



FERTILIZING

It's the middle of the night at Rustic Canyon GC in Moorpark, Calif. The members of the Rustic Canyon maintenance crew are at home, asleep in their beds. The air is still. In the distance, a coyote calls. But on the fairways, the swish-swish of the irrigation system can be heard. The course is being fertilized in the moonlight.

BY THE LIGHT OF THE MOON

For the past six years, Rustic Canyon superintendent Jeff Hicks has used fertigation to spoon feed his golf course. He mixes a liquid fertilizer on site and injects it using a specially designed pump system that hooks into the irrigation system. As the irrigation system runs overnight to irrigate the course, each droplet of water delivers nutrients onto it.

"I blend my own fertilizers, turning granulars into soluble. It's very cost effective," Hicks says. "We may put in 500 pounds of ammonium sulfate, 500 pounds of ferrous sulfate, mixed into 500 gallons of water, and that will get injected out on the course over the course of a couple of weeks. That's one blend we'll do. It's going every day, watering fairways, greens, tees, roughs. It goes all of the time."

Types of systems

Michael Chaplinsky is the owner and president of Turf Feeding Systems, a fer-

FERTIGATION IS A VALUABLE IRRIGATION TOOL FOR SUPERINTENDENTS, BUT IT'S NOT FOR EVERY COURSE. BY STACIE ZINN ROBERTS

tigation equipment manufacturer based in Houston, Texas. The company's fertigation systems range from \$5,000 to \$15,000. Over the past 25 years, Chaplinsky says, he's installed more than 2,000 systems at golf courses around the world.

Fertigation is a sustainable practice, he says, one that "is nothing more than a very precise, automatic way to feed the golf course through the irrigation system."

John King spent 12 years as a superintendent in New Mexico. For 10 of those years, he used fertigation at five courses he managed in Sante Fe and Albuquerque, as well as two courses at the University of New Mexico. Now, as turf products sales-

person for Ewing Irrigation, King often works with superintendents to help them determine whether or not fertigation is right for their courses.

Ewing sells fertigation systems from Turf Feeding Systems, Inject-O-Meter and EZ-FLO. King says that the best systems will have a proportional monitor that matches the flow of the fertilizer, or other chemical injection, with the flow of the water to ensure a proper mix. King says that those systems, including the tank, monitor and injection pumps, start at about \$7,500.

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Spoon Fed

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The hard sell

“The benefits of fertigation are you get spoon feeding so you don’t get an excess or flush of growth. You spoon feed all the time, which is much healthier for the plant overall, rather than putting down a large amount of fertilizer that may be more than the plant can use at one time,” King says.

“You get fertilizer applied where you get water applied,” he continues. “So, if you have accurate application of your water, you also have application of your fertilizer. You can also inject multiple

products simultaneously with some fertilizer injection systems.”

In fact, superintendents can inject a mix of wetting agents, biologicals, fertilizer and acids through fertigation.

“You can buffer your salts and bicarbonate in the water through injection,” King says. “Injection is often referred to as fertigation, but sometimes it’s just simply injection. It’s not necessarily a fertilizer. Sometimes you can inject an acid. There are safe acids that can be injected through the irrigation system to help you with water quality issues.”

Jeff Langner is a brand manager for

uniformity. If your system is not efficient, if it doesn’t have good distribution uniformity, then your fertilizer application through injection is going to be off target or uneven. Your injection will only be as good as your system is, that’s for sure.”

At Rustic Canyon, Hicks says one of the challenges he faces by fertilizing through fertigation is that he “can’t control where it doesn’t go.” When he irrigates, whatever is being pumped out through the irrigation system goes everywhere, including to greens, tees and fairways. Hicks says some of his fellow superintendents tell him they’re hesitant



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Profile Products, based in Chicago. He says his company makes a product called Aqua-pHix, a buffered chelated acid that can be injected into the irrigation system through fertigation to help balance pH in the soil and improve water quality.

King adds that reduced labor costs are another benefit of fertigation.

“There are labor savings that you realize with fertigation or injection, because you’re not having to put a person out on a tractor with someone else loading them,” King says. Hicks agrees.

“There’s a huge cost savings on labor,” he says. “We do not get the rapid growth we’d get with a granular. It’s a more steady, slow growth,” he says.

Nothing’s perfect

But fertigation may not be the right choice for every golf course. As effective as it is, it does present challenges.

“Not everybody has a good enough irrigation system to inject,” Hicks says. “When I say a good enough irrigation system, I’m talking about distribution

to fertigate because they can’t isolate their greens from the fertigation process.

“When I’m fertigating, I don’t have a separate system. I would have to put out 300,000 to 400,000 gallons of water to get the fertilizer out of my lines,” Hicks says. But the inability to isolate the application is not enough to deter him from fertigation.

“The way I look at it, most of the fertigation applications are very minimal,” Hicks says. “I just lower the rates on my foliar applications on the greens. We do soil sampling and tissue testing. It’s a constant monitoring.”

King offers another word of caution: “Things can go wrong. It’s often an unmonitored process while it’s taking place. It’s happening at night when you’re irrigating your golf course.

“You could blow a line on your injection system inside the pump station (and end up with a pump room full of fertilizer on the floor),” he continues. “That happened to me more than once.”



The G1000B Fertigation System from Turf Feeding Systems sells for less than \$5,000.

At Rustic Canyon, Hicks still does granular fertilizer applications in the spring and fall for a burst of growth after aeration. He also does a foliar spraying of micronutrients on his greens, a process that he wants to isolate so he does not send that out through fertigation.

Ewing's King says it's a good idea to check the status of the irrigation system prior to injecting anything into the lines. "Don't set it and forget it," he says. "Check your equipment every time. Make sure you have proper head rotation on critical areas like greens. Make sure that your injection lines from your tank feeding into your main line are in good shape. Make sure your injector itself has been set up the way you want it for the proper rate.... There is still some labor involved in preparation, in mixing your tank or hooking up your barrels, but ultimately it's a better labor savings than what you would have if you sent out two

to three people to do a granular fertilization on the golf course."

Hicks says although he's happy with his fertigation system, fellow superintendents need to assess their own facilities before installing a system. "For me, it has worked well because we do not have a large budget," he says. "With our sandy soil conditions and low labor, fertigation has worked really well. In other climates, it would really depend."

Hicks notes that the irrigation source, for example, could weigh heavily on the decision on whether or not to fertigate. "Are they pulling from multiple lakes where they would need multiple injection points?" he asks. "I have one inlet coming in and I'm not pulling from a reservoir, so it's simple. It depends on the situation." ■

Stacie Zinn Roberts is president of What's Your Avocado?, a writing and marketing firm based in Mount Vernon, Wash.

Word to the wise

"Every superintendent should know that fertigation is supplemental to granular applications. It is not something that can stand alone," King says. "You don't end up with any reserves in the soil because you're putting it out in very small increments, spoon feeding."

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