

# U·FACTS

UNIVERSITY OF NEBRASKA COOPERATIVE EXTENSION IN LANCASTER COUNTY

"HELPING YOU PUT KNOWLEDGE TO WORK"

## Integrated Flea Control

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Every summer, many dog and cat owners in Nebraska are plagued by serious and persistent flea infestations. Sometimes even petless families have to deal with fleas after a visit to the pet store or after the kids have played with a neighborhood dog or cat. Flea bites can be mistaken for a rash; each bite has a small red spot in the center surrounded by a red halo. And unlike some other insect bites, there is not much swelling associated with flea bites.

Fleas are small, dark brown insects whose bodies are hardened and compressed from side to side. If you looked at a flea under a microscope, you would see that it has strong hind legs that helps it jump from host to host. Animals often get infested through contact with other animals or after walking in areas frequented by infested animals.

Flea bites are extremely irritating to the animal; large infestations or extreme sensitivity may result in intense itching and weight loss. There are many species of fleas which tend to infest specific types of animals. But, if no other host is available, they will also jump on and bite any warm-blooded host.

Adult female fleas require a blood meal to produce viable eggs. Eggs are laid on the animal, but because they are not glued onto hairs, the eggs fall off the animal into the bedding, carpet, yard or wherever the animal spends most of its time. It has been

recorded that a single female flea may lay 400 - 800 eggs over the span of 5 months! This is even more remarkable when you consider the fact that each egg is about 1/12 the size of the adult flea. If you have an indoor pet, the very small, wormlike larvae live among the carpet fibers or cracks and crevices. There, they feed on all sorts of organic matter, skin scales, and dried blood. After several developmental stages, the larvae pupate by spinning a tiny silken cocoon.

Adult fleas emerge from the cocoon when proper stimulation is present, including vibration, increased carbon dioxide levels, heat and motion. The adult can emerge from the cocoon very quickly and immediately jump on the host. Once on the host they feed on blood by biting through the skin. Under optimal conditions, a flea can go through its entire life cycle in 14 days.

Flea control is difficult because effective treatment includes treating the animal, the house and the outdoor environment. However there are new products on the market that make flea control safer and more effective than ever before.

### Treat the Animal:

**Lufenuron/Program® (Novartis Animal Health).** Complete flea prevention for the entire season is now possible by treating your dog or cat monthly with Program® beginning in early spring, before the flea season starts. For animals that live in kennels

or warm climates, year-round treatment may be needed. Program® is formulated as a pill for dogs or as a liquid suspension to be mixed with a treat for cats. This flea control medication is only available from a veterinarian.

The Program® controls fleas because the hormone is present in the blood meal and effectively sterilizes the female by preventing eggs from hatching. Data shows that within 7 days after lufenuron is fed to the animal, virtually 100% of the eggs laid by female fleas failed to hatch. Novartis Animal Health states that The Program® is also safe for breeding and lactating animals.

All cats and dogs in a household must be treated with lufenuron because any untreated animals can infest your household with fleas.

If you already have a flea infestation, lufenuron will bring it under control by breaking the flea life cycle. However, it will take a couple months to reduce the flea population to a minimal level. You may want to use some other products to use temporarily to control adult fleas.

Advantages of Program®: It is safe, very effective and convenient to administer. Disadvantages: Fleas from outside sources can still bite the animal and cause irritation which can be a problem with pets that are allergic to flea bites.

Note: Novartis produces another product, Sentinel®, that combines lufenuron with another drug that



controls heartworms and other internal parasites so a once-a-month treatment will control a number of parasites.

**Fipronil/Frontline® (Rhone Merieux).** Frontline® kills fleas up to three months on dogs and a month or more on cats. Ticks are also killed for a month or more. Frontline® Top Spot can be used on 10-week old puppies, 12-week old kittens and pets receiving other medications. A pre-measured dosage in a plastic pipette is applied to the skin in a spot between the pet's shoulder blades. Fipronil collects in the oil-producing glands of the skin and wicks back out with the fur for up to three months. It is effective even against removal by bathing or swimming.

