 University of British Columbia Centre for Dairy Education and Research	Document Number	SOP-CALF-001
	Revision Number	000
	Effective Date	JUNE 24, 2020
NEWBORN CALF CARE		

1. PURPOSE

- 1.1. This Standard Operating Procedure (SOP) instructs farm staff and students on the humane and proper methods of newborn calf care at the UBC Dairy Education and Research Centre.

2. SCOPE

- 2.1. This SOP will describe the methods and procedures used for handling and care of newborn calves at the UBC Dairy. This document will provide information pertinent to the health and humane care of a newborn calf.

3. RESPONSIBILITY

- 3.1. The Operations Manager is responsible for reviewing and updating this procedure when required.
- 3.2. The Operations Manager is responsible for ensuring all staff are trained in this procedure and that training is documented.
- 3.1. Personnel who work with newborn calves are responsible for reading, adhering and understanding the procedures outlined in this SOP.

4. DEFINITIONS


- 4.1. *Neonatal calves*- Defined as newborn calf.

5. TRAINING

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

6. SAFETY PRECAUTIONS

- 6.1. Personnel handling calves and equipment will follow routine health and safety procedures to protect against human and animal injury.
- 6.2. All personnel entering the calf barn will need to rinse boots off with hot water. Dedicated facility footwear is to be worn when working with calves. When working with newborns, gloves are recommended.

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6.3. Care will be taken when using the Gator Utility Vehicle.


7. MATERIALS AND EQUIPMENT

- 7.1. Gator Utility Vehicle
- 7.2. Shavings
- 7.3. Scale and scale basin
- 7.4. Rubber gloves
- 7.5. Navel Iodine Dip
- 7.6. 4 L quality colostrum
- 7.7. Bucket and thermometer to warm up colostrum
- 7.8. 2 x 2 L bottles with nipples
- 7.9. Esophageal tube (used in some cases)

8. PROCEDURES

8.1. MOVING TO THE CALF BARN

- 8.1.1. Prepare an individual stall in the calf barn. Place shavings in the next available clean, disinfected pen and spread it around to evenly cover the floor.
- 8.1.2. Use enough shavings to provide cushioning and absorption of future manure, at least 15cm. See SOP on Calf Housing
- 8.1.3. Return to the maternity pen to retrieve the calf with the Gator. Carefully lift the calf into the back of the gator and transport it to the calf barn. Personnel are not expected to move the calf alone. Partners are assigned to assist with calf care.
 - 8.1.3.1. The calf should be positioned near the front of the gator bed close to the driver seat. This allows for ability to hold on to the calf gently and securely to prevent injury to animals and humans.
- 8.1.4. Upon arrival at the calf barn, the calf needs to be weighed on the scale.

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8.1.4.1. Place calf gently into the basin on the floor scale to measure the birth weight. This information will be used on the newborn record.

8.1.4.2. Rinse weighing basin with hot water after the calf has been weighed.

8.1.5. After weighing, the calf can be gently placed in the clean and shaving-filled pen.

8.2. **DISINFECTING THE NAVEL**

8.2.1. After the calf has been moved to an individual pen, the navel and umbilical cord should be thoroughly dipped with the iodine tincture found on the table in the barn.

8.2.2. Ensure the teat dip cup is clean and the iodine mixture is fresh.

8.2.3. If the teat dip cup is empty, refill with bottle labeled “Navel Dip” located on the shelf in the pasteurizer room.

8.2.4. Repeat daily until the umbilical cord is dry.

8.3. **FEEDING COLOSTRUM**


8.3.1. All calves should be fed 4 L of “good” (or better) quality colostrum within 4 hours of birth. After colostrum feeding, calves are fed pasteurized milk. Refer to SOP-CALF-003 Calf Housing for more information. Colostrum is located in the fridge/freezer in the vet room of the main barn.

8.3.2. See “Colostrum Management” SOP for further information regarding colostrum quality score, and handling.

8.3.3. Warm colostrum to 35-38°C in a bucket of hot water. Replace water when it gets too cold. Do not defrost frozen colostrum at room temperature, this facilitates bacterial growth.

8.3.4. Transfer warm colostrum into two bottles (4 L) and place nipples on the bottles.

8.3.5. Feed one bottle at a time to the newborn calf. If the calf won’t suckle on the bottle, it will need to be tube fed (see below for instructions).

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Ask for assistance from an experienced person if you are unfamiliar and haven't been trained to tube feed a calf.

- 8.3.6. Make sure bottles stay within 35-38°C prior to being fed. This may be especially challenging in cooler weather.

