

Insec(tc)ure*:

Are you insecure about your insect cures?

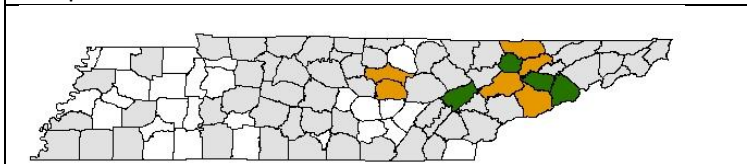
A UT Urban IPM Lab Newsletter for the Pest Management Industry

Update on the new tick in town, the Asian longhorned tick

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On May 24, 2019, the Tennessee Department of Agriculture, USDA-APHIS, Tennessee Department of Health and the University of Tennessee's Institute of Agriculture jointly announced the detection of a new invasive, the Asian longhorned tick (ALT), *Haemaphysalis longicornis*, in Tennessee. Within a month, the University of Tennessee released the publication, W826 Asian Longhorned Tick <https://extension.tennessee.edu/publications/Documents/W826.pdf>, which is already outdated due to the tick's spread.

Asian longhorned ticks are established in 4 counties (green), detected in 6 counties (gold), and not-detected from 57 counties (gray) of the 95 Tennessee counties. Established counties have more than two life stages or six specimens, while detected counties have less than six specimens or one life stage. Hollowed (white) counties have not been sampled.

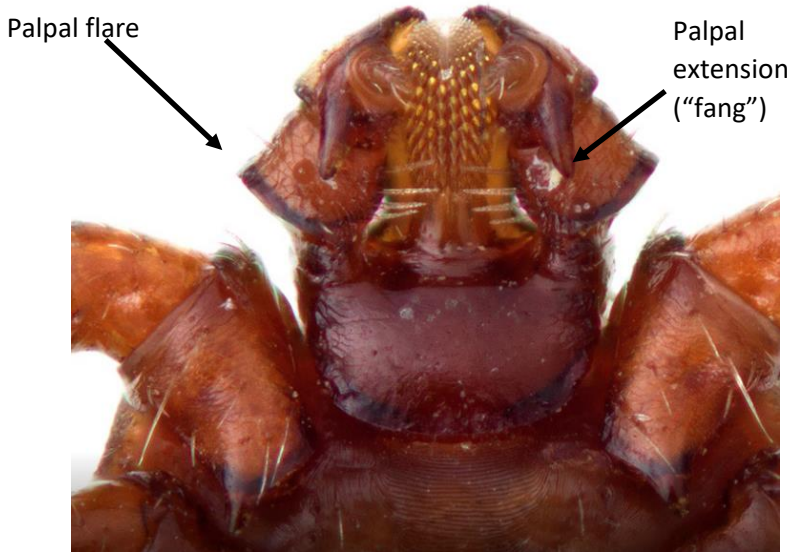


Originally from eastern Asia, this tick was first discovered in the US in late 2017 and as of December 9, 2020 has been found in 15 states. Infested states (number of infested counties) are Virginia (32), West Virginia (24), Pennsylvania (12), North Carolina (11), New Jersey (10), Tennessee (10), New York (7), Kentucky (4), Maryland (4), Connecticut (3), Delaware (2), Arkansas (1), Ohio (1), Rhode Island (1), and South Carolina (1). Unconfirmed ALT have been reported from Georgia. As of today, this tick has been collected in 10 Tennessee counties: Union, Roane, Cocke, Grainger, Sevier, Putnam, White, Knox, Claiborne, and

Jefferson.

Animal health officials are concerned about this tick because it can occur in large numbers on livestock and other animals, reduce animal growth and production, as well as, cause death in severe cases. Where it's invaded to New Zealand, Australia and other Pacific islands, it can transmit pathogens that cause disease (Anaplasmosis, Babesiosis, Ehrlichiosis, Theileriosis, Rickettsiosis, and Viruses) and is a severe livestock pest. The Center for Disease Control (CDC) has recently found that ALT can transmit the Rickettsial pathogen that causes Rocky Mountain spotted fever in the US, and we have detected Rickettsial pathogens in ALT collected from the environment in Tennessee although the *Rickettsia* species has not been determined. Asian longhorned ticks have also been found to transmit *Theileria orientalis* in Virginia and cattle have died in North Carolina due to exsanguination (extreme blood loss) caused by many ticks feeding at once. Initially found on sheep in New Jersey, ALT has now been collected from black bear, brown booby, Canada goose, cat, cow, chicken, coyote, deer, deer mouse, dog, eastern cottontail rabbit, elk, goat, great horned owl, ground hog, horse, human, opossum, raccoon, red and gray fox, red-tailed hawk, skunk and the environment. The most commonly reported hosts are dog, white-tailed deer, human, raccoon, cow and opossum. Note that small mammals have been extensively sampled in ALT-infested areas, and ALT has only been found on one deer mouse. We expect this list of hosts to grow as more ticks are collected.

So what does this tick look like? ALT is all brown with palpal flares and extensions which look like fangs. The nymphs look somewhat similar to lone star ticks but lone star ticks have long palps.



Ventral view of head and mouthparts of an adult female Asian longhorned tick. Courtesy of U.S. National Tick Collection, Institute for Coastal Plain Science, Georgia Southern University.



Dorsal view of nymph and adult female Asian longhorned tick. Center for Disease Prevention and Control



Asian longhorned tick nymph triangular palp (left) and lone star tick nymph elongated palp (right). Graham Hickling.

