kids' college costs and even financed a few weddings. Your insurance agent should guide you in this endeavor. Trying to get life in-



“These are uncertain times for the future of healthcare, but suffice it to say it will be different than it was just a few years ago.”



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“Just like a golf course budget, we need to develop a family or household budget for the working years and also for retirement.”

insurance at a normal retirement age is nearly impossible. As we age we tend to have a few medical problems, and each of those is taken into account when we are quoted a monthly premium for life insurance.

How many policies do you have? The majority of the life insurance policies are either from the employer or paid for by the individual. Do not overlook some supporting life-insurance policies that come from other organizations that you might belong to, such as the GCSAA. Those organizations may not be aware of a person’s death, so be sure to make your family aware of those policies and who to contact after your passing.

As current generations live longer than any before them we must consider additional insurance for disability and long-term health care. We must also take into account inflation as health care costs will likely see large increases over the years we’re likely live past our points of retirement.

LONG-TERM HEALTH. I am not surprised to see elder care is considered to be one of the top professions of the future. This should only increase as the baby boomers reach retirement age. There are a variety of options for people today that could include a nice transition in our elder years.


When my parents were still quite healthy they opted to buy into an assisted-care facility. They were only in their 70s, but realized their health was probably going to decline in the next 20 years. At first they lived in independent living and had a nice-sized apartment that worked well for their lifestyle. Eventually, my father moved into assisted care after my mother had passed away and received all the

proper attention he needed after he was in his 90s. Now all of that did not come without a cost, and monthly fees can vary from \$3,000 to \$7,500 at some facilities. If we think back to a 401(k) plan that could be depleted and Social Security that may only offer \$2,400 a month then it becomes obvious that you may outlive your money. My suggestion is to look into long-term health care insurance and disability insurance if you do not already have it. Few have the wherewithal to pay for




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“The simplest way I can state this is to tell you if you don’t have a legal document that defines your wishes then the state you live in will decide some of those things for you.”

such services for up to 30 years.

These are uncertain times for the future of healthcare, but suffice it to say it will be different than it was just a few years ago. My older friends tell me you have to sign up for Medicare in the year prior to turning 65. If you do not meet their timeline, there will be penalties. Best to check it out before you turn 64. Medicare does not cover all your costs for healthcare, so be sure you do your homework about not just regular Medicare Plan A but also Plans B, C and D. While your base medical costs will be covered under Plan A you will likely need to add the monthly premium costs for the other plans to your budget.

YOUR WISHES. It is often assumed “my family knows what I want.” Are you really sure about that? Before I hit the ripe old age of 50 I engaged a local estate planner to assist me with formalizing my wishes for my family. This included the establishment of a will and a trust that would protect many of the assets I had accumulated during my career.

The simplest way I can state this is to tell you if you don’t have a legal document that defines your wishes then the state you live in will decide some of those things for you. I prefer to set my own direction for obvious reasons. I strongly suggest using the advice of people who specialize in this area. They can offer you a variety of options to choose from. Avoid probate at all costs as your family will end up with less than the amount you have worked so hard to build up over 40-plus years of work.

At the time of developing your will you will

have to consider who would be the executor, who would care for your children (legal guardian) and how your estate would be divided. I had to convert most of my assets to a living trust to avoid additional taxation.

Part of a will should include items such as potential power of attorney and clauses regarding decision-making for family members on “Do not resuscitate.”

PAPERS PLEASE. All the planning you do will pay big dividends for your retirement and your passing. Be sure to develop a file or portfolio that contains all your plans and let your family know where that file can be found. Life is much easier for your family if they know where all your accounts and safe deposit boxes are located. You should have multiple copies of your will and trust. List all your potential life or health insurance policies. All of these things should be available in one central location.

It’s never too late to start planning for your retirement. We should also plan for the time when we depart the earth.

Consult with professionals that can assist you and steer you in the right direction. That would include a financial planner, estate planner, lawyer, etc. The cost for their services will be saved several times over by developing sound investment and retirement strategies and avoiding probate after your passing. No time better than the present to get your house in order. **GCI**

Bruce Williams, CGCS, is principal for both Bruce Williams Golf Consulting and Executive Golf Search. He is a frequent GCI contributor.

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Brian Vinchesi, the 2009 EPA WaterSense Irrigation Partner of the Year, is president of Irrigation Consulting Inc., a golf course irrigation design and consulting firm headquartered in Pepperell, Mass., that designs irrigation systems throughout the world. He can be reached at bvinchesi@irrigationconsulting.com or 978/433-8972.

APPLES AND ORANGES?

I recently bought a new car. My Subaru was vibrating between 65 and 85 mph to the point it couldn't be driven comfortably and slower than 65 just doesn't work for me. I hate car shopping with a passion. So to make it more interesting, I couldn't help but compare purchasing a new car to purchasing a new irrigation system. I looked at the differences in the two purchases systematically and analyzed a number of important issues.

SELECTION. I had no idea what car I wanted, so my selection was huge. With so many different manufacturers out there and I had to use a process to narrow down the list to at least five or less. This problem does not exist with irrigation. There are just a few choices out there and you can quickly narrow your choice to two or three companies and move on to the other buying issues.

STYLE. Cars can be sedans, coupe, cross overs, SUV's or hatchbacks. In irrigation we have block or valve-in-head, decoders or field controllers. In car-buying the style may not be important, but in irrigation systems the control style has become a major decision.

FEATURES. With a car there are lots of different features. Many are included in packaged groups and once you pick a specific package you get everything that it includes. For example, a power package may include power windows, mirrors, door locks and cruise control. Irrigation systems are no different in that once you pick a control system level – for example in Rain Bird there is Stratus, Nimbus and Cirrus the features

are automatically included. Similarly, the price is higher the more features in the package. And as with a car, in most cases you start with a lower level and add in just the individual features for an additional cost. With an irrigation system you also get features that you may not want and therefore will not use. In the car, you will probably use them if they are there.

TRADE-IN VALUE. I got to trade in my Subaru for a fair amount that acted as my down payment. Depending on the

And as with a car, in most cases you can start with a lower level and add in just the individual features for an additional cost.

age of your irrigation system it may have resale value, but it certainly will not be any substantial amount. There are some third-party refurbishes and resellers who might take the old equipment off your hands, or you might find a golf course that can use your stuff for parts. If you get really lucky you might also be able to sell your old pump station cheaply. Basically, there is no trade-in value.

NEGOTIATING. For some, not me, the fun in car buying is the negotiating. Once you know what you want you start seeing how low you can buy it for. Irrigation systems have some negotiating room, but not really that much. Irrigation sys-

tem negotiations quickly get to a point that if you want a lower price you have to decide what you are willing to give up – fewer sprinklers, less isolation, etc. For example, how many sprinklers are you willing to eliminate and where?

FINANCING. New car financing is pretty easy unless your credit rating is crap. There are options: bank financing, dealer financing, leasing or manufacturer financing. Irrigation is a little more difficult. One reason is the cost – millions of dollars are not financed in an hour or less. There is bank financing usually as a mortgage on the property or club house which will require an up-to-date appraisal. Member financing by assessment or savings through capital improvement requires informational meetings and maybe a vote. Many times there is a combination of different financing options. There is also leasing and manufacturer financing but these are rarely used as bank financing is almost always more attractive to a club/owner.

PRICING. A car has a sticker price attached to the window but it just indicates an order of magnitude and a place to start (see negotiation). In irrigation, for each individual item; sprinkler, valve, controller – there is a list price for each. There is no list price for the entire system like a car, but like the car, the list price doesn't really mean anything. In irrigation, the price is based on the package or a percentage off the list price. You're not sure what the price will be until there is a design and something to price from. GCI



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by Bob Lohmann

think **BIG**

GCI's Bob Lohmann explains how courses can be a solution to their communities' water mitigation problems.

When superintendents, along with most of us in the industry, consider water management issues, I think we naturally think first about water "quality" or the increasing concern over water "availability." Clearly these are pressing concerns.

Golf courses have not generally been seen as a positive force for the public when it comes to the maintenance of water quality, or the preservation of water resources. We in the industry know the real truth, though: Wetland areas and the natural filtration qualities of turfgrass can ably serve a community's water quality goals while returning that cleaner resource to the water table we all share. Obviously this message is not being communicated to the larger public well enough, not nearly. We all need to do a much better job in this regard.

But water management issues should be more broadly considered. They don't have to be a source of insecurity for golf course superintendents. They can actually enable better public relations in the immediate community and enable course managers themselves to upgrade their course products, at prices that are reduced or even mitigated by the very water management issues many communities are obliged to address.

Plan projects that make the most of a water element and show off the course's commitment to water management.



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WATER MANAGEMENT

Let me flesh out what I mean, and allow me to cite multiple real-life examples.

We're working right now with a community in Wisconsin where the city is desperate to identify places within its jurisdiction where it can direct water, store it, clean it up, and release it to a nearby river. The city is obliged to address these water quality and storage issues, by law. The city-owned golf course is going to be key to implementation of these remediation plans — and this municipality is going to receive a valuable redesign and upgrades in the bargain, with limited, if any, impact on its own capital budget.

The project team, which includes Lohmann Golf Designs as the golf course consultant, is 50 percent finished with the design



BEFORE

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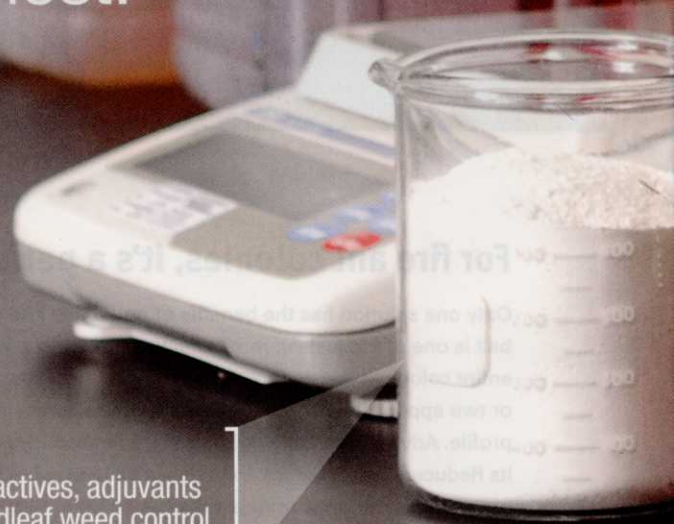
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The Westmoor Country Club in Wisconsin was approached by the City of Brookfield to work together in handling a public water-quality problem: a nearby neighborhood development was causing silt, salt and other debris to enter into the city stormwater systems. The course worked with Lohmann and the city to redesign the 15th hole to take on and clean the water. The redesign included adding a filtrating wetland system, an expanded water feature and stone retaining wall.



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phase of this project. We're building two large retaining ponds that will impact 4-5 different holes. As is, the course is a modest layout with a few interesting hills and dales, but it is never going to host a U.S. Open. In other words, those four to five holes — including four brand new greens — will all be vastly improved by the renovation, while further course-wide upgrades will also occur as some 100,000 cubic yards of fill are deployed from the creation of these ponds.

The overall price tag has not yet been determined but it will be covered by the city's stormwater division, mainly via funds provided for the bigger, city-wide water quality effort. So the course improvements will likely

have minimal impact on the golf course's operating budget, other than some fertility costs during grow-in.

Superintendents need to think big and get strategic. Most every community is struggling with these same water management issues. Golf courses are vital, vibrant members of the community that also happen to be vast, in terms of acreage. It only makes sense that they actively partner with cities and counties to be part of larger solutions that also benefit course quality, course maintenance, course budgets and golfers.

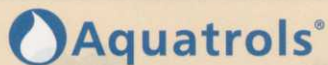
The course does not have to be municipal in order to make this sort of partnership work. A few years back, another Wisconsin com-

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“We have to acknowledge that while water conservation is a serious issue, sometimes the problem is actually too much water.”

munity, the City of Brookfield, approached a longtime client of ours, the private Westmoor Country Club, about solving a festering water-quality problem: silt, salt and other street debris running off a particular neighborhood development. The compromised water resource was already coming onto the golf course through an existing pipe.

The club, with our help, took control of the remediation effort. We created a filtrating wetland system on the 15th hole where this water could be cleaned before it re-enters the city stormwater system, and we

redesigned the hole to accommodate the change – expanding the water feature around the green and building an attractive stone retaining wall. We fit this work into a larger renovation effort that was already underway, but all the work at 15 was funded by the city.

Superintendents need to view these projects not as nuisances, but as opportunities – for their courses and their communities at large. We have to acknowledge that while water conservation is a serious issue, sometimes the problem is actually too much water.

In suburban Chicago, we’ve just finished a serious renovation job that was enabled by a similarly serious stormwater management issue. Poplar Creek Country Club had been a nice, upscale municipal facility for decades. But over the last 30-plus years, the land all around it had been developed both residentially and commercially, creating huge stormwater problems for the golf course and immediately adjacent landowners.

We vastly expanded the on-course water storage capability to accommodate the runoff that had routinely flooded the golf holes and upstream properties. In the process we upgraded all 18 holes in some capacity, improving drainage in flood-prone areas, naturally, but also integrating into the routing all this new

pond and wetland space (read: more drama, more risk-reward elements). Again, that much pond-digging creates a great deal of fill. We put all that fill to good use in raising golf features (out of the floodplain), creating more playability (forward tees) and improving separation of uses (mounding around the range).

Today, The Bridges at Poplar Creek is a far better golf course in almost every respect. Was the course budget unaffected by all this renovation work? No. But the park district realized achieving long-term sustainability, a grand mission of the district as a whole, required a change and so they committed the necessary funding. Indeed, a course renovation project would never have been considered if the larger

(continued on page 102)

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Early to rise

A short, warm winter means early *Poa* emergence. Superintendents discuss their strategies for coping.

By Helen M. Stone

As if golf course superintendents didn't have enough to worry about, springtime temperatures set records across the nation. According to the National Ocean and Atmospheric Administration (NOAA), more than 15,000 daily record-high temperatures were set in March. Meteorologists used words such as "astonishing" and "amazing" to describe the phenomenon, and NOAA declared it the warmest March on record in the contiguous United States.

But before you could get the shorts and sunglasses out for good, temperatures close to normal quickly returned, along with dire weather warnings in the Midwest. Weathermen have been blasted for inaccuracy since the Babylonians used astrology to forecast temperatures in 650





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TURF MANAGEMENT

B.C., but today's climate patterns seem to make all the new technology and computer models about as accurate as reading the stars.

The warmer temperatures made *Poa annua* control an earlier issue than usual. "We have been relatively wet, and with the mild winter temperatures this was one of the worst *Poa* seasons I have seen," says Roger Meier, CGCS, golf course superintendent at Valhalla Golf Club in Louisville, Ky.

Annual bluegrass causes several types of headaches on the golf course. The rapid seedhead development is first, and PGR (Plant Growth Regulator) sprays to control the pesky intruders must be timed with the appearance of the "boot" or seed sheath. Some superintendents use Growing Degree Days (GDD) to start their program, while others rely on weather patterns. Phenology clues, such as forsythia blooming, are also employed.

"A turfgrass plant doesn't recognize the calendar," says Dean Mosdell, technical manager for Syngenta. "When conditions are right, it wakes up and grows regardless what the calendar says."

"Spring temperatures have been higher in most of the northern tier states and that translated into earlier *Poa annua* maturity and seed head production," says Roger Storey, vice president of the turf and ornamental division of SePRO Corporation.

"You want to put down Embark right after the last frost," says Kevin Hicks, superintendent at Couer d'Alene Resort Golf Course in Couer d'Alene, Idaho. "This year we sprayed on March 15, and we're usually done around the first of May."

With the famous "floating green," Coeur d'Alene is a destination course, and needs to be in top condition during its relatively brief play-

Once the right weather conditions are in place, *Poa annua* moves quickly to seedhead development.



“We put our last application of Cutless down about last Halloween, and we started up again about four weeks earlier than normal – about the first of April.”

— Clay Stewart, Idle Hour Country Club

ing season. “We have seven months to make money,” says Hicks. “If I make a mistake, it affects revenue.”

The challenge lies in the large percentage of *Poa annua* on the course. When Hicks began working on the course nine years ago, the greens and fairways, originally seeded bentgrass, were largely *Poa*. “I was in a meeting this morning where the rep had a product that promised to take out the *Poa*,” Hicks says. “I wouldn’t have any grass left!”

A split application of Embark “carries us through the heavily seeded part of the year,” says Hicks. “Then we use a combination of Primo and Proxy for trailing seedheads.”

During mid-summer, Hicks switches gears again. “We’ve been really happy with Legacy; it’s a combination product and gives us very effective long-term control.”

“Initial applications of Legacy at the lowest label rate recommendation should be started after the bentgrass is fully active,” says Storey. “After the initial application, rates can be increased to gain the desired turf growth and clipping reductions.”

Strategies to deal with *Poa* will vary depending on how what percentage of the turf is “infested.” Clay Stewart, superintendent at Idle Hour Country Club in Lexington, Ky., is “only looking at less than five percent on the greens and 10 percent on the fairways.” The unusual weather

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“A turfgrass plant doesn’t recognize the calendar. When conditions are right, it wakes up and grows regardless what the calendar says.”

—Dean Mosdell, Syngenta

patterns has affected his application timing as well.

“We put our last application of Cutless down about last Halloween,” he says, “and we started up again about four weeks earlier than normal – about the first of April.”

“Under a Cutless program, it is important to continue applications through the summer months during the periods that *Poa annua* is stressed,” says Storey. “The most significant declines in *Poa annua* population are achieved by continuing the program starting in the spring and continuing through the summer and into the fall.”

Stewart sprays every two weeks with 10-13 ounces per acre of Cutless on putting greens. On fairways, approaches and tees he uses eight ounces of Cutless mixed with six ounces of Primo every three weeks. PGRs should be watered in after application.

“We vary our rates according to the weather,” Stewart says. He is on a season-long program to suppress the annual bluegrass. “We make the rates a little higher in the spring and fall and back them off in the summertime. It also depends on whether we are also spraying fungicides and which ones we are using – some have growth-regulating properties. So we’ll back off that week because you don’t want to shut everything down.”

The type of PGR and the rates and application timing will also depend on whether the goal is control or elimination. “Primo is used when maintenance is the goal,” says Mosdell. “If control or elimination is the goal, you can use stronger PGRs such as Trimmit.”

