Mastitis

What is Mastitis?

Mastitis is the term given to the disease of the mammary gland or udder. Clinical and sub clinical levels of infection are well documented, as are the various bacteria causing the condition. 60% of cases occur within the first eight weeks after calving – the time of peak yield. This makes it extremely economically damaging due to lost milk and the cost of treatment.

Environmental mastitis is the most common form of the disease with E. coli and Strep. uberis causing the bulk of the problem. These organisms generally exist within bedding favouring straw yards and sawdust (especially when damp) and manure. If the teat is contaminated, bacteria can enter the teat canal if the cow lies down after milking when the teat ends are still open, during milking if the teats are not cleaned properly before the machine is attached, or if the machine function is suboptimal.

Contagious mastitis usually takes the form of Staph. aureus which is spread via contact. This can happen when a contaminated machine is put on a cow unaffected by mastitis. Another common method of infection is from flies, whether biting or not. Staph. aureus is carried on their feet and mouthparts and flies transmit infection when feeding on cows that leak milk. They also leave the bacteria in fecal matter, 'fly specks', which they deposit when they land. Biting flies are a bigger problem as they bite the skin around the teat end, which is soft. They can cause wounds and scabs in which this type of bacteria readily grows. The infection often becomes chronic.

Cows who contract Environmental mastitis often have a cell count that stays low (under 300,000) which can prevent detection of sub clinical disease.
Contagious mastitis usually causes a rise in cell count to over 300,000.
Research has shown that cows with a SCC below 20,000 have twice the risk of contracting clinical mastitis than those with a cell count of 20-100,000.

Diagnosis

Environmental mastitis causes udder swelling, raised temperature, increased heart rate and changes in milk consistency, usually clots.
Contagious mastitis can be harder to determine as udder changes are not always evident although cell count will be high.

Milk samples can be tested to isolate the bacteria responsible for infection although this is notoriously difficult for contagious mastitis as an animal sheds Staph. aureus only intermittently. A more effective method of analysis in this case would be a bulk tank sample to analyse the extent of contagious mastitis within a herd. A sample result optimum would be less than 10 with a result over 300 indicating a major problem. If a herd's cell count is low and total Staph. count is high, it would indicate a spreading infection with an increase in cell count to follow.

Treatment

Treatment with either gram positive or gram negative sensitive antibiotics (identify the bacteria) can cure an incidence of mastitis but results are variable. Staph. aureus bacteriological cure rates overall are 25% in clinical cases and 40% for sub clinical infection. Rates can improve to 65% or more with large doses with dry cow therapy.
Prevention through regular dry bedding, thorough milking routines and machine maintenance, post-milking dip, culling protocol and dry cow therapy is essential.