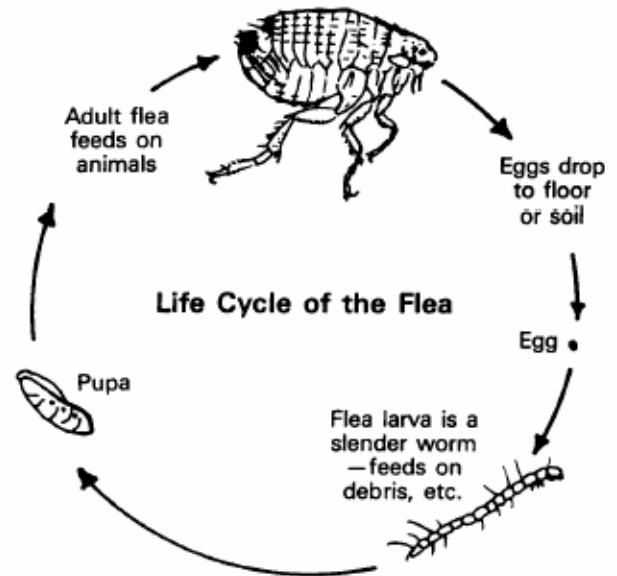


Providing Leadership in Environmental Entomology

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FLEA CONTROL

Pets benefit us in many ways, but they are also a breeding site for uninvited fleas. Fleas thrive during our warm, muggy, South Carolina summers. If you allow your pet access to both the house and the yard, you should be resigned to the fact that fleas will probably be a problem. Eradicating fleas from South Carolina is only wishful thinking but flea control is possible. The secret lies in understanding the flea's life cycle and using an integrated control program.



Life Cycle

Adult fleas are wingless, brown to black insects about 1/16 inch long. Fleas mate on the pet, and both sexes bite. After each blood-meal, the female usually lays four to eight eggs. Over her lifetime, a female may lay more than 400 eggs. Flea eggs are smooth, whitish, and oval and readily fall to the floor or ground from the pet.

Depending on temperature and humidity, flea eggs hatch in one to ten days. Newly hatched fleas are minute, slender, whitish, wormlike larvae. The larvae avoid light, burrowing into carpets, cracks, or, if outdoors, soil. There the larvae feed on small particles of animal or plant debris and adult flea feces until they achieve full growth. Larval development may require as little as five days but may be extended for up to three weeks, depending on food and environmental conditions.

Next, the larvae spin silken cocoons. These are hard to see because fleas incorporate nearby debris into the cocoon. In the cocoon, the flea larva develops into a pupa and then an adult. The cocoon protects the developing flea from insecticides. Fleas can stay in the cocoon for periods ranging from less than a week to more than four months.

Adult fleas emerge from their cocoons after a physical disturbance or in the presence of warm-blooded animals. This is why vacationers often return to find their homes overrun by fleas. The adult fleas remain in their cocoons when the house is quiet, emerging hungrily all at once when the family returns. The flea's ability to stay in the protective cocoon so long is one of the reasons an integrated control program is needed.

Control. A control program should be followed in the order outlined below. If possible, this four-step program should be completed in one day.

1. Treat the pet. Check with a veterinarian for the treatment that is best for your animal. Combing your pet with a comb designed to collect fleas can remove many of these parasites from your animal. In addition, a 10-minute, warm soapy bath will kill most of the fleas on the animal. If just soap and water is not working, you can try pet shampoos containing insecticides. Insecticidal shampoos do not provide long term control.

Insecticide sprays are another control alternative. Some sprays for pets contain a flea-like hormone called methoprene. Methoprene disrupts the breeding cycle of adult fleas feeding on an animal. Other new,

effective pet treatment products include spot applications (using imidacloprid or fipronil) or oral pills (using lufenuron). These new products are for long term treatments and are available from veterinarians.

2. Vacuum the house. Before any insecticides are sprayed, vacuum the floors, carpet, furniture, and any other areas to which the pet has access. Wash pet bedding. Light traps can also be use to catch adult fleas and evaluate areas where flea numbers are high. These traps are available at many discount stores.

When vacuuming, use a heavy-duty household or commercial vacuum cleaner. In some situations, you may want to have the carpets professionally cleaned. Vacuuming carpets with a beater-bar brush can remove a quarter of the flea larvae and more than half of the flea eggs. Vacuuming also stimulates the fleas to leave their protective cocoons. It also helps to straighten carpet fibers, enabling insecticides to penetrate more effectively. After cleaning, take the vacuum outside and remove and discard the bag because fleas can sometimes crawl out of the vacuum.

3. Treat indoors. With people and pets out of the house and vacuuming completed, an indoor insecticide application can be made. Many products are available. Flea bombs are perhaps the easiest method, but they are not very effective or efficient because they release insecticide all over the room, not just where the fleas are located.

Spot treatments with sprays directed to the floor areas are usually more effective. Methoprene (Precor) can be applied at the same time as other sprays for long-term (six months) larval control as well.

4. Treat outdoors. The outdoor treatment is the final step. Just as you did inside the house, make outdoor insecticide applications to areas where the pet spends most of its time and where it enters the house. Remove pet watering and food containers first. Also, mow any grass and collect the clippings before treating. In areas where there is excessive debris or litter, you may want to increase the volume of water in a spray without increasing the amount of insecticide. This can help get the insecticide into the debris where fleas are hiding. If you use this method, be very careful not to contaminate nontarget sites.

When treating, make the application to the areas pets frequent. Spot-treat carpets, floor edges and cracks, and under furniture near pet areas. It is not necessary to treat entire carpet or all floor areas. If your pet has access to furniture, treat under the cushions, not on top. After treatment, do not touch

treated areas until they are completely dry. Many insecticides are labeled for use by homeowners. Products can be purchased at hardware, grocery and discount stores. Remember, always check the insecticide label for special warnings and use the product **ONLY** according to the directions.

It may be necessary to repeat steps 2-4 after three weeks before good control is obtained. Fleas in cocoons are very difficult to control with insecticides, and several weeks are usually required for all individuals to complete development and emerge as adults. The hopping activity of the adult allows the flea to come in contact with the insecticides.

Patience is required, but, if all control attempts fail, you may want to call a South Carolina licensed pest control professional. These experienced professionals have access to better application equipment than homeowners and restricted-use insecticides to help combat fleas.

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Eiis/HS-2 (New 11/1997) (Revised 01/2001).