

TUBE FEEDING A CALF

1. PURPOSE

Proper care of newborn and sick calves is critical for their long-term health and survival. If a calf is unable to suckle from a bottle to consume enough colostrum or fluids, then a stomach tube should be used.

2. RESPONSIBILITY

- 2.1 Veterinarian.
- 2.2 Trained and qualified personnel

3. MATERIALS

- 3.1 Calf esophageal feeder (feeder consists of a plastic ball probe with an attaching plastic tube and reusable plastic pouch or bottle that holds the fluid)
- 3.2 Fluids (Colostrum(C), transition milk, (TM) milk replacer (MR), electrolytes warmed to 98-100°F (38°C)
- 3.3 Marking equipment (e.g., pen, tape)

4. GENERAL

- 4.1 A minimum of two individuals is required to administer tube feeding to a calf.
- 4.2 Feeding calves requires patience! If a calf refuses to drink from a bottle, notify the technician or herd supervisor. A second person should attempt to bottle feed the calf before implementing the use of an esophageal tube feeder.
- 4.3 Do not tube feed a calf that is so weak that it has little or no ability to swallow. Tubing calves in this state can result in liquid aspiration to the lungs. The veterinarian must be consulted.
- 4.4 Premature or small calves should not be tube fed more than 1 L per feeding.
- 4.5 Proper technique requiring training to ensure the correct placement of the tube is critical to success.
- 4.6 The esophageal feeder can cause damage to the animal if used improperly.

5. PROCEDURE

- 5.1 For Colostrum or MR, prepare the fluids as per related SOP:
 - DC-500: [Colostrum Powder Supplement](#)
 - DC-501: [Colostrum management](#)
 - DC-502: [Milk Replacer Preparation](#)
- 5.2 Use a thermometer to ensure any liquid, including transition milk and electrolytes are at body temperature of 98-100°F (38°C).
- 5.3 Ensure that all equipment has been thoroughly cleaned and is in good working order.
- 5.4 Ensure the feeding tube is the right length for the calf: The length of the tube and the size of the calf will dictate how far to insert the tube.
 - 5.4.1 Feeding tube is already marked with weights in kg: Slide the black ring to the approximate weight of the calf. Otherwise, refer to Section 5.4.2.

5.4.2 Steps to ensure the correct sizing of a feeding tube:

5.4.2.5 Measure the distance between the tip of the calf's nose and the point of the elbow behind the front leg. This is the approximate distance that the tube should be inserted (Figure 1).

5.4.2.6 Mark this distance on the tube.



FIGURE 1: Measure the distance that the tube should be inserted

5.5 RESTRAIN CALF:

5.5.1 Work quietly and calmly as to avoid causing stress to other animals.

5.5.2 Position the calf between your legs in a standing position. (Fig. 2)

5.5.3 A minimum of two individuals is required to administer tube feeding to a calf. One person should secure the calf in an upright position, while the other person inserts the tube and ensures the calf's head remains elevated. If necessary, a third person can assist by holding the milk bag or bottle.

5.5.4 Back the calf into a corner with one hand under its muzzle to keep its head and neck upright.

*** IMPORTANT**

Feed tubing a calf in lateral recumbency must be avoiding to prevent aspiration into the lungs and ultimately causing death.

5.5.5 If the calf cannot stand:

5.4.2.7 Position the animal on its sternum and hold the head between your legs (Fig. 3).

5.4.2.8 Ensure the head and neck remain above stomach level throughout the feeding to prevent aspiration of fluids.



FIGURE 2: Calf restraint - standing



FIGURE 3: Calf restraint – sternum

5.6 INSERT THE FEEDING TUBE:

- 5.6.1 Moisten the probe end of the feeder with the fluid to lubricate and make the bulb slippery.
- 5.6.2 Raise the calf's head slightly and squeeze the sides of its mouth gently to open its mouth. (Figure 4). The calf's head should be in a neutral position. If the neck is too extended, the feeding tube has more chance to enter in the trachea instead of in the esophagus.
- 5.6.3 Kink the plastic tube and slowly push it over the tongue to the back of the mouth, aiming the tube to the left of the throat. This will stimulate the calf to swallow.
- 5.6.4 Once the calf swallows the end of the feeder, slide the tube gently down the esophagus to the pre-determined mark. The tube must remain kinked until it reaches the stomach to avoid aspiration into the lungs. (Fig. 5)
- 5.6.5 Stop immediately if you feel any resistance, pull the tube out slightly and redirect. **THE TUBE MUST NEVER BE FORCED.**
- 5.6.6 Once in the correct place, the calf should appear comfortable and be swallowing.



