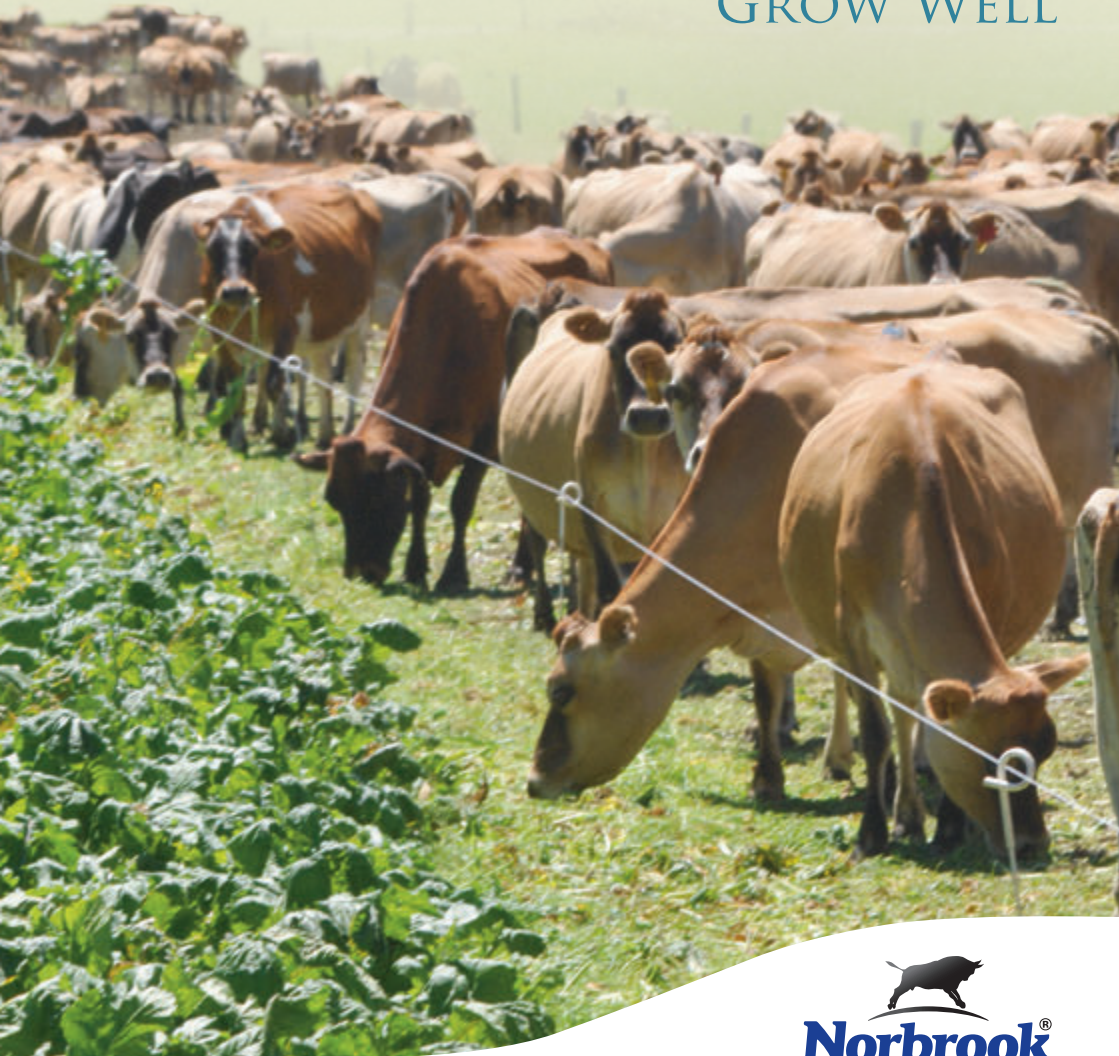


Management of Dry Cows Information Leaflet



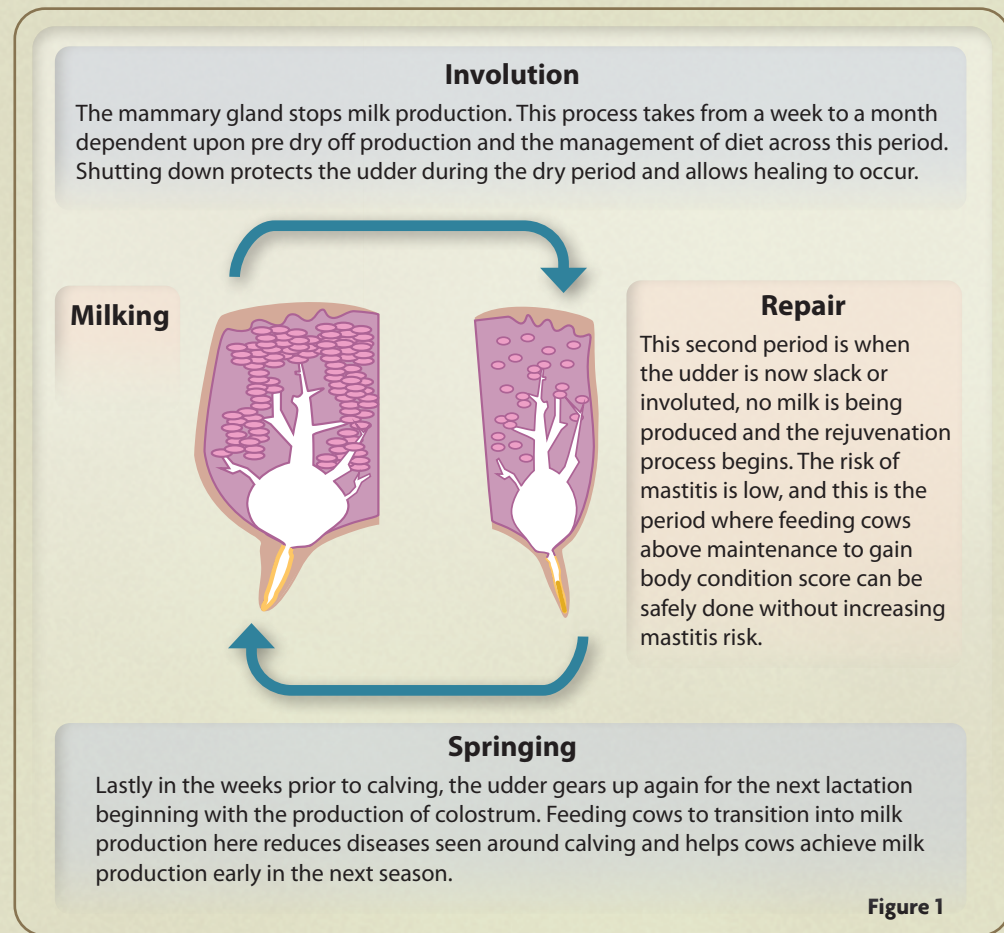
Why is the dry period so special?

The dry period of cows, between finishing one lactation and calving to begin the next, is a critical period for future udder health and production.

This is because:

- ▶ The mammary gland rejuvenates and prepares the gland for the next year.
- ▶ Subclinical infections of the udder are more reliably self-cured or treated over a longer period than during lactation.
- ▶ Cows' body condition scores can be improved in preparation for the next lactation.

