

MOLECULAR DETECTION AND CHARACTERIZATION OF *Anaplasma* spp. IN SHEEP AND EVALUATING THE CORRELATION BETWEEN OVINE ANAPLASMOSIS AND CYTOKINE INTERFERON-GAMMA

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Anaplasmosis in sheep is caused by intraerythrocytic bacteria and the infected sheep exhibit symptoms such as elevated temperature, respiratory and cardiac irregularities, anaemia, weight loss, and jaundice. The present study aimed to detect specific strains of *Anaplasma ovis*, *Anaplasma centrale*, and *Anaplasma marginale* responsible for anaplasmosis infections in sheep at the Oyamaduwa NLDB farm in Anuradhapura. Thirty (30) blood samples from suspected animals were analysed using Polymerase Chain Reaction (PCR) to identify the responsible bacteria strains and the Sanger sequencing technique for specific identification. Interferon-gamma levels in sheep were measured using Enzyme-Linked Immunosorbent Assay (ELISA). Data from ELISA were statistically analysed using ANOVA, correlation analysis, and logistic regression in the R package to establish the relationship between interferon-gamma levels and anaplasmosis infection status. The findings revealed that 53.33% and 26.67% of sheep were infected with *A. ovis* and *A. marginale*, respectively, while *A. centrale* was not detected. Statistical analysis indicated no significant correlation between anaplasmosis infection status and interferon-gamma levels, possibly due to the small sample size. Increasing the sample size is recommended for a more robust analysis. This study highlights the significance of anaplasmosis as a potential health threat in sheep within Dry one farms, emphasizing its importance for livestock management and the overall well-being of sheep populations.

Keywords: Blood, ELISA, PCR, Sequencing