

National Pest Alert



Asian Longhorned Tick *Haemaphysalis longicornis*

The Asian longhorned tick (ALT) is primarily a pest of concern in livestock (cattle, goats, sheep) and studies suggest there is a potential for the ALT to vector pathogens that cause Rocky Mountain spotted fever and other tick-borne illnesses. In its native range, the ALT can transmit *Rickettsia japonica*, which causes Japanese spotted fever, and the potentially fatal, severe fever with thrombocytopenia syndrome (SFTS) virus, among others.

Origin and Distribution

The ALT is native to East Asia, with established populations in China, Japan and South Korea, and is considered invasive in Australia, New Zealand and the United States. The ALT was first believed to be discovered in the United States in August of 2017 on a tick-infested female Icelandic sheep in New Jersey. An unidentified tick specimen archived in Union County, New Jersey, now identified as an ALT, has moved the assumed introduction date to 2013. As of 2021, the ALT has been detected in primarily mid-Atlantic and southern states. For the current distribution please see: aphis.usda.gov/aphis/maps/animal-health/asian-longhorned-tick.

Life Cycle

There are four life stages of the ALT. The ALT begins its life as an egg. The second life stage is the larval stage. At this point, the ALT is six-legged. The next life stage is an eight-legged nymph. The next and last life stage is the adult. Ticks take one blood meal as they transition to the next life stage. After each successful blood meal, the tick releases from its host, molts and then begins to quest for a new host. An interesting aspect of the ALT is that females can reproduce without mating with a male. This process is called parthenogenesis and as a result, male Asian longhorned ticks are rare.



Asian longhorned tick (*Haemaphysalis*)

Identification

The adult ALT resembles the adult brown dog tick (*Rhipicephalus sanguineus*). To differentiate the two species, look for the presence of “eyes” on the sides of its body near the second row of legs.

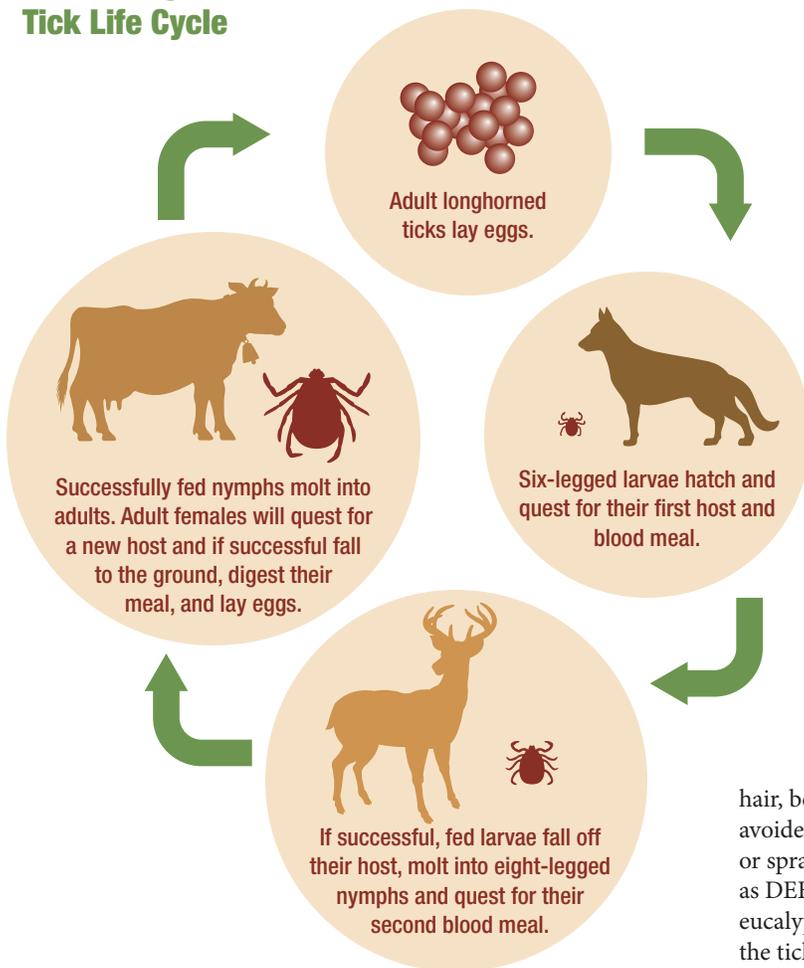


Brown dog tick (*Rhipicephalus*)

