What is my yield gap? Maximising Water Productivity on Irrigated Dairy Farms

1. What is the project about?

This project will demonstrate and trial irrigation technologies and management strategies on commercial dairy farms across Australia, including new technologies for the dairy industry.

Working with farmers, researchers and agronomists the project has established 10 farmer led ‘Dairy Optimisation Sites on farms in South Australia, Western Australia, Victoria and New South Wales. Each site’s reference group has tailored the technologies and strategies trialled to local interests, with a primary focus on optimising yield, thus reducing the gap between current and potential production from irrigation. All sites are using soil moisture monitoring and water balance tools to concentrate on getting irrigation scheduling right to keep moisture levels within the Readily Available Water zone of the soil, determined by the local soil type and pasture/crop type.

Project sites are located near Dardanup, Mount Compass, Mount Gambier, Allansford, Tongala, East Sale, Yarram, Bega, Tocal and Coraki.

2. Why do irrigators need to know about it?

Dairy Optimisation Sites provide an opportunity for irrigators to check their operating practices and understand the impact of unreliable or inefficient irrigation systems on their yield, experience new irrigation technologies in action and discuss transferable adoption options for their own farming systems, supported by their peers and local advisors.

Variable rate irrigation (VRI) will be investigated on some sites. Previous on farm research found it can achieve productivity gains of 30%. Other research demonstrated autonomous irrigation is feasible for wider dairy application.

Working with other industries that rely upon irrigation is a major benefit of the project’s collaborative model. This partnership will provide opportunities to visit other agricultural industry irrigation farms and they will be open to all interested farmers and service providers.

3. How will the research benefit irrigators?

Dairy Optimisation Sites established under Smarter Irrigation for Profit Phase 1 found most operators were not getting the basics right. Conducting annual irrigation system checks, including pumps, helped to avoid unnecessary power and water use, increasing irrigation profitability. Focusing on starting irrigation at the right time at season commencement, or after rainfall events, helped to maintain soil moisture within the RAW, resulting in 40% increased yield on some sites.

On-farm system evaluations of energy efficiency and irrigation uniformity (checking irrigation systems are performing as they were designed to) found big variations— even with recently installed systems.
4. Key results to date

For further information or project progress updates, contact:
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