

# ADRAGNA RANCH

Gilroy, CA



SOIL MOISTURE MONITORING  
COVER CROPS  
LOW-FLOW SPRINKLERS

**Vito Adragna**

Thirteen years ago, Vito Adragna and his wife Lucy purchased land in Gilroy, CA, to build a house and raise their sons. They soon acquired another lot and planted a twenty-four acre walnut grove. Over the years, Adragna Ranch transformed from the early days of Lucy hand-watering the walnut trees to Vito moving gated pipes in the morning before he left for his “day job” with his family’s vending company.

The first year of return on their organic walnut crop arrived just in time for Vito’s “retirement” from the family business. Finally, Vito had time to make some changes on the ranch. “My friend was telling me to contact NRCS and finally I got tired of moving those pipes so I called them up. I used to move a mile of pipe a day.” Not only was he tired of moving pipes, he was also tired of the continuous battle against pipe leaks. In fact, Vito notes that the water from the leaks in his gated pipes provided enough water for his neighbor to grow willows next to the pump. Soon they had a team of technical advisors helping them make some needed changes on the ranch. “They all worked together. It was a big party out here. It was good.”

## WATER-SAVING PRACTICES

- Adragna Ranch shifted from using a gated pipe sprinkler system to low-flow buried pipe sprinklers that distribute water uniformly throughout the walnut grove. The sprinkler system design includes an adjustable flow rate for different soil types and provides the flexibility to irrigate in multiple configurations, which allows Vito to mow and irrigate different blocks simultaneously.
- Last year, Adragna Ranch planted a permanent cover crop of drought-tolerant grasses, which helps increase water infiltration and avoid run-off.
- Vito tracks soil moisture levels with an electrical resistance-type moisture monitoring system that helps him determine how much moisture is available at the root zone, “where the tree drinks.” He tailors irrigations accordingly. The system includes four field stations, each with three sensors placed at different depths in the root-zone. He uses a handheld meter that gives him a digital reading of moisture levels at each depth.



Vito checking soil moisture levels



Adragna Ranch walnut grove

## BENEFITS

- Permanent cover crops help retain water, reduce surface evaporation, and reduce or eliminate run-off and erosion.
  - Cover crops help improve air quality by reducing dust pollution during harvest and field operations.
  - Cover crops improve water infiltration because the root systems reduce compaction.
  - Switching to buried-pipe sprinklers reduces water losses associated with leaks in the gated pipe sprinklers and helps apply water more efficiently.
  - With permanent cover crops, fuel use is reduced and time is saved on tractor work for weed control and tillage.
- Using less water means less pumping costs.
  - Cover crops provide habitat for beneficial insects that help control pests.
  - Irrigation scheduling based on soil moisture levels helps prevent over-watering.

## COSTS

- The low-flow sprinkler system cost \$120,000 to install on their twenty-four acre walnut grove. Ninety percent of it was covered through the Natural Resources Conservation Service (NRCS) water conservation cost sharing and incentives programs.
- The Santa Clara County Water District donated four soil moisture monitoring sensors; the handheld soil moisture meter cost \$300.
- Cost-sharing assistance through the NRCS helped pay for drought-tolerant grass seeds and drill planting.

## LESSONS LEARNED

- **Technical advice.** Seek out the technical advisors and resources in your area. “There is a lot of technology out there and they took all the brainwork out of figuring it out,” Vito explains.
- **Tailor sprinkler system design.** Design a sprinkler system that allows you the flexibility to run sprinkler sets to accommodate different soil types and different rows “instead of being committed to a locked set.”



Adragna Ranch