

# Epidemiology of *Neospora caninum* Infection in Québec Dairy Herds

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A case-control study was undertaken on 46 dairy herds located throughout the province of Québec. Case herds (N=24) were herds that had a confirmed *Neospora caninum* abortion between 1993 and 1995. Control herds (N=22) were selected from herds attending the same veterinary clinic as the case herds, and either 1) were estimated by the referring veterinarian as a herd with a low abortion rate, or 2) had submitted an aborted fetus to a diagnostic laboratory since 1993 which yielded a definite diagnosis other than *N. caninum* infection. All cows and heifers older than 6 months of age were blood sampled and sera was evaluated for the presence of specific *N. caninum* antibodies by use of an ELISA. Demographic information recorded at the time of blood sampling included age, lactation number, stage of lactation, stage of gestation, history of abortion, and whether the animal had been purchased or raised on the farm. A questionnaire was administered on site to the dairyman to describe the management, feed storage, abortion history, herd health practices, calf health and presence of wild and domestic animals on the pre-

mises. Results indicated that all case herds (100%) and most control herds (73%) had at least one seropositive cow, and that on some herds seroprevalence was as high as 50%. In most herds (76%), there was evidence of cow-calf transmission (vertical transmission). **A strong association was identified between the presence and the number of dogs on the premises, and the proportion of seropositive cows ( $p \leq 0.01$ ).** The average number of dogs present during the last 3 years in case herds (4 dogs) was greater than that in control herds (1 dog,  $p=0.0001$ ). Results suggest *Neospora caninum* infected cows are present in the majority of Québec dairy herds. Results also suggest that dogs may be involved in the transmission of the parasite, although the definitive host has yet to be identified. In conclusion, results warrant recommendations of limiting access of dogs to cows, particularly to feeding areas, and to placentas, aborted fetuses and dead calves. Recommendations should also include identification of seropositive cows, in order to control vertical transmission.