

GUIDELINE 14

Decide dry cow management strategy

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Antibiotic Dry Cow Treatment (DCT) is used to:

- Treat existing infections

Internal Teat Sealants (ITS) are used to:

- Protect uninfected quarters from becoming infected during the dry period
- Extend the period of protection when used in combination with antibiotic DCT.

More information about antibiotic DCT

- Antibiotic DCT is a formulation of antibiotic that is administered into the udder immediately after the last milking of a lactation. It is designed to remain in the udder in concentrations high enough to kill mastitis bacteria, which can be between 20 to 70 days, depending on the product used. The prolonged period and the formulation help the antibiotic to penetrate into the tissues and increase the chance of curing infections embedded deep in the udder.

More information about ITS

- Most ITS products contain the non-antibiotic product, bismuth sub-nitrate, an inert material that stays inside the teat throughout the dry period. This provides a physical barrier inside the teat and teat canal, which stops bacteria moving up into the udder and causing an infection. ITS can provide protection in the absence of antibiotic DCT and is appropriate for low SCC cows.
- NOTE: It does not protect against bacteria that may be pushed inside the teat canal if the administration is not done very cleanly. These environmental bacteria can cause severe mastitis.



Good Read

[Technote 14 – Decide dry cow management strategy](#)

14.1 Calculate drying-off dates to ensure that all cows get at least a six-week (preferably eight-week) dry period.

After each lactation, dairy cows require a dry period that is sufficiently long to allow the udder tissue to repair and rejuvenate. Many of the cells that produce milk are removed and replaced again before the next calving. A minimum of six weeks (preferably eight weeks) is recommended between drying-off and calving.

Use expected calving dates, production levels, body condition scores and feed availability to calculate drying-off dates so that all cows get at least a six-week dry period. If operating a split calving pattern, take extra care to ensure that individual cows have a dry period of at least 6-8 weeks (42-56 days).

In many herds, it is practical to stagger drying off over a number of weeks or days.

14.2 Dry off high SCC cows early to help lower bulk milk SCC.

Cows with high SCC can jeopardise milk quality, especially towards the end of the season when milk volumes are low. Dry them off early and cull or use antibiotic DCT on these cows if they are being kept for the next lactation.



Antibiotic Dry Cow Treatment (DCT)

Antibiotic DCT are used in cows with high SCC at drying-off to treat pre-existing infections during the dry period and prior to calving. They are a long-acting formulation of antibiotics and should only be infused into the teats after the last milking of lactation. Care must be taken to ensure that the dry period of individual cows is longer than the withholding period of the selected DCT product.



Internal Teat Sealants (ITS)

Teat sealants are used in cows at the time of drying-off to help protect them from environmental mastitis infections during the dry period and prior to calving. They are infused into the teats after the last milking and stay in the lower part of the teats throughout the dry period, physically preventing bacteria from entering the teat canal. Teat sealants are not antibiotics. These do not necessarily cure infected cows.



Whole herd approach

See **Guideline 14.4** to plan your treatment approach for the whole herd.

14.3 Collect data to assess herd level risk of mastitis.

You will require:

- Bulk milk SCC for the last six months
- Records of clinical cases in the previous dry period
- Records of clinical cases in the current lactation
- Individual Cow SCC information – ideally within the last 80 days prior to dry off
- Any bacteriological milk culture results.

A single herd test SCC, carried out in the last 80 days prior to dry off, can be as predictive as up to four herd tests across lactation, to define if a cow is infected with a major pathogen, or otherwise, at drying off.

All cows that have a SCC over a threshold should be considered “infected”. Discuss with your vet as to the threshold suitable for your herd, which will be between 150,000 cell/s mL and 250,000 cells/mL.

Milk cultures provide an indication of the types of bacteria present in cases of clinical mastitis or in high SCC cows, depending on the cows that have been sampled during the lactation.



Milk cultures

See [Guideline 4.3](#) for more on collecting milk samples for culture.



Generate a Mastitis Focus report for your herd

Check the box on **Previous dry-off strategies** to review performance during last dry period.

