



CROSS-BORDER TRANSMISSION OF *BRUCELLA SUIIS* BIOVAR 4 BETWEEN RUSSIA AND NORWAY?

A CALL-OUT FOR COOPERATIVE EFFORTS

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Brucella suis biovar 4 in reindeer/caribou and moose

B. suis bv. 4 is the causative agent of brucellosis in reindeer/caribou (*Rangifer tarandus* spp.)¹ (Fig. 1). The most frequently reported clinical signs are reproductive problems in both sexes and swelling of the joints (Fig. 2)²⁻⁷. The disease is present in Alaska⁸, Canada⁹ and Siberia¹⁰. The disease is assumed absent in Greenland⁷, Svalbard (pers. obs. Nymo) and mainland Norway^{11,12}. Moose (*Alces alces*) (Fig. 3) may also be infected with *B. suis* bv. 4 and can transmit the infection to reindeer/caribou^{13,14}. *B. suis* bv. 4 cause brucellosis in humans¹.



Fig. 1. Norwegian reindeer (*R. t. tarandus*). Photo: Tryland, UiT – The Arctic University of Tromsø.



Fig. 2. Swollen carpus due to infection with *B. suis* bv. 4. Photo: Wobeser, Canadian Cooperative Wildlife Health Centre.



Fig. 3. Moose. Photo: Arnemo, Hedmark University College.



Fig. 4. Norwegian - Russian river border. Photo: Røst, Dagbladet.

Transmission of *B. suis* bv. 4

Transmission of *Brucella* spp. usually takes place through contact with aborted, infected material¹⁵. *Brucella* spp. persist for years in frozen material and for months under moist conditions at 10-15°C¹⁶, thus facilitating transfer in Arctic regions without direct contact between animals.



Norwegian – Russian border

Norway and Russia share a 196 km long border, two-thirds along rivers¹⁷ (Fig. 4). There are fences in some areas, but of such character that animals may pass. Animals may swim the rivers in summer, or walk over the ice in winter. Reindeer moving from Norway to Russia have been observed and are either herded back or euthanized (Pers. comm. border patrol agent Mathisen 25.02.15). There is also a migration route for moose crossing the border with 50-200 moose migrating each year¹⁸.

Aim

We would like to establish collaboration with researchers for the purpose of applying for further funding and evaluating samples from both species from the border region.

Conclusion

A larger scale investigation involving samples from reindeer and moose in the border region should be conducted to evaluate the risk of trans-border movement of *B. suis* bv. 4.

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