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A LITTLE OFF THE TOP

Scheduling tree pruning for winter months can cut expenses and enhance tree health. GCI walks you through the process to establish a pruning program.

BY ROB THOMAS

WITH WINTER WINDS ON the horizon, superintendents are quickly preparing their courses for the cold months ahead. Focusing solely on the turf, however, would be shortsighted. A proper tree pruning program can have far-reaching benefits - ensuring trees remain healthy and are ready for the foul weather ahead.

Tom DePaepe, ISA Certified Arborist with Ryan Lawn & Tree, looks at tree care from two sides – arboriculture and golf. "First, good pruning should minimize storm damage," he says. "This should help the golf superintendent reduce untimely expenses. He can schedule his pruning to winter months when play is down. Then it becomes a budget item he can prepare for.

"Second, raising trees on the course can benefit air movement, which will help the turf, plus may improve sight for golf play, and if done artistically, aesthetic benefits for members," he adds.

Dr. Bruce Fraedrich, vice president research, Bartlett Tree Experts, agrees with reducing the potential for storm damage through thinning or removing branches when the crown is dense, therefore reducing wind resistance. In addition, thinning improves light and air penetration into the canopy, which can reduce the severity of foliage diseases.

"Pruning can also provide benefits to surrounding plants and to people using the site," Fraedrich says. "For example, raising branch levels by removing low limbs can increase light penetration to the turf beneath the tree's canopy. Pruning can also provide clearance to buildings, security lights and pedestrian and vehicular traffic. For young trees, pruning is particularly important to establish a strong branch structure for future growth."

Add root pruning to the list of tree care that will ultimately benefit turfgrass health, lessening competition for vital nutrients, says Scott Johnson, a Board Certified Master Arborist and assistant district manager for Davey Tree Expert Co., Nashville.

As for knowing which ones to prune, Fraedrich suggests inspecting trees annually and after major storms. Look for dead, broken and cracked limbs as well as low branches that may interfere with play or may be excessively shading turf.

Larry Ryan, a graduate forester and president of Ryan Lawn & Tree, looks at the aesthetic importance, as well. "Removing visible, unsightly limbs makes any grounds appear to be manicured and kept up," he says. "Nothing says 'run down and struggling business' like something that appears poorly maintained."

Trees that are unhealthy, but not targeted for removal, can still be pruned, but Freadrich warns to tread cautiously. "Trees in poor health frequently have dead branches which should be removed," he says. "However, removing live branches from unhealthy trees should be avoided unless it is done for safety reasons. Removing live branches reduces the energy-producing area of the tree, which can result in further decline.

"Pruning also creates wounds, which makes the tree expend additional energy to close those wounds and defend against insect and disease attack," Freadrich adds. "This is not an issue in healthy trees, but can be problematic for one that is in poor health."

DePaepe points to oak decline, in which case an arborist may spread the virus or disease via their tools to healthy trees, as a concern when pruning unhealthy trees. "A good arborist will sterilize tools after pruning a questionable tree with rubbing alcohol or diluted Clorox," he says. If you can afford to remove this tree, it is often cheaper to remove it in the early stages of decline versus pruning every few years, then removing the tree. Save that annual cost if the tree is on its way out."

But should the work be done in-house?

"Some superintendents have a good understanding of arboriculture. Most probably don't," Ryan says. "I know turfgrass for home lawns, but not for golf courses. We can't know everything."

A benefit of hiring a professional arborist is knowing the person pruning a tree is using proper technique.

"It doesn't take longer to prune a limb correctly than it does to prune incorrectly," DePaepe says. "Taking off the needed limbs to get a proper pruning job, but not more. Over pruning is tough on trees. A good arborist will realize not to remove a limb that is too large for the size of the tree. This can compromise the future structure of the tree."

For example, by removing a limb equal in size to a limb you leave in the lower section of the tree, you are often dealing with large trunk wood. This will create a very large wound. An alternative, if the limb has to be removed for structural reasons, is first cut the limb back by one-third this year. Next year, remove half of the remaining limb. A year or two in the future, decide whether to remove the rest of the limb or again remove half of what remains. It creates less shock to the tree.

"A newer procedure good arborists are implementing is removing co-dominant leaders in trees. This can reduce future limb failure, big time," DePaepe says.

This is done with the same process described above. Again, reducing shock to the tree.

