

Rearing Heifers from Weaning to Calving

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The estimated cost of rearing a heifer to first calving in New Zealand is around \$1 400, with little difference in the cost of rearing a good heifer compared to a poor one. Despite the investment in selection of genetics and rearing prior to weaning, heifer management from weaning to first calving is often overlooked.

A recent (2013) review of New Zealand data showed a significant effect of weight at 15 – 17 months of age on the likelihood a heifer would calve and subsequently survive for a second lactation. This supports other New Zealand work (1991) which showed that as many as 20% of heifers with a live weight of 315kg at 18 months would not complete their first lactation. By the end of their fourth lactation only 55% of the lighter heifers remained in their respective herd compared to 70% of heifers weighing 385kg at 18 months.

Body weight at first calving also has a significant effect on a heifer's lifetime performance as heavier heifers will have more reserves which can be utilised to produce milk early in lactation, when their energy intake is less than the energy required for milk production.

Possibly more importantly, the heavier the heifer at calving, the closer she is to her mature body weight and the lower her nutrient requirement for growth during her first lactation. This energy can be used for milk production. New Zealand data has shown an increase of 0.12kg of milk solids for every 1kg of additional live weight at first calving with overseas data typically showing similar or greater responses.

The recent data compiled by LIC showed that heifer rearers are generally doing a good job till 3 months of age, but growth rates are well under target for the majority of heifers from then on. On average NZ heifers are 50kg lighter at first calving than they should be, which equates to about 6.5kg MS less in the first lactation based on NZ data.

For heifers to get in calf by 15 months or earlier, it is essential that target growth rates from weaning to 10 months are achieved as the onset of puberty is more closely related to bodyweight than age. Ensuring good rumen development through the use of grain based feeds prior to weaning helps increase the animal's ability to effectively utilise forages post weaning and helps to reduce weaning stress, while *ad libitum* access to clean water during the rearing period will aid rumen development.

Coccidiosis both pre- and post- weaning can have a dramatic effect on the ability of the animal to utilise feed effectively and results in poor weight gains. Controlling coccidiosis or any other disease (e.g. BVD, worms) is as important as offering a high quality feed. A 10% drop in pasture quality will require a 15-20% increase in intake, and that is not always achievable. Strategies such as rotational grazing should be used to maximise pasture quality and where pasture quality is limiting the use of other high quality supplements should be considered. Feeding poor quality silage can have a negative effect both on feed intake and the digestibility of the whole diet further limiting growth. Another important consideration is the provision of sufficient good quality protein for lean tissue development. She noted that while pasture typically provides sufficient protein, it is important to consider protein supply over summer when protein levels in pasture are low, or when heifers are fed other low protein supplements.

The last two months prior to calving can be a particularly challenging time for heifers as the nutrient demand of the growing foetus increases rapidly at the same time as the heifers feed intake is decreasing and New Zealand data suggests that heifers are often not consuming enough energy during this period. Where possible similar feeds to those which will be introduced post calving should be offered pre-calving. For example, feeding a proportion of the diet as whole crop or maize silage is a useful way of introducing starch into the diet of heifers which will be fed grain once they enter the milking herd. However, it is important to remember that heifers should be fit and not fat at first calving.

Any expenditure on good heifer rearing should be considered an investment in the herd's future.

Establishing target body weights and monitoring regularly is important, and will maximise the return on the investment made in genetic progress and calf rearing.