



CAES

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CAT FLEA (*Ctenocephalides felis* (Bouche))

Fleas are small wingless insects. There are approximately 2,000 species worldwide. As external parasites of birds and mammals, they require blood meals from their hosts. The most common species in Connecticut is the cat flea, *Ctenocephalides felis* (Fig. 1).



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Fig. 1: Cat flea

A squirrel flea known as *Orchopeas howardi* (Baker) is another occasional pest in the home. Fleas cause discomfort by biting, and some species can transmit disease organisms.

Adult fleas are found on the host, hiding in animal fur or bird feathers. Larvae live off the host in protected microhabitats, such as bird nests, animal dens, or regularly used resting sites. In the home they are found in pet beds, crates, and wherever household pets frequently sit or rest. Resting places and travel routes of wildlife and feral animals can

also be a source for fleas that ultimately show up in the home.

Description:

Adult: Adult fleas are wingless and flattened laterally. Their coloration ranges from polished reddish brown to black. Numerous backward pointing bristles help the insect move forward through the host's fur or feathers. Fleas are usually 1/20th to 1/5th inch long and have mouthparts for piercing and sucking (Fig. 2). Antennae are short and inserted into grooves behind inconspicuous eyes. Large hind legs are designed for jumping.



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Fig. 2: Cat flea head

Egg : The oval eggs are dry, creamy white, and 1/40th inch.

Larva: Larvae have no legs. They move by using setal rings and abdominal hooks located on the body segments. Their normal clear white coloration turns reddish after vertebrate blood (in the adult flea frass) is partially digested. The head capsule is well developed with chewing mouthparts and no eyes. Mature larvae are about twice as long as adult fleas (up to 2/5th inch) (Fig. 3).

Pupae: Pupae are inside cocoons comprised of silk and collected debris for camouflage.

Biology and Hosts:



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Fig. 3: Cat flea larva

Hosts: The known mammalian hosts for cat fleas in Connecticut include raccoons, opossums, weasels, feral and domestic dogs and cats, skunks, domestic rabbits, red squirrels, gray foxes, gray squirrels, calves, humans, brown rats, short-tailed shrews, townsend chipmunks, coyotes, and goats.

Biology: The most common flea of modern western cosmopolitan areas is the cat flea, *Ctenocephalides felis* (Bouche). It is currently the most frequently used flea species in scientific study.

The cat flea *C. felis* is believed to have originated in Africa and is now worldwide in distribution. Adults start seeking a blood meal 48 hours after emerging from the cocoon. The adult flea usually lives for at least two to three weeks, depending on the grooming habits of the host. After mating, the

female lays dry eggs in the host's fur. The eggs fall into the resting area underneath the animal and hatch after an incubation period of up to 21 days. Eggs will not hatch on the host.

Larvae ingest adult flea frass (feces), which contains 90% of the protein from the original blood meal. Larvae go through 3 instars (molts), before spinning a cocoon for pupation. Depending on temperature, availability of food, and humidity, the larval development can range from 1-2 weeks to several months.

The duration of the cocoon/pupal stage, under favorable conditions can be 4-14 days. In unfavorable conditions, pre-emergent adults will remain within the cocoon for several months.

Based on recent research, it has been observed that some cats are able to support more fleas than others. Grooming ability and physiology play an important role. Younger cats have more fleas than older animals. This might be due to acquired host resistance or better grooming habits of the older cats. An actively grooming cat can reduce the adult flea population by 50%.

Successful direct transfer from host to host by fleas is low. Female fleas tend to remain with their host. Males are more likely to cross directly between animals. The greatest number of flea transfers takes place in resting sites or dens. One or more life stages of the cat flea can live in a home for several weeks, even when pets are not present.

The public has been concerned about whether cat fleas can live on humans. In laboratory conditions, fleas were fed human blood to see if they would produce eggs. When female fleas were allowed to feed for 12 consecutive hours, viable eggs were produced. Females

that were allowed only to feed for a few minutes on human blood were unable to produce viable eggs.

Control:

Fleas are more active during the summer than during the winter because higher temperatures and humidity favor development. Optimal conditions are 80.6°F-89.6°F (27°C-32°C) with 75-92% relative humidity.

Standard means for control on the pet: Restrict pet access to hard-to-reach places, such as crawl spaces, around the home. It is suggested that the pet be combed and bathed in EPA-approved flea and tick shampoos regularly. Flea collars, topical, and oral flea treatments are also available.

Standard means of non-chemical control off the pet: If the pet is sleeping with owner, stop this activity and confine pet to a designated area in the home away from bedroom. Wash pet bedding and vacuum the area regularly (especially along cracks and crevices). Good hygiene is the safest, fastest, and a very effective method for controlling fleas. Steam clean carpets and upholstery if necessary.

Chemical control: Using chemicals to treat indoor areas for fleas is not recommended due to the potential exposure risk to pets and children. “Bug” or “flea” bombs are insufficient at reaching cracks and crevices where off-host fleas may be present.