

Minnesota Ticks and Their Control

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There are thirteen known species of ticks in Minnesota. Of these, three kinds are commonly encountered by humans:

American Dog Tick (also called the **wood tick**) (figure 1). The adult female can be easily distinguished by the grayish markings on its back.

Deer Tick (figure 2). The adult female is smaller and brownish-orange with black legs and a black scutellum (the round area behind the head). This tick is a potential carrier of Lyme disease.

Brown Dog Tick (figure 3). The adult female is reddish-brown and also smaller than the American dog tick.



Figure 1. Adult female (left) and male American dog tick, approx. 10 times actual size.



Figure 2. Adult female (left) and male deer tick, approx. 10 times actual size.



Figure 3. Adult female (left) and male brown dog tick, approx. 10 times actual size.

The adult males of these three species differ in color and size compared with the females (figures 1,2,3). All three ticks are hard-bodied. Occasionally, soft-bodied ticks are encountered in the home (figure 4). They are associated with bats, birds, and poultry.

A generalized tick life cycle consists of egg, larva, nymph, and adult. The immature larva and nymph stages are very similar in form to the adult, but are smaller and often differ in color. A larva has six legs, while nymphs and adults have eight legs. Each tick stage feeds once before maturing to the next stage.

THE AMERICAN DOG TICK

American dog ticks are most commonly seen in the spring in open fields and the underbrush of hardwood forests. They feed on a wide variety of mammals, including white-footed mice, voles, chipmunks, raccoons, squirrels, dogs, cats, and people.

These ticks usually take two years to complete their life cycle. During the summer of the first year, the eggs hatch into larvae. These larvae do not feed until the following spring. After their blood meal, they turn into nymphs. After feeding a second time, these immature ticks develop into adults during late summer of the second year. The adults do not feed until the following spring, when the weather turns warm. Adults are common April through June but die after laying eggs, thus completing the life cycle.

The adult ticks attack humans and are found in grass, shrubs, brush, and other vegetation—particularly along animal trails or footpaths. When brushed by a moving body, they quickly let loose of the plant on which they are resting and attach to the animal or human.

There is a superstition that these ticks crawl up trees and drop down on humans and animals. Another superstition contends that ticks twist their mouthparts into the bite wound and have to be “unscrewed” to be removed. Neither is true.

Often people are completely surprised to find ticks attached to their body because the ticks can bite without being felt. If you are in a tick-infested area, carefully examine your body for ticks at night before retiring. The American dog tick may be carried into human living quarters but will not establish itself as a continuous pest there.

Dogs must be examined closely for ticks during the tick season. Examine them daily if they have had an opportunity to become infested. The female tick must feed on the dog for several days before she is full of blood and ready to drop off and lay eggs.

The American dog tick can be a carrier of several infections of humans including tularemia, or “rabbit fever,” and Rocky Mountain spotted fever. Fortunately, these diseases are uncommon in Minnesota.

THE DEER TICK

The primary hosts of deer ticks are white-footed mice and white-tailed deer, although other mammals, birds, and humans can be parasitized.

Deer ticks require at least two years to complete their life cycle. Larvae hatch in June or July and feed in August or September on white-footed mice or other small mammals. They spend the winter either as engorged larvae or as nymphs. The following year the nymphs take blood meals in spring or early summer, feeding on small mammals, birds, or humans. They usually turn into adults in late summer. Adults take blood meals in the fall or the following spring. They feed on white-tailed deer, dogs, horses, raccoons, or humans. Females lay eggs in May, completing the life cycle.

The deer tick is important because it is a potential carrier of Lyme disease. Lyme disease is most prevalent in Minnesota in the east central region. Most cases of Lyme disease occur in June and July, although cases have been reported in Minnesota from February through November.

A person bitten by a Lyme disease-infected tick may develop a red skin lesion. The lesion expands to form a large bright red ring with a clear center which often is hot to touch. Other symptoms at the onset may include malaise, fatigue, chills, fever, headache, myalgia (muscle pain), sore throat, nausea, or vomiting. Several days to a month later, arthritis can develop. Cardiac abnormalities and other maladies may also occur.

See a doctor immediately if you believe you have been bitten by a tick carrying Lyme disease. Correct identification is important in Lyme disease diagnosis. Have suspected deer ticks identified at either the University of Minnesota or the Minnesota Department of Health.

For more information see “Lyme Disease in Minnesota,” Minnesota Extension Service fact sheet AG-FS-3753.

THE BROWN DOG TICK

This tick has only the dog as its host. It cannot winter outdoors in Minnesota, but it may be found year-round on dogs in heated kennels and homes. Frequently, the family pet becomes infested with ticks when placed in a kennel, and carries the ticks home. The ticks then reproduce in the home. They may be found on carpeting, furniture, draperies, and walls and can become most annoying.

The female tick obtains a large blood meal from the dog and then drops off to seek a hiding place under baseboards, behind radiators, or in floor spaces. Here she may lay up to 3,000 brown eggs. Within three weeks to two months, the small "seed" ticks hatch and crawl around in search of a dog. They attach to the dog, fill up with blood in a few days, and again drop off and hide. Then they shed their skins, which permits them to grow and prepare for a second blood meal. A third blood meal is necessary to become an adult. After mating, the female lays a single batch of eggs, then dies.

