

Tackling Mastitis through Risk Management

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How to tackle a mastitis problem by risk management

Following on from the series by Messrs Blowey and Edmondson, this article by Neil Howie of the Nantwich Veterinary Group outlines some systematic approaches to tackling a mastitis problem.

Blowey and Edmondson's articles described the types of bacterial infections and role of the milking machine in causing mastitis, and in turn how knowledge of the lifestyle of bacteria found in samples points to areas of risk in mastitis outbreaks.

The predispositions to a disease outbreak are called risk factors. In some diseases there may be a few easily identifiable ones, but mastitis is complicated by the interplay of the three classes of risk factors discussed by Blowey and Edmondson, namely infections carried by the cows, infections living in the environment and the physical effect of the milking machine on the cows.

Control of a mastitis problem may involve managing risks posed by each of these, and in turn each have many potentially remedial actions.

However, as an adviser to owners and herdspeople, one has to be careful not to overload milkers with so much advice and many things to do that time pressure and fatigue preclude the critical efforts being carried out effectively or for long enough. I've never counted, but I'm sure I can easily pass on twenty different efforts that can be made to control mastitis. In most herds three or four of them will be critical in the face of any given outbreak. From an adviser's point of view, the easy thing to do is give all twenty odd pieces of advice every time – then the real problem is bound to be covered. My experience is that overloading milking staff with information and things to do very quickly results in a fall off in some of the advised practises, and it's an even bet that the pertinent ones are the ones which will be dropped first. So the trick is to eschew the scattergun approach and target a few selected risks.

The danger is this approach is missing the target – selecting three or four efforts, which are irrelevant to the particular case, is worse than useless. The workload is increased, but the problem does not go away, so careful selection of the effort to be made is critical.

To make the selection, good quality information is needed to make good quality decisions. Notwithstanding the mountain of statutory records, computer programmes and milk recording information available in many farms, a rolling picture of mastitis incidence and type is not often available.

We need to know why there is a perceived problem. Is there an increase in clinical cases, are cell counts high or rising or is the dairy reporting a bactoscan problem? It may simply be that previously accepted levels of these parameters are now deemed a problem by new personnel, a new dairy or higher management demands.

Having established why there is perceived to be a problem, we need to establish what the problem is. Is there an increase in clinical cases, or are there too many new high cell count cows reported at recording?

Bacteriology, as described by Blowey and Edmondson, is important at this stage. Good case selection to get meaningful results is important, again a targeting of effort is important. Bulk tank bacteriology can be an excellent guide as to which bacteria udders are being exposed to, and can quickly lead to solutions. For example, we had a dairy with an increased evidence of 'environmental' type mastitis although the farm is as clean as any. Bulk milk analysis showed *Pseudomonas* to be present in high levels. These bacteria like lukewarm water, and sure enough the dairyman regularly washed cows tails and udders with warm water from a header tank. We isolated *Pseudomonas* from that water. The farmer still uses the warm water wash, but now regularly disinfects the tank with hypochlorite, and the problem has gone away.

On another farm we suddenly ran into a problem in the high yield group. Here, by sampling bulk milk after midday and night milking, we were able to show a high *Staph aureus* count in the high yield group, but also higher levels of the bacteria associated with poor plant cleaning at the night milking. It turned out that the problem mastitis cows were milked last (on my advice) at lunchtime, then the plant was only cold rinsed before the high yield group were milked first at night (an own goal!). Hot washing was introduced at the midday milking and the problem reduced, although once introduced, a *Staph aureus* problem takes time to resolve.

Sudden increases in 'environmental type' mastitis should always trigger a machine check. We had a client last winter with a sudden outbreak of *E-coli* mastitis, with no change in his housing or hygiene. He had recently had a machine service, so presumed the machine was OK. However, it turned out that the vacuum regulator was on its last legs and disrupting it at the service had rendered it unstable. A new, digital regulator went in and the problem went. We have had similar experiences with faulty pulsators. Always check – and check again.

Where the problem is more protracted, either in case numbers or cell count problems, effort must be made to find the cause of new cases. This means sampling for individual quarter bacteriology – but sample the cows that are going to tell us something.

What causes the new cases? Sample them. What causes cows to be new high cell count cases without showing clinical mastitis? Use cell count records to select new high cell count cows. Follow that up with California Milk Testing, find the relevant quarter, and sample that.

When you know what is spreading you can put defence measures in place. If the problem is environmental, it may be vaccine, or pre-dipping, or barrier dips, or better bedding hygiene – or your vet can help you choose.

If the problem is *Staph aureus*, or *Strep dysgalactiae* carried by cows then you will need to break the cycle of infection during milking. This may involve wearing gloves, dunking units in peroxaetic acid between cows, or creating separate problem groups. Again, many things can be done and consulting with your vet will help identify the risks and target the effort.

There is nothing more debilitating than getting up day after day to milk a herd of cows with mastitis problems. Some people refer to the milking plant as the combined harvester of the dairy farm. I disagree. A problem combine can be parked up in a corner and another combine called in. Cows have to be milked every day – problems or not.

We have had some harrowing experiences with new parlours and mastitis. Nobody sets out to put in a problem parlour, but it can be difficult to be certain it will be right. We advise our clients two things before a new parlour goes in. One, make sure you have a contract with both the supplier and the fitter which assures mutual responsibility to problem solve. Otherwise there can be divided commitment to addressing problems.

Two, get a teat score done in the old parlour. This simple, numerical, score of teat end health should be at least as good in the new parlour as the old. If not, there is irrefutable evidence of a problem, which those involved in the responsibility contract will have to address.

So, you tackle a mastitis problem by making good quality decisions based on addressing risk factors. Think of it as answering the what, why, where, when and how.

Use your vet and your machine company as a team, and between you the solutions should be apparent. And remember that good rolling records will be important in selecting the effort targets.