



PRACTICAL COLOSTRUM MANAGEMENT 2

Colostrum contains antibodies which give immunity to the calf at the start of life; therefore colostrum is crucial for protecting against conditions such as scour and pneumonia.

Ensuring calves receive adequate colostrum can be a challenge but sticking to the 5 Qs below can help to make sure your youngstock get the best possible start.

QUANTITY

Increased quantity = better immune protection.

Give a first feed of 4 litres or 10% of bodyweight within 4 hours of birth; this should then be followed up by a further 2 litres within 12 hours of birth.

A calf requires approximately 20 minutes of continuous suckling to consume enough colostrum from the cow.

If a calf is not receiving adequate colostrum quantities it may be necessary to feed the calf using a nipple feeder or stomach tube. Stomach tubing should only be performed if you and your herdsmen are trained and confident – talk to your vet about training.

Impact of feeding 2 or 4 litres of colostrum at birth to a group of Brown Swiss calves¹

	Fed 2 litres of colostrum	Fed 4 litres of colostrum
Number of cows in each group	37	31
Average daily weight gain (kg)	0.8	1.03
Age at 1st conception (months)	14	13.5
% culled before the end of 2nd lactation	24.7	12.9
Total milk yield in 1st and 2nd lactations (kg)	16,044	17,072

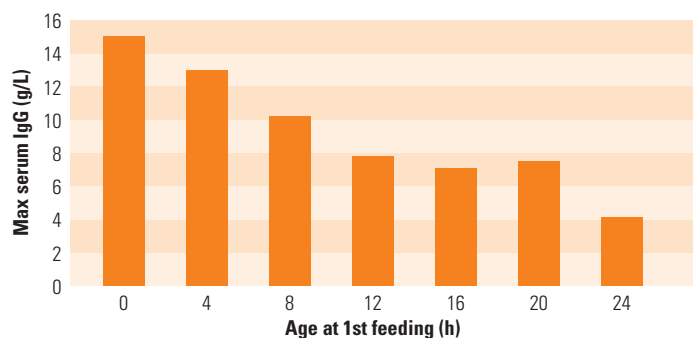
QUALITY

Colostrum quality varies enormously between cows, so only feed good quality colostrum. Colostrum of high quality contains high concentration of antibodies (at least 50 g/L of IgG antibodies). Test colostrum quality every time with a colostrometer or BRIX refractometer to ensure calves are receiving good protection.

QUICKLY

At birth the calf's gut is porous so it can absorb antibodies directly into its bloodstream. This ability lasts only a few hours so it is absolutely critical that the calves get their first colostrum feeding within the first 4 hours of birth. Colostrum quality decreases by 3.7% every hour after birth so it is critical that colostrum is harvested quickly too.

The calf's ability to absorb antibodies declines rapidly over the first 24 hours²



SQUEAKY CLEAN

Colostrum is an excellent medium for bacterial growth as numbers can double every 20 minutes at room temperature. If colostrum becomes contaminated with bacteria this will reduce the uptake of antibodies by the calf or worse, lead to sickness such as septicemia or diarrhoea. Good hygiene is essential when harvesting colostrum from the cow, giving it to the calf or storing it for later use.

Colostrum storage and preparation

The earlier you collect the colostrum, the higher quality it will be. Store frozen colostrum ready to be used in the case of low quality colostrum of a cow, down cows, death of a cow etc. Test colostrum before storage to confirm it is high quality. Raw colostrum from different cows should not be pooled as this will lower overall quality of colostrum, and also increases the risk of Johne's disease transmission.

Fresh colostrum kept at room temperature should be used within 1 hour. If the colostrum is being stored for longer it should be refrigerated (use within 2 days) or frozen (this should not be stored for longer than 12 months). Only clean, good quality colostrum should be frozen.

Before use, bring the colostrum to 35-40°C in a warm water bath. Never use a microwave or boiling water.

