

AUTOMATIC DAIRY PROVES TO BE AN EFFICIENT FARM SYSTEM

Despite the drought, FutureDairy's automatic milking system (AMS) performance during 2007 confirmed that a pasture-based AMS can achieve very high levels of pasture utilisation with reasonable milk production and unit utilisation.

Throughout the year, FutureDairy assessed the overall 'farm system performance' of its robotic milking system at Camden, NSW.

To be successful under Australian conditions an AMS must operate with high pasture utilisation, high milk production and high unit utilisation.

Pasture utilisation is particularly important to the profitability of any Australian dairy farm, including those with automatic milking systems.

FutureDairy's findings demonstrate that previous industry concerns regarding pasture utilisation in an AMS were unfounded.

Pasture utilisation at the DeLaval AMS farm at Camden, NSW was 14t DM/ha on irrigated pastures and averaged 11t DM/ha across the entire farm. This was similar to the pasture utilisation for the conventional dairy system on the same property at the Elizabeth Macarthur Agricultural Institute (EMAI) and well above the district average.

FutureDairy's Dr Kendra Davis said it was achieved simply by following best practice: feeding pasture first and supplementing only to meet any true deficit.

"However, accurate pasture allocation is important in any system but even more so in an AMS. Getting pasture allocation wrong in an AMS has additional impacts on cow traffic and milking frequency as well as pasture utilisation and milk production," said Dr Davis.

Pasture made up about 60% of the cows' annual diet, with the remainder coming from a combination of concentrate in the milking units, and a mixed ration on a feed pad post-milking.

Milk production

Despite the drought, the AMS research farm produced 915,547 litres of milk during 2007. This equated to 7,383 litres per cow and 518kg MS/cow or 1459 MS/ha. It is equivalent to 547,774L milk per unit or 32,500 kg MS per unit.

Dr Davis reported that milk production was expected to improve in the future as a result of refining a number of system management practices.

System performance

Unit utilisation refers to how 'busy' each automatic milking unit is on a given day.

"To operate at optimum utilisation, the milking unit needs to be used fairly continuously throughout the night and day, with minimal idle time," said Dr Davis.

Unit utilisation is influenced by the number of cows per milking unit, number of litres harvested per unit and the number of times cows are milked each day.

"It is likely to be less under Australian grazing conditions than in Europe where cows are housed in doors most of the time," she said.

Over the year, FutureDairy's AMS averaged 75 cows/unit, which is high by international standards.

FutureDairy's unit idle time was 9.25 hours, much higher than the European average of two to three hours indicating there's potential for improvement at Camden.

The amount of milk harvested by each of FutureDairy's units peaked at 1650L milk/unit/day, which is within the range seen on European systems (1500 to 2500kg) but the FutureDairy team believes gains can be made.

"We are confident that refinements will improve milking frequency and unit utilisation," said Dr Davis.

During 2008 the focus will be on increasing the proportion of pasture in the diet and machine utilisation to improve economic viability.

FutureDairy's major sponsors are Dairy Australia, DeLaval, Department of Primary Industries (NSW) and the University of Sydney.

For more information contact Dr Kendra Davis ph (02) 9351-1633 email kendrad@usyd.edu.au