Most professional commercial arborists provide assessments and management programs as part of their maintenance services, Fraedrich says. The height of the golf season isn't a great time for a superintendent to schedule a major pruning project. The cycle of a tree happens to cooperate.

"Light pruning can be done any time of the year, but the dormant season is generally the best time to schedule pruning operations," Fraedrich says. "In late autumn and winter, the structure is more visible and pruning is easier since there are no leaves to deal with. Additionally, in northern areas, courses are usually closed and pruning in winter minimizes disruptions on the course."

Johnson, who worked for Crooked Stick Golf Club in Carmel, Ind., for 10 years and developed their tree-management program, suggests staying on top of the situation. "Think preventatively and actively manage trees instead of letting them dictate when you work on them," he says. "An ounce of prevention is worth a pound of cure."

When Johnson first arrived at Crooked Stick, a tree would fail during the height of the golf season. The maintenance staff would have to slow down or stop what they were doing to fix the problem. As the tree-care program progressed, the staff better managed tree issues.

Scheduling can help with cost. "It has to fit into the superintendent's budget," Ryan says. "If he can work with a good tree company so they partner, both organizations can plan ahead to have the best people do the work, and get the superintendent excellent results at a fair price.

"Winter pruning is often discounted by tree companies to fill out their year and keep staff employed," he adds, noting there's less impact on the course working on frozen ground during the winter months in Midwestern and Northern climates."

Considering doing the work in-house? You'll need the right tools.

Realizing some southern courses might desire to do pruning mid-summer, when their play is lower, Ryan suggests picking the off season for your area of the country and working with a reputable tree company.

Still consider doing the work in-house? You'll need the right tools. "For safety, I'd recommend renting a bucket truck," Ryan says. "You don't want to try to teach your people to climb if they don't have the right gear and safety training. There is a reason pruning companies pay 15 percent workman's compensation insurance.

"Safety instructional videos from International Society of Arboriculture are good," he adds. "We'd also recommend all safety gear, from Kevlar chaps for people running chain saws on the ground to eye, ear and head protection. Don't cut corners on protection. We tell our arborists frequently, we never want to tell your spouse you won't be coming home tonight, so be safe every moment."

Think along the lines of safety and ask: "What can my crew safely do?"

Johnson suggests having a tree care expert train a couple of your employees. They can concentrate on pruning some of the smaller trees with minimal tools – such as a pole pruner and handsaw. For medium-sized and larger, more mature trees, recommends utilizing a professional service.

Cost is often an issue, so Fraedrich urges superintendents to consider all options before taking on this task. "While we recommend pruning be handled by a professional arborist, we do realize that budgets only go so far," he says. "With this in mind, if we can work with the course's crew we will. For example, there are times when we have handled the pruning and removals and the course employees have done the cleanup. This stretches the budget and helps to keep course crews productive in winter."

Find an arborist who will work with your crew on cleanup to maximize the course's budget dollars. As for cost, pruning is often done on an hourly basis, but those rates can be misleading, according to Ryan.

"As an employee-owned company, our people are used to working quickly and efficiently and we have found we often get more work done per dollar spent than many companies do," he says. "A good superintendent might want to farm out a small portion of their work to several companies and watch the outcome of each company. Judge who gives you the best value. The results might be surprising."

A superintendent can actually earn some of the money back – selling logs to people looking for firewood or dealing the smaller logs to paper mills, Johnson says. Courses he works with will utilize wood chips to cover maintenance cart paths or for weed suppression in natural areas.

Still undecided about in-house pruning versus hiring a professional tree company? Ryan says to start small.

"Prune the shrubs, then small trees. Work your way up," he says. "Study, ask, read, continue to learn. If it was me and I was a superintendent competing with your course, I'd spend my time training my staff to wow my clients and hire the pruning [to be] done.

"My focus is to have so much play on my course, make it such a good experience, that I can afford to hire services like pruning," Ryan adds. "I would want to be the best golf course in the city. You can be the second best and do your own pruning." **GCI**

Rob Thomas is a Cleveland-based freelance writer and frequent GCI contributor.

John E. Kaminski, Ph.D. is an associate professor, Turfgrass Science, and director of the Golf Course Turfgrass Management Program at Penn State University. You can reach him at kaminski@psu.edu.

IT'S NOT THE GADGET, IT'S THE USER

If you're like me, then you're thinking about all of the cool gadgets out there just waiting for me to come along and put down my credit card. While there are a lot of things I would be interested in buying, the same genre of electronics always comes back and takes the lion's share of my money – camera equipment.

