

How feed requirements change during lactation

This chapter:

Explains the changes in energy requirements and intake capacity of cows at different stages of lactation.

The main point in this chapter:

- the partitioning of energy to milk production and body condition changes with the stage of lactation
- the stages of lactation can be categorised into early, mid- and late lactation and the dry period
- each stage has different goals and therefore required different feeding strategies.

Several changes occur in cows as they progress through different stages of lactation. As well as variations in milk production, there are changes in feed intake and body condition, and stage of pregnancy.

Following calving, a cow may start producing 10 L/d of milk, rise to a peak of 20 L/d by about seven weeks into lactation then gradually fall to 5 L/d by the end of lactation. Although her maintenance requirements will not vary, she will need more dietary energy and protein as milk production increases then less when production declines. However, to regain body condition in late lactation, she will require additional energy.

If a cow does not conceive, she has no need for additional energy or protein during pregnancy. Once she becomes pregnant she will need some extra energy and protein. However, the calf does not increase its size rapidly until the sixth month, at which time the nutrient requirement becomes significant. The calf doubles its size in the ninth month, so at that stage a considerable amount of feed is needed to sustain its growth.

Cows usually use their own body condition for about 12 weeks after calving, to provide energy in addition to that consumed. The energy released is used to produce