

Sarcocystis IN WHITE-TAILED DEER

Authors: KARSTAD, LARS, and TRAINER, D. O.

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Sarcocystis IN WHITE-TAILED DEER

Frequently, in recent years, we have made chance observations of sarcosporidian parasites in deer, moose, caribou and wapiti. Although their occurrence is documented in several cervid species (Karstad, L. (Editor) 1964. Wildl. Dis. #43), we could find no references to sarcosporidia in white-tailed deer (*Odocoileus virginianus*).

A study was carried out in 1966 and 1967 to determine the frequency of *Sarcocystis* sp. in white-tailed deer from several areas of North America.

Methods

Cross-sections of tongues taken from deer killed by hunters and from deer killed in the course of other research, were fixed in 10% formalin, embedded in paraffin, sectioned and stained with hematoxylin and eosin. Specimens were obtained from deer in Texas, Wisconsin and Ontario. One 6 to 8 μ thick cross-section of tongue per deer was examined. In some cases sections of diaphragm of similar size also were examined. Infection rates were calculated, and when appropriate information was available, separated on the basis of sex and age data.

Results and Discussion

Although they were not seen grossly, *Sarcocystis* sp. were detected microscopically in approximately 80% of the 208 white-tailed deer examined and infection was common in all of the geographic sites studied (Table 1).

TABLE 1. Rates of Sarcosporidia Infections in White-tailed Deer

| Source | No. Infected/ Total | No. Males Infected/ Total Males | No. Females Infected/ Total Females |
|--------------------------------|------------------------|---------------------------------------|---|
| Griffith Is. Ontario | 14/20 | 5/8 | 9/12 |
| Bruce Co. Ontario | 21/30 | 7/13 | 11/14 |
| Frontenac Co. Ontario | 13/20 | Unknown | Unknown |
| Welder Refuge Texas | 43/53 | Unknown | Unknown |
| Black River Falls Wisconsin | 25/33 | 14/20 | 11/13 |
| Bayfield Co. Wisconsin | 13/14 | 5/6 | 8/8 |
| Douglas Co. Wisconsin | 18/19 | 7/7 | 11/12 |
| Price Co. Wisconsin | 17/19 | 10/10 | 7/9 |
| Total | 164/208 | 48/64 | 57/68 |

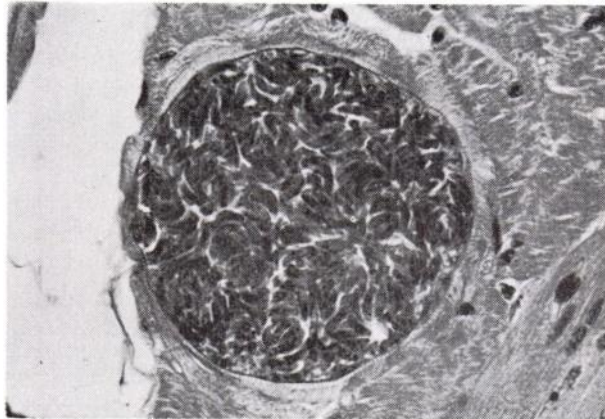


FIGURE 1. *Sarcocystis* cyst in striated muscle of the tongue of a white-tailed deer. Hematoxylin-eosin X 1600.

Sarcocystis cysts in white-tailed deer appeared to be similar in structure to those of other species. A representative cyst is shown in figure 1. Numbers of sarcosporidia cysts per histologic section varied from none to 20. The tongue appeared to be a more consistent source of *Sarcocystis* than did the diaphragm. In one sampling of deer on the Welder Refuge, Texas, 19 of 26 or 73% of the tongues were positive for *Sarcocystis*, whereas only 25% of the diaphragm specimens from these same deer were found to contain sarcosporidia.

As may be expected, higher rates of infection were found in adults, than in fawns. In one sampling of deer on Griffith Island, Ontario, in December, 1967, only 1 of 6 tongue sections from fawns contained *Sarcocystis*, while 13 of 14 tongues from adults were infected. In all areas, the infection rates recorded are minimal, since some low infections were probably missed with the screening procedure used. The infection rates for males and females were approximately equal (Table 1).

There was no evidence of pathogenicity of *Sarcocystis* in any of the deer examined.

Summary

Sarcocystis sp. were found in histologic sections of tongue muscles from 164 of 208 white-tailed deer from Ontario, Wisconsin and Texas. Rates of infection in all areas were similar.

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LARS KARSTAD

and

D. O. TRAINER

Section of Zoonoses and Wildlife Diseases
Ontario Veterinary College
University of Guelph, Guelph, Ontario

Department of Veterinary Science
University of Wisconsin
Madison, Wisconsin, U.S.A.

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