

MOLECULAR IDENTIFICATION OF TICK-BORNE MICROORGANISMS AND SEASONAL PATTERN OF TICK LOAD ON CATTLE IN NORTHERN AND SOUTHERN PROVINCES OF THAILAND

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Abstract. Ticks play an important role in disease transmission globally due to their capability to serve as vectors for human and animal pathogens. Ticks and the diseases they transmit are causes of debilitating illness in humans and pose significant threats to veterinary public health. In farm animals, ticks and infection from tick-borne microorganisms can result in low productivity of livestock and in economic loss. Presence of microorganisms in ticks collected from cattle residing in northern and southern regions of Thailand and seasonal pattern of tick load on cattle were determined. Tick samples ($n = 2,663$) collected from cattle in the two locations were identified as *Rhipicephalus (Boophilus) microplus*. *Anaplasma* spp and *Theileria* spp was detected in 14% and 11% of tick pools from Phayao and Narathiwat Province, respectively while *Ehrlichia* spp in 8% of tick pools in Phayao Province. *Babesia* spp, *Rickettsia* spp and *Wolbachia* spp were not detected. Tick load in both locations was low during the rainy season, increased when rainfall dropped and reached the highest peak in the dry season. A stronger inverse correlation was observed between number of feeding ticks on cattle and amount of rainfall in Phayao Province (northern region) ($r = -0.8$) than in Narathiwat Province (southern region) ($r = -0.4$). The survey in northern and southern regions of Thailand of tick species feeding on cattle, seasonal tick load and zoonotic microorganisms infecting the ectoparasites reveals despite the same tick species infesting cattle the other parameters were different between the two regions. The data on seasonal tick load are critical for designing tick control strategy appropriate for each region of interest in Thailand and elsewhere.

Keywords: *Anaplasma* spp, *Ehrlichia* spp, *Rhipicephalus (Boophilus) microplus*, *Rickettsia* spp, *Theileria* spp, tick, Thailand

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