SMARTER IRRIGATION FOR PROFIT

Turning off the tap to boost irrigation efficiencies

CASE STUDY

Drying off pasture over Summer ensures one Gippsland dairy farm can make the most of a limited irrigation allocation while maximising production of homegrown feed for the rest of the season.

Farming under the "dome" at Cobains in the Macalister Irrigation District of Gippsland, Garry Cook and Colleen Laws know better than most about the importance of using every single drop of water.

Cobains and its surrounding area of East Gippsland is known for its inconsistent annual rainfall, so water use efficiency is a crucial part of their farm management.

"We have good water right here, but the water right for the farm isn't quite enough to water right through summer," Garry explained.

"If it is dry, we run short of water. That's why drying the farm off was a no-brainer for us."

The 520-cow Spring calving dairy farm managed by Garry and Colleen was an "optimisation site" for the Smarter Irrigation for Profit phase 2 program (SIP2), funded by the Department of Agriculture, Fisheries and Forestry, and Dairy Australia.

The three-year program concentrated on developing practices and technology to maximise water use efficiency and irrigation productivity.

The program trial was conducted on 2.5ha of perennial ryegrass and clover, divided into three equal irrigation bays.

The first bay was dried off in mid-December, the second in mid-January and the third was irrigated throughout the Summer.

Garry said they'd decided to dry-off their farm – cease watering – the year before the program started, but their involvement in the program, and subsequent findings supported this approach.

"I actually think other people are going to start doing it. Sure, you can grow grass over Summer if you have the water, but water is going to become scarce and expensive – it is going to have to happen."

Garry and Colleen generally decide to dry-off the farm once they experience a few days in a row when the temperature is in "the high 20s" (degrees Celsius) and there's no rain forecast.

Irrigation begins again when rain is forecast, in either February or March.

Australian Government
Department of Agriculture, Fisheries and Forestry

Dairy Australia

This project was supported by funding from the Australian Government Department of Agriculture, Fisheries and Forestry as part of its Rural R&D for Profit program.

This practice enables them to create their own "Autumn break" with irrigation water and establish pasture breaks for the herd to graze over Winter.

When the farm is completely dried-off, cows are fed a diet of fodder in a sacrifice paddock, and this is combined with grazing about 20ha of crops.

This plan can change however, like it did as a result of rainfall this past Summer.

"If we get rain over Summer and we have a bit of grass, they will get grass and a bit of crop," Garry said.

"We still have to (supplementary) feed no matter what, but we've found that if we dry-off the paddocks we can protect our residuals and it protects the rest of the farm, gives it a break. It's good for the root structure of the plants."

In addition to investigating the water use efficiency benefits of ceasing irrigation across Summer, the program also looked at how soil moisture probes could assist with irrigation scheduling.

"With these probes we found we were probably irrigating the (trial) area two days earlier than what we should have been," Garry said.

"There were a couple of times where we could have stretched-out the irrigation round a little to make better use of the water."

Garry and Colleen also found the temperature measurement component of the probes useful to ensure they weren't applying water when the ground was too cold for the plants to utilise the moisture.

While these changes were only "one or two percenters", Garry said chasing these gains were important to him and Colleen and the farm's owners.

At the conclusion of the program, Garry and Colleen will distribute the soil moisture probes across the farm to measure and monitor the Readily Available Water (RAW) and temperature across the farm's three different soil types.

Garry is especially interested to understand the timing of irrigation on the farm's red soil – a part of the milking platform that grows well over Summer with irrigation.

"This year I believe we started irrigating too early on the red soil and it became waterlogged," he said.

"We thought it was dry because we didn't have the rain. But we also didn't have the (high) temperatures (for evapotranspiration). So being able to monitor the rain and temperature will mean we should be able to grow a bit of grass."

MORE INFORMATION

Cath Lescun, Dairy Australia
National Soils and Irrigation Lead
E: Cath.Lescun@dairyaustralia.com.au

dairyaustralia.com.au/smarterirrigationforprofit

smarterirrigation.com.au

Dairy Australia Limited ABN 60 105 227 987
E enquiries@dairyaustralia.com.au
T +61 3 9694 3777
F +61 3 9694 3701
dairyaustralia.com.au

3513.13 | Dec 2022