

MAINTENANCE GUIDEBOOK VII TERMITE, INSECT, AND RODENT CONTROL

CHAPTER SIX - FLEAS

SECTION A CHARACTERISTICS AND RECOGNITION

Fleas are common indoor problems throughout the United States, except in very dry areas. Heat and humidity, such as exist during summertime, provide optimum conditions for flea growth. The most typical species, and the one used here as a model for flea control, is the cat flea. It feeds on a number of hosts, including cats, dogs, and rodents, and is found in a wide range of environmental conditions.

This flea prefers animal hosts, but also affects people. For instance, taking a host animal out of the building removes the fleas' main host, starving them. While the main host is gone, however, flea larvae continue to develop by feeding on dried blood in carpet, and pupae complete their life cycles and are ready to emerge from cocoons. After an absence of a host, large numbers of emerged and emerging adult fleas are ready to feed on any warm-blooded host, including human beings.

The adult cat flea (Fig. 6-1) is about 1/8-inch long, has sucking mouthparts, and exclusively feeds on a host's blood. A flea body can withstand substantial pressures. Egg production in the female begins two days after her first blood meal and peaks about the fourth day. She produces from 150 to 400 round, light-colored eggs the size of a fine-point pen tip, and lays about 20 of them per day for up to three weeks. Since about half of the fleas on a pet are female, up to 500 flea eggs per day can drop onto rugs, carpets, bedding, and other pet resting areas in a residence.

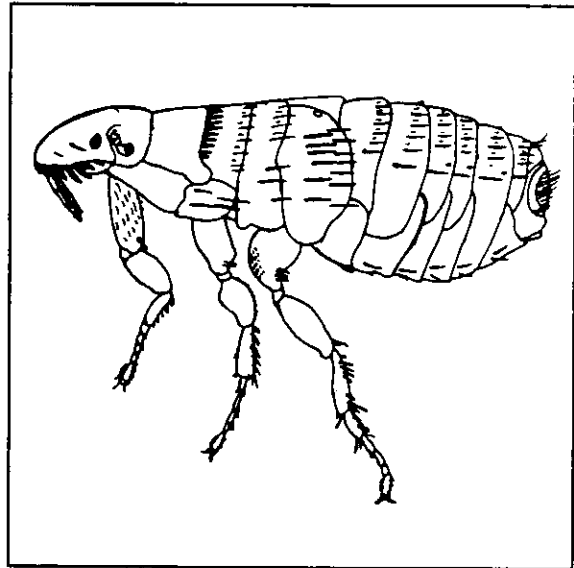


Figure 6-1

Larvae hatch in two to fourteen days and move to the base of carpet or other fibers seeking food. Cat-flea larvae are 1/8-inch long, have chewing mouthparts, and feed on adult flea feces (which are partly digested blood), and organic debris. They need a source of dried-blood or blood-containing materials to complete the three necessary molts of larval development. Cat flea larvae are not very mobile. They are usually either in the pet's resting areas or protected spots. They shun heat, sunlight, and decreased humidity but are attracted to moisture. They curl around carpet fibers if they are disturbed and are nearly impossible to remove by vacuuming (they are covered with backward-pointing bristles and spines).

When molts are completed, larvae spin a sticky silken cocoon within the carpet fibers and pupate (a protected, quiescent stage during which larval fleas change to adults). When pupal development is complete, the new adults may remain within the cocoon until some stimulus triggers their emergence—proximity of an animal, carbon dioxide exhaled by a host, vibrations, or increased temperature and humidity. Most adult fleas emerge from pupal cocoons in ten to fourteen days. However, adult fleas can remain in the pupal-stage cocoon, inactive but ready to emerge, for as long as a year while waiting for the proper stimulus.

Flea larvae and pupae are mostly found in undisturbed areas which provide optimum humidity and temperature, are regularly visited by pets, and contain larval food. Fleas may be imported into living rooms by squirrels entering the house through chimneys, and via pets.

SECTION B HAZARDS OF INFESTATION

Typical flea bites show as a central, small red spot where flea mandibles penetrated the skin, surrounded by a red halo. Some animals may be allergic to flea bites, which may be seen as dermatitis, hair loss, excessive scratching, and skin inflammation.

SECTION C INSPECTION AND MONITORING

1. INSPECTION

Conduct a close inspection of the living unit to find "hot spot" areas with flea development.

