

Cull persistently infected cows

Culling infected cows is a key strategy in mastitis control as it is the only way to eliminate some infections.

Dry Cow Treatments do not cure all infections despite the potency of the formulations. The likelihood that Dry Cow Treatment will eliminate bacterial infections decreases with increases in the chronicity and degree of infection, the age of cows, and the presence of *Staph aureus* (Buddle et al 1987, Sol et al 1994). For example, cure rates to cloxacillin in 12 Victorian herds was over 80% for cows less than five years of age and less than 60% for cows over five years of age (Browning et al 1994).

In a study of eight dairy herds in New South Wales, Stevenson and Lean (1998) observed the likelihood that cows would be culled for acute or chronic mastitis increased each lactation and suggested this may be due to cumulative damage in the udder over their productive life. They believe that adherence to the Countdown Downunder Farm Guideline recommendations has the potential to decrease the number of cows infected early in their productive life and ultimately removed for chronic mastitis in later lactations.

Although culling is an important mastitis control tool, it is an expensive option and cell count problems will only be solved if concurrent measures are taken to prevent new infections. Very little research has been conducted to determine the costs and benefits of different culling strategies on udder health status.

15.1 Consider culling any cow when you find her third clinical case for this lactation.

Treatment is less likely to be successful in cows that have had multiple cases of mastitis, with reported cure rates of 75% for first cases, 45% for second cases and 12% for cows being treated for the third time in New Zealand (Livestock Improvement 1992). There is general industry agreement that it is uneconomic to keep recurrent clinical mastitis cases in the herd.

Confidence – High

Treatment is less likely to be successful in cows that have multiple mastitis episodes.

Research priority – Low

Confidence – Moderate

High cell counts in two consecutive lactations, with intervening Dry Cow Treatment, indicate chronic infections or cows that are highly susceptible to re-infection.

Research priority – Low

Technote 12.1 shows how to calculate the impact of high cell count cows on milk payments.

Technote 8.3 discusses segregation of infected cows.

Technote 4.13 discusses the options for drying-off clinical quarters.

If cows with high cell counts are retained in the herd they should be segregated and milked last as infected cows.

15.2 Consider culling cows with high cell counts in two consecutive lactations, despite treatment with Dry Cow Treatment in the dry period in between.

High cell counts in two consecutive lactations, despite Dry Cow Treatment, indicate extensive or refractory infections. Cows that are unlikely to cure should be considered for culling if this action is economically justifiable.

Whether or not it is economic to cull high cell count cows depends on:

- their impact on the BMCC and consequently on the milk payment;
- the risk of mastitis spreading to other cows in the herd; and
- the cost of replacement cows.

If three clinical episodes occur in a single quarter, one option may be to dry-off that quarter in either this lactation or permanently.

Before culling, always check the history of the cow. Those that have had a very high cell count in only one lactation are candidates for Dry Cow Treatment.

Key papers

Browning JW, Mein GA, Brightling P, Nicholls TJ, Barton M. Strategies for mastitis control: dry cow therapy and culling. *Aust Vet J* 1994;71:179-181.

Buddle BM, Herceg M, Ralston MJ, Pulford HD. Reinfection of bovine mammary glands following dry-cow antibiotic therapy. *Vet Microbiol* 1987;15:191-199.

Livestock Improvement. How to use somatic cell count information. *Farm Facts*, New Zealand, October, 1992.

Sol J, Sampimon OC, Snoep JJ, Schukken YH. Factors associated with bacteriological cure after dry cow treatment of subclinical mastitis with antibiotic. *J Dairy Sci* 1994;77:75-79.

Stevenson MA, Lean IJ. Descriptive epidemiological study on culling and deaths in eight dairy herds. *Aust Vet J* 1998;76: 482-488.