**Imidacloprid/Advantage™ (Bayer).** The active ingredient in this product kills adult fleas on contact before they can lay eggs. Advantage™ is applied to the skin over the back where it diffuses through the skin over the rest of the body. The treatment works quickly; 98-100% of adult fleas are killed within 24 hours after application. A single dose lasts four weeks on dogs and up to four weeks on cats. To prevent fleas, this product should be applied monthly. Because Advantage™ is not systemically absorbed, the product is considered to be very safe. Disadvantages: the skin may become quite greasy at the site of application and remain greasy for a few days.

#### **Insecticidal Shampoos/Powders:**

Flea shampoos contain insecticides that vary in their effectiveness. The goal is to remove the fleas that are present on the animal at the time of shampooing. To be effective, the shampoo must stay on the animal for at least 10 minutes before rinsing. Only use a product on an animal for which it is labeled. A natural insecticide that is fairly effective D-limonene, a volatile oil from citrus fruits. These safe shampoos are good on kittens and puppies and for homes with infants.

Powders are effective insecticides and easy to apply. Shake a small amount of powder onto the skin around the tail, rear legs, stomach and around the neck. Apply powders in a well-ventilated area. If you have respiratory

problems, do not apply this powder, use another type of product on your animal.

**Sprays:** Sprays should be applied one or twice weekly. It is not necessary to soak the animal. Hit the tail base, the rear aspect of both hind legs, the stomach, and around the base of the neck.

**Flea Collars:** According to Consumer Reports, August 1991, flea collars aren't effective and are probably a waste of money. Ultrasonic flea collars are absolutely worthless because they do not work.

#### **Treat the Home:**

**Bedding and Carpets:** Wash pet bedding in hot water. If animals sleep with a family member, all bedding must be washed. Vacuum carpets thoroughly everywhere the infested pet is allowed to inhabit and especially near where the animal sleeps. In addition, cleaning carpets with a steam cleaner should kill some of the larval fleas, and also remove the bits of organic matter that accumulate in carpets that the larvae feed on.

**Spray Treatments:** Insecticide spray treatments can be used in carpets to reduce numbers of fleas. Some products on the market target the adult flea. Methoprene (Precor) and pyriproxyfen (Nylor, Archer) are growth regulators that prevent eggs from hatching and the larval fleas from pupating into adults that reproduce. Methoprene will reduce flea populations up to 95% in 14 days while pyriproxyfen, due to its photostability, lasts in carpets for many months. Because these products do not kill adult fleas, products that contain both an insecticide and growth regulator are more effective.

**Foggers:** Foggers are basically total release aerosols. The insecticide is released into a mist which dissipates in the room. Unfortunately, foggers do not penetrate well where adult and larval fleas are hiding. In general, they provide poor flea control.

#### **Treat the Outdoor Environment:**

Treat dog houses, kennels by cleaning them out thoroughly and/or washing bedding material. Treat dog house, kennels and yard areas with an insecticide containing an insect growth

regulator, such as pyriproxyfen. This growth regulator is more photostable than methoprene (Precor) and lasts longer in outdoor environments. Pyriproxyfen is sold under the trade name Archer or Nylor.

In the cold winter months in Nebraska, it is not necessary to treat the outdoor environment because fleas are not active at cold temperatures.

#### **Summary**

There are more effective approaches to flea control than ever before. Flea control strategies have recently focused on treating the animal to prevent a serious flea infestation inside the home. These preventative treatments appear to be quite effective, but most are only available by prescription from a veterinarian. The type of preventative treatment that you choose depends on your specific pet situation, whether your pet lives inside or outside, in a kennel, how many pets you have, whether your pet is allergic to flea bites, whether your animal comes in frequent contact with other untreated animals and other considerations.

If you choose not to use a preventative approach, there are many options to control a flea infestation. Controls should include treating the animal for adult fleas, the home, and outdoor environment, especially if the animal spends significant time outside.