QUANTIFY

Up to 50% of calves do not get enough colostrum and a recent study showed that as little as 30% of calves have sufficient levels of colostral immunity.³

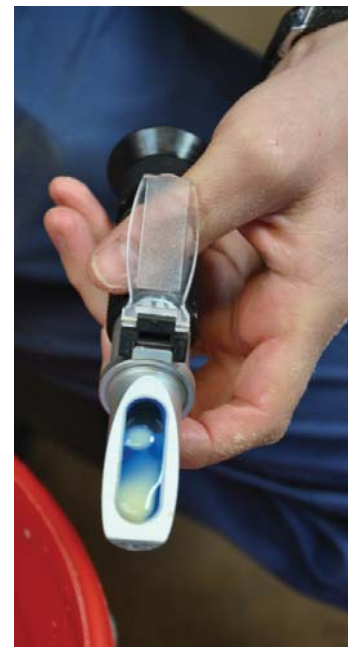
Evaluation of the colostrum quality and management on farm should always consist of two steps: evaluation of the colostrum quality and then evaluation of the calf's immune status.

Step 1 – Measure colostrum quality

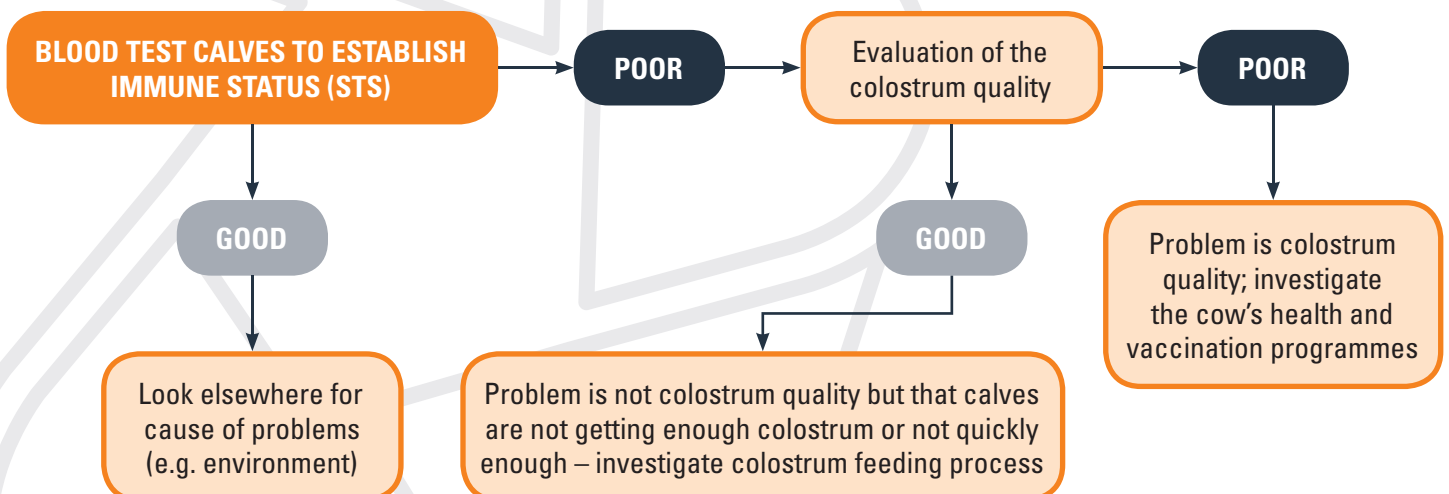
- ◆ The quality of colostrum (concentration of antibodies) can be directly evaluated by testing the colostrum's specific gravity with a colostrometer or BRIX refractometer.
- ◆ Good quality colostrum has a specific gravity > 1.050 (> 50 g/L of IgG antibodies or a BRIX measurement of ≥ 22).

Step 2 – Evaluate calf's immune status

- ◆ Your vet will collect blood samples from calves aged 24 hours to 7 days to measure the total solids in serum (STS), using a hand-held refractometer.
- ◆ This quick and simple test evaluates the transfer of antibodies from cow to calf in colostrum.
- ◆ With good management STS should reach values of 6-6.5 g/dL; in well managed herds at least 85% of calves should have STS levels above 5.2g/dL.



If your herd is having issues with calf health then knowing the quality of the colostrum of your cows and how that is transferred to your calves is crucial. Use this flow chart and discuss the results with your vet to come up with a colostrum action plan on your farm.



References: 1. Faber *et al.* (2005) Case Study: Effects of colostrum ingestion on lactation performance. The Professional Animal Scientist 21: 420-425. 2. Stott *et al.* (1980) Colostral immunoglobulin transfer in calves. Journal of Dairy Science 62: 1766-1773. 3. All-Island Animal Diseases Surveillance Report for 2012.

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