



## DRYING OFF COWS

### 1. PURPOSE

- 1.1. This Standard Operating Procedure (SOP) instructs farm workers and students working in the milking parlour on the methods used to dry cows off at the UBC Dairy Education and Research Centre.

### 2. SCOPE

- 2.1. This SOP will describe the method used for drying off the cows at the UBC Dairy.
- 2.2. This document will also provide a general overview of important points to remember which impact the welfare of the animal.

### 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.
- 3.1. Farm workers are responsible for learning and following the techniques for drying off cows.
- 3.2. Training will include animal handling. See SOPs on Moving and Chasing Cattle, and Milking Procedures.

### 4. DEFINITIONS

*Drying off cows:* treating cows at the end of lactation (after the last milking) with an approved intra-mammary dry cow preparation to reduce risk of mastitis

*Zoonotic:* relating to the transmission of a disease between humans and animals.

### 5. SAFETY PRECAUTIONS



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- 5.1. Personnel working with the dairy cattle will follow routine health and safety procedures to protect against contamination or transfer of zoonotic diseases.
- 5.2. All personnel entering the milking parlour will wear personal protective equipment -coveralls, rubber apron, disposable gloves and dedicated facility footwear.
- 5.3. Hands are to be thoroughly washed with hot soap and water after removing gloves.

### 6. GENERAL

- 6.1. Verify the identity of each animal at the time of treatment.
- 6.2. All procedures performed will be recorded in the dairy day book, and herd management software.

### 7. MATERIALS AND EQUIPMENT

- 7.1.1. Antibiotics - Single dose syringes (ex. Spectramast LC)
- 7.1.2. Single dose teat sealant syringes (ex. Lockout)
- 7.1.3. Teat dips –iodine post dip, and post sealant dip (ex. Gladiator Superdry)
- 7.1.4. Paper towels
- 7.1.5. 4 x 4 cotton gauze
- 7.1.6. 70% isopropyl alcohol
- 7.1.7. Disposable gloves

### 8. NOTES

- 8.1. Although intra-mammary infusion is highly recommended, there is a potential for the introduction of organisms during the infusion process. Unsanitary infusion practices can introduce antibiotic-resistant environmental organisms into the udder. Therefore, good teat-end preparation prior to intra-mammary infusion needs to be continually emphasized.

 <b>University of British Columbia</b> <b>Centre for Dairy Education</b> <b>and Research</b>	<b>Document Number</b>	<b>SOP-COW-008</b>
	<b>Revision Number</b>	<b>000</b>
	<b>Effective Date</b>	<b>June 24, 2020</b>
<b>DRYING OFF COWS</b>		

- 8.2. The problem of new dry period infections associated with the method of treatment has been the subject of some investigation. Partial insertion of the infusion cannula (up to 4 mm) has resulted in fewer new intra-mammary infections and improved cure rates (Boddie and Nickerson, 1986; McDougall, S., NZ Vet J, 2003).
- 8.3. The improvement with a short cannula is attributed to fewer organisms being delivered beyond the streak canal. In addition, antibiotic that is deposited and left within the streak canal should control local infections.
- 8.4. The rate of new intra-mammary infections is significantly higher in the dry period than during lactation (Eberhart, 1986). Furthermore, the chances of obtaining a new intra-mammary infection in the dry period is greatly increased if the teat canal is left open (Dingwall et al. Prev. Vet. Med. 63, 2004). The greatest increase in susceptibility is during the first three weeks of the dry period.
- 8.5. A second period of heightened susceptibility to infection occurs just prior to calving and in the immediate postpartum period.
- 8.6. The reported rates of new intra-mammary infection in the dry period vary widely. Some reasons for these differences include the diagnostic criteria used, and the types of organisms considered to be major pathogens. There are also important herd-level effects such as the prevalence of existing infections at drying-off and the method of dry-off (Busche and Oliver, 1987; Green et al. JDS 90(8) 2007). The average rate of new infections in untreated dry cows is expected to be between 8 and 12% of quarters (Eberhart, 1986 ; Berry and Hillerton, JDS (85), 2002).

