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Dealing with high SCC cows

Cows with an individual SCC > 200,000 cells/mL are likely to have at least one infected quarter. These cows are not only contributing to the bulk tank SCC, but they are also a potential source of infection for other cows in the herd.

Very often these cows will have no clinical signs, yet pose a significant, and silent, threat to the herd. Bacteria from the quarters of these cows can be spread to other cows. Spread most frequently occurs during milking, through routes including cluster liners, milkers' gloves and poor forestripping technique.

Withholding the milk from these cows from the bulk tank will provide a short term solution to an elevated bulk tank SCC, but will do nothing to address the potential for spread of infection in the longer term.

What are the options for dealing with these cows?

Cure the existing infection

Treating cows with a high SCC in order to cure the existing infection may appear the most logical step to take. However, consider what cure rates can be achieved in these situations.

Various studies show that cure rates can range from 20-80%, depending on various factors:

- What pathogen is the cow infected with?
- What's the duration of infection?
- What lactation number is the cow?
- How many quarters are infected?
- Is the cow being treated during lactation or at drying-off?

Remove them as a potential source

Cows with a high SCC are a potential source of infection for the other cows in the herd. They may be a source of contagious bacteria e.g. *Staph aureus*, that can be spread from cow to cow. Removing these infected cows (or quarters) from the herd will reduce the risk of spreading infection.

High SCC cows can be dried off early and treated with antibiotic DCT. Although they will not contribute milk for the remainder of the season, cure rates are higher during the dry period compared to lactation, which increases the likelihood of these animals remaining productive for future lactations. This may be the best option for 1st lactation animals, and for cows nearing the end of their lactation that have had low cell counts in previous lactations.

Drying-off quarters

If a cow has a high SCC, identifying the infected quarter(s) can help in the decision making. If a cow has only one infected quarter, then drying-off that quarter is often a workable and practical strategy.

- Use a CMT to identify the quarter with the high SCC (the infected quarter).
- Do not dry-off quarters while they exhibit signs of clinical mastitis.
- Do not use any antibiotic/intramammary tubes, simply cease milking the quarter.
- Mark the cow and the quarter, to avoid accidental milking of the dry quarter for the rest of the lactation.
- Check/feel the quarter at every milking for the next 10 days, for any signs of heat or pain.



CMT is useful to identify the quarter with the high SCC.

When the cow reaches her drying-off date, do not use antibiotic DCT in the dry quarter as absorption will be affected, presenting an antibiotic residue risk when she calves. Discuss the alternative of using injectable antibiotic treatment with your veterinary practitioner.

There is a lack of available data to predict the likelihood of that quarter still being infected at the next lactation. However, it is likely that the self cure rates for dried off quarters are influenced by the same factors that influence antibiotic therapy cure rates i.e. duration of infection, age of animal etc.

Culling

Cows that have had high SCC in 2 consecutive lactations, despite antibiotic DCT, should be considered for culling.

Culling may seem an expensive option, but there are times when it is the most logical and effective strategy. Culling should be considered for chronically infected cows that are unlikely to be cured. Discuss options with your CellCheck advisor.

However, remember that culling will not cure herd-level SCC problems if measures are not taken at the same time to prevent new infections.

Reduce their risk of spreading infection

In order to reduce the risk of spreading infection, the goal must be to attach a clean cluster to a clean cow. Various practices are employed in order to achieve this, some with more supporting scientific evidence than others.

Superior hygiene and milking routine

Bacteria can be transferred from cow to cow by the milker as well as the milking equipment. Ensuring the hygiene is optimal, and that the way the milking machine is managed helps reduce the risk of spreading infection.

- Wear gloves when milking.
- Disinfect gloves regularly throughout milking, especially after dealing with high SCC cows.
- Avoid getting milk on gloves when forestripping.
- **Never** use communal rags when cleaning cow's teats.
- Take care when removing clusters from cows - never pull the cluster off while under vacuum.
- Avoid overmilking, which can contribute to teat-end damage.
- Regular machine maintenance, including a 6-monthly service ensures optimal machine function.
- Change liners after 2,000 milkings, or every 6 months, whichever comes first.

Segregate the infected cows from the uninfected cows

If all the uninfected cows are milked first with a clean milking machine they cannot be exposed to any potential infection from the infected cows in the herd.

Depending on the farm system, this may be practically achieved in different ways:

- Run infected cows as a separate herd, and milk after the main herd.
- If running a separate herd is not practical on your farm, mark infected cows and prevent them from entering the parlour until the end of milking. They will quickly learn to hang back making this job easier.
- Alternatively, do not put clusters on these marked cows when they come up the line for milking. Instead, draft them out when the whole row leaves, and milk these high-risk cows as the last row of the milking.

Whatever the method, it is essential to ensure that the milking machine and equipment is thoroughly washed and allowed to dry before the next milking.

Alternatives to segregating the herd

These practices aim to mimic the effect of segregation by ensuring a clean cluster is put on every cow.

Cluster dipping. This practice is often used in an effort to reduce the transfer of infectious mastitis bacteria via the liner from one cow to the next. Further research is needed to determine the effectiveness of this approach, and to establish recommendations around solution refresh rates, contact time etc. Peracetic acid should be used as the dipping solution rather than sodium hypochlorite. Check with your CellCheck advisor as to how to carry out this practice correctly on-farm and as to the suitability of it for your farm.

Cluster flushing. A 2007 study in the UK highlighted the benefits from cluster back flushing and also the added benefits from having it automated, resulting in a better milking routine overall.

Studies from Moorepark evaluating automated cluster flushing have shown that cluster flushing reduces numbers of bacteria in liners and sanitises the cluster between each cow. Care must be taken that the correct detergents are used and that their concentration is correct to ensure that there is no danger of residue contamination. A CellCheck advisor with a background in milking machines will be best placed to give advice on the suitability of one of the automated cluster flushing systems for your milking machine.

Separate cluster. The practice of using a separate cluster can be applied when milking high SCC cows, as well as clinical cases. The cluster should be clearly marked to ensure that all milkers know that it should only be used for milking infected cows. It is also essential to disinfect the cluster after every use.