Example of a Previous dry off strategies box from a Mastitis Focus report:

Previous dry-off strategies		★
	Your Herd	Trigger
Failure to cure over the dry Existing infections not cured by antibiotic Dry Cow Treatment	35%	>30%
Missed treatments Infected cows that didn't receive antibiotic Dry Cow Treatment	0%	>5%
Infections over the dry Cows that became infected in the dry-off or at calving	25%	>15%
Dry period clinical case rate Indicates the success of the dry-off procedure	0	>1 case per 100 cows

14.4 Plan to use appropriate treatment and prevention for all cows in the herd.

SmartSMM recommends that all cows are protected during the dry period.

For most herds, this will involve a **Selective** or **Targeted Approach**, which involves:

- targeting antibiotic DCT towards cows with a history of clinical mastitis and/or a high SCC, and
- protecting all cows, or low SCC cows, with ITS.

For certain herds, the level of mastitis at dry off, or risk of new infections in the early lactation, may be so high that the herd veterinarian may prescribe antibiotic DCT for all cows. This should be part of a comprehensive mastitis management plan towards more selective use of DCT.

Cows that are considered “at risk” of infection, and should therefore receive antibiotic DCT include:

1. Cows treated for clinical mastitis in the last dry period or in current lactation
2. Cows (and heifers) with an individual cow SCC above an agreed threshold (i.e. between 150,000 and 250,000 cells/ml) in the current lactation
3. Cows with visible teat end damage

All other cows may be treated with a non-antibiotic internal teat sealant (ITS).

For herds that do not herd test, the Rapid Mastitis Test can be used to identify individual cows that should receive antibiotic DCT. Cows with 1 or more glands that are positive to the Rapid Mastitis Test (i.e. Trace or above) would be eligible for antibiotic DCT.



Consult your veterinarian

- To identify your herd’s risk of mastitis in the dry period, and next lactation
- To decide the most appropriate treatment approach for your herd.



Reduce risk of antibiotic residues

- Do not treat blind quarters with antibiotic DCT
- Do not treat cows which are to be culled after drying-off.



See [**Guideline 14.3**](#) for a definition of **sufficient records** to make decisions about individual cows.

See [**Technote 14**](#) for more information on selecting your dry cow treatment strategy.

14.5 Consult with your veterinarian to select the most appropriate antibiotic DCT for your herd.

Your veterinarian will help you assess factors such as:

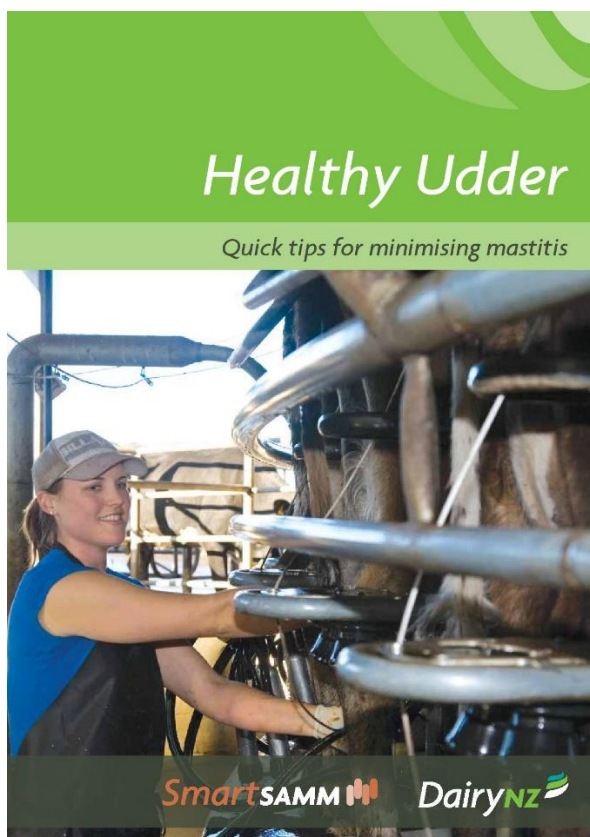
- Previous culture results and antibiotic responses on your property
- Published cure rates of products for existing infections
- Claimed period of protection of products for new infections
- Minimum dry periods of products and anticipated dry period lengths of cows
- Suitability of a combination of approaches for your situation.

