Ticks

Ticks have four stages in their life cycle: egg, larva, nymph and adult. Mating usually occurs while adult ticks are on the body of the host animal. The female then drops to the ground and deposits her eggs. Adult female hard ticks feed only once and lay one large batch of eggs, often containing as many as 10,000 or more. Some adult female soft ticks will feed several times and lay 20 to 50 eggs after each meal. depending on such conditions as temperature and humidity, larvae will hatch from the eggs in anywhere from two weeks to several months.

The first immature stage (larvae, which are many times called seed ticks) have only six legs. These larvae must find and attach themselves to a host in order to get a blood meal. After obtaining this blood meal they usually drop to the ground, shed their skin and emerge as 8-legged nymphs. Larvae of some ticks which feed only on one host remain on the host to molt. Because of the difficulty of finding a suitable host, larvae can withstand long periods without feeding.

Nymphs resemble the adult tick in that they have eight legs. They do not, however, have a genital opening. Like the larva, the nymph must be able to live without feeding for long periods of time until it finds a suitable host. After finding a host and feeding, the nymph molts and becomes an adult tick. Hard ticks have only one nymphal instar while soft ticks may have several. A few ticks, such as the cattle, *Boophilus annulatus,* have only one host and molt on it, leaving the host only to lay eggs.

Adult ticks may require several days of feeding before they are able to reproduce. Male hard ticks usually die soon after mating, and females die soon after laying their eggs. Adult soft ticks are generally longer-lived, and egg-laying is a periodic activity of the female.

Most ticks spend the bulk of their life on or near the ground, waiting for a suitable host animal. Since they cannot run, hop, fly or move quickly, ticks must climb onto an appropriate object such as tall grass or weeds or up onto fences and siding of buildings. It is from these advantageous positions that they wait for a suitable host to pass by. When they detect vibrations and chemical cues such as host odors or exhaled carbon dioxide, ticks will fall from their perch or stretch out (holding on to their perch with only 2 or 4 of their rear legs) and hope to snag or attach onto a passing host (e.g., a mammal with a fur coat or pants and socks worn by humans.) Ticks are also capable of detecting shadows cast by a passing host. These tick behaviors are important to understand and recognize in order to make thorough and effective applications of acaricides, pesticide dusts or sprays labeled for eliminating ticks and other arachnids. These behaviors also explain why ticks crawl up exterior or interior surfaces of homes and often lodge in cracks and crevices below shingles, clapboard siding, window molding, baseboards, etc. In these latter cases, you must understand this aspect of tick

behavior and carefully inspect and treat all these crack and crevices with a good insecticide dust.

Most ticks will feed on blood from a wide variety of animals, with only a few tick species feeding on but one kind of host. In some tick species the immature stages will feed on different hosts than do the adults. reptiles, amphibians, mammals and birds are all vertebrates which ticks may parasitize. Migratory song birds regularly spread ticks across wide regions of the United States as they move about. Certain ticks carry the causal organisms of such diseases as Rocky Mountain spotted fever, Lyme disease, typhus, rickettsial pox, relapsing fever, tularemia, Colorado tick fever and Texas cattle fever. Another health threat posed by certain ticks attacking humans and other animals involves a poorly understood condition called "tick paralysis." This occurs during the feeding process when the host is afflicted with a paralytic condition, which develops gradually and may result in death. Paralytic symptoms disappear rapidly upon removal of the tick and there seem to be no serious after effects. Most of the tick problems which you might encounter are in and around homes, and do not involve the disease-carrying species. Only those species likely to be encountered around homes or other structures are described in this article. their seasonal habitats.

Tick elimination is a combination of chemical and non-chemical control methods in and around your home, as well as **removing ticks from your dogs.** Chemical elimination of ticks includes insecticide sprays and insecticide dusts. This article will detail both because both are important if you wish to rid your home and property of ticks. The more you understand this stubborn pest, the easier it will be in eliminating it. You might want to take time to read Tick Biology and Habits if you have not already done so. In the tick biology area, there are links leading to description and habits of **Brown Dog Ticks**, **American Dog Tick**, **soft ticks** and **hard ticks**.

Non-chemical Control of Ticks

Non-chemical tick control procedures should be implemented along with chemical control methods. These non-chemical control measures will greatly reduce tick problems. Keeping grass and weeds cut short in tick infested areas increases tick desiccation during hot weather, discourages alternative hosts and lessens the amount of plant material which may need a pesticide application to kill ticks. Removal of birds' nests in and around the property will reduce tick numbers, especially of soft ticks. Removal of clutter and debris on the property will also discourage rodent populations. You should also remove nesting material left by rodents. Screening and sealing entry points (used by squirrels, raccoons, chipmunks, rodents, bats, etc.) to houses and other structures will also greatly reduce tick problems in and around the home. Sealing cracks and crevices where ticks can hide, both inside and on the exterior of your home, will aid in tick management.

Habitat change is very important in tick control. Since ticks cannot hop or fly to get to their host, they must climb onto an object (such as tall vegetation, fences, etc.) and wait for a potential host to travel close by. Detecting shadows, vibrations, exhaled carbon dioxide or other host odors, the tick then drops from their tall perch to attach themselves to their host. Tall vegetation not only gives ticks easier access to their next passing host but also prevents insecticide applications from giving you the thorough coverage that you need. Pesticides that just "sit" on tall grasses, weeds and other vegetation are easily destroyed by sunlight. Properties and fence rows that are overgrown with weeds and tall grass offer excellent harborage for tick carrying rodents and reptiles; vegetation that grows too tall will naturally go to seed, attracting birds, rats, mice and other creatures that feed on seed. In summary, tall vegetation will severely inhibit your tick control!