“In the Southwest, superintendents use Trimmit on bentgrass greens in early summer until it gets really hot,” says Dr. Dave Kopec, turfgrass specialist with the University of Arizona Cooperative Extension in Tucson. “At that point, the *Poa* retreats. Then they can pick up applications in the early fall.”

Overseeded Bermudagrass greens require a different regime. “You can use multiple applications of Legacy, but you need to be careful when the Bermuda breaks dormancy,” Kopec cautions. “The PGR can actually slow the Bermuda down, because it’s taken in by the roots as well as the shoots.” In the summer, *Poa* isn’t an issue in Bermudagrass greens because the vigorous growth will choke out the invader.

Of course, the bottom line is that healthy, vigorous turf will minimize *Poa* infestation no matter what type of grass is grown. “As soon as we are able to control moisture and grow healthy turfgrass plants, we can combat the *Poa* and keep it in check,” says Meier.

“We actually have a good climate here in Kentucky for *Poa* control,” Stewart says. “It



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“As soon as we are able to control moisture and grow healthy turfgrass plants, we can combat the *Poa* and keep it in check.”

— Roger Meier, Valhalla Golf Club

gets hot and dry in the summer and *Poa* doesn't like that. So with the PGRs the *Poa* gets regulated and the bentgrass just crawls right over the top of it.”

Even the most diligent program will not result in complete eradication. Stewart is in the fifth season of his program. “By no means do we eliminate it, but we've been able to significantly reduce it,” says Stewart. “Especially in our fairways – we've seen a significant reduction.”

The take-away message? If you are on an ongoing program for *Poa* management, keep your timing on schedule. As temperatures rise, PGR rates should drop. Hot, dry conditions are *Poa annua*'s worst enemy. The best advice is the same as you have heard for almost every turfgrass challenge. Provide the best possible growing conditions for your turf, and you should be able to sail through the summer ahead. **GCI**

Helen Stone is a Las Vegas-based freelance writer and frequent GCI contributor.



Application of PGRs have to be properly timed to affect *Poa annua*.

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Syngenta Business Institute™

ALUMNI UPDATE

One of the key things I took away from the Syngenta Business Institute™ was that golf's business model needs to evolve and change to survive. The old 1960s notion that the golf course is the man's domain and is his exclusive sanctuary on the weekends is a dinosaur — it's extinct. Today, wherever dad goes so do mom and the kids. Clubs that survive will be those that fill the needs of the entire family and not just the individual player. As a result learning about this new generational difference and discussing it with my peers, I began addressing these issues through my maintenance blog and I've started to work many of the concepts I learned into my blog posts.



Bill Davidson, CGCS
Superintendent
The Country Club
of Naples



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Monroe Miller is a retired golf course superintendent. He spent 36 years as superintendent at Blackhawk Country Club in Madison, Wis. Miller can be reached at groots@charter.net.

SPORT'S TOUGHEST (AND BEST) TICKET

It's said a Masters ticket is the toughest one in sports – harder to come by than the Super Bowl, World Series, Stanley Cup or the NBA Championship. And yet, this April I had one, free of charge, just like many other golf course superintendents. We were, as in every other year, guests of the Augusta National Golf Club.

I take it as a sign of respect from the Club and recognition of GCSAA and our profession's importance to golf. I tried to find a club official to personally thank; I did drop a note to Billy Payne and I hope he actually reads it.

Waiting in line and looking around left me with a wonderful first impression. Annual flowerbeds are perfectly maintained, mulched beds are clean, all structural surfaces seemed freshly painted and even the concrete and blacktop seemed new. Every detail had been covered.

Once through the gate, a brief walk takes you past the huge pro shop, the food stand and suddenly you see the big scoreboard on your right and the first tee on your left. The setting forces you to stop and soak it all in. Then the big golf course captures you and brings you to reality and the tournament that is underway.

I had hoped to catch the honorary players – Arnold Palmer, Jack Nicklaus and Gary Player – but I missed them by minutes. I spent some time watching the players warm up, enjoyed seeing them up-close trying to figure out the green speed on the practice green.

Walking a golf course backward is the best way to see it during a big event. Although I am interested in the competition, I am more interested in the course. It was early enough for me to watch the staff work. They were still mowing, rolling and grooming and completing preparation for play. Rain on Wednesday had cancelled

completion of the Par 3 Tournament and closed the course, so there was some extra work to do, cleaning up under story area, raking needles, blowing leaves and debris from play areas, whipping dew and clippings and pushing water out of wet areas. Everybody hustled to get the extra work completed so as not to disturb players or patrons.

Along the way I greeted CBS broadcaster Vern Lundquist, who was checking the course after the rain. I cut my backward tour short when I ran across a Toro truckster. Almost immediately a staff member came to

Walking a golf course backward is the best way to see it during a big event.

get it. I was looking for my Wisconsin colleague Scott Schaller and Tenia Workman, a colleague when I was our chapter publications' editor. She is the Georgia GCSA executive director. They have both worked on the golf course crew during the Masters week for a number of years.

When course preparation is complete, Scott and Tenia are stationed in a rough area on the Back 9 on an emergency response vehicle. The truckster is prepared to handle just about any unexpected event, just like the two veterans stationed with it. The previous day Brannon had an interesting assignment – filling divots on the 1st tee of the Par 3 Tournament, giving him a front-row seat.

The early spring left the Masters without its usual profusion of blossoms. But frankly, the course is so beautiful and well-prepared I didn't even notice until someone mentioned it. I did notice there were a number

of fairway mowers painted gray; I thought they were Toro's, but was too far away to know for certain. I also wonder how Brad Owen does it every year regardless of the cards dealt him.

The course was cut short, the fairways are wide and there isn't much rough. It is a big piece of property – I would guess more than 400 acres – that was an abandoned nursery when Bobby Jones and Cliff Roberts bought it for a golf course. That explains the presence of so many flowering ornaments. Today's clubhouse was part of the deal; it was the home of the owner and was built in 1854.

Most have heard about the lunch stands around the course and at the clubhouse area. There aren't any grills cooking hamburgers and brats. Instead you select from a menu that includes egg salad, pimento cheese and other sandwiches.

The ambience of the event leads to pleasant attitudes of fans, too. You can set your chair near a green, go to a restroom – which are immaculate – and find it there when you return. The Masters, to me, embodies so much of what I love about being a golf fan.

In 1969, I was assigned to Fort Gordon, an Army post on Augusta's western edge, for Army military police training. The city of Augusta and the area around the club were far different then; the course was on the edge of town. I had one weekend pass and I took a cab to the guardhouse at the end of Magnolia Lane. I explained I was a turf graduate and wondered if I could see a bit of the course. The guard was very kind, "I'm sorry, son, but I just cannot give you a pass." I remember hoping that someday I would get that chance.

This was my fourth trip to the Masters. My hope is that you get to make the trip yourself some day. It is worth it. **GCI**

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Liquid assets

By John Torsiello

Wetting agents get the most out of the moisture on your course.

Somewhat remarkably, the number of wetting agent products on the market has increased during the past 35 years from four or five to more than 130.

There are several reasons for the explosive increase. But a primary igniter for this amazing burst of product is the increased expectations of golfers who now consider smooth, fast greens and pristine fairways to be a given. This, of course, has meant closer mowing heights and more intensive management to maintain the new standards, while at the time ensuring turfgrass health.

"There is little doubt that wetting agents are more popular or used more today than ever before," says Dr. Keith Karnok, a professor specializing in turf management at the University of Georgia's College of Agricultural and Environmental Sciences. He

estimates a whopping 90 percent of superintendents use wetting agents as an integral part of their management program.

"Currently, wetting agents are the best tool or management practice for managing localized dry spots caused by water-repellent soils," he says.

Depending on the situation, wetting agents can help improve fertilizer and pesticide efficacy, Karnok says. "Certainly, we have shown through research, wetting agents applied to a water-repellent rootzone can improve irrigation efficiency significantly," he says. "We now have some evidence that wetting agents applied to non-water-repellent soils will improve irrigation efficiency."

Traditionally, superintendents have employed wetting agents during hot, dry conditions, says Andy Moore, agricultural marketing manager for Aquatrols.

In recent years, with the advent of new, unique chemistry, turf managers are realizing specific wetting agents can help them balance water and air in the rootzone in wet and dry conditions.

"More people are beginning to use our products for overall water management rather than just curing dry spots," Moore says. "We also see more people using our Dispatch technology because it can save them money on water and energy costs, as well as make all their soil-directed inputs (fertilizers and chemicals) more efficient."

Soil surfactants contribute to healthier, more resilient turf that withstands stresses and maintains quality. They can also contribute to significant water and energy savings during the irrigation season. All this leads to enhanced playability of the course, which should bring in

greater revenues, Moore says.

"Not that I am saying by using our products all problems are solved. However, managing water effectively and efficiently can have a big impact on the bottom line. Water is at the foundation of all other agronomic practices. If water is being used effectively it can impact turf health, which impacts the turf's response to stress and the need for other inputs."

Chuck Champion, president of KALO, says university research over the years has confirmed the





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value of soil sufficants.

"Next to labor costs, the purchase of city water and utility costs for pump stations represent the highest budget expense for most golf courses. Pumping hundreds of thousands of gallons of water on a course over a few days is not unusual for large courses during summer months," Champion says. "Wetting agent applications can pay for themselves in water and utility cost reductions." He says quantifying that savings is subjective.

"There are many claims about water savings but realistically 5 percent to 15 percent less water used to maintain equal turf quality should be possible with wetting agent use," he says.

Bert Brace, vice-president/formulator for AQUA-AID USA, says superintendents are better understanding how each product works and are adjusting chemistries as conditions, expectations and budgets demand.

"Presently, superintendents have three modes of action for wetting agent/surfactant chemistries to choose from in today's market and four ways to apply the chemistries," Brace says. "The three modes of action for surfactants are hydrating, penetrating and corrective. The four different ways to apply surfactants include tank spraying, injection, granular and hand watering pellets."

David Dore-Smith, superintendent at Copperleaf Golf Course in Bonita Springs, Fla., says soil sufficants helped him get through some potentially devastating weather in recent years.

"We have experienced two of the worst droughts over the past two years in this region and are now entering a third," he says. "The use of wetting agents has allowed me to prevent turf damage and continue to provide quality conditions for both our members and reciprocal players during these trying conditions."

Wetting agents have proven to be invaluable in providing consistent conditions," he says. "Hotspots are greatly reduced, thus eliminating over watering, playability is improved due to improved ball roll, labor is reduced due to not needing to chase after 'hot spots' and overall turf quality is 'superior.'"

Tim Schaefer, superintendent at Emerald Falls Golf Club in Broken Arrow, Okla., has used wetting agents in the past few years and the results have been promising.

"We have several different types of soil on our property, so a wetting agent is needed in some areas more than others," he says. "The best result we saw was water penetrating into the areas where we applied it instead of running to the valleys and further saturating them."

Dave Libby, superintendent at Prouts Neck Country Club in Scarborough, Maine, believes there is significant value in using soil sufficants. The first benefit, he says, is water savings. He has been able

"We have several different types of soil on our property, so a wetting agent is needed in some areas more than others. The best result we saw was water penetrating into the areas where we applied it instead of running to the valleys and further saturating them."

— Tim Schaefer, Emerald Falls Golf Club

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PROFESSIONAL WATERING PRODUCTS 2012



When a product does its job day in and day out - it works. When it saves you time, money, or water - it's smart. When it does both - it's from Underhill.

Products that work...smart.™



NEW!

Magnum™ UltraMAX

Made in USA

PREMIUM HOSE-END NOZZLES & ACCESSORIES

Step up to the most professional nozzle you can buy - MAGNUM™ UltraMax. Firefighter quality for professionals in any field, these variable flow, multi-function nozzles are virtually indestructible and leak proof. The innovative TURBO SHIFT feature, available on both high-flow and low-flow models, provides two distinct GPM ranges for added versatility. And the outstanding distribution patterns of all MAGNUM UltraMAX nozzles make them excel in high demand areas like greens/tees, infield conditioning and equipment and stadium washdowns.

features / specifications

- Multi-Pattern Spray: Fog, Jet Stream, Fan
- Built for 1" and ¾" Hose Flow Rates (range: 7-43 GPM)
- Materials: Aircraft Aluminum, Stainless Steel, TPR Rubber



FULL THROTTLE
Single Variable Flow: Delivers steady, maximum volume fog, jet stream and fan patterns.

High Volume Model:
 15-40 GPM (57-151 L/min)

Low Volume Model:
 12-19 GPM (45-72 L/min)



Pistol Grip

Firefighter Grip

UltraMAX Valves

NEW!

Heavy duty ball valve, push-pull on/off control handle and exceptional build quality for long life under demanding use. Available in Firefighter Grip for two-handed operation or ergonomic Pistol Grip for comfortable, extended use. **Nozzles sold separately.**



TURBO SHIFT

Dual Variable Flow: Delivers light fog and low volume jet stream patterns before shifting to high volume jet stream and fan patterns.

High Volume Model:
 Opens with 12-17 GPM (45-64 L/min)
 Turbo Shifts to 20-43 GPM (76-163 L/min)

Low Volume Model:
 Opens with 7-12 GPM (27-45 L/min)
 Turbo Shifts to 14-17 GPM (53-64 L/min)

ordering

All flow rates based on 80 psi (5,5 bar)

Part # NG550-DFH-75	Turbo Shift 12-43 GPM (45-163 L/min) - ¾" FHT inlet
Part # NG550-DFH-10	Turbo Shift 12-43 GPM (45-163 L/min) - 1" FHT inlet
Part # NG550-DFL-75	Turbo Shift 7-17 GPM (27-64 L/min) - ¾" FHT inlet
Part # NG550-DFL-10	Turbo Shift 7-17 GPM (27-64 L/min) - 1" FHT inlet
Part # NG500-SFH-75	Full Throttle 15-40 GPM (57-151 L/min) - ¾" FHT inlet
Part # NG500-SFH-10	Full Throttle 15-40 GPM (57-151 L/min) - 1" FHT inlet
Part # NG500-SFL-75	Full Throttle 12-19 GPM (45-72 L/min) - ¾" FHT inlet
Part # NG500-SFL-10	Full Throttle 12-19 GPM (45-72 L/min) - 1" FHT inlet
Part # SVPG-75	Pistol Grip Valve - ¾" FHT inlet
Part # SVPG-10	Pistol Grip Valve - 1" FHT inlet
Part # SV-75	Firefighter Grip Valve - ¾" FHT inlet
Part # SV-10	Firefighter Grip Valve - 1" FHT inlet

Magnum™

SOLID METAL HOSE NOZZLE

Underhill™ Magnum™ contains no plastic internal parts to break, stick or wear out. Our unique ratchet mechanism easily adjusts from gentle fan to powerful jet stream and prevents over-tightening damage. Precision-machined, incredibly smooth operation and outstanding distribution patterns make it ideal for high-demand areas like greens and tees. Magnum™ is also an excellent equipment wash-down nozzle.

features

- Multi-pattern sprays - effortless control with hydraulic assist on/off
- Solid metal internal - no plastic parts to break or wear out
- Ratchet mechanism prevents over-tightening damage
- Ultra-durable construction withstands any abuse
- Fire hose quality nozzle feels great in your hands
- Beautiful, consistent spray patterns for life
- Built for 1" and ¾" flow rates

specifications

Materials: stainless steel, aluminum, TPR rubber

Flow: 37 GPM at 80 psi

Inlet: ¾" hose thread (1" brass adapter available, see Page 4)



Magnum™ nozzle pictured with 1" brass adapter (sold separately on Page 4)



solid metal internal body

Won't stick...won't break



NEW!
Bumper Design



CoolPro™

COOL WITHOUT OVER WATERING - NO ROOT DAMAGE

A hot summer day can be murder on your greens. Use too much water and you risk damage to the roots. CoolPro™ is the first nozzle specifically designed for the single purpose of lightly misting the turf canopy to cool without over watering. And its 25 foot fogging pattern gets the job done quickly.

features

- Precision™ nozzle fogs at 70 psi to deliver a 25 ft. pattern with only 4-6 GPM
- ¾" inlet (1" brass adapter available, see Page 4)
- Ergonomic handle/valve provides easy grip and variable on/off control.
- Durable solid metal design: zinc, aircraft aluminum and stainless steel.

ordering

Part # NG450	MAGNUM™ Hose Nozzle
Part # HNC075	CoolPro™ Valve and Nozzle
Part # HNO600	CoolPro™ Nozzle only
Part # CV075L	CoolPro™ Valve only

Perfect for tournament play, CoolPro™ puts down only enough water to cool the turf canopy. It prevents wilting while maintaining good ball speed. CoolPro is a great tool for protecting grass on hot days without damaging roots.

Precision™

SOLID METAL, SPECIFIC TASK HOSE NOZZLES

Underhill Precision™ nozzles deliver millions of soft, uniform droplets to provide rapid yet surprisingly gentle water application over a huge range of flow rates. From soft watering to powerful drenching, patented Precision nozzles are designed with ideal flow rates and droplet sizes to fully irrigate without disturbing turf, dirt, seeds, etc., providing a precise solution for every hand watering application.



Rainbow™ TASKS: Greens, tees, seed beds, transplants, delicate landscaping (15 GPM)



Rainmaker™ TASKS: Syringe and spot watering turf and hardy landscaping (23 GPM)



Cloudburst™ TASKS: Dry spots, drenching, and wetting agent application (35+ GPM)



Cyclone™ Pre-game skins watering, heavy watering of large areas (50+ GPM)
Note: GPM will vary with pressure at nozzle.



NEW!
Bumper Design

high-flow valves



COMPOSITE / STAINLESS STEEL:
¾" hose thread inlet/outlet, oversized handle, up to 55 GPM



SOLID BRASS: ¾" hose thread inlet/outlet, up to 50 GPM

hose adapters / quick-connectors



ordering

- Part # HN1500CV Precision™ **Rainbow™** Nozzle Kit
- Part # HN2300CV Precision™ **Rainmaker™** Nozzle Kit
- Part # HN4800CV Precision™ **Cloudburst™** Nozzle Kit
- Part # HN5000CV Precision™ **Cyclone™** Nozzle Kit

Nozzle Kits include brass High Flow Control Valve and ¾" MHT x 1" FHT Adapter.

To order nozzle only: remove "CV" from part number.