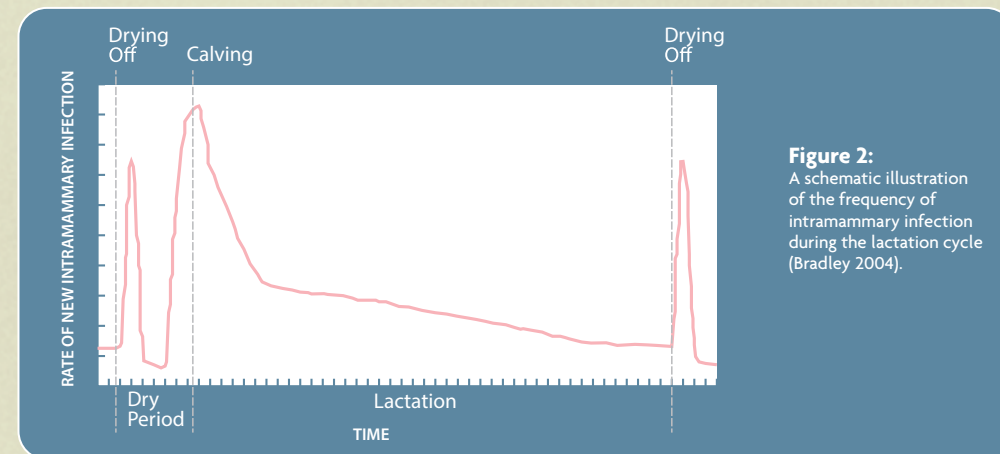
There are **3 distinct stages** during the dry period that a cow's mammary gland moves through: involution, repair and finally making colostrum.



The dry period and risk!

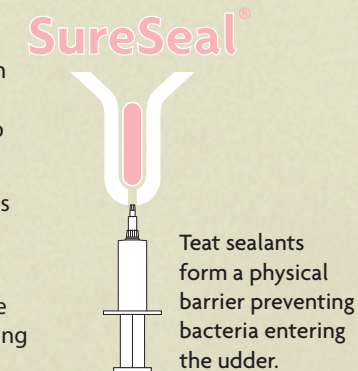
The times of a dry period where an udder is not involuted (the days and weeks following dry off and prior to the following calving) are high risk periods for an udder getting a new intramammary infection (IMI) that will present as mastitis the following lactation.

We manage these high risk periods through the use of internal teat sealants and management of the environmental challenge and transition nutrition out of one lactation and into the next.



Internal teat sealants

- ▶ Internal teat sealants, such as SureSeal®, reduce the risk of an udder gaining a new IMI through mimicking the natural defences, a keratin plug. This is the barrier, at the teat end, to the entry of bacteria across the dry period.
- ▶ This is particularly important in high challenge environments when cows have a high stocking density or it is muddy, for example the feeding of crops.
- ▶ Internal teat sealants reduce the risk of clinical mastitis in the following lactation as a continuation of less new IMIs occurring over the dry period.



Using nutrition to manage the transition to a dry cow

- ▶ Overfeeding beyond maintenance requirements during the involution process increases the risk of continued milk production and milk leaking, a known risk for mastitis.
- ▶ Nutrition at maintenance levels assists the involution process.

What is udder involution?

Udder involution is the process by which a cow's production of milk is stopped. During involution antibacterial factors are produced to help resolve subclinical mastitis and the udder recovers and rejuvenates ready for the next lactation. Visually the udder swells (Fig 3) in the days following drying off before becoming slack, where it is noticeably smaller and less swollen (Fig 4).

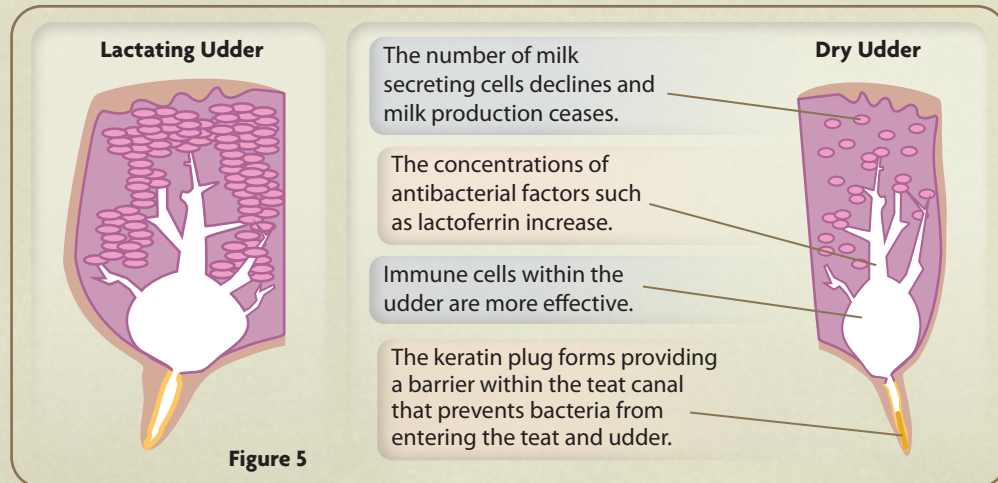


Figure 3



Figure 4

During involution:



So why is there such risk at drying off?

