

## Dairy Directions – Analysing Farm Systems for the Future

*Providing robust analysis of the impact of on-farm changes and innovation on the profitability of dairy farm systems*

### Once a day (OAD) milking – does it pay?

#### Why would I consider OAD milking?

The decline in milk price combined with relatively high feed prices have caused some farmers to question the merits of changing to OAD milking in the short term.

Switching to OAD milking can reduce costs (feed, labour and shed costs). The other side of this story is the loss of income due to a reduction in milk solids production from less frequent milking.

This investigation uses a ‘case study’ farm from northern Victoria to compare the economics of OAD milking with twice a day (TAD) milking, as a short-term option for herds in mid to late lactation in 2009-10. This analysis is based on modelling work from the Modelling Farming Systems project based at the Department of Primary Industries, Tatura, Victoria.

#### Under what conditions does changing to OAD milking make me better off than TAD milking?

A range of milk prices and feed prices were analysed to illustrate the range of circumstances that farmers may be facing in the coming months. The milk prices investigated were from \$3.50 to \$4.50/kg milk solids (Fat + Protein). The effect of milking OAD was also examined considering possible feed savings, with a potential range of feed prices from 1.5 to 3.5c/MJ, there being roughly equivalent to grain worth between \$170 and \$390/t.

Other assumptions that were made include:

- 180 cow herd producing 1.2 kg milk fat + protein (16L) per cow per day before switching to OAD milking.
- Body condition did not change after switching to OAD milking.
- Metabolisable energy consumed decreased because of reduced milk production.

#### Changing to OAD milking for herds in mid to late lactation in response to 2009-10 season milk price

“The analysis shows that OAD milking becomes more economically attractive with higher feed prices and lower milk prices”



- Labour saved was \$60/day (3 hours/day at \$20/hour).
- Shed costs decreased by 30% (from a base of \$45/cow/year)

The decrease in milk production as a result of changing to OAD milking is likely to vary substantially between farms. Results from a range of trials suggested that the decrease in milk protein + fat production expected on Australian farms would generally be in the range of 10-30% per cow. Limiting the production decrease to

**Table 1. The decrease in milk solids production that would allow OAD milking to break-even with TAD milking at a range of milk and feed prices.**

Cash Labour savings of \$60/day		Milk Price		
		\$3.50/kg Milk protein + fat (~26 c/L)	\$4.0/kg Milk protein + fat (~29 c/L)	\$4.50/kg Milk protein + fat (~34 c/L)
Feed Price	1.5c/MJ (~\$170/t for grain)	13%	11%	9%
	2.0c/MJ (~\$230/t for grain)	16%	13%	11%
	2.5c/MJ (~\$280/t for grain)	19%	15%	12%
	3.0/MJ (~\$330/t for grain)	25%	18%	14%
	3.5c/MJ (~\$390/t for grain)	34%	22%	17%

If milk price was \$3.50/kg protein + fat and grain price \$280/t, then milk production would need to decrease by less than 19% for OAD milking to be more profitable than TAD milking (Table 1). If the decrease in milk production was 20%, then the decrease in income would be greater than the decrease in costs. Milk income would decrease by about \$1.08 per cow per day and costs would decrease by \$0.96 per cow per day (feed \$0.62, labour \$0.30, shed \$0.05 per cow per day).

The break-even point for the drop in milk solids production was between 9 and 17% if milk price was \$4.50/kg protein + fat. In contrast, with a milk price of \$3.50/kg protein + fat and a grain price of \$390/t, a drop in milk solids production of up to 34% could occur before TAD would appear more profitable than OAD milking (Table 1). The analysis clearly shows that OAD milking becomes more economically attractive with higher feed prices and lower milk prices.

If the transition to OAD milking is well planned and managed, resulting in a drop in milk solids production of only 10%, OAD milking could be a more profitable option. However, a decrease in milk production of 10% would not be common.

## What if there are no savings in labour costs?

If there is no real cash labour savings then production can only drop by about 2 to 5% before remaining on TAD would be more profitable (Table 2).

