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course, and that couldn't be good for anybody."

In essence, Cook told his members that he would be putting in a new irrigation system so they wouldn't have to use it. That was the thing that really got them scratching their heads.

"With the system we had, we couldn't shut it off, because if we did, we would never catch up," he says. "The idea with the new system was to keep the course drier because then you could catch up. That was hard for [the members] to get: 'Playing conditions are going to get better because we're going to keep the course drier? How's that going to work?'"

So Cook laid down a daunting number: \$3 million, \$1.5 million per side, soup to nuts. Over the years, no matter what the project, he found it's better to hit members with an honest number right up front than something not representative of the whole cost.

"Hit them in the face with it," he says. "Because if you start



Steve Cook told Oakland Hills members a full-system upgrade would allow him to reduce hand watering, which would provide some labor savings.

telling them we can do it for \$600,000 by piecemealing it, then all of a sudden that turns into \$800,000, then at the end of the day you're at \$1.2 or \$1.3 million more. Tell them, if you don't want to spend that, then don't spend it, but that's the cost."

**"We told them we could decrease the water window from 12 to 8 hours, which would mean better playing conditions and better member service."**

*—Steve Cook, Oakland Hills Country Club*

**S**till having trouble selling that plan to your membership?

Irrigation consultant and GCI irrigation columnist Brian Vinchesi suggests another tact. Document and show your membership how much time you spend on irrigation and water management.

"Some guys told me 80 to 90 percent, which is ridiculous," Vinchesi says or projected time investment. "It should be 10 to 15 percent. Members should understand they didn't hire you to be spending that sort of time on the course's irrigation system."

Vinchesi warns superintendents against putting off an upgrade for too long. He often relays a cautionary tale about one course that had saved \$350,000 for their irrigation system, only to see the money earmarked for a clubhouse renovation when a new regime took over the golf course facility.

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Cook backed up his number with a survey of other clubs that underwent total irrigation system upgrades. And he told his members, "Let's get over the fact that it's expensive and that it's underground and you won't see it. It's not a flower box you can see when you drive in the front gate, but let's talk about it and take the next three years building a case for it."

Cook said it also helps to have a member on your side who believes in what you're doing and understands how it will help the course. And hiring a good irrigation consultant and putting them in front of the membership helps, too.

"It sounds so self-serving when a superintendent wants a new irrigation system or a new maintenance facility," Cook says. "The members say, 'Everything looks fine, why do we need that?' But if you have someone else carrying the torch for you, I think it helps."

So what if doing a total irrigation system upgrade is not a reality? Could replacing the heads alone result in significant financial and resource savings? Cook believes it could, using a heart transplant as an analogy.

"As long as the delivery system and the body is good, you can have a heart transplant," he says. "If you have clogged arteries, it's kind of tough."

Cook says he will have to make the case for replacing his own heads in the next three to five years, because at 10 to 11 years old right now, they aren't performing as they once did.

"They simply wear out, particularly if your water quality isn't good," he says.

But still, he goes back to favoring replacing the whole system. "The thing you have to weigh is, okay, I sell [my members] on these heads and it takes me three years to do this and then what? I might never be able to sell them again on replacing something else."

Chris Tritabaugh of Northland Country Club in Duluth, Minn., admits it's nice to dream about a total irrigation system upgrade, but often times it's not reality. Money is extremely tight at his club, so much so that not even highlighting the age of his system (35 years) is enough to convince membership to budge. That system's shortcomings took center stage last summer in the extremely hot and dry conditions.



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## IRRIGATION

How bad were the conditions? He normally budgets \$5,000 for water in July...and this year he spent \$17,000.

"But still I heard how the course was too dry and that I didn't put enough water down. To which I replied, no, I put down plenty of water, it was the inability of the system to put it

in the right place efficiently," says Tritabaugh. "It's a tough nut to crack with any membership. I doubt there is anyone out there who has gone through an irrigation renovation where, in the beginning, they had members walking up to them saying, 'We want to put in a new irrigation system.'"

Tritabaugh has had to make do with upgrading heads, moving on specifically to the next generation of 800 Series heads from Toro after starting with a mix of 600 and 700 Series. His current policy is that if there is an issue with a head and it requires anything more than a simple fix, it gets replaced.

