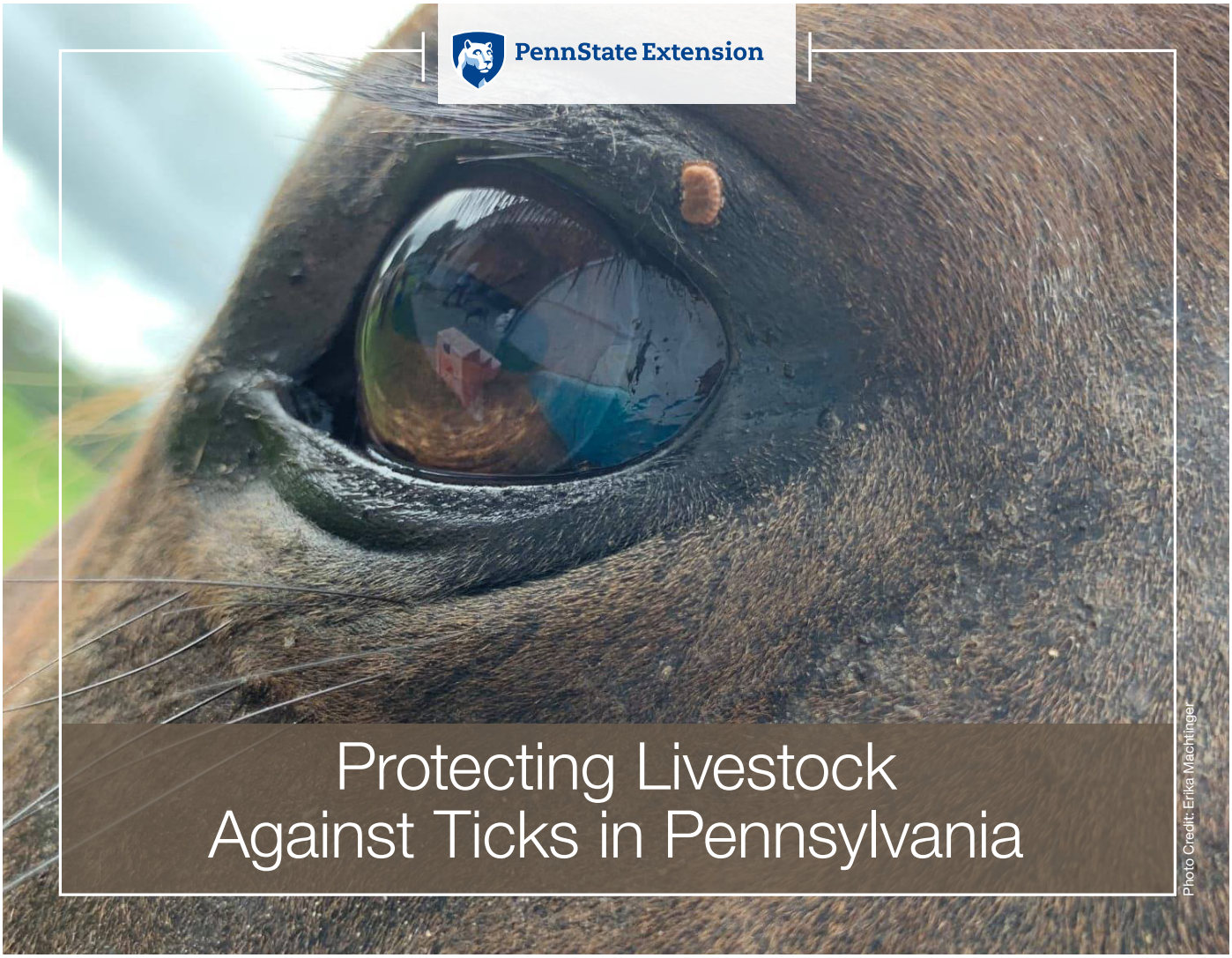


PennState Extension

Protecting Livestock Against Ticks in Pennsylvania

Photo Credit: Erika Machtinger

Many species of ticks can be found on livestock and horses in Pennsylvania, particularly animals that spend some time in pastures. These ticks can cause physical harm to animal hosts and transmit pathogens that cause diseases. Control of important ticks affecting livestock and horses includes recognizing important species, removing ticks, and preventing and controlling ticks in the environment.

What ticks are likely to be found on livestock and horses?

While there are over 20 species of ticks in Pennsylvania, only a few are pests of livestock and horses. Most of these ticks are three-host ticks, meaning they bite a different animal during each of their three life stages, larva, nymph, and adult. Usually, these ticks choose progressively larger animals for each life stage. This means that adult ticks are the most common life stage found on livestock and horses. However, occasionally nymphs will also be found.

