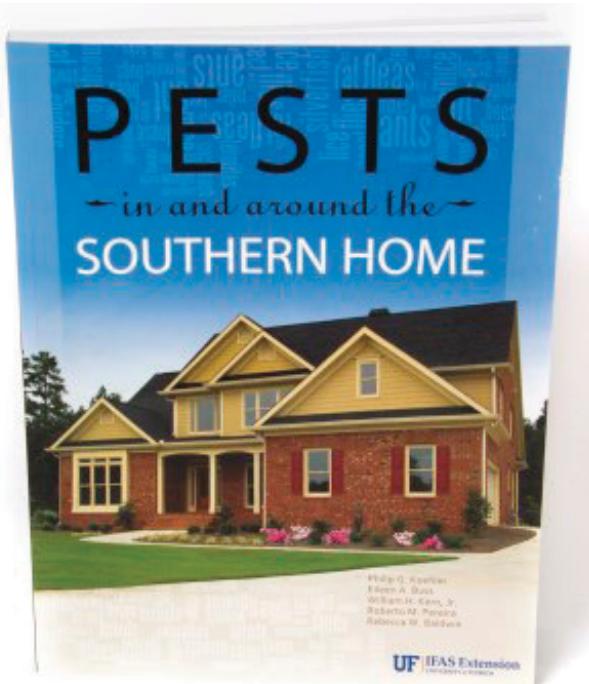


Ticks (Family Ixoididae)¹

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This fact sheet is excerpted from SP486: Pests in and around the Southern Home, which is available from the IFAS Extension Bookstore. <http://ifasbooks.ifas.ufl.edu/p-1222-pests-in-and-around-the-southern-home.aspx>

Ticks are not insects and are closely related to the spiders. Adult ticks have eight legs. Their life cycle is divided into four stages: egg, larva, nymph, and adult. All ticks feed on blood during some or all stages in their lifecycle. Ticks are known to transmit serious diseases to animals and humans even though humans are not the preferred host. They are

known to be almost as important as mosquitoes in terms of public health importance.

Several species of ticks attack dogs, but cats are rarely infested. Many of the dog ticks are known as wood ticks and infest dogs when they run through the woods or fields.

Of the ticks found in Florida, the brown dog tick and the American dog tick are the most troublesome. The brown dog tick rarely bites humans, but infestations are frequently found on dogs and in the home. The American dog tick attacks a wide variety of hosts, including humans, but rarely will infest homes.

Brown Dog Tick

The brown dog tick (Figure 1) seldom attacks animals other than dogs. It is most likely found where dogs are kept in or around the house. The brown dog tick rarely transmits disease to humans (except the Bouteuse fever in the Mediterranean countries) but may transmit diseases to dogs such as canine ehrlichiosis and babesiosis.

The adult female tick lays a mass of 1,000 to 3,000 eggs after engorging on a dog's blood. These eggs are often found in cracks on the roof of kennels or high on the walls or ceilings of buildings. In the house, eggs are laid around baseboards, window and door casings, curtains, furniture, and edges of rugs. The egg-laying females are often seen going up walls to lay eggs.

1. This document is ENY-206, one of a series of the Entomology and Nematology Department, UF/IFAS Extension. Original publication date June 1991. Revised July 2011. Reviewed December 2013. Visit the EDIS website at <http://edis.ifas.ufl.edu>.
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Figure 1. Brown dog tick (male left and female right).

The eggs hatch in 19 to 60 days into six-legged, small larvae known as "seed ticks." The seed tick takes a blood meal from dogs when they are available. The larvae are so small they will not be noticed on the dog unless there is a large number of larvae together. They remain attached to the dog for three to six days, turn bluish, then drop to the floor. After dropping from the host, the larvae hide for six to 23 days before molting into eight-legged, reddish-brown nymphs. They are now ready for another blood meal and again seek a dog host. The nymphs attach to dogs, take a blood meal, drop off, and molt to the adult in 12 to 29 days. As reddish-brown adults, they again seek a blood meal, become engorged and bluish, and reach about 1/3 inch in length.

