

Lesser known mastitis pathogens

Less common mastitis organisms are environmental pathogens which enter the teat via fomites including dirt, water, contaminated milking machines and/or due to poor hygiene practices.

Since the organisms are environmental, *a positive culture doesn't necessarily mean infection but may reflect contamination of the sample and results need to be interpreted clinically.*

Bacillus cereus is usually isolated from cows with high somatic cell counts that do not have clinical mastitis. However, it occasionally causes severe, necrotising mastitis.

Candida species are common in the environment and as such most animals are resistant to infection unless there is a significant breach in host defence mechanisms. Antibiotics will not control this fungal infection and may in fact worsen the signs of mastitis.

Corynebacterium species increase somatic cell counts but rarely cause clinical mastitis.

Hafnia alvei belongs to the Enterobacter family and is often associated with chronic mastitis.

*Nocardia spp** may cause granulomatous mastitis with abscessation, marked fibrosis and a significant drop in milk production. The response to treatment is usually poor.

*Storing milk samples, particularly if refrigerated or frozen for even a few hours reduces the ability to culture *Nocardia spp* and if infection is suspected then immediate plating is recommended.

Prototheca spp are algae associated with wet areas containing manure and plant matter. When these organisms are seen, they are often associated with clinical mastitis. There is no treatment for *Prototheca* mastitis and most infections are chronic.

Serratia marcescens may produce elevated SCC without causing clinical mastitis in some cows while producing flaky, discoloured milk in others. Infection is often chronic and clinical signs can be intermittent. Studies have found that *Serratia spp* can be resistant to chlorhexidine and quaternary ammonium disinfectants, and various antibiotics including cephalosporins, penicillins and tetracyclines.

Pseudomonas aeruginosa can cause severe mastitis and is resistant to most commonly used antibiotics.

Coagulase Negative Staphylococci (CNS) usually increase somatic cell counts without causing clinical mastitis.

Trueperella pyogenes may cause severe mastitis with thick, purulent material and usually results in loss of the quarter.