

Pacharathon Simking 2008: Epidemiological Study of *Babesia spp.* Infections in Stray Cats in Bangkok Metropolitan Areas by Polymerase Chain Reaction and Geographic Information System. Master of Science (Veterinary Parasitology), Major Field: Veterinary Parasitology, Department of Parasitology. Thesis Advisor: Associate Professor Sathaporn Jittapalapong, Ph.D. 72 pages.

Babesiosis is a worldwide tick-borne disease infecting a variety of vertebrate hosts and caused of hemolytic anemia in domestic animals. The objective of this study was to detect and survey the distribution of babesiosis in stray cats which live in the monasteries in Bangkok metropolitan areas by the PCR assay combined with GIS technology to find out factors associated with the spreading of organism. The result of PCR method was demonstrated that only 21 from 1,490 cats (prevalence = 1.3%) in 140 monasteries from 50 districts of Bangkok metropolitan areas showed positive results. In addition, from the microscopic examination, 2 positive results (prevalence = 0.1%) which was the same positive samples by PCR assay. The *Babesia* positive samples detected by PCR assay, were found in 18 monasteries from 14 districts. The highest prevalence of babesiosis in district was found in Bueng Kum 16.5% (5/30). Furthermore, the GIS technique was shown the location of the total study monasteries and localized the infected monasteries and led to the environmental factor for disease's distribution. By the NCSS analysis, this result indicated the significant factor was sex of infected cats ( $p = 0.02$ ,  $df = 1$ ,  $\chi^2 = 5.02$ ). In fact, the other important factors for disseminating of disease may be the community and the public health around the monasteries. This result will be beneficial for disease surveillance and control program in stray animals in Thailand.

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