At drying off lactation continues until the involution process is completed but defence mechanisms are stripped away. Daily or twice daily milking that flushes bacteria out of the udder and teat is halted resulting in more opportunity for new IMI. Teat spraying that reduces bacteria on the outside of teats is also stopped resulting in increased teat end challenge.

These reasons highlight the time between dry off and involution as a critical one; it takes time for the benefits of involution to come through and managing a successful involution helps ensure good udder health on the other side of the dry period.

How can I improve involution outcomes?

1. Production at dry off

- ▶ Follow industry guidelines for production of milk solids recommendations at dry off (*SmartSAMM Guideline 16*).
- ▶ Using the bulk milk tank as an average production has many cows milking above recommendations (an average production of 10L/cow at final milking still has many cows at risk of milk leakage after their last milking).
- ▶ If cows are still milking well discuss with your veterinarian how to reduce production safely before drying off. This will involve drying off cows in batches as they become ready and carefully managing feed intake of cows that are milking well.

2. Select the right dry cow products

- ▶ Complete annual refresher training on administration of intramammary dry cow products, read industry guidelines (*SmartSAMM Guideline 17*) or watch a demonstration video (<https://vimeo.com/251077954>).
- ▶ Immediately after last milking administer the dry cow products safely as recommended by your veterinarian.



3. Manage the cows nutrition over the transition

- ▶ Pre drying-off provide a low energy diet that signals the cow to stop making milk.
- ▶ Feed to maintenance levels after drying off until involution occurs.
- ▶ Follow industry guidelines for production of milk solid recommendations at dry off (*SmartSAMM Guideline 16*).
- ▶ Involution is promoted through a combination of reduced energy intake, halting of the milking process and changed routines.
- ▶ Compared with cows fed 8kg dry matter per day after drying off, cows fed 16kg dry matter per day were twice as likely to leak milk in the second and third day following last milking (*Tucker 2009*).

4. Changing routines

- ▶ Normal milking routines are a signal to cows for lactation to continue. After dry off ensure cows are located away from the dairy until involution is complete.

5. Check regularly

- ▶ Follow industry guidelines for monitoring cows after dry off (*SmartSAMM Guideline 18*).
- ▶ Check your cows initially by walking through the mob every day.
- ▶ Cows with mastitis may be slow to move, have some swelling in the udder or walk like lame cows. Draft any suspect cows and examine for mastitis.
- ▶ Check all cows udders closely at 10-14 days after dry off when involution has occurred by putting them back through the cowshed or other place where the udders can be observed and palpated if needed.

Follow industry guidelines (*SmartSMMM Guideline 16*) after dry off by placing cows in a clean, dry paddock. During the dry period, risk of a new IMI must be managed until involution has been successful. Risk of a new IMI must also be managed in the springing period before the next lactation. It is important to keep the environmental challenge under control during these periods of high risk.

Drainage, shelter and keeping moderate stocking rates are key. Cows need to be able to lie down in a place that is not covered in mud or faeces.

Figure 6: Adapted from *SmartSMMM Technote 1*: Reduce exposure to environmental mastitis bacteria.

Options for surface types, in preferred order (highest to lowest) are:

- clean, grassed paddock with no surface water;
- well-drained inorganic material, such as sand;
- well-drained organic material.



1. 7-14 days before drying off

- ▶ Monitor production levels at a cow level. Cows that take more than 4 minutes to milk out at the end of the season are likely to be high producing cows.
- ▶ Manage reductions in high producing cows through nutrition.
- ▶ Use weather forecast to avoid drying off when conditions are wet and muddy.

