SMARTER IRRIGATION FOR PROFIT

Easier and more productive soil moisture management at Yarram

CASE STUDY

There are a few things you won't catch Shelley Field doing anymore.

The Yarram dairy farmer won't be riding around her farm with a shovel, in the lead-up to irrigation season.

Nor will she be digging holes in paddocks and then examining the dirt in these holes for signs of dryness.

It's not that she won't be checking the Readily Available Water (RAW) in the soil of her family's 450 Holstein dairy farm, in preparation for irrigation. It's just that she will be doing it from the comfort of the house — quite possibly with a cup of tea.

Shelley learnt about soil moisture monitoring and how it optimised irrigation water productivity as part of the Smarter Irrigation for Profit phase 2 program (SIP2), funded by the Department of Agriculture, Fisheries and Forestry, and Dairy Australia.

The soil moisture probes helped Shelley make decisions about irrigation timing.

"Honestly, I could have started irrigating earlier than what the probes were telling us to. So, I've learnt I don't have to irrigate as soon, or as early, as I thought. We needed less water to keep the grass happy – keep the moisture up to it.

"This gives me more time to go and do something else, like ride around and make sure there's grass in front of the cows. But at least now, I won't have to carry a shovel to dig a hole in the paddock.

"It's about working smarter, not harder."

Shelley's Yarram family farm, which she operates with her partner Barry McSweeney and parents Brian and Lee, was an "optimisation site" for the irrigation project.

The farm's entire milking platform, 175 hectares, is irrigated using centre pivots, fixed sprays and bike-shift.

The project site included two paddocks, a total of 7.45 ha, irrigated by a 23ha 5-span Zimmatic centre pivot.

As part of this research, Shelley and her reference group of local farmers and service providers proved the benefit of installing soil moisture monitors in paddocks and combining the data derived from these with the AgVic *Weekly Irrigation Requirement Reports* to make more informed irrigation decisions.

Using these management tools, the perennial ryegrass paddock in the trial maintained dry matter production between seasons two and three of the project but with reduced energy and water costs.

Australian Government
Department of Agriculture, Fisheries and Forestry

Dairy Australia

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The energy and water cost reduction of $2.54/tDM, between season two and three equated to a reduction in total cost per hectare of about 15 per cent or $19.06/ha to $104.92/ha.

GippsDairy's Robyn McLean, one of the Dairy Optimisation Site Coordinators for the Yarram trial, said Shelley's new skills in irrigation scheduling and soil moisture monitoring really paid dividends in the third season of the project.

"There was an obvious opportunity to commence irrigation in late October; Shelley held-off because of forecasted rainfall which eventuated and resulted in saturated conditions in both paddocks," she said.

"Shelley was able to start up irrigation on time in early December when rapid soil moisture depletion was evident. The strategic importance of Shelley's decisions, guided by the soil moisture monitoring, became evident at a field day in March 2022 when other regional irrigators conveyed that they had started irrigations three-to-four weeks too late as they had been 'fooled' by the extensive spring rainfall."

As part of the project, Shelley's irrigation pumps were also evaluated, including a breakdown of energy costs.

Her energy cost per tonne of dry matter improved in the perennial ryegrass paddock for the third season of the project. It was $13.56 compared to $16 per tonne DM in season two.

While Shelley was grateful to learn about irrigation optimisation and how it saves costs and increases productivity, she said one of her best experiences came from the reference group.

"I met some really good people, other farmers from across the district and all the people who organised it," she said.

"These connections will benefit my business going forward and I will attend discussion groups when I have got the time."

MORE INFORMATION

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