Photo Credit: Erika Machtinger

Blacklegged tick adult female.

Blacklegged Tick *(Ixodes scapularis)*

Also known as the "deer tick," this species is very common throughout Pennsylvania. Adults are active in the late fall and early spring.

Pathogens: This species can transmit the pathogens that cause Lyme disease to susceptible animals, including horses, and *Anaplasma phagocytophila*, the cause of equine granulocytic anaplasmosis. Cattle, sheep, and goats are not susceptible to Lyme disease infection and do not experience disease related to *A. phagocytophila* in the United States.

Lone star tick adult female.

Lone Star Tick
(Amblyomma americanum)

Lone star ticks are found in the southern and southeastern parts of Pennsylvania. Adults and nymphs are around in the spring and early summer. This species is found mostly in the coastal plain, but it can also be found in the piedmont. The larvae, called seed ticks, prefer humans.

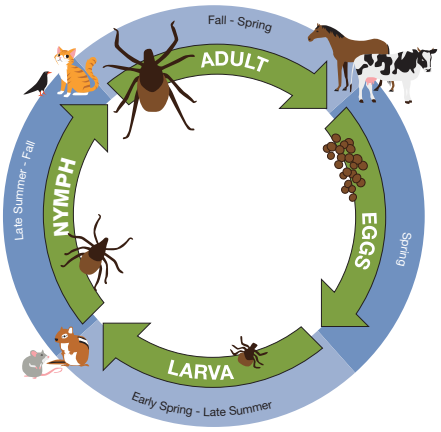
Pathogens: Though this tick can carry pathogens that can cause disease in humans, they are not considered a major vector for diseases of horses and livestock.

American dog tick adult female.

American Dog Tick
(Dermacentor variabilis)

American dog ticks are found throughout Pennsylvania and appear as adults in late spring and summer. While dogs are the preferred host of the adult, it has been recorded on numerous wild and domestic animals and humans.

Pathogens: This tick may annoy domestic livestock, but it is not a known vector of pathogens that cause disease in livestock or horses. However, American dog tick bites can cause paralysis in livestock, people, and dogs.



Life cycle of the blacklegged tick, a three-host tick, occurs over two years. Eggs are laid in the spring and hatch in late summer as larvae. Larvae feed on small mammals like mice and chipmunks. Larvae overwinter and molt to nymphs in the spring. Nymphs feed on small mammals as well as birds, cats, and other medium-sized mammals. Nymphs molt into adults in the fall and feed on large mammals like deer, but also cattle, horses, and goats. Adults can also be present in the spring.

Winter Tick
(Dermacentor albipictus)

Winter ticks are commonly found on forested ungulates like deer and elk throughout Pennsylvania. However, it will also feed on domestic animals if given the opportunity. It is a one-host tick—meaning that it completes its entire life cycle on a single host—so all life stages may be present on large animals

Pathogens: This tick can transmit *Anaplasma marginale*, the pathogen that causes anaplasmosis in cattle. This disease is not common in Pennsylvania, but with movement of cattle, it is still a risk. In addition to ticks, it can be passed from animal to animal when needles are reused.

Photo Credit: Tadhgh Rainey

Asian longhorned tick nymph.

Asian Longhorned Tick
(Haemaphysalis longicornis)

This species is invasive to Pennsylvania and has been recovered from the central and eastern counties. In its native range in Asia, this species prefers cattle as hosts. Unlike our native ticks that affect livestock and horses, this tick is parthenogenic (females can reproduce without a male) and all life stages may be found on large animals. In the United States, this species has been recovered primarily from deer, sheep, cattle, and other ungulates, although it has also been found on domestic pets and people.

Pathogens: This tick is known to carry *Theileria orientalis*, a pathogen that causes theileriosis in cattle. Historically, the genotypes of *T. orientalis* in the United States were very mild, but in 2017, a pathogenic genotype (Ikeda) was identified in cattle in Virginia. It is thought that this genotype was introduced with this invasive tick species. Theileriosis has been associated with anemia, ill-thrift, abortions, and death in cattle of all ages in Virginia.

Cattle and other livestock pastured near wooded areas or in brushy fields may be at risk for tick bites.

Why should I control and remove ticks?

Ticks can transmit pathogens and cause other physical problems in animals. Ticks cause local irritation to skin, which may result in hair and blood loss from rubbing on trees and fences. Secondary infections may be present in these open wounds. Heavy infestations of ticks may cause losses to physical condition in cattle, including weight loss, anemia, and reduced milk production. Horses are also susceptible to Lyme disease and equine granulocytic anaplasmosis, and cattle to bovine anaplasmosis. Saliva from certain tick species can also cause tick-bite-associated paralysis. In addition, many ticks in Pennsylvania found on livestock and horses will also bite other animals, so handling animals with tick burdens may increase the risk of bites to humans and pets.

