



ADMINISTERING ORAL MEDICATIONS TO CATTLE

1. PURPOSE

- 1.1. This Standard Operating Procedure (SOP) instructs farm workers on the methods used to administer oral medications to cattle by drenching or bolusing at the UBC Dairy Education and Research Centre.

2. SCOPE

- 2.1. This SOP will describe the methods used to safely drench and give boluses to cattle.
- 2.2. Refer to SOP on Newborn Calf Care for esophageal feeding of colostrum to newborns.

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 any farm worker who may be required to administer oral medications to cattle is trained in this procedure.
- 3.3. Farm Worker IIs will be responsible for administering oral medications to the cattle.
- 3.4. The Operations Manager is responsible to transferring entries made in the dairy day book to the herd management software.
- 3.5. Training will include animal handling and moving cattle. See SOPs on Handling of Cattle, and Moving and Chasing Cattle.

4. DEFINITIONS

- 4.1. Drenching: orally dosing cattle with a liquid via a tube guided down its throat into the rumen.
- 4.2. Frick tube: Heavy **tube** with reinforced ends through which a stomach **tube** may be passed for administering fluids and boluses in large animals.



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- 4.3. Bolus: a very large pill used to administer oral medications such as antibiotics, dewormers and vitamin and mineral mixes. Their administration requires the use of a bolus or balling gun.
- 4.4. Bolus or balling gun: a long cylindrical tube made of stainless steel or plastic material that has a spring-action handle to administer the medication.

5. SAFETY PRECAUTIONS

- 5.1. All personnel entering the cattle holding area will wear personal protective equipment -coveralls and dedicated facility footwear. Wearing disposable gloves is also recommended.
- 5.2. These procedures will only be done by an experienced farm worker.
- 5.3. Thoroughly wash hands with hot soap and water when leaving the barn.

6. DRENCHING CATTLE

GENERAL

- 6.1. Drenching cattle is a method used to administer medications orally to an animal. In the case of a downed cow, it can also be used to keep the animal hydrated.
- 6.2. The UBC Dairy uses a Drench-mate system (Fig 1) which is specifically designed for high volume drenching of cattle.
- 6.3. A smaller drenching gun (Fig 2) is used to administer small volumes of liquid such as glycol.
- 6.4. All treatments will be recorded in the Dairy Day Book, for later entry into the herd management software by the Farm Operations Manager.

7. MATERIALS AND EQUIPMENT

- 7.1. Drench-Mate – consists of a 6.5 gallon bucket, a 11.5 foot poly-hose and a cam-lock fitting for easy detachment. It also has a locking frick tube with nose tong designed so that the tube won't slip out of the rumen. There is a red mark on the hose that indicates how far the hose should be inserted into the rumen on a mature cow. Mounted on top of the lid is a hand diaphragm pump.



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Fig 1. Drench mate



Fig 2. Drenching gun.

- 7.2 Drenching gun
- 7.3 Solution for drenching
- 7.4 Disposable latex gloves
- 7.5 Headlock for restraint

8. PROCEDURE FOR USING DRENCHMATE

- 8.1. Determine the best location to drench the animal. Cows and heifers can be drenched while in headlocks, or if 'downed', can be drenched where they are found (See SOPs on Downer Cows and Giving Calcium)
- 8.2. If required, move animal to an area equipped with headlocks and let her 'lock up' See SOPs on Moving and Chasing Cattle, and Handling Cattle for lockup procedure.
- 8.3. Prepare the drenching solution. If a powder, mix in the bucket with warm water as per label instructions. Firmly close lid on bucket.
- 8.4. Ensure the animal is firmly restrained.
- 8.5. Hold the animal's head, keeping it low to ensure a direct path to the rumen.



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- 8.6. Carefully insert the frick tube into the animal's mouth and the nose tong into the nostrils. The nose tong is spring loaded and holds the tube in place while the drench is being pumped in. (Fig 1)



Fig 1. Preparing to drench an animal. Frick tube and nose tong in place.

- 8.7. Carefully insert the poly hose through the tube until you feel resistance in the back of the animal's mouth. Pause, and let the animal swallow. **DO NOT FORCE.**
- 8.8. Once the hose has been swallowed, feel the throat and make sure there are two hard structures. One will be the hose in the esophagus, the other will be the animal's trachea.
- 8.9. Push the hose in all the way to the red mark. This will help ensure you are in the rumen. (Fig 2).

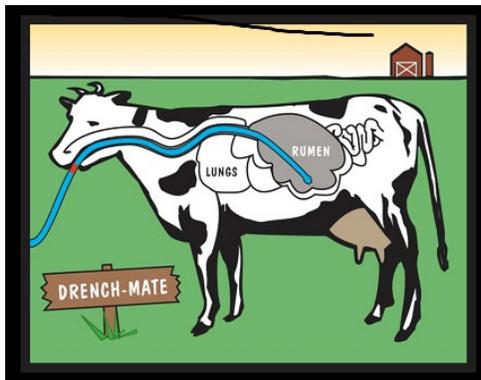


Fig 2. Proper placement of hose into rumen

- 8.10. **BEFORE** attaching the end of the hose to the Drench-Mate pump, hold it to your ear and listen for a bubbling or gurgling sound. You should **NOT** hear breathing. If breathing is heard, remove and then reattempt inserting the hose.
- 8.11. Smell the end of the hose. You should detect the fermenting odor of the rumen.



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- 8.12. Connect the hose to the pump and using a steady stroke begin pumping. The animal should be chewing while the tube is in her mouth. If not, **STOP** pumping as rumen fluid could reflux into her lungs.



Fig 3. Tilt bucket as it empties to ensure you use all of the liquid.

Continue pumping until the bucket is almost empty, then tilt to pump the last of the liquid out (Fig 3).

