



Precision automated furrow irrigation for the Australian sugar industry

1. What is the project about?

Irrigation is the key driver of sugar cane production in many Queensland milling areas. Much of this land is irrigated using furrow irrigation which is a form of irrigation with high labour requirements, lower energy inputs, and often poor water use efficiency. Previous research has shown that automation of furrow irrigation improves water use efficiency and reduces labour and energy requirements.

This project aims to extend research conducted in a recent SRA project which developed automated furrow irrigation systems within the Burdekin to site(s) in the southern Queensland growing area. Automated furrow irrigation is a potential option for growers in other sugarcane growing areas. However, there is a lack of knowledge on costs, benefits and applicability of this technology to other regions.

2. Why do irrigators need to know about it?

This project provides an opportunity for southern area growers to be involved in demonstration activities to test the feasibility of furrow irrigation automation in their milling areas.

Demonstration activities will include analysis of an existing automation system or implementation of a trial system by a large corporate grower. Data will be collected and processed to analyse the behaviour of the system, the grower management and the in-field volumetric performance of the irrigation events across the season.

The output will be an economic analysis of the feasibility of automated irrigation systems in the southern region.



3. How will the research benefit irrigators?

This project will build grower understanding of the feasibility of furrow irrigation systems previously trialled successfully in the Burdekin, for southern sugar growing regions. It will address the issues involved in adapting existing automation technology to different water supplies and on farm water delivery infrastructure; different soils and cropping practices and different field layouts. It will also assess whether furrow automation systems can collect the necessary data to provide accurate estimates of water applied, runoff and deep drainage losses and enable better irrigation scheduling decisions. The information gathered during the trials will enable the development of design guidelines and indicative system costs and benefits.

4. Key results to date

There has been additional investment in furrow automation systems in the Burdekin over the past 2 years since the completion of the original research project. Growers are now using these systems to improve irrigation scheduling through more timely application of irrigation events.

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