I am a photography buff. I received my first real camera (a Nikon N70) during my 1997 internship at Congressional. Film, though, proved to be too expensive for a starving graduate student living on $16K per year in Washington, D.C. That didn't stop my love for photography, though. Instead, I realized a simple digital camera produces some great images if you learned how to use it.

Today everyone has a digital camera and is an amateur photographer, and I receive plenty of images through email, Facebook and Twitter where some poor superintendent has been struck with some monstrous problem that needs identifying. The ability to diagnose problems digitally, while not always possible, has increased our efficiency and ability to quickly relay our "best guess" based on a single photograph. Unfortunately, about 50 percent of those images, for one reason or another, don't tell the story.

> Get down close and get an image of either a lesion or some other symptoms on an individual plant or even find a sclerotia or some other sign of the actual pathogen.

In many cases, images shared with me are either blurry (No. 1 problem) or don't show the scope of the problem. If the image is sharp and identifiable, then it's probably too close to the subject, too far away or in some other way doesn't really tell the full story. In this month's article, I will cover some basics about purchasing the right camera and share techniques on how to capture the perfect image.

BUYING GUIDE. While I am a converted iPhone user simply because of its camera, I don't usually recommend this as your primary camera. Any cell phone camera will be good for general documentation, but it lacks key functions that situates it far behind most digital cameras. I also don't recommend running out and buying an expensive interchangeable lens DSLR. A good point-and-shoot digital camera can provide some of the best images for a number of reasons.

Canon vs. Nikon? I don't get into the whole Canon vs. Nikon argument. I'm a Nikon guy…for the most part. My DSLRs are all Nikon because that's what I started with and that's what my lenses fit. Besides, it's the lenses of the DSLR that cost you all the money. So, once you go down that road you don't switch bodies. However, when it comes to my point and shoot, I'm actually a Canon and Nikon shooter.

My recommendations for those of you on the golf course would be the following. For less than $250 you can get a great digital point and shoot. My recommendations would be a Canon Power Shot ELPH 110 HS ($179 at B&H Photo) or for the more rugged users a Nikon AW100 ($249). The latter is a great camera because it is shockproof, shoots 1080p HD video and is waterproof for up to 33 feet.

LEARN THE MACRO MODE. Now that you've bought yourself a digital camera, it's important to know how to use it properly. The first and probably most important function you should learn on your new camera is "macro." This button usually is represented by a little flower or tulip. The setting is the difference between an in-focus or a blurry image. Most cameras are designed to shoot macro, but there are a few things you should know before setting the button to "flower mode" and shooting.

On most cameras, the macro mode is designed to work with the zoom as wide as possible. However, most people believe because you are trying to shoot something in very close that you also have to zoom in to the subject. It's actually just the opposite. Set your camera to macro, zoom out as far as possible and move your camera as close to the subject as allows without getting blurry. On the Nikon AW100, you can get 0.39 inches away from your subject and still be in focus. Now

(continued on page 47)

