

Performance, *Not* Perfection

Fertigation doesn't require a flawless irrigation system, but retrofitting an old system takes careful evaluation



MIKE KLEMM

BY FRANK H. ANDORKA JR., MANAGING EDITOR

Conventional thinking says you could never switch to a fertigation system with your old single-row, quick-coupler system. Well you could, but to do it correctly, you'd have to rip out your old system and install a technologically advanced system at a cost of millions of dollars. You'd probably never be able to sell your board on that, so fertigation would clearly be out of your reach.

Not so, says Jim Barrett, president of the American Society of Irrigation Consultants and president of James Barrett Associates, a Roseland, N.J.-based irrigation consulting firm — and he has a real-life example to prove it.

At one well-known club, Barrett says he was designing a new irrigation system for both of its courses. The committee initially chose a course to start the work on, so Barrett built a pump station equipped to do fertigation and was ready to start work on replacing the older irrigation system from the ground up. Then the committee changed its mind and decided to start work on the other course instead. So the fertigation system pumped away on the first course for seven

years without a serious upgrade to its single-row coupler system. The superintendent told Barrett that the fertigation program was still effective despite the ancient system.

"Fertigation is typically used to keep levels of nitrogen constant in the soil," Barrett says. "It's not as if superintendents are putting their entire loads of fertilizer strictly through this system. So despite the limits of an older system, it can still work."

In an older system, you may not get the fertility exactly where you want it, but as a labor-saving device you can't afford not to put some part of your fertility program through your system, says Paul Granger, president of Aqua Agromonic Solutions, a Clinton, N.J.-based irrigation-consulting firm.

"If you have a new system, you'll get more even distribution," Granger says. "But even if you can't afford a new system, you can tweak the old system to give you enough coverage to make it a viable option."

What to do

Not all systems — particularly the larger systems in the West that operate year-round — can be

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retrofitted, of course. Dave Davis, president of David D. Davis and Associates, a Crestline, Calif.-based irrigation consultant, says a common problem is that a green committee tells a superintendent to buy and install a fertigation system without checking to see if the older system will be able to handle it. Wear-and-tear on older systems often render them impossible to retrofit for fertigation.

"The problem is that some guys know when their systems are worn out and others don't," Davis says. "When you don't do your homework, you get into problems."

Davis says he's also seen a second scenario where the course has had a recent upgrade to the irrigation system within the past three or four years, but the fertigation system wasn't installed immediately. The problem with such a setup is that the wear-and-tear may not be visible, Davis says. "If the superintendent can't see the problems, he may not know that fertigation won't accomplish what it's supposed to do."

To determine if your system can handle fertigation, Davis says the most important item you should check is the sprinkler's nozzles.

"Nozzles are often worn by sand and other debris in the water," he adds. "You need to make sure they're in working order. If they're

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not, you need to replace them."

Davis recommends superintendents test nozzles with a can test. Place a container within the range of the irrigation heads and see how much water it collects during a regular operating cycle.

"When your nozzles are older, there's a good chance they have been damaged by debris," Davis says. "It's increasingly rare to have water so clean that they won't wear down a system over time."

He also recommends getting a full audit of the irrigation system, which includes looking at everything from distribution patterns to electrical bills to see if there are any underground leaks or other problems that prevent the system from working at peak efficiency.

Your system should also have a central-control system that allows a superintendent to make adjustments efficiently. Davis adds that a real-time weather station will help the superintendent get the most from the system.

Finally, a superintendent should check to see if the pump stations pumps water sufficiently to make fertigation worthwhile. "If a pump station puts out too much water or too little water, you're going to end up with an imbalance of nutrients that could hurt your turf," Davis says.

Brian Vinchesi, president of Irrigation Consulting, a Pepperell, Mass.-based irrigation consulting firm, says the fertigation pump must deliver between 120 gallons and 150 gallons per hour to be appropriate for fertigation applications. "You want to have as much flexibility as possible," he adds.

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Change in thinking required

Davis says that once the system is retrofitted, superintendents have to change the way they think about their fertility programs to accommodate the new method of applying small amounts of nitrogen. If they don't, adding a fertigation system may not provide the benefits expected.

"You don't want to put yourself in a situation where you're overfertilizing, which can happen if you're not used to using fertigation," Davis says. "You need to keep accurate records of each type of chemical or fertilizer used, or you could end up applying too much or too little. Remember, you probably won't use fertigation to apply 100 percent of the fertilizer."

Davis also warns superintendents to check local ordinances before they decide on going through the expense of adding fertigation to their systems. "There are some municipalities that don't allow fertigation, so you want to make sure you're not violating any laws," he says.

Granger says more superintendents need to understand fertigation.

"There are some guys out there who don't understand how fertigation works, so they're scared to make the move [to use it]," Granger says. "I don't believe you can run an effective golf course without it anymore. It's become an essential tool in the management of high-quality turf." ■