

Feeding milk to calves

Whole milk vs milk powder?

Whole milk has always been the foundation of all great calf nutrition programs. However, there are several studies to show that whole milk alone may not be sufficient to meet the requirements of calves. The main concern is that whole milk is low in vitamins and minerals, prone to bacterial contamination and fluctuate in nutrient intake compared to using a milk replacer. With the ever increasing calf growth demands and shorter weaning times we need to be open to the benefits of these strategies.

That been said, not all milk replacers are created equally. Care should be taken when choosing a milk replacer to include in your calf feeding program. Using a replacer that is highly digestible with a higher percentage of milk proteins (compared to plant proteins) (overall crude protein level of 18-25%) and appropriate levels of fat (10-20%) can make up for solid levels and help adjust the protein:fat ratio in whole milk and ensure consistency in calf diets. Remember to follow the directions by the manufacturer for water temperature to ensure accurate mixing and stability within water.

How much milk to feed?

Traditionally we have stuck to volumetric quantities (4,5l) as a guide for milk feeding. However, this is much less than natural intake of calves meaning they are underfed and fail to reach their true potential. It is important that we move our mindsets to measures of weight as milk solids to avoid scours and minimised nutrient absorption due to osmotic issues* and inconsistencies in solid contents of the total solution.

*Osmotic balance: High total solids in **milk** or **milk** replacer can create a situation where the **osmotic** balance in the **calf** is out of equilibrium and water is pulled out of cells resulting in diarrhoea and dehydration, even in a **calf** drinking plenty of **milk** (DairyHerd,2016)

There are several strategies for increasing milk nutrient intake in calves.



(Dairy Australia, 2017)

1. Increasing volume fed per day

Can be done through feeding more milk per feeding or increasing number of feeding daily. Remember to transition calves onto these higher volumes gradually and monitor total milk solids to ensure consistency.

2. Increase total solids fed per day: *Fortified milk*

Is when calf milk replacer is added to whole milk to produce a solution with 20% total solids. The aim of this is to provide the high energy and protein feed in a smaller volume to achieve a similar nutrient content if either was used alone. To reduce exposure to pathogens good hygiene, handling and storage needs to be adhered to when preparing these solutions.

How it works

1 l of whole milk = 125g/MS total solids ie 12.5% total solids

A calf fed 2l of 20% fortified milk = 150g/MS total solids ie equivalent to giving an extra litre of milk in powder form

Therefore a calf fed 6l volume will receive an equivalent of 8l of milk nutrients by feeding 3l of fortified milk twice a day.

For example

Our objective is to feed 1.5% BWT (bodyweight) as DM (dry matter)

= 50kg calf x 1.5%

= 750g

So in a 50kg calf that is 6l of whole milk or in a fortified system an additional 250g of milk powder in a 4l milk

This will not only ensure a better growth rate but also a more efficient growth.

Fresh concentrates (starter rations) and adlib water should also be offered from the first week of milk rearing (Refer to our Calf Nutrition: Weaning brochure for more information).

Remember ..

For every 100g/d of preweaning body gain, milk yield will be increased by 160kg in the first lactation.

Contact us to discuss enhanced calf feeding strategies that will suit your farm.

