



Input efficiencies and quality of life with automated furrow irrigation for sugarcane

A grower case study

PROPERTY NAME

- Russell Jordan
- Burdekin, North Queensland
- Irrigation area: 340 ha complete.
- Water source: Sunwater channels
- Soil type: mix of heavy clays, loams and sandy soils
- Rainfall: 985mm, summer dominant

What SIP2 research was adopted?

Smart automation research was applied in stages across 340 ha of irrigated sugarcane from 2009 onwards.

What were the primary factors contributing to the decision to adopt?

Water savings: Russell commenced his investigations many years ago, seeking objectivity with his water management and greater agronomic accuracy, applying it to the plant when required. With automation, water savings meant savings on energy costs. “I wanted greater accuracy with getting the water on and off, as deep drainage losses are a hidden cost and without objective measurement and telemetry, controlling those losses can be very difficult”

Labour savings: In peak season, irrigation can be very demanding, with manual operation of pumps, valves and water monitoring needing monitoring during day and night. The ease of management offered by automation and telemetry has not only eliminated the need to be driving around checking things but enables better crop management and greater yield potential. “I used to be getting up during the night, sometimes every two hours to change sets and monitor levels. Its inevitable that over a long season, the amount of water put on will be compromised”

Energy prices: With grid-connected irrigation pumps on the Ergon network, the price per kWh has risen over 400% in nominal terms over the last 20 years making the cost of moving water a key line item in the sugarcane crop Gross Margin. Automation only pumps water when the crop needs it, thereby avoiding the need to pay unnecessary energy costs for water that is either lost or returned to the system. “automation also gives me the option to fit my pumping schedule in around Ergon tariffs in some situations, which can lower the pumping costs when I do need to pump water” .

What worked well? (installation/ and benefits)

The Jordan family were early movers in the automation space, with the first install occurring in 2009. Installing the technology, everything panned out as hoped. Over this period, Russell has found the sensors, hardware and software very reliable “For those irrigators worried about something going wrong with the technology, I can say that the equipment has been very good, as has the support from AgriTech solutions, when I did get one occasion when water ingress in some of the hardware”.

“We’ve also found that there are greater efficiencies rolling out the automation over a larger area, as the per hectare costs are lower and the water and labour savings are greater”



Image courtesy Sugar Research Australia

What didn't work so well in the installation or ongoing management? (What were the challenges?)

There were very few challenges, other than working out where to do the install first, although Steve from AgriTech helped guide us through that process.

What would you have done differently as part of the investment/adoption?

Nothing stands out as needing to be done differently. The technology works anywhere with solar. Base station needs 240v power supply and the sensors are all radio controlled and can be accessed through team viewer on an i-phone or desktop computer.

Do you have plans to further upgrade the system going forward?

Sensors have been getting cheaper and more efficient over time, so other than replacing dated hardware, see no need to further upgrade the system.

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