



Management of heifers in dairy animals in Pakistan

Introduction

Female calves are called heifer calves and after weaning they are called heifers. A farmer who does not rear any heifer calves must buy all the replacement heifers needed for his herd. It may be possible to buy heifers whose genetic merit is superior to that of older cows, but this cannot be guaranteed. Also, the health of the purchased heifer is often unknown so that new diseases may be introduced to the herd.

Good heifer care is important because the amount of milk a cow produces in her life time depends on the number of lactations completed, in turn depending on the number of calves born. If the first calving occurs at a too early age this may cause stunted growth, which may reduce lifetime production. As such, the period between weaning and first calving should not be seen as an unproductive period, but as the foundation for the animal's productive life.

The objective of heifer rearing must be to achieve:

- The best growth for the economic circumstances and capital resources of the farm, particularly since the most efficient use of food for growth occurs in younger animals and better feeds are used with a greater efficiency for growth than for milk production
- Maximum number of lactations (number of calves born) by breeding heifers at the correct stage/age

The feeding, health, management and growth of the heifers must satisfy the following requirements:

- to achieve a high rate of survival
- reach puberty (good management) at about 12-13 months of age (cattle) and 17-21 months (buffalo)
- under good management to become pregnant at 15-20 months of age (cattle) and 21-25 months (buffalo).
- Ideally to calve at 24 - 30 months of age (cattle) and then to produce milk satisfactorily
- to return to oestrus and be re-mated within 70 to 80 days of calving

Well-grown heifers can be expected to achieve the objectives listed above, and table below gives the minimum acceptable weights for heifers for two temperate breeds at several important stages of their growth and development.

Target weights (kg) for heifers (good management)

	Buffalo	Cattle
Birth weight	26-31	30-35
At puberty	270-300	220-270
To become pregnant at	300-325	270-310

Heifer growth and nutrition

A heifer's weight rather than her age determines when puberty occurs and the heat cycle begins. The first signs of heat usually appear when heifer reaches 40-60% (Cattle) or 50-70% (Buffalo) of their mature body weight. In well-fed heifers, sexual maturity usually occurs at about 11-15 months (Cattle) or 17-21 months (Buffalo) of age. In Pakistan, sexual maturity of heifers may not occur at these ideal ages due to poor management.

Heifers which are much lighter than the above suggested weights are less likely to become pregnant at the above ages. Also, they are likely to produce less milk fat in their first lactation; they may also be less fertile when being re-mated during their first lactation.

Breeding soon after a heifer reaches puberty would result in poor performance in subsequent lactations.

In order to achieve the recommended live weights at the various ages, the Jersey and Friesian heifer calf must grow at about 450 to 550 g per day, respectively during the period from weaning until the birth of its first calf. In cattle, provided that the heifer's growth rate is satisfactory, she will reach puberty by about 12 months of age and be ready to be mated at 14 to 15 months of age. If the heifers do not achieve the recommended live weights by mating time their fertility is likely to be affected. Also, if they do not achieve the recommended live weights at 24 months, with many animals their first lactation's milk production is likely to be reduced.

These important effects are caused by slow growth, which to a large extent is due to poor nutrition. In some cases it may be appropriate to feed the lighter heifers preferentially for short periods with good quality concentrates, in order to overcome the effects of previous under feeding.

Some guidelines on weights (kg) to breed pure and cross breeds:

Friesians, Friesian x Brown Swiss	- 300
Friesian x zebu crosses	- 275
Buffal	- 300

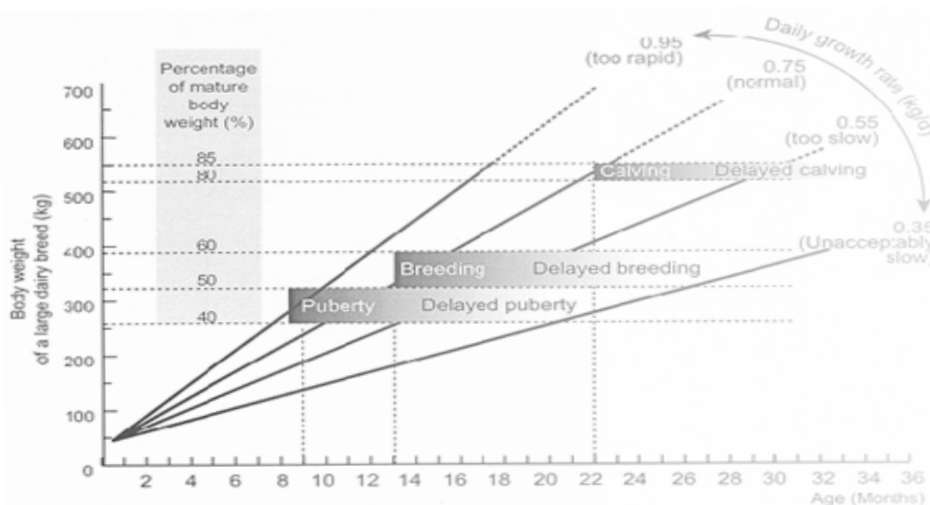
Feeding from breeding to calving

Heifers that are more than 13 months old have sufficient rumen capacity for adequate growth when fed on good quality forage. Fertilized grass or a combination of maize silage and a legume provides adequate nutrient intake. Use

concentrates when the forage quality is low. One to two months prior to calving, the feeding should be adjusted to prepare the heifer for calving and first lactation.

The pregnant heifer should be well fed to reach a Body Condition Score of about 3.0 at calving (see Fact sheet on BCS system). This will give her some protection against the stresses and strains of early lactation when she must produce milk and continue to grow, and also allow her to return to oestrus in the second month after calving. Emaciated (too thin) or obese (too fat) heifers are more prone to difficult calving and post calving problems. Once the heifer is pregnant, insufficient growth may have harmful effects:

- poor foetal nutrition,
- difficult calving due to sub-optimal skeletal growth,
- lower first lactation milk yield



When high quality feeds are difficult to produce, rearing pure or crossbred heifers with abundant, low quality feeds may result in slow growth rates (400-500 g/day) and delayed first calving, but this might be the most economical rearing strategy for such situations!!

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It was prepared by M.N.M Ibrahim (m.ibrahim@cgiar.org).



RESEARCH PROGRAM ON Livestock and Fish



ilri.org
better lives through livestock
ILRI is a member of the CGIAR Consortium

Box 30709, Nairobi 00100, Kenya
Phone: +254 20 422 3000
Fax: +254 20 422 3001
Email: ILRI-Kenya@cgiar.org

Box 5689, Addis Ababa, Ethiopia
Phone: +251 11 617 2000
Fax: +251 11 617 2001
Email: ILRI-Ethiopia@cgiar.org