SOFT-BODIED TICKS

Another tick that occasionally annoys humans in Minnesota is the bat tick—a type of soft-bodied tick that is brownish-gray or dirty gray in color. It is found in homes where bats roost in the upper floors of buildings. Other soft-bodied ticks are associated with birds and poultry. In the absence of their normal hosts, these ticks may wander into the home and bite humans. However, they cannot survive for long periods without their hosts because they are unable to reproduce on human blood.

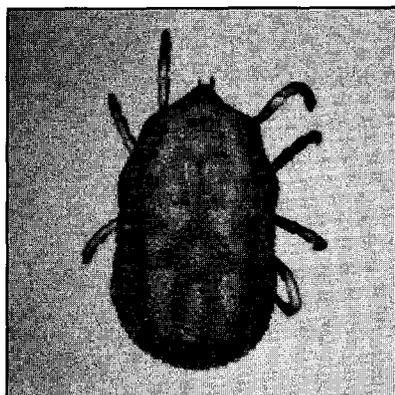


Figure 4. Adult bat tick, approx. 10 times actual size.

REMOVAL METHODS

Whenever you find a feeding tick attached to an animal or human (the host), grasp it very close to the skin of the host with tweezers or tissue paper. Then pull it off. You are most likely to remove the tick if you follow this procedure. Always treat the wound with a good germicidal agent such as iodine.

Methods using tape, alcohol, or vaseline to induce the tick to voluntarily pull its mouthparts are not effective; tweezers are the most sure removal method. Never destroy ticks by crushing them in the fingers; this practice has been known to cause infection.

PREVENTION AND CONTROL MEASURES

American Dog Tick and Deer Tick

1. Keep grass and vegetation short around the home, along paths, and in areas where people are apt to contact ticks.
2. If a lawn borders a tall, grassy field and ticks are moving from the field into the lawn, you may use a chemical barrier to temporarily stop this migration. First, mow the grassy area approximately four feet back from the lawn and then treat this mowed area with one of the following chemicals: carbaryl (Sevin), chlorpyrifos, diazinon, or fenvalerate [sometimes listed as cyano (3-phenoxyphenyl) methyl 4-chloro-alpha- (1-methylethyl) benzeneacetate].
3. When walking in known tick areas, wear protective clothing, such as long-sleeved shirts and long pants. For added protection, tuck pants inside socks. Stay on trails; avoid walking through grassy areas. Check yourself for ticks after returning from trips from known tick-infested areas. Save any suspected deer ticks for identification.
4. Use repellents for additional protection. Apply to socks, trouser cuffs and pant legs and parts of clothing that may brush tall grasses.



The repellents remain effective for several wearings if the garments are not washed.

Effective repellents include DEET (N, N-diethyl-m-toluamide) and Permanone (permethrin). DEET can be applied to clothing and skin while Permanone can be applied to clothing only. Be careful not to overapply repellents; apply only enough to cover the desired area.

Use a repellent on dogs that contains the active ingredient permethrin (for example, Permakill). Permethrin not only repels ticks on dogs but also kills them.

5. To kill ticks on dogs and cats, use one of the following approaches:

Dips commonly contain pyrethrins, permethrin or chlorpyrifos. Sponge or swab the pet with the insecticide until the pet is thoroughly wet to the skin. Allow to dry. Do not rinse or towel the pet.

Sprays contain one of the following insecticides: pyrethrins, permethrin, chlorpyrifos, or tetramethrin/sumithrin. Spray until damp to the skin; spray against the natural lay of the hair to better allow the insecticide to penetrate to the skin.

Dusts contain one of the following insecticides: carbaryl, carbaryl/rotenone, or carbaryl/pyrethrins. Rub the dust into the fur against the natural lay of the hair until it penetrates to the skin.

An insecticide containing pyrethrins is the least toxic treatment. However, pyrethrins only

control ticks they come in contact with; they have no lasting power to kill ticks that are encountered later.

Tick/flea collars are not suggested for use on pets; they work too slowly to effectively control ticks on animals.

Caution: Do not combine treatments; a pesticide overdose may occur.

Brown Dog Ticks and Soft-Bodied Ticks

Larval and adult ticks can crawl considerable distances. They can be found along door and window casings and even on curtains. Direct sprays into these hiding places, along baseboards, and on rugs, so that crawling ticks have to come in contact with the insecticide. Insecticides such as chlorpyrifos, permethrin, and tetramethrin, available in aerosol or liquid ready-to-use containers, provide good tick control in the home. However, do not apply them to carpets or rugs because damage may occur. Elimination and exclusion of the host from nests or roosts in and around the home is also necessary to control bat, bird, or poultry ticks. For more information, see "Bats," Minnesota Extension Service fact sheet NR-FS-1141

Caution: Read all insecticide and repellent label directions very carefully before buying and again before using to ensure proper use.

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