- Part # CV075H High-Flow ¾" Valve - Brass
- Part # A-BV77FM High-Flow ¾" Valve - Composite/Steel
- Part # A-BA107FM 1" FHT x ¾" MHT Brass Hose Adapter
- Part # A-BA107MF 1" MHT x ¾" FHT Brass Hose Adapter
- Part # A-BQ7M ¾" Quick-Connect, male end
- Part # A-BQ7F ¾" Quick-Connect, female end
- Part # HN075W replacement washer, ¾" hose

PelletPro™

APPLICATOR GUN FOR SOLID WETTING AGENT TABLETS

Our heavy-duty surfactant applicator, high-flow valve and Precision™ Cloudburst™ nozzle combo comprises the finest wetting agent gun available. PelletPro™ accepts all wetting agent tablets and provides a high volume, yet soft spray for watering or applying surfactants to tight, hydrophobic soils.

features

- 35+ GPM to get the job done faster!
- Ultra Heavy-Duty - brass fittings, aircraft aluminum, stainless steel, and precision engineered glass-filled materials
- Patented Cloudburst™ nozzle delivers large droplets in an outstanding fan pattern
- Pellet rotation (1 RPS) evenly dissolves/applies tablets



PelletPro™ rotates pellets at one revolution per second (RPS) to evenly dissolve/apply wetting agent



PelletPro's bowl works great as a replacement in-line filter for most spray rigs. Heavy-duty, transparent bowl shows fluid levels, and won't crack during winter storage.

IN-LINE APPLICATOR OPTION

Connect directly to a water source (quick coupler, HoseTap, etc.) to get the benefits of PelletPro with less handheld weight.



Two products in 1!

PelletPro and LiquidPro's Precision™ Cloudburst™ nozzle and high-flow valve quickly assemble to create a powerful, 35+ GPM syringe nozzle.



LiquidPro™

APPLICATOR GUN FOR LIQUID WETTING AGENT

LiquidPro's chemical-resistant, UV-protected, lightweight siphon/mixing system can cover 1000 square feet in less than a minute! With unmatched speed and uniformity, you can virtually "paint" your turf with liquid wetting agent, fertilizers, and micronutrients. Adjustable metering dial offers 10 additive settings including "Water Only."

ordering

- | | |
|------------------|--|
| Part # A-PPWA50K | PelletPro™ Applicator Gun |
| Part # A-PPQ-075 | PelletPro™ In-line Applicator: 3/4" FHT inlet, 3/4" MHT outlet |
| Part # A-PPQ-100 | PelletPro™ In-line Applicator: 1" FHT inlet, 1" MHT outlet |
| Part # A-PPB | In-line Filter Bowl |
| Part # A-PPBG | Gasket |
| Part # A-LPWA50K | LiquidPro™ Applicator Gun |
| Part # A-LPWAB-6 | 6-Pack of 32 oz. Polybottles and Carrier |



With the included 1" FHT x 3/4" MHT brass adapter, PelletPro™ and LiquidPro™ work with both 3/4" and 1" hoses.

Profile™

SOLID METAL GOLF SPRINKLER NOZZLES

Upgrade your Toro® or Rain Bird® sprinklers with our perfect-fit Profile™ nozzles and you will see improved results immediately. And with ultra-uniform water distribution, you can cut back watering times to **save millions** of gallons of water **every year**. Over time, since Profile solid metal nozzles resist wear and clogging, you'll enjoy these superior results for the life of your sprinkler...never needing to change out nozzles again. Nozzles so consistent, patterns so uniform... it's like rain on demand.™

Use less water, energy and manpower
and get better course playability.

"Profile nozzles lived up to our expectations and eliminated patchy dry spots and donuts. We retrofitted all our fairways and now run a more efficient irrigation program."

Logan Spurlock

Superintendent, Sherwood Country Club

"It was like putting in a new irrigation system. I became a believer overnight."

Mike Huck

Irrigation & Turfgrass Services

Former USGA Staff Agronomist and Superintendent, Murrieta Hot Springs Resort

"The Profile retrofit program has also extended the life of our Toro system while improving course appearance and playability."

Dennis Eichner

Assistant Superintendent, Silverado Resort - Napa, California

"The real power is knowing that retrofitting sprinklers with Profile nozzles can be phased in to work within a course's operating budget."

Kurt Thompson

K. Thompson and Associates, Irrigation Consultant and Trainer

Huntersville, North Carolina and Pace, Florida

Upgrade your
entire course all at once -
ZERO INTEREST FINANCING
options available now!

See how Superintendents are
upgrading their entire golf courses!
Video online now at www.underhill.us





Profile nozzles for **Toro®**

730 SERIES Full Circle: Front/Rear Nozzle Set

Part #	Nozzle Color # range/spreader	Toro Noz #
T730-3313	Brown 33 / Gray 13	33
T730-3413	Blue 34 / Gray 13	34
T730-3515	Violet 35 / Red 15	---
T730-3515L (50 psi)	Green 35 / Red 15*	35
T730-3615	Red 36 / Red 15*	36
T730-3617	Red 36 / Lavender 17	



* For square spacing, specify #17 (lavender) nozzle with the #35 and #36 range nozzles



760 and 860 SERIES Part Circle: Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange/close-in
T760-GY	Gray / Yellow
T860-GY	Gray / Yellow



830, 834S, DT SERIES Full Circle: Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange / close-in	Toro Series
T830-GY	Gray / Yellow	830
T834-GY	Gray / Yellow	834S
TDT100-GY	Gray / Yellow	DT 34/35



835S SERIES Full Circle: Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange / close-in
T835S-WP	White / Plug

630 SERIES CALL FOR AVAILABILITY



Profile nozzles are so consistent, with distribution patterns so uniform... it's like rain on demand.™



Profile nozzles for **Rain Bird®**

EAGLE 700 SERIES

Full Circle: Midrange/Close-in Nozzles

Part #	Nozzle Color midrange / close-in	Rain Bird Nozzle #s
R70028-RG	Blue / Gray	28
R70032-RG	Red / Gray	32
R7003640-GG	Blue / Gray	36/40 and larger



Look familiar? Poor performing Eagle 700 sprinklers are often the result of clogged and worn nozzles. Profile nozzles' solid metal construction and nozzle shape were scientifically designed to solve this exact problem. They simply don't wear out. And they don't clog. Upgrade your old golf sprinklers to better than OEM with Profile!



670 SERIES Full Circle: Rear Nozzles

Part #	Nozzle Color: midrange / close-in
T670-BY	Black / Yellow



690 SERIES Full Circle: Rear Nozzle

Part #	Nozzle Color: spreader
T690-G	Gray



750 SERIES Full Circle: Front/Rear Nozzle Set

Part #	Nozzle Color #range / spreader	Toro Nozzle #s
T750-5617	Red 56 / Lavender 17	56
T750-5717	Gray 57 / Lavender 17	57



780, 854S, DT SERIES Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange / close-in	Toro Series
T780-BY	Black / Yellow	780
T854-BY	Black / Yellow	854S
TDT150-BY	Black / Yellow	DT 54/55

855S SERIES Full Circle: Midrange/Close-in Nozzle Set

Part #	Nozzle Color: midrange / close-in
T855S-PP	Pink / Plug

650 SERIES CALL FOR AVAILABILITY



900 EAGLE SERIES Full Circle: Close-in Nozzle

Part #	Nozzle Color
R900-M	Maroon



91 SERIES BRASS IMPACTS Full Circle: Close-in Nozzle

Part #	Nozzle Color
R91-G	Gray



51 SERIES BRASS IMPACTS Full Circle: Front/Rear Nozzles

Part #	Nozzle Color # range / spreader	Rain Bird Nozzle #s
R51-1411.5	White 14 / Gray 11.5	14 / 11.5
R51-1611.5	Blue 16 / Gray 11.5	16 / 11.5
R51-1811.5	Yellow 18 / Gray 11.5	18 / 11.5
R51-2011.5	Red 20 / Gray 11.5	20 / 11.5
R51-2213	Green 22 / Black 13	22 / 13
R51-2413	Black 24 / Black 13	24 / 13



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AuditMaster™

EXPERT SPRINKLER PERFORMANCE TESTING KITS

Increasing watering times to compensate for poorly performing sprinklers wastes a lot of water. Accurately measuring sprinkler application rates with Underhill™ AuditMaster™ helps maximize water savings.



4" x 5" Marking flags on 21" wire (50-pack) are available in 6 colors.



AuditMaster Combo ST/LT Kit pictured, includes large CatchCanPro cups (blue) and CatchCanPro Mini cups (30 each).

AuditMaster ST Kit excludes the large CatchCanPro cups. This kit is ideal for **SMALL TURF** audits.

AuditMaster LT Kit excludes the CatchCanPro Mini cups, 3/4" Hose Bib and Gauge and the Spray Head Tester w/Gauge. This kit is optimized for golf courses, sports fields and other **LARGE TURF** audits.

CatchCan Pro™

features

- Self standing - easily anchors into turf, even on slopes
- Measures sprinkler application in inches or centimeters
- Unique design allows for shorter duration test
- Made of durable polypropylene engineered plastic
- Can be stacked for easy storage
- Each 10 pack kit comes with instructions



CatchCan Pro (CCPK-10) for **LARGE TURF** audits. Measures ml, cm, inches.

CatchCan Pro Mini (CCPMK-10) for **SMALL TURF** audits. Measures inches.

ordering

Part # AUD-ST	AuditMaster ST Kit
Part # AUD-LT	AuditMaster LT Kit
Part # AUD-STLT	AuditMaster Combo ST/LT Kit
Part # SALESPRO4	AuditMaster Wheeled Carry Case
Part # A-STW	Stop Watch
Part # A-WIND	Anemometer (Wind Gauge)
Part # CCPK-10	CatchCan Pro (Blue) - 10 Pack
Part # CCPMK-10	CatchCan Pro Mini - 10 Pack

Part # MT-100	Fiberglass Measuring Tape: 100'
Part # A-FLAG	Marking Flags: Yellow - 50 Pack
Part # A-FLAG-B	Marking Flags: Blue - 50 Pack
Part # A-FLAG-O	Marking Flags: Orange - 50 Pack
Part # A-FLAG-P	Marking Flags: Pink - 50 Pack
Part # A-FLAG-R	Marking Flags: Red - 50 Pack
Part # A-FLAG-W	Marking Flags: White - 50 Pack

TurfSpy™

EARLY STRESS DETECTION GLASSES

Disease, drought and weed invasion are plant and turf killers. But by the time you see them it can be too late. TurfSpy™ glasses, with stress detection technology developed by NASA, lets you “see into the future” to identify problems 2-10 days before they are visible to your naked eye. Keep your turf and vegetation healthy BEFORE serious problems arise.

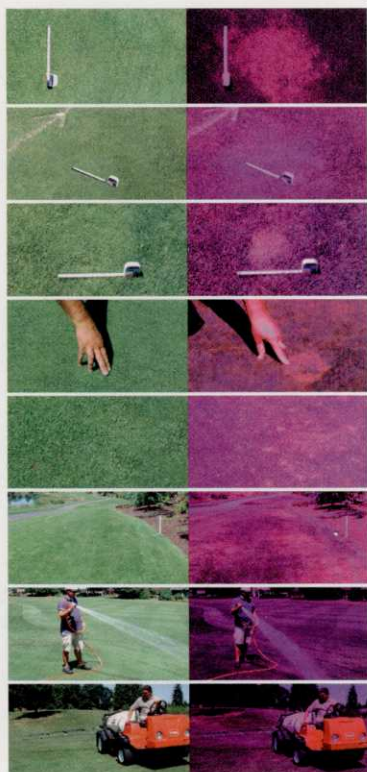


features

- Shatterproof/polycarbonate stress detection lens (ANSI approved safety lens)
- Wrap-around lens limits ambient light for optimal detection
- Sports frame with adjustable ear piece
- Lightweight case included

HOW IT WORKS

Dying vegetation absorbs and reflects sunlight differently than when it's healthy. The earliest signals occur at the outer limits of the human visual spectrum, and are rendered invisible compared to the predominant middle wavelengths. TurfSpy™ filters the light in the center so that fringe spectra, which show early plant stress, become visible.



fusarium patch

pythium blight

yellow patch (rhizoctonia)

brown patch

anthracnose

get a jump on broken or poor-performing sprinklers

highly efficient spot watering saves time and labor costs

superior weed location and spraying saves time and money



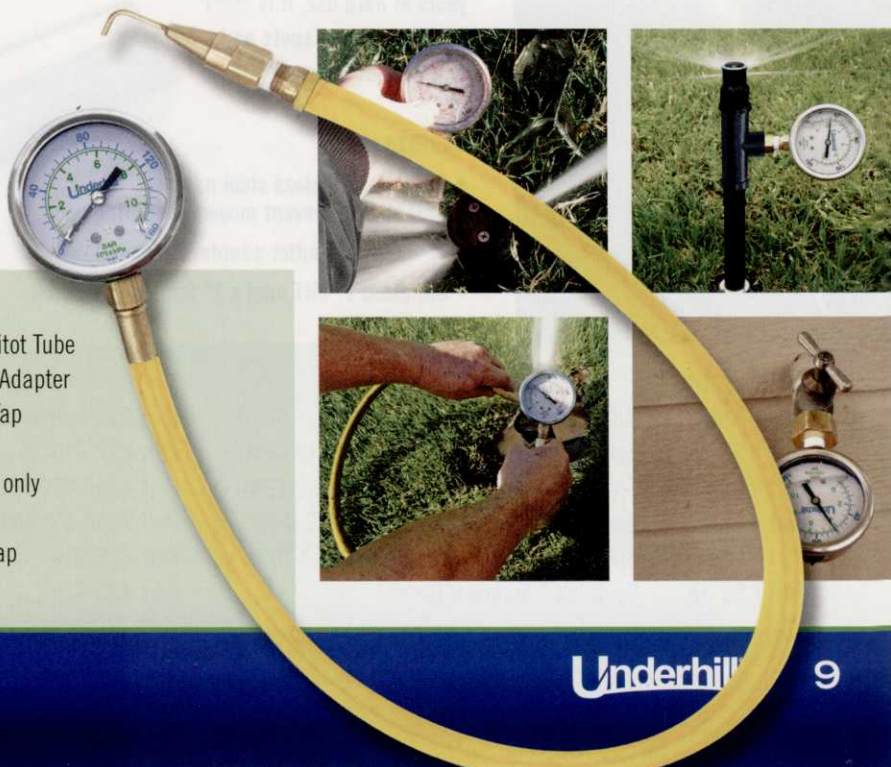
ordering

Part # NG655-01 TurfSpy™ Glasses and Deluxe Case

HeadChecker™

NOZZLE DISCHARGE PRESSURE GAUGE

Use this liquid-filled 160 psi gauge with 30" flex hose and solid brass Pitot tube, hose bib, or spray head adapter to measure water pressure at discharge points.



ordering

- Part # A-PHG-160K HeadChecker™ gauge, 30" Flex Hose, Pitot Tube
- Part # A-SHG-160K HeadChecker™ gauge with Spray Head Adapter
- Part # A-HBG-160K HeadChecker™ with 3/4" POC Hose Bib Tap
- Part # A-HCGPK HeadChecker™ gauge and Pitot tube
- Part # A-PG160L HeadChecker™ 160 psi pressure gauge only
- Part # A-HCP Pitot tube only
- Part # A-HBT 3/4" Hose Thread x 1/4" Brass Hose Bib Tap
- Part # A-SHA Spray Head Adapter



SpotShot™

LOW VOLUME PORTABLE SPRINKLER KIT

SpotShot™ is an expandable sprinkler system kit ideal for turf areas requiring low volume watering for extended periods. Connect the Starter Kit to a quick coupler (or golf sprinkler with the HoseTap™ on page 12) and connect Add-On Kits for larger area needs.



ideal for

- Leaching salts on greens
- Targeting hot spots on fairways, roughs, etc.
- Mound watering
- New seed grown in
- Other low volume watering



Starter Kit includes 20' of ½" flexible PVC tubing with connection fittings, pressure regulator, sprinkler base and low volume rotating sprinkler (20 ft. radius / 0.65 GPM - 0.16 in./hr.)



Add-On Kit includes 20' of ½" flexible PVC tubing with connection fittings, sprinkler base and low volume rotating sprinkler (20 ft. radius / 0.65 GPM - 0.16 in./hr.)



Micro-Sprinkler Options

- 20 ft. radius / 0.65 GPM (0.16 in./hr.)
- 20 ft. radius / 1.2 GPM - (0.26 in./hr.)



RollerPro™

PORTABLE SPRINKLER BASE

The 22" wide stainless steel roller of RollerPro™ provides a stable field position for supplemental watering. Designed for years of hard use, it is ideal for watering dry spots and newly seeded areas.

features

- 22" wide stainless steel roller is weighted to prevent movement during use.
- ¾" inlet and outlet adapters included
- Standard 1" FHT inlet x 1" female NPT outlet



RollerPro™ works with both 1" and ¾" hoses and sprinklers using the included adapters. Sprinklers sold separately on page 12-13.

ordering

Part # A-RP221	RollerPro™
Part # SS-SK	SpotShot™ Starter Kit (20 ft. rad, 0.65 GPM)
Part # SS-AOK	SpotShot™ Add-on Kit (20 ft. rad, 0.65 GPM)
Part # SS-SK26	SpotShot™ Starter Kit (20 ft. rad, 1.2 GPM)
Part # SS-AOK26	SpotShot™ Add-on Kit (20 ft. rad, 1.2 GPM)
Part # SS-SB	SpotShot™ Sprinkler Base

Part # R75-HFM-40	Pressure Regulator (40 psi)
Part # TP-050-20	20' Coil of ½" PVC, SuperFlex Pipe
Part # S40-050-HFS	¾" Hose Thread Female x Male, Slip Fitting
Part # S40-050-HMS	¾" Hose Thread Male x Female, Slip Fitting
Part # SS-S16	Micro-sprinkler (20 ft. rad, 0.65 GPM - 0.16 in/hr)
Part # SS-S26	Micro-sprinkler (20 ft. rad, 1.2 GPM - 0.26 in/hr)

Tracker™

PORTABLE IRRIGATION MACHINE

The Tracker™ offers an economical solution for supplementing seasonal watering needs of ¼ acre to 2 acre areas. It's also ideal for irrigating athletic fields, cemeteries, golf course roughs, or other large areas where an underground system is impractical. Built to last with precision German engineering and high quality materials, this portable powerhouse can irrigate an entire football field in just two passes.

specifications

- Weight: 58 lbs.
- Size: Length 33", Width 22", Height 22"
- Materials: Aluminum, Brass, ABS
- Minimum Water Pressure: 50 psi
- Hose Required: 1"
- Includes 1" brass quick-connect adapter



ordering

Part # T-400 Tracker™ Portable Irrigation Machine

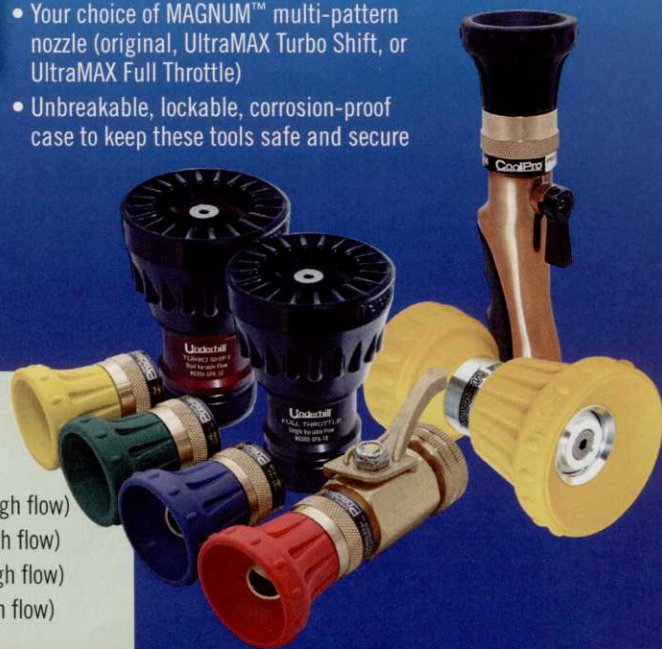
NEW!

