

Niorn Ratanapob 2010: Caprine Arthritis Encephalitis Virus Infection in Goats Raised in The Central and Western Part of Thailand. Master of Science (Veterinary Clinical Studies), Major Field: Veterinary Clinical Studies, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Theera Rukkwamsuk, Ph.D. 93 pages.

Caprine arthritis encephalitis virus (CAEV) is an important pathogen in goats. So far, there have been limited studies on CAEV in Thailand. The objectives of this study were to survey the seroprevalence of CAEV infection in goats raised in the central and western part of Thailand, and to culture the synovial cells for further study of CAEV properties. Blood samples were randomly collected from 1,333 goats, including 419 dairy goats and 914 meat goats from 50 and 100 dairy and meat goat farms, respectively. Serum samples were used for serological test. Hematological study was done on samples from 174 dairy goats and 399 meat goats. Synovial tissue collected from a five-month old, male goat was cultured and the fibroblastic cells were confirmed by detecting vimentin using immunocytochemistry.

The result showed that the seroprevalence of CAEV infection was 45.33% at the herd level and was 12.23% at the individual level. In dairy goat, herd prevalence and individual prevalence were 54% and 21.24% and in meat goat were 41% and 8.10%, respectively. Dairy goat had 3.01 times more likely to become positive than meat goat ($P < 0.05$). In dairy goats, female goat had 4.42 times more likely to become positive than male goat ($P < 0.05$). In meat goats, buck and doe had 2.60 times more likely to become positive than kid and yearling ($P < 0.05$). Hematological results showed that only hematocrit and hemoglobin concentration were different between seropositive and seronegative goats, however the differences were not specific for CAEV infection. Therefore, hematological test was not a useful tool for diagnosis of CAEV infection. Synovial cells were cultured, and the cultured cells were spindle-shaped and were able to be attached to the bottom of the flasks. These cultured cells could be subcultured more than 9 passages. Cultured cells thawed from freezing could normally grow. The synovial cells were proved to be fibroblasts because of vimentin can be detected by immunocytochemistry technic.

According to seroprevalence finding in this study, farmers should be notified in order to realize the importance of CAEV. Proper prevention and control measures should be taken to avoid an economic loss to farmers. Viral susceptibility of goat synovial cell must be tested for further use in the future CAEV study.

Student's signature

Thesis Advisor's signature