

Colostrum Management

Off to a healthy start naturally!

www.calfcare.ca



Acknowledgements

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www.ontarioveal.on.ca

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For more information visit www.calfcare.ca

Handling colostrum

Collecting colostrum

- Wash your hands before collecting colostrum.
- Cleanly collect colostrum from the cow. Clean mother's teats and teat ends using a single cloth or towel approach as follows: strip, dip/wash, dry, and apply milking unit. If using a bucket milker, make sure the bucket, inflations and hoses are clean and in a state of good repair as these apparatuses can transfer bacteria to the teat canal.
- Collect colostrum from mother within 15 minutes of calving.



Pooling colostrum: is it good or not?

Industry experts recommend that pooled colostrum **NOT** be fed to calves because it has the potential to spread disease. The risks associated with using pooled colostrum far outweigh the added advantage of immunoprotection from multiple-sourced cows. Immunoglobulin levels would be average at best.



Storing colostrum

Fresh colostrum can be refrigerated without degrading the proteins for up to seven days. Do not leave colostrum at room temperature. Bacteria double every 20 minutes in colostrum. When you do refrigerate colostrum the fridge should be between 1°C to 2°C.

When freezing colostrum, it is recommended that it be frozen in 2 litre double-bagged freezer bags or in 2 litre plastic containers. Laying the bags in the freezer on a flat cookie sheet speeds up the freezing process. Colostrum can be frozen for up to one year. Freezing colostrum should be a standard practice on the dairy farm for those situations where colostrum is in short supply.

Each bag or container should be labeled with the date and cow who gave the colostrum.

Freezer temperature should be -20°C. Frost free freezers are **NOT** recommended for long term storage because of the freeze thaw cycles.



Thawing colostrum

Colostrum should be thawed in a warm water bath (50°C or 120°F) not at room temperature on a counter. Microwaving on low for short time periods is acceptable. Avoid creating hot spots in the frozen colostrum by watching closely and mixing if necessary.



Feeding calves colostrum

Amount to feed

- If colostrum is good quality, free of blood, serum, mastitis, feed 4 litres to the calf within 30 minutes of birth. If colostrum is poor quality use good quality colostrum that has been frozen or a good quality colostrum replacement product.
- Calves should be fed an additional 2 litres of colostrum within 8 hours of birth. Remember bigger breeds (such as Holsteins) need at least 4 litres of colostrum right away and smaller breeds (such as Jersey) need at least 3 litres.
- Continue feeding transition milk for three days as it is very rich in nutrients and energy that will benefit the calf.



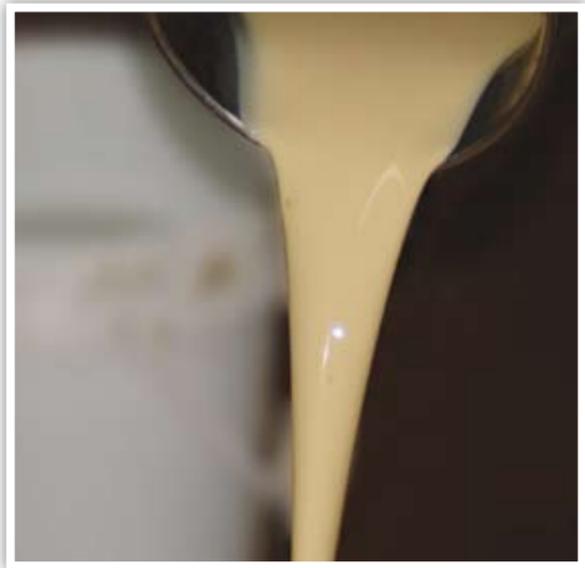
Colostrum quality

Colostrum should look like and have the consistency of melted vanilla ice cream. Runny, thin colostrum or colostrum mixed with blood are signs of poor quality. To test for quality use a colostrometer.

Calves that have a total protein concentration greater than 5.5g/dL have received adequate colostrum. Testing can occur from six hours after the first colostrum feeding to one week of age. Your veterinarian can do random blood tests, which is good feedback on the effectiveness of your colostrum management.