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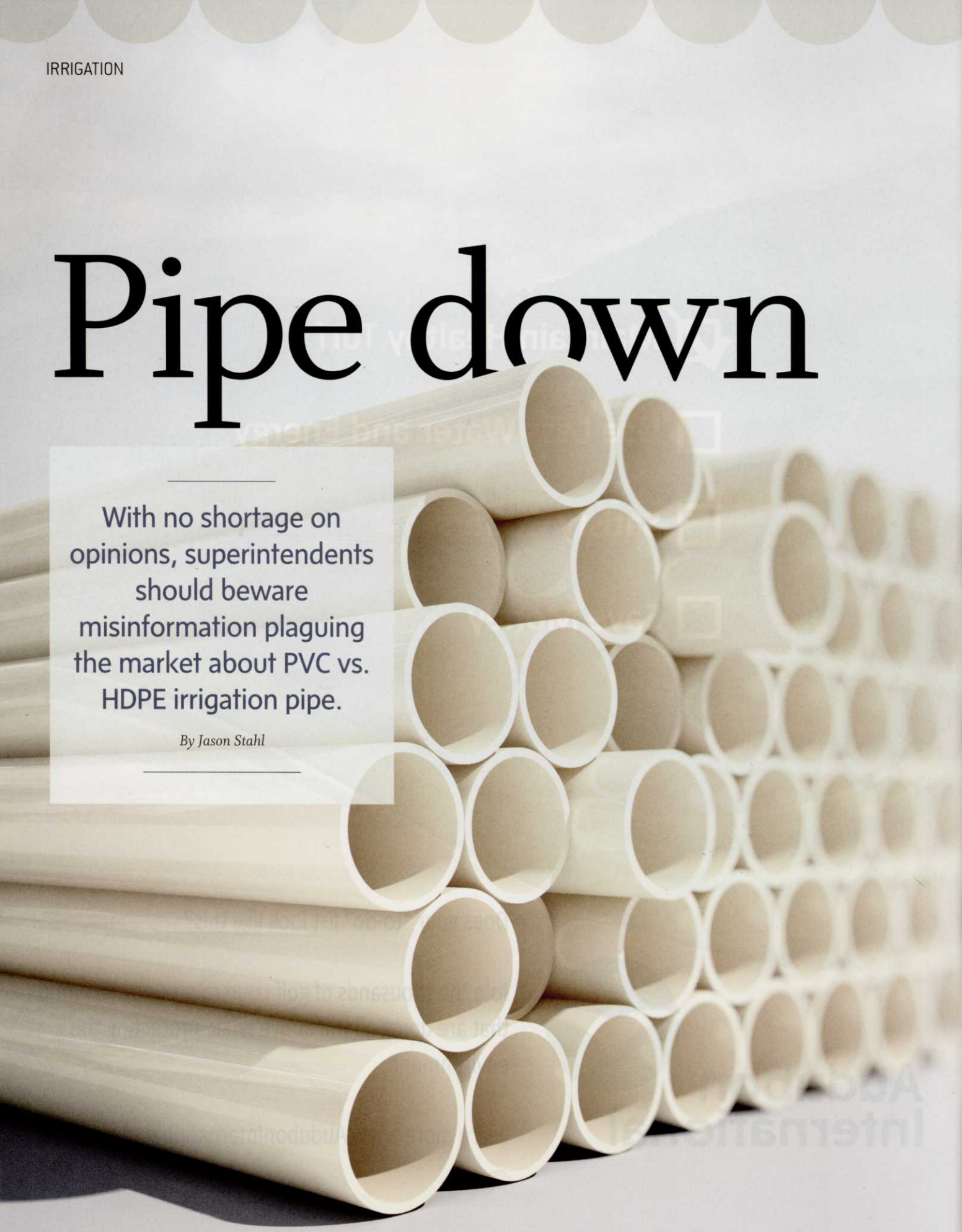
Pipe down

With no shortage on opinions, superintendents should beware misinformation plaguing the market about PVC vs. HDPE irrigation pipe.

By Jason Stahl



Nothing vexes Brian Vinchesi more than misinformation. It doesn't matter what the misinformation concerns, the irrigation consultant says, it's just bad news all around. In the ongoing debate of PVC (polyvinyl chloride) pipe vs. HDPE (high-density polyethylene) pipe for irrigation systems, the misinformation is that HDPE is stronger than PVC.

To that, Vinchesi says poppycock.

"HDPE is not a stronger material than PVC," he says. "You can buy PVC and HDPE with exactly the same pressure rating, which makes them exactly the same strength. As a matter of fact, in the golf market, HDPE is usually weaker because people use a less pressure-rated HDPE vs. PVC. When you compare the two pipes, you have to compare apples to apples, and no one is hardly doing that."

Another fallacy, says Vinchesi, is that HDPE performs better than PVC in cold climates.

"Based on my engineering knowledge, there is no basis for HDPE being more suited to cold climates than PVC," he says.

Okay, so now that we've got the misinformation out of the way, what are the truths about HDPE being better than PVC? For one, it's definitely more flexible, which could be ideal for golf courses with rocky soils because it goes around objects more easily. But Vinchesi says flexibility also presents problems.

"Flexibility also means that it expands and contracts at a much higher rate than PVC, so you have to be careful of that because it's not a good thing," he says.

Vinchesi goes back to the apples-to-apples comparison. If you compare HDPE vs. PVC this way, HDPE is going to cost more. So Vinchesi typically asks superintendents, "Why do you want to use HDPE?" In most cases, they tell him things that are untrue. So then he lays out the real pros and cons and lets them decide.

"Apples to apples would be having pipe that has the same pressure ratings," Vinchesi says. "I can make HDPE cheaper or equivalent to PVC if I lower the pressure rating of HDPE compared to the pressure rating of PVC, and that's what a lot of people do."

