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Administer drying off treatments as recommended

17.1 Plan for the time and effort that treating cows with antibiotic DCT and/or ITS takes

It is essential for farmers to plan the time and labour required to administer antibiotic DCT and ITS to their herd. The Countdown Farm Guidelines for Mastitis Control state that one person can only handle about 20 cows per hour to do the job well. This estimate is based on observation of a small number of good operators, but is not likely to be too much in error. It allows three minutes per cow in which each of the following needs to be done:

- › Mark the cow
- › Restrain the cow
- › Disinfect and treat all four quarters
- › Apply post milking teat disinfectant to all teats
- › Record the treatment details

In fact, it is preferable that two operators are available to restrain and handle the cows to minimize occupational health and safety risks.

When herds change from part herd to whole-herd treatments or from using only antibiotic DCT to both antibiotic DCT and ITS, they often fail to 'recalibrate' to the additional time required to administer treatments. As a result, tired operators often rush the job or there is last-minute recruitment of less experienced help.

Some veterinary practices now offer a service to administer dry cow products which can be helpful to herds with large numbers of cows.

17.2 Make the choice between whole herd or part herd antibiotic treatment and whether internal teat sealants will be used

Technote 14 describes options and circumstances in which different dry cow strategies should be used.

17.3 Do not use Dry Cow Treatment on cows that are to be culled

Technote 3.1 describes withholding periods following Dry Cow Treatments. Technote 4.10 discusses issues about withholding periods.

Do not use antibiotic DCT on cows which are going to be culled within the next 2–3 months. For cows that have been treated with antibiotic DCT, the meat withholding period of the product must be adhered to prior to selling.

Whenever an intramammary tube nozzle is inserted in to a teat canal there is a risk that bacteria could be introduced. This can cause severe mastitis. In some situations, for example at drying off and with the introduction of pseudomonas, death is a likely outcome.

These risks can be mitigated by the use of correct technique and management of the process.

Advisers are encouraged to copy and distribute Fact Sheet B and Fact Sheet M of the Countdown Farm Guidelines for Mastitis Control to their clients.

It is essential for advisers to ensure the teat end preparation and intramammary infusion technique is satisfactory. A physical demonstration to staff prior to drying-off is often worthwhile.

Preparation and treatment of one teat at a time will be more hygienic than preparation of all four teats followed by treatment of each teat.

Insertion of antibiotic and teat sealant should be done at the teat level rather than the cow level.

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Technote 3.1 describes milk suitability following Dry Cow Treatments.

Technote 4.10 discusses issues about withholding periods.

Technote 4.8 provides some examples of marking.

Countdown's 'Dry cow treatment' video can be found at <https://youtu.be/M0PrpZM50ek>

17.4 Use antibiotic Dry Cow Treatment only at the cow's last milking for the current lactation

Antibiotic dry cow treatment is only registered for use immediately after a cow's last milking for a lactation. If farmers give Dry Cow Treatment to cows that have not been milked for a few days, the intramammary nozzle will scrape the surface of the teat canal – disrupting formation of the keratin plug and predisposing the quarter to mastitis.

17.5 Mark the cows for treatment

Marking cows before treatment helps reduce the risk of treated cows accidentally being milked. A marked cow that has accidentally not been treated is less of a risk to the vat than a cow that has been treated with DCT, and not marked. Use spray paint on the udder, tail and legs, or use tail tape to ensure that all milk harvesters can clearly see cows that have been treated with DCT and/or an ITS, if the cow accidentally ends up in the milking herd.

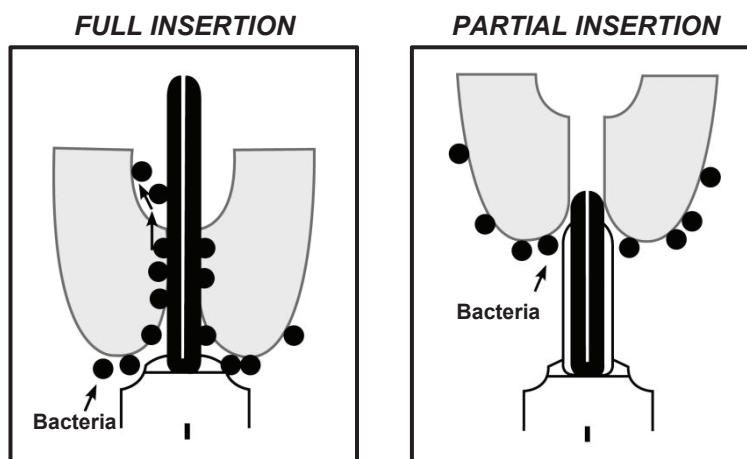
17.6 Administer the treatments as recommended ensuring the teat ends are sanitised properly

Technote 4.5 describes administration of intramammary preparations.