8.4. **ESOPHAGEAL TUBE FEEDING**

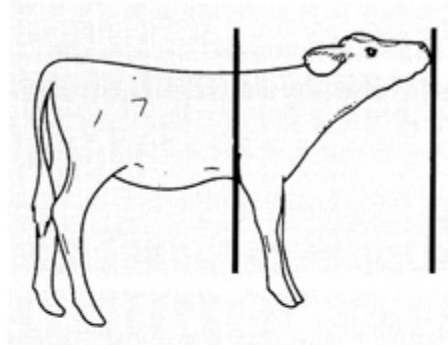
- 8.4.1. Calves are fed via esophageal tube when it has been determined, by a trained person, that a calf hasn't consumed the adequate quantity of colostrum or milk within a specific window of time. Consult a Senior Farm Worker with any questions.
- 8.4.2. Examine esophageal tube feeder to ensure it is undamaged and clean.
- 8.4.3. To determine the approximate distance the tube needs to be inserted, compare the tube length from the distance between the calf's mouth and shoulder.
- 8.4.4. Position the calf to be standing. If the calf can't stand, position it to sit on its sternum (breastbone) with the head up and between the person's legs.
- 8.4.5. Plug the small hole located on the side of the bottle.
- 8.4.6. Moisten the end of the feeder (the ball) with colostrum/milk to help lubricate the tube.
- 8.4.7. Secure the calf's head and gently insert the tube into the mouth over the calf's tongue. When the ball reaches the back of the calf's throat wait until the calf swallows and gently guide the tube down the esophagus.
 - 8.4.7.1. Before administering the colostrum or milk, ensure the tube is correctly placed. Feel along the left side of the calf's neck. Both the trachea and esophagus should be felt. See **Fig. 1**
 - 8.4.7.2. Trachea is a hard and rigid tube. The esophagus is soft, but firm when the tube is inserted. The tube should be felt in the esophagus.
 - 8.4.7.3. If the calf is coughing the tube is incorrectly placed and



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needs to be repositioned.

Hyperextension of a calf's neck and points for estimating length of esophageal tube.



Position of esophageal feeder in relationship to the trachea.

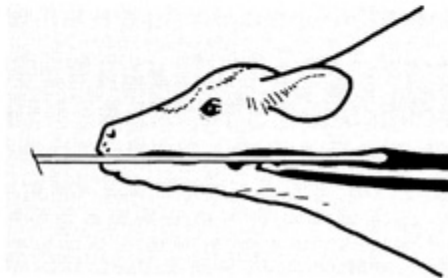



Fig 1. Measuring for length of esophageal tube, and correct placement of tube

- 8.4.8. Remove the plug from the hole to allow the fluid to flow from the bottle, through the tube and into the calf via gravity.
 - 8.4.8.1. Do not squeeze the bottle to speed up the feeding process.
- 8.4.9. Calves may move during this process; it is important to keep the calf's body in the correct position listed above.
- 8.4.10. It is normal for calves to vocalize during this step.
- 8.4.11. Once the quantity of colostrum has been consumed and there is no remaining fluid in the bottle or tube, plug the hole and remove the tube with one move.

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8.4.12. Wash esophageal tube and bottle to remove any colostrum and debris. Refer to Calf Care: Barn and Equipment Cleaning SOP.

8.4.13. Record colostrum feeding on the calf ID sheet. Fig 2.

8.5. **EAR TAGGING**

8.5.1. Calves will receive one ear tag after colostrum feeding. Refer to “SOP-CALF- 004 Ear Tagging” for the proper steps to ear tag a calf.

8.6. **BULL CALVES**

8.7. Unless otherwise noted, all bull calves remain at the UBC Dairy Centre until approximately 1 week of age. Around 1 week of age bull calves are sold and moved off the UBC Dairy Centre. See SOP on Fit to Transport

8.7.1. Bull calves are housed in the same manner as heifers unless they are enrolled in a research project.


8.8. **RECORD KEEPING**

8.8.1. Create a stall card for the calf (see Fig 2). Stall cards can be located in the calf binder inside the pasteurizer room.

8.8.2. Record the calf ID, mothers ID, date and time of birth (if exact time is unknown, an approximate time will work). Also record the cow number (of the cow providing the colostrum), colostrum quality, amount fed, method fed (tube/bottle), and time fed.

8.8.3. In the day book located in the main barn vet room, record the cow and calf IDs, the ease of birth and weight of calf. If it is a bull calf, place the sticker corresponding with the RFID number in the daybook beside the written information.

8.8.4. Complete the information on the calving sheet located above the day book in the vet room.

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Calf Identification		
Calf # _____	Weight _____ Kg	Dam # _____
Birth date _____	Birth time _____ am / pm	
Colostrum details		
Cow # _____	Quality _____	
Volume _____	Time fed _____ am / pm	
Method	Bottle / Tube	Signature _____


Fig 2. Calf stall card for birth and colostrum intake information.

9. REFERENCES

- 9.1. CalfCare.Ca website. Cleaning feeding equipment. Bottles, Buckets, and Nipples. Accessed Oct. 1, 2019.
- 9.1. CCAC Guidelines on the Care and Use of Farm Animals in Research, Teaching and Testing. CCAC. 2009.
- 9.2. National Farm Animal Council. 2009. Code of Practice for the Care and Handling of Dairy Cattle.
- 9.3. University of Kentucky. The Esophageal Feeder- a Life Saving Tool for Calves. November 14, 2019. <https://afs.ca.uky.edu/dairy/esophageal-feeder-life-saving-tool-calves>

10. REFERENCE SOPs

- 10.1. SOP-Calf-003 Calf Housing
- 10.2. SOP-Calf-004 Ear Tagging
- 10.3. SOP-Calf-008 Colostrum Management
- 10.4. SOP-Cow-005 Fit to Transport
- 10.5. SOP-General-006 Calf Barn and Equipment Cleaning

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11. APPROVAL AND REVISION HISTORY

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History		
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