

Trichinella spp. (Nematoda) in free-living carnivores (Mammalia: Carnivora) from the Lower Silesia (Poland)

Jolanta Piekarska[1], Michał Gorczykowski[1], Marta Kicia[2], Jarosław Pacoń[1], Zenon Sołtysiak[1], Dorota Merta[3]

[1]Department of Internal Medicine and Clinic of Diseases of Horses, Dogs and Cats, Division of Parasitology, Faculty of Veterinary Medicine, Wrocław University of Environmental and Life Sciences, Norwida 31, 50-375 Wrocław, Poland
[2]Department of Biology and Medical Parasitology, Wrocław Medical University, Mikulicza-Radeckiego 9, 50-367 Wrocław, Poland
[3]Institute of Biology, Pedagogical University of Cracow, Podbrzezie 3, 31-054 Krakow, Poland

Corresponding Author: Jolanta Piekarska; e-mail: jolanta.piekarska@up.wroc.pl

The study was conducted between June 2013 and December 2015 in the largest continuous forest of Poland – the Lower Silesian Wilderness. A total of 310 free-living carnivorous mammals including 177 red foxes (*Vulpes vulpes*), 51 badgers (*Meles meles*), 25 raccoon dogs (*Nyctereutus procyonides*), 19 raccoons (*Procyon lotor*), 19 European pine martens (*Martes martes*), 13 stone martens (*Martes foina*), 4 American minks (*Neovison vison*), and 2 European polecats (*Mustela putorius*) were examined. The samples of the diaphragm (5 g) were tested for the presence of *Trichinella* muscle larvae using the artificial HCl–pepsin digestion method. The obtained larvae were stored in 70% alcohol. Species determination of the recovered *Trichinella* larvae was performed by multiplex PCR protocol amplifying fragments of ribosomal RNA coding genes, according to standardized method.

Trichinella spp. larvae were detected in 1 (0.6%) of 177 red foxes, 1 (5.2%) of 19 raccoons, 1 (4%) of 25 raccoon dogs, 2 (15.3%) of 13 stone martens and in 1 (25%) of 4 the American minks. The comparative analysis of three sequences belonging to the ITS1, ITS2, and ESV allowed for the identification of *Trichinella spiralis* in raccoons (*Procyon lotor*) and stone martens (*Martes foina*).

The results indicate that the new invasive species of carnivorous mammals are the reservoirs of *Trichinella* spp. and they are responsible for maintaining the infection in food chains, including game animals and domestic animals intended for human consumption.