

## *Coxiella burnetii* Infection Associated with Chronic Subclinical Mastitis in a Dairy Herd

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Dairy cattle are a major reservoir of *Coxiella burnetii*, the obligate intracellular zoonotic pathogen that causes Q fever. Infected cows are frequently asymptomatic, although metritis, placentitis, and abortion are described. While the organism is frequently shed in milk for extended periods, only a few reports have investigated an association with mastitis. *C. burnetii* can not be isolated using standard aerobic culture methods, and past prevalence studies relied on serologic testing. We describe the association between *C. burnetii* shedding in milk and chronic high somatic cell counts (SCC) in dairy cattle. In an initial case-control study, the prevalence of *C. burnetii* was measured by real-time PCR of quarter milk samples from 10 cows with chronic high SCC where no mastitis pathogen was isolated for  $\geq 3$  months, and was compared to Q fever prevalence among 10 culture negative low SCC cows. In a subsequent cross sectional study of the same herd, Q fever PCR status was determined for 275 cows with 3 consecutive monthly quarter milk aerobic culture and composite milk SCC results, and 52 additional cows with a single month culture and SCC. Q fever status and isolation of major aerobic mastitis pathogens were positively associated with high SCC in a single month and with chronic high SCC. However, Q fever status was not associated with intramammary infection by major mastitis pathogens. Further, restricting analysis to cows with chronic high SCC without an intramammary infection caused by major mastitis pathogens strengthened the association between Q fever infection and SCC.