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Source: Journal of Wildlife Diseases, 28(3) : 474-475

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-28.3.474

Journal of Wildlife Diseases, 28(3), 1992, pp. 474–475

Prevalence of *Trichinella spiralis* in Black Bears (*Ursus americanus*) from Newfoundland and Labrador, Canada

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ABSTRACT: Tongue and diaphragm samples from 158 black bears (*Ursus americanus*) from Newfoundland and Labrador were examined for *Trichinella spiralis*. No larvae were detected in samples from the island of Newfoundland but one animal from the Labrador samples was infected. The results of this and other studies suggest a lack of involvement of the black bear in a sylvatic cycle of *T. spiralis* in eastern Canada.

Key words: *Trichinella spiralis*, black bear, *Ursus americanus*, prevalence, survey.

Bears (Ursidae) are particularly susceptible to trichinellosis, caused by *Trichinella spiralis*, which infects a variety of wild and domestic animals, including man (LeCount, 1981). Infections have been reported in other regions of North America (Rausch et al., 1956; Emson et al., 1972; Schmitt et al., 1972; Worley et al., 1974, 1976; Binninger et al., 1980). However, no *T. spiralis* has been found in black bears from Newfoundland. The present study was conducted to determine the occurrence and prevalence of *T. spiralis* in Newfoundland and Labrador.

During a 3-yr period between 1987 and 1989, tongue and diaphragm samples from 158 black bears were obtained from hunters in Newfoundland and Labrador. The samples were held frozen (−30 to −60 C) prior to examination. About 20 to 60 g of finely ground tissue were digested in a 1% pepsin-HCl solution before examining for *T. spiralis* larvae.

None of 62 samples from Newfoundland was infected but one of 96 bears (1%) from Labrador harbored an infection 0.12 larvae/g. Comparison of *T. spiralis* infection in black bears in North America indicates that the prevalence in Labrador is low (Table 1).

No clinical cases of trichinellosis in humans have been recorded in Newfoundland but five were reported from Labrador (Hockin and Meerovitch, 1982). The suspected source of infection in four of these

TABLE 1. Prevalence of *T. spiralis* in black bears (*Ursus americanus*) in North America.

Location	Number examined	% Infected	Reference
New York	49	6	King et al., 1960
Alaska	23	22	Rausch et al., 1956
Vermont	35	0	Babbot et al., 1968
New England	372	1	Harbottle et al., 1972
Idaho, Montana and Wyoming	72	12	Worley et al., 1974
Montana	80	5	Worley et al., 1976
Quebec	107	1	Frechette and Rau, 1977
Ontario	59	2	Addison et al., 1978
Nova Scotia and New Brunswick	73	0	Smith, 1978
Central West, USA	454	3	Zimmermann, 1977
Arizona	51	4	LeCount, 1981
Pennsylvania	2,065	2	Schad et al., 1986
Newfoundland and Labrador	62	0	Present study
	96	1	

cases was meat from black bear: one in 1981 and three in separate incidents in 1982. A serologic survey for antibodies against *T. spiralis* using a quantitative ELISA method was conducted for Newfoundland and Labrador residents from December, 1981 to February, 1982 (Hockin and Neerovitch, 1982). Using a titre of $\geq$1:40 as evidence of prior infection, 24% of sera from coastal Labrador were positive compared to 9% of island residents ($\chi^2 = 4.32$, $P < 0.05$). This regional difference compares favourably with the results of the present study and does indicate some cause for caution related to potential contact with *T. spiralis* in Labrador and to a lesser extent in Newfoundland. However, Hockin and Meerovitch (1982) do indicate that serology may not be specific to determine the prevalence of infection in populations.

The low prevalence of *T. spiralis* in Labrador may be indicative of a generally low prevalence in eastern Canada as supported by Smith's (1978) results for Nova Scotia and New Brunswick and findings by Frechette and Rau (1977) in Quebec (Table 1). Based on these results, it is likely that the black bear is not involved in a sylvatic cycle of *T. spiralis*.

We thank hunters who willingly submitted samples, the Newfoundland Wildlife Division staff for handling them and T. Saunders and J. McCormick for processing the samples. The study was supported by funds from the Province of Newfoundland and the Natural Sciences Engineering Council of Canada.

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Received for publication 19 November 1990.