

Parasite Carrying Tick Increases Risk of Theileria Infection in Cattle



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All dairy farmers are being warned to look for signs of *Theileria* infection (“theileriosis”) in cattle, with two confirmed cases in beef cattle recently reported in Kentucky. *Theileria orientalis* Ikeda is a microscopic protozoan parasite that infects the red blood cells of cattle, causing anemia. The disease is primarily transmitted by the bite of an infected Asian Longhorned Tick or by blood transfer through the use of contaminated needles. The tick can feed on many animal species, including humans, but the parasite only affects cattle. The first high risk transmission period is when infected nymphs come out of dormancy in February and March and the second from infected adult ticks in July and August. Once a cow is infected, it may take 1 to 8 weeks before she shows symptoms of disease. A spring peak in disease incidence occurs in April and a fall peak in September-October. No effective treatment for sick cattle or a vaccine to prevent infections exists at this time. However, once infected, cattle become carriers and are protected from new infections. No recognized long-term health or production effects from persistent infection have been seen. *Theileria* is not a public health concern and contact with affected cattle does not pose a human health risk or food safety risk.

What to look for

- The majority of infected cattle have limited or mild clinical signs. The symptoms are very similar to anaplasmosis, another tick-borne cattle disease that causes anemia.
- Affected cattle show signs of anemia including lethargy, pale or jaundiced (yellow) mucous membranes, and increased respiratory and heart rates. Labored breathing may be mistaken for pneumonia, especially in young stock.
- Affected cattle may be exercise intolerant and lag behind the rest of the herd when being moved or lie down in the field.
- Affected cows may be off feed, have a fever, and decreased milk production.
- May see sudden death, especially in late pregnant and early lactation cows.
- Abortions may occur due to lack of oxygen to the fetus with subsequent death of the calf. Metritis in the cow can follow.
- Calves, especially 6 to 8 weeks of age but up to 6 months of age, may show symptoms.

What to do if cows show signs

- Contact your vet.
- Stress and movement of affected animals should be minimized, as their reduced number of red blood cells lowers their ability to transport oxygen around the body. This can lead to collapse and death. Affected animals should be rested, given high quality feed and water, and handled only when necessary. Consider once a day milking or dry off to reduce stress.
- No treatment options are available other than supportive care. Blood transfusions may be used for valuable animals. Recovery may take 1 to 2 months depending on the severity of the anemia.

Prevention and control

- *Inspect cattle for presence of ticks.* Routinely inspect livestock, pets, and humans for the Asian Longhorned tick (ALT). Parthenogenetic strains exist in the USA, meaning male ticks are not required to produce eggs and viable larvae. A female can produce 1,000-2,000 offspring without mating. A single cow can quickly become host to thousands of tick offspring that may cause death due to blood loss without causing a blood-borne parasite

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infection. The ticks are light brown and often smaller than a sesame seed. The adult female is about the size of a pea when full of blood (see Figure 1). All 3 life stages (larva, nymph and adult) may be present at the same time. In cattle, check the head, neck, ears, flanks, armpit, groin, udder and under the tail (areas where the skin is thinner). Cattle that seem lethargic or unthrifty should be closely inspected for ticks.

- *Manage the tick population:* The eradication or removal of ticks from a farm is virtually impossible. The focus is more about controlling the tick population by treating animals carrying ticks or to deter ticks from attaching to an animal, and by pasture management. Ticks spend most of the time, nearly 90%, in the environment. Even though only a small proportion of the tick population is on livestock at any one time, treating cattle with a tick repellent will reduce the numbers that feed and develop into the next stage of the tick lifecycle. This will have an impact on the numbers of eggs that eventually get deposited in the pasture and helps manage the disease spread. Currently, no known acaricides are labeled for use against the ALT. The use of pesticide-impregnated ear tags, pour-ons, sprays, and back rubs that control the American dog tick and the Lonestar tick should provide beneficial tick control. There are field reports of success with macrocyclic lactone dewormers such as Cydectin® Pour-on and Dectomax® Injectable products.
- *Environmental Control to Reduce Contact with Ticks:* This involves mowing pastures, especially shaded areas, and fencing cattle from wooded areas. Perimeter fencing of a minimum of 20 feet from wooded areas will reduce the number of ticks on the grazing area. All stages of the tick like warm, damp conditions and long grass. Avoiding long rank pasture that has not been grazed such as around the edge of crops and brushy areas will reduce the likelihood of animals picking up ticks. Keep in mind that wildlife can serve as tick hosts and accelerate their spread in fields without cattle. Virginia Cooperative Extension has produced a fact sheet entitled [“Managing the Asian Longhorned Tick: Checklist for Best Management Practices for Cattle Producers”](#) that covers animal inspection, chemical control, and herd management options.
- *Ease any underlying disease or stress:* Cows in late pregnancy, early lactation and young calves (2 to 3 months old) are more susceptible to severe disease. Pay close attention to transition management, avoid trace mineral deficiencies, and vaccinate cattle against the immunosuppressive BVD virus.
- *Treat “new” animals:* Treat cattle for ticks as they arrive to the farm and before moving from one property to another to avoid movement of infected ticks.
- *Young stock:* Calves should be closely inspected for ticks and signs of anemia, too.
- If you suspect a case of Theileria infection, contact your veterinarian for advice.

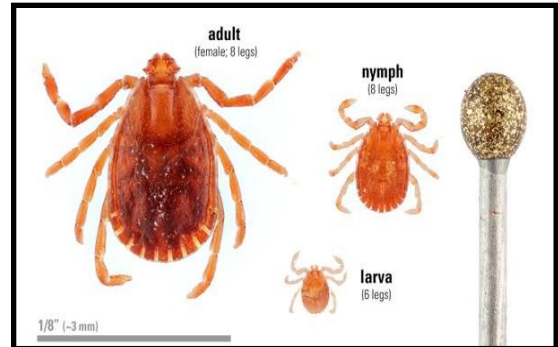


Figure 1: Three life stages of the Asian Longhorned tick sized relative to the head of an insect pin. Nymphs and adults can transmit Theileria to cattle. Photo used with permission from Dr. Matt Bartone, NC State