

The occurrence of *Trichinella* spp. nematodes in free-living animals in the Głęboki Bród Forest District, Poland

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Parasitic nematodes of the genus *Trichinella* are found in many species of terrestrial mammals, birds, reptiles, and also in humans. Carnivorous and omnivorous animals occupy a special position in the life cycle of *Trichinella*, being the main reservoir of *Trichinella* in the natural environment. The aim of this study was to monitor the occurrence of *Trichinella* spp. nematodes in free-living animals in the Głęboki Bród Forest District, Poland. Additionally, the predilection sites for *Trichinella* spp. were also determined.

The material was collected between 2013 and 2016 in the Głęboki Bród Forest District, Poland. Tongue, diaphragm, masseter, as well as limb muscles of different animal species (fox, raccoon dog, marten, badger, American mink, polecat) were collected for the study. The muscles were digested separately in artificial gastric juice (pepsin-HCl). The larvae obtained were counted and the intensity of infection was expressed as the number of larvae per gram (LPG). The *Trichinella* species was determined by multiplex PCR.

541 animals were tested for the presence of *Trichinella* spp., and the presence of the parasite

was confirmed in 39.82% of raccoon dogs, 27.49% of foxes, 17.54% of martens and 5.48% of badgers. The total prevalence was 26%. The presence of *T. spiralis* was confirmed in one fox, while *T. britovi* was found in the other infected animals. In addition, it was shown that the tested isolates of *T. britovi* obtained from different animal species from the Głęboki Bród Forest District are 100% identical to each other within the tested fragment of the CO1 gene. In raccoon dogs, the highest mean LPGs were found in the tongue and forelimb muscles. On the other hand, in pine martens the largest number of *T. britovi* larvae was located in the diaphragm and tongue.

The study confirmed that *T. britovi* is the dominant species in free-living animals in the Głęboki Bród Forest District. Epidemiological monitoring of the occurrence of *Trichinella* in the environment should be continued due to the high prevalence of the parasite in the studied animals.

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