

● ALTERNATIVES

MANAGING FLEAS WITHOUT POISONS

BY ANGIE HICKMAN AND CAROLINE COX

Oregon's urban entomologist calls fleas "the bane of every dog and cat owner."¹ Many of us agree, especially when we've just been bitten. However, this doesn't mean we need to resort to pesticides to keep these annoying little insects under control. Common sense techniques can keep your house free from poisons and flea problems.

Flea Biology

The most common flea on domestic pets is *Ctenocephalides felis*, commonly known as the cat flea.²

Like many other insects, the flea's life cycle consists of four stages: eggs, larvae, pupae, and adults.²

Female adult fleas begin the process of laying eggs by seeking out a warm host on which to feed. Fleas can sense heat coming from a living being and will use this to locate a suitable host, often a dog or cat. Once a host is found, the adult female flea feeds and lays her eggs.²

About 70 percent of these eggs will become dislodged from the host animal within the first eight hours and drop off into the carpet or the pet's bedding. Hatching time for the eggs varies drastically with conditions such as temperature, but often the eggs will take between one and six days to hatch.²

Since flea larvae feed on organic debris in the environment, the pet's bedding and carpets provide an excellent habitat for the larvae to thrive. After about a week or two the larvae spin a cocoon and turn into pupae.²

Usually adult fleas emerge in several days, but it can take several months, depending on the temperature and



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humidity conditions.² Reduce or eliminate exposure to flea insecticides by using simple and effective non-chemical strategies.

The newly emerged adult flea begins host seeking immediately, and the cycle repeats.²

Bedding

One important component of any flea control program is washing the pet's bedding. Since immature fleas will most often be found off of the host,² washing pet bedding regularly can help reduce the number of fleas present in the home. For best results, wash bedding and throw rugs often, at least once a week when fleas are bad.³

Flea Combs

A flea comb is a good pesticide-free method of removing fleas from your dog or cat. A flea comb works by catching the fleas in the very narrow gaps between the teeth or forcing them to jump off. Use a flea comb outside, and keep a container of soapy water nearby for drowning the fleas, or comb your pet in a bathtub where you can rinse the fleas down the drain.

Start by running the comb gently through your pet's coat. After each run through, dunk the comb in the water and leave any fur caught in the comb in the water. The soapy water will kill the fleas. Continue this procedure until the entire pet has been combed, making sure to comb their underside. A flea comb can be used every day when fleas are bad, and can help prevent fleas entering the house if used before the pet comes inside.⁴

Flea Traps

Flea traps provide a nonchemical option to reduce the number of fleas present in the home. Flea traps use an incandescent light bulb to attract the fleas which then become caught on sticky paper. Flea traps are available commercially from Enforcer Products (www.enforcer.com), Woodstream (www.victorpest.com), and Springstar LLC (www.springstar.net) and usually cost less than \$15.

A published study showed that flea traps are effective at capturing about 10 percent of the adult fleas.⁵ Studies sponsored by a trap manufacturer found much higher trapping rates, up to 95 percent.⁶ Even if trapping rates are variable, traps are worth trying in your home, especially when coupled with other nonchemical methods.

Vacuuming

Vacuuming is perhaps the most important part of any nonchemical flea control program. A laboratory study done at the University of California showed that vacuuming catches about 96 percent of adult fleas.⁷

In addition to capturing the adult fleas, vacuuming may help to dislodge eggs and larvae from the carpeting and bedding. It also stimulates emerging adults to leave their cocoons, so that they can be vacuumed up next time you vacuum. Vacuum often, even daily. After use, seal the vacuum bag inside a plastic trash bag to keep fleas

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from escaping and throw it away.³ Or fasten a plastic bag over the end of the vacuum cleaner hose until you vacuum again.⁴

Nematodes

Nematodes are a biological control that can help if you have a significant number of fleas outside your home. Nematodes of the genus *Steinernema* feed on many insects, including immature fleas.⁸

To use nematodes to manage fleas, apply them to soil in areas where your pet spends time. The nematodes need about 20 percent soil moisture in order to survive, so spray the area with water every few days.⁹

Less Toxic Chemical Controls

NCAP does not recommend the use of pesticides; however, we recognize that you may feel you must use them when coping with serious flea problems. Please try our nonchemical solutions first! If you feel that use of an insecticide is unavoidable, consider the following hazards of common flea insecticides as you make your decision about how to proceed:

Boric acid kills fleas both by causing dehydration and by acting as a stomach poison.¹⁰ In laboratory tests boric acid damaged sperm and caused miscarriages.¹¹

Diatomaceous earth is made up of the mineral amorphous silica.¹² Like

boric acid, it kills fleas by dehydration.¹⁰ In laboratory tests, it caused lung inflammation and emphysema.¹³

Fipronil is a nerve poison.¹⁰ It caused thyroid cancer in laboratory tests, and affected the development of the nervous system in offspring when pregnant mothers were exposed.¹⁴

Imidacloprid is another nerve poison.¹⁰ It caused miscarriages and abnormal development of bones in laboratory tests with rabbits.¹⁵

Lufenuron stops the development of flea eggs.¹⁶ It is given to pets as pills or as a liquid mixed in food. In some dogs and cats, it caused vomiting, diarrhea, loss of appetite, lethargy, and itchy skin.^{17,18}

Methoprene prevents emergence of adult fleas.¹⁰ It stimulated gene activity in a laboratory study using mammalian cells.¹⁹

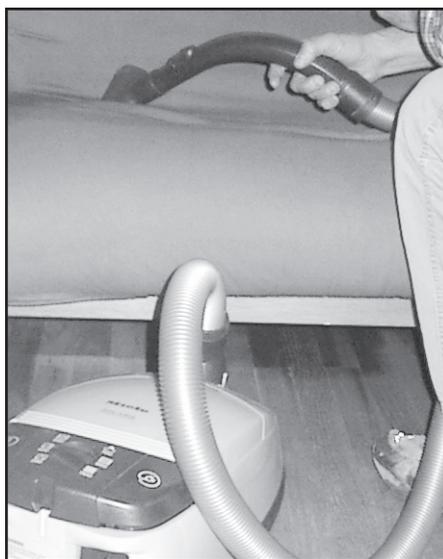
Pyriproxyfen prevents flea larvae from molting.¹⁰ It caused anemia and increased blood cholesterol levels in a laboratory test using dogs.²⁰

Conclusion

Many pets are family members. We pet them, play with them, and share our homes with them. These interactions are healthiest if neither fleas nor flea insecticides are involved. The nonchemical flea management ideas in this article let you keep flea problems at bay while avoiding the use of poisons. Give them a try! ♡

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Flea combs and vacuum cleaners are the cornerstones of nonchemical flea management.