



CASE STUDY

## Using Technology to Improve Water Efficiency

For Select Harvests, making the best use of the water available to our orchards is vital for productivity and cost-efficiency. Technology to help us achieve this has been evolving rapidly. All of our orchards are using latest technology to assist in determining when to irrigate and how much to apply, without causing drainage past the rootzone.

### Amaroo Farm

At one farm alone, Amaroo in South Australia, the use of latest irrigation technology has saved over 600 megalitres of water a year, amounting to cost savings of more than \$250,000. This outcome has been achieved through the use of a combination of technologies including soil capacitance, direct plant sensing, aerial imagery, and direct soil auger sampling.

### Soil capacitance technology

Soil capacitance technology provides detailed information about soil moisture content and irrigation infiltration rates within the rootzone of the crop. This in combination with precise irrigation application through the use of drip irrigation systems enables the right amount of water to be applied at the right times. Sensors are spaced at 20cm intervals within the soil profile of the crop zone and are designed to measure moisture content at each interval.

### Plant sensing technology

Sensors have been installed on a large number of selected trees within each irrigation block throughout the Amaroo Orchard. These sensors continuously monitor micro-variations in trunk diameter which can determine levels of water stress. This provides a very good indication of when to next irrigate. Positive results from the use of this technology have already been observed across all of the orchards.

Data collected through both soil capacitance and plant sensing is transmitted to central data servers where the information can be analysed and used to effectively develop an accurate irrigation scheduling program.

The two systems described above have enhanced our existing approach to soil and irrigation management to deliver greater benefits to our orchards, the environment and our business.



BELOW: Amaroo farm data transmitter locations

ABOVE: Probe equipment

