

Dry cow antibiotic shortage

Treatment of cows with dry cow antibiotic at the end of lactation is a key part of a herd's mastitis management strategy: the long-acting antibiotic in dry cow treatment maximises the likelihood of curing subclinical mastitis infections. In the event of a shortage of dry cow antibiotic product/s, farms will have to change their dry cow management, such as using a different product or changing from blanket (whole-herd) to selective (part-herd) dry cow treatment for a period of time.

These changes will be specific for each farm and needs to be discussed with their prescribing veterinarian in a dry cow consult. This factsheet covers some common considerations.

Know the differences between antibiotic dry cow products

There are many products on the market, with different active ingredients. Cloxacillin products are effective against Gram positive bacteria like Staph aureus and Strep uberis, while cephalonium products and those containing ampicillin also cover Gram negative bacteria like E. coli. Research has shown that products with more milligrams per tube will have higher cure rates.

The key difference from a farm management point of view is the **minimum dry period**: that is, the required number of days between administration at drying off and calving. As seen in the following table, there is almost a 20-day difference between products. Depending on the timing of the shortage, changing to a product with a longer minimum dry period might be unfeasible for some farms that are closer to calving. Accurate calving dates are essential to help reduce the risk of cows calving within their minimum dry period.

Active ingredient per tube	Minimum Dry Period
Cloxacillin 600mg	35 days
Cloxacillin 500 mg	30 days
Cloxacillin 500mg + Ampicillin 250mg	30 days
Cephalonium 250mg	49 days

For cows calving after the minimum dry period has elapsed, all dry cow products have a milk withholding period of 8-milkings.

Consider selective dry cow treatment

Selective dry cow treatment is where only the cows most likely to have subclinical mastitis are treated with intramammary antibiotic at drying off. It is a potential way to make supplies of antibiotic products last longer.

Farmers treat **all quarters** of any cow that a) had clinical mastitis during lactation and b) those that have had a peak individual cow cell count (ICCC) above a certain threshold. Farmers will need to discuss with their vet as to the most suitable ICCC threshold, although a common cut off is 150,000 cells/mL.

Dairy Australia's **Drying-Off-Checklist** outlines the herd-level criteria for best practice selective DCT, including:

- A annual average bulk milk cell count of <150,000 cells/mL.
- Good cow identification.
- Complete and accurate clinical case records.
- Less than 25 clinical cases of mastitis per 100 cows (25%) within the last 12 months.
- No Strep agalactiae (based on PCR testing and/or individual cow milk cultures).
- At least one individual cow cell count (ICCC) for each cow within 80 days of planned drying-off date.

While four or more herd tests over a lactation are recommended to provide the best information on ICCCs for culling decisions and drying off treatments, New Zealand research has shown that either of the following can be as predictive in defining if a cow is infected (or not) with a major pathogen at drying off:

- The ICCC result from a single herd test ("spot test"), carried out in the last 80 days prior to dry off.
- For farms with inline ICCC sensors, the average of the last 12 weeks of ICCCs.

With selective dry cow treatment, all cows should still receive an internal teat sealant (ITS).

These products contain an inert non-antibiotic product (bismuth subnitrate) that blocks off the teat canal and help prevent new infections occurring during the dry period. For farms that haven't used teat sealants before, it is important to get advice and training from your veterinarian as the application method is different from dry cow antibiotic. A video demonstrating the process is available [here](#).

The Selective Dry Cow tool

The Selective Dry Cow tool is available to Herd Platform users on **DataVat**. It draws upon herd test results, clinical case records and other available herd/cow records and provides the recommended course of action for each individual cow that is within 80 days of the end of their lactation. For more information see: datagene.com.au/wp-content/uploads/2023/11/Fact-sheet-33-Selective-Dry-Cow-Tool.pdf

Have realistic expectations: When using herd test or spot test data to select the cows that will and won't receive antibiotics, it is inevitable that some infected udders may be missed and receive no antibiotics and vice versa. Changing the ICCC threshold for treatment will change the proportions of each and is something to discuss with your veterinarian

Don't waste product on incurable cases

Cows to consider for culling are those which are unlikely to cure. This includes cows which have had high cell counts throughout two consecutive lactations (despite receiving dry cow treatment in the intervening dry period) and cows that have had three or more clinical cases of mastitis during the lactation. The **Mastitis Focus Report** – available on DataVat – can help farms create a cull cow list based on herd test and clinical case data.

What if a farm doesn't herd test and a spot test isn't possible?

For some farms, it may not be feasible to get individual cell counts prior to drying off. In this scenario, a logical approach is to target treatment towards those more likely to cure: that is, the younger animals within the herd. After confirming how many cows-worth of dry cow is available, a farmer could create a list of cows in ascending age order and treat from the youngest to the oldest.

The number of older cows that will be excluded from treatment depends on the amount of product available and the size of the herd. However, in addition to being the animals who are more likely to have chronic infections, these older animals are less likely to continue in the herd for multiple lactations.

For some farms, it may be feasible to do rapid mastitis tests on all or some of the cows, and only treat the cows that test positive. However, this can be difficult to do safely and hygienically, and interpretation can also be difficult. Again, this is something for farmers to discuss with their veterinarian.

Focus on other drying-off management practices

The following are always important to do, regardless of the availability of dry cow products:

- Ensure best practice hygiene during dry cow treatment to reduce the risk of introducing bacteria up through the teat canal.
- Reduce milk production to appropriate levels prior to drying off (6 to 12 litres per day) to minimise risk of cows leaking milk after drying off.
- Consider the environmental conditions dry cows will be facing – aim for dry cows to have the cleanest paddocks in the first and last two weeks of the dry period when the teat canal is less likely to be fully sealed.
- Reduce risk of new infections during the remaining lactation, particularly those spread at milking time like *Staph aureus*: check the concentration of post-milking teat disinfectant and ensure good coverage: everywhere that the teat cup liners touch.

The **Countdown Farmer Guidelines for Mastitis Control** have more information about best-practice dry off management.

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