



REAR YOUR OWN HEIFERS



Rear your own heifers

Raising dairy heifers begins with choice of a bull that is likely to produce animals with high genetic potential for milk. A well-managed dairy farm should have as many calves born every year as there are cows in the herd. Most farmers sell male calves at an early age while the females are reared as dairy replacement heifers for the herd or as heifers for sale.

Advantages of rearing own heifers

- Enables a dairy farmer to obtain the best replacement heifers through strict selection criteria from wide selection.
- Expand the dairy herd at low cost (without buying heifers or cows)
- Earn income from sale of excess heifers.



Source: Adapted from Vietnam Belgium Dairy Project 2009

Objective and goal of raising own heifers

Heifers represent the future of the herd. However, they are non-productive animals incurring expenditure in terms of feed, labour and veterinary services without immediate returns. Raising heifers is a financial investment that begins to earn dividends after the first calving; therefore the goal should be to ensure proper growth rate at minimum costs. The heifer needs to be inseminated on time in order to realize full lactation potential later in life.

Feeding of heifers

When feeding heifers, the farmer should aim to:

- Reduce interval between weaning and first lactation. This will increase number of calvings per lifetime (more of lactations) and lead to faster genetic improvement.
- Minimise mortality.
- Achieve a growth rate of 500 – 700 grams per day.
- Achieve first calving at around 24 months of age
- Ensure that heifers reach target live weights for breeding at 14 -16 months of age through feeding management.

Combining both adequate development and early age at calving has several advantages:

- It decreases the risk of calving difficulty.
- It improves lifetime milk production (days in lactation and milk production per day during lactation).
- It reduces rearing costs (feed, labour, etc.)
- It decreases total number of heifers needed to maintain herd size.

Heifers can be reared on good quality pasture only as their nutrient requirements are low (growth and maintenance). Supplementation with concentrate should be at 1% of body weight. Generally, the amount of concentrate given to heifers should be 1 to 4 Kg depending on whether the heifer is in-calf, its age, its size and forage quality. Mineral salt supplement is recommended on a free-choice basis (i.e always available).

While designing a feeding program for heifers, the following should be considered:

- Puberty is related to size rather than age. The consequences of poor feeding are manifested in delayed calving resulting in delayed milk production.
- Feeding heifers too much energy leads to deposition of fat in mammary gland tissue displacing secretory tissue resulting in reduced milk yield. The key period in mammary gland development is between 3 and 9 months of age. During this period, mammary tissue is growing at 3.5 times faster

than body tissue. Heifers fed high-concentrate rations develop less milk secretory tissue in the mammary gland than heifers raised on recommended rations.

- Heifers calving at 24 months have a higher lactation milk yield compared to those calving at an older age.
- Milk yield is related to the size of animal. For twins of same genetic makeup, the heavier one produces extra milk in a lactation.
- Both under- and over-feeding heifers are undesirable during heifer rearing. Overfeeding may result in obesity, low conception rate, difficult calving and low milk production while underfeeding will result in low conception rate, poor fetal growth, difficult calving and low first lactation milk yield. It is therefore important to monitor performance of heifers, particularly the body weight change and height at withers.
- It is recommended that heifers should be served when in body condition score 3 on a scale of 1-5.



Overfeeding



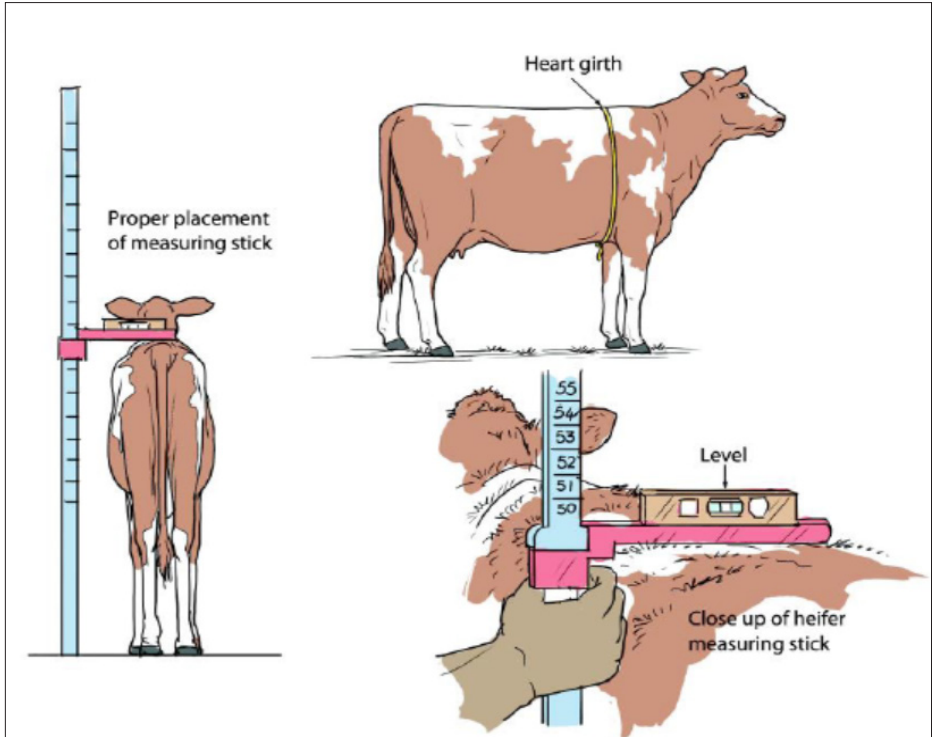
Underfeeding

The following targets for heifers are recommended for optimal productivity:

Parameter	Time
Age at first calving	24 to 28 months
Body weight at first insemination	280-300 kg
Body condition score	3.0 to 3.5
Growth rate from 3 to 10 months of age	0.5 to 0.6 kg/d

Growth Rate (Weight) Versus Age of heifers

Growth should be such that increase in weight is accompanied by a proportionate change in height. Growth charts allow a farmer to compare the height and weight of heifers to a standard curve that represents the average for the particular breed. This tool enables the farmer to monitor heifer performance to determine whether feeding and other management practices are adequate.



Three Important Measurements for Evaluation of Heifer Growth

Source: Dairy cattle manual, Ministry of Agriculture, Livestock and Fisheries, State Department of Livestock

Appropriate age and Weight for Serving Heifers

Regardless of age, puberty is attained when a heifer weighs approximately 40% of her mature body weight. However, service is recommended when a heifer reaches 60% of her expected mature body weight. This is normally achieved when the heifer is 14 to 18 months old in exotic dairy breeds. Smaller breeds may be served one or two months earlier than large breeds because they mature earlier. Heifers in good body condition and gaining weight at service time

generally show more definitive signs of estrus and have improved conception rates compared to heifers in poor condition and/or losing weight.

Steaming up of heifers

Once heifers are in-calf, feeding should be adequate to ensure proper development to avoid calving problems and poor first-lactation yield. In-calf heifers may be maintained on good quality forage alone but concentrates should be given if the forage is of low quality.

Feeding regime during the last two months of gestation can affect milk production during the first lactation. The exact amount of concentrates to feed before calving will depend on forage quality, size, and condition of the heifer. A rule of thumb is that the heifer should be fed concentrate at 1 percent of body weight starting about 6 weeks before calving with a ration balanced in protein, minerals, and vitamins.



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KALRO/NAVCDP IC Pamphlet No. 036/2024