Unengorged larvae, nymphs, and adults may live for long periods of time without a blood meal. Adults have been known to live for as long as 200 days without a blood meal. Indoors, ticks hiding between blood meals may be found behind baseboards, in window casings or window curtains, in bookcases, inside upholstered furniture, and under edges of rugs. Outdoors, ticks hide near foundations of buildings, in crevices of siding, or beneath the porch.

American Dog Tick

The American dog tick (Figure 2) is also a common pest of pets and humans in Florida. The adult males and females are frequently encountered by sportsmen and people who work outdoors. Dogs are the preferred host, although the American dog tick will feed on other warm-blooded animals. The nymphal stages of the American dog tick usually attack only rodents. For this reason the American dog tick is not considered a household pest.

The female dog tick lays 4,000 to 6,500 eggs, then dies. The eggs hatch into larvae in 36 to 57 days. The unfed larvae crawl in search of a host and can live 540 days without food.

When a small rodent is found, the larvae attach and feed for approximately five days. The larvae then drop off the host and molt to the nymphal stage. The nymphs crawl about in search of a rodent host, attach to it, and engorge with blood in three to 11 days. Nymphs can live without food for up to 584 days.



Figure 2. American dog tick.

Adults crawl about in search of dogs or large animals for a blood meal. Adults can live for up to two years without food. American dog tick adults and many other species can be found along roads, paths, and trails, on grass, and on other low vegetation in a "waiting position." As an animal passes by, the tick will grasp it firmly and soon start feeding on its host. The males remain on the host for an indefinite period of time alternately feeding and mating. The females feed, mate, become engorged, and then drop off to lay their eggs.

The American dog tick requires from three months to three years to complete a life cycle (Figure 3). It is typically an outdoor tick and is dependent on climatic and environmental conditions for its eggs to hatch.

Importance of Ticks

When feeding, ticks make a small hole in the skin, attach themselves with a modification of one of the mouthparts, which has teeth that curve backwards, and insert barbed, piercing mouthparts to remove blood.

The presence of ticks is annoying to dogs and humans. Heavy, continuous infestations on dogs cause irritation and loss of vitality. Pulling ticks off the host may leave a running wound, which may become infected because of their type of attachment.

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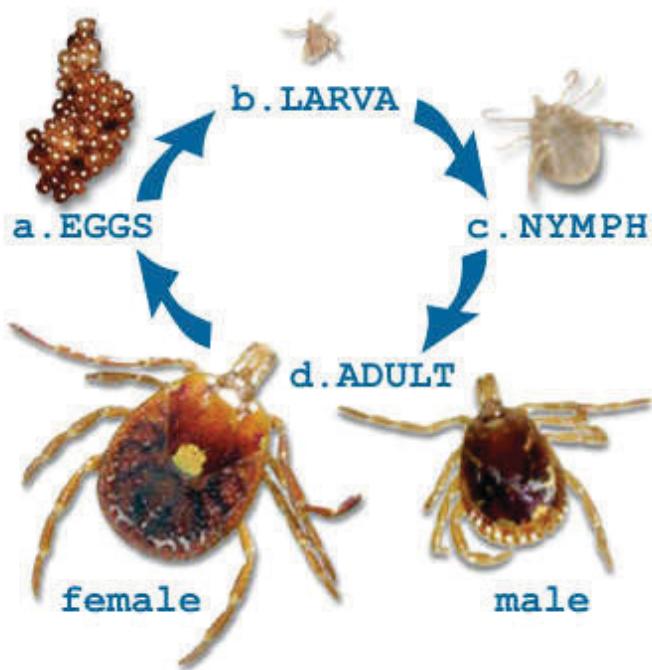


Figure 3. Tick life cycle.

Credits: Texas Department of Health Services.

