ABSTRACT

The African continent, the second largest in the world after Asia, harbors remarkable biodiversity, including a highly diverse group of carnivores. Of the more than 270 species recognized in the order Carnivora, 81 species belonging to caniforms and feliforms inhabit Africa. Algeria, the largest country in Africa, hosts 21 species of carnivorous mammals that play a crucial ecological role as predators. These mammals are exposed to a wide range of parasites through their diet, including extraintestinal nematodes of significant medical and veterinary importance. Despite their global distribution, the presence of these parasites in Africa remains largely undocumented. The objective of this thesis was to assess the presence of extraintestinal nematodes in Algeria, focusing on five key parasites: *Crenosoma vulpis, Angiostrongylus vasorum, Aelurostrongylus abstrusus, Acanthocheilonema dracunculoides*, and *Trichinella* spp.

Chapter 1 reports the first identification of *C. vulpis* and *Eucoleus aerophilus* in a red fox (*Vulpes vulpes*) from Algeria. A road-killed fox collected in Bouhadjar-Tarf was subjected to parasitological necropsy, histopathological, and molecular analyses. A male *C. vulpis* was identified, marking the first documentation of this lungworm in Africa and emphasizing the need for further epidemiological studies in the region.

Chapter 2 investigates the presence of *A. vasorum*, a metastrongyloid nematode responsible for severe cardiopulmonary disease in domestic and wild carnivores. A total of 47 road-killed mammals collected across six Algerian regions underwent necropsy, histological, and molecular analyses. *A. vasorum* was identified in a single African golden wolf (*Canis lupaster*) from Constantine, representing the first report of this parasite in Africa and a new host association. This study underscores the necessity for further research on *A. vasorum*'s epidemiology in North Africa.

Chapter 3 examines *A. abstrusus*, a widespread feline lungworm, in domestic cats from Zimbabwe and Algeria. A total of 87 fecal samples (30 from Algeria, 57 from Zimbabwe) were analyzed using the Baermann technique and molecular confirmation. One sample from Zimbabwe tested positive, marking the first molecular confirmation of *A. abstrusus* in an African domestic cat and the first report in southern Africa. No positive cases were detected in Algeria.

Chapter 4 focuses on *A. dracunculoides*, a filarioid nematode transmitted by hematophagous arthropods. A total of 147 blood samples from carnivores, predominantly dogs (n=125), were collected across 11 Algerian regions. Detection was performed via Knott's test and molecular analysis. A single dog (0.8%) from Bouhadjar, El Tarf, tested positive, providing the first molecular confirmation of *A. dracunculoides* in Algeria. This finding highlights the need for further investigations into its epidemiology and transmission dynamics.

Chapter 5 investigates *Trichinella* spp. in carnivorous mammals from Algeria. Between February 2022 and August 2023, 33 road-killed carnivores were sampled from five departments. Trichinoscopy and molecular analyses confirmed the presence of *Trichinella britovi* in the muscle tissue of a domestic dog

from Ain Kerma, El Tarf. This is the first documentation of *Trichinella* in an animal host in Algeria, emphasizing the potential role of domestic dogs in the sylvatic cycle of *T. britovi*.

Overall, this thesis provides the first comprehensive assessment of extraintestinal nematodes in Algerian carnivores. The findings expand the known geographical distribution of these parasites and highlight the need for continued surveillance to better understand their epidemiology, host range, and potential zoonotic implications in North Africa.