Equine Piroplasmosis

Equine piroplasmosis (EP) is a blood-borne disease spread by ticks. It can affect horses, donkeys, mules, and zebras.

EP is endemic in most tropical and temperate areas of the world with ticks capable of carrying the disease. In the United States, EP is endemic only in Puerto Rico and the U.S. Virgin Islands. However, isolated outbreaks have occurred in horses on the U.S. mainland. Also, many areas of our country have climates and tick vectors suitable for the disease to establish itself here.

If you're a horse owner or veterinarian, you need to know about the risks of EP transmission in the United States. The following information describes the disease and how to help protect the U.S. horse industry from it.

EP is a foreign animal disease in the United States. You must report any detection of EP to your State Veterinarian (**usaha.org/saho**) and/or USDA Area Veterinarian in Charge (**aphis.usda.gov/animal_health/contacts/field-operations-districts.pdf**).

How USDA Protects Equine Health

The U.S. Department of Agriculture (USDA) protects our Nation's horse industry from EP in several ways:

- USDA regulates equine imports and maintains tick control and surveillance programs.
- We require a negative EP test for most imported horses to enter the United States. EP-positive horses can only enter the country temporarily under special arrangements, such as for international equine events like the World Equestrian Games.
- USDA has laboratories approved to test horses for EP. We notify the World Organization for Animal Health (WOAH) if an outbreak occurs here.
- We also offer a supervised EP-treatment program. See more detail on the next page under "Treatment."

Transmission

Two parasites, *Babesia caballi* and *Theileria* (formerly *Babesia*) *equi*, cause this disease. In most cases, horses that survive the acute phase of infection continue to carry the parasites. These "chronic carriers" become potential sources of infection for other horses.

The disease spreads naturally via tick bites. It can also spread through contact with blood-contaminated equipment or blood products.

Tick Bites

Ticks become infected with EP when they ingest blood from infected equines. The ticks then spread it by biting uninfected equines.

EP is carried by Ixodid or "hard" ticks of various genera. The United States is home to several tick species capable of carrying this disease:

- Cayenne tick *(Amblyomma [cajennense] mixtum)*
- Tropical horse tick *(Dermacentor nitens)*
- Winter tick *(D. albopictus)*
- American dog tick *(D. variabilis)*
- Southern cattle tick *(Rhipicephalus [Boophilus] microplus)*
- Asian longhorned tick *(Haemaphysalis longicornis)*

Although these ticks could host and transmit EP, current surveillance shows no natural tick-borne transmission of EP on the U.S. mainland.

Contaminated Blood

Equipment contaminated with EP-infected blood can also spread the disease. This may include injectable, surgical, dental, or tattoo equipment.

The most common routes of transmission in recent U.S. cases include:

- Reuse of needles, syringes, or intravenous administration tubing between horses
- Blood-contamination of multidose drug vials
- Administration of contaminated blood or plasma products
- Direct blood transfusion between horses

Rarely, in utero transmission from mare to foal has also been reported.

History

The United States identified natural tick-borne transmission of EP in Florida in the early 1960s, primarily due to *B. caballi.* In response, we began a State-Federal EP control program in Florida to eradicate the disease and tropical horse ticks. The program used quarantine and drug treatment for infected equines, tick treatment for infected and exposed animals and premises, and movement controls to prevent EP spread. As a result of this lengthy eradication campaign, the United States was declared EP-free in 1988.

Another outbreak of tick-transmitted EP was not identified in the United States until 2009. Over 400 horses from a large ranch in south Texas were found to be infected with *T. equi.* Ticks linked to the outbreak included cayenne tick *(A. [cajennense] mixtum)* and American dog tick *(D. variabilis).* The Texas ranch had another site in Brazil, where EP was endemic. Movement of horses between these two ranches was likely the source of the outbreak. In cooperation with State, federal, and academic partners and ranch personnel, we eradicated *T. equi* from the Texas ranch by quarantining the premises long-term, culling infected horses or treating them with imidocarb dipropionate, and mitigating tick vectors with acaricide.

Epidemiology

In recent years, EP transmission in the United States has been from:

- Illegal imports of infected horses or blood products from countries where the disease is endemic.
- Unhygienic practices that transfer blood from an infected horse to uninfected horses.

This has caused clusters of infection in epidemiologically related populations, particularly Quarter Horses involved in unsanctioned horse racing.

We can avoid these modes of transmission by:

1. Testing horses for EP, as required during legal import, or before their use as blood donors.
2. Sanitizing dental and surgical equipment between horses, and never reusing needles and syringes.

Current Quarter Horse racehorses are at increased risk for EP. Owners should routinely test these horses for EP and equine infectious anemia (another blood-borne disease) during their racing career. Former Quarter Horse racehorses should also be tested as part of prepurchase examinations.

Clinical Signs

In most cases, an EP-infected horse can take 10 to 30 days to show signs of the disease. Acute cases of EP may be mild or more severe. Mild forms of the disease cause horses to appear weak and show lack of appetite. More severe clinical signs include fever, anemia, yellowish mucous membranes, a swollen abdomen, and/or labored breathing. Other signs of EP can include central nervous system disturbances, roughened hair coats, constipation, colic, and hemoglobinuria (a condition which gives urine a red color). In some cases, death may occur.

Yet, the disease may not affect all horses equally. Some may show few or no clinical signs in the acute phase and no obvious decrease in performance. Horses in the chronic phase of infection usually show no clinical signs other than anemia, or they may exhibit weight loss, poor performance, and loss of condition.

Diagnosis

Testing at a USDA-approved laboratory can diagnose EP. Some U.S. equine events or racetracks may require a negative EP test before allowing horses to compete.

Veterinarians: If you suspect EP, contact State or Federal animal health officials before you collect any samples.

Treatment

Historically, EP-infected animals would be euthanized, exported from the United States, or quarantined for the rest of their lives. Today, USDA offers a treatment program for EP-infected horses. Imidocarb dipropionate is the drug used to treat EP infection. An accredited veterinarian performs the treatment, with oversight from State and Federal animal health officials.

This program has been successful in clearing most horses of infection over time. Treated horses are released from quarantine once they test negative for EP.

Prevention

There is no vaccine for EP. To prevent infections, avoid (1) bites by infected ticks, (2) contact with blood-contaminated equipment, and (3) administration of contaminated blood products.

For More Information

Call USDA Veterinary Services at (970) 494-7391 or send an email to equine.health@usda.gov. You can also visit us online at **www.aphis.usda.gov/animal-health.**

APHIS-22-048 I Issued October 2022