Ticks on Dogs

In many cases, dogs (one of the main targets of ticks) will pick up ticks while roaming through wooded or overgrown areas, and also when taken for walks through parks. During the peak of tick season, you should limit your dog's access to these areas. The only tick collar that we have seen work consistently is the Preventic Tick Collar for Dogs. You could also use Frontline Topspot as a topical treatment or spray your dog with a solution made from Permethrin-10 if your dog is exposed to areas suspected to be tick infested. Regular examination and grooming of pets (especially dogs) and frequent cleaning of their bedding is also strongly recommended. Infested pet bedding should be carefully washed or disposed of. The area around the pet bed should be carefully and thoroughly treated (see insecticide treatment) with an approved dust or spray. It has to be emphasized that the dog must be treated if the infestation is to be eliminated.

Products Used In Tick Elimination

Permethrin Pro is the best spray to use for outdoor and indoor tick elimination. Permethrin Pro cannot be shipped to MA, NY, NJ, CT, VT, AK, DC. This product should be used for tick prevention outdoors during tick season. Many people use Permethrin Pro for all of their pest control needs because it is safe, economical, low-odor, water-safe for fabrics and effective against all household pests, when label instructions are followed. Insecticide dusts are also needed for indoor ticks.

Outdoor Tick Control

Outdoors, special attention should be paid to lawns, shrubbery and crawl spaces under buildings of any size. These areas should be thoroughly treated with Permethrin Pro to kill ticks and to prevent infestations of fleas, ticks, ants and other pests. Apply Permethrin Pro outdoors with a hose-end sprayer only -- using a pump sprayer will not work! We have best results with the Gilmour Dial

Sprayer**.** Treat all tick habitats, spraying shrubbery up to a height of 2 to 3 feet. If at all possible, mow grass and weeds on any vacant lot frequented by you, your pets and any other creature (rats, mice, raccoons, birds, reptiles) that can come into contact with your family. These areas should also be treated with Permethrin Pro. The recommended rate for killing outdoor ticks is 1 ounce of Permethrin Pro per 1,000 square feet of lawn. For prevention, 1 ounce of Permethrin Pro will cover 2,000 square feet. Permethrin Pro cannot be shipped to MA, NY, NJ, CT, VT, AK, DC.

Because of a tick's ability to detect and avoid pesticides, you must begin your pesticide application at the exterior of your home (or other structures), then work out and away from the house. This will help prevent "flushing" or "running" ticks up and into your home from outdoors. Keep pets and children off of any treated surfaces until dry. Permethrin Pro is one of the safest (and most effective) products on the professional market, but good safety practices are always smart -- read and follow all label instructions.

Kill Ticks Indoors With Drione and Permethrin Pro

All tick life stages can be found in cracks and crevices in the infested home. Spray all baseboards, furniture, flooring beneath furniture and flooring adjacent to walls with Permethrin Pro. Permethrin Pro cannot be shipped to MA, NY, NJ, CT, VT, AK, DC. Permethrin Pro is a low odor product which is water-safe for fabrics. This means that Permethrin Pro will not harm your furniture, tile, hardwood floors, throw rugs or carpet, if water will not harm the same materials. Pay close attention to areas frequented by pets. After your Permethrin Pro application has dried, apply Drione Dust to all cracks and crevices, edges of carpets, under throw rugs, behind baseboards, behind door moldings and under and on pet bedding. When used as directed, Drione Dust and Permethrin Pro are safe to use in homes where there are children and pets. Drione Dust contains silica gel, which has a desiccating (or drying) action on ticks and other pests. Be prepared to make second or third applications of your indoor tick control products. Ticks can go without feeding for such long periods (during which time they stay concealed), they often do not contact treated surfaces before the application wears off. This is why many people get discouraged while trying to manage an indoor tick infestation.

Tick Control Summary:

Treat outdoors where your family or dog might come into contact with ticks. Treat all areas indoors (where ticks might come into contact) with Permethrin Pro. Keep pets and children off all treated areas until dry. After pesticide application has thoroughly dried, apply Drione Dust to cracks, crevices, hiding places as well as under and in pet beds. Repeat spray and/or dust applications in 7 - 10 days as needed. Ticks must be removed from dogs to obtain control --

even outdoor only dogs which family members come in contact with on a daily basis.

- Treat outdoors with Permethrin Pro, using a hose-end sprayer
- Treat indoors with Permethrin Pro and Drione Dust
- Remove ticks from dogs and their bedding
- Treat dog with Frontline Plus for tick prevention if your pet frequents areas suspected to contain ticks.

Frontline flea treatment contains Fipronil. It remains effective even after bathing or swimming. Frontline Plus kills most fleas before they bite, which is great for pets suffering from flea allergies. Frontline also kills ticks. Applied between the shoulder blades, Frontline kills fleas and ticks for 30 days or more. Safe to use on puppies at ten weeks and kittens at 12 weeks of age, when used as directed.

Fipronil, the powerful active ingredient in Frontline flea treatment, collects naturally in the hair follicles and oil-producing glands of the skin, where it remains protected from removal by shampooing or swimming. Then it continually reapplies itself to the hair, providing long lasting control for a month or more.

Frontline flea treatment is packaged with 3 separate applications per pack, a three month supply for one pet.