Administration technique

Hygienic preparation of the teat before infusing intramammary treatments is **critical**, especially for ITS.



- See [Healthy Udder](#) for a practical guide.
- Discuss the training needs of your team with your veterinarian.



Healthy Udder

Quick tips for minimising mastitis

SmartSAMM

DairyNZ

FOR USE AT DRY OFF

- **Dry cow (antibiotic) treatments (DCT)** are used to treat existing infections and prevent new cases in the dry period and after calving. Dry use DCT directly after a cow's last milking of the season.
- **Internal teat sealants** (non-antibiotic) are used to prevent new cases in the dry period in low SCC cows. They can also be used immediately after DCT, to extend protection in dry cows (combination treatment).

<p>1. Hygiene</p> <p>Hygiene is critical – wear clean gloves or wash hands.</p>	<p>2. Scrub</p> <p>Scrub the first teat end, usually front left, until it is clean with medicated wipes or a cotton wool ball soaked in 70% meth. Remove the cap from the treatment tube.</p>	<p>3. Insert</p> <p>Insert the tip of the tube gently into the teat canal. Partial insertion (3-4 mm) is ideal. Do not touch anything else before inserting.</p>
<p>4. Squeeze</p> <p>Squeeze the contents of the tube gently into the teat canal. Hold teat firmly but avoid blocking the teat canal. Empty the whole tube into the teat, then remove. Antibiotic DCT can be massaged up into the udder.</p>	<p>5. Repeat</p> <p>Repeat steps 2, 3 and 4 to administer the teat sealant, if giving combination treatment. Then move on to the next teat (e.g. front right). Do NOT massage teat sealant up into the udder.</p>	<p>6. Spray</p> <p>Spray with normal teat spray once all teats treated. If still milking other cows, mark her well. Release the cow.</p>
<p>! Hygiene is critical when using intramammary products. Poor hygiene can result in sick or dead cows.</p>		
<p>💡 When squeezing in teat sealants, pinch off top of teat where it meets the udder, to keep sealant inside the teat cavity or sinus. DO NOT massage teat sealants up into the udder.</p>		

TREAT

14.6 Purchase and store the antibiotic DCT and ITS you will need at drying off.

Order and purchase the required number of tubes for all quarters of all cows to be treated, well ahead of your planned dry off dates. Make sure you have some available for cows that are dried off early.

Store tubes in a cool, clean environment, preferably in a refrigerator.

Avoid storing dry cow antibiotic tubes near to lactating cow antibiotic tubes, to reduce the risk of accidentally administering antibiotic DCT to lactating cows. **This is very costly and requires the cow to be withheld from milk supply for an extended period of time.**

Under cold conditions, warming of intramammary products before use is sometimes helpful to reduce viscosity. This is best done by:

- storing the products in a warm dry place for the night before use, or
- placing a hot water bottle in the midst of the tubes, or
- by using a 'water-bath' technique, which involves keeping the tubes inside a dry container (e.g. original bulk container or bucket) and floating this in a larger container of hot water for a period of time to warm the product through.
- **NEVER place the tubes directly in warm water.**

Ensure you have sufficient supplies of materials for teat sanitising, such as teat wipes or cotton wool balls, soaked in 70% methylated spirits. **Use only new or previously unopened packs of teat wipes** - teat wipes are only effective if they retain their high alcohol content.



Avoid accidental treatment of milking cows with DCT

Do not store antibiotic Dry Cow Treatment near tubes of Lactating Cow antibiotic.



Purchase fresh supplies of teat wipes

Containers of wipes, once opened, dry out quickly over a few days and are then ineffective.



Keep products clean before use

Under no circumstances should tubes of ITS (internal teat sealant) or antibiotic DCT be made wet or dirty before use, as this greatly increases the risk of environmental bacteria being introduced into the udder and causing severe mastitis.