Nozzle Locker™ Kits

**STOP LOSING
YOUR NOZZLES!**

THE VERY BEST NOZZLES - KEEP THEM SECURE (and handy)

- Entire Precision™ nozzle series (Rainbow™, Rainmaker™, Cloudburst™ and Cyclone™)
- Solid Brass High-Flow Valve
- CoolPro™ with Precision™ fogging nozzle
- Your choice of MAGNUM™ multi-pattern nozzle (original, UltraMAX Turbo Shift, or UltraMAX Full Throttle)
- Unbreakable, lockable, corrosion-proof case to keep these tools safe and secure



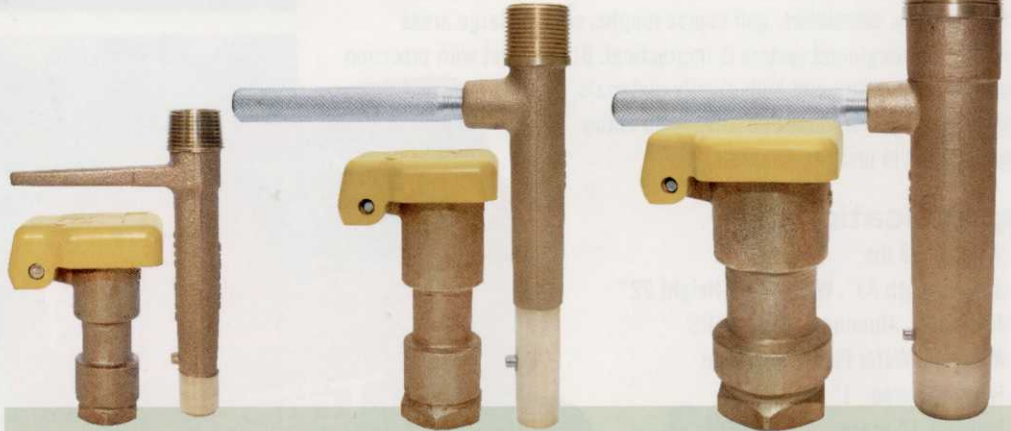
ordering

- Part # HP-K1 NozzleLocker™ with ¾" Magnum (yellow) nozzle
- Part # HP-K2 NozzleLocker™ with ¾" Magnum UltraMAX Full Throttle nozzle (high flow)
- Part # HP-K3 NozzleLocker™ with ¾" Magnum UltraMAX Turbo Shift nozzle (high flow)
- Part # HP-K4 NozzleLocker™ with 1" Magnum UltraMAX Full Throttle nozzle (high flow)
- Part # HP-K5 NozzleLocker™ with 1" Magnum UltraMAX Turbo Shift nozzle (high flow)

Quick Coupler Valves & Keys

SOLID BRASS, SINGLE SLOT/LUG ESSENTIALS

Built to last, Underhill valves and keys are constructed of solid red brass and stainless steel. Valves incorporate rugged one-piece design.



Valve: Part # QV-075R
($\frac{3}{4}$ " FPT inlet)

Key: Part # QK-075
($\frac{3}{4}$ " MPT x $\frac{1}{2}$ " FPT outlet)

Valve: Part # QV-100R
(1" FPT inlet)

Key: Part # QK-100
(1" MPT x $\frac{3}{4}$ " FPT outlet)

Valve: Part # QV-150R
($1\frac{1}{2}$ " FPT inlet)

Key: Part # QK-150
($1\frac{1}{2}$ " MPT x $1\frac{1}{4}$ " FPT outlet)

hose swivels

- Part # HS-075 $\frac{3}{4}$ " FPT x $\frac{3}{4}$ " MHT outlet
- Part # HS-100 1" FPT x $\frac{3}{4}$ " MHT outlet
- Part # HS-101 1" FPT x 1" MHT outlet
- Part # HS-151 $1\frac{1}{2}$ " FPT x 1" MHT outlet



The Claw™ pictured with 1" quick coupler, key and hose swivel.

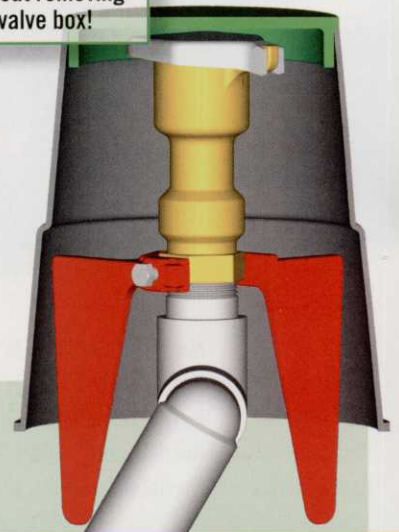
The Claw™

QUICK COUPLER MOTION RESTRAINT

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- Part # QCA-075100 The Claw™ for $\frac{3}{4}$ " and 1" valves
- Part # QCA-150 The Claw™ for $1\frac{1}{2}$ " valves

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features

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- Stainless steel drive spring
- Bearing assembly hood for longer wear life
- Chemical resistant bearing seals
- Solid brass nozzle



Underhill brass impacts atop the RollerPro™ portable base (see page 10) puts a powerful sprinkler anywhere you can run a hose.



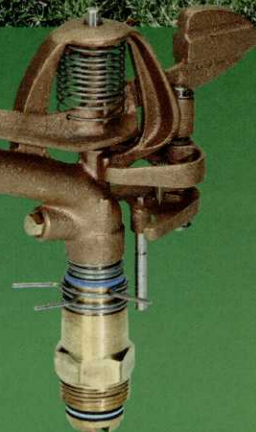
3/4"

Flow: 5-15 GPM
Spacing: 40-60 ft.



1"

Flow: 15-45 GPM
Spacing: 50-80 ft.



1 1/4"

Flow: 25-120 GPM
Spacing: 75-110 ft.

Performance data shown at 80 psi. GPM and radius will vary with pressure at sprinkler

ordering

		GPM	Radius (ft.)
Part # SI075F	3/4" MPT Full Circle	13	57
Part # SI075P	3/4" MPT Part/Full Circle	11	48
Part # SI100F	1" MPT Full Circle	23	71
Part # SI100P	1" MPT Part/Full Circle	23	71
Part # SI125F	1 1/4" MPT Full Circle	51	96
Part # SI125P	1 1/4" MPT Part/Full Circle	54	78

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Includes HoseTap, 1" MHT brass swivel and 3/4" adapter

ordering

- Part # HN-T100S HoseTap™ for Toro® 1" inlet golf sprinklers
 - Part # HN-T150S HoseTap™ for Toro® 1 1/2" inlet golf sprinklers
 - Part # HN-R125S HoseTap™ for Rain Bird® Eagle 700 Series sprinklers
 - Part # HN-R150S HoseTap™ for Rain Bird® Eagle 900 Series sprinklers
- Includes 1" brass swivel and 3/4" adapter. Add "B" for BSP thread.
To order without brass swivel: Remove "S" from part number.

REPLACEMENT O-RINGS

- Part # OR-100 Fits Toro® 1" inlet and Rain Bird® Eagle 700 Series golf sprinklers / HoseTap
- Part # OR-150 Fits Toro® 1 1/2" inlet golf sprinklers / HoseTap
- Part # OR-150R Fits Rain Bird® 1 1/2" inlet golf sprinklers / HoseTap



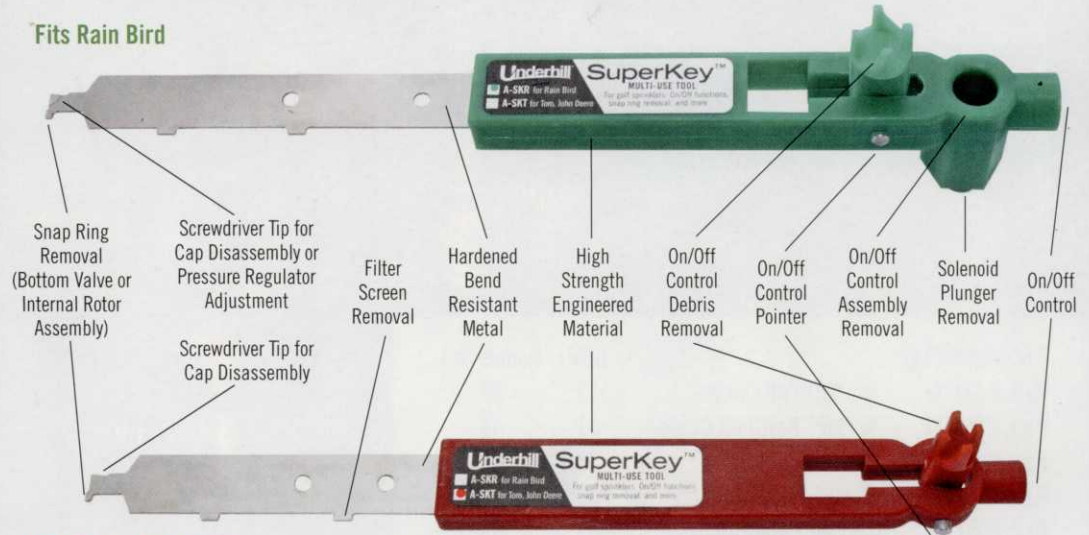


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- On/Off Control Pointer
- On/Off Control Assembly Removal
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- On/Off Control

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- Part # A-SKR SuperKey™ for Rain Bird® golf sprinklers
- Part # A-SKT SuperKey™ for Toro® and John Deere® golf sprinklers



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Aluminum shaft



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- | | |
|------------------|--------------------------------------|
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| Part # A-G3636CK | BigGulp™ UltraMax w/ 36" outlet hose |
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“We have experienced two of the worst droughts over the past two years in this region and are now entering a third. The use of wetting agents has allowed me to prevent turf damage and continue to provide quality conditions for both our members and reciprocal players during these trying conditions.”

—David Dore-Smith, Copperleaf Golf Course

to extend his interval between irrigation cycles dramatically. Given normal rainfall he may irrigate fairways three times a month now as opposed to three times a week in the past. He also sees a more uniform turf performance and fewer localized dry spots. And, he has found that fertilizer and fungicide inputs decreased because turf wasn't suffering from inconsistent moisture stresses.

When David Phipps, superintendent at Stone Creek Golf Club in Oregon City, Ore., started using wetting agents on the fairways there was a dramatic difference from the previous year. The first and foremost difference was the uniformity in which the turf appeared during the stressful times of the summer. “There were far fewer dry areas,” he says. “It also seemed we were far more effective with water.”

Scott Pavalko, superintendent at Cog Hill Golf and Country Club in Lemont Ill., has used wetting agents, most recently spraying Dispatch, an Aquatrols product, 16 ounces per acre every two weeks with his normal preventative fungicide rotation.

“What I like best is that it is safe to tank mix, spray in the morning and water in at night. We had chronic LDS problems on fairways,” he says. “We are also a public facility with very early tee times, which makes it very difficult to spray and water in a wetting agent immediately. Using wetting agents has made

our overnight watering more effective.”

Some wetting agents can be applied all year, depending on where a course is located and the local climate. The main use period is throughout the growing season, whatever that might be in a locale. Some products are used on an as-needed basis. The volume used depends on the product.

Karnok says wetting agents can be applied anytime throughout the year.

“It depends on the objective. If the objective is to affect drainage or water movement in the root zone, wetting agents can be applied anytime,” he says. “For the control of localized dry spots caused by water-repellent soil, they are often applied in early spring and through the summer and into the fall. However, depending on the severity of water-repellency, region of the country, type of rootzone, turfgrass species and weather conditions, there may be advantages to using wetting agents throughout the year. The rate in which a wetting agent is applied, depends on the specific product. Recommended rates range from four ounces to 16 ounces per 1,000 square feet. Superintendents should always follow label directions.”

Despite the apparent panacea soil sufficants offer in these days of extremely variable weather conditions and enhanced expectations for pristine playing conditions at all times, the use of

Getting it in the ground

Using a golf course fertigation system in conjunction with the use of soil sufficants is becoming commonplace.

Andy Moore, agricultural marketing manager for Aquatrols, says injection has a number of benefits; it is a very low labor-cost way of treating the entire golf course; it is a great way to save on water and energy; it helps to smooth out problems with irrigation coverage; and it improves playability across the entire golf course.

Chuck Champion, president of KALO, says, “The most cost-effective way to apply wetting agents is through irrigation injection. This is a labor-free method for spoon-feeding small volumes of wetting agent over the entire golf course over an extended time for preventative treatment. This method allows wetting agent costs to be spread over the entire golf course acreage.”

Most injection systems will allow for rate adjustment for golf greens separate from other turf areas. It's best to have a proportional injection system that is programmed with the metering pump to keep the wetting agent injection in a consistent parts-per-million application rates. When the water pumping system is shut down, the wetting agent metering pump shuts down as well. These systems need to be monitored regularly to avoid spills or to ensure that application rates are calibrated properly.

“This summer will be the first summer that we will use wetting agents through fertigation,” says Tim Schaefer, superintendent at Emerald Falls Golf Club in Broken Arrow, Okla. “Our goal is to be able to fine-tune our fairway wetting agent program so that we are only applying it where we actually need it. If we are able to achieve this, the cost saving could be very significant.”

Dave Libby, superintendent at Prouts Neck Country Club in Scarborough, Maine, began wetting agent use with injection products.

“They worked great,” says Libby. “We have since moved away from that because we find that we want more control of when and where the agents are applied. I think injection is a great way to apply wetting agents for those courses with limited resources, or limited spray windows. Healthier turf and fewer input makes everyone happier.”


Dr. Keith Karnok, a professor specializing in turf management at the University of Georgia's College of Agricultural and Environmental Sciences, says superintendents need to keep in mind that an irrigation system needs to be in good working to achieve uniform delivery, and that not all areas of the golf course may benefit from the application of a wetting agent.



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soil sufficants is not without some potential drawbacks, or at least concerns.

"The biggest drawback is cost," says Schaefer. "I would love to apply wetting agents in our fairways from June until September but can't afford to. We have to pick and choose when and where we want to apply them."

Libby says long-term products can have some drawbacks in rainy years.

"The 90-day products aren't really all that special from a chemistry standpoint. Their longevity is derived from the high rate at which they are applied and their resistance to downward mobility in the soil profile. This means that if you apply 16 ounces of a product in the spring and end up having a really wet year, the turf can become soft and soggy."

Moore advises that superintendents ask for proof about what is being claimed by each wetting agent product before using.

"Many states do not regulate the sale of soil wetting agents, a lot of stuff is put into containers and claims are placed on the label. This leads to confusion for the turf manager. Don't take anyone's information on face value. Ask questions and make sure you know what you are using."

Karnok says identifying the "best" wetting agent is virtually impossible, since every wetting agent cannot be tested under all the varying conditions one would find in the field. Also, new products are being released constantly. The degree of potential phytotoxicity is a major concern. Some wetting agents should be watered into the soil and off turfgrass leaves as soon as possible after application, whereas irrigation can be delayed with some products.

Brace says more and more superintendents will be using surfactants as the demand for water increases and water quality decreases.

However, new chemistry for wetting agents is slow to develop as raw material suppliers are conservative about investing in development costs for new basic chemicals, says Champion.

"The size of the market is limited and there are too many products chasing too few customers these days, so product technology has remained much the same in recent years."

It is clear that wetting agents will likely become an ever more important tool in a superintendent's arsenal to insure superior playing conditions in the coming years. **GCI**

John Torsiello is a Torrington, Conn.-based freelance writer and frequent GCI contributor.

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Jeffrey D. Brauer is a licensed golf course architect and president of GolfScapes, a golf course design firm in Arlington, Texas. Brauer, a past president of the American Society of Golf Course Architects, can be reached at jeff@jeffreydbrauer.com.

DESIGN FOR MAINTENANCE

Last month, I noted that designers in the early post-WWII era designed more with maintenance in mind, compared with designers of the 1990s and 2000s who favored visual splendor over practicality. Historically, practicality and cost dominates design, so it's worth remembering the design details that make a maintenance-friendly course. Luckily, I often ask superintendents which features cost them the most time and trouble – and keep notes on the answers!

On a “bell curve,” the top 10 percent of courses should greatly favor design over maintenance, the bottom 10 percent of courses should greatly favor ease of maintenance over design and the middle 80 percent should be a practical blend between maintenance savings and design.

Superintendents and courses vary, so no single item is mandatory design criteria. Many others have high maintenance value no design impact, and should be included. Disclaimers aside, here is my ongoing list of design maintenance-friendly design features for your consideration:

GREENS

- At least six real pin positions, 14 or more preferred for busy courses
- Gentle edge shapes (min. 25-foot radius) and vertical transitions to reduce mower damage on cleanup pass maximum
- Maximum 17.5 percent slopes to surrounding mounds, between distinct green levels and on high points facing damaging winds
- Turf choice – No monocultures – select for hardiness, water conservation over color or putting

GREENS SURROUNDS

Green Access

- Equipment – Transition slopes to mounds, ability to mow in all direc-

tions easily; 6 inches between green and bunker for turning

- Golfers' access routes (from cart path) – Min. 30 feet wide, maximum 5 percent slope, 2 percent no cross slope; back half of green for circulation, speed of play; away from major drainage flows

Superintendents and courses vary, so no single element is mandatory design criteria.

