

# FERTIGATION

## Move to the next level

**When a condominium's property languished, the managers turned to fertigation. It might be just the solution you need**

BY ROBERT E. REAVES

**W**e're all creatures of habit, but when faced with a declining landscape and traditional management methods that aren't working, it's time to look at new solutions. In the case of the Tuscany Hills Homeowners' Association in Lake Elsinore, CA, fertigation plus regular diagnostic evaluation solved the problem.

Tuscany Hills features poor soil quality (in many cases pure rock) along with steep slopes, some 3:1, which made it difficult for the landscape management company to apply granular fertilizer. In addition, sodium from the irrigation water accumulated in the soil because there was no way for the water to leach. As the landscape continued to decline, some blamed poor soil conditions while others blamed the landscape architect and the landscape contractor.

### **Analysis first, prescription next**

"I got a call to come out and look at the situation," says Bill Nolde, technical director for Fertigation Choice, a fertigation project management company located in San Diego. "After a full battery of soil, tissue and water analyses, I came to the conclusion that the problem was a plant nutrient deficiency because of poor soil chemistry. Because the site was so difficult, a whole new



landscape management strategy had to be applied. I recommended using fertigation systems to apply needed products."

At Nolde's suggestion, the homeowners association purchased 23 water-driven fertigation units, selected because the irrigation controllers were far away from the backflow preventers. Each unit was positioned close to the backflow preventers.

With the fertigation system in use after several months, the results have been excellent. "We applied a chelated phosphorus product on Indian hawthorn and New Zealand tea tree this year. The blooms have been phenomenal. The groundcover has begun to recover and we are not seeing any disease," Nolde said. Response from the homeowners association continues to be positive. "There's even a desire from homeowners to install fertigation systems at individual residences," he reports.

Because of the fertigation systems, Tuscany Hills is expected to decrease its water use 30% to 50%, depending on the month. "Most homeowners associations want to be good water stewards; however, their primary motivation is to save money on water bills," observes Nolde. He says



As a result of fertigation, Tuscany Hills changed from a bare wasteland (inset) to a thriving green property (above).

fertigation delivers higher plant quality and decreases irrigation time, as well as the labor necessary to apply fertilizer and soil conditioning products.

The program accomplished four things at Tuscany Hills:

- ▶ Soil conditioning (removal of salts),
- ▶ water conditioning/buffering,
- ▶ application of fertilizer nutrients, and
- ▶ water conservation.

#### Homeowner association market

Nolde says homeowners associations are a great place to increase the use of fertigation in landscapes. "Attractive common areas effect property values – which is very important to the members. This common area at Tuscany Hills will ultimately expand from 80 to 240 acres. It's been gratifying to convince people who aren't landscape professionals about the benefits of fertigation."

Unlike the agricultural and golf course markets, fertigation is relatively new to the

landscape industry. "I have given many talks to landscape groups," Nolde says. "Unless landscape architects specify fertigation, landscape contractors probably won't consider it in the near future. Because they are under such tremendous competition for business, fertigation and diagnostic evaluations are usually thrown out of the picture."

Unfortunately, few in the landscape market use water testing. "Over time, landscape management companies will pick up contracts from other companies who have lost the account. This is a critical time to go in and do a water analysis, along with tissue and soil tests."

Fertigation is most effective when combined with diagnostic evaluations. "Guessing is a 50/50 proposition. Fertigation with diagnostic evaluation takes landscape management to a science. You apply what is

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## "Fertigation combined with diagnostic evaluation takes landscape management to a science." – Bill Nolde

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missing through the fertigation system." For example, if magnesium was the only missing ingredient, magnesium sulfate (Epsom salts) could be applied through the system.

Nolde is a convert to fertigation from his 16 years as a golf course superintendent. When he arrived at Canyon Country Club in Palm Springs, CA, he found a fertigation system out of commission. "We rebuilt the pump and got the system going again. Because of the sandy soil at the course, we had very low cation exchange capacity. I bought some soil conditioning products and began adding humus through the irrigation system. We grew the most beautiful bermudagrass I have ever seen. It took me a while to develop confidence in fertigation. Now, I'm sold on it."

### Get off the 'gypsum bandwagon'

He believes it is time to approach landscape management from a new perspective. "Most owners of landscape management companies are very sharp. However, it takes longer to convince field personnel since they have first-hand dealings with all the competition in the marketplace. The landscape market is very aggressive, with a financial critical mass. It's very easy to give up on things like soil tests. Right now, 90% of all landscape management is grooming. Very little attention is given to plant fertility."

As an agronomist, Nolde says poor soil chemistry is the major culprit in landscape decline. "I see so many folks who lose their jobs because of soil chemistry, something over which they have no control. Soil salinity is a problem at many landscapes."

He says gypsum is not the answer to salinity. "Some of the liquid materials we have used through fertigation systems have displaced sodium cation exchange sites within a few weeks. We can document this through soil tests."

Many researchers are reluctant to explore materials that can be a solution to soil salinity, he believes. "They're still on the 'gypsum bandwagon.' Not only does it take up to two years for the exchangeable calcium to be released in gypsum; the amount of exchangeable calcium in gypsum is very low compared to soluble forms of calcium." But before selecting a calcium product, be sure to ask your supplier how much exchangeable calcium is in it. Work with chemical distributors that support this technology with products suitable for fertigation systems.

Soluble forms of calcium are terrific alternatives to gypsum, all of which can be used with fertigation systems. "I recommend calcium chloride, calcium polysulfide, calcium thiosulfate or calcium nitrate – big improvements over gypsum. For example, everybody raves about the color of

overseeded ryegrass where calcium nitrate is used."

Soil conditioning is the most important component of growing good plants, according to Nolde. "And I believe a liquid-based delivery system is the best way to accomplish this. If you can apply materials that condition the soil, plant roots will penetrate easier. You can also buffer sodium and bicarbonates in water through fertigation systems."

### Costs in time and money

Nolde says the maintenance/management time of fertigation systems is minimal. "At Tuscan Hills, we use 30-gallon tanks. Each of these fertigation units operates from zero to 40 gpm. We rotate soil conditioning and plant fertility materials frequently. Depending on the season and needs of plants, we can adjust from 500 gallons of water/1 gallon of product to 40 gallons of water/1 gallon of product." However, he says product rates and choices are not a guessing game. "Everything we apply through the fertigation system is based on the results of diagnostics."

As far as money is concerned, the installed cost of a water-driven system is around \$1,500 per unit, while an electric system will run around \$2,500 per unit. He expects costs to come down as fertigation becomes more common.

"Landscape managers have tried everything else. If they will look at fertigation systems strictly as a device to get the job done, their usage will grow."

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## Rx for a declining landscape

**Situation** Tuscan Hills Homeowner Association, Lake Elsinore, CA, faced a declining landscape under tough growing conditions. Granular fertilizers were not working on the steep slopes, and high salinity added to the problem.

**Property Size** 80 acres, with plans to expand to 240 acres.

**Solution** Technical consultant Bill Nolde decided on fertigation to solve salinity and fertility troubles. To displace sodium, he used fertigation to release faster-available forms of calcium into the soil profile. The results have been dramatic.