



Profitable dairy farming: Good business management reduces greenhouse gases

Getting herd and breeding management right: more profit, fewer emissions

[Tips for managing cows to improve efficiency, increase profit and reduce emissions](#)

Why focus on the herd?

Unproductive animals cost money, emit greenhouse gases and produce less milk. The more of them there are on your farm as a proportion of the total herd, the more emissions intensive your operation is. Conversely, the most productive cows produce the most milk per unit of feed, make the most money and produce the least emissions per kg of milk solids.

Applying best practice management to improve herd longevity, fertility, transition cow management and health can have major effects on lifetime cow productivity, and therefore profitability and farm emissions intensity.

As Australian agriculture makes its way in an increasingly a carbon-constrained world, understanding and implementing practices that reduce emissions intensity while increasing profitability makes good business sense as part of the everyday management of profitable dairy farms.

How does it work?

Extended longevity will reduce emissions intensity

By increasing the age at which mature cows are culled you reduce the proportion of their lifespan that is unproductive. This results in lower emissions intensity. Greater longevity also means that fewer replacements are required to maintain herd size and milk production. Heifer replacements produce emissions but not milk, so having a lower proportion of them in your herd also reduces farm emissions intensity and the costs associated with feeding and maintaining unproductive stock.

Less dry cows means more milk for the same emissions

You can increase lifetime production and reduce input costs and emissions intensity by minimising the length of time that cows spend in dry periods. Reducing the time to first calving by ensuring heifers are suitably managed to calve at 24 months is one way to achieve this.

Implementing an extended lactation system will also reduce the number of dry cows and replacements. Production benefits include extra days in milk and higher milk solids concentration, as well as potential reductions in breeding and animal health costs, and workload. Studies on Australian dairy systems have shown that extended lactation systems reduced replacement rates by 9%.

Improved fertility will reduce emissions intensity

Improving your herd's fertility via breeding or nutrition will result in greater lifetime production per cow and fewer replacements, both of which will increase farm profitability and reduce emissions intensity. Good transition cow management is a key element of this, as management during this period will affect not only herd fertility but also milk production, replacement rates and cow health.

Key points

- Heifers and unproductive animals cost money to maintain, and continue to produce greenhouse gas emissions during their unproductive periods
- Reducing the amount of time that cows are unproductive will reduce farm emissions
- The key ways to reduce unproductive periods are through timely mating, fertility, reducing replacement rates and increasing lifetime cow production.

Key recommendations

- Improve longevity, fertility, time to first calf, transition cow management and herd health to reduce replacement rates, increase lifetime animal productivity and profitability, and reduce emissions intensity
- Improve feed conversion efficiency to reduce input costs and emissions.

Comfortable, healthy, well-fed cows will produce fewer emissions

Ill health, inadequate diet or stress will all reduce milk yield, meaning an increase in emissions intensity. Minimising the occurrence and severity of disease in your herd, and providing shade and shelter to reduce environmental stress can help avoid significant losses in milk yield. Apart from the direct production effect on profitability, trees and shrubs planted as shelterbelts on your property can provide a number of additional benefits for natural resource management.

Animals bred for feed conversion efficiency will be less emissions-intensive

More feed-efficient animals will use a greater proportion of their diet for milk production, reducing the amount that is excreted as either methane or nitrous oxide. In the near future it will be possible to select bulls on the basis of their feed conversion efficiency which will mean better feed utilisation, fewer inputs, less waste and higher production per unit of input.

Breeding to reduce emissions intensity offers a more permanent and cumulative option than most other management strategies, and should be cost-effective in most systems.

Case study: In calf, on time, every time

Rob, Norm and Lesley Frampton operate their 155 ha dairy farm 'Strathalbyn' near Gawler in northern Tasmania, milking 450 cows on a perennial ryegrass base. Production last season was 356 kg milk solids.

The family have worked hard to improve their herd's fertility over the past few years, keeping replacements from early-calving cows and sometimes the early-calving heifers (depending on herd requirements), and selecting sires based on breeding value for fertility as well as longevity, calving ease and protein production. There is also a strong emphasis on culling for fertility, mastitis and cell count.

The Framptons believe that keeping replacements from early-calving cows has resulted in a more fertile herd. Their emphasis on breeding and managing for fertility allows for a shorter AI period, minimal external labour, and a tight calving pattern without the need for calving induction.

According to Rob, their emphasis is on efficiency:

"We're focused on production per hectare rather than production per cow," he said. "It's all about turning as much grass as possible into milk."

For the Framptons, improving fertility makes economic and environmental sense – it maximises reproduction efficiency, and reduces emissions intensity. The improvements in fertility and the tight calving pattern have also led to a high level of labour efficiency, saving both time and money.

Conclusion

Managing herds to reduce unproductive animals and number of unproductive days makes good business sense from both emissions and profitability perspectives. Farmers should first and foremost consider the productivity and profitability impacts of potential emissions reduction strategies. But with a range of practical options available for improving cow longevity, fertility and health – and therefore reducing emissions intensity – incorporating these into your farming operation makes good business sense.

Further information

InCalf Resources:

<http://www.dairyaustralia.com.au/Animal-management/Fertility/About-InCalf.aspx>

Dairy Climate Toolkit:

<http://www.dairyaustralia.com.au/Environment-and-resources/Climate/MicroSite1/Home.aspx>

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