

Three ways wins the day

AUTOMATIC MILKING SYSTEMS



KEY POINTS

- ✓ Three-way grazing works best
- ✓ Need to understand technology to make most of it
- ✓ Robots managed mastitic cows well

LESS than a year after installing an automatic milking system (AMS), the Dennis family, Beaudesert, Queensland, is delighted with the results: the year-round calving cows have achieved the target average of 2.5 milkings a day under a completely voluntary milking system. And the key to success is offering three fresh feeds a day, or three-way grazing, as it is called.

Tamrook Holsteins is a family business involving Greg Dennis, his wife, Trish, parents Darrell and Brenda, Greg's uncle and aunt Ray and Rose and a full-time employee. They are each actively involved in the business, which also includes growing and selling square-bale hay for horse feed. Greg manages the herd and the dairy operation while Darrell looks after the irrigation and Ray runs the hay business.

The 200-cow herd, Tamrook Holsteins, averages almost 8000 litres/cow (4% fat and 3.3% protein) and is milked by three Lely robots.

Having had a five-year break from milking cows, the family re-entered dairying in December 2007, re-building a herringbone with secondhand equipment to milk 120 cows.

"It didn't take long before the dairy became quite limiting," Mr Dennis said. "There was no drafting facility and the yards were pretty basic. Treating cows was difficult and we weren't getting enough cows in calf, which was affecting milk production."

As he'd always enjoyed milking, Mr Dennis didn't consider an automatic milking system until his neighbour Matthew Cahill installed DeLaval robots in 2010.

"I started doing some research and discovered most cows are able to be milked by robots, and the robots weren't nearly as expensive as I thought," he said. "That opened my mind to the potential of robotic milking."

While the labour and lifestyle benefits of robotic milking appealed to Mr Dennis, he needed to be able to show they would



The Lely Grazeway is a set of smart gates that directs cows to either fresh pasture breaks or the feedpad, depending on how the gates have been programmed.

pay their way to convince the rest of the family and the bank.

"At the time we were milking 140 cows so we decided to buy three robots, which gave us the capacity to expand the herd up to about 200 cows," he said.

Mr Dennis said it took about eight months to get the system running smoothly. "The robots are the easy part," he said. "The challenge is learning to use the feeding system to encourage the cows to move around the farm on their own – what we refer to as 'voluntary cow movement'. It works brilliantly. But it involves quite a different mindset and it takes time to develop the experience and to adapt the system to work for your farm."

With a conventional milking system, many Australian dairyfarmers practise two-way grazing: cows are offered a fresh break of pasture morning and night.

Work by FutureDairy researcher Nicolas Lyons has shown that three-way grazing works better on AMS farms. It results in better voluntary cow movement, a 40% improvement in milking frequency, 20% more milk production and 17% improved AMS unit utilisation.

Three-way grazing may involve offering the cows either three fresh breaks of pasture a day or two breaks of pasture and a feedpad with a loafing area. The cows receive the same total volume of feed but their daily allowance is spread across three meals a day instead of two.

"When we installed the robots we set the farm up for three-way grazing," Greg said. "It wasn't expensive; it just involved some changes to our laneway system."

The herd gets two fresh breaks of pasture and access to a feedpad, which has an adjacent paddock for loafing.

The cows receive about 10 kilograms

of grain per day; half is fed during milking and the rest mixed with hay at the feedpad.

"We achieve much better pasture utilisation now because it is so critical to the voluntary cow movement," he said. "If we allocate the cows too much they just don't come up to be milked."

It took a bit of trial and error to get the system running smoothly. Within three months most of the cows were moving to the dairy on their own. By the six-month mark Mr Dennis was happy with the voluntary cow movement and by eight months the herd was averaging 2.3 milkings a day. Further refinements see the cows currently averaging 2.5 milkings a day.

"I was absolutely confident the system would work," he said. "It just took some time for me to build up the experience. Once you understand what motivates cows to move, there's actually quite a lot of flexibility."

"The smart gates – Lely Grazeway – are an important tool. We change their settings to alter when and where the cows have access to fresh feed."

The refinements to the feed management system included using a backing fence, altering the timing of access to fresh breaks, changing the composition of summer pasture and adjusting the fencing at the feedpad.

"The timing of the fresh break can make quite a difference to the cows' movement," he said. "At the moment, with the hot weather, we set the smart gates to allow cows to fresh pasture breaks at 2pm and 10pm. From 4am until 2pm the cows have access to the covered feedpad where the feed is provided in two fresh batches at about 6am and noon. They tend to stay there until late afternoon and then head down to graze in the cooler hours."



FutureDairy researcher Nicolas Lyons has shown that three-way grazing works better on AMS farms than the traditional two-way grazing used on other farms.

◀ Mr Dennis has learnt to be confident that the cows will leave the paddock during the night and head off to be milked.

“We had to learn to resist the urge to go and collect any cows from the paddock late in the evening,” he said. “It’s not necessary and our lifestyle is much better if we leave them to it.”

At one stage a few cows would hang around the feedpad for so long that they would miss the fresh pasture and end up with too long between milkings.

Mr Dennis adjusted the fencing around the loafing area so that the cows can now see when their mates are leaving their dairy and going to the fresh pasture break. When they see there’s fresh feed on offer

most will get up and start moving towards the dairy.

This works very well from May to November when good-quality annual ryegrass is on offer. Summer pasture is usually based on kikuyu and Rhodes grass, which is less of an incentive for the cows to move around the farm.

“This summer we’ll have better quality feed on offer for grazing,” he said.

Mr Dennis has sown combinations of pearl millet, Brassica, tonic plantain and chicory for summer and autumn grazing.

He also plans to install fans and sprinklers at the robot shed and feedpad to keep cows cool in the very hot weather.

“I’ve already noticed that the cows head for the shade at the robot shed and feedpad,” he said. “The fans and sprinklers keep them even cooler and maintain feed intake and milk production when it would otherwise fall.”

Mr Dennis is expecting this summer to be less challenging.

“Last summer we were new to robotic milking and the big wet left us with far more mastitis than we’d ever had,” he said.

Mr Dennis was pleasantly surprised with the way the robots handled cows with mastitis.

“We ended up with 30 three-titter cows,” he said. “The robots milked them without any trouble at all.”

And to Mr Dennis’s delight, all but one of those cows have re-calved since then, with all four quarters in milk.

“She’s still in the herd as a three-titter and producing 40kg/day in early lactation,” he said.

“Before I looked into robots I was of the mistaken view that many cows were unsuitable for automatic milking due to udder conformation.

“As it turned out we culled fewer than 2% due to udder shape or teat placement.”

“The technology is much more flexible than I originally thought.”

With the robots running smoothly and having mastered the grazing system, Mr Dennis was so pleased with the results that a fourth robot was installed in December 2011.

This enables the family to milk up to 280 cows but the current plan is to milk about 240.

“Robotic milking has given us a new outlook on dairying and on life,” Mr Dennis said. **D**



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