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BIOLOGICAL CHARACTERISTICS OF TICKS TRANSMITTING THEILERIOSIS IN CATTLE

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Abstract. *The article presents the results of laboratory studies on the biological characteristics of *H. anatolicum* ticks that transmit bovine theileriosis. The ticks were collected from the territories of Nukus, Chimboy, and Bo 'zatov districts, and experimental investigations were conducted under laboratory conditions.*

Keywords: *spontaneously infected, *H. anatolicum*, test tube, larva, nymph, imago.*

Introduction. Theileriosis is a highly dangerous hemoparasitic disease of cattle, which primarily has a negative impact on recovery and reproductive performance. The high prevalence of the disease can lead to mortality among cattle and causes a significant reduction in the production of meat and dairy products.

Main part. Blood-engorged *H. anatolicum* ticks were collected from cattle spontaneously infected with theileriosis. Under laboratory conditions, the blood-engorged ticks obtained from infected animals were placed two per test tube. Each tube was labeled with the date and the name of the farm. The test tubes were tightly closed with cotton gauze stoppers and placed in a thermostat at a temperature of 26–27 °C and a relative humidity of 70–80% to observe their biological development. The engorged ticks placed in the thermostat were examined daily under a magnifying lens. During the observation period, *H. anatolicum* ticks placed in the thermostat on May 27 began laying eggs after

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9–11 days, that is, on June 6–7. Egg laying was completed after 25–29 days, on June 21–24, and larvae began to hatch from the eggs after 35–40 days (July 3–4) (Figure 1).

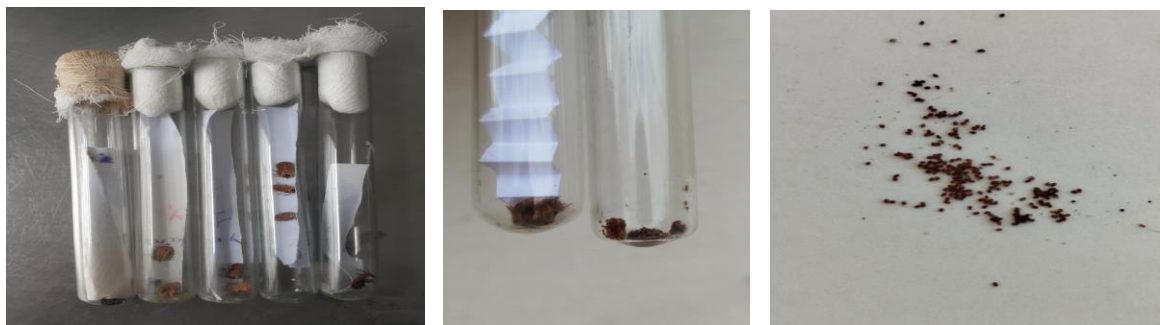


Figure 1. Process of tick generation.

One week later, as soon as the larvae were exposed to light, they began to move actively. Ticks collected separately from the territories of the Nukus, Chimboy, and Bo‘zatov districts were individually transferred to cattle. Cattle infested with tick larvae were monitored daily. During this period, the feeding status, nutrition, and sensitivity of the ticks were observed. Throughout the experiment, the cattle underwent daily clinical and parasitological examinations.

In the experimental cattle infested with *H. anatolicum* ticks, no clinical signs of theileriosis or parasitic reactions in the blood were observed. During the experiment, tick larvae were collected from the infested cattle on days 5–6 and cultivated in a thermostat according to the procedure described above. On days 12–15 of cultivation, the engorged larvae molted and became active; they were then kept fasting for 5–6 days, after which they were transferred to cattle free from theileriosis. Clinical and parasitological examinations of the experimental cattle were conducted daily. As a result, clinical signs of theileriosis and parasitic reactions in the blood were observed 19–21 days after tick infestation.

Thus, the conducted experiments demonstrated that three-host *H. anatolicum* ticks pass through the larval, nymphal, and adult (imago) stages

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during their developmental cycle. It was also established that during parasitism on infected or previously infected cattle, ticks acquire the causative agents of the disease and, when feeding on susceptible cattle, simultaneously transmit *Theileria* from their salivary glands to the host.

Conclusion. Based on the results of the study, it was established that the degree of tick distribution and the intensity of infestation are closely related to climatic factors and their magnitude. The findings of this research indicate the necessity of implementing appropriate agrotechnical and ecological measures to improve the prevention and monitoring of bovine theileriosis associated with tick spread.

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