Human Health Concerns

The first human ALT bite in the U.S. was reported in 2018 in Westchester County, New York and did not result in the subject becoming ill. The ALT has not been found on rodents including white-footed mice, shrews and chipmunks, which are natural reservoirs for tick-borne pathogens. In one study, 120 ALTs were tested for pathogens that cause human disease including species in the following genera: *Anaplasma*, *Babesia*, *Borrelia* and *Ehrlichia*; all were found to be negative. In lab settings, ticks have been reported to transmit Rocky Mountain spotted fever. Further testing is necessary to determine the maintenance and transmission of this pathogen in nature. In a recent study, 263 ticks were tested, and one adult female was positive for *Borrelia burgdorferi*, a bacterial species that causes Lyme disease. Continued observation and testing of the ALT is imperative to monitor its threat to public health.

Asian Longhorned Tick Life Cycle



Animal Health Concerns

The United States Department of Agriculture and animal health officials have noted their concern about the ALT's impact on livestock. The ALT is notorious for large-scale infestations with multiple ticks on one animal, which leads to stress on the animal and reductions in growth and production. A serious infestation can lead to death of the animal due to blood loss. The ALT has been linked to the death of five cows in Surry County, North Carolina, with one bull having over 1,000 attached ticks. Cattle tested positive for *Theileria orientalis* Ikeda at a Virginia farm where the ALT was found. The ALT is referred to as the "cattle tick" in New Zealand, where it has been linked to *Theileria orientalis* Ikeda outbreaks among cattle.

Integrated Tick Management Strategies

The strategies for avoiding the ALT are similar to techniques used for other tick species, including avoiding wading through the woods or grassy areas. If walking along a path, try to stay near the middle to avoid questing ticks along the grassy edges. It is also important to check clothes and pets after coming in from outdoors, especially after walking through wooded, brushy or grassy areas. Throwing clothes in the dryer on high heat for 10 minutes will kill any ticks that remain hidden on clothes. Check any items for ticks that cannot go in a dryer such as backpacks and shoes. The next suggested strategy is to take a shower and check your body for ticks. Be sure to inspect armpits, ears, bellybutton, back of knees,

Asian longhorned tick facts:

- Females can reproduce without mating with a male, which makes male ticks quite rare
- Ticks have one blood meal during each life cycle stage
- Females can lay up to 2,000 eggs



Size of Asian longhorned tick compared to a dime.

hair, between legs and waist. Lastly, Asian longhorned ticks can be avoided by purchasing and wearing permethrin-treated clothing or spraying clothes with an EPA-registered insect repellent such as DEET, picaridin, insect repellent (IR) 3535 or oil of lemon eucalyptus. If bitten by a tick, remove immediately by grabbing the tick by the head with a tweezers as close to the skin as possible and pull upwards. Be sure to clean the bite with soap and water or rubbing alcohol.

Integrated tick management strategies for livestock include trimming grass, weeds and branches in and around pastures and ensuring wooded areas are at least 10 feet from fences. Visually check for ticks on animals daily on their chest, jaw, belly, ears, eyelids and elbows and use your hands to feel for embedded ticks. If ticks become a problem, apply a low-risk, EPA-registered insecticide while closely following the label instructions. Area-wide acaricides are another management strategy used to reduce tick populations.

For more information on the Asian longhorned tick, visit the USDA-APHIS website at: aphis.usda.gov/aphis/maps/animal-health/asian-longhorned-tick

Authored by the Public IPM Tick Working Group. For more information see: tickipmwg.wordpress.com

This work is supported by the USDA National Institute of Food and Agriculture, Crop Protection and Pest Management Program through the North Central IPM Center (2018-70006-28883).

For information about the Pest Alert program, please contact Jacqueline Pohl, communications specialist for the North Central IPM Center at northcentral@ncipmc.org.

April 2021

Regional
IPM
Centers

North Central
IPM
Center

IPM
IPM Institute
of North America