

Faster irrigation improves water use efficiency

THE FARM

Mark & Monique Bryant

Nathalia, Northern Victoria

A few simple changes to the irrigation system have enabled Mark and Monique Bryant to dramatically improve water use efficiency on their Nathalia dairy farm.

By increasing the flow rate of water along their irrigation bays, the Bryants have cut watering times in half, and halved the amount of water used per hectare.

Mark and Monique plan to milk 300 cows this year, up from the 230 they milked last season.

They have a split calving pattern, with about half the herd calving in autumn and the other half in the spring.

The home farm comprises 140 ha in total, with around 100 ha laid out for border check irrigation.

Soils are free draining and predominantly Shepparton East fine sandy loam.

BUSINESS SNAPSHOT

- Number of cows: 300
- Year round milking; split seasonal calving
- Farm area: 140 ha
- Irrigation: Up to 70% of the property
- Irrigation water source: Victorian Murray irrigation system via the Broken Creek
- Supplementary feeding: 2 tonne grain/cow/year
- Predominant pasture species: Ryegrass/clover

LESSONS LEARNED

- Faster irrigation has dramatically cut water use.
- Large quantities of high-quality annual pasture can be grown from an early autumn start up.
- Feed pad minimises wastage of hay and silage.

Mark and Monique Bryant.



CHANGES TO THE FARMING SYSTEM

Irrigation

The home farm has a 262 megalitre (ML) of high reliability water share on the Murray system, which is pumped from the nearby Broken Creek.

A recycle dam with a 10 ML capacity is in place to capture and reuse run-off water.

Pastures

Historically, the majority of the farm was permanent pasture, with about 25 ha of annual pasture (subterranean clover and ryegrass).

Over the past 10 years, reduced water allocations have seen an increased reliance on annually sown pastures and winter cereals.

Today, there is no permanent pasture; this season they have irrigated about 40 ha of annual ryegrass/clover mix, and there is a further 20 ha of forage wheat which has not been irrigated.

Feeding

Lower water allocations have also seen a greater reliance on conserved fodder and brought in supplements. This led to the purchase of a mixer wagon a few years ago, and in 2008 a feed pad was installed near the dairy.

The feed pad has helped cut wastage associated with silage and hay feeding, and protect wet pastures from pugging and damage caused by heavy vehicle traffic.

'Fast watering'

Probably the simplest change to the farming system in recent years has also been the most cost effective. Six-foot-wide bay outlets installed in 2007 allow a flow rate of 16 ML/day to run down a single irrigation bay. This enables a hectare to be irrigated in about 40 minutes – the average 1.5 ha paddock takes only an hour to irrigate.



Annual ryegrass and clover on the Bryant farm.

Utilising faster irrigation has cut water use by 50% by reducing the amount of water lost to deep drainage. These days only paddocks that can be 'fast watered' are irrigated.

In 2008, Mark and Monique used 4.2 ML to grow more than 12 tonnes dry matter per hectare of annual ryegrass/clover. Pastures are sown and irrigated from mid-February on and, on their agronomist's advice, are given a second irrigation four days after the first.

The recycle dam is an important part of the fast watering system, especially when irrigating overnight. In the longer term, automated irrigation is on the 'wish list' of farm improvements.

The Bryants feel that attention to detail has helped them to adapt their farm business to the lower water allocations that they have received over the last few years. Annual pastures and cereals which utilise winter rainfall, combined with quicker irrigation times, have enabled them to grow high quantities of quality forage from their most limiting resource, water.

CONTACT

John Boyd, Murray Dairy,
phone (03) 5833 5312, mobile 0400 083 285,
e-mail johnb@murraydairy.com.au