

Epidemiology and risk factors associated with *Anaplasma marginale* infection of cattle in Peninsular Malaysia

ABSTRACT

Bovine anaplasmosis is a major concern to cattle farming in most parts of the world. Anaplasmosis negatively impacts the profitability of cattle farming by reducing the production, reproduction, and draft ability of cattle. Here, we report results from a one-year cross sectional study to determine the epidemiology and the risk factors for *Anaplasma marginale* infection of cattle in Peninsular Malaysia. Examination of one thousand and forty five blood samples of apparently healthy cattle from forty-three farms in all the states of Peninsular Malaysia by polymerase chain reaction (PCR) assay revealed an overall prevalence of *A. marginale* infection of cattle of 72.6%, showing high endemicity of this hemoprotozoan among cattle in the country. Cattle breeds, production type, herd owner, herd size, management system, farm size, farm age, prophylactic treatment against blood parasites, presence of ticks, frequency of deticking, zones, closeness to forest, closeness to waste area, closeness to human settlement and closeness to body of water were the risk factors significantly associated ($P < 0.05$) with the detection of *A. marginale* in cattle. Results of this first molecular study on the epidemiology and risk factors for *A. marginale* infection of cattle from all the states of Peninsular Malaysia suggest policies and strategies for the prevention and control of the parasite to improve profitability of cattle farming in the country.

Keyword: *Anaplasma marginale*; Cattle; Epidemiology; Peninsular Malaysia; Polymerase chain reaction (PCR)