

External Parasites

Like the intestinal parasites, ectoparasites live at the expense of their host. External parasites live on the outside of the body. Examples are fleas and ticks, which plague both dogs and cats. Within the past decade, technologically advanced flea products for dogs and cats have significantly reshaped the way veterinarians and pet owners approach common ectoparasites. Today's flea products have set new performance standards, including broader-spectrum activity, longer duration of protection (even after water immersion or bathing), and pet-friendly application enhancements. However, even with these major strides, these pests remain a real threat to the health and well being of our pets. When we look at flea and tick control, it is important to take a preventive approach.

Fleas

Fleas are bloodsucking parasites that live on the skin's surface. Fleas can make life miserable for a pet. Not only do they bite an animal, but they also run around on its dry, sensitive skin. They are not limited to attacking pets, however. They bite humans as well. If a flea has ever bitten you, you know that it causes an uncomfortable reactive condition — it itches! Many animals are allergic to the flea saliva that is injected with each bite. This allergic reaction makes the itching worse and some pets will develop serious skin infections. Fleas can also transmit disease. Animals that become severely infested with fleas can develop flea anemia. Pale gums and weakness are the main signs of anemia. This is more common in puppies, cats, and smaller dogs because of their size. However it can also occur in large dogs.

Fleas can be hard to find — many animals have thick fur, and fleas are small and run quickly when you are looking for them. Finding fleas, flea eggs, or flea feces (digested blood, which when dry looks like black pepper) on an animal is proof of flea infestation. Other signs of flea infestation include tapeworm infection (white segments about the size of a piece of white rice found crawling on the ground or on the hair near a pet's anus). Even though you may not be able to see a flea, flea dirt indicates that fleas are present. Generally, only adult fleas are found on pets. After ingesting blood from an animal, female fleas lay eggs inside the house in cracks and crevices or outside on damp ground. Over her life span, a female flea may lay several hundred eggs. Immature fleas called larvae hatch within two weeks. Larvae live in cracks and crevices and feed on organic material, including tapeworm eggs. Under warm, moist conditions, the entire life cycle may occur in as little as 16 days, or it may take as long as a year under unfavorable condition. This aspect of the life cycle explains how fleas survive from year to year in harsh climate.

In general a flea population is made up of approximately 50% eggs, 30% larvae, 15% pupae, and only 5% biting adults. Completion of the life cycle from egg to adult varies from 2 weeks to 2 months. Adult fleas cannot survive or lay eggs without a blood meal, but once it is feeding on a dog or cat, the female can lay 20 to 40 eggs per day and up to 2,000 in a lifetime. If groomed from the host, egg production ceases and fleas die within 24 to 48 hours. Newly emerged previously unfed adult fleas, however, can live 1 to 2 weeks if a blood meal is not obtained. Warm temperatures and high humidity speed up the life cycle of the flea. The optimum temperature range for survival is 70° to 85° at an optimum humidity of 80%. The life cycle of the flea varies considerably in length.

Life Cycle

1. Adult flea. *
2. Adult flea lays eggs.
3. Eggs develop into larval stages. *
4. Larvae become pupae with a cocoon (nothing kills the pupae at this stage).
5. Pupae develop into adult fleas.

* These stages are susceptible to insecticides

Treatment

Effective flea control involves two steps:

1. Eliminating fleas from the pet and
2. Eliminating fleas from the environment

Severe flea infestations are best controlled by simultaneously treating fleas on the animal, in the house, and in the pet's outdoor environment on a regular basis.

Frequent vacuuming can help remove flea eggs and larvae from carpets and furniture. Vacuum bags should be disposed of immediately. Steam cleaning carpets is very effective, too. The pet's bedding should be washed and thoroughly dried. Insecticides can then be used to complete the in-home clean up. Insecticides selected for use in the home should combine instant and residual flea-killing power. Foggers are popular and effective; however, their mist does not penetrate underneath furniture, behind baseboards, and in closets. The area must be sprayed. Instead of being treated with a fogger, the entire house may be sprayed with appropriate insecticides.

Flea control outside the home should be aimed at areas where the pet spends most of its time. Grass and weeds should be mowed and the clippings removed. Within reason, areas where the pet spends its time under porches, in its

doghouse, in the yard near the home, etc) should be sprayed or dusted with insecticides designed to kill fleas. Hand-held sprayers, garden hose attachments, and fertilizer spreaders are appropriate for insecticide application. Because of the flea's life cycle, insecticides used on the pet and on the premises may need to be applied more than once, be sure to follow package recommendations. There are a variety of flea products (insecticidal dips, shampoos, sprays, and powders) available at most retail stores. However, many of these products have been around for many years and are not without risk (e.g., marginally effective, short acting, some can be fatal). For a variety of reasons, including cost, some owners chose to use retail products without a complete understanding of the relative risks because they simply do not read the label. One of the most significant misuses is that of permethrin dog-only products on cats. Permethrin use on cats can be lethal.

