

## How to Fight Fleas

It's flea season. If you're a pet owner, you might be agonizing about how to protect your dog or cat and your home from the insidious little pests.

Should you use a flea collar? Maybe not. An increasing number of pet owners are objecting to the pesticides they contain. And some experts say that even if you do use a collar, fleas can cope surprisingly well. It is estimated, for example, that only about 20 percent of the fleas in a home are actually on a pet's body; the other 80 percent are in the carpet, floor cracks or on furniture. In addition, fleas are able to "hibernate" in a pupal stage of growth that can last anywhere from seven days to more than a year. At any time, there may be generations of flea larvae lodged in the carpet, ready to emerge when the weather conditions are just right.

If you don't want to use environmentally and physically damaging pesticides on your pet, what else can you use? I called the Bio- Integral Resource Center, a Berkeley organization specializing in "least-toxic pest management," to find out. (Note: It publishes a comprehensive booklet entitled "Least-Toxic Pest Management for Fleas." To get a copy send \$6 to P.O. Box 7414, Berkeley, California 94704.) Here's what they told me:

### **YOU SHOULD START SIMPLE**

Use the vacuum cleaner. In a research study conducted by entomologists in Virginia, carpet vacuuming killed up to 59 percent of flea eggs contained there. Important note: When you're finished vacuuming, seal and dispose of the vacuum cleaner bag. Otherwise, flea eggs may hatch there. Also steam clean your carpets.

Use a flea comb: This is a specially constructed comb with teeth that lets your pet's hair through but traps fleas. Keep a dish of soapy water nearby, and drop the fleas in as you catch them. Flea combs are fairly inexpensive and are available at pet stores. The only drawback: It's time-consuming to comb your pet thoroughly.

Bathe your pet. Try it periodically with insecticidal soap and water or herbal shampoo. Restrict your pet to single bed, and wash the sleeping place or bedding often. Lots of flea eggs are located there.

### **SUBSTITUTES FOR PESTICIDES**

Insecticides made from citrus peel extracts can combat fleas surprisingly well. Pet stores sell them in sprays and shampoos. Use only EPA-registered products and follow the label's directions carefully - excessive doses can harm pets.

Sprinkling food-grade diatomaceous earth (hardware stores and garden supply centers sell it) into rugs and upholstery causes fleas to dry up and die when they make contact with it.

If you have questions or comments about our environment and what you can do to help, please write to John Javna in care of EarthWorks, P.O. Box 419149, Kansas City, Mo. 64141. Because of the volume of mail, John is unable to reply personally but will address issues of general interest in the column.

Q: I own two dogs and spray them weekly with a flea-control product. Recently, I have been bitten by fleas a number of times. Is it possible that the insecticide in the spray is ineffective?

A: It is unlikely that your flea-control product is ineffective, and I will attempt to explain why I make that statement. Dogs have a stable population of fleas on them. That number of fleas generally does not vary greatly on a particular dog, although it may vary from dog to dog. The stable population will seldom bite a human, but when infestation levels are extremely high, fleas may voluntarily leave a particular dog and infest human beings. Adult fleas remain on the host animal throughout their lives and do not jump on and off, as do many other insects. The eggs are laid after the female flea has a blood meal; the eggs then fall off the pet and lodge in carpets and floor crevices where the larval and pupal stages of the flea's life cycle occur. The eggs and pupae are resistant to most chemicals.

Your flea-control spray product is probably effective for controlling the adult fleas on your dogs. However, when large numbers of adults emerge from pupae during ideal conditions of light, temperature and moisture, flea control becomes difficult to achieve. That is why it is so essential to treat the environment of pets as well as the pets themselves. Dips and sprays do control fleas on dogs; collars and medallions are not effective for heavy infestations but are good to place in vacuum cleaner bags to help environmental flea control. Flea-control products containing only pyrethrins can safely be used daily on dogs and cats.

What you have to keep in mind, however, is that, in the long run, none of the methods mentioned will be effective if environmental control is neglected. Specifically, it's that very absence of environmental control, combined with a sudden increase in the flea population that often leads to the claim that a dip or spray that seems to have worked for years suddenly seems ineffective.

For do-it-yourself indoor spraying, you can obtain foggers at veterinary hospitals, and in a number of pet stores. It is better to use a small fogger in each room rather than a large one for the whole house. A number of insecticidal sprays are available for spraying inside and outside the house. One relatively safe product is malathion (50%), which is available in most plant nurseries. The generally recommended mixture is two and one-half ounces diluted in one gallon of water, an amount that can easily be distributed via a hand-held sprayer.

Do-it-yourself environmental treatments should be done every two weeks for three treatments and then monthly during flea season, which in Southern California is all year long.

Environmental indoor and outdoor spraying can be done by an exterminator service, and while that is more expensive, such firms do have flea-control products that are effective for longer periods of time (they can not be purchased by pet owners). Exterminator firms will usually guarantee their services for specified periods of time.