

## SMOOTH START TO FUTUREDAIRY'S (ROBOTIC) AUTOMATIC DAIRY

FutureDairy researcher, Dr Kendra Davis, and her colleagues were pleasantly surprised by the smooth start to the automatic milking system (AMS) at the Elizabeth Macarthur Agricultural Institute, Camden, NSW.

“This is a high-tech dairy so we were expecting some teething problems with both the technology and getting the cows used to being milked by robots,” said Dr Davis who was a researcher with the Greenfield Project’s automatic milking system in New Zealand. “The commissioning process was far beyond my expectations and much better than my previous experience.”

There were very few technical hiccups. The robots ran smoothly without major breakdowns.

Training the cows was essentially trouble-free and they quickly learnt to voluntarily move around the farm and present themselves at the dairy to be milked.

Under Australian grazing systems, voluntary movement of cows is critical to the success of an automatic milking system.

“Labour saving is the main benefit we are seeking from automatic milking and that is lost if cows have to be fetched to and from the dairy,” she said.

From their experience the FutureDairy team has created some guidelines for a smooth introduction of a grazing herd to an automatic milking system.

The guidelines relate to staff training, dairy layout, stock-handling, feed incentives, cow training and stage of lactation.

“These are just guidelines because there’s no magic recipe. All farms are unique and the process of decommissioning the old dairy and commissioning a new one depends on the individual situation,” she said.

### **Staff training**

Train staff before installing an AMS.

Before FutureDairy’s AMS was installed, two farm technicians and a representative from the local DeLaval dealership completed a 2-week training course in Sweden. All three were heavily involved in setting up the FutureDairy machines prior to commissioning. The team had access to a 24-hour help desk in Sweden via phone or email.

The system comes with easily accessible diagnostic tools which the team uses to identify arising problems and prevent major breakdowns.

“The combination of well-trained staff and reliable technology set us up for smooth operations from day one,” said Dr Davis.

### **Layout**

Ensure the layout of the dairy encourages good cow-flow. While this is important for any dairy, it is especially important for voluntary movement of cows.

The FutureDairy AMS is laid out so that cows travel in a straight line from the entry race into the waiting yard and then into the milking station, and out to the feed pad. One way gates in the dairy prevent cows moving in the wrong direction.

“This made it very easy for the cows to see where they were going and find their way around,” said Dr Davis.

### **Stock-handling**

It is essential to have patient staff with excellent stock-handling skills to train cows to use an automatic dairy.

The sooner a cow manages to come to the dairy and enter the milking unit without intervention, the

quicker she adapts and gains confidence.

“Our staff were a huge asset during the adjustment phase. Cows were given the opportunity to explore the system, follow other cows and learn themselves without unnecessary encouragement from staff,” she said.

### **Feed incentives**

During the first few weeks, limit the amount of pasture on offer and provide large feed incentives at the dairy. If the system includes a feedpad, locate it immediately after the dairy.

Feed is a strong incentive to teach cows to voluntarily move around the system. At Camden seasonal conditions meant there was very little pasture available during the training period.

FutureDairy’s cows receive concentrates while being milked. After exiting the milking unit they have access to and maize silage and hay rations a feed pad.

“The location of the feed pad immediately after the milking station is a very good incentive for cows to leave once milking is completed,” said Dr Davis.

### **Cow training**

If possible, train a small group of cows initially.

This allows full commissioning of the machines and trouble shooting without the pressure of the full herd.

It also allows the first group of cows to lead new cows through the system.

In FutureDairy’s case it just took three milkings for all cows to voluntarily come to the dairy and five days to them all to move to and from the dairy on their own.

“We are often asked how many cows have unsuitable udder conformation for milking in a robotic dairy. All 110 cows that were sent to the AMS have been suitable, although before we started we excluded five cows on the basis of udder conformation,” she said.

### **Stage of lactation**

If possible, train cows in late lactation.

The impact of the training phase on milk production is less if cows are in late lactation. Although late lactation cows are less motivated by feed incentives to move around the system, they only need 2-4 weeks to get the hang of it.

### **Current status**

The commissioning phase occurred in mid-2006. By December cows in early lactation were averaging 2-3 milkings a day.

Dr Davis and her team are now conducting a range of trials to determine pasture utilisation levels, potential machine throughput (ie how many cows can be milked per machine) and potential production levels. Data from these component trials and the farm system will eventually be used to determine the economic viability of automatic milking under Australian conditions.

“It is going to be challenging to get cows to maintain milking frequencies (approx twice a day) when the bulk of their feed comes from pasture. Unfortunately we haven’t been able to address that yet because pasture availability has been severely limited by the drought,” she said.

*For more information contact Dr Kendra Davis email: [Kendra @ futuredairy](mailto:Kendra@futuredairy). FutureDairy is a national research project for the Australian dairy industry, aimed at addressing the challenges likely to occur in the next 20 years. FutureDairy’s major sponsors are Dairy Australia, the Department of Primary Industries (NSW), the University of Sydney and DeLaval. Other supporters include the Dairy SA, MelbourneUniversity, the Dairy Research Foundation and DIDCO.*

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**Caption:** Cows adjusted quickly to being milked in FutureDairy's robotic dairy at Camden, NSW.

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