The other factor superintendents have to consider, says Vinchesi, is HDPE has a much thicker wall than PVC and therefore a smaller inside diameter. Therefore, the velocities in HDPE are higher than PVC. So if you intend to keep your velocity the same in HDPE as it is in PVC (which Vinchesi says you should because there is a standard that says you should), you will have to boost your pipe size, which will raise costs.

"The reason HDPE is so popular is because they cheapen it up to make it cost competitive," says Vinchesi. "And the only way you can do that is by raising the velocities and lowering the pressure rating."

Vinchesi does grant that the manufacture of HDPE is more environmentally friendly than the manufacture of PVC. He claims there is a green code being proposed today by the Sustainable Site Initiative that would prohibit the use of PVC pipe on a sustainable site, but the outcome of that proposal is not yet known.

As far as HDPE being less tolerant of chlorine than PVC, Vin-

LONG BEACH COUNTRY CLUB

HDPE history

In the late 1980s, HDPE pipe was introduced for golf applications in select areas of the U.S. In 1988, Jim Kirchdorfer of ISCO Industries is said to have been the first in the U.S. to use HDPE pipe entirely on a golf course at Quail Chase, a Kentucky golf course he owned. At that time he had to manufacture the fittings for his project because they were not yet made by any other company. Kirchdorfer introduced HDPE pipe to golf course irrigation systems in the late 1970s using HDPE on the tough applications such as stream crossings, exposed pipe, intake pipe and poor soil conditions.

When done correctly an HDPE joint is 150 times stronger than the pipe itself.

chesi believes the jury is still out.

"[Researchers] are not 100 percent sure on chlorine degradation," he says. "They're doing studies, but it does seem HDPE is susceptible to chlorine at low levels, which can be found in most potable water from cities."

As for HDPE being less fragile than PVC, Vinchesi would argue that PVC, when installed correctly, has as little chance of breaking as HDPE. However, with HDPE, if it does break, a golf course has to hire someone to fix it because it requires a special fusing machine, he says.

In the future, Vinchesi feels superintendents will see more hybrid systems combining both HDPE and PVC, with the laterals being PVC and the mainline being HDPE, or vice versa.

"Mainline PVC doesn't break as much and keeps the cost down," says Vinchesi. "The problem you usually have with PVC is the glued stuff, so if you make all the laterals HDPE, you get rid of all your gluing."

Matt Shaffer, director of golf course operations at Merion Golf Club in Havertown, Pa., has one of these hybrid systems. His system consists mostly of PVC, but on new additions they have been installing HDPE. Once he saw how well it worked, he bought his own welder and trimmer. An irrigation technician on staff who Shaffer calls "fantastic" took the necessary training to become an experienced welder, and now they do all their own pipe in-house.

Shaffer was sold on HDPE because he felt like it was a stronger product that didn't need as many pressure blocks.

"Normally, when you have a leak, it's almost always in a fitting," he says. "But these [HDPE] fittings are really beefy and welded fast to the pipe. I really like that."

He initially thought HDPE had no drawbacks because of its flexibility and "high bursting point," but then learned of its supposed susceptibility to chlorine – a concern to him since he uses city water.

"We're looking at putting in a new irrigation system with all HDPE, and if we do, we would look into a different water source other than the city," says Shaffer. "If I can't drill wells and fill my lake but have to rely more on city water, then we may have to go back to PVC. To what extent chlorine impacts HDPE, I'm not sure and am certainly not qualified to say. I will definitely speak to an irrigation consultant before we go through with this."

Nick Sinnott, partner and president of ServiScape Golf Management, took bids on both PVC and HDPE when considering a total irrigation system replacement at Long Beach Country Club in Long Beach, Ind. The original system had been installed in 1985, and after the ductile iron fittings used throughout the system were recalled due to their tendency to rust, the club knew in 2001 that it would have to start saving for a new system. With that kind of foresight, they were able to install the system in 2011 without having to assess the membership or take out loans.

The primary reason he chose HDPE was because of the soil characteristics of the golf course, Sinnott says. "There is a beach sand section of the course and a heavy peat area," he says. "To effectively thrust block PVC would have required enormous amounts of concrete, and we didn't have to do that with HDPE. Plus, the costs of installing HDPE have come down so much that it's almost apples to apples with PVC. Looking back, it was the right decision."

The only downside Sinnott sees to the new HDPE installation is the learning curve the crew will have to go through. For instance, they're currently looking at redoing many of the

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