Coagulase-Negative Staphylococci and the Consequences for Udder Health, Milk Production and Culling

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Coagulase-negative staphylococci (CNS) are a large group of over 50 different species. Although they are the most frequently isolated bacteria from milk samples, CNS are generally considered as pathogens of minor importance in dairy production especially when compared to the major udder pathogens, *Staphylococcus aureus*, streptococci and coliforms. Recent reports indicate that cows and heifers infected with CNS have a higher milk production (2.9kg/d) than culture-negative cows and heifers, and have a higher daily milk production when compared to cows infected with major pathogens. These results suggest that udder infections with CNS may help prevent new udder infections with major pathogens that are responsible for clinical mastitis in dairy cows.

The hypothesis is that these minor pathogens stimulate an inflammatory reaction in the udder that induces a moderate increase in milk somatic cell count which may help to protect cows against new infections. However, none of these studies have been done in cows. Additionally, the effect could very well be different for the CNS species, and therefore proper identification and speciation of CNS need to be done.

The objectives of this study are a) determine the effect of udder infection with CNS on the risk of clinical and subclinical infection by major mastitis pathogens and their effect on risk for clinical mastitis, milk production and culling, and b) determine whether the effect is the same for all different CNS species. Data and bacteria samples for testing and analysis will be obtained from the Canadian Bovine Mastitis Research Network (CBMRN).

Implications: Early detection and identification of CNS species causing udder infection will provide new technology allowing dairy farmers and veterinarians to develop management practices that will help improve udder health, reduce premature culling and increase milk production.