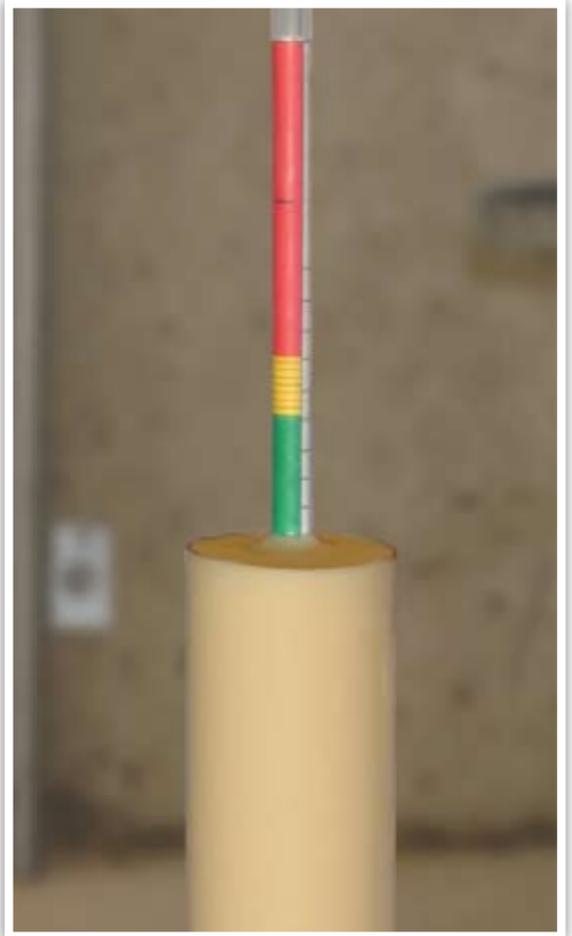
Colostrum samples can be sent for testing. Bacteria counts should be less than

100,000cfu/mL. High bacteria counts are associated with poor colostrum absorption in the calf. Colostrum may also become a source of infection.



Using a colostrometer

- Colostrometers measure the specific gravity of colostrum and estimates of immunoglobulin (IgG) levels present in colostrum. When using a colostrometer it is important to follow these guidelines:
- Allow the sample to cool to room temperature.
- Fill the cylinder to the top. Overflow the cylinder to make sure all foam and scum are removed from the sample.
- Float the colostrometer in the colostrum.
- If the result is green go ahead and feed to newborn calves.



Bottles, buckets and nipples

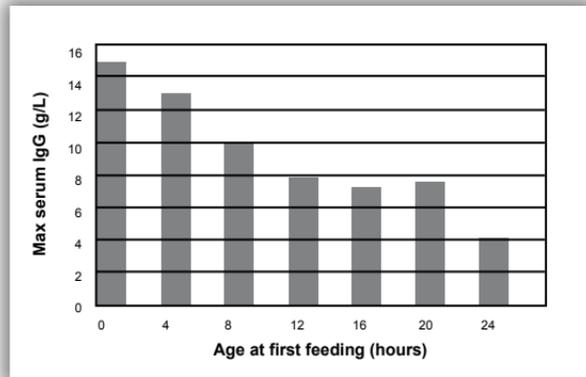
Bottles, buckets and nipples should be washed using soap and hot water (80°C). The bottles, buckets and nipples should then be rinsed with a 10% bleach solution. After cleaning, let the bottles, buckets and nipples dry before the next use to reduce bacterial load.

Bottles and buckets with cuts, grooves or scratches on the inside should be discarded. That is an ideal place for bacteria to grow.



Antibody absorption

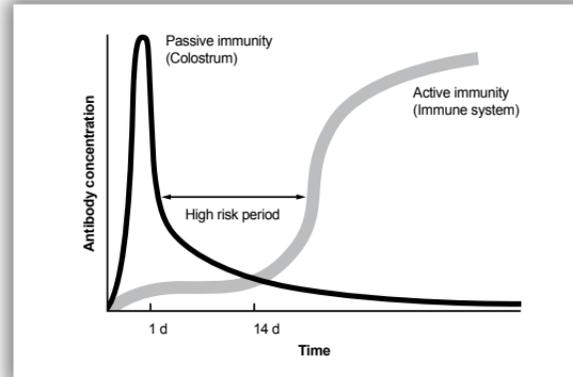
From this graph, you can see the importance of getting the colostrum into the calf as soon as possible. By 24 hours old, the calf's ability to absorb antibodies has rapidly declined. This decline starts 30 minutes after birth which stresses the importance of feeding calves colostrum as soon as they are born.



Source: Journal of Dairy Science, 62:1766-1773

The mighty immune system

This graph shows how long the passive immunity from colostrum lasts when the calf is given the correct quality and quantity of colostrum. By day 14 the calf has entered into the risk period for sickness. At this time the calf is starting to activate its own immune system rather than the immunity gained from the colostrum.



Source: Penn State

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