

Comparison of ELISA and nested PCR assays for detection of Caprine arthritis encephalitis ⁽¹⁾

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Abstract

The objectives of this experiment are to perform CAE (CAE) monitoring using competitive enzyme linked immunosorbent assay (ELISA) and nested polymerase chain reaction (nested PCR) assay. Blood samples of 129 Nubian goats from a Taitung goat farm were used for test. CAE antibodies were detected in 71.3% (92/129) of serum samples using ELISA. In the results, the frequency of positive results in 3 to 12 months, 13 to 24 months and above 24 months were 77.9% (88/113), 54.5% (6/11) and 0% (0/5), respectively. The frequency of positive results in does and bucks were 72.6% (45/62) and 70.1% (47/67), respectively. There were no correlation between does and bucks in the CAE positive results ($P > 0.05$). DNA samples were extracted from the blood and used nested PCR assay targeting the CAEV proviral *pol* region, then nested PCR results were confirmed by sequence analysis, 97 (75.2%) goats were positive which increased the number of positive animals detected to 5, Kappa statistic showed substantial agreement between ELISA and nested PCR ($\kappa = 0.70$).

Key words: Goat, Caprine arthritis encephalitis, Enzyme linked immunosorbent assay, Nested PCR.

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