Ideally, antibiotic DCT and ITS should be given using partial insertion of the intramammary tube, whereby no more than the 2–3 mm of the nozzle is inserted into the teat canal.

This technique is considered to cause less damage to the keratin lining of the teat canal, and ensures that some product remains in the teat canal to help provide a temporary seal in the teat canal and provide a barrier against bacteria entering the gland. A single published study compared partial insertion with full insertion of antibiotic DCT across 86 cows and observed a 50% reduction in new infection rate for teats treated with the partial insertion technique (Boddie and Nickerson, 1986).

Some commercial products are available with short nozzles. It is also possible to achieve the technique using longer nozzles, with a bit of practice. For some herds, where cows are not used to having their teats handled, partial insertion may not be an option but for others, this option is well worth trying.



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17.7 Treat all quarters of cows to receive Dry Cow Treatment (except quarters that have been dried off for some time in cows milked as 'three teaters')

It is not appropriate to administer Dry Cow Treatment to individual quarters that were dried off during lactation (where cows have been milked as '3-teaters') or when cows have not been milked regularly beforehand. This is because there is no guarantee of normal dispersion, absorption or removal of antibiotics in quarters in which significant number of tissue cells have already collapsed (for example cows producing less than 5 L per day) at the beginning of the repair and rejuvenation process. Some instances of Dry Cow Treatment antibiotic residue in milk following calving, even after expiry of the Minimum Dry Period and the withholding period, have occurred when Dry Cow Treatment was administered to involuted quarters.

For cows producing very low volumes at dry off or cows with shorter minimum dry periods, an ITS product could be considered.

Technote 3.1 lists common reasons for antibiotic violations associated with Dry Cow Treatment.

Technote 4.13 discusses quarters that have been dried off.

17.8 Thoroughly spray or dip teats with freshly made up teat disinfectant after treatment

Technote 7 discusses teat disinfection.

17.9 Record cow ID, date and product details of all treatments &

17.10 Put cows in clean areas after treatment

Do not leave cows in laneways or yards immediately after administering antibiotic DCT or ITS. Ensure cows remain standing for the first 2 hours after giving antibiotic DCT or ITS.

Graze cows in dry, clean paddocks (not heavily soiled with manure, little bare ground, and no exposure to dairy effluent) for up to 14 days after giving dry cow products, or until udder involution has become evident (i.e. udder swelling has subsided).

17.11 Transport or move cows within the first 12 hours of giving DCT or ITS, or delay until 14 days after dry off

To minimise risk of milk leakage when the teat canal is trying to close and form a tight seal, it is best to avoid walking cows long distances or transporting them during the 1-13 day period after dry off when the udder is at its most swollen. Any issues associated with poor hygiene at administration of dry cow products will become evident (sick cows) within the first few (2-4) days after treatment. If cows are being moved to places that have facilities to regularly check cows for mastitis, they can be moved within the first 24 hours after dry off. If such facilities are not available, it is best to delay moving them until involution is evident e.g. about 14 days after dry off.

Low milk volumes at dry off (<5L/day), prior to administration of antibiotic DCT, have been linked to an increased risk of antibiotic residues at calving.

Dry Cow Treatments are only registered for use immediately after the last milking of a lactation.

Technotes 16.5 and 16.6 discuss the importance of a clean, dry environment at drying-off.

Key papers

Boddie RL, Nickerson SC. Dry cow therapy: Effects of method of drug administration on occurrence of intramammary infection J. Dairy Sci. 1986; 69: 253-257

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 NZ Vet.J.2003: 51:2, 63-72

Acknowledgements

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