Advancing the adoption of precision irrigation technology

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- A precision irrigation optimisation algorithm and control system, VARIwise, is being transitioned from proven proof-of-concept to a commercial-ready package
- In research trials, VARIwise delivered 5% in water savings and 5% productivity improvements
- Adds yield prediction to soil water balance for irrigation recommendations
- Precision irrigation technologies can have adoption barriers including compatibility between sensor systems, and access to ongoing technology support

Research objectives

- Translate VARIwise to commercial-ready package
- Pilot new approach to increase adoption

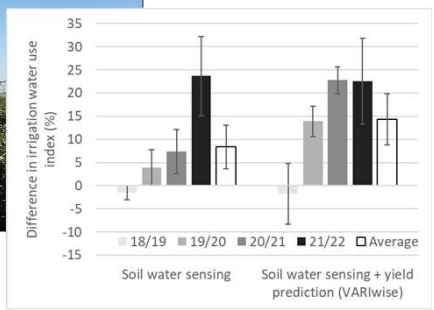
Project Approach

- Develop VARIwise into a format that can interface with any on-farm sensor and irrigation system and provide non-exclusive commercial access
- Work with commercial technology providers and consultants to pilot technology
- Conduct on-farm demonstration activities led by consultants – link infield sensors, algorithm and irrigation decision, and potentially automation hardware

Previous research

Plot trials in four seasons

Results



- Similar irrigation depths were applied by all strategies until flowering
- Irrigation volumes slightly reduced after peak bloom and/or at boll opening
- Water stress during peak bloom to open bolls can cause young boll shedding but has less impact on yield than loss of early season bolls
- Less water applied during peak boll opening may hasten boll maturity, improve defoliation and regrowth that may lead to increased yield and improved fibre quality

Irrigation algorithm to be demonstrated at automatable site

Conclusions

Irrigation algorithms that target maximised yield can improve water productivity for crops over existing irrigation strategies

Expected outcome is faster adoption of new irrigation innovation

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CRICOS: QLD 00244B, NSW 02225M TEQSA: PRV12081
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Acknowledgements: Funding from Australian Government Climate-Smart Agriculture Program's Partnerships and Innovation Grant led by CRDC in partnership with irrigation technology provider SWAN Systems, precision agriculture advisory business Ag Logic and University of Tasmania