**Table 2. The decrease in milk solids production that would allow OAD milking to break-even with TAD milking if there are no real labour savings made**

No cash labour savings achieved		Milk Price		
		\$3.50/kg Milk protein + fat (~26 c/L)	\$4.0/kg Milk protein + fat (~29 c/L)	\$4.50/kg Milk protein + fat (~34 c/L)
Feed Price	1.5c/MJ (~\$170/t for grain)	2%	1%	1%
	2.0c/MJ (~\$230/t for grain)	2%	2%	1%
	2.5c/MJ (~\$280/t for grain)	3%	2%	2%
	3.0c/MJ (~\$330/t for grain)	3%	2%	2%
	3.5c/MJ (~\$390/t for grain)	5%	3%	2%

If there are no real cash labour savings realised when changing to OAD milking, the slight drop in milk solids production (the most generous being 5%) required to improve profitability over TAD are not considered realistic.

Some farms may be able to reduce paid labour or increase off-farm income by switching to OAD milking, while on other farms it will involve a reduced input from the operator without any change in cash costs. However, if this time saved provides the operator an opportunity to work off farm and generate income, then this time saved provides a real cash benefit.

## Are there any other benefits of OAD milking?

This analysis has compared OAD milking with TAD milking. In some cases it may be relevant to compare OAD milking with drying off early. The economics of OAD milking compared favourably with drying cows off early, unless the milk production per cow was already very low. One important advantage of OAD milking over drying off early is that it keeps options open if seasonal conditions improve in the following months.

There may be additional longer-term benefits of OAD milking if it halts a decline in body condition that may have occurred if TAD milking was continued. However, the decrease in feed required would be less than was assumed if body condition increased as a result of switching to OAD milking. This could be somewhat countered by a reduction in the feed required as a result of reduced walking to the dairy.

## Are there any issues I should keep in mind when switching to OAD during mid lactation?

The main issues to focus on are minimising the drop in milk fat + protein production and the increase in cell count.

While dry matter intake will generally decrease when milking OAD, it is important to ensure that a transition from TAD to OAD in mid-lactation does not coincide with a significant decrease in the quantity and quality of feed allocated. This can be a challenge as concentrate feeding is generally reduced when switching to OAD milking (to avoid problems associated with feeding twice the amount of concentrate in one visit to the dairy). Cows milked OAD can be more sensitive to declining feed quantity and quality and the subsequent reduction in milk production can be difficult to correct.

There isn't a definite rule regarding when to switch from TAD to OAD. Anecdotal evidence suggests that a reasonable time to switch is when the herd is producing about 1.2kg of milk fat + protein per cow per day (about 14 to 16 litres). Switching to OAD milking when cows are producing less than 8 litres per day may increase the likelihood of a milk price penalty from a high somatic cell count.

Studies suggest that OAD milking does not lead to a significant increase in the number of clinical cases of mastitis. However, OAD milking does increase the somatic cell count. To reduce the risk of a milk price penalty, it is advisable to be below 150,000 BMCC before commencing OAD milking (depending on the factory that the farm supplies). OAD milking can

accentuate any problems that already exist when the cows are milked TAD. Therefore, the cows that are best suited to OAD are those with no history of mastitis, a low somatic cell count and good udder support.

## Final thoughts

The drop in income associated with switching from TAD to OAD milking is likely to be greater than the reduced costs in 2009 in most instances if milk solids production drops by more than 20%. In only the most unfavourable conditions (milk prices of \$3.50/kg milk solids combined with grain prices above about \$330/t) was OAD milking more profitable than TAD milking if milk solids production dropped by more than 20%.

If there are no real cash labour savings, then OAD milking is unlikely to be as profitable as TAD milking. However, the net benefit of milking OAD and generating off farm income with the labour saved could be more profitable than TAD milking. The marginal return will depend on the milk production decrease so it's important to investigate whether OAD milking suits an individual farm (eg appropriate cow type, cell count and feed situation) and then to plan the implementation carefully. Farms that incorporate a well thought out and implemented OAD milking program, are more likely to be successful than those that do it because it appears 'easy'.

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