



## DAN AND TOM ROGERS' ALMOND ORCHARD

Stewardship Profiles in California Agriculture  
Environmental Leadership with Water Efficiency and Nutrient Management

Brothers Tom and Dan Rogers' grandparents emigrated from Italy to California in 1916 and settled on the property in Madera County that has remained in the family since. At the time, the land was home to pasture, cotton, corn and alfalfa. In the late Seventies, their father, who had been pasturing dry heifers, was compelled by a severe drought to look for something else to do. In the early Eighties, he started planting almonds. By 2005, the entire property of 175 acres was covered in almonds. Today, about 45 acres are out of production. The Rogers' operation yields roughly 2,500 pounds of almonds per acre.

### PROBLEM

Dan and Tom Rogers rely on groundwater to irrigate their farm. As water has become scarcer in California, they must increase their water use efficiency to ensure their water supply into the future. The brothers are also actively working to reduce their fertilizer usage.

### SOLUTION IMPLEMENTED

A decade or so ago, the Rogers installed a sensor into each of the farm's three irrigation blocks to measure soil moisture, temperature and humidity. The information is uploaded to the web so that the brothers can see snapshots of soil conditions throughout the day. "We have sensors set at different depths, so we can watch the water move through the [soil] profile," he said. Going forward, he hopes to install additional sensors to provide even more details on soil conditions.

The Rogers brothers replaced the irrigation system on their farm with double-line drip irrigation on all but 22 acres. Along with the change in equipment from less efficient micro sprinklers to more efficient double-line drip, the farmers have changed their approach to irrigating. "What we were taught growing up is you build a soil profile, water it and walk way, and irrigate it again when the soil dries out again," said Tom Rogers.

"We are putting out less water than ever before by watering a couple of hours every day.

### ACHIEVEMENTS

- Reduced water usage by up to 20%
- Increased crop yield per drop of water
- 2014 Farm Water Steward Award recipient



**"Be prepared for problems. Look for ways to work through them and keep at it. It will be well worth it."**

**-Tom Rogers**

What has enabled us to do this is that we have automated the irrigation sets, so now I run start times on the computer and the computer takes over the rest.”

In addition to making water usage more efficient, Tom Rogers believes his updated water tactics help oxygenate the almond trees. “Studies have shown that the trees need oxygen as much as water. When you are watering traditionally, you are limiting the amount of oxygen the tree roots have,” he said. “We are not filling the profile while keeping a sufficient amount of water to meet what the trees need.”

The Rogers have changed their approach to fertilizer, too. They leverage the information recorded by the sensors on soil temperature to guide their fertilizer usage. “Rather than putting on a lot of fertilizer at once, we put a little on over a longer period of time,” said Tom Rogers. “We don’t start fertilizing the soil until the soil warms up. We fertilize from March 1 to some time at the end of May or June depending upon how the crop grows.”

## CHALLENGES/OBSTACLES OVERCOME

One of the main challenges Rogers has faced is finding irrigation automation platforms that are precise enough to suit his needs. This year, he implemented a platform from WiseConn, a Chilean company that’s new to the U.S., and has liked the results so far. WiseConn “has given us control over the water to run it when we want to and in the amount that we want,” said Rogers. “We run on a 24-hour schedule, and nobody is going to get up at 2 a.m., 3 a.m. or 4 a.m. to change it. This has given us the flexibility to move water around at those times. The timing of the water is as critical as the amount of it.”

## MEASURING SUCCESS

The Pacific Institute, California Alliance with Family Farmers and Ag Innovations Network honored the Rogers’ water efficiency achievements with their Water Stewardship Award last year. Outlining the reasons they handed the award to the Rogers, they noted the operation has reduced water usage by up to 20 percent while producing more crop per drop. This year, Rogers, who mentioned fertilizer dependence has been cut as well, said, “I have used less water this year, and trees look as good as they ever have. We are not sacrificing anything.”

***For more information about the stewardship practices discussed in this profile, please contact the farmers directly. You can reach Tom Rogers by phone at (559) 930-0340 or by email to: [nutfarmer@comcast.net](mailto:nutfarmer@comcast.net)***

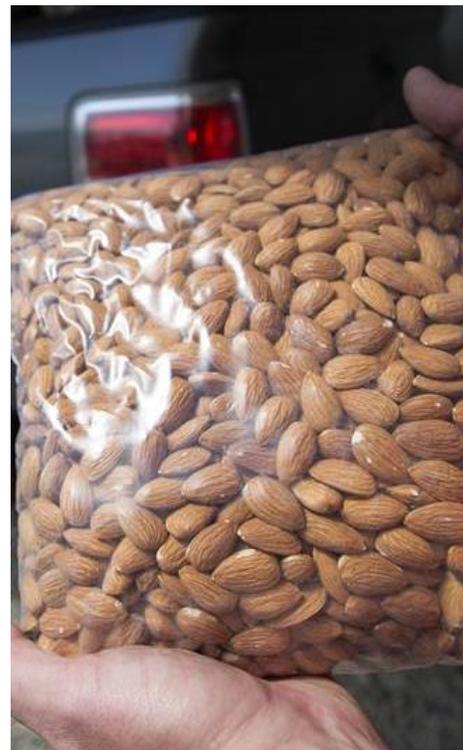
## STEWARDSHIP PRACTICES



Water Efficiency



Nutrient Management



## PROJECT PARTNERS

- California Agriculture Solutions
- Madera Pumps

This project is supported by a Specialty Crop Block Grant from the California Department of Food and Agriculture and the Agricultural Marketing Service of USDA.

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California State Office**

2001 N Street, Suite 110, Sacramento, CA 95811 • (916) 448-1064 • [www.farmland.org](http://www.farmland.org)