

CASE STUDY: RAKAIA INCORPORATION

Good irrigation practice in action

Careful water use has enabled a partnership between share-milkers and Māori shareholders to create an award winning dairy farm near Rakaia.

Tahu a Tao farm is a 216 hectare farm near Dorie in Mid Canterbury which milks 820 cows. The property is managed by 50:50 sharemilkers Julie and Mark Cressey and owned by the 300 shareholders of Rakaia Incorporation. In 2016 the farm won the Ahuwhenua Trophy for Māori excellence in farming.

The land has been in Māori ownership since 1886 when it was set aside as Māori reserve land. Most of the other reserve land has been sold, but the Rakaia Incorporation has retained ownership of its land and developed the property to be both productive and environmentally responsible.

After many years of leasing the land to neighbouring farmers, in 1996 the Rakaia Incorporation resumed the management of the land. The property had minimal capital development and was unirrigated. The property was very dry and only receives around 650mm of rainfall.

In 1996 the land was converted to dairying, and three rotorainer irrigators were installed to distribute water from two wells. At the time centre pivots were relatively new and very expensive and the long, narrow property lent itself to rotorainers.

Recognising the limitations of rotorainers, sharemilker Mark Cressey and farm supervisor John Donkers have worked together with Rakaia Incorporation to improve irrigation performance.

Soil moisture monitoring was installed around seven years ago to help make decisions about when to irrigate. "It's very useful in Spring and Autumn as it tells us when to consider starting and finishing irrigating and whether we can change our irrigation schedule because of rainfall," says Mark Cressey.

Water is metered and this is used to help monitor and budget water use across the season.

In 2014, a fourth rotorainer was added. This allows smaller amounts of water to be applied more often. While no more water is used overall they have seen better grass growth as a result of the change.

Mark says since installing the extra rotorainer they have become more efficient in their water use and now use less than their annual water volume allocation as a result.

"The major reason why it's important to be efficient with water use now is that by avoiding over-watering we can significantly reduce nutrient losses," says John Donkers.



Mark Cressey, Former Rakaia Incorporation Chair James Russell and John Donkers with their award in 2016.

Other strategies the management team use to manage water use and reduce nutrient discharge include growing fodder beet and using crop rotations.

"Fodder beet's requirement for water is less than for pasture. We don't water it anywhere near as much," says Mark.

Over the past few seasons, they have started planting fodder oats and Italian ryegrass in fodder beet paddocks after they have been grazed. Being winter active the oats and ryegrass grow well over winter and "soak" up some of the nitrogen in the soil following the fodder beet crop. The oats and ryegrass serve as feed in the Spring and the ryegrass provides pasture for the following season.

While most Canterbury farms have only recently developed a Farm Environment Plan, Tahu a Tao farm has had a plan in place for some years and has also been using OVERSEER to manage fertiliser inputs and nutrient levels.

The farm prepared a nutrient baseline (for 2009–13) in 2016 and this year was granted a land use consent as required by Environment Canterbury under the Land and Water Regional Plan. Like other Canterbury dairy farms the property is working to reduce its nitrogen discharge levels, as required by Environment Canterbury rules.

SMART
IRRIGATION