

# Managing the transition to solid feed

At birth, the rumen is small, undeveloped and does not contribute to digestion. The rumen needs to develop before it can digest forages. The intake of concentrate and water are the most important factors for rumen development.

## Rumen development

If stimulated early on, a calf's rumen can start to function from as early as five days of age with the majority of calves actively ruminating by 28 days of age.

Consumption of concentrates and water provide the rumen microbes with the nutrients they need to grow and multiply.

After three weeks of eating starter concentrate, the rumen will have enough microbes to ferment the feed to supply the calf with energy.

## Starter concentrate

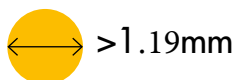
Calf starter should be offered from day one.

- Starter can be provided as a pellet or coarse feed and should be highly palatable to encourage early intake

Ensure starter has adequate particle size for proper rumen development

- 3mm pellets are the most common
- Should be larger than 1.19mm in diameter to avoid ruminal parakeratosis and bloat
- Should not be powdery or dusty as this will reduce intake.

Pellet



Calf nuts of 6mm are designed for feeding to calves at 12 weeks or older.

Starter should provide around 18% crude protein to aid microbial growth and promote intake.

Calves eat only small amounts in the first few weeks but intake begins to increase measurably around 14 days of age.

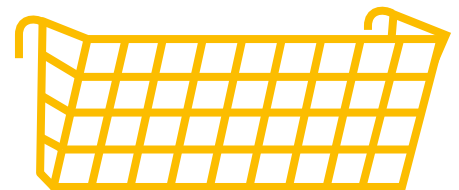
To avoid wastage, provide small amounts of fresh starter daily.

Observe calves to see when they require more starter.

## Forage feed

Forages are a good source of fibre which promotes the growth of the muscular layer of the rumen and helps maintain the health of the rumen lining.

In addition to starter, good quality forage should be offered as early as day 3. This should be offered on a little and often basis to ensure freshness and encourage intake.



Feed racks and buckets should be located at a height that is suitable for calves and positioned so as to reduce possibility of soiling.

# Water – An essential nutrient

Water accounts for 70-75% of a calf's body weight and calves will perform best with fresh drinking water available to them from birth.

## Why is water important for calves?

Water is fundamentally important to rumen development and optimal growth of young calves.

- It is required to support the rumen microbial population and promote good rumen development and function.

All calves **MUST** be provided with fresh, clean water from birth.

Fresh water should be provided in addition to milk or milk replacer.

- Providing water in addition to milk replacer can increase growth by 38% and starter intake by 31%
- Calves will drink 1 litre of water per day during the first week of life, increasing to nearly 3 litres by 3-4 weeks of age
- Providing warm water (16-18oC) during cold weather may stimulate starter intake.



## Hot weather

In hot weather, particularly in temperatures above 25°C, the calf's intake of water will increase to maintain hydration and normal body function.



## Water Quality and Cleanliness

Location of the water supply needs to be considered to avoid contamination from faeces and reduce wet bedding material due to spillage.

Clear out water sources daily of any feed or bedding.

## Scours

During periods of scours, dehydration will result in reduced feed intake, feed conversion and growth.

Scouring calves will consume greater volumes of water so must be provided with continuous access to water.

For more information on calf management, please visit the web: [dairy.ahdb.org.uk/calves](http://dairy.ahdb.org.uk/calves)