

# First 100 Days in Milk Adviser Workshop

## Take-home messages

### Pre-calving feed intake and impacts of heat stress

Sustaining high feed intake in the last few weeks of pregnancy leads to improved cow health and production in the first 100 DIM.

The effects of heat stress on conception rate are not limited to the few days around the day of insemination. They extend from 105 days before insemination to 7 days after insemination.



Keeping late gestation cows cool during hot weather is critical to avoid reductions in:

- Cow's lactation and reproductive performance in their subsequent lactation, and
- Their daughters and grand-daughters' lifetime performance and survival through developmental programming.

Negative energy balance has many impacts on cows' health and fertility.

### Fresh Period and Early Lactation nutrition considerations

Feeding maize grain instead of wheat with a high quality forage in the Fresh Period, when cows' feed intake is under metabolic control (hepatic oxidation theory), increases DMI, milk production and profit, with a carryover milk yield benefit into Early Lactation.

Feeding fresh cows a TMR ad-lib instead of ad-lib pasture and concentrate in the bail is an option worth considering on pasture-based farms with a feeding pad and mixer wagon.

More focus is needed on meeting cows' increased demand for Metabolisable Protein and Essential Amino Acids with a good quality protein supplement such as canola meal during the Pre-calving Transition Period and especially the Fresh Period, to minimise the duration and depth of negative protein balance, and its impacts lactation and reproductive performance.

Maize grain appears to have a programming effect on cows when offered with high quality forage in the Fresh Period, which may result in higher profit. Increasing MP supply with a good AA balance in the Fresh Period may also have carryover benefits well into Early Lactation.

Canola meal supplementation in Early Lactation stimulates higher pasture intake and milk production.

Feeding maize grain in the Fresh Period, followed by a canola meal/wheat/barley grain mix in Early Lactation, has been shown to have a carryover milk yield benefit into Mid Lactation. Fat supplementation in the first 100 DIM may have carryover benefits through Mid Lactation.

In Early Lactation, we seek to use concentrates and other supplements to maximise profit, not milk production, using marginal thinking.

Every milking herd, each day, has its own production function (milk response curve). The 'just right' input zone lies between the levels of supplement at which the average response is maximized (left boundary) and the marginal output per unit input becomes negative (right boundary).

## Individualised in-parlour feeding

In individualised in-parlour feeding systems, there are many parameters that may be used to allocate different rates of one or more types of concentrates to each cow during milking.

In grazing systems under conditions where forage supply is not limiting ( $> 30$  kg DM/cow/day), research studies have found no strong evidence to support stepped or individualized feeding vs flat rate feeding.



However, under conditions where pasture allowance is restricted, cows compete for pasture, leading to variation in the relative deficit between nutrient supply and demand for cows in the herd. Using an individualised feeding to allocate greater quantities of concentrates to those cows with the greater nutrient deficit may increase herd milk production and profit. These cows may include those in their first 40–80 DIM, those of higher genetic merit, those lower in the herd's social hierarchy, and those late in the milking order, and therefore late to arrive at pasture after milking.

Aside from increasing milk production and using feeds more efficiently, individualised feeding may be used to:

- Mitigate risk of rumen dysfunction and acidosis
- Improve fertility, and/or
- Reduce heat stress risk.

Consistent rules for individualised feeding strategies do not exist, and nor should they.

## Keys to successful management of cows in the first 100 Days in Milk

Several alternative management strategies for cows in the first 100 Days in Milk are available to farmers.

Setting up and operating each of these strategies successfully will require different things in terms of how cows are managed each day, how fresh cow and early lactation diets are designed, and the feeding facilities and equipment used to deliver feed to cows. For all management strategies for cows in the first 100 Days in Milk, the following are important:

- Monitoring of cow health and nutritional status
- Inclusion of nutritional supplements/additives in diets
- Managing mastitis risk and heat stress risk
- Staff training, definition of roles and responsibilities, work routines.



### Disclaimer

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