GREEN APPROACH

- Sand cap and herringbone tile
- Adjust sprinklers so part circles don't all stop at same place, causing overwatering

BUNKERS

- Bunker-rake friendly (with no liners, or durable liners) – Multiple sand rake access points; match sand rake turning radius, normally 7-8 feet; flat enough to reduce sand wash from rain (varies by region, but max. 25 percent); no uphill drainage goes into bunkers; extensive herringbone tile.
- Banks and Noses – Match mowers' turning radius and maximum slope (varies, but about 9-foot radius, 33 percent slope); if narrower, make “nose width” one mower-width wide for down and back mowing.

TEES

- Rounded tee edges easier to mow – 8-foot minimum radius
- Gentle tee banks – 4:1 or greater, but 3:1 okay, with transition slope
- Combine tee surfaces – large tee surfaces quicker to mow than several small ones.

CART PATHS

- Broad curves to distribute exit traffic; allow truck to drive 15 mph (both at least 100-foot radius); wide access points to fairway (at least 30 feet)
- Minimum radius of intersections 55 feet (allows max. cart speed to stay on path)
- Curbing at tees and greens – 4-foot-roll curbs to allow maintenance equipment to pass; short (20 feet or less) curb areas concentrate foot traffic
- Drains/grading to keep surface and edges dry to reduce tire damage
- USE REBAR, DAMMIT!

FAIRWAYS

- Reduce fairway acreage – fairways cost more than rough, 30 acres is better than 45; narrow and starting as far from tee as possible
- Cut off drainage that flows cross fairway
- Provide good irrigation coverage, especially on cart path side; wide access routes (at least 30 feet wide)

ROUGHS

- Minimize in favor of natives
- Don't minimize where it affects speed of play
- Provide irrigation, even if not for regular use
- Reduce mounds to increase mowing productivity

TREES

- Clear wide enough from critical areas – at least height of tree
- No trees on east sides of tees, greens, heavy circulation areas
- No shallow root or brittle bark trees, select for water conservation

Attention to construction details in implementing these schemes assists in making maintenance easier, but the list would be just as long. **GCI**

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Charging forward

The latest models of electric and hybrid walk-behind greens mowers have superintendents buzzing over the benefits they offer. *By Jason Stahl*

Looking at the latest offerings in hybrid and electric walk-behind greens mowers, superintendents have all gotten a charge out of the noise reduction, fuel savings and more precise cut they provide over gas-powered models. But the real buzz has been over technology that allows users to control reel speed independent of walk speed for better cut quality.

"I think it is one of the most revolutionary advancements in our industry in some time," says Mike Reinzi of Kiva Dunes in Gulf Shores, Ala., who uses a Jacobsen Eclipse 122S hybrid. "You take most of the control away from the operator and subsequently get greater consistency. Every single green gets cut exactly the same."

Ken Mangum of Atlanta Athletic Club, who uses

a John Deere 220 E-Cut hybrid, has equal praise for the technology that allows users to control Frequency of Clip (FOC).

"It's one of the real innovations in the last few years in our industry because you can almost get a double cut in one pass," says Mangum. "For the PGA Championship, we single-cut Thursday and Friday with those mowers at .125 – for a major championship."

Chris Fox, product manager for Jacobsen, says he was encouraged to see all the interest in FOC at this year's Golf Industry Show (GIS). "We had been educating the industry on FOC for a couple years, and at GIS this year it seemed more people were interested in that," he says. "It was cool to see how the industry has come around and understood what



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FOC could do for them.”

Fox explains that with gasoline chain or belt-driven engines, the ratio of walk speed to reel speed is always fixed. But by separating those two speeds, it allows the superintendent to walk at, say, 3.2 miles per hour but spin his reel at 1,900, 2,000 or 2,200 rpm. Reel speed is also controlled as he slows down to turn or does a clean-up pass.

“A customer of ours at Twin Orchards in the Chicago area was able to take his height of cut on greens up from .110 to .115 and maintain the same ball speed but achieve a better FOC,” Fox says. “That’s really what we’re after. Plus, the superintendent has healthier grass on the greens to withstand stress and summer heat.”

Jacobsen introduced the first electric walk-behind greens mower, the E-Walk, in 2003. The primary drivers for introducing this machine, Fox says, were controlling reel speed and traction speed independently and also reducing noise. Fuel savings wasn’t a big motivator because gas prices weren’t that high at the time, plus greens mowers don’t use a huge amount of gas com-

pared to, say, fairway mowers.

“We had already been strong in the riding tri-plex market since the mid-1990s with the all-battery E-Plex, so it was a natural progression to take the technology to the walker platform,” says Fox.

One of the features of the current Eclipse 100 series is a two-battery system that enables users to mow up to eight or nine greens before running out of power, depending on the size of the greens, Fox says. Users can change batteries in under a minute and place the spent one in a holding tray on the mower.

“When you look at mowing practices, usually a guy sends out four to five walking greens mowers, so if each one mows four greens, he’s getting most of his course done,” says Fox. “If there is an issue with large greens, the extra battery pack allows for cutting the entire course without running out of power.”

Fox says there had been some anxiety on superintendents’ part regarding the range of these machines, but the gen-set (battery power) introduced in 2007 alleviated those concerns.

Explaining why Jacobsen de-



New electric and hybrid mowers offer a higher level of control.

ecided to go hybrid instead of all-electric, Fox says, “Guys says they liked the advantages of electric but weren’t so sure on the range. The majority of our sales are in the gen-set versions where guys know that if they have a unit down, they can have a guy cut a little bit longer. Plus, if you look at the demands of groomers on a unit, they use more power and you may not get the same life out of an all-battery unit.”

Fox says he sees more walk-behind greens mowers moving to all-electric in the future. Toro is coming out with a lithium-ion battery-powered (versus Jacobsen’s lead acid battery) mower this year but Fox says the technology is very expensive.

“Plus, with our ability to put two batteries on the mower, we still feel that’s an acceptable solution for right now,” he says. “Down the road, we would move to lithium-ion, but it becomes more of an issue of price point and cost-effectiveness.”

Ana Voorhees, marketing associate at Toro on the greens mower team, says Toro’s all-new Greensmaster eFlex models are the only models of their kind in the industry right now.

“Lithium-ion technology offers many benefits over lead acid, such as increased range, longer battery life, minimal maintenance and lower weight,” says Voorhees. “Our Greensmaster eFlex models can mow up to nine greens or up to 45,000 square feet on a single charge. During the development of the product, this was the range customers demanded out of an all-electric walk greens mower.”

The eFlex has an advanced battery management system that enhances control and offers other benefits to the quality of cut and after cut appearance. An “EZ-Turn” feature on the eFlex 1800 and 2100 offers more control, especially in turnarounds, says Voorhees.

“At the end of a mowing pass, when the operator lifts the mower to turn it around, the unit will automatically slow down,” she says. “Improved operator control in turns reduces damage to turf, particularly in tight turns near a bunker or hazard, and produces better alignment on the return pass without sacrificing productivity.”

Voorhees says what superintendents like most about the eFlex, especially those whose greens are located near houses, is its quiet operation. Quiet operation allows superintendents to mow earlier in the morning, without disturbing neighbors or bystanders.

Another benefit, says Voorhees, is when you buy the eFlex, you’re purchasing five years’ worth of fuel up front. “In addition to buying fuel up front, no CO₂ emissions, disposal of hazardous materials and no engine maintenance makes the eFlex a strong environmental choice for golf courses.

“We have to balance the trade-off between range, weight and cost,” she says.

As to what the future holds, Voorhees sees more and more

Man vs. Computer

Never before have superintendents been able to “talk” to their mowers than now. With the sophisticated technology being introduced in today’s walk-behind greens mowers, user interface options have exploded.

Take, for example, Jacobsen’s “In-Command” control system. Superintendents and/or mechanics can preset certain password-protected codes via an LCD screen that keeps the actual operator from making changes.

“For instance, they can select the FOC they want and then lock it out,” says Fox.

Says Jacobsen customer Mike Rienzi, “I can tell the computer exact numbers, like my height of cut is .110 and FOC is .090. I just don’t see the precision and exactness on other brands like Jacobsen has.”

Toro’s eFlex has an LCD display monitor, InfoCenter, on the operator console that provides machine feedback and operation information such as battery charge status, speed, power consumption and battery current and voltage. The InfoCenter also helps technicians pinpoint and troubleshoot issues quickly, enhancing productivity.

John Deere features a no-nonsense dial indicator on the backside of the handlebar that allows users to set FOC. **GCI**



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expansion into alternative energy.

"I believe that lithium-ion and other alternative energy sources will expand far beyond greens mowers into other golf maintenance equipment in the very near future," she says. "Demand for electric and alternative energy sources will also increase with rising fuel costs and more stringent environmental regulations."

Tracy Lanier, product manager for John Deere, says the company's main focus with its 220 E-Cut hybrid has been to offer the customer better contour following.

"The cutting unit out front has full contouring ability because there are no mechanical linkages going out to it – just a harness going out to the electric motor," says Lanier. "So a key benefit is ground following. No longer do you have to worry about cutting lower on undulations or scalping. Plus, our system gives the cutting unit the ability to follow the curve of the green when golf crews are doing their clean-up paths – something they do every day – so they get less damage."

Another feature is on-board backlapping, which can be accomplished by simply flipping a switch. Also, via a dial indicator, users can adjust the FOC.

Lanier says the hybrid walk-behind mower is superior to an all-electric one, considering the number of attachments one runs on these machines: groomers, rotary brushes, lights for early morning, etc.

"What you get with all-electric is that your battery starts to drain down as soon as you start to use it. And when you get into double cutting for a tournament and other things, you just don't have the reserve power to get all the jobs done," Lanier says. "Our customers says they wanted a machine that could mow one to 18 greens, and that's what the 220 E-Cut does."

After coming out with the 2500E hybrid tri-plex riding greens mower in 2005 that removed all the hydraulics from the reel circuit (which reduced leak points), reduced noise and reduced fuel cost because it could run at a lower RPM, Lanier says it wasn't a great leap to apply that technology to the walk-behind greens units.

This year, Deere introduced the 180 E-Cut at GIS, similar to the 220 but an 18-inch version. As far as what could be introduced in the future, Lanier says the possibilities are endless.

"With technology always changing, we're always looking at the latest and greatest to bring solutions for our customer's concerns on golf courses," he says. "With electric, hybrid and different technology coming on board, there are lots of possibilities that could come into play." **GCI**

Jason Stahl is a Cleveland-based freelance writer and a frequent GCI contributor.



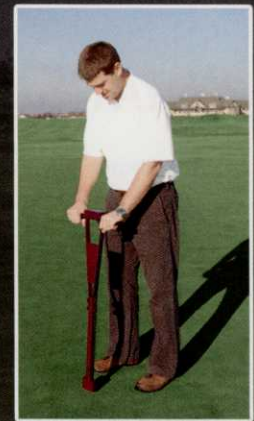
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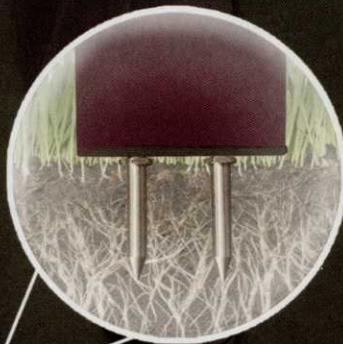
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WHAT'S IN YOUR BUCKET?

As Eleanor Roosevelt so eloquently stated: "The purpose of life, after all, is to live it, to taste experience to the utmost, to reach out eagerly and without fear for a newer and richer experience." She makes a good point: Life is about new experiences, and if you're at some point you're going to want something new, which probably means you're going to think, "I want to do the set-up for a big tournament."

It's only natural. For superintendents, preparing a course for the best players in the world and national TV is the top rung of the ladder. Our Super Bowl. Having been involved in prepping dozens of courses for USGA events, I can't tell you how many times I'm asked, "What is it like to host a big event?" Which is inevitably followed by: "Do you think I could do it?"

The question no one ever asks is, "Do you think I should do it?" Which makes sense because when a club is in the running to host an event the super doesn't usually get a vote. You may know where all the bodies are buried, but trust me, if your place lands a major tournament, job No. 1 is keeping those bodies deep underground.

So your course could be hosting something bigger than the county championship. What will you get out of it? I'll start with the positives:

PRESTIGE. You're in the spotlight: the pros, crowds, dignitaries from Presidents to movie stars. A televised event puts your course (and, therefore, you) in front of millions of viewers worldwide. Maybe even Johnny Miller! If that's not enough pressure, telecasts today are high-definition. You must be on top of your game from the first moment.

UNDER PRESSURE. The event excitement and the anticipation of having the world's best players critique your work. This is pressure, but pressure is a

privilege. Can you deliver? This is much different than your low-handicap members asking for faster greens. Do the job here and your agronomic status rockets.

For superintendents, preparing a course for the **best players** in the world and national TV is the top rung of the ladder.

THE ABILITY TO UPGRADE. Whether it's the club paying or the host organization, expect to see money. It could be a new irrigation system, putting green or bunker renovations, maybe architectural and facility enhancements. You'll employ the newest technology in our industry – new turfgrasses, moisture sensors, the latest whatever! Your knowledge base will increase dramatically.

NEW STAFF. You'll recruit and develop a well-trained and organized staff, bringing in youth and energy that energizes everyone. This new attitude will serve the event and the course long afterward.

YOUR CAREER. Do a good job – years of planning, execution and agronomics; coordinating members, vendors, guests, volunteers and tournament staff; taking your club to the next level – and you are a hero. It's an accomplishment, and a feeling, that will never leave you.

And now the negatives:

STUFF HAPPENS. Do the best job possible and there are still two elements over which you have no control: weather and people. I've seen both devastate superintendents, their staffs, their courses. When everything is going according to plan, the weather shoves it

right back in your face. If it's not rain or a micro-burst, it's unbearable heat and humidity, high winds throwing debris everywhere, tornados, waves crashing across the 18th fairway (think Pebble Beach) or even the occasional earthquake. And just when everything is back together and play is about to resume, it happens all over again. And this is just inside the ropes: Don't forget parking areas, maintenance and vendor roadways, gallery routes, bus stops and most important the trail to the merchandise tent. Followed by the television folks running amuck in golf carts across the golf course you just repaired. Then there is the potential for vandalism, protests against toxic products, security for high-profile visitors, plane crashes, assassination attempts and bus drivers going on strike.

FAMILY TIME. No, I don't mean sharing the experience with loved ones. I mean the lonely hours away from them. Is it any wonder the divorce rate among superintendents is high? This applies to your staff, as well.

THE MERRY-GO-ROUND. While working on this year's event, you are preparing for next year and the one after that. Rare is the opportunity to step back and enjoy what you're doing and what you've done.

YOUR HEALTH SUFFERS. Lack of sleep, poor dietary habits, no exercise, stress, pressure. Living on coffee, doughnuts and Advil takes its toll. And if the event is a bust you become a leper: Everyone you thought was on your side is now treating you like an infectious disease.

I'm not saying the chance to work on a big golf event isn't fun. It is, as well as challenging, maddening, elating, spirit-crushing and the ultimate rush. All I can suggest is you know what you're getting into as early as possible. **GCI**



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weather matters

This year's wild weather may have stressed golf course trees, leaving them more susceptible to a host of insects and diseases. *By Nicole Wisniewski*

The mild winter and early spring did more than make flowering plants bloom early on golf courses this year. Some insect and disease problems are showing up early as well.

And if golf course superintendents aren't paying attention, they could miss some vital opportunities to stop them before they cause serious damage.

"Trees work similar to the human immune system," says Michael Bova, a project coordinator with the Davey Resource Group and an International Society of Arboriculture Certified Arborist and Certified Tree

Risk Assessor. "When a person's immune system is stressed or if a person is lacking in vitamins or minerals, he or she is more open to catching viruses or infection. Poor maintenance practices and unusual weather events create similar situations with trees where they can become stressed and enter into survival mode. But a healthy tree in good condition can fight off decay, insects and diseases pretty well."

And, this year, weather conditions have increased insect pressure, so unhealthy trees are at greater risk of attack.

"A living thing is a living thing, and when it gets stressed, it's

open to more problems," says Thomas Schlick, CGCS, Southern division manager of Davey Golf Course Maintenance. "You have to be proactive with trees, especially during a year like this, or you're going to miss some telltale warning signs of trouble."

WACKY WEATHER. Whether it was an unusually mild winter, early spring or a mix of out-of-place

wet and dry conditions, the entire country has experienced some awkward weather patterns so far in 2012. In fact, every state in the U.S. experienced at least one record warm daily temperature during the month of March.

Temperatures in the lower 48 states were 8.6 degrees Fahrenheit above normal for March and 6 degrees higher than average for the first three months of the

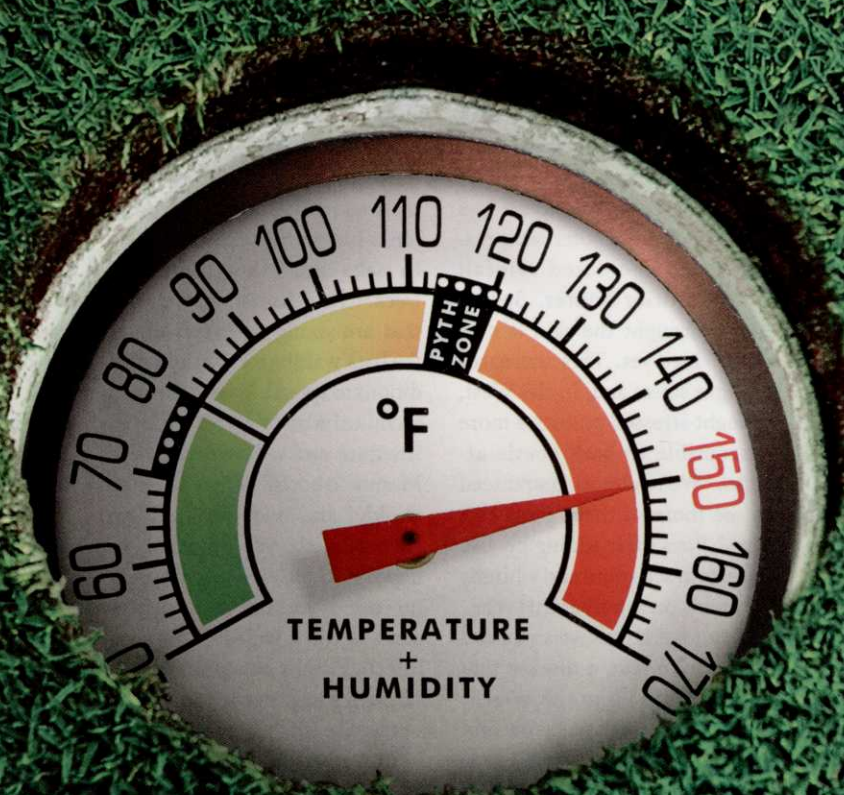
"You have to be proactive with trees, especially during a year like this, or you're going to miss some telltale warning signs of trouble."