The UT Medical and Veterinary entomology laboratory is sampling for ALTs and have found them active during the months of March through November; with larvae being active April through November, nymphs active March through October, and adults active April through August. Larvae, nymphs, and females have all been collected, no males have currently been collected in the US, and it is expected that female populations will continue to grow. Larvae are most abundant July through September, nymphs are most abundant May through September, and adults are most abundant July through August. The laboratory has created a tick-surveillance network which includes UT AgResearch and Extension, along with collaborators from animal shelters, livestock auctions, USDA-VS, University of Tennessee (farm animal clinical service, field service, necropsy), TWRA, USDA-F&G, USDA-APHIS, Rehabilitation Centers, TDH, and USDA-FS. If you suspect you've found the Asian longhorned tick, please send the tick to us at the address on the back page along with the date collected, the host (human or specific animal) or vegetation collected from, GPS location or address where collected and your contact information. Or, you can deliver the tick with the same information [to your local county Extension agent](#).

Female ALT are parthenogenetic meaning they lay eggs without mating. ALT females can lay between 2000 and 4000 eggs so it's easy to understand how an animal can easily become overwhelmed with ticks. Find and destroy Asian longhorned ticks before they can lay eggs!

Protecting Yourself from Tick Bites

Asian longhorned ticks are found in shaded edges of fields, trails, and clearings. Being outside puts you at risk from encountering ALT and other ticks such as lone star tick, American dog tick, deer tick, and others.

What can you do to avoid tick bites?

Personal Protection

- Wear light-colored clothing with long-pants tucked into socks when going into tick-infested areas.
- Learn about [ticks](#), [tick-vectored diseases](#), and the [proper use of repellents](#).
- Treat your shoes, boots, and clothing with an appropriately labeled permethrin product or purchase permethrin-impregnated clothing before entering tick-infested areas.
- Keep to the center of trails to minimize contact with brush and tall grasses.
- Inspect for ticks when returning indoors.
- When returning home, place clothing into a dryer for 10 minutes on high before washing to kill ticks quickly. Shower and conduct another tick inspection.

Animal protection

- Treat livestock and companion animals with an acaricide, such as a permethrin product, that is recommended by a veterinarian.
- Routinely sample ticks from livestock when animals go through squeeze gates to monitor tick populations.
- Check companion animals for ticks daily (especially after going on walks in vegetation or forested habitats).
- Bushhog pastures where livestock reside regularly.
- Treat all newly bought livestock with an acaricide before bringing the animal to your property.
- Restrict livestock from forested or edge habitats.

Habitat Modification

- Manage the landscape to reduce humidity where ticks are likely to be found.
- Reduce cover for animals. Eliminate wooded, brush-covered habitat, prune lower branches of bushes, clean-up storage areas, woodpiles and junk piles.
- Reduce deer habitat, avoid landscape plantings that attract deer or use deer-exclusion fencing to keep deer off properties.
- Rake leaf litter and place stone or gravel, or plant shade-tolerant grass, under shade trees to reduce tick abundance.
- Trim trees and brush to open up wooded areas in and around areas of human activity, allowing sunlight to penetrate to reduce moisture and thus reduce tick habitat.
- Keep grass mowed.
- Remove leaf litter, brush, and weeds at the edge of the lawn.
- Restrict the use of groundcover such as pachysandra in areas frequented by people.
- Discourage rodent activity to eliminate hosts for ticks other than ALT. Cleanup and seal stone walls and small openings on school properties.
- Move bird feeders away from buildings.
- Keep playground equipment away from woodland edges and place them on wood-chip or mulch-type foundation.
- Trim trees and shrubs on properties and at the woodland edges to permit more sunlight.
- Create a three-foot or wider wood chip, mulch, or gravel border between turf and woods.
- Widen woodland trails/walkways to permit trail-users to avoid contact with woody vegetation and tall grasses.

Modified from

Anonymous. 2012. Ticks (and brown recluse spiders, American cockroaches and stinging pests)

<http://schoolipm.utk.edu/documents/newsletters/July%202012.pdf>

Dinkel, K. D., D. Herndon, S. M. Noh et al. 2020. A U.S. isolate of *Theileria orientalis*, Ikeda Genotype, is transmitted to cattle by the invasive Asian longhorned tick, *Haemaphysalis Longicornis* <https://assets.researchsquare.com/files/rs-90827/v1/6a3d3d5b-d12b-41c5-82e9-a2bad42c4e83.pdf>

Grove, G., R. Trout Fryxell, G. Hickling, K. Vail, and J. Ivey. 2019. W826 Asian longhorned tick. UT Extension

<https://extension.tennessee.edu/publications/Documents/W826.pdf>

Stanley, H.M., S. L Ford, A. N Snellgrove, K. Hartzler, E. B. Smith, I. Krapivunaya, and M. L. Levin. 2020. The ability of the invasive Asian longhorned tick *Haemaphysalis longicornis* (Acari: Ixodidae) to acquire and transmit *Rickettsia rickettsii* (Rickettsiales: Rickettsiaceae), the agent of Rocky Mountain spotted fever, Under Laboratory Conditions. J. Med. Ent. 57(5):1635–1639 <https://doi.org/10.1093/jme/tjaa076>

USDA, APHIS. 2020. National *Haemaphysalis longicornis* (Asian longhorned tick) Situation Report. December 9, 2020.

https://www.aphis.usda.gov/animal_health/animal_diseases/tick/downloads/longhorned-tick-sitrep.pdf

Vail, K. and R. Trout Fryxell. 2019. There's a new tick in town, the Asian longhorned tick. Pests and Pesticides in Child-serving Facilities: An IPM Newsletter 13(1): 1-3. <http://schoolipm.utk.edu/documents/newsletters/August2019.pdf>

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To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label and registered for use in your state.

Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

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