2. At last milking

- ▶ Follow best practice administration technique using products as directed by your veterinarian immediately after the last milking.
- ▶ Provide clean and dry paddocks for involution.
- ▶ Begin maintenance diet to assist involution.
- ▶ Observe cows for mastitis over the next 10-14 days.

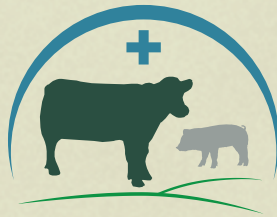
3. Check cows 10-14 days after last milking

- ▶ At this stage cows should be involuted (slack udders). Check for mastitis and for failure of involution.
- ▶ If you find many cows with poor involution then that is a signal to review intakes and keep checking for mastitis as the risk is not over yet.
- ▶ Begin feeding cows that have properly involuted to improve body condition scores.
- ▶ Continue maintenance feeding for cows still not involuted.

4. Springing cows 3 weeks before calving

- ▶ Begin transition diet to ensure appropriate energy (*Feedright Technote 12*) and mineral (*Feedright Technote 13*) requirements are met.
- ▶ Minimise environmental challenge as the risk of new IMI increases again.





GROW WELL

Grow Well

Grow Well aims to develop tools for veterinarians and their clients which may be used in practical situations.

Your veterinarian is the trusted professional with local knowledge to best meet your farm's herd health needs. Combining science with practical considerations, your veterinarian can tailor a preventative health plan to fit your situation, aiding you in optimising the management of your herd from lactating to dry cows. We trust that the information contained within this leaflet will help you work with your vet to improve mastitis control over the dry period on your farm.

Review

Does your management plan for dry cows consider:

- ▶ Refresher training on administration of dry cow product
- ▶ Ensuring reduction in milk production prior to dry off
- ▶ Maintaining clean dry off and calving environments
- ▶ Ensuring involution by managing feed availability after drying off

References:

- Bradley AJ, Green MJ, 2004. 'The importance of the nonlactating period in the epidemiology of intramammary infection and strategies for prevention.' *Vet Clin North Am Food Anim Pract.* vol 20 pp547–568.
- Dairy NZ 2012, *SmartSAMM Technote 1: Reduce exposure to environmental mastitis bacteria*, Dairy NZ, viewed 16 October 2020, <https://www.dairynz.co.nz/media/195637/SmartSAMM_Technote_01_Reduce_exposure_to_-environmental_mastitis_bacteria_2012.pdf>
- Dairy NZ 2013, *SmartSAMM Guideline 16: Dry off Abruptly taking steps to reduce yield*, Dairy NZ, viewed 16 October 2020, <https://www.dairynz.co.nz/media/193820/SmartSAMM_Guideline_16_Dry_off_abruptly_taking_steps_to_reduce_yield_2013.pdf>
- Dairy NZ 2013, *SmartSAMM Guideline 17: Administer dry cow treatments as recommended*, Dairy NZ, viewed 16 October 2020, <https://www.dairynz.co.nz/media/193823/SmartSAMM_Guideline_17_Administer_dry_cow_treatments_as_recommended_2013.pdf>
- Tucker, C, Lacy-Hulbert, S, Webster, R. 2009. 'Effect of milking frequency and feeding levels before and after dry off on dairy cattle behaviour and udder characteristics.', *J. Dairy Sci.* vol 92, pp3194-3203
- Kay, J, 2017, *Feedright Technote 12: Feed the transition cow appropriately*, Dairy NZ, viewed 26 November 2020, <https://www.dairynz.co.nz/media/5789044/technote-12_web.pdf>
- Kay, J, 2017, *Feedright Technote 13: Monitor and mitigate milk fever*, Dairy NZ, viewed 26 November 2020, <https://www.dairynz.co.nz/media/5789045/technote-13_web.pdf>

Norbrook® New Zealand Ltd
KPMG Centre
18 Viaduct Harbour,
Auckland 1140

Mail:
PO Box 132292
Sylvia Park
Auckland 1644

Free call: 0800 224 022
customer-care@norbrook.com.au