— Thomas Schlick, Davey Golf Course Maintenance

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When trees aren't stressed, they're able to fend off decay, insects and disease – under stress, defense becomes much tougher.

year, according to calculations by the National Oceanic and Atmospheric Administration.

Unusual weather stresses trees, making them susceptible to disease and insect pressure.

A warm winter followed by a warm spring seems to have resulted in earlier insect emergence in many regions. Overwintering and migrating insects appeared earlier, creating time for possibly more insect generations and larger populations. "There is a synchronized life cycle between plants and pests.

Once spring hits, there is a flush of new growth, so a rush of opportunistic pests gravitate toward plants during this time to go after new leaves and blossoms," says Anand Persad, an entomologist and technical advisor with The Davey Institute. "New growth is susceptible because plants must build up their immunities to pests over time, and



New growth is especially attractive to insects.

newly planted trees, specifically, have not had time to do so."

Each region of the country encounters different plant challenges based on their specific weather patterns.

On the West Coast, Bova says 5- to 10-degree cooler temperatures and decreased rainfall meant a drier winter. Spring hasn't brought the rain it normally does yet. This increases drought stress and, in the West, drought-stressed pines are more susceptible to bark beetle attacks. "We're almost guaranteed to see more of these pests this year," Bova says, adding he also expects to see aphid and whitefly problems on ash trees this year.

As temperatures warm up and rains arrive late, a disease that tends to crop up in the West is anthracnose on sycamore and ash trees. "This disease turns leaves brown as they try to leaf out, delaying full leaf out until June when they would normally leaf out in April," Bova says, adding that better air circulation between tree and shrub plantings can help limit this disease.

In Florida and Texas, the situation is the same with warmer temperatures coming earlier without the normal rainfall. "Florida's spring came three weeks early, and it's been abnormally dry, which has brought a lot of plant wilting," Schlick says. "The mois-

ture is being sucked out of the ground, and the drought is stressing plants. As trees continue to stress, insects could get the upper hand on them."

In Texas, drought-stressed trees are suffering from hypoxylon, a fungus that causes cankers in oaks and other hardwood trees. "This disease infests oaks that are young and stays under the bark waiting for the right conditions to spread," says A.D. Ali, a technical advisor with The Davey Institute and a Board Certified Master Arborist. "Once the tree is older and under stress from root disturbance or drought, hypoxylon kicks in and there is no cure. If you catch it early you can see the powdery spores on infected limbs and prune them off to try to prevent the spread of the disease."

In transition zone areas like North Carolina, Ali expects Eastern tent caterpillar, bagworms and Japanese beetles to arrive early and be more abundant.

In the Northeast, spring is two to three weeks early and there has also been a rainfall deficit, says Mike Cook, an ISA Certified Arborist with The Care of Trees, who takes care of trees on more than 15 golf courses in the Northeast. Cook has seen pine saw fly out early this year, and he also expects boxwood leafminer to be a problem.

Leaf diseases also seem to be troubling apple and crabapple trees this year in the Northeast, particularly apple scab and cedar apple rust. "If superintendents weren't out at the beginning of April with a preventive fungicide application to keep the trees looking good, they missed their window this year because it came early," Cook says, adding that a lot of treatment windows will have to be adjusted to reflect the earlier season.

And in the Midwest, spring came three to four weeks early, meaning some flowering plants were blooming at the end of March when they usually don't bloom until early May, points out Grant Jones, a technical advisor with The Davey Institute.

Compared to last year's exceedingly wet spring in the Midwest, this year has been drier. In some ways, this is good news, Jones says. "Last year, the wet weather meant a lot more disease infection, like apple scab and cedar apple rust," he says. "A lot of those disease spores are still on the leaves. More spores usually mean more disease pressure. But there hasn't been a lot of rainfall, so the conditions haven't been favorable for disease to develop yet. While there is a lot of disease in the environment, whether it becomes a bad year depends on how much moisture we get."

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TREE CARE



Last year's wet spring made conditions favorable for many tree diseases to flourish.

Part of the uncertainty of predicting how this will affect plants this year comes from not knowing if these temperatures will continue or what the rainfall pattern will be like. For instance, if warm temperatures persist and moist weather conditions follow, diseases could show up earlier and more widespread than in previous years.

MONITORING IS A MUST. Because weather patterns are unusual this year, golf course superintendents need to be more mindful of the condition of their trees and shrubs. Davey professionals encourage early and persistent scouting to spot early signs of disease or insect infestation.

Additionally, golf course superintendents should avoid placing any additional stress on their trees and shrubs.

"Stress is like a catalyst to lurking problems," Cook says. "We're already expecting to see more stress. And it's important to monitor how this year's weather affects trees. For instance, if trees leaf out and are experiencing a lack of moisture in the ground, it can't be helpful for root systems and the growth of those trees. We may have stunted growth this year on some trees or trees that begin to decline as a result of stress."

Stress comes in many forms. On the West Coast, Bova sees salt accumulation around golf course trees that are being watered with recycled or nonpotable water. While the practice is sound for increased sustainability, higher salt accumulation in trees, which tends to happen during years when there isn't

enough fresh rainwater to wash the salt away, can inhibit trees' nutrient uptake.

Golf course trees that are pruned improperly or are wounded from extreme weather, like the early, damaging winter snowstorm that impacted the Northeast in October of 2011, could also be susceptible to increased insect and disease pressure. "Trees are still recovering and trying to survive, so that might give secondary pests and diseases a foothold into the tree," Cook says.

Limbs that do not heal properly or trunks that are damaged from equipment can lead to the increase in decay and the presence of sulfur fungus that we are seeing in the West. Decay can spread and lead to branch or root rot and, ultimately, a potential safety issue if the tree isn't able to compartmentalize that decay from spreading. "By the time you're seeing conks on the tree, it's likely you have significant decay," Bova says.

Ensuring broken branches are properly pruned in these situations so trees can heal can help limit these problems.

Ali jokes about another situation he calls golfer canker, where golfers accidentally hit their balls into tree trunks, creating a trunk deformity and a place for tree decay to grow. "Unfortunately," he says, laughing, "the only cure for that is for players to improve their level of play." **GCI**

Nicole Wisniewski is a senior project manager with The Davey Tree Expert Company, Kent, Ohio.

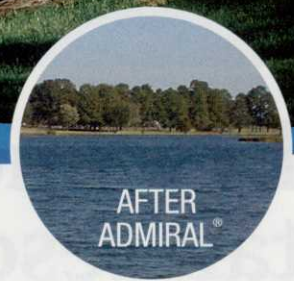

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Patches of bermudagrass in tall fescue and zoysiagrass are easily identified by differences in color and leaf texture (above, dormant bermudagrass in a tall fescue lawn).



Bermudagrass control in tall fescue and zoysiagrass

In situations where Bermudagrass covers a large percentage of a given turfgrass area, complete renovation should be considered over selective removal.

By Greg Breeden, James T. Brosnan, Thomas J. Samples

Bermudagrass (*Cynodon spp*) is commonly selected for use on Tennessee athletic fields and golf courses for its aggressive growth (providing fast recovery from wear and tear) and tolerances to heat, drought and traffic stress. These same characteristics, however, also render Bermudagrass an extremely difficult-to-control weed in tall fescue (*Festuca arundinacea*) and zoysiagrass (*Zoysia spp.*) stands.

Infestations of Bermudagrass in tall fescue and zoysiagrass commonly take the shape of distinct patches, easily identified by differences in color (during periods of active growth and

dormancy) and leaf texture. In zoysiagrass turf, differences in morning dew patterns also help identify areas of Bermudagrass contamination. Bermudagrass will invade any area of a tall fescue or zoysiagrass stand that has been weakened by diseases, insects, other types of weed competition or any type of stress.

BERMUDAGRASS GROWTH AND IDENTIFICATION. Bermudagrass is a mat-forming perennial grassy weed that aggressively spreads by both rhizomes and stolons. This extensive network of below- (rhizomes) and above-ground (stolons) vegetative

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Bermudagrass has a hairy ligule.

Bermudagrass seedheads have three to seven spikelets.



propagules makes bermudagrass extremely difficult to control. In many instances, bermudagrass can be desiccated on the soil surface with certain herbicide applications, only to regenerate over time from below-ground rhizomes. Additionally, aggressive above-ground growth from stolons allows bermudagrass to advance into additional areas of desirable turf.

Bermudagrass can be misidentified as other grassy weeds. For example, similarities in leaf texture often cause many to wrongly identify Bermudagrass populations as nimblewill (*Muhlenbergia shreberi*).

However, Bermudagrass has a hairy ligule, while the ligule of nimblewill is membranous. Bermudagrass also has a deeper root system than nimblewill and persists in drier, sunnier environments.

Bermudagrass can also be confused with zoysiagrass; however, zoysiagrass leaves are rolled in the bud and often have hairs along the leaf blade, while bermudagrass has a folded veneration and has no hairs on the leaf blade. Bermudagrass seedheads have three to seven spikelets, which can be 1 inch to 2 inches long.

CULTURAL PRACTICES TO PREVENT BERMUDAGRASS INFESTATIONS.

The best method of preventing Bermudagrass infestations is to maintain a healthy, dense turf. Implementing the proper cultural practices required to maintain tall fescue and zoysiagrass turf will reduce the likelihood of Bermudagrass encroachment. For information on the proper cultural practices used to maintain tall fescue and zoysiagrass turf in Tennessee, see UT Extension publication PB1038, Lawn Fertilization and Management. Additional information can also be found at <http://tennesseeturf.utk.edu>.

Additional tactics, including the following, can be taken to discourage Bermudagrass encroachment and spread in tall fescue and zoysiagrass.

Inspect all new materials. Inspect all soil, compost, plant material and seed brought onto a property to be sure that they are free of Bermudagrass. Pay special attention to ensure that no vegetative structures (rhizomes or stolons) are present in these materials.

Increase mowing heights when possible. Increasing the canopy height will improve the rooting and photosynthesis of the desirable turf, resulting in a healthier stand that is less susceptible to Bermudagrass encroachment. Additionally, the taller canopy will shade any Bermudagrass present in the stand, which will reduce its ability to spread.

Maintain proper fertility. For tall fescue, fertilize two times annually, once in the spring and once in the fall. Always avoid fertilizing tall fescue during the summer. For zoysiagrass, fertilize during the summer to deliver less than 3 lbs. nitrogen/M/year. Zoysiagrasses have lower nitrogen requirements than Bermudagrass. Thus, fertilizing at the proper rate will maintain adequate density while reducing the likelihood of Bermudagrass encroachment and discouraging the spread of any Bermudagrass present in the stand.

Water deeply and infrequently. Irrigate to a depth of about 6 inches, approximately twice a week. Shallow, frequent irrigation favors Bermudagrass.

Pay attention to flower beds and other landscaped areas. Keep these areas free of Bermudagrass contamination. Use heavy mulch or deep edging to keep Bermudagrass from establishing. Edging material should

be at least 6 inches into the soil.

HERBICIDE OPTIONS FOR BERMUDAGRASS CONTROL. There are limited herbicide options for controlling Bermudagrass in tall fescue and zoysiagrass. Be aware that if the applications are successful, numerous voids (bare areas) will be left in the turf canopy after Bermudagrass has been removed. These voids will be susceptible to future weed infestations and should be re-seeded with a high-quality turfgrass cultivar. Check the herbicide label for information regarding the time required between seeding and applying a herbicide.

In many instances, a single application of the herbicides listed below will cause severe Bermudagrass injury, causing a void to develop in the canopy; however, Bermudagrass can usually grow out of this injury over time. Thus, multiple herbicide applications and proper cultural implementations will be required to achieve complete control.

OPTION NO. 1 — FUSILADE II FLUAZIFOP PROGRAM.

Make sequential applications of Fusilade II at 3–6 oz./acre + Turflon Ester at 32 oz./acre, on 4-week intervals, for Bermudagrass control in tall fescue and zoysiagrass turf. Sequential applications of fluzifop are labeled for Bermudagrass control in tall fescue and zoysiagrass. Research has shown that tank-mixing fluzifop with triclopyr will improve weed control efficacy and reduce undesirable turf injury. Do not apply Fusilade II applications when the desired turfgrass is under any type of stress, due to the increased potential for herbicide injury.

Recent research at The University of Tennessee has found that Bermudagrass is most susceptible to these treatments when transitioning into winter dormancy in fall and in spring once green tissue is present. Often the process of transitioning into winter dormancy can begin before visual signs of the transition (i.e., changes in turf color) are apparent. We've observed that applications of fluzifop + triclopyr are most effective once the average daily air temperature falls below 72F. These applications treatments will need to be applied throughout multiple growing seasons to obtain complete control.

OPTION NO. 2 — ACCLAIM EXTRAFENOXAPROP PROGRAM. Sequential applications of Acclaim Extra at 20–28 oz./acre fenoxaprop

+ Turflon Ester triclopyrat 32 oz./acre, on 4-week intervals, are labeled for Bermudagrass suppression in tall fescue and zoysiagrass turf. Research at The University of Tennessee has observed that programs incorporating Acclaim Extra fenoxaprop tend to be less effective than those delivering Fusilade II fluzifop. Do not apply Acclaim Extra fenoxaprop if the desired turfgrass is under any type of stress, due to the increased potential for herbicide injury to occur. These applications will need to be applied throughout multiple growing seasons to obtain complete control.

OPTION NO. 3 — GLYPHOSATE SPOT TREATMENT PROGRAMS.

Spot treatments of glyphosate (Roundup Pro or similar) can be utilized to control Bermudagrass in an array of different warm- and cool-season species. Precise applications are required, since glyphosate (a non-selective herbicide) will kill any desirable turf that it contacts, in addition to weedy areas of Bermudagrass contamination. Bare areas present after application will need to be reseeded to prevent future weed infestations and improve the overall aesthetic quality of the turf stand.

FINAL THOUGHTS. Controlling Bermudagrass in warm- and cool-season turf is difficult. All herbicide programs involve making sequential applications over multiple growing seasons for complete control. In situations where Bermudagrass covers a large percentage of a given turfgrass area, complete renovation should be considered over selective removal. For more information on renovating tall fescue turfs, see UT publication W238, Weed Control During the Seeded Establishment of Cool-Season Grasses.

Always refer to the product label for specific information on proper product use, tank-mix compatibility and turfgrass tolerance. For more information on turfgrass weed control, visit the University of Tennessee's turfgrass weed science website, <http://tennesseeturfgrassweeds.org>. **GCI**

Greg Breeden is extension assistant, Turfgrass Weed Science; James T. Brosnan, Ph.D., assistant professor, turfgrass weed science; Thomas J. Samples, Ph.D., professor, turfgrass science and management, Dept. of Plant Sciences, The University of Tennessee.

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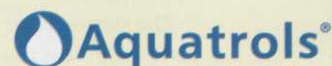


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Henry DeLozier, a principal in the Global Golf Advisors consultancy. DeLozier joined Global Golf Advisors in 2008 after nine years as the vice president of golf of Pulte Homes. He is a past president of the National Golf Course Owners Association's board of directors and serves on the PGA of America's Employers Advisory Council.

THE PURSUIT OF GREATNESS

Tiger has a swing coach. Phil has a coach for his short game and a different coach for his full swing. A lot of players have mental coaches. Bubba eschews coaches, but how would anyone know how to coach Bubba? I can only assume that Ian Poulter has a wardrobe advisor, who should be on double-secret probation by now.

Top performers the world over – from athletes to actors to business executives – seek out the people and information that make them better. The goal is the same: continuous improvement.

Leading clubs and golf businesses understand the need for continuous improvement among their employees. They know that green grass is a commodity, sumptuous clubhouses become indistinguishable after you've seen enough of them and you can get the beer only so cold before it freezes.

They realize their people are their most important competitive difference. That's why they invest not only in attracting and retaining the best people, but also in improving their skills. To them, human resource development is an essential element of their strategic plan.

During his spectacular run as manager of the Cincinnati Reds' Big Red Machine, Sparky Anderson often said, "The difference between great managers and good managers is great players." Similarly, top performing clubs understand that key management team members directly impact their financial vitality, their image and their members' satisfaction.

"Having the right team in place gives any golf facility a head start toward increasing its bottom line," says Lyne Tumlinson, who headed the GCSAA's career development program for eight years. "Investing in the development of current employees can facilitate that with less trouble and expense."

Just as every club requires a strategic plan and an annual business plan to guide long-range and near-term decisions, respectively, leading clubs make sure that those plans are executed by professionals dedicated to continuous improvement.

Tumlinson wants to make sure that superintendents don't get overlooked in the pursuit of excellence. To that end, she's launched Career Lift (www.career-lift.com) to support superintendents' career development opportunities.

She suggests that superintendents interested in furthering their careers and making more important contributions to their facilities start with a three-step

self-evaluation.

Think about your own attitudes and behaviors. In general, do people energize you or wear you out? Do you make quick decisions or do you often get stuck gathering more information? Do you prefer to communicate verbally or in writing?

Understand what makes you stand out among your peers and colleagues. What things are you best at?

Decide where you want to be in the next year, five years, 10 years and 20 years with respect to your career, finances, personal relationships, spirituality, health, family and leisure time. Write down your dreams so they get on your radar.

Once superintendents have a better understanding of their skills, interests and needs, they can work with their management team to design a **mutually beneficial** career development plan.

Once superintendents have a better understanding of their skills, interests and needs, they can work with their management team to design a mutually beneficial career development plan.


