



72 Lowry Street, Rochester, Vic, 3561

Ph: (03) 54842255 Fax: (03) 54842424 Email: admin@rochyvet.com.au

Colostrum

Importance of colostrum

Colostrum is defined as the mammary secretion collected at the first milking after calving. Colostrum is a unique mixture of components derived from the cow's udder and blood. It contains antibodies as well as other constituents that work together to provide disease protection for the calf.

Calves are born without any antibodies meaning they are required to be ingested and absorbed by the calf's intestine. The calf's intestine absorbs the large IgG molecules easily straight after birth. However, the intestine's ability to absorb antibodies decreases after birth—it decreases by 30–50 % within 6 hours of birth and stops completely between 24 to 36 hours after birth. Therefore, it is essential to deliver colostrum to the calf as soon as possible after birth.

There are many factors that affect the quality of colostrum being provided to the calf. These include cow factors, timing of collection and contamination of colostrum with bacteria.

Colostrum should be harvested from the cow within 12 hours of calving. Therefore, it is recommended to remove freshly calved cows from the calving environment at least twice daily and harvest the colostrum as soon as possible.

*Calves should not be left to suckle the cow for colostrum intake as greater than 60% of calves do not achieve passive transfer of immunity (either not consuming enough colostrum or consuming poor-quality colostrum).

Assessing the quality of colostrum

The easiest method of assessing colostrum on farm is using a Brix refractometer. See Appendix 2 for details on how to use a Brix refractometer.

A Brix refractometer reading of 22% or greater indicates good quality colostrum (more than 50 g of IgG per L).

Storage of colostrum

Short term options Include:

No refrigeration- Colostrum should be used within a couple hours of collection before quality starts to deteriorate and bacteria counts start to increase.

Refrigeration- Colostrum should be refrigerated within 1 hour of collection. It can be stored in the fridge for up to 2 days. Ideally store colostrum in 2L containers. Make sure containers are labelled with the date. Prioritize colostrum by feeding newborns the freshest colostrum.



Refrigeration with a chemical preservative- Potassium sorbate can be added to the colostrum soon after collection to prevent deterioration. It can be stored for up to 6 days in 2L containers. Make sure containers are labelled with the date.

Long term option include:

Freezing – Is the only method which can maintain quality and avoid bacterial contamination. Only freeze good quality colostrum. Freeze colostrum soon after collection. Freeze colostrum in 2L lidded containers or sealed freezer bags (Zip-lock bags or Perfect Udder bags) placed on flat trays—thawing is quicker this way.

Thawing colostrum

Thawing out frozen colostrum needs to occur slowly. Use warm water (not hotter than 60°C) to avoid damaging the antibodies or at room temperature. It is not recommended to microwave colostrum as it thaws unevenly and can cause damage to the antibodies.

How to supply the colostrum to the calf?

Calves can be offered colostrum via a teat, or they can be tubed with an oesophageal tube (see Appendix 1 for instructions on how to carry out tubing a calf). Both methods have been shown to be effective.

How much colostrum to give?

Current colostrum feeding practices= 3L of Brix >22% in first day of life.

A useful guide for estimating the volume of good quality colostrum required to achieve the best transfer of immunity is **10-12% of the calf's bodyweight**. This should be given within the first 12 hours of life and this volume repeated in the next 12 hours of life.

Greater volumes and more frequent feedings can be used to increase the likelihood of transfer of immunity but if nutritional scours are a concern, avoid feeding more than 5% of body weight in a single feed and space feeds by at least 2 hours.

****Calves are required to absorb 150g of IgG to achieve passive transfer of immunity.

Assessing passive transfer in calves

Assessing the calf's total proteins level in the blood within the first 7 days of life is a useful method of determining the passive transfer status of the calf and how well the colostrum supplementation program is working. The protein level approximates the IgG in the blood stream.

Vets can take the sample from the calf:

- Blood sample collected within the first 7 days of life
- Blood sample left standing for 24 hours to allow the blood cells to settle to bottom of tube
- A droplet of the serum is applied to a refractometer and the level is recorded

When using a refractometer, a total protein of 5.5g/dl indicates successful passive transfer.

It is ideal for herds to aim for 80% of calves sampled to have blood total protein of 5.5g/dl.