



Agricultural Innovation Program (AIP) for Pakistan

AIP-Livestock Fact Sheet no: 08

DRY COW THERAPY – MASTITIS CONTROL

Introduction

During the early dry period tremendous stress is exerted on the udder because the gland must break down and absorb retained milk as well as millions of dead milk secreting cells. It is during this time and two to three weeks prior to calving that approximately 40 to 50 percent of new udder infections occur. Research has shown dry cow therapy can reduce the number of new infections during this period by up to 30 percent.

Mastitis continues to be one of the most costly diseases of dairy cattle, and while mastitis cannot be eliminated, an **effective control program** will dramatically **reduce the prevalence of and economic loss** from mastitis.

Mastitis (mammary gland disease) is **caused by milking in non-hygienic** conditions or by incorrect milking practice. It is the most frequent cattle disease. Mastitis is a bacterial disease that causes the udder of the cow to swell, redden and become painful. One, two, three or all four quarters of the udder may become infected. **Mastitis is difficult to detect and treat but easy to control**, therefore preventive measures rather than treatment should be emphasized.

Signs of mastitis

- The udder is hot, swollen, hard and painful
- The milk is watery and thin, contains clots and is yellowish in colour
- In severe cases, blood may be seen in the milk
- The animal will generally refuse to be milked or will kick when the udder is touched
- If disease-causing organisms spread to the body, the animal will show signs of fever
- If the cow is not treated, the affected quarter(s) will become hard, produce less milk and may become completely unproductive.

There are **two forms of mastitis**:

- Chronic, without visible symptoms (**sub-clinical**) and it is identified only through appropriate laboratory tests;

- Acute (**clinical**) mastitis, with visible symptoms (redness, swollen and painful udder, changes in milk).

Subclinical mastitis: In addition to reducing the high rate of new infections during the dry period, dry cow therapy is the best method to treat subclinical udder infections.

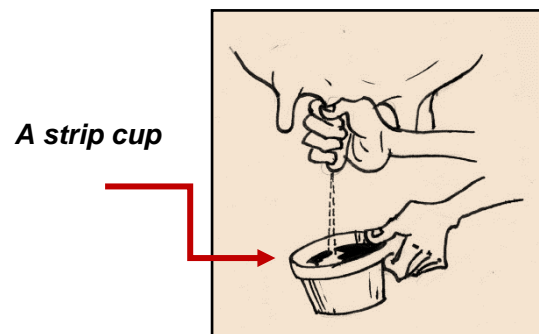
Clinical mastitis: While clinical mastitis cases must be dealt with as they arise, in many instances dry cow therapy have the following advantages over lactation therapy:

- **The cure rate is higher than that achieved by treatment during lactation.**
- **A much higher dose of antibiotic can be used safely.**
- **Retention time of antibiotic in the udder is longer.**
- **The risk of contaminating milk with drug residue is reduced.**

Streptococcus agalactiae is the only common mastitis-causing organism that can be treated readily during lactation. Cure rates are usually in the range of 90 to 95 percent.

Mastitis test

To test for mastitis, milk the first few streams into a strip cup (see illustration below) or onto a smooth black surface (e.g. Wellington boot or bucket lid). Check carefully for any change in colour or any watery appearance and/or clots. Clean the surface or strip cup and then check milk from the next teat.



Drying off and the early dry period

Reducing the concentrate ration and sudden cessation of milking is the recommended practice for drying off cows. High producing cows should be taken off concentrates two weeks prior to dry off to help reduce production. Cows should be observed closely for two weeks after drying off to ensure udders are involuting (not swollen or inflamed) properly. Udders with swollen quarters should be examined for mastitis.

Cows showing visible signs of illness should be provided supportive therapy; however, re-infusion of antibiotics into the mammary gland is not recommended. Supportive therapy may include intramuscular or intravenous administration of antibiotic and/or anti-inflammatory compounds. Consult a veterinarian for advice on a proper treatment procedure.

Infusion Procedures

Following proper infusion procedures is a key component of the dry cow therapy program. Teats must be cleaned and sanitized before infusing antibiotics into a quarter. Without proper preparation, organisms present on the teat end may be forced into the udder and result in an infection more severe than the one for which treatment was intended. The following steps should be adhered to anytime intramammary infusion products are administered.

1. Clean and dry teats with a single service paper towel or cloth.
2. Dip teats in an effective germicidal product. Allow 30 seconds of contact time before wiping teats with single service paper towel or cloth.
3. Thoroughly clean and disinfect each teat end by scrubbing with cotton soaked in 70 percent alcohol. Use a separate piece of cotton for each teat. Prepare teats on the far side of the udder first, followed by the teats on the near side.



4. Treat quarters in reverse order; near side first, far side last.

5. Insert only the tip of the cannula into the teat end. Do not allow the sterile cannula to touch anything prior to infusion.
6. Dip teats in an effective germicidal product after treatment.
7. Identify treated cows and remove them from the milking herd to prevent antibiotics from entering the milk supply.

Teat dips

Dipping teats with a disinfectant is considered one of the most important steps in the prevention of new mastitis infections. When the practice of teat dipping is employed, the rate of new infections during lactation can be reduced approximately 50 percent within one year. After a two-year period, up to 75 percent of the infections can be prevented. If teat dipping is discontinued, the infection rate increases rapidly.

Sanitation

The risk of new intramammary infection is greatest during the early and latter part of the dry period. Because udders are not milked during these times, pathogens are not flushed from the lower portion of the teat canal. This may lead to new intramammary infections. The number of new infections is related to the bacterial population on the teat end. Therefore, the shed and calving areas should be clean and dry. Animals on pasture should not be allowed in ponds or muddy areas.

While dry cow treatment is beneficial in preventing new infections during the early dry period, the udder is vulnerable to new infections during the last two to three weeks of the dry period when dry cow therapy is no longer effective. Stalls with clean dry bedding, preferably straw or inorganic bedding, are recommended during bad weather conditions.

Effective mastitis control programs include:

- Milking clean, dry udders
- Dipping teats immediately after milking with a product known to be safe and effective (acetic acid or solution of vinegar)
- Good udder hygiene between milking
- Prompt treatment of all clinical mastitis cases
- Culling cows with chronic mastitis infections
- Keeping accurate records of clinical mastitis and somatic cell counts in individual cows to assist in making management decisions