## **9. PROCEDURE**

- 9.1. Animal Preparation
  - 9.1.1. Verify the identification of the cow or calf by number.
  - 9.1.2. Bring the cows from their pen to the milking parlour. Refer to the Moving and Chasing Cattle SOP.
  - 9.1.3. Milk the udder out completely. Refer to the Milking Procedures SOP.
  - 9.1.4. Immediately following teat-cup removal, dip all teats in an iodine post dip.
  - 9.1.5. Allow the teat dip to dry; if necessary, remove excess dip from the ends of the teat with a clean, single-service paper towel.

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- 9.1.6. Disinfect each teat end by scrubbing for a few seconds with a separate alcohol-soaked cotton swab. Start with the teats on the far side of the udder, and work towards the near side.
- 9.1.7. Infuse each quarter with a single-dose syringe of a recommended dry cow treatment (ex. Spectramast LC). Use the partial insertion method of administration into the teat streak canal. A modified infusion cannula is provided with most dry cow treatment products to facilitate the use of the partial insertion method.
- 9.1.8. Again using the partial insertion method, infuse each quarter with a single-dose syringe of a recommended teat sealant – (ex. Lockout.)
- 9.1.9. Dip all teats in a recommended teat dip (ex. Gladiator superdry teat dip) immediately following treatment.
- 9.1.10. Release animals and return them to their pen. See Moving and Chasing Cattle SOP.

## 10. REFERENCES

- 10.1. National Mastitis Council. Dry Cow Therapy factsheet.  
<https://www.nmconline.org/wp-content/uploads/2016/09/Dry-Cow-Therapy.pdf>
- 10.2. CCAC Guidelines on the Care and Use of Farm Animals in Research, Teaching and Testing. CCAC. 2009.
- 10.3. Code of Practice for the Care and Use of Dairy Cattle. National Farm Animal Care Council. 2009.
- 10.4. Boddie, RL and Nickerson, SC. 1986. Dry cow therapy: Effects of method of drug administration on occurrence of intramammary infection. *Journal of Dairy Science*, 69: 253–257.  
<https://www.sciencedirect.com/science/article/pii/S0022030286803940>
- 10.5. S McDougall (2003) Management factors associated with the incidence of clinical mastitis over the non-lactation period and bulk tank somatic cell count during the subsequent lactation, *New Zealand Veterinary Journal*, 51:2, 63-72  
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<b>DRYING OFF COWS</b>		

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<https://www.sciencedirect.com/science/article/pii/S0022030286805914?via%3Dihub>
- 10.7 Dingwall et al. (2004) Association of cow and quarter-level factors at drying-off with new intramammary infections during the dry period. Prev. Vet. Med. 63(1-2): 75-79. <https://www.sciencedirect.com/science/article/pii/S0167587704000510>
- 10.8 Bushe and Oliver (1987) Natural Protective Factors in Bovine Mammary Secretions Following Different Methods of Milk Cessation. JDS 70(3):696-704. <https://www.sciencedirect.com/science/article/pii/S0022030287800607>
- 10.9 Green et al. 2007 Cow, Farm, and Management Factors During the Dry Period that Determine the Rate of Clinical Mastitis After Calving. JDS 90(8): 3764-3776. <https://www.sciencedirect.com/science/article/pii/S0022030207718337>
- 10.10 Berry and Hillerton, 2002 The Effect of Selective Dry Cow Treatment on New Intramammary Infections. JDS 85(1):112-121. <https://www.sciencedirect.com/science/article/pii/S0022030202740599>

## 11. RELATED SOPS AND FORMS

- 11.1. Referenced SOPs
  - 11.1.1. SOP-Cow-006 Moving and Chasing Cattle
  - 11.1.2. SOP –Cow-016 Milking Procedures

## 12. 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>