The American dog tick may carry Rocky Mountain spotted fever, tularemia, and other diseases from animals to people. Dogs are not affected by these diseases, but people have become infected by picking ticks from dogs. People living in areas where these wood ticks occur should inspect themselves several times a day. Early removal is important since disease organisms are not transferred until the tick has fed for several hours.

The American dog tick is also known to cause paralysis in dogs and children when ticks attach at the base of the skull or along the spinal column. Paralysis is caused by a toxic secretion produced by the feeding tick. When the tick is removed, recovery is rapid — usually within eight hours. Sensitized animals may become paralyzed by tick attachment anywhere on the body.

Lyme disease is transmitted by ticks, but few cases have been reported in Florida. Most transmission occurs in the New England states, and the primary vector is the deer tick. The deer tick is not prevalent in Florida, but species that are close relatives and are capable of transmitting Lyme disease are common throughout the state. The American dog tick and the brown dog tick are not considered important vectors of Lyme disease. In cases of tick bites where Lyme disease is suspected, a physician should be contacted so that appropriate blood tests can be done for the patient.

Control

There are different strategies and levels of control one could follow to manage a tick infestation. The first and easiest one involves personal protection by taking the right measures to avoid ticks or mechanically remove them in the case of an attack. Ticks should be removed from pets and humans as soon as they are noticed. Ticks should be removed carefully and slowly. If the attached tick is broken, the mouthparts left in the skin may transmit disease or cause secondary infection. Ticks should be grasped with tweezers at the point where their mouthparts enter the skin and pulled straight out with firm pressure. A small amount of flesh should be seen attached to the mouthparts after the tick is removed.

People entering tick-infested areas should keep clothing buttoned, shirts inside trousers, and trousers inside boots. Do not sit on the ground or on logs in bushy areas. Keep brush cleared or burned along frequently traveled areas. Repellents will protect exposed skin or clothing. However, ticks will sometimes crawl over treated skin to untreated parts of the body. There are various products available for repelling ticks. Some products are registered to be applied on clothing, and some are available as skin repellents. When applying products on clothing you should be careful not to apply on skin and make sure the clothes are dried well before wearing. Generally, read carefully and follow the instructions on the product label to ensure safe and proper use of each product.

The second strategy involves landscape management to create an environment unsuitable for tick survival. Simple measures that could be taken to provide a tick-free environment are to keep the grass mowed, remove all the leaf litter, brush, and weeds at the edge of the lawn, trim tree branches and shrubs around the edge of the lawn, and manage pet activity by trying to keep cats and dogs out of the woods. The third available level of control is wildlife management through exclusion of hosts by fencing the habitat, or host-reduction management.

The last two levels of control involve host-targeted treatments and area-wide treatments. Various kinds of insecticidal products are available for this use and are labeled specifically for the control of ticks. Some of these pesticidal products are registered to treat pets directly and some are registered to treat the infested area. If a heavy tick infestation occurs, it is necessary to treat pets, home, and yard at the same time.

Established brown dog tick infestations of homes and yards are frequently difficult to control. Pets should be treated by using dusts, dips, or sprays. Rub dusts into the fur to the skin, being careful not to allow chemicals to get into the pet's eyes, nose, or mouth. Heavy infestations of ticks on the animal should be controlled by spraying or dipping. See your veterinarian for products and recommendations for direct pet treatment.

Insecticides should be applied inside the house carefully as light, spot treatments to areas where ticks are known to be hiding. These can be applied indoors as crack-and-crevice or surface treatments. For heavy infestations indoors, or when egg masses of ticks hatch, space sprays can be applied to give quick knockdown. Outdoors, infested areas should be treated by applying a broadcast treatment of insecticide to the landscape. Special effort should be given in treating areas frequented by pets. Applications at two- to four-week intervals may be necessary to eliminate the ticks. Pets should be kept off treated surfaces until dry. Apply products according to label directions. Do not apply these products directly to pets.