

# Fertigation Case Study **McInne Bros Harrisville**

## THE FARM

### **Inverclyde Holdings Pty Ltd Harrisville, Fassifern region, SEQ**

The property is located on Radford Road, to the southeast of Harrisville in the Fassifern region of SEQ.

The 500 hectare farm comprises of mostly irrigated crops and pastures. The dairy herd, which supports 500 milkers, are split into two herds, the "fresh herd" and "stale herd". The fresh herd are fed a PMR on the feedpad comprising of silage, grain mixes, cotton seed, brewers grain and hay, in addition to grazing ryegrass during the cooler months. During the summer months, pasture and legumes are grazed subject to weather conditions. The stale herd graze pastures throughout the year and are supplemented with a mixed ration once or twice per day, depending on the season and herd numbers.

Pasture production is mainly ryegrass in the winter months. A range of pastures and crops are grown as conserved feed to supply the PMR ration, including corn, barley and lucerne, in addition to some ryegrass silage. Grazed legume crops, such as cowpeas, are grown during summer.

Most of the grazing and cropping areas have the ability to be irrigated, with a crop rotation of three crops in two years being employed to ease the pressure on soil moisture and therefore irrigation requirements. Irrigation comprises of two centre pivots on the home block, with areas of 18 ha and 12 ha, with the remaining blocks irrigated by soft hose travellers. Water is sourced from Warrill Creek.

## BUSINESS SNAPSHOT

### General

Farm area	500ha
Average rainfall	800mm

### Land Use

Effective dairying area	500ha
Pasture/cropping types	Corn, barley, lucerne, ryegrass and more

### Herd Description

Average Milking herd	500 cows/year
Average annual milk production	3,800,000 litres

### Feeding system

Type	Pasture + partial mixed ration ± grain/concentrate feeding in bail (Pasture grazed for most or all of year + partial mixed ration on feed pad ± grain/concentrates fed in bail).
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## PROJECT OUTLINE

An Ecodose fertigation pump was purchased, at a cost of \$2,900 (excl. GST) and installed at the pivot site.

Aston ryegrass was planted in May 2017, and one quarter (Q3) of the pivot area was fertilised after grazing with Easy N liquid fertiliser, and one quarter (Q4) was fertilised with broadcasted urea as a comparison. The Easy N liquid fertiliser was purchased in 1,000L shuttles for this trial.

Pasture DM yield was measured pre- and post-grazing to compare the two systems. Soil moisture monitoring equipment was installed to assist with irrigation scheduling, and fertiliser and irrigation events were recorded.

## KEY BENEFITS OF FERTIGATION

- Reduces labour requirements
- Decreases R&M on machinery
- Fuel savings, less tractor work
- Can fertilise immediately following grazing, instead of days later
- Better timing of fertiliser, less volatilisation
- Reduced soil compaction with less traffic on pasture/crop

## CONSIDERATIONS PRIOR TO PURCHASE

- There is an upfront setup cost
- Uniformity of application is only as good as the DU of the irrigation system, therefore need a low pressure system with good DU
- In times of extended wet weather, some fertiliser applications may be missed due to unnecessary irrigation applications
- May still need a spreader for other nutrient requirements

## OUTCOMES

### The following observations were made:

- The Ecodose fertigation pump was a relatively inexpensive pump to purchase
- The fertigation quarter was less labour intensive than the broadcasted quarter
- Irrigation scheduling is important to help determine how much and how often to apply liquid fertiliser for a particular soil type and pasture/crop
- Grazing management is key to a cost effective ryegrass season

- Buy in bulk – setting up a bulk storage tank will be much more cost effective than the purchase of 1,000L shuttles
- If considering fertigation, getting the right advice upfront should ensure that the right size injector unit is purchased

Year 1 of the project was funded through the Australian Government's National Landcare Programme, and was delivered by the Dairying Better 'n Better program, a joint initiative of Queensland Dairyfarmers' Organisation and Subtropical Dairy. The project was

supported by the Dairy and Fodder Water for Profit program.

*"By trialling the fertigation system we have saved on labour costs, we can just go down to the pivot and push a button instead of having to get the tractor, hook on the spreader, fill the spreader then fertilise the paddock."*

*"We are now planning to install a fertigation unit on our second pivot, allowing us the flexibility to apply nitrogen fertiliser immediately after grazing and further reduce our labour costs." ■■*

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