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Source: Journal of Wildlife Diseases, 24(2) : 369-370

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-24.2.369

*Journal of Wildlife Diseases*, 24(2), 1988, pp. 369–370


# Intestinal Coccidia of White-tailed Deer in Southern Florida

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ABSTRACT: From 1984 to 1986 110 white-tailed deer (*Odocoileus virginianus*) from Big Cypress National Preserve in southern Florida were examined for intestinal coccidial infections. Three species of *Eimeria* (*E. mccordocki, E. madisonensis*, and *E. odocoilei*) were found in low prevalences. There were no differences in prevalence due to age, sex, season of collection or specific locality within the Preserve.

*Key words:* White-tailed deer, *Odocoileus virginianus*, intestinal coccidia, oocysts, Florida, host age and sex effects, seasonal and geographic effects, prevalence data.

Four species of *Eimeria* have been reported from white-tailed deer (*Odocoileus virginianus*) in North America and include *E. mccordocki, E. virginianus, E. odocoilei*, and *E. madisonensis* (Levine and Ivens, 1986). Although two of these species (*E. mccordocki* and *E. madisonensis*) have been found in white-tailed deer in Georgia (Kingston, 1981), the species of intestinal coccidia infecting deer in Florida have not been identified. In the present study records are presented for three species of *Eimeria* in two white-tailed deer populations from southern Florida and the effects of host age and sex, season, and geographic differences on the collective coccidian prevalences are examined.

Between August 1984 and June 1986, feces were collected from 110 white-tailed deer in the Big Cypress National Preserve in Collier County, southern Florida (26°00′N, 81°00′W). During the 2-yr study, deer were collected each year in August and September ($n = 25$), October ($n = 26$), March ($n = 33$), and June ($n = 26$) from two areas within the Preserve; Bear Island ($n = 53$) and Raccoon Point ($n = 57$). The age structure of the deer consisted of 18 fawns (<1 yr of age), 24 yearlings (1–2 yr) and 68 adults (>2 yr).

Feces obtained from the colon of each deer were crushed and placed in 2% potassium dichromate solution and kept at room temperature for several weeks. Sporulated oocysts were concentrated by centrifugation of feces in Sheather's saturated sugar solution. In addition, fresh feces were smeared on slides and processed by Kinyoun's carbol fuchsin negative staining (Current, 1983) as an additional attempt to detect oocysts of *Cryptosporidium* spp.

Prevalence data were evaluated by using PROC FREQ for chi-square tests with regard to sex, season and locality and Kendall's tau b test for age (SAS Institute Inc., 1985). In addition, linear logit analyses were performed using the CATMOD procedure. Significance was taken at $P < 0.05$.

Oocysts were observed in 10 (9%) of the samples. Three species of *Eimeria* were represented; *E. mccordocki* in five deer (5%), *E. madisonensis* in two (2%) and *E. odocoilei* in one (<1%). Feces from one deer contained oocysts of *Eimeria* sp. which did not completely sporulate and therefore could not be referred to a species. Feces from another deer contained a few oocysts of a species of *Adelina*-like coccidium which were probably spurious. Data on this species are excluded from further calculations and considerations. None of the positive samples contained more than one species of coccidia. Oocysts of *Cryptosporidium* spp. were not detected.

There were no significant differences between the prevalences of coccidia (all species of *Eimeria* combined) in deer from two areas within the Big Cypress (Bear Island and Raccoon Point). Likewise, there were no significant differences in prevalences in males and females or in preva-

lences across seasons of the year and within age classes of deer.

The species and overall prevalence of coccidia in white-tailed deer from southern Florida were similar to those found in deer elsewhere in North America (Kingston, 1981). As in other areas (Anderson and Samuel, 1969; Samuel and Trainer, 1971) *E. mccordocki* was the most common species. However, the prevalence was not significantly higher in fawns as had been shown in the studies from Pennsylvania and Texas. The reason for this variance is unknown, but this may be due to a sampling artifact caused by the small number of fawns ($n = 18$) examined in the present study. Alternatively, this may result from geographical or other differences in the hosts and/or parasites.

The assistance of Walt McCown, John Roboski, Jayde Roof and other personnel of the Florida Game and Fresh Water Fish Commission in the collection of the deer is acknowledged. The technical assistance of Melody Roelke and John Bogue was appreciated. R. C. Littell is thanked for help with the statistical analyses. This research was supported in part by a contract from the Florida Game and Fresh Water Fish Commission and is a contribution of Federal Aid to Wildlife Restoration, Florida Pittman-Robertson Project W-41. Florida Agricultural Experiment Stations Journal Series No. 8439.

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*Received for publication 29 September 1987.*