



XXVI. Serological survey for exposure to *Erysipelothrix rhusiopathiae* in muskoxen across the Arctic

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Erysipelothrix rhusiopathiae, a bacterium frequently observed in pigs and poultry, was isolated from muskoxen (*Ovibos moschatus*) for the first time on Banks and Victoria Island (Canadian Arctic) during a series of acute mortality events between 2010 and 2012. In addition to being a conservation concern, the zoonotic potential of the pathogen raises the issue about food safety for community members handling and consuming muskoxen. In order to better understand the epidemiology of the bacterium and to document its historical and current occurrence, we initiated a serological survey using archived and newly collected samples from several muskox populations ranging from Greenland to Alaska.

We obtained serum from over 900 muskoxen sampled during monitoring or research projects between 1976 and 2015. Animals originated from Alaska (n>500), Canada (n>350) and Greenland (n=20). Blood was collected in blood tubes or filter-paper strips, and serum was obtained through centrifugation or elution and tested for anti- *E. rhusiopathiae* antibodies using an indirect Enzyme-linked Immunoassay (ELISA) developed in our lab.

Preliminary data (n=330) indicate exposure in various Alaskan herds from 1976 to present with a seroprevalence around 20%. In contrast, data from Banks Island in Canada (n=161), where we have a time series from 1991/92, 2001, 2008 and 2012 demonstrate low to no seropositivity in 1991/92, but increasing seropositivity from 2001 and all sampling time periods thereafter. High seroprevalence in fall 2012 aligns with a large mortality event observed in the previous summer in this region. Results across all sampled herds, regions and time periods as well as spatial and temporal patterns will be presented in detail. Further insights into the dynamics and impact of *E. rhusiopathiae* infection on muskox populations and potential public health significance will be discussed.

MUSKOX HEALTH ECOLOGY SYMPOSIUM



ABSTRACTS