Title: Intestinal system helminths of red foxes and molecular characterization Taeniid cestodes

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ABSTRACT

Red foxes (Vulpes vulpes) are the most prevalent wild carnivores in the world and definitive hosts of many pathogenic parasites for humans and farm animals. These animals travel great distances in search of prey and nests, and cause contamination of large geographic areas with parasites. For this reason, monitoring the parasitic pathogens of red foxes is particularly important in terms of public and animal health. The goal of this study was to determine the intestinal helminths and molecular characterization of Taenia species of red foxes in Turkey. In this study, 103 red fox intestines obtained from 29 provinces of Turkey were examined with sedimentation and counting technique. Collected helminths were diagnosed according to their morphologic features. Additionally, further molecular analysis (PCR and DNA sequencing) was performed for the identification of Taeniid cestodes. At the end of the study, it was determined that 87.37% (90/103) of red foxes were infected with at least one helminth species. Detected helminths and their prevalence's were Mesocestoides sp. (56.31%), Joyeuxiella echinorhynchoides (33%), Taenia polyacantha (15.53%), Dipylidium caninum (0.97%), Pterygodermatites affinis (51.45%), Toxascaris leonina (45.63%), Uncinaria stenocephala (33%), Oxynema numicidum (20.38%), Toxocara canis (14.56%), Ancylostoma caninum (12.62%), and Trichuris vulpis (1.94%), respectively. Additionally, Pachysentis sp. (37.69%), Centrorhynchus sp. (0.97%) (Acantocephala), and nymphs of Linguatula serrata (20.38%) (Arthropoda) were also detected in the same intestinal samples. This is the most comprehensive study that has been conducted on the intestinal helminthes of red foxes in Turkey. To the best of our knowledge, molecular characterization of T. polyacantha and the detection of O. numicidum, A. caninum, Pachysentis sp., and Centrorhynchus sp. are the first reports in red foxes in Turkey. Our study revealed that red foxes are important hosts for many intestinal helminth species and are link between domestic and sylvatic cycles of these parasites.

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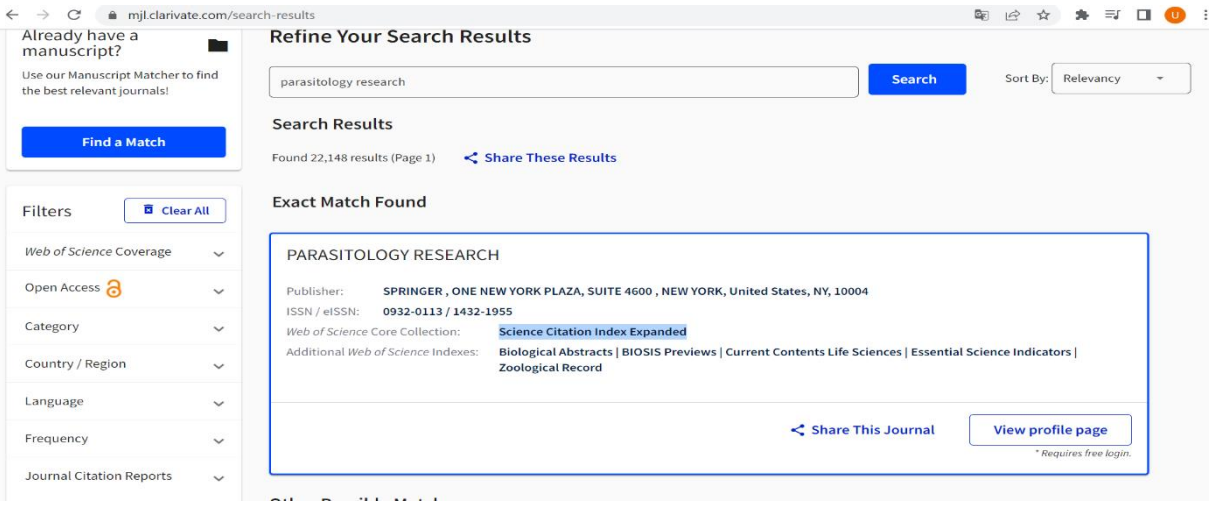

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