- Look under furniture and in rugs or carpets for granules resembling salt and pepper, which indicate flea presence. These salt-and-pepper granules are made up of flea feces, empty egg cases, shed larval skins, and dried blood.
- Collect fleas and have them identified. Fleas can be trapped in a number of ways:
 - Collect fleas that land on an inspector's white pants after a one-minute walk-through of flea-infested areas. Collection of five or more fleas might indicate infestation.
 - Make a night-time light trap by hanging an illuminated 25-watt light bulb a few inches over a shallow pan of water placed on the floor, with a few drops of detergent added. Be sure the light bulb or wiring cannot come into contact with the water.
 - Collect fleas from pet bedding, or by combing infected animals with a flea comb; place fleas in a plastic bag and kill them by freezing or heating (to 120 degrees F).
 - Use commercial flea traps available from pet-supply dealers.
- Watch for animals going into yards or under dwellings. Look for bird or mammal nests under the structure and in unscreened chimneys and pipes. (Opossums carry large populations of cat fleas,

and may infest areas, such as yards, they travel through.)

SECTION D CONTROLS

1. MAJOR MISTAKES IN FLEA-CONTROL PROGRAMS

The effectiveness of flea-control programs can be diminished by failure to:

- Identify fleas and find the source of the problem;
- Exclude or treat animals bringing fleas into the dwelling;
- Clean indoor areas where fleas find harborage, and to instruct residents on cleaning methods;
- Treat outdoor areas where fleas live;
- Gain resident cooperation or inform them of what to expect after treatment—because of the flea's life cycle, a few adult fleas will be seen after pesticide treatments;
- Use proper pesticide application techniques or rates.

2. PHYSICAL, MECHANICAL, AND CULTURAL CONTROLS

a. Sanitation

- Once or twice a day for a month, thoroughly vacuum in a criss-cross pattern all flea "hot spots" and other areas used by animals (rugs, sofas, drapes) with a strong vacuum cleaner. Vacuuming can remove a high percentage of flea larvae and eggs. Good vacuuming can keep a flea population low. Removal of flea larvae from carpeting is the most important action in reducing an infestation; allowing pets to remain flea-infested, however, will minimize the success of treatment. Carefully dispose of sealed vacuum bags containing live fleas.
- Remove clutter, boxes, and other items stored on the floor to limit flea harborage. Store items on shelves or off the floor.
- Frequently shampoo or steam-clean carpets; remove rugs from public use areas. Wash floors with detergent before, but not after, application of residual pesticides.
- Wash pet bedding and clean the pet kennel box at least once a week to destroy flea eggs and larvae and to remove dried blood that fleas use for food; destroy all old pet bedding.
- If possible, lower the relative humidity in the house to less than 50 percent.
- Keep pets outdoors; establish grooming, washing, and feeding procedures that keep pets free of fleas. Limit a pet's contact with other animals.
- Remove vegetation near the structure that may provide rodent harborage.

b. Exclusion

- Screen vents, crawl spaces, and chimneys to keep animals out from under structures, outbuildings, or chimneys.
- Assure that pets brought into dwellings by other people are not infested with fleas.

3. OTHER CONTROLS

Fleas tend to prey on sick or poorly nourished animals; healthy dogs and cats can usually manage flea problems. Feed pets nutritious, well-rounded diets of whole grains, vegetables, and lean meats rather than commercial pet food.

Fleas die in dry or moist air temperatures above 110 degrees F.

Ultrasonic devices have not been shown to be effective for flea control.

4. CHEMICAL CONTROLS

Dusting cats with residual pesticide chemicals may cause them to ingest poison from their fur when grooming. Pets may also come into contact with grass or rugs that have been treated for fleas, become chemically over-dosed, and suffer adverse reactions. Excess exposure to pesticides can adversely affect not only pets but also people who handle them.

Chemicals alone will not eliminate flea problems. The control should be combined with physical and mechanical means. The following are additional items for flea control:

- Apply pesticides indoors after the dwelling has been thoroughly vacuumed.
- If pesticides are used on pets such as dogs, wear protective equipment such as gloves, face mask, and goggles, and ensure adequate ventilation.
- Do not allow children to contact surfaces or pets treated with residual pesticides before they dry.
- Dwellings and pets should be treated for fleas at the same time.
- Insect-growth regulators offer best results when used at least a month before spring flea activity begins. Follow label directions.
- Commercial flea soaps for pets are also effective against; follow the label directions.
- Flea collars impregnated with residual chemical toxicants are the least effective for flea control and may irritate animals.

END OF CHAPTER SIX