"We've never gone around and said we're going to replace all the heads here or there," says Tritabaugh. "But I'm thinking of putting together a proposal to replace all the heads around the greens with 800 Series next year. If we can do it the best way we can, we might as well."

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water application on one green where three of the four heads are 800 Series was “night and day,” says Tritabaugh. But the total cost of \$150,000 to do a course wide head replacement (including labor and parts) keeps things at the hodgepodge level they are now: replace only when necessary. But Tritabaugh can see a different scenario at a different course.

“Maybe replacing heads alone is a good route to go for a course with a 15-year-old system that has 700 Series heads with good piping and infrastructure and a control system they like or can easily upgrade,” he says. “Maybe it gets them another 15 years and the cost is worth it.”

Tritabaugh agrees with Cook about pushing course conditions as the No. 1 justification for upgrading an irrigation system.

“What I hear most from everyone is, ‘We really like the way the course plays – fast and firm. We just don’t like how it gets when we don’t get enough rain in July,’” he says. “To me, that’s when alarm bells should be going off. They should realize the reason the course is like that is because of the irrigation system. Some people get it, some people don’t.” GCI

**H**ow about not replacing irrigation heads but just the nozzles? This past summer, superintendents saw the value in this after the whole country burned up and Mother Nature did little to help out. Mark Ferris, sales and marketing director at Underhill International, says his phone rang off the hook with superintendents asking, “What can we do to upgrade our heads?”

“Some superintendents have learned that their heads may not necessarily be worn out and only the nozzles need to be upgraded,” says Ferris. “Their heads still have life but the nozzles are worn out or it wasn’t designed properly from the beginning. It’s a gigantic savings.”

Questions superintendents typically have to answer before such an upgrade include:

- What is the rotation speed? It has to be two to three minutes – one minute is too fast, four minutes is too slow.
- Are you putting out the proper pressure of 70 psi?

Replacing nozzles can reduce watering time, Ferris says, and courses that are pumping it out of the ground can save “huge” dollars in electricity. The Metropolitan Water District of Southern California believes in nozzles enough that it’s offering a 100-percent rebate on the cost of new nozzles to golf courses in its district, he says.

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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 with offices in Pepperell, Mass., and Huntersville, N.C., that designs golf course irrigation systems throughout the world. Reach him at [bvinchesi@irrigationconsulting.com](mailto:bvinchesi@irrigationconsulting.com).72.

## BLOW BY BLOW

As with everything, there is a right and a wrong way to winterize an irrigation system. Due to their size, golf course irrigation systems require a specialized approach to keep from damaging the system and to conduct the winterization in a safe manner.

First, air compresses and water does not. Therefore, air is dangerous. When using compressed air in a system you need a way for the air to escape. There should be no dead ends for the air pressure to build up against. The danger is why air-release valves are installed on mainlines. When air is compressed the pressure builds until something breaks. To be safe and damage free, caution should be taken.

When winterizing, volume (cfm) is important, not pressure. The system can be as easily blown out with 40 psi as with 80 or 100 psi. Higher pressure will allow you to winterize the system faster, but it can do damage and causes a dangerous situation. With valve-in-head sprinklers higher pressures are more apt to launch the internal out of the case. Toro recommends a blowout pressure of only 35-50 psi. If you do not have a compressor that produces enough volume, the air will only remove part of the water and then ride over the remaining water in the pipe because it is compressible. You need enough air to move all of the water out of the way so there is a slug of water moving down the pipe ahead of the air. A compressor of 800 cfm or larger for 18 holes is a good start.

Heat is another important consideration. Many compressors produce hot, not cold, air. Make sure the tempera-

ture is low to prevent damage – like melting diaphragms and other plastic pieces. If your compressor produces hot air, then you must run the air through metal pipe or a long length of hose to absorb the heat. You need to make sure the air is cool as it enters the PVC piping. If your blow out on a connection is in your steel pump discharge piping, it won't be an issue. Entering your system through a metal quick coupler helps, but is not ideal.

Many people think the quicker the winterization/blow out process can be done, the better. This is not the case.

You need enough air to move all of the water out of the way so there is a **slug of water** moving down the pipe ahead of the air.

