Prevalence of Coagulase-Negative Staphylococcal Species on Saskatchewan Dairies

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Coagulase-negative staphylococci (CNS) have been widely studied as CNS species and subspecies are frequently isolated from bovine milk. The effects of each species on animal health and production are varied between studies. The objective of this study was to determine species distribution of CNS isolated from the environments, body sites and intramammary infections (IMI) on dairy facilities to determine whether they act in a contagious or environmental manner.

Ten farms in Saskatchewan were selected for the study with approximately 100 cows enrolled per farm. Farms were sampled 3 times at 3-week intervals. Aseptic quarter milk samples were taken at each sampling for milk culture. At first sampling, milk samples were collected for somatic cell count (SCC) analysis. At third sampling, body site samples were taken from study cows, and environmental samples were taken in the parlour and barn. Milk samples were cultured on blood agar plates for pathogen identification. Body site and environmental samples were cultured on MSA plates for staphylococci identification. CNS isolates were speciated using sequencing of the *cpn60* gene target.

In total, 923 cows were enrolled in the study. Of these, 184 cows had at least one quarter with a CNS infection, and at least one body site sample taken. A total of 555 CNS isolates were identified and processed (206 milk, 305 body site and 44 environmental samples). Analysis to compare milk isolates with both body site and environmental isolates and differences in SCC between CNS species are ongoing.

Implications: Coagulase-negative staphylococcal IMI are prevalent on Saskatchewan dairy herds and some species may play a more significant role in udder health than others. Understanding the source of each CNS species will allow identification of which species act as contagious and which act as environmental pathogens.