Asian Longhorned Ticks and Theileriosis in Arkansas

DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

Asian longhorned ticks (*Haemaphysalis longicornis*) and *Theileria orientalis* Ikeda and Chitose genotypes have been confirmed in Arkansas (Figs 1 & 2). Both pose potential health issues for Arkansas cattle. The Asian longhorned tick (ALT) is an invasive tick that was first reported in the U.S. in 2017, but was later found to have been present as far back as 2010. Currently, ALT occurs in 26 states from northeastern Oklahoma eastward. *Theileria orientalis* Ikeda genotype is a tickborne protozoa that infects the red and white blood cells of cattle causing a disease called theileriosis. *Theileria orientalis* is transmitted by ALT. There is no evidence that the species of *Theileria* found in cattle affects humans.

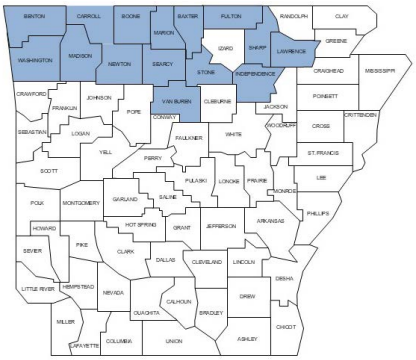

Fig. 1. Arkansas counties with confirmed populations of Asian longhorned ticks, *Haemaphysalis longicornis*. (16 Oct.2026)

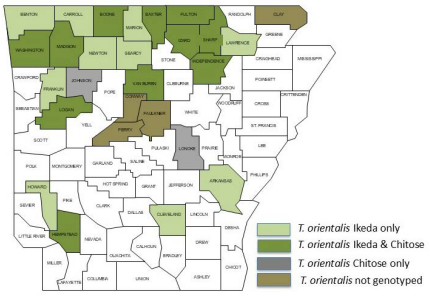

Fig. 2. Arkansas counties with confirmed cases of *Theileria orientalis* Ikeda genotype in cattle. (28 Sept. 2026)

Biology and Identification

The ALT reproduces asexually (parthenogenesis). Females produce a large number of eggs (up to 2,000) after feeding on an animal, like a cow. All viable eggs will develop into females. No males are produced. This type of reproduction allows ALT populations to reach very high densities. ALTs are three-host ticks with four life stages – eggs, larvae, nymphs and adults. Each of the feeding stages (larvae, nymphs and adults) will feed on a different host. After larvae and nymphs feed, they drop off the host and molt into the next stage. Females that completely engorge will drop off the host and lay eggs and then die.

ALTs are reddish brown ticks, void of markings, and possess short, blunt mouthparts. Adults are about 1/10 of an inch in size. ALTs are similar in size to blacklegged (deer) ticks but smaller than some of our other native ticks (Fig. 3). Their mouthparts are shorter and more angular than many of our native ticks. In addition, ALTs possess a distinctive elevated spur or "horn" on palpal segment three (Fig. 4), which can only be seen under a microscope.

Fig. 3. Comparison of ALT to native ticks

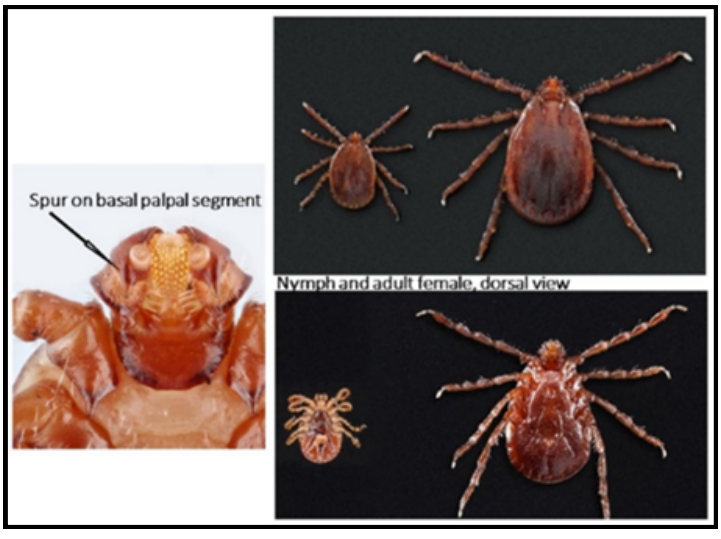

Fig. 4. ALT adult and nymph- dorsal and ventral views; spur on palp.

Impact on Cattle

Because of its reproductive strategy, ALT can reach very high population densities that may result in elevated stress and has been linked to possible exsanguination of its host. In addition, it is the primary vector of theileriosis in Arkansas and U.S cattle. *Theileria orientalis* Ikeda genotype is "new" to Arkansas and because it infects blood cells, its symptoms are similar to anaplasmosis. Symptoms include weakness, going off feed, pale gums, jaundice, increased abortions and sudden death. However, in contrast to anaplasmosis, theileriosis affects both calves and adult cattle whereas anaplasmosis primarily impacts adult cattle. Currently, there are no approved treatments or vaccines available for theileriosis in cattle. Currently, there are no approved treatments for bovine theileriosis in the U.S.. Medgene Labs Inc. is marketing a new prescription platform vaccine (RxPP) for Theileria in cattle.

Research Efforts

The University of Arkansas has recently started a project funded by a USDA NIFA grant (USDA NIFA Award No. 2024-67016-42397) to determine the prevalence of the ALT and *Theileria orientalis* Ikeda genotype in Arkansas. We are surveilling for ALT and *Theileria orientalis* in symptomatic cattle. We will also identify suspect ticks collected by cattle producers, veterinarians, other state agencies and county agents. Suspect ticks can be preserved in a vial containing 90% ethanol or sent live in a vial containing a blade of grass to improve survival. Please provide name, contact information, GPS coordinates (or at least county) of collection, collection date and host (dog, cow, etc.) or environment (grass, wooded areas, edge of woods, etc.) with the sample. Samples can be returned to your local county office or sent directly to: *Kelly Loftin, 2601 N. Young Ave. Fayetteville, AR 72704.*

Asian Longhorned Tick Control

Insecticide products and methods used to control horn flies on cattle can reduce the number of ALT that attach to cattle. However, some methods are more effective in controlling ticks than others. Below is a list of controlmethods ranked beginning with the most effective.

1. Whole body insecticide/acaricide treatment – spraying (permethrin, permethrin/PBO, phosmet (Prolate/Lintox), coumaphos (Co-Ral)
2. Pour-on insecticides/acaricides – pyrethroids or endectocides (Dectomax, Ivomec, Cydectin)
3. Insecticide impregnated ear tags - XP820 (abamectin), others – Max40 (diazinon), Python II (zeta-cypermethrin) aid in control of ticks
4. Self- treatment devices – back rubbers with face flips and dustbags
    a. Both should be forced use (pass though the device daily for feed mineral or water)
    b. Back rubbers – permethrin, Prolate/Lintox, Co-Ral, Ravap
    c. Dust bags – Python (zeta-cypermethrin), Co-Ral, permethrin

Habitat modification reduces tick density by making the habitat less favorable for tick survival. For example. modifications such as cutting/brush hogging vegetation such as brush and tall weeds may reduce humidity and promote tick desiccation and may influence host usage of the area. Fencing cattle out of wooded areas can reduce the number of ticks that attach to cattle. Because this pest is still spreading across Arkansas, keeping a closed herd can also help protect your cattle from the introduction of both ALT and *T. orientalis*.

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