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MOLECULAR EPIDEMIOLOGICAL INVESTIGATIONS OF BOVINE THEILERIOSIS IN JAFFNA, SRI LANKA

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Bovine Theileriosis is a tick-borne infection causing economically significant diseases globally. Although the genetic diversity of *Theileria* in cattle has been studied to a certain extent in Sri Lanka, the association between Theileriosis and cattle demographic data is lacking in Jaffna. Therefore, this study aimed to identify *Theileria* species infecting cattle and its genotypes in the Jaffna District. Blood samples (n = 40) were collected from three small-scale cattle farms in Jaffna. Giemsa-stained blood smears were used to detect *Theileria* piroplasms microscopically while PCR was conducted to identify *T. orientalis* and *T. annulata* by amplifying gene regions of *MPSP* gene (776bp) and *Tams1* (785bp), respectively. Packed cell volume (PCV) was used to determine anaemia. Half of the cattle (20/40) were microscopically positive while 88% (23/26) were PCR positive for *T. orientalis*. Five were tested positive for both *T. orientalis* and *T. annulata*. PCR reported a significantly higher ($p = 0.001$) detection rate compared to microscopy and haematological (PCV) analysis. Sequencing and phylogenetic analyses revealed the presence of the apathogenic genotype *Type 5* of *T. orientalis*. Infection was significantly higher in females (82.5%) than in males (17.5%; Fisher's Exact test, $p = 0.04$). Only two individuals (5%) were anaemic (PCV < 24%), without any of them being symptomatic. The low prevalence of anaemia recorded by PCV can be associated with the low parasitaemia and pathogenicity of the genotype identified. This highlights the risk of under-detection of Theileriosis due to the lack of clinical signs and the significance of using molecular tools for effective diagnosis. Results confirm that immunocompromised lactating cattle are at a greater risk. This is the first record of *T. annulata* in Jaffna District.

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