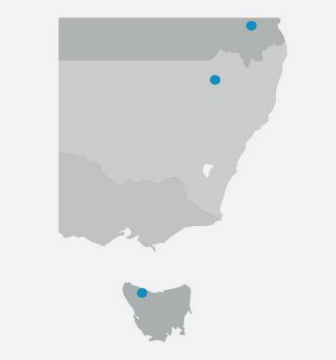
Smarter Irrigation for Profit PHASE II

Precise real-time automated cotton and dairy irrigation for improved water productivity

1. What is the project about?

This project is building on previous research to further develop fully autonomous broad-acre irrigation systems for cotton (furrow & pivot) and dairy pasture (pivot). Research is being conducted on large commercial-scale fields under real farming conditions. The project will maximise yield improvements or water saving objectives using existing advanced bio-physical crop modelling. This will be done in conjunction with the latest irrigation optimisation models, under the VARIwise control system.

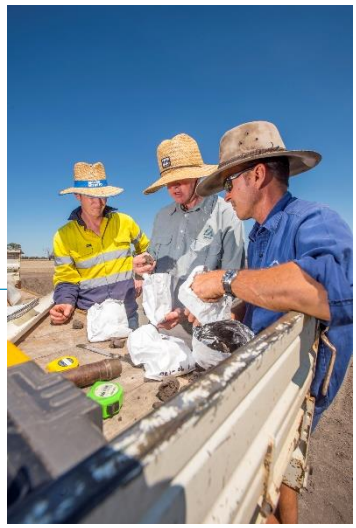


In addition, the project will further develop two minimal viable products (MVPs); VARIwise cotton yield and dairy pasture biomass prediction capability based on fixed tower and UAV camera vision analysis of key plant attributes; and synchronous furrow irrigation optimisation measurement and modelling techniques. The latter product is being upgraded to operate synchronously and autonomously from Taggle IrriMATE advance sensors using SISCOweb.

Project sites are located near Burnie, Jondaryan and WeeWaa.

2. Why do irrigators need to know about it?

Whilst commercialisation of some of the autonomous irrigation technology developed through this research is on-going, the MVP products are now available for improved manual or remote control of broad-acre irrigation. These MVP products represent interim steps toward fully autonomous optimised irrigation control.



3. How will the research benefit irrigators?

Continuous improvements in the cost and availability of connected sensor technologies for remote monitoring of irrigation will provide increasing opportunity for relief from tedious manual management of broad-acre irrigation. With improved measurement to inform management, better use of valuable water resources for agricultural production is possible. Furrow irrigation optimisation leads to an average 10 to 15% water saving per irrigation event.

4. Key results to date

Commercial scale deployment of remote-controlled furrow irrigation is now common for less than $800/ha. VARIwise controlled cotton irrigation has led to a 6% yield improvement and 14% more efficient water use. The MVP VARIwise Yield Predictor has regularly predicted final cotton yield to within 3% of actual yield six weeks prior to picking.

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