

THEILERIA ORIENTALIS – A LEARNING OPPORTUNITY COMING HUNTER NICKELL – LIVESTOCK

There's an emerging threat to Kansas cattle and human health, but one that experts at Kansas State University are prepared to monitor, diagnose and counter, as part of the university's mission to enhance biosecurity around the state and world. Earlier in October, the Kansas Department of Agriculture confirmed the presence of a live Asian longhorned tick in Kansas — the first known detection of the exotic, invasive species in the state.

For Gregg Hanzlicek, professor and associate director of the Kansas Veterinary Diagnostic Laboratory, or KVDL, the discovery reinforced what K-State's veterinary medicine and extension programs were built to do: translate emerging science into practical tools for producers. "This doesn't mean we have a widespread or established population," Hanzlicek said. "But it's a reminder that these ticks, and the diseases they can carry, can move quickly. Awareness is key to limiting their impact."

Understanding the risks of Asian longhorned tick *Theileria orientalis* Ikeda

The Asian longhorned tick is the primary vector for *Theileria orientalis* Ikeda, a protozoan parasite that infects red and white blood cells in cattle. The disease causes anemia, weakness and, in some cases, death. It is not responsive to antibiotics, and once infected, cattle remain carriers for life. "It's not a bacteria, it's not a virus—it's a protozoa that remains in the animal's system for life," Hanzlicek explained. As the parasite invades and replicates in cattle red blood cells, it changes the surface proteins on each cell. The spleen identifies those cells as abnormal and removes them from circulation, which leads to anemia and deprives the animal of oxygen.

Affected cattle often appear weak, sluggish, and uncoordinated as their bodies struggle to function with reduced oxygen-carrying capacity. While adult cows usually recover, young calves are far more vulnerable. In outbreaks documented in other regions, as many as 80% of calves became sick and nearly half died. Late-term abortions have also been reported in some herds, though these cases have not been common in Kansas – yet.

The Kansas Veterinary Diagnostic Laboratory is one of only three laboratories in the U.S. with a validated polymerase chain reaction test to detect *Theileria orientalis* Ikeda. Since 2022, the lab has tested about 2,000 samples from across the country, and roughly 38 percent have been positive — mostly from herds showing clinical signs of disease. Note, the contents of this article were originally published in October, this number has probably more than doubled. Housed within K-State's College of Veterinary Medicine, KVDL serves as the front line for animal health testing in Kansas and across the region. The laboratory conducts tens of thousands of diagnostic tests each year for veterinarians, producers, and animal health agencies—helping identify emerging diseases, confirm diagnoses, and protect both animal and public health.

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The Asian longhorned tick has a three-host life cycle, feeding on three different animals as it develops from larva to nymph to adult. At each stage, it can acquire and transmit Theileria to new hosts. A herd of cows stands in a field facing the camera. “These ticks are amplifiers,” Hanzlicek said. “When they feed, their saliva contains high concentrations of the organism, and that’s how the infection spreads.” Unlike most tick species, this one can reproduce with or without males, making it extremely efficient at establishing populations in new area. Every single Asian longhorned tick found outside its native range of central and east Asia has been female, and each one can lay thousands of eggs, allowing populations to grow rapidly once established. The tick feeds on a variety of hosts — including cattle, deer, wildlife and birds — allowing it to move long distances. It has been documented in at least 20 states and continues to spread westward. The tick thrives in warm, humid areas, offering some hope that the drier regions of western Kansas may slow its expansion. Since first publishing in October – eastern Kansas and southwestern Missouri has become a hotspot for cases. Shoutout to Kelsey Stremel from the KSU College of Agriculture for the bulk of the information in this article.

Veterinarians and producers are still learning clinical signs and what to look for in cattle herds. There have been over 150 herds affected in Kansas and surrounding states in a few months. To combat misinformation or lack of information all together, the Southwind Extension District is hosting a meeting on **February 25th, 2026 at 5:30 PM** in the sale ring at Fort Scott Livestock Market. Dr. Cassandra Olds, K-State Veterinary Entomologist, will provide an overview of Theileria in cattle, transmission pathways, entomology considerations, arthropod control strategies, and management decisions that reduce disease risk while minimizing insecticide resistance. This program is free to attend, light snacks and refreshments will be provided. If you have any questions, or would like to reserve a spot, contact Hunter Nickell, Livestock Production Agent, at 620-365-2242 or by email at nickell99@ksu.edu.



← Asian longhorned Tick