Technote 10

Detecting and managing clinical mastitis in lactation

In this technote:

1. Monitor bulk milk SCC
2. Check for swollen and poorly milked out quarters
3. Watch for clots on the milk filter
4. Foremilk strip for early detection
5. Decide when to collect milk samples for culture
6. Record and treat clinical cases as recommended by your veterinarian

If clinical cases are missed, they contribute millions of cells into the vat and can significantly increase Bulk Milk Somatic Cell Counts (BMSCC). Herds that have more than 5 clinical cases per 100 cows in the calving period, or 1 clinical case per 100 cows per month in subsequent months have a significant mastitis problem and help should be sought.

Rapid detection and treatment of cases means fewer chronic infections develop, and there is less chance of infection being passed to other cows. This requires milking staff to be aware of signs that indicate clinical cases and situations that increase the risk of mastitis spread.

Milk cultures are recommended to identify which bacteria are involved if a herd problem emerges. A sterile sample must be taken before treatment is started for each case.

Cows with heat, swelling or pain in the udder, or changes in their milk (wateriness or clots) that persist for more than three squirts, have clinical mastitis and require treatment.

➜ The DairyNZ **Mastitis Focus Report** can help to monitor the incidence of clinical mastitis in the herd.

① Monitor bulk milk SCC

Sharp rises or spikes in the BMSCC may indicate the presence of a new clinical case of mastitis in the herd.

➜ **Technote 11** provides more information on monitoring bulk milk SCC.

② Check for swollen and poorly milked out quarters

Swollen quarters and those that don't milk out as normal should be looked for before and after every milking, and strip-checked for clots or other clinical signs of mastitis.

➜ **Technote 4.3** describes techniques for checking udders.

③ Watch for clots on the milk filter

Milk filters ('socks'), located between the milk pump and bulk milk tank, remove gross contamination such as hair, dirt, and dung from milk that has not been removed before application of the teat cups, or was drawn in after accidental contact of teat cups with the floor or cow (Akam and Spencer 1992). Filters do not remove dirt particles less than 70 micrometres, somatic cells or bacteria.

The presence of clots on the filter sock is an indicator of poor mastitis detection (Blowey and Edmondson 1995). Filters should be inspected after every milking and before plant wash-down. If clots are detected, suspect cows should be examined at the next milking.

Not all clinical mastitis presents as clots on the filter sock (e.g., watery or discoloured milk). These cases may be indicated by a sharp rise in the BMSCC.

It is important that farm staff can distinguish between mastitis clots and clumps of internal teat sealant. Teat sealant clumps will smear or spread out when rubbed, whereas mastitis clots will not.

④ Foremilk strip for early detection

When clots are found on the filter or sharp rises in the BMSCC are observed, all cows should be foremilk stripped to check for clots.

'Suspect' cows should be marked for priority stripping. These include cows that:

- have calved recently;
- have had clinical mastitis within the past two months;
- have a high individual cow cell count (e.g., ICSCC above 500,000 cells/mL or a herd-specific threshold);
- have not milked out properly; or
- have teat damage or severe teat lesions.

Daily foremilk stripping of the whole herd is warranted during high-risk times, such as during outbreaks of clinical mastitis or the first 6-8 weeks of lactation.

This approach improves early detection of clinical cases, reduces missed infections, and helps limit rises in BMSCC.

➜ **Technote 5.3** describes advantages, techniques and routines for regular foremilk stripping.

⑤ Decide when to collect milk samples for culture

It is good practice to sample all new clinical cases to identify the causative pathogens, as pathogen profiles can change as lactation progresses. For cows with recurrent clinical cases, ensure at least 2-3 weeks has elapsed since the previous treatment before resampling, to minimise the risk of false-negative results due to residual antibiotic effects.

Identifying the predominant pathogens causing new infections provides valuable feedback on the effectiveness of current preventive measures and helps guide appropriate treatment selection.

Herd owners should be encouraged to use commercial diagnostic services, available through their vet or point-of-care diagnostic systems, to identify pathogens associated with new clinical cases. All diagnostic approaches depend on correct aseptic sampling technique to avoid contamination; therefore, staff responsible must be appropriately trained.

Aseptic milk samples, and where appropriate, diagnostic systems using herd test samples, can also be used to investigate high SCC cows as part of a targeted mastitis control plan.

➜ **Technote 4.4** discusses collection, storage and analysis of milk samples for culture and other bacteriological tests.

➜ The **Healthy Udder Guide** provides step-by-step instructions for sampling cows in an aseptic manner.

⑥ Record and treat clinical cases as recommended by your veterinarian

The animal health treatment plan provided by the herd veterinarian will set out relevant treatment approaches for dealing with clinical cases of mastitis. Generally, this will involve an antibiotic treatment and may include use of a NSAID (non-steroidal anti-inflammatory drug), to aid recovery.

MRS T provides a useful reminder of the steps to safely manage cows under treatment for clinical mastitis and avoid contaminating the bulk tank with antibiotic-treated milk.

➜ **Technote 4** provides more detail on mastitis treatments, including NSAIDs, as well as management of animals during treatment.

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Key papers

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