

Colostrum

Colostrum is the first milk produced by cows post calving. Colostrum contains a range of nutrients and other non-nutritive factors such as hormones, bioactive and growth factors to help with the development of the calf. Colostrum has 2X the total solids as whole milk with higher levels of electrolytes and proteins (17-18% in comparison to 2.3-3.5% in milk).

As calves are born are with no immunity against diseases- they rely entirely on the passive immunity through colostrum. Development of the gastro intestinal tract and energy metabolism in calves is also enhanced with appropriate colostrum feeding.

Colostrum management: The 4 Qs

1. Quality

Not all colostrum are created equally and of the same quality. Breed, parity, level of pre-calving nutrition, length and condition of dry period can all affect colostrum quality. Therefore, each colostrum sample needs to be routinely assessed using a Brix refractometer. The amount of antibody IgG is used as the measurement of colostrum quality. This will determine how much successful passive transfer occurs. The quality of colostrum also determines the glucose uptake of calves. Visually judging IgG content using thickness and depth of colour is subjective and would not give an accurate measure.

High quality colostrum has an IgG concentration of >50 milligrams of IgG in each ml of colostrum.

Very high	Brix score >22%	60 mg per ml
High	Brix score 22%	50 mg per ml
Low	Brix score <20%	30 mg per ml

Ensure that the highest quality colostrum is fed to calves during the first 24hrs and the lower quality for feeding calves at 2 or 3 days of age.

2. Quickly

It is paramount that the calf is fed colostrum as soon as it is born. The first few hours after birth is when the transfer of immunity (in the form of antibodies) is the highest. Within 6 hours, the calf's ability to absorb these antibodies drop to 30-50%. After 24 hrs no more IgG can be absorbed by the calf's intestines. It could still be good practice to feed colostrum after the first 24hrs. IgG still binds to pathogens in the gut and protect the calf from infections.

3. Quantity

The amount of colostrum fed can have a significant impact on prepubertal growth rate and feed intake post weaning.

- » Good quality ($\geq 22\%$ Brix) – give 2 x 2 litre feeds within the first 12 hours of life.
- » Poor quality ($< 22\%$ Brix) or if not tested – give 2 x 3 litre feeds within the first 12 hours.
- » An additional feed of 2 litres of good quality, fresh colostrum in the next 12 hours is beneficial.

Spacing feeds out by 2 hours and limiting a single feed to 2-3 l will reduce overfeeding issues. If calves are exposed to lower temperatures, the colostrum required to meet maintenance is doubled.

4. sQueaky clean

The cleanliness of colostrum is important because bacteria can interfere with the calf's ability to absorb vital antibodies. In addition, they increase the prevalence of diseases in the calf.

You could send off a fresh/frozen sample of colostrum to your vet to test for a Total Plate Count (TPC) or Total Coliform Count (TCC).

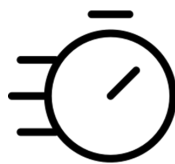
Clean colostrum is categorised as:

Total Plate Count (TPC) $< 100,000$ cfu/ml
Total Coliform Count (TCC) $< 10,000$ cfu/ml

cfu = colony forming units)
(coliforms indicate faecal contamination)



QUALITY



QUICK



QUANTITY



**SQUEEKY
CLEAN**

(basically put this together myself using an icon of each and adding a text below it so maybe source google?)

Shani Liyanage

0429 662 771

Kristy Evans

0456 977 413

Caitlin Chester

0487 662 772

