Form No.5

Abstract of Thesis/Dissertation

Applicant

Master's/Doctoral Program in Veterinary Science

Graduate School of Animal and Veterinary Sciences and Agriculture

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Title : Epidemiological studies on tick-borne pathogens of dogs in Vietnam

(ベトナムにおける犬のマダニ媒介性病原体に関する疫学的研究)

Abstract

Recently, canine tick-borne pathogens have commonly emerged in tropical areas, becoming a significant concern for public health. Dogs often have close contact with humans due to sharing the same living environment, which poses an additional source for introducing and spreading exotic infectious diseases. In this regard, I conducted this research on ticks and tick-borne pathogens in dogs in Vietnam with the aim of providing updated information to protect public health from exposure to these pathogens.

The first investigation of the study found that tick-borne pathogens (TBPs) in dogs in Vietnam revealed a high 73.9% detection rate. The investigation identified new pathogens in dogs, including *Babesia vogeli*, *Mycoplasma haemocanis*, *Rickettsia* spp., and *Bartonella* spp. *Babesia vogeli* was the most common pathogen (30.5%), while *Rickettsia* spp. was the most prevalent bacterium (27%). Co-infections were found in 31.4% of infected dogs, with *A. platys* and *Bartonella* spp. being the most frequent combination. Puppies, domestic breeds, and rural dogs showed higher infection risks. The study highlighted zoonotic transmission concerns, especially given the close human-dog proximity and illegal dog meat trade.

The second investigation of the study found that assessed 1,423 privately owned dogs in major cities and provinces, revealing an overall brown dog tick exposure of 29.01%. The predominant tick species found was *Rhipicephalus sanguineus* s.l. from the tropical lineage, with higher tick activity observed during summer and autumn, especially in the Northern region. Geographic variations showed higher infestation rates in Ho Chi Minh City compared to Hanoi. Risk factors associated with tick infection included age, breed, body size, lifestyle, and bathing frequency, with freely roaming dogs and those in rural areas being more prone to infestation. Domestic breeds showed higher tick infestation rates than exotic

breeds. Pathogen analysis revealed *Mycoplasma* spp. (78.53%) as the most prevalent, followed by *Ehrlichia/Anaplasma* spp. (37.29%), *Rickettsia felis*, *Hepatozoon canis*, and *Babesia vogeli*. The presence of these pathogens highlights potential risks for both animal and human health, emphasizing the need for further epidemiological investigations on tick-borne infections in canines in Vietnam.

In conclusion, this study provides updated and pertinent information on the presence of tick-borne pathogens in dogs and ticks, as well as the potential risks of spreading zoonotic pathogens to people residing in the studied areas.

Notes 1. Fill in the Japanese translation for an English in the ( ).

2. Abstract should be between 1,800 and 2,200 characters in Japanese, or be between 1,000 and 1,400 words in English.

3. Do not include figures and tables.

4. Abstract can be longer than one page.