FIGURE 4: Tube insertion

* IMPORTANT

Ensure the head and neck remain above stomach level throughout the feeding to prevent aspiration of fluid.

DO NOT force when inserting the tube.



Figure 5: Slide the tube gently down the esophagus



Figure 6: Palpate to ensure proper placement of the feeding tube

5.7 CHECK PLACEMENT:

- 5.7.1 Palpate the left side of the calf's neck to ensure proper placement of the feeding tube (Fig.6).
- 5.7.2 When the tube is in the correct position, you will distinctly feel two tube-like structures (esophagus with the feeding tube inside and windpipe) in the neck. (Fig. 7)

- The trachea is firm and has rings or ridges obvious to the touch.
- The esophagus is a softer collapsible structure that can only be felt because the feeding tube is inserted.

5.7.3 If only one tubular structure can be felt, it means that the feeding tube is in the trachea. Remove the tube and try again.

5.8 ADMINISTER THE FLUID:

5.8.1 When the calf is comfortable and the correct feeding tube placement has been confirmed, the fluid can be introduced.

5.8.2 The liquid should be fed at body temperature of 98-100°F (38°C)

5.8.3 Allow the fluid to flow by gravity. The calf will begin to move about when it feels pressure in its filling rumen. The calf may also bawl.

5.8.4 Feed the fluid at a slow rate to ensure the calf regurgitates less.

5.8.5 Control the flow rate by raising and lowering the bag.

5.8.6 Split feeds into smaller volumes if uncertain about how much liquid the calf has already consumed.

5.8.7 Monitor the calf throughout the feeding.

5.8.8 If any of the following signs are observed STOP feeding and remove the tube (See Section 5.9) and IMMEDIATELY notify a technician: Refer to Table 1 : Reasons Fluid can Enter the Airway:

- discomfort
- bloating
- change in behavior.
- the calf becomes uncomfortably full
- regurgitation through mouth or nose

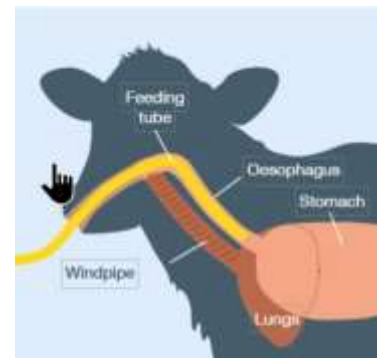


Figure 7: proper placement of feeding tube

* IMPORTANT

If at any point you suspect something is wrong, IMMEDIATELY lower the bottle to stop fluid flow and kink the tube before withdrawing the tube.

5.9 REMOVE THE TUBE:

5.9.1 Wait until all liquid has exited the tube and passed down the esophagus before removing.

5.9.2 Kink the feeding tube.

5.9.3 Hold the calf as still as possible and gently pull out the tube in one swift motion.

5.10 CLEAN THE EQUIPMENT:

5.10.1 Clean the feeding tube immediately after use.

5.10.2 Rinse the tube feeder with cold water and then wash in hot soapy water.

5.10.3 Follow with a chlorine and hot water rinse (5cc: 2L).

5.10.4 Hang to drain and dry.

TUBE FEEDING A CALF**6. REFERENCES**

Adams, Ragan and McPhail, Eric. Proper Use of the Bovine Esophageal Feeder. Retrieved from <http://veterinaryextension.colostate.edu/menu2/Cattle/TubeDoc.pdf>

Agriculture and Horticulture Development Board 2018. Calf management. (Tube feeding colostrum to calves).

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Document Status and Revision History

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