



Three feeds a day with robotic milking

by Nicolas Lyons and Kendra Kerrisk

Research and farmer experience has confirmed that a 3-way grazing system works better on farms with automatic milking systems (AMS) than the traditional approach of offering cows two fresh pasture breaks a day.

FutureDairy research found that offering feed in three allocations every 24 hours increased average milk production by 18%, increased milking frequency by 40 and improved AMS unit utilisation by 10%.

Experience on commercial AMS farms supports these findings, with 90% of pasture-based Australian AMS farmers currently using a 3-way grazing system.

FutureDairy experience has shown that a 3-way grazing system is relatively easy to manage, as long as the laneways and farm layout are designed for it.

When planning an AMS, it is critical to design the farm layout to allow for 3-way grazing. It is not particularly expensive, or difficult to include at the design stage for most farms, but it can be much harder to go back afterwards and rearrange the farm layout.

Three-way grazing can include three fresh breaks of pasture a day, or two pasture breaks and a feedpad with a loafing area.



FutureDairy researcher, Nicolas Lyons, found that a 3-way grazing system works better on farms with automatic milking systems (AMS) than the traditional approach of offering cows two fresh pasture breaks a day.

January 2012

Three-way grazing is central to motivating cows to move regularly and voluntarily around the farm, taking themselves to the dairy to be milked, and walking back to the paddock afterwards.

The labour, lifestyle and management benefits associated with an AMS are best achieved if cows move on their own. Researchers around the world have found food is the most reliable incentive to encourage cows to move around the farm.

Cows in an AMS are just as well fed as cows in a conventional system, where they typically have access to two fresh paddocks a day. The only difference is that AMS cows are offered their daily feed allowance in three smaller 'portions' each day.

Benefits

FutureDairy trials found that offering cows feed in three fresh portions a day meant they visited the dairy and were milked more often, and there were 36% fewer cows who went for an extended period (16 hours or more) between milkings.

This resulted in more milking sessions per hour and more evenly distributed cow flow through the AMS units during the day and night. The combined effect was a large increase in operational efficiency of the AMS units.

These gains occurred in cows at all stages of lactation. In contrast, in a 2-way grazing system, milking frequency tended to drop off significantly towards late lactation.

More frequent movement of cows allows the farm manager to be more selective about which cows are drafted for milking and when this occurs.

For more information

Dr Kendra Kerrisk

FutureDairy project leader

ph 0428 101 372

email kendra.kerrisk@sydney.edu.au

3-way grazing system



FUTUREDAIRY information sheet

About FutureDairy

FutureDairy is an R&D program to help Australian dairy farmers manage the challenges they are likely to face during the next 20 years.

As one of the big challenges is the availability of labour and the associated lifestyle issues, FutureDairy's focus is on automatic milking systems, or 'robotic milking'. While robotic milking technology is now in wide use overseas, there's less experience with automatic milking in grazing-based farming systems such as in Australia.

FutureDairy's research is investigating the real impact of automatic milking on labour, reproductive performance and voluntary cow traffic, especially in larger herds.

In addition, we support farmers and their advisors to adapt their farming systems to automatic milking. As well as training advisors, we develop tools and resources for farmers and provide direct support through group activities, on-line communication and individual advice when needed.

Sponsors

FutureDairy is a collaborative project based at the University of Sydney's Camden campus. Sponsors include Dairy Australia, DeLaval, the University of Sydney and the Department of Primary Industries, NSW.

Previous work by FutureDairy

FutureDairy started in 2004, exploring opportunities for productivity gains by substantially increasing forage and feed production and utilisation on farm and technological innovations with the potential greatest impact on farmers' lifestyle labour management.

There were two key areas of investigation: development of farming systems for automatic milking within a grazing system and development of complementary forage rotations. We explored how our findings work under commercial conditions through partner farms. This allowed us to study how technical issues are affected by 'people' issues that can make a difference between a technology being used on-farm or not.

From 2008 to 2011 FutureDairy focused on two key areas: Feedbase and Precision Farming (AMS and other technologies). A major initiative was working with DeLaval to co-develop the 'robotic rotary', an innovative automatic milking system designed for large herds and Australian dairying systems. We also developed farming systems based on complementary forages. We put our recommendations from our research to the test by working with DPI NSW to assist farmers in the Hunter Valley in implementing complementary forage systems on their farms.

Contact us

Project leader

Dr Kendra Kerrisk ph 0428 101 372
email kendra.kerrisk@sydney.edu.au