



PureSense®

Real-time Irrigation Management

Citrus and Avocado Case Study

Grether Farming

Results

- Lower operating costs.
- Improved fruit size.
- Optimized irrigation.
- Reduced time managing irrigations.
- Improved predictability and ability to replicate positive results.
- Reduced disease pressure.

The Challenges

- Grether Farming needed a reliable system to alert foremen of cold temperatures so they could take appropriate measures to prevent frost damage to fruit trees.
- Grether Farming needed a system to help optimize irrigation for lemons and avocados. Lemons can often be under-irrigated, particularly during the dry winter months, while avocados tend to be over-irrigated due to their shallow roots. Improper irrigation of lemons results in smaller size fruit which may be costly as growers can receive about \$2 extra per box for better sizes. In avocados, poor fruit size can be the difference between a sale price of \$0.40/lb. and \$1/lb.
- Over-irrigating avocados and lemons can result in root rot and other diseases as well as higher cultural costs.
- Increasing pressure from environmental interests and regulatory agencies are pushing growers toward 80% irrigation efficiency.
- Regulatory agencies in California are cracking down on farms which don't protect their workers from heat stress. Grether Farming wanted a system to warn crew foremen and to record and document the temperatures at their ranches to show agencies in case they are audited.
- The time consuming task of having to travel to many orchards to manually collect data, compile it and then try to make sense of it was expensive and frustrating to Grether Farming.



The Solution

PureSense Irrigation Manager addressed Grether Farmings' needs by using field monitoring stations combined with analytical, web-hosted software applications to provide an integrated solution. PureSense helps growers to leverage plant health and irrigation intelligence into broader insights and understanding which help optimize crop yield and reduce crop risks.

Grether Farming became convinced that the PureSense system was right for their operation following the first day of installation as the ranch foreman began receiving frost alerts warning of a cold night. The ranch foreman was able to awaken the wind machine operators and irrigators and take action.

In another incident, one of the irrigators forgot to water a block that was covered by the PureSense system. The irrigator was notified to correct the oversight. The PureSense system provided a significant level of accountability for each of the irrigators.

The Results

Installing the PureSense Irrigation Management System enabled Grether Farming to:

- Receive accurate weather and frost alerts.
- Check the web based system from the office, the house, or from the foreman's cell phone.
- Gain significant time savings compared to the traditional in-field data collection methods.
- Take advantage of the easy-to-use user interface and ready to use graphic analysis.
- See current soil moisture in each block and moisture levels at different root zones.
- Assure irrigations occur as planned and provide accountability for each of the irrigators.
- Understand overall plant health and plant water requirements because PureSense adjusts to the phenology of the plant rather than just weather.
- Provide ready documentation for various regulatory agencies.
- Help prevent under-irrigating, particularly during the dry winter months.
- Help prevent higher costs of over-watering.
- Provide reliable information to water management agencies as proof of the farm's irrigation efficiency.