



Dry-Cow Therapy: Aseptic Infusion

Dry-cow therapy and dry-cow management are important for animal health and production in the next and future lactations. Udder inflammation caused by bacteria entering the udder, or mastitis, is the most common and costly disease in dairy herds. Mastitis that is present at calving can reduce milk yield by 5 percent throughout the lactation.

The dry period is the optimal time to treat existing intramammary infections as well as to prevent new infections from occurring. There are several dry-cow therapy protocols that can be used. For more information on the importance of the dry period and dry-cow therapy protocols, please see MSU Extension Publication 3290 *Dry-Cow Therapy: Choosing the Best Protocol for Your Dairy*.

Only FDA-approved dry-cow therapies should be used at dry-off. Regardless of the chosen regimen, proper hygiene is crucial when preparing teats for infusions to avoid introducing bacteria into the teat canal. Always wear disposable gloves and replace gloves between cows. The following steps should be taken to sanitize the teats before infusion of antibiotics and/or internal teat sealants, and application of an external teat sealant.

Antimicrobial Infusion (see Figure 1)

1. Keep the antibiotic tube away from obvious dirt (a shirt pocket is a safe location), and keep the lid on until inserted into the teat. Make sure the tip does not touch anything other than the teat itself. If the tube is contaminated with bacteria, you will insert that bacteria or yeast straight into the udder.
2. If using sand bedding or the teats are visibly soiled, wipe each cow's teats with a clean towel (use one towel per cow).
3. Dip each teat into an effective germicidal product, and allow 30–45 seconds of contact time.
4. Dry teats with a clean towel; do not share towels between cows.
 - Use single-use paper towels or cloth towels that have been properly disinfected by washing with bleach or very hot water and drying at a high temperature in an automatic dryer.
5. Use a cotton swab soaked in 70 percent alcohol to scrub the teat end, paying special attention to the teat orifice.
 - Hold the teat and the base of the udder, and use the other hand to vigorously scrub each teat end.
 - Use separate cotton swabs for each teat, and continue to use clean swabs until no dirt is visible on the cotton swab.
 - Do not let the teat end come into contact with anything (including your gloved hand, tail hair, or other teats) once it has been swabbed.
6. Insert just the tip of the cannula into the teat end, and express all of the contents

- Use the insertion tip provided with a short cannula to avoid damage to the teat end. For a long cannula, insert 3 mm of the tip into the teat.
7. Gently massage contents into the quarter, starting from the end of the teat and slowly moving the fingers up toward the udder.
 - If not using an external or internal teat sealant, post-dip all teats and stop here.

External Teat Sealant

1. Use a dip cup to dip the entire length of each teat.
2. For maximum protection, wait 5 minutes, and apply again.
3. Industry representatives recommend a second application 10 days before calving.

Internal Teat Sealant (see Figure 2)

1. Use a cotton swab soaked in 70 percent alcohol to scrub the teat end, paying special attention to the teat orifice.
 - Hold the teat and the base of the udder, and use the other hand to vigorously scrub each teat end.
 - Use separate cotton swabs for each teat, and continue to use clean swabs until no dirt is visible on a new cotton swab.
 - Do not let the teat end come into contact with anything (including your gloved hand, tail hair, or other teats) once it has been swabbed.
 - If you already did this to infuse antibiotics, it does not need to be done again, but doing it again will certainly not hurt anything.
2. Pinch teat off at the base of the udder to prevent contents from going into the quarter. Insert the tip of the cannula into the teat and infuse sealant slowly to ensure that the sealant remains only in the teat. If it enters the quarter, it will not provide the needed protection and can remain in the milk for weeks after calving. If cheese is made from this milk, black spots may be evident in the cheese.
 - After infusion, DO NOT massage contents into the quarter.
3. Dip all teats with an effective germicidal product before moving to the dry-cow area.

Take-Home Messages

By using the aforementioned aseptic infusion and application techniques, dry cows can be treated effectively without introducing new bacteria into the udder in the process. Mastitis-causing bacteria such as yeast, mold, *Prototheca* spp., and *Bacillus* spp. have been shown to enter the udder through contaminated infusions. Aseptic technique should always be followed during intramammary infusion.