The flea products available here

Advantage: kills fleas, applied monthly

Revolution: prevents heartworms, fleas, intestinal parasites, ear/skin mites, moderate action on ticks, applied monthly

Frontline Topical/Spray: Kills fleas, ticks, applied monthly

Sentinel: Prevents heartworms, sterilizes fleas (prevents breeding)

Capstar: Kills fleas currently on pet up to 24 hours (a monthly preventative will be also be needed for control)

These products kill fleas rapidly, provide long-lasting action, and are safe. With the development of these new products (i.e., Advantage, Frontline, Sentinel, Capstar), flea control has become more effective and simple. As long as these products are used appropriately, the pets will act as the vector to "clean up" the environment. (Each pet must be treated monthly for complete control.)

It is critical that any product be applied in accordance with label directions to optimize performance and help prevent adverse reactions. In the event that a pet has a reaction, owners should be strongly encouraged to have the pet examined. It is important that the original packaging be retained so that product identification can be made.

Prevention Is The Key...As someone once said, the best defense is a good offense, and this is true of flea control.

Ticks

A tick is a small insect that buries its head in an animal's skin and ingests a blood meal often transmitting disease. Damage from ticks includes blood loss from severe infestation and skin irritation from bites. Ticks can be removed by hand (using tweezers) or through the use of insecticides.

Adult ticks lay eggs on the ground in sheltered spots such as in sheds, in woodpiles, under rocks, and in the crevices of walls. Immature ticks hatch from these eggs. These ticks then infest plants such as grass and shrubs as they wait for a suitable host, such as a rodent, dog, or cat. After feeding on the host for up to 10 days, immature ticks fall off the animal to complete the next phase of their life cycle. Before laying eggs, most species of ticks will feed on two more host animals. A life cycle is usually completed in one year, but may take up to 3 years. Unfortunately, ticks can survive long periods of cold weather. Most ticks require a moist environment for survival. But one species, the brown dog tick, can survive in areas of low moisture. This adaptation makes the brown dog tick more difficult to eliminate because it can reproduce in houses and kennels. Ticks are indiscriminate parasites; they may feed on dogs, cat, rabbits, deer, people, and other hosts.

Ticks may appear on any animal that is exposed to tick-infested vegetation. If the infestation is uncomplicated, its only sign may be ticks attached to the animal's skin. Ticks are usually found on the ears, head, and neck, but may be found on any part of the body. Ticks may be found in various stages of engorgement, so they may be small and brown, large and whitish brown, or any size and color in between. The skin where a tick is attached may be reddened and inflamed. Ticks can carry many microorganisms from one animal to another. As a result, tick infestation may be accompanied by or precede disorders such as Rocky Mountain Spotted Fever or Lyme disease (a disorder characterized by joint and musculoskeletal abnormalities). Dogs are also at risk for Ehrlichia (which can be fatal). Like fleas, ticks can cause blood loss and anemia. It is not uncommon for animals to need a blood transfusion because of tick anemia. There are several different kinds of ticks that range in size from small (no bigger than a pinpoint) to large. All kinds are potentially harmful, and pets should be treated at the first sign of infestation.

Life Cycle

1. Adult ticks attach to pets.
2. Ticks lay eggs.
3. In 30 days, the eggs hatch into larvae. *
4. The larvae develop into adult ticks. *

*These stages are treatable with insecticides.

The life cycle of the tick can be as short as two months or as long as two years. High temperatures and humidity speed up the life cycle of the tick.

Treatment

As with fleas, to control and conquer tick infestation, the parasite must be eliminated from the host (pet) and from the environment. Frontline or Revolution is appropriate for mild to moderate tick problems. A Preventic Collar (ticks only) may also be necessary. The important thing to remember about ticks is the thirty-day incubation period of the eggs. The environment must be controlled for thirty days to break the life cycle of the tick. Insecticides kill only adult ticks, not their eggs. Therefore, if eggs have just been laid, treatment will need to continue until the eggs have hatched and the insecticide can control the infestation. Clients are advised to treat the pet, treat the house and treat the yard with insecticide, giving an especially thorough soaking to wood piles, sides of buildings, and trunks of trees. Eliminating ticks from homes and kennels may require spraying the premises with an insecticide designed to kill ticks. Repeated treatments are often necessary.

Prevention Is The Key

Early treatment of the environment, especially areas prone to tick infestation, will help prevent problems at the height of tick season. Clients should also examine their dogs for ticks regularly. Be sure to look inside the dog's ears, under its legs, and between its toes — all favorite hiding places for ticks. Pets should be treated for ticks at the first sign of any problem.