How should a club's board of directors or senior management go about developing targeted improvement for mid-level managers?

Tumlinson says start with a step-by-step process that gets everyone on the leadership team on the same page and heading the same direction.

"Reaching the ultimate goal requires working together toward the mission and vision of the golf facility, by providing the right level of conditioning for the member, golfer or customer," she says.

Tumlinson suggests coaching each professional on the team individually and as part of a group to identify strengths, improve communication, clarify roles, strengthen relationships and motivate.

"The differences between coached and un-coached managers are often plain to see in their attitudes," Tumlinson says. "Coaching is all about transformation – both inside a person and externally – so those who are open to change through feedback can demonstrate more evidence of positive development." **GCI**



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Battling back

Superintendents describe how they control Anthracnose and meet member expectations.

by Scott Kauffman



Anthracnose appears as irregular yellowed or brown patches in turf.

DREAMSTIME, FORESTRYIMAGES.ORG



Greg Shaffer, superintendent at Elcona Country Club, turned to bi-weekly topdressing to help combat the disease.

“Every time I aerify, we’ll sponge seed into the greens at least two to three times a year.”

— Jason Adams, Blue Hill Country Club

Greg Shaffer feels pretty good about his annual anthracnose program. In his seventh season at Elcona Country Club in Bristol, Ind., the turning point for Shaffer was a shift in member expectations and an overhaul of his facility’s cultural practices that now allows him to better control anthracnose.

It started with more frequent bi-weekly topdressing. Shaffer says there’s a lot of research showing more frequent topdressing and other cultural practices perhaps do not injure the plant after all.

Another change to Shaffer’s maintenance regimen is semi-annual aeration in the spring and fall.

“We were having issues with the anthracnose based on trying to put member expectations on the forefront of our goal as opposed to turf health,” says Shaffer. “We were low on fertility, aggressively rolling, mowing at low heights. Just the simple fact of trying to keep the members happy. And it came back to bite us a few years ago.”

Of course, any superintendent who has experienced the wrath of

upset members due to inferior greens doesn’t relish that feeling. So Shaffer and his club reevaluated what they were trying to accomplish.

“Some guys are smarter than I am and they learned that before they have issues,” Shaffer says. “We never really dealt with a loss of turf. But with the anthracnose that we had we weren’t able to meet expectations. So it was kind of an uncomfortable circle.”

That’s when the more aggressive practices began. Shaffer usually aerates his greens the first week of April, and once they heal in three to four weeks, the bi-weekly topdressing kicks in. That usually lasts through September, when Elcona prepares for its October aeration.

As soon as Shaffer increased his rate of topdressing, the Purdue University graduate also increased his club’s fertility inputs, nearly doubling his rate of nitrogen to 3.5 pounds per year – sometimes even approaching four pounds depending on the type of foliar program. During the golf season, Shaffer alternates between foliar and root nitrogen applications.

“Every other week we’re either

spraying urea out with our fungicide (at about a tenth of a pound), and on the opposite week we’re spraying ammonium sulfate and watering it into the root,” says Shaffer. “That also gets mixed into the tank with our wetting agent, surfactant or any other type of micronutrients that we’re putting in for the soil.”

Elcona’s greens are about 80-90 percent annual bluegrass, according to Shaffer, so “we’re right in the wheelhouse for anthracnose.” Shaffer says his crew is “probably mowing at a higher height of cut than most guys are in the area.” The Elcona crew rolls its greens about three to four times per week, depending on the event.

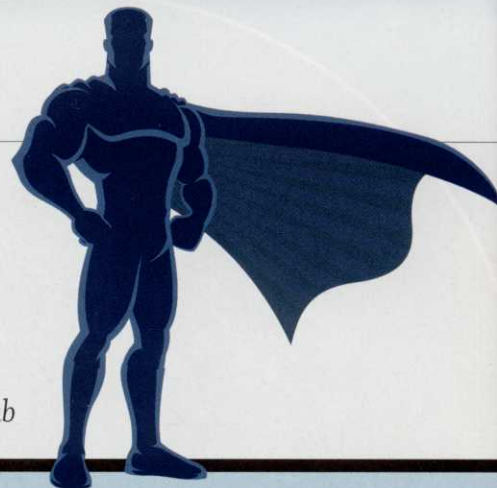
“A lot of the guys are mowing at 100 or under 100,” Shaffer says, “and we’re 115-120 on the (acting gauge).”

Besides keeping the anthracnose at bay, perhaps the best part of his newly adopted maintenance practices is Elcona members haven’t really noticed any effects on the quality of their greens. Membership has downplayed its public need for speed.

“From a playability standpoint, I don’t think they’ve really had to make

“We were having issues with the anthracnose based on trying to put member expectations on the forefront of our goal as opposed to turf health. We were low on fertility, aggressively rolling, mowing at low heights. Just the simple fact of trying to keep the members happy. And it came back to bite us a few years ago.”

—Greg Shaffer, Elcona Country Club



any sacrifices,” Shaffer says. “And not that what we do, we do for the sake of green speed, but the reality is it’s important. That’s kind of one of the things membership hangs its hat on. So one of the things we’ve gotten away from trying to focus on is green speed.”

For example, historically, Elcona staff would always post a green speed by the first tee as of certain morning intervals.

“It got to be a real pain in the rear end because guys’ days would be ruined before they even hit a ball,” Shaffer says. “They’d walk up and see ‘Oh, the speed’s only going to be 10 today.’ So we’ve changed that mindset a little bit that we’re going to more consistency. We still want to meet their expectations as far as speeds – they just don’t know what the speeds are.”

At Blue Hill Country Club in Canton, Mass., superintendent Jason Adams also finds his anthracnose “a little more manageable” these days. Typically, Blue Hill will see signs of anthracnose in late May and early June, especially after cool, wet winters, and a relatively less severe touch of it in the autumn months.

“I’m curious to see what this year brings with the warm weather we’ve had,” says Adams, who is going into his fifth season at Blue Hill. “With it being a drier season and coming out of the heat and spring, I’m hoping the severity isn’t as bad.”

One thing that has helped Adams keep anthracnose in check is continually overseeding his predominantly *Poa annua* greens with bentgrass as much as possible.

“We’re very aggressive,” Adams says. “Every time I aerify, we’ll sponge seed into the greens at least two to three times a year. During my first couple years I might have seeded greens eight to nine times during the growing season. That’s one of the biggest things and because of that, I’ve had some greens here that were probably 99 percent *Poa* when I first got here to the point we got the populations up quite a bit.

“I’ve got some that are as high as 60-70 percent (bent). And I only have three greens on the golf course now that probably have 20 percent bent versus nothing. It’s kind of a painful thing at some points. We’ve lost some *Poa* over the years – a little bit here and there in some of the cleaner cut. We kind of look at it as a silver lining. Yeah, you might lose some of the *Poa*, but it’s an opportunity to get some bentgrass in there.”

According to Adams, anthracnose was so bad at Blue Hill at times it would take the *Poa* right down into the crown. “We’ve come in a Sunday morning and seen the green just riddled with it,” Adams says.

Another significant change in Adams’ cultural practices is an aggressive deep tine “drill and fill” program that started when Adams took over the property in 2008. After evaluating the property, which dates to 1925 and once hosted the 1956 PGA Championship, Adams discovered significant thatch issues on some of the greens and some very heavy soils 4 inches below the surface. The combination of the two resulted in greens with severe dry spots, inconsistent

playing surfaces and poor drainage after heavy precipitation.

“By doing more deep tine, drill and fill (approximately 40 tons of sand was drilled into 8,500 square feet of greens last fall), we’re not staying as wet and soft on top for that disease,” says Adams. “Plus we’re top-dressing more often than we have in the past.”

Increasing the rate as much as 12-14 times now per year, Adams matches what he did at his previous club, after doing it just six to seven times historically at Blue Hill.

“For this particular club it was a lot busier and they didn’t like to see a lot of disruptions as far as green surfaces,” Adams says. “We’re going to go back probably to that 12-14 times. The only thing we’re going to do this year during the growing months (June-August) when this place is really packed wall-to-wall is do more of that bagged dry sand and spread it by hand.”

On the chemical front, Adams is “changing this up by using more of DMI” like Banner or tebuconazole, and even formulates his pesticide program more around anthracnose than anything right now. Another noticeable difference from a fertility perspective is Adams will likely use higher amounts of potassium this year.

“We played around with it last year and saw a pretty significant response,” Adams says. “I think we’re using 0-0-28 potassium fertilizer and we’re going to half pound rates per month. It seemed like going into fall we had to battle the disease far less than

we’ve had to in the past.”

A backup tool he is starting to use with success is Civitas, a mineral oil loaded with some bionutrition. Adams mixes it with Banner at half rates and gets instant results.

“Last year when we had the hurricane blow through,” Adams says, “we were just loaded with anthracnose about two to three days after. We’ll spray (Civitas) and it almost cleans everything up in a matter of two to three days. It’s amazing.”

Adams cautions to not use the oil once it warms up to 82-83 degrees because he’s seen it discolor or burn the tips of the annual bluegrass on some of Blue Hill’s collars.

“In the spring and fall when things are cooler, the moisture levels are better and there’s less stress on the plant,” Adams says. “You’ve got better roots on your plants so you don’t seem to have any issues. I just don’t spray it in the heat of the summer.”

Constantly juggling risk-reward attributes of various anthracnose practices with the watchful eye of demanding members is what makes this insidious disease so tough.

“If we didn’t have to worry about it and we could do what we want when we want as far as topdressing and skipping mowing, it would probably be a lot easier to control this disease,” says Adams. **GCI**

Scott Kauffman is a Clermont, Fla.-based freelance writer and a frequent GCI contributor.



Filling the void

Superintendents share their best-kept secrets for divot repair.

By Scott Kauffman

For golf generations, divots have been the bane of golfers and superintendents, making divot repair and divot management programs an integral part of golf course maintenance practices. In a 1941 installment of the “Greenskeeper’s Reporter,” a story even quoted three greens chairmen as saying, “divots were the “No. 1 pest.”

Oddly enough, despite this high-profile place in turf maintenance annals, little research had been done on the methods and materials used to control this “pest” – at

least until a recent study by the University of Illinois.

Among the findings published in 2005 by the GCSAA, respondents spent an average \$3,671 in labor and materials to repair divots on course tees, \$4,240 on fairways and \$3,383 on range tees. There was a wide range in annual divot-related expenditures, ranging from \$500 to \$33,000, according to the GCSAA.

Seven years later, vast differences continue to exist in the scope of superintendents’ turf practices in regards to divot repair. For

example, superintendent Jason Adams of Blue Hill Country Club in Canton, Mass., takes a measured approach to repairing his private course divots, including the use of a special mix supplied by New England Specialty Soils.

Adams says one critical tip in ensuring healthy divot repair is picking the “right mix that works



Divots cost courses thousands in repair through labor and materials - finding the right fill mix is critical to help fix them quickly.

for you.” In the case of Blue Hill, Adams uses an 80-10-10 mix of sand, peat and compost material, respectively. He also dedicates an individual every day to fill in divots not only on range tees, but the entire course as well.

Another key practice that Adams employs is making a point to give par-3 holes and range tees a “little extra moisture” a couple times a day just to “keep the mix a little bit on the moist side.”

Another ingredient Adams finds helpful is the EarthWorks Renovate Construction Mix.

Adams mixes in the amendment with his seed-soil mix and finds the extra source of minerals heals his turf quicker.

“For us we feel like we get quicker germination when we mix the Renovate in with the seed soil mix,” Adams says.

On the Southern California coast, superintendent Steve Thomas of the Resort at Pelican Hill implemented several changes to his divot repair regimen after Pelican Hill completely renovated its upscale courses in 2006-07 and converted the property from a ryegrass-Bermudagrass fairway mix to 100 percent Tifway 2 Bermudagrass fairways. For instance, Thomas now uses straight sand to fill in fairway divots that no longer need to be overseeded.

Thomas is experimenting with a darker custom divot blend to help speed up recovery because the darker compost material tends to “heat up the ground temperature and help the Bermuda recover a little quicker.”

In fact, when Thomas drew up the pros and cons of fully resodding Pelican Hill’s fairways with Bermudagrass the first one he came up with was divot repair, especially in the winter months when the Bermuda goes semi-dormant.

“So we fill (the divots) as fast as we can with sand,” says Thomas, who’s entering his 10th year at the Tom Fazio-designed resort course. “We still overseed the tees so we send a crew out typically as a second job and fill the tee-tops, particularly on the par-3s that get a lot of iron play. Our second jobs are usually around 9-10 o’clock. There’ll be some play, but we’ll go behind them and take care of the divots from the day before.”

Besides the new Tifway 2 fairways, two other noticeable changes to Thomas’ daily divot repair schedule are painted sand and re-filling divot boxes. Nei-

ther of these divot practices is deployed anymore.

Thomas stopped painting divot sand for cosmetic reasons as a cost- and labor-savings measure. He also got rid of his “tacky” divot boxes because golfers never utilized them, or didn’t know what to do with them, according to Thomas.

“We tried to use them in different locations but (golfers) seemed to ignore them, kick them and just put their drinks on ‘em,” says Thomas, who’s in his 10th year as Pelican Hill’s superintendent. “We just never really gotten use out of them. So our guys will do the balance of the divots in-house. We get pretty good control that way.”

At one of Florida’s newest private golf clubs, Bella Collina in Montverde, Fla., superintendent Jeff Helms doesn’t have anywhere near the budget or crew that Thomas enjoys. So Helms goes about his daily divot drudgery the old-fashioned way: divot-by-divot, and hoping members and guests fill in their part, too.

Helms relies on the golfers to replace and fill fairway divots due to his short staff situation. For the tees, especially during the winter overseed months, Helms goes out 1-2 times per week and simply fills in divots with Florida’s ubiquitous green divot sand – mixed with a 5-to-1 ratio of sand to ryegrass seed in large 5-gallon buckets.

“It’s not a big science project going on out there,” says Helms.

But it works for Bella Collina for now. And probably dozens of other cash-strapped superintendents driven to control those dastardly divots. **GCI**

Scott Kauffman is a Clermont, Fla.-based freelance writer and a frequent GCI contributor.

BY DOUG HOUSEWORTH

New chemistry for *Poa annua* elimination

In March, the Environmental Protection Agency approved a new post-emergent herbicide, Xonerate from Arysta LifeScience, which has shown to control *Poa annua*.

P*oa annua* is one of the most common and widely distributed winter annual grassy weeds in the world, and also is one of the most difficult to control on turfgrass. In March, the Environmental Protection Agency approved a new post-emergent herbicide, Xonerate from Arysta LifeScience, shown to effectively control *Poa annua*.

Poa annua survives as a weed due to its high genetic variability, short life cycle, tolerance of compacted soil and rapid germination; each *Poa annua* plant produces between 1,000 and 2,250 seeds in a season that can easily spread from equipment, human or animal contact. *Poa annua* is especially challenging in creeping bentgrass, which provides conditions that are ideal for its growth, including high moisture, nitrogen and traffic levels and routine fungi-

cide use.¹ Also, *Poa annua* is very susceptible to diseases, such as anthracnose, and doesn't tolerate heat well, which means it dies quickly in warm weather, leaving unsightly bare patches during high play times. The effect on golf courses is bumpier-than-normal surfaces, impaired playability and unattractive greens and fairways during the height of the play season.

Xonerate offers a solution to golf course superintendents.

Xonerate contains 70 percent amicarbazone in a convenient water-dispersible granule formulation, which is absorbed by leaves and roots of *Poa annua* for quick, residual, post-emergent activity. Xonerate is selective, so it kills the weeds, but not the turfgrass.

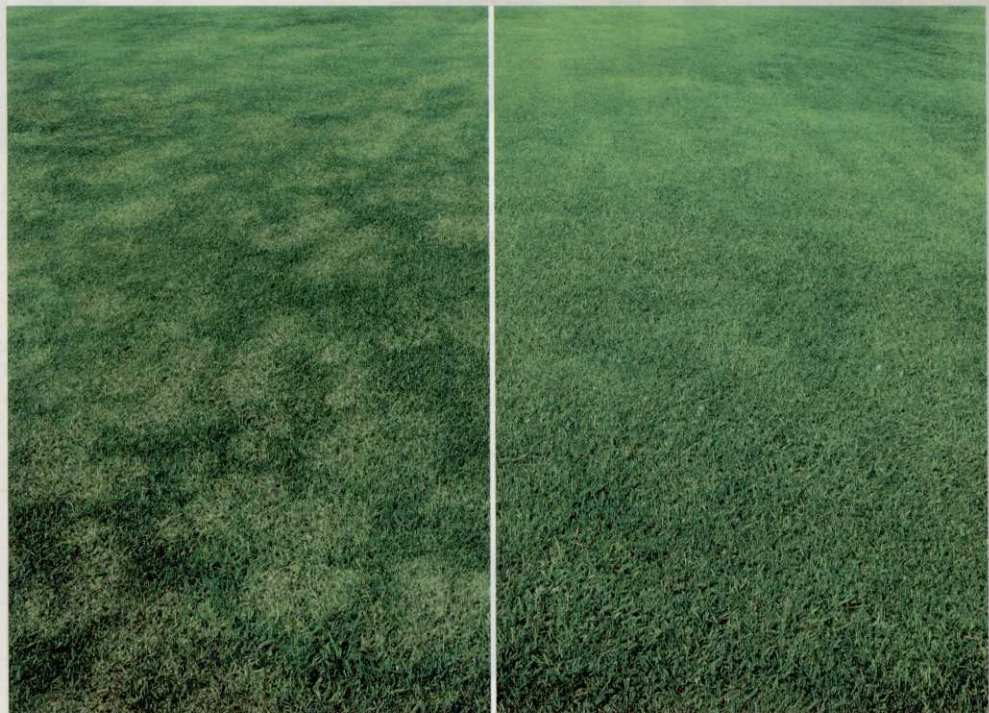
TRIALS. Over the past five years, numerous university and co-operator field trials have been conducted to examine the per-

formance of Xonerate in diverse geographic areas, under a wide range of climatic and turfgrass conditions. The trials found Xonerate to be 90 percent effective in controlling *Poa annua* – more than any product currently on the market.¹

TRIALS SHOW MINIMAL EFFECT ON TURFGRASS QUALITY. While trials prove Xonerate effective at eliminating *Poa annua*, they also showed Xonerate had minimal

Editor's Notes

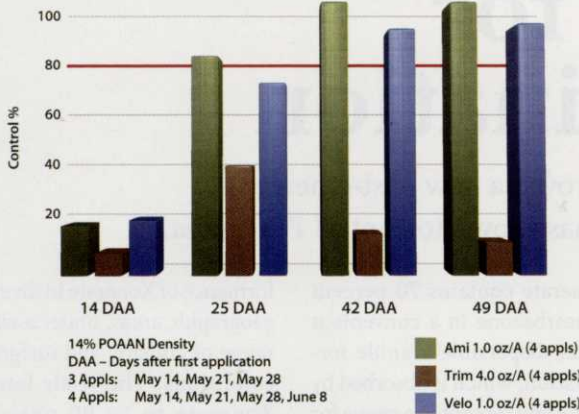
Since there's been considerable interest and discussion about this product in the market, we asked the technical team from Arysta to do this article to present what they know about the product and particularly how it should be used on greens.