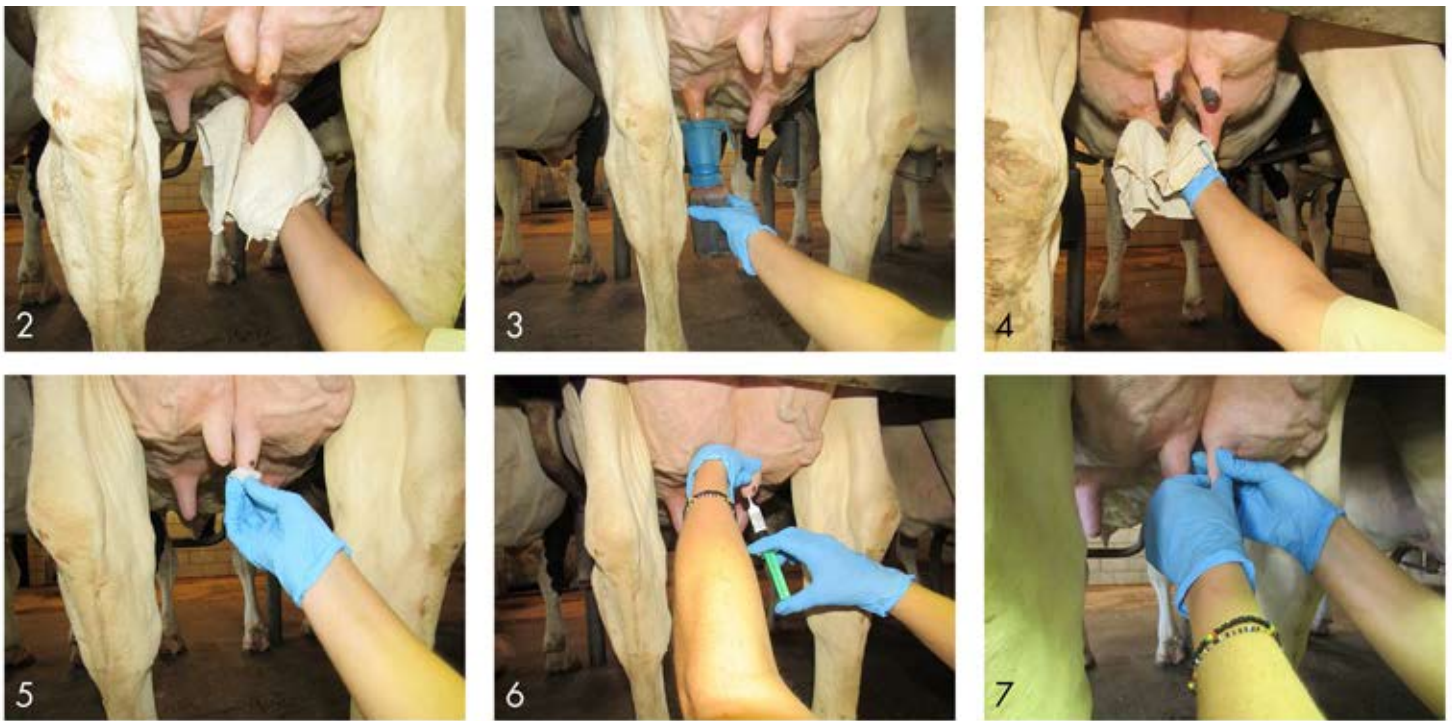


Figure 1. Steps 2–7 of aseptic administration of an intramammary antibiotic infusion.



Figure 2. Aseptic administration of an internal teat sealant.

References

- CBMRN. 2004. Administration technique of intramammary treatment in dairy cows. University of Montreal. Montreal, Quebec, Canada.
- Fox, L. K. 1997. Effectiveness of laundering udder cloth towels to reduce mastitis pathogens. *J. Dairy Sci.* 80 (Suppl. 1):234.
- Hogan, J. S., R. N. Gonzalez, R. J. Harmon, S. C. Nickerson, S. P. Oliver, J. W. Pankey, K. L. Smith. 1999. *Laboratory Handbook on Bovine Mastitis*. Madison, WI: National Mastitis Council.
- National Mastitis Council. 2006. Dry-Cow Therapy. NMC Fact Sheet. <https://nmconline.org/drycow.htm>.

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