Where should I look for ticks on my animals?

Once a tick has located an animal host, it will identify a suitable area to bite. While ticks can be found anywhere on the body, ticks usually select areas that are warmer and more protected with thinner skin, like on the chest, jaw, flank, and underbelly; mane, ears, eyelids or brisket area; or elbow. In many cases, there is a local skin reaction that can be felt as a small lump.

How do I remove a tick from my animal?

Should you find a tick on your animal, the tick should be removed immediately. Tick removal from animals is the same as with people. It is important to not crush or squish the tick, as the tick may regurgitate potential pathogens into your animal through the bite, which may increase the risk of pathogen transfer. In addition, do not apply any agents to the tick like oils, petroleum jelly, heat or fire, paint, nail polish remover, or similar materials. Using a sharp pair of forceps or tweezers, grasp the tick as close to the skin as possible and pull straight away from the skin slowly. Ticks can be placed in a small plastic bag in the freezer and saved for future pathogen testing if desired.

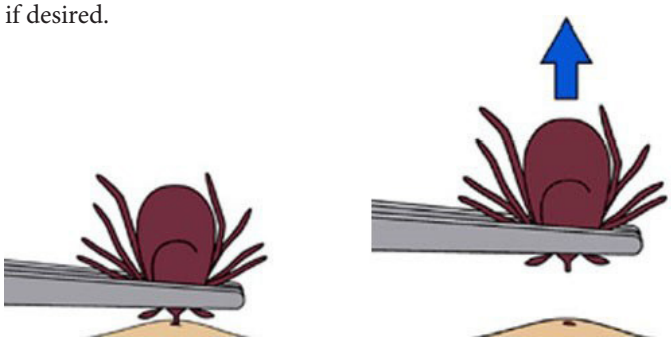


Photo Credit: CDC

Using sharp tweezers or forceps, grasp the tick close to the skin and pull slowly straight away from the bite.

How do I prevent ticks from getting on my livestock or horses?

Tick prevention starts in the environment and is aided with on-animal control methods. Pasture modifications can be made to reduce contact animals have with wooded perimeters where ticks are often found. Moving fence lines 10 feet from the edge of the woods and keeping vegetation in those corridor areas mowed short and free of debris can prevent tick movement toward pastured animals. Eliminating brush and woody debris like fallen branches from the perimeter of pastures can reduce small mammal habitat, which in turn reduces immature tick hosts. Because ticks are susceptible to drying out, they are not found in sunny areas with low-cut grass. Mowing grasses in pastures and reducing weeds eliminates suitable sites for ticks to search for hosts, and cutting overhanging branches to allow sunlight can reduce humidity, which can help dry ticks out and kill them. It is not necessary to chemically treat pastures for ticks. However, if pastures include wooded edges, these areas can be treated with acaricides to reduce tick presence.

If possible, animals should be checked for ticks frequently. Daily checks are recommended for horses in areas at risk for tick

bites since the pathogen that causes Lyme disease can transmit in a little as a day. As ticks are often small before they feed, thoroughly checking animal skin with both hands and eyes may be more effective than using your eyes alone.

Pyrethroid products such as permethrin or cypermethrin wipe-on or spray repellents, shampoos, dusts, ear tags, pour-on products, or similar materials applied to animals can be helpful. However, many topical treatments are not meant for extended protection and generally last four to eight hours. These products also do not guarantee prevention of tick bites, so checking animals for ticks should be continued even with application. Make sure that all products applied are labeled for use on the animal for which they are intended, and follow all label application, safety, and disposal instructions.

Fence lines bordering wooded habitat can put livestock and horses at risk for contact with ticks.

Moving the fence line away from the wooded or brushy habitat can reduce risk of tick contact.

Trimming overhanging tree limbs and removing understory brush and debris (seen here along the fence line) can reduce suitable tick habitat and tick bite risk.

Always refer to the insecticide labels for current and specific instructions for use and application. It is important to read, understand, and follow all insecticide label precautions. Before applying any product (including natural or biological control products), read the label and note application rates. In addition, only apply products that are labeled for use in the state of application. Check with local, county, or state regulations before using any product.

Have more questions?

If you have questions or concerns regarding tickborne diseases, contact a large animal veterinarian. For questions about tick identification, contact the Penn State Insect Identification Laboratory.

Prepared by Erika T. Machtinger and Hayley Springer.

extension.psu.edu

PennState Extension

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

This publication is available in alternative media on request.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

Produced by Ag Communications and Marketing
© The Pennsylvania State University 2019 Code **EE00348** 10/19pod