

## ***Theileria orientalis*: Information for Cattle Producers**

### **FACTSHEET**

**Background:** *Theileria orientalis* is a disease-causing parasite in cattle. The Asian Longhorned tick is an organism that may carry and spread *Theileria*. Both organisms were previously thought to be foreign agents, but have recently been found within the United States, including Tennessee. The range of the tick and *Theileria* is spreading.

- *Theileria orientalis* is a parasite that has recently been identified in cattle in several U.S. states, including Tennessee.
- *Theileria* affects red blood cells and may destroy them, causing anemia in affected animals. Thus, infected cattle may look like those affected by anaplasmosis. Signs can include weakness, off feed, isolated, or just “off” with an abnormal attitude.
- Death loss in infected cattle is possible with death rates ranging from 5-90% in affected herds.
- *Theileria* can be transmitted by the Asian Longhorned tick or by direct blood transmission. Therefore, implementation of control programs like those used in managing other blood-borne pathogens, such as Bovine Leukemia Virus or *Anaplasma marginale*, should be useful in limiting the spread of *Theileria* as well.
- The Asian Longhorned tick has now been found in 17 states, most of them in the East and mid-Atlantic region. In Tennessee, this tick has been identified in 10 counties. Entomologists confirm that wide regions of the Eastern, Mid-Western, and Northwest United States have a suitable habitat for the tick and project the tick’s range will continue to expand.
- It is important to note that while some cattle get sick from *Theileria*, surveillance data shows that a large proportion of cattle are carriers of the organism yet exhibit no signs of disease or production loss. Once parasitized, cattle are considered infected for life. Periods of stress could lead to relapse of disease.
- The significant number of cattle that test positive for *Theileria* that do not get sick show that cattle afflicted by other more common diseases may test positive for *Theileria* yet may not have clinical disease caused by Theileriosis. A diagnosis of Theileriosis should be made by a veterinarian, and should be accompanied by compatible signs of disease, positive test results, and ruling out other more common diseases.
- There is no approved treatment for Theileriosis in the United States. Treatments in other countries are generally cost-prohibitive or have significant withdrawal times.
- Attempted interventions should focus on supportive measures for individual cattle, and on tick control and elimination of blood-borne transmission at the herd level.
- Using a clean needle for each animal and disinfecting surgical tools and taggers will reduce the chance of spreading the disease within affected herds. If your herd is unaffected, you may consider testing replacement animals and bulls prior to addition.
- Although absolute tick elimination is likely not possible, all practical tick control practices should be used to slow the spread of disease.
- Since initial identification, the reported ranges of both the disease-causing parasite (*Theileria orientalis*) and the tick that spreads it (Asian Longhorned Tick) are spreading in the U.S. Given the current distribution of the tick, along with suitable habitat in much of North America, *Theileria* is likely to become permanently established in numerous states.
- All cattle entering the state must have a valid Certificate of Veterinary Inspection (CVI) from a veterinarian. For all cattle import requirements, please contact the State Veterinarian’s office.
- There are currently no restrictions on interstate or intrastate movement of cattle due to *Theileria* or the Asian Longhorned tick
- The Tennessee Department of Agriculture (TDA) and UT Extension are coordinating to identify the prevalence of *Theileria* and the Asian Longhorned tick in Tennessee. Cattle producers and livestock veterinarians are an important part of tracking this disease.
- For *Theileria* suspect cases, PCR is the diagnostic test of choice, and is available at Virginia Tech and Cornell. If you suspect *Theileria* in your herd, please contact your veterinarian to help coordinate diagnosis.
- Your veterinarian, TDA, and UT Extension can all be helpful in identifying the Asian Longhorned Tick, if you believe you have identified this pest on your premises.

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### **FAQ**

**Background:** *Theileria orientalis* is a disease-causing parasite in cattle. The Asian Longhorned tick is an organism that may carry and spread *Theileria*. Both organisms were previously thought to be foreign agents, but have recently been found within the United States, including Tennessee. The range of the tick and *Theileria* is spreading.

#### **What is the risk to my cattle?**

Tennessee cattle producers should be aware, but not alarmed, of the risk of *Theileria* infection in their cattle, so they can take preventive measures. Theileriosis is a newly identified disease in Tennessee; however, it is expected that the vector that commonly spreads the disease, the Asian Longhorned tick, will continue to expand its range. Cattle with more exposure to ticks are at higher risk of infection with *Theileria* and other tick-borne diseases.

#### **How is the disease spread?**

In other countries, such as New Zealand and Australia, where *Theileria orientalis* is endemic, the primary route of transmission is the Asian Longhorned tick. Since *Theileria* is a blood parasite, other methods of spread can include contaminated needles and surgical tools, although these methods present a lower risk. Changing needles and sterilizing surgical equipment can help prevent the spread of *Theileria* and other diseases such as Bovine Leukemia.

#### **What can I do to prevent *Theileria* in my cattle?**

There is no vaccine or approved treatment for *Theileria orientalis* in cattle. Therefore, the best method of prevention is tick control. Recommended strategies include veterinary approved pesticide treatment (such as pour-on and ear tags), regular tick inspection, and keeping pastures and grass mowed short. Testing replacement cattle for *Theileria* and other infectious diseases, such as Anaplasmosis, can help prevent the introduction of new diseases into your herd.

#### **Does *Theileria* affect any other species?**

There are multiple species of *Theileria* that affect livestock, such as sheep, goats, and horses; however, *Theileria orientalis* is only known to infect wild and domestic cattle. *T. orientalis* does not affect humans and meat from *T. orientalis* infected cattle is not a human health risk.

#### **What should I do if I think my cattle have *Theileria*?**

If your cattle are showing clinical signs such as weakness, pale gums, increased abortions, or high mortality, contact your veterinarian immediately. Your veterinarian can work with you to rule out all potential diseases and will contact the State Veterinarian's office if they suspect *Theileria* or any reportable disease. Cattle found to be infected with *Theileria orientalis* that are healthy will have no movement restrictions and should be managed like *Anaplasma* infected cattle to try and limit disease spread to new herds.