Like the tortoise and the hare, slow and steady is best. Be consistent and blow out the system slowly, taking several days. The bigger the pipe the bigger the compressor will be needed to keep the water moving through the piping network in front of the air.

There are varying opinions on where to blow out from. Some say the high point, some the low point. Some move the compressor around from high point to high point. I like the air to take the same path as the water, that way you know you have been through all the piping. The easiest way to do that is to blow from your water source. Many pump stations have a blowout connection built in to the discharge zee fitting to connect to.

To blowing out efficiently, open your air release valves and then open

your drains and drain out the mainline as much as it will let you. Close the drains from high point to low point and close the air release valves. If you don't close the air release valves, the air will vacate through them and not the sprinklers. Turn on each sprinkler until a light mist is achieved and then shut the sprinkler off. Quick couplers should be activated to clear them of water during the process. It's best to use a remote control as the amount of time each sprinkler should operate will vary. At the beginning of the process, the sprinklers will operate longer

and at the end less depending on how you lateral piping is configured. When the blowout is complete shut off the compressor and allow several hours for any remaining water to settle into the low points. Go back to low areas and activate the sprinklers again. If there is water and not a mist operate them till a fine mist is present as before. Do not operate sprinklers not producing a flow of water. The air will damage components.

When completed, open your air release valves so they are ready for the spring start up. If you know from experience that you have an area or two that collects water over the winter there should be a drain there and leave them open for the winter, but closed if water will back up into the piping through the open drain. **GCI**

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# Under the microscope

PYTHIUM  
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## GCI's turf experts discuss the southern disease trends you need to know about now for 2013. by Rob Thomas

**H**ome to sweet tea, SEC football and the Magic Kingdom, the South, it has been written, is more than a region — it's a state of mind. While the South has many wonderful things, it also is home to its own set of turfgrass diseases, which no doubt weigh on the minds of countless superintendents.

There are precious few weeks remaining before we close the books on 2012, but it's not too early to look back at the year and take a glimpse at what to expect south of the Mason-Dixon line in 2013.

2012 was a good year early when ample clean irrigation sources were available, though conditions changed, according to Dr. Philip Harmon of the University of Florida plant pathology department.

"Dry weather early in the year limited foliar fungal diseases, but tropical systems and regular rainfall later in the summer promoted summer bipolaris diseases on zoysiagrass and Bermudagrass and diseases like the Pythium root rot and blight that we don't typically see on Bermudagrass most summers," Harmon says.

John Foy, director for USGA Greens Section, Florida Region, took the look back one more month — December 2011 — and noted that there was a "fair amount of disease activity," but agrees with Harmon's assessment as 2012 kicked into full affect.

"It was very dry and warm dur-

ing winter and early spring — no diseases," Foy says.

Many southern states see an increase in play over the winter months due to cooler days and the influx of snowbirds. He says the general concern for superintendents now is to get their turfgrass as healthy as possible heading into peak season.

"Typically this time of year, when we get the change of season, shorter days, the growth of the grass slows down," he warned. "We're starting to see an increase in golfers now. It'll build up through Thanksgiving, then a lull before the January boom."

The timing seems to be good for many as Harmon sees some summer diseases on a decrease, though others are still a concern in certain areas.

"In the last month, we have started to see Rhizoctonia leaf and sheath spot sample numbers decline from their peak for the year on Bermudagrass greens to a few samples from South Florida," he says. "We are also seeing lingering Pythium root rot and Pythium blight issues where excessive rainfall has occurred in the last few weeks.

"Finally Bipolaris leaf blotch, also known as Helminthosporium leaf spot, is showing foliar spots on zoysiagrass fairways and tees and on Bermudagrass fairways, tees, and some greens," he adds. "Large patch has been active in the transition zone and is now (mid-October) becoming active in central Florida on zoysiagrass and seashore paspalum."

While the diseases facing southern superintendents aren't new to the region, Harmon says some could be classified as "emerging." They've been around, but have become more problematic or serious recently.

"Rhizoctonia leaf and sheath spot continues to cause problems that include patches and miniature rings of dead and yellow turf," he says. "The increase in the number of cases could be related to stressful weather conditions in the South, or more local stresses such as low mowing heights, minimal fertility programs and similar problems."

What about new diseases?