- 8.13. Disconnect the hose from the pump and hold it over your head for about 10 seconds so that any remaining fluid drains out.
- 8.14. Carefully and slowly remove the hose from the animal's throat.
- 8.15. Release the nose tong and remove the frick tube.
- 8.16. Release the animal from the headlock and return her to her pen, if necessary.
- 8.17. Clean and rinse the Drench-mate apparatus with hot water after use.
- 8.18. Thoroughly wash hands with soap and hot water.
- 8.19. Record what was given to the animal in the dairy day book located in the vet room for later addition to the herd software.

9. USE OF THE DRENCHING GUN

- 9.1. The drenching gun is used to administer smaller liquid volumes (up to 300mls).
- 9.2. Fill reservoir by depressing the trigger, placing the end of the probe in the liquid and then releasing the trigger.
- 9.3. Move the animal to an area equipped with headlocks. See 8.1 & 8.2



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- 9.4. From outside of the pen, slowly approach the animals' head. If right handed: place yourself at the cow's right side. Reach over the head, and open her mouth by putting your fingers under her upper lip and in the corner of her mouth. Keep her head slightly elevated and a little towards yourself.
- 9.5. With your other hand, gently guide the probe of the bolus gun along the inside of the cow's mouth. When you feel resistance gently guide the probe over the tongue.
- 9.6. The probe of the drenching gun is curved to facilitate the positioning of the probe.
- 9.7. When the probe is fully inserted, keep her head up and firmly press the trigger to discharge the liquid in a slow steady stream. Initially release only a small amount of liquid. If the animal starts coughing, reposition the probe before continuing. You may need to press the trigger several times to empty all of the medication.
- 9.8. When the reservoir is empty, remove the probe from the animal's mouth. Wait for her to swallow before releasing her head.
- 9.9. To be sure the animal is OK and is breathing normally, watch her for a few minutes before releasing her from the headlocks and returning her to her pen. If she is not breathing normally, contact a Senior Farm Worker, the Operations Manager or the herd veterinarian.
- 9.10. Clean and rinse the drenching gun in hot water before putting it away.
- 9.11. Thoroughly wash hands with soap and hot water when leaving the barn.

10. BOLUSING CATTLE

GENERAL

- 10.1. The Bovikal[®] bolus gun is referenced in this SOP, but the instructions will work for any commercially available bolus gun.

11. MATERIALS AND EQUIPMENT

- 11.1. Disposable Latex gloves



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- 11.2. Bolus gun
- 11.3. Boluses



Bovikal bolus and bolus gun.

12. PROCEDURE

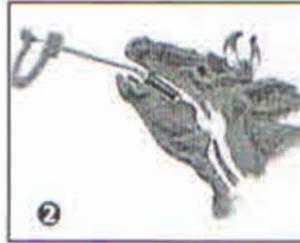
- 12.1. If required, refer to Moving and Chasing Cattle SOP to move animals to a pen with headlocks.
- 12.2. Allow animals to lock up. See SOP on Handling Cattle for lockup procedure.
- 12.3. Place the bolus in the bolus applicator with the rounded end pointing forward. (Fig1)



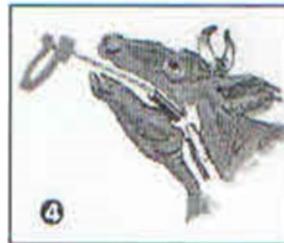
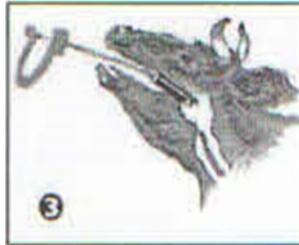
- 12.4. From outside of the pen, slowly approach the animals' head. If right handed: place yourself at the cow's right side. Reach over the head, and open her mouth by putting your fingers under her upper lip and in the corner of her mouth. Keep her head slightly elevated and a little towards yourself.
- 12.5. With your other hand, gently guide the applicator loaded with one bolus along the inside of the cow's mouth. When you feel resistance gently guide the applicator over the tongue. (Fig 2)



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- 12.6. Insert the tip of the gun as far back as possible. The cow will start swallowing, and chewing on the handle which will help work the applicator into position. Press the handle to release the bolus further back in the mouth. (Figs 3&4)



- 12.7. Keep the cow's head raised until she swallows the bolus. You can encourage this by stroking her throat.
- 12.8. Once she has swallowed the bolus she will lick her lips and nose, and may cough. Remove the applicator.
- 12.9. Observe the animal for a few minutes to make sure she is OK and breathing normally. If she appears to be having difficulties breathing, contact a Senior Farm worker, Operations Manager and/or the herd veterinarian.
- 12.10. Release the animal from the headlocks and if necessary, return her to her pen.
- 12.11. Record treatments given to any animal in the Dairy Day Book located in the vet room, for later addition to the herd software.
- 12.12. Clean and rinse the bolus gun in hot water before putting it away.
- 12.13. Wash hands thoroughly with hot soap and water when leaving the barn.

13. REFERENCES



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- 13.1. CCAC Guidelines on the Care and Use of Farm Animals in Research, Teaching and Testing. CCAC. 2009.
- 13.2. Code of Practice for the Care and Use of Dairy Cattle. National Farm Animal Care Council. 2009
- 13.3. Drench mate website. <https://www.drenchmate.com/> Accessed Oct 2019

14. RELATED SOPS AND FORMS

- 14.1. SOP-Cow-004 Downer Cows
- 14.2. SOP-Cow-006 Moving and Chasing Cattle
- 14.3. SOP-Cow-013 Giving Calcium
- 14.4. SOP-Cow-023 Handling Cattle

15. APPROVAL AND REVISION HISTORY

Author/Approver	Date	Signature
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