

Dry Cow Therapy Revisited

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Prevention of mastitis and successful treatment of clinical cases when needed are the hallmarks of a cost effective and successfully implemented mastitis program. The use of correctly-applied pre-dip, stripping of foremilk to check for clinical mastitis prior to attaching the milking machine, post-dipping the lower 3/4rds of the teat with a germicide at the conclusion of milking, routinely serviced and properly operating milking equipment, and maintaining a relatively “clean” resting environment are vital parts of any mastitis prevention plan. In addition, the use of dry cow therapy plays a key role in these on-farm mastitis prevention protocols.

Treating all quarters of all cows with a long-acting antibiotic at dry off, known as blanket dry cow therapy, has been an important component of mastitis prevention/treatment plans. Dry cow therapy offers both a therapeutic and preventative component in reducing the risk of a cow getting mastitis. Long-acting antibiotics found in dry cow treatment tubes are designed to cure cows with sub-clinically infected quarters (therapeutic role) and prevent new infections during the high risk period around the time of dry off (preventative role). These products along with soundly implemented milking practices have been very effective at reducing the overall incidence of mastitis, eliminating *Strep. ag* infections, and controlling *Staph. aureus*. Properly used teat sealants provide a keratin-like plug which decreases the entry point for bacteria into the teat canal. At dry off, many cows, especially higher producing cows, may have a delay in teat end closure and a higher risk of developing mastitis. Teat sealants are recommended to be used in addition to antibiotic therapy.

Selective dry cow treatment, where only cows having an infected quarter(s) are treated with antibiotics, has been shown to decrease the use of antibiotics and might be an appropriate protocol for some herds. However, one must realize that this practice requires more attention to details, the use of well-kept individual cow records, and additional on-farm protocols. All cows still receive a tube of a teat sealant into the teat canal of all quarters and this practice is a vital part of decreasing the risk of new infections at dry off.

Studies that have compared selective to blanket dry cow therapy have seen a mixed bag of responses related to risk of mastitis infection post-calving. Some studies have seen no differences when comparing cows receiving a blanket versus selective dry cow treatment, whereas others have seen an increased incidence of mastitis with selective dry cow treatment. The success or failure with this approach relates back to the organisms causing mastitis in the herd (*Staph. aureus* in particular) and the incidence of not only clinical mastitis, but also prevalence of subclinical mastitis. (Cows with a SCC greater than 200,000 cells/mL are considered to have mastitis.) To use this approach, one must be able to correctly identify those cows which do not need to be treated.

Mastitis researchers suggest one start by identifying if your herd is a candidate for selective dry cow treatment. The specific criteria suggested to identify herds that might be a candidate to consider selective dry cow therapy varies somewhat between mastitis researchers. However, some common recommendations do occur. These include: (1) average bulk tank SCC below 250,000 cells/mL, (2)

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conduct monthly cow SCC tests, (3) no quarters are infected with *Strep. ag* and *Staph. aureus* is controlled or non-existent, (4) the herd has an ongoing system to monitor and record (written or electronic records) clinical mastitis cases, (5) clinical cases are cultured to identify organisms causing mastitis, and (6) attention to details regarding implementation of procedures at dry off. One critical component, if a herd is a candidate for selective dry cow treatment, is to routinely monitor outcomes post-calving and to detect mastitis related problems early. One also must assess the risks versus the financial gains of adapting selective dry cow therapy.

Once one has decided the herd is a candidate to try selective dry cow therapy, decisions need to be made for each individual cow as to whether she should be dry cow treated or not. All cows need to receive a tube of teat sealant in all 4 quarters at dry off regardless of whether or not they receive dry cow antibiotic treatment. At the time of dry off, cows with a SCC less than 200,000 cells/mL, no clinical mastitis cases in the last 90 days, and cows with a CMT score less than 2 (no gel formation- a way of detecting SCC at the day of dry off) are candidates for selected dry cow therapy. Other mastitis researchers prefer a SCC below 200,000 the entire lactation and no more than 2 clinical mastitis cases detected during the entire lactation. Another approach is to culture each quarter individually 1 to 2 days before dry off and those with no growth do not receive antibiotic dry cow treatment. Some researchers suggest a lower SCC threshold for first lactation cows, such as 150,000 cells/mL. These protocols attempt to identify those cows which do not need antibiotic therapy at this time. Always consult with your veterinarian as to the criteria to use in your respective herd.

One might also consider just using a teat sealant and not treating any cows within the herd with dry cow therapy. Organic dairy farms routinely use this practice as the use of antibiotics is restricted. In a recent study reported at the National Dairy Science meeting, clinical mastitis during the next lactation was decreased by 44% with antibiotic therapy plus a teat sealant versus using a teat sealant alone in mature cows in a single large dairy herd. Individual farm responses will vary and can be related to the mastitis-causing organisms found on farm, subclinical and clinical infection rates, housing environment for dry cows, cleanliness of calving areas, and successful implementation of effective milking time mastitis prevention practices; all of which can change over time. Thus, using no dry cow therapy on any cows within the herd does carry a higher risk that cows could have a higher prevalence of clinical and subclinical mastitis, resulting in higher SCC.

Decisions on the best approach to use at the time of dry off need to reflect the current health of cows within the herd as well as the level of risk that is acceptable to the farmer. These decisions need to be made with the best information available in consultation with your local veterinarian. Hopefully, these decisions can reflect your assessment for the best outcome on your farm and not driven by market availability of products to use at dry off.

References: Rowe- ADSA Symposium presentation and Ruegg- DAIReXnNET webinar