 <b>University of British Columbia</b> <b>Centre for Dairy Education</b> <b>and Research</b>	<b>Document Number</b>	<b>SOP-Calf-008</b>
	<b>Revision Number</b>	<b>000</b>
	<b>Effective Date</b>	<b>June 24, 2020</b>
<b>COLOSTRUM MANAGEMENT</b>		

## 1. PURPOSE

- 1.1. This Standard Operating Procedure (SOP) instructs Farm Workers and students on the proper method of colostrum management at the UBC Dairy Education and Research Centre.

## 2. SCOPE

- 2.1. This SOP will describe the method used for testing and storing colostrum at the UBC Dairy Centre.

## 3. RESPONSIBILITY

- 3.1. The Operations Manager is responsible for reviewing and updating this procedure as required.
- 3.2. The Operations Manager is responsible for ensuring all staff are trained in this procedure and that training is documented.
- 3.1. Farm workers and students who work in the milking parlour are responsible for reading, and, adhering to the procedures outlined in this SOP.

## 4. DEFINITIONS


- 4.1. *Colostrum*: refers to the first milk harvested after a cow has calved, that is high in immunoglobulins.
- 4.2. *Immunoglobulins*: also known as antibodies, are present in the colostrum and provide new born calves with passive immunity against diseases. IgG (immunoglobulin G) is one type of antibody found in colostrum.

## 5. TRAINING

- 5.1. Training will include SOP overview, animal handling, equipment instruction, and cleanliness administration.

## 6. SAFETY PRECAUTIONS

- 6.1. Personnel harvesting colostrum will follow routine health and safety procedures to protect against human and animal injury.

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- 6.2. All personnel entering the milking parlour will need to wear personal protective equipment. Coveralls, disposable gloves and dedicated facility footwear is to be worn.

## 7. GENERAL

- 7.1. Colostrum is collected at the first milking after a cow has calved.
- 7.2. Calves are fed colostrum within 4 hours of birth. See SOP on Newborn Calf Care. Depending on the time of birth and dam's colostrum quality, calves may be fed colostrum that has been harvested, tested, and stored from another cow. It is important to note that colostrum is not pooled. Colostrum from one cow feeds one calf.


## 8. MATERIALS AND EQUIPMENT

- 8.1. Milk can
- 8.2. Graduated Cylinder
- 8.3. Digital thermometer
- 8.4. Colostrodoser (Colostrometer)



## 9. PROCEDURE


- 9.1. Harvest colostrum from first milking into a separate milk can. Refer to SOP on Milking Procedure.
- 9.2. Allow colostrum to cool to about 20° C. Do not leave the bucket of colostrum at room temperature for an extended period of time because bacterial numbers in the fluid will increase exponentially. See graph 1.

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- 9.3. Fill the clean, graduated cylinder that comes with the colostrodoser with well-stirred colostrum and remove any foam to obtain an accurate reading.
- 9.4. Place the colostrodoser gently in the colostrum and read the scale.



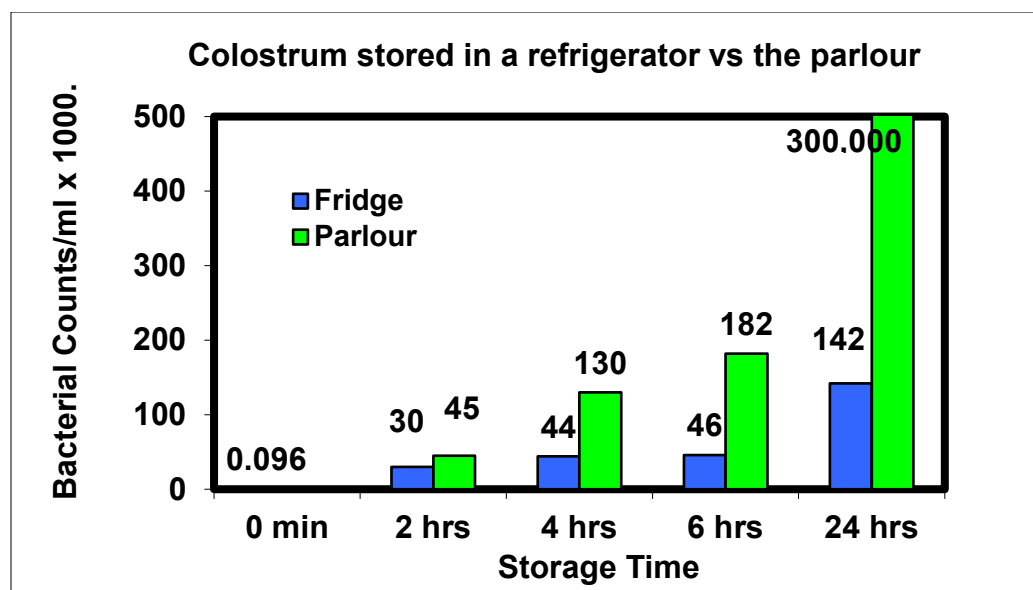
- 9.5. Refer to **Table 1** below, and the chart located in the vet room for a description of colostrum quality vs the colostrodoser reading.
- 9.6. Colostrum with readings “poor/fair” (less than 50 IgG/L) should be discarded.
- 9.7. If not required right away to feed a calf, or if there is more than needed for feeding (see SOP on Newborn Calf Care), transfer good –excellent quality colostrum into clean 4L jugs. These are located under the medicine cabinet in the main vet room.
- 9.8. Label the colostrum jug with the colostrum quality (based off chart), cow number, and date harvested.
- 9.9. Depending upon the number of imminent calvings expected, and the amount of colostrum already in the refrigerator, either store the fresh colostrum in main barn vet room refrigerator or freezer.
  - 9.9.1. When moving colostrum from the freezer to the refrigerator record the date thawed (moved into the refrigerator) on the colostrum container.
  - 9.9.2. Colostrum may be stored in the refrigerator for up to five days, after which time it should be discarded.
- 9.10. Clean the colostrodoser with clean water and dry with a paper towel.
- 9.11. Return bucket to milking parlour for cleaning. Refer to SOP on General Calf Barn and Equipment Cleaning.

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## 10. FIGURES AND DIAGRAMS

Colostrum Quality	Colostradoser Reading
Poor/Fair	Less than 50 g IgG/L
Good	50 - 75 g IgG/L
Very Good	75-100 g IgG/L
Excellent	More than 100 g IgG/L


Table 1. Colostrum quality as indicated by the colostradoser reading.



Graph 1. Poster presentation. Maintaining Colostrum Quality. Veira D. et al. Sept. 2006.

## 11. REFERENCES

- 11.1. CCAC Guidelines on the Care and Use of Farm Animals in Research, Teaching and Testing. CCAC. 2009
- 11.2. Code of Practice for the Care and Use of Dairy Cattle. National Farm Animal Care Council. 2009.

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- 11.3. McQuirk, S. and Collins, M. Managing the production, storage and delivery of colostrum. Vet Clin Food Anim. 20 (2004) 593–603.
- 11.4. Poster presentation. Maintaining Colostrum Quality. Veira D. et al. Sept. 2006.

**12. REFERENCE SOPS**

- 12.1. SOP-Calf-001 Newborn Calf Care
- 12.2. SOP-Cow-016 Milking Procedures
- 12.3. Sop-General-006 Calf Barn and Equipment Cleaning

**13. APPROVAL AND REVISION HISTORY**

<b>Author/Approver</b>		<b>Date</b>	<b>Signature</b>
<b>History</b>			
<b>Document #</b>	<b>Revision #</b>	<b>Changes</b>	