"We are still seeing a Fusarium pathogen on seashore paspalum that has not been characterized, but that appears to cause small chocolate brown spots about the size of dollar spot infection centers," Harmon says. "They are frequently associated with pink to orange tufts of mycelium in the early morning dew and occur during temperatures slightly higher than when we typically see dollar spot (before in fall and after in spring)."

DMI fungicides tend to give decent control, while strobilurin products do not, he adds.

Though not classified as a disease, Foy points to nematodes as becoming a problem.

"There's a much more pronounced issue all the way around," he says. "We had a warm, mild winter, so there was very little slowdown of nematode activity."

A big part of the issue is due to loss of many cures — such as Nematicur — that were taken off the market due to health concerns. The residue of the active

**"Superintendents are always under pressure to have faster greens speeds... Be careful not to compromise the health of the turf heading into peak season."**

*— John Foy, USGA Greens Section, Florida Region*



## KEY POINTS

- Rhizoctonia leaf and sheath spot decline from their peak for the year on Bermudagrass greens.
- Lingering Pythium root rot and Pythium blight issues remain in regions experiencing excessive rainfall.
- Bipolaris leaf blotch (aka Helminthosporium leaf spot) is showing foliar spots on zoysiagrass fairways and tees and on Bermudagrass fairways, tees, and some greens.
- An increase in the number of Rhizoctonia leaf and sheath spot cases could be related to stressful weather conditions in the South.
- In addition to pest factors, cold-temperature injury plays a role in the Bermudagrass decline on golf course turf.

ingredient – fenamiphos – was deemed not safe to golfers and those working the courses.

As you may imagine, weather often determines the probability and/or severity of many diseases.

“In addition to those [aforementioned] factors, cold-temperature injury seems to play a big role in the Bermudagrass decline or root rot problems on golf course turf,” Harmon

says. “How cold the soil gets, and for how long, play a role as you might expect, but injury can also occur with large, rapid temperature swings like we saw in February this year in Florida. Damaged areas in fairways, tees and greens are slow to recover where *G. graminis* var. *graminis* is present.

“In general, warm-season grass diseases are very much

avored by turfgrass stress due to environment, pests like nematodes and agronomic practices,” he adds. “Any practice that is good for the overall health and vigor of the turf should also reduce the likelihood and severity of disease outbreaks. Increasing mowing heights during stressful conditions and maintaining appropriate fertility levels are two excellent places to start.”

Foy also stressed that superintendents should protect themselves with best practices to maintain healthy turf.

“Superintendents are always under pressure to have faster greens speeds,” he says. “Be careful not to compromise the health of the turf heading into peak season.”

A broad spectrum treatment routine in rotation with common contact and systemic fungicides is key, but also pay attention to the weather and stay on a good program to maintain healthy turf.

It’s not all fire and brimstone. There are some positives coming out of the research labs like Harmon’s.

“For large patch disease of

zoysiagrass, I am seeing some excellent results from premix products that contain a DMI and a strobilurin active ingredient,” he says. “The key to getting good efficacy is to make the applications preventatively about a week before you expect to see symptoms. Keeping notes from year to year on when symptoms occur and paying close attention to soil temperatures also helps clue me in as to when to put out my preventative large patch applications. Two applications are usually adequate to prevent disease. Some breakthrough in the winter or spring may occur, but has not resulted in significant, lasting turf quality issues into spring and summer.

“Limiting late fall nitrogen fertility also helps reduce the severity of zoysia large patch,” Harmon adds.

With the good comes the bad, however.

“Several superintendents submitted Bermudagrass greens samples with apparent moderate-to-severe DMI phytotoxicity this year,” Harmon says, noting that some companies are marketing inexpensive DMI products as safe for Bermudagrass. “My experience has been that most DMI actives will significantly reduce turfgrass quality when the grass is under stress (as most putting greens receiving fungicide applications are). Although they have a place in some programs, the risks should be explained and disclosed.

“My advice is to consult beyond the salesman on the safety of these products, and hopefully these types of practices will self-select out of the market,” he adds.

Give a plant pathologist time and you’ll get an answer to any turfgrass problem. But research requires more than time ... financial support is paramount.



Give a plant pathologist time and you’ll get an answer to any turfgrass problem.

(continued on page 48)