

Title: PREVALENCE AND DISTRIBUTION OF *ECHINOCOCCUS* SPECIES IN NOVA SCOTIA FOXES

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Background: *Echinococcus* spp. is a parasitic tapeworm that lives in the small intestine of definitive hosts, primarily canids. The two species found in Canada are *E. canadensis* and *E. multilocularis*. The intermediate hosts for *E. canadensis* are cervids, while the intermediate hosts for *E. multilocularis* are rodents. Accidental hosts, including humans and domestic dogs, become infected by ingesting eggs shed in definitive host feces. In accidental hosts, larvae migrate to the liver or lungs and form hydatid or alveolar cysts, causing severe disease.

Hypothesis: We hypothesized that red foxes (*Vulpes vulpes*) in various regions in Nova Scotia are infected with *E. canadensis* and/or *E. multilocularis* based on previously reported cases.

Objectives: We sought to determine the prevalence and distribution of *Echinococcus* spp. by screening fox small intestines and mapping the location of infected foxes.

Methods: Small intestines of 50 Nova Scotia foxes, donated by hunters and trappers, were frozen at –80 °C to inactivate zoonotic eggs, and dissected. Intestinal contents were extracted using a modified intestinal scraping and filtration technique. The intestinal content was screened using stereomicroscopy. Parasites were identified and *Echinococcus* species were quantified. The data was statistically analyzed and mapped to assess distribution.

Results: No foxes (0/50) were positive for *E. canadensis* or *E. multilocularis*.

Conclusion: Our findings suggest limited prevalence of *Echinococcus* species in Nova Scotia's fox population. This may be linked to factors such as location, diet, and environmental conditions. Additional surveillance is needed to better characterize the distribution of these parasites. This study is on-going.

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Field of Research:

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