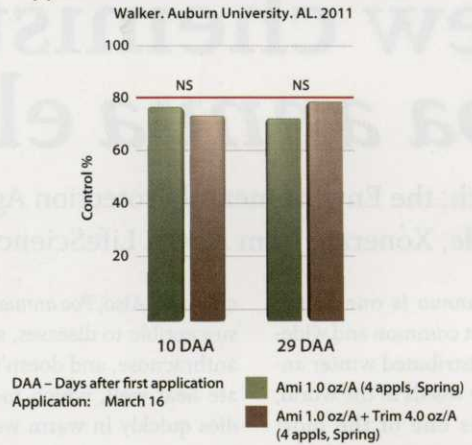
Poa annua is tough to control due to high genetic variability, short life cycle and rapid germination.

Results of control tests for annual bluegrass and *Poa annua*

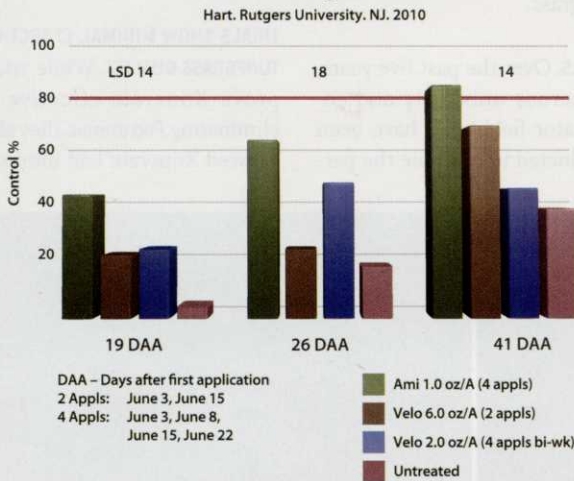
Effect of Amicarbazone on Annual Bluegrass Control
McDonald. Turfgrass Disease Solutions. PA. 2010



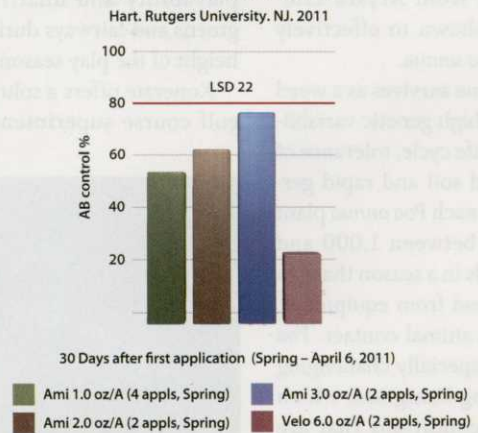
Perennial Poa Control with Spring Applications of Amicarbazone and Trimmit.
Walker. Auburn University. AL. 2011



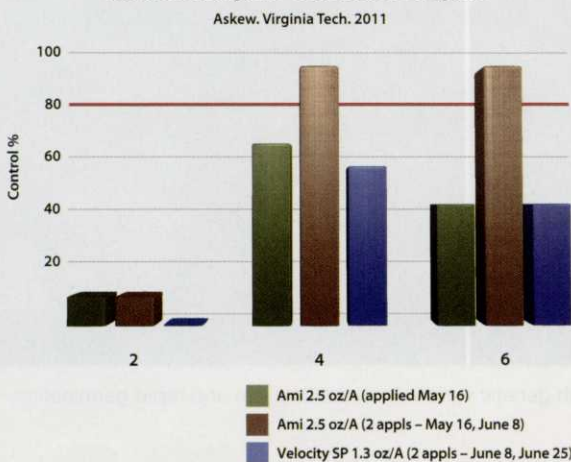
Effect of Amicarbazone and Velocity on Annual Bluegrass Control
Hart. Rutgers University. NJ. 2010



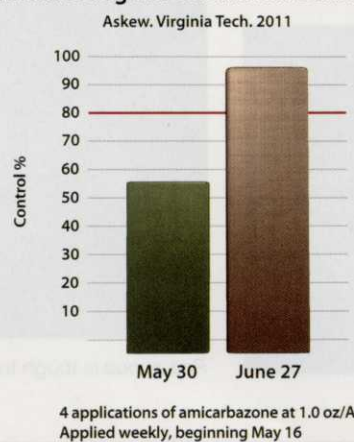
Effect of Spring Application of Amicarbazone on Annual Bluegrass Control on Bent Fairway
Hart. Rutgers University. NJ. 2011



Annual Bluegrass Control in Bentgrass
Askew. Virginia Tech. 2011

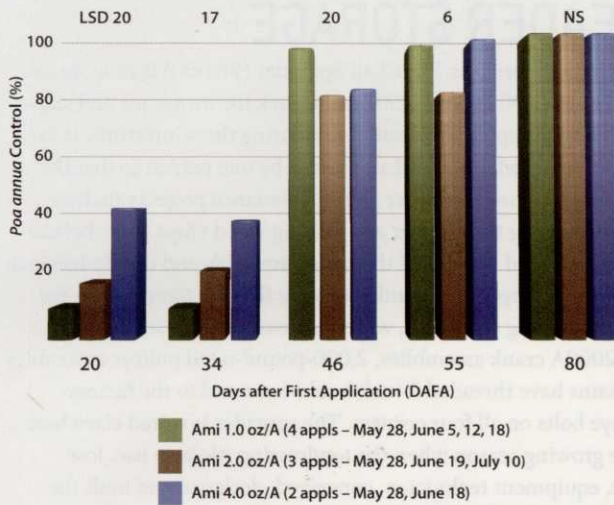


Spring Applications of Amicarbazone Annual Bluegrass Control on Bent Fairway
Askew. Virginia Tech. 2011



Poa annua Control in Kentucky Bluegrass with Amicarbazone

Street & Holdren, Ohio State University, 2011



effect on the quality of desirable turfgrasses. Many studies showed no visible effects to turfgrass. In some instances, a temporary yellowing of turf occurred after application, but turf recovered after 14 to 21 days.

HOW XONERATE WORKS. Xonerate offers selective removal of *Poa annua* in many cool- and warm-season turfgrasses including creeping bentgrass and Bermuda grass. The mode of action in Xonerate eliminates *Poa annua* with little to no disruption to the growth of bentgrass. Xonerate is absorbed by leaves and roots of *Poa annua*, where it inhibits photosynthesis by interfering with normal electron transport. Subsequent cell membrane and chlorophyll loss occurs. *Poa annua* initially becomes chlorotic (loss of green color), followed by necrosis (browning of plant tissue). Turfgrass remains mostly the same, with possible discoloration at first, lasting about two weeks as it fills back in. *Poa annua* control occurs over a three- to four-week time period.²

Xonerate may be tank-mixed (water is the recommended liquid carrier). It can be applied

up to four times at a 1-ounce-per-acre rate for bentgrass. (KBG and KBG/ryegrass up to 2-ounce rate at two applications). It should be used on turf that has smaller percentages of *Poa annua* (less than 10 percent *Poa annua* population), while transitioning to desirable turfgrass. Creeping bentgrass can be re-seeded as soon as seven days after the last application in roughs, fairways and tees.

Elimination of *Poa annua* should also include a management program that incorporates frequent topdressing, proper nutrient balance in the soil, proper soil pH and good water control (not overwatering) tailored toward encouraging optimum bentgrass growth and quality.³

SHORT-TERM BENEFITS; LONG-TERM GAINS. Golf course superintendents now have the choice to manage *Poa annua* or eliminate it with Xonerate herbicide. *Poa annua* requires intense management practices that are costly in terms of labor, water usage and fungicide/insecticide applications. At a cost of "X" per acre, the total cost of Xonerate is "X" in herbicide plus any additional monies in seed and fertilizer minus the reduced input needed to maintain *Poa annua* throughout the playing season. The first year cost will be the largest initial increase in budget expenses, subsequent annual applications of Xonerate will be required to maintain a clean stand of bentgrass.

The expense of this herbicide application in the future will be

offset, however by the reduced use of fungicides, insecticides, plant growth regulators and irrigation that would be required to maintain the *Poa annua*. Specifically, superintendents can anticipate savings of 10-20 percent in the fungicide budget once the *Poa annua* is removed.

Most importantly, the elimination of *Poa annua* improves the aesthetics of fairways, greens and roughs and increases turf quality and playability throughout the heavy play times. The loss of *Poa annua* during the heat of the summer will no longer be a problem, the consistency of the playing surfaces will increase, and color variation will decrease dramatically. **GCI**

Doug Houseworth, Ph.D., Turf & Ornamental Technical Manager, Arysta LifeScience North America

Notes

1. Grounds Maintenance, Controlling *Poa annua* in bent grass greens by Bert McCarty, Clemson University, Dec. 22, 2011.
2. Rates and applications will vary by turf type and geography.
3. USGA Green Section Record, The Continuing Saga of *Poa annua* May/June 1987.

XONERATE Fairway Application Cost Example:

Cost per Acre After All Applications are Made	Number of Fairway Acres Treated	Total Cost to Remove <i>Poa</i> from Fairways
\$450	20	\$9,000

The total cost to remove *Poa annua* will vary by application rates. This example represents four applications of Xonerate at 1.0 oz product per acre.

Hand Watering Example:

Number of Laborers Watering	Hourly Rate	1 hr/ Employee - 7 Days	Total Labor Saved
4	\$10	28	\$1,120.00/ week

The total amount of savings in labor from hand watering will vary with climate and amount of *Poa annua* present on the course.

Chemical Example:

Product	Rate	Cost/Gallon	Cost/Acre	Total Application Savings
Disarm C	2 gallons/acre	\$172	\$344	\$6,880

The amount of savings will vary based on the number of applications made targeting Anthracnose.



Terry Buchen, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or terrybuchen@earthlink.net.

Travels With Terry

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares helpful ideas relating to maintenance equipment from the golf course superintendents he visits – as well as a few ideas of his own – with timely photos and captions that explore the changing world of golf course management.



WINTER SAND/SALT SPREADER STORAGE

The Western Ice Breaker Sand/Salt Spreader (\$6,000) is mounted in the bed of the 2002 Ford F-350 dump truck for winter ice and snow removal. When the spreader is not in use during the wintertime, it can be temporarily loaded, unloaded and stored by one person so that the dump truck can be used for other golf maintenance projects such as hauling stuff, towing the chipper and loading wood chips. Two 4x4x10-inch lumber are used to support the pulley assembly and one 4x4x8-inch lumber below to support the crank assembly that are mounted on the Sandstor topdressing silo frame, which has two Dutton Lainsson Co. model D12000A crank assemblies, 2,000-pound-rated pulleys and cables and the chains have threaded 2-inch hooks mounted to the factory-installed eye bolts on all four corners. The spreader is stored elsewhere during the growing season when the topdressing silo is in use. Jose Rodriguez, equipment technician, conceived, designed and built the lift working closely with Brett Scales, golf course superintendent, at the Navesink Country Club in Middletown, N.J. It took about 12 hours for installation and it cost about \$250 for parts.



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SMART BATTERY CHARGERS

Mary E. Yarick, professor and program coordinator for turf equipment management at Florida Gateway College in Lake City, Fla., has an idea for charging the 12-volt batteries on turf equipment that does not get used often and/or during the off-season when equipment is not being used and remains in a discharged state resulting in sulfated plates and eventual failure. A Schumacher SE-1-12S battery charger is available through R & R Products and costs about \$30. It is designed for equipment in storage with a 1.5-amp trickle charge and automatic operation and comes with a mounting plate (which slides underneath the battery), hardware and short 115-volt



power cord. Another option is to install a CTEK Multi US 3300 battery charger that ranges in price from \$50 to \$250. The unit puts the batteries through an eight-step reconditioning process that revives dead or borderline batteries by maintaining

them through cleaning, testing, discharge and recharge and fast and slow charging. CTEK also has connector options to allow the charger to be used on more than one machine. The mounting of either charger takes less than an hour.

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Sometimes being aware of water management means equipping the course to handle too much water.

district goals were not served by the project. In addition, maintenance costs at The Bridges are already trending down: less maintained acreage; no more clean-up costs related to regular stormwater damage and better course revenues. The flooding used to be so bad, the course had to be closed for days at a time; Poplar Creek had a reputation as a place that was always soggy, which further eroded rounds.

We frankly see stormwater management and water quality management as largely one and the same. When you gather all that water on a golf course site, you may as well clean it before

releasing it to the water table or a nearby river/stream. Our firm played a role in pioneering this dynamic with our renovation work at a pair of Chicago facilities in the early 2000s. Our work at The Traditions at Chevy Chase in Wheeling won a Renovation of the Year award in 2004, but our work at Deerpath Golf Course in Lake Forest is perhaps the better example.

The course had been there since the 1920s but a hospital – basically a giant slab of concrete and hardtop – had since been built across the street. A recent expansion made things worse. Run-off was supposed to be con-

tained but in reality it wasn't: it caused serious flooding on and around the golf course.

In the end, it was the golf course that solved the problem, and the impacts went well beyond the course boundaries. Lohmann Golf Designs designed and built an elaborate, inter-linked water storage system at Deerpath that gathered all that water, created an extraordinary new wetland habitat, and just happened to bring some nifty new risk-reward strategies to several holes. Pretty neat solution – better than costly storm-sewer upgrades. But we did more than that: The on-course

filtration capability we created through this chain of wetlands vastly improved the quality of retained water. This matters, because no water storage system is entirely closed. At Deerpath it continues to head off site today – all nice and clean – into the Skokie River.

That's not exactly making lemonade from lemons. But it's close. **GCI**

Bob Lohmann is Bob Lohmann is founder, president, and principal architect of Lohmann Golf Designs and a frequent GCI contributor.

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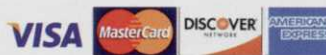
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THE HOT TUB OF OPTIMISM

From the time I hit the ground in Vegas for the GIS I was bombarded, barraged and berated about the “sense of optimism about the market.”

It was almost as if golf’s powers that be had gotten together last year and decided to sing off the same sheet. “We feel a sense of optimism in the market,” they all said as if scripted to do so. Imagine that.

Thus, every report about the industry, every blog and every Tweet seem to (cautiously) resonate with sweet, sweet hope. We have (maybe) turned the corner! Golf is (sort of) back! We have staved off disaster (for now)!

As my tone might suggest I, for one, am still having a hard time drinking the optimism Kool-Aid. I’ve been around a long time and I have learned the value of being at least mildly bearish when I sense the gentle tickle of sunshine being blown up my butt.

For example, I’ve learned not to make broad, rosy economic pronouncements. This “teachable moment” occurred after a top-level superintendent called me out at the end of a gloomy state of the industry speech in Connecticut a couple of years ago: “Wait Jonesy... weren’t you the one who told us for years that East Coast private clubs were recession-proof?”

Did I really say that? Not me! Must have been my evil twin or Bill Cowher or somebody else with a cheesy porn mustache and a lot of loosey-goosey opinions.

Okay, so I’m not friggin’ Nostradamus. Mea culpa.

I will admit there are reasons to dip our toes in the hot tub of optimism:

- The weather is good and rounds are up. (Duh. Even a broken clock is right twice a day and it’s about bloody time for the seasonal facilities to finally catch a break.)

- The stock market and housing starts and unemployment and all the other such random statistics on the CNN ticker are better than they were a few years back. (Thanks for the fine work, Wall Street! I’m sure you’ll never let us down again. Glad you finally have it all figured out.)

- A lot of facilities have regrouped, gotten their finances in better order and tried to change. (My gut tells me many courses are still operating at a 2006 status quo and “waiting for things to bounce back.” This is roughly equivalent to waiting for Jimmy Hoffa and Amelia Earhart to come walking around the corner arm-in-arm.)

Optimism won’t put one round on your tee sheet or get you one new member to sign on the dotted line.

So, as golf’s designated curmudgeon, I automatically worry that one of the kids may have peed in the hot tub of optimism. So I’m going to take a pass. But climb right in if you want. I’m sure it’s fine!

Let’s saunter across the patio to the swimming pool of pessimism and see what we find floating there:

- Massive competition for core customers’ time due to work expectations and kid-related obligations. In my lifetime, we’ve gone from children generally roaming free on weekends while dad sucked a few beers with his buddies on the back nine to today’s hellish parental death march schedule of soccer practices, dance recitals and travel hockey tournaments.

- Value pollution in the form of discounting. When a lousy operation up the street is giving away rounds of golf, it’s pretty damned hard not to panic and stoop to their level. When

the process goes national and is being driven by online tee-time discounters, how do you ever get back to a fair price for a round of golf?

- Some kind of pervasive aversion to providing good service. For god’s sake... there are 15,700 of you competing for a dwindling customer base. Can’t you at least slap on a smile and pretend you’re happy to see me?

So, let’s conclude our little chat about optimism over at the tiki bar of reality. I’ll have an O’Douls, but you should probably get something a bit stronger because this is going to sting a little. Are you ready?

Yes, optimism is a lovely thing. It

creates a bit of a placebo effect that seems to make those nasty symptoms go away. It can become a kind of self-fulfilling prophecy. All of that is fine, but here’s the thing:

You can’t eat optimism. You can’t use it to pay your bank note. They don’t accept it as barter for fertilizer at your local turf distributor. Optimism won’t put one round on your tee sheet or get you one new member to sign on the dotted line.

Want to feel really optimistic? Take immediate steps to offer good golf at the right price, differentiate your course from the pack and provide excellent service. You can’t solve the social/time compression problem but you can steal the rounds from lesser operations just by getting better and telling people about it.

So, there, that’s what I think about the whole question about optimism. Happy now? **GCI**

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