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## G78-412 Guide for Controlling Insects on Pets (Revised December 1989)

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## Guide for Controlling Insects on Pets

This guide is restricted to the most common insect pests of cats, dogs, rabbits, birds, guinea pigs, and gerbils.

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*John B. Campbell, Extension Entomologist, David L. Keith, Entomologist*

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Pets, like all animals, are subject to attack by certain insects. Sanitation around the area where pets are kept, cleanliness of the pets, good care and nutrition all help reduce the chance of a serious problem.

### Fleas

Various species of fleas are the most common insects on pets, and may increase to high numbers in areas where pets are kept. Fleas spread throughout homes, animal quarters and yards. They attack pets, livestock, birds, and people.

The dog flea, *Ctenocephalides canis*, the cat flea, *C. felis*, and sticktight flea, *Echidnophaga gallinacea*, the human flea, *Pulex irritans*, and other species may be found on pets. Most species are quite active and move through the hair rapidly when disturbed. The sticktight flea attaches permanently in less hairy areas, as around the eyes or ears.

**Description and Life Cycle:** Fleas are about one-eighth inch long with a compressed body (narrowed laterally). They have no wings. Most are brown with legs well developed for jumping. The head is compressed (usually longer than high), rounded in front, and appears to be divided in two parts.

Fleas have four stages in their development: egg, larva, pupa and adult. A generation may be completed in a month. Fleas deposit small white eggs on the animal, which usually fall off into the bedding area. The larvae are white, worm-like, and legless. Larvae feed on organic matter such as hair, and on flea excreta which is partially dried blood. The pupal form usually is enclosed in a silk cocoon, encrusted with sand and organic material. Newly emerged adults soon seek a host and spend most of their life on

the host.

**Importance:** Fleas suck blood, and heavy populations can cause anemia, particularly in young, old, or sick animals. The flea bite may be irritating and animals, particularly cats, may develop a sensitivity to flea saliva, causing an allergic skin reaction (skin eruptions). Flea-infested animals scratch at the site of flea bites because of the allergic reaction that occurs. Fleas may transmit bacterial, viral and protozoan diseases and tapeworms.

Humans may be infested with fleas because of close association with infested animals. However, humans are most often infested with fleas following a period when neither pets nor humans are in a home. The vibration from a person walking on a floor triggers adult fleas to leave the cocoon in search of a blood meal.

Humans usually are infested around the ankles and lower part of the legs. Some fleas have an anticoagulant in their saliva and a material of low molecular weight which provokes an allergic reaction in the host. This reaction often causes some pain and itching.

**Control:** For successful control of fleas, both the animal and the premises need to be treated. If only the animal is treated, reinfestation from the premises may occur as newly emerged adults start seeking a host. For specific insecticide recommendations, refer to *EC 89-1551, Nebraska Management Guide for Control of Arthropod Pests of Poultry and Pets*.

Animals can be treated by using insecticide sprays, dusts, foams, shampoos, collars and pills. Insecticides, in any formulation, are poisonous, and label instructions should be followed with care.

Do not use an insecticide on an animal unless the label specifically states that it can be used on that animal species. Follow restrictions such as age of animal to be treated, and precautions such as not treating sick animals or using in conjunction with other medications or on lactating animals. Always store insecticides in a locked container.

Toxic reactions such as vomiting, excessive salivation and weakness, followed by nervous tremors and convulsions, are common signs of phosphate poisoning. An animal with these signs should be taken to a veterinarian. Take along the label from the suspected poison so the veterinarian can determine the proper antidote.

Insecticide treatment for fleas should include the animal's quarters. The quarters should be thoroughly cleaned, including a thorough vacuuming of the bedding. Residual sprays then can be applied to the area the animal inhabits.

## Mites

Several species of mites attack pets. These mites are microscopic in size and may require identification by a specialist. They cause a condition called mange. This is an unsightly, painful and irritating skin condition caused by the burrowing and feeding of mites. The life cycle of mites is composed of egg, larva, nymph and adult stages, and may require two to three weeks for completion.

One mite, *Notoedres cati*, affects the skin on cat's heads, causing itching, loss of hair, and visible sores. The ear mite, *Otodectes cynotis*, feeds deep in the ear canal, near the eardrum, causing congestion in the eardrum. Infested animals scratch or rub their ears and may run in circles or show other evidence of nervous disturbance. Rabbits in particular are affected by this mite.

A mite unlike the others discussed, *Demodex canis*, lives primarily in the hair follicles. It also is microscopic in size and has a long, worm-like shape. This mite causes hair loss and pronounced itching. The infested areas often become pustular due to secondary bacterial infection.

**Control:** Prevention of mite infestation is largely a matter of good care and management. Mites spread by contact, so do not allow your pet to mingle with unkempt animals or the areas they inhabit.

Insecticides recommended for fleas also are used in mite control. Mange mites are not as difficult to control as is the demodectic (hair follicle) mite, but both may require repeated insecticide applications. Cats seem to have a more sensitive skin than most pet species, and insecticides may cause a skin irritation. Control of the ear mite usually requires a veterinarian to remove the debris from the middle ear before insecticide treatment.

## Ticks

In Nebraska, only three ticks are known to be of economic importance. They are the American dog tick, *Dermacentor variabilis*; the brown dog tick, *Rhipicephalus sanguineus*; and the Rocky Mountain wood tick, *D. venustus* (=andersoni). All three are carriers of human and animal diseases.

The American dog tick transmits Rocky Mountain spotted fever to dogs and man, piroplasmosis to dogs, and perhaps other diseases. The brown dog tick transmits tularemia, encephalitis and other diseases. The Rocky Mountain wood tick transmits bovine anaplasmosis, Rocky Mountain spotted fever, Colorado tick fever and tularemia.

Ticks have eight legs. The body of unfed ticks tends to be oval, usually tapering anteriorly, and flattened. The body of the female is capable of great distention and, when blood engorged, looks like a brown bean or nut.

There are four stages in the life cycle. These include egg, larva (seed tick), nymph and adult.

There are one-, two-, or three-host ticks. The three common ticks in Nebraska are three-host ticks. They leave the first animal host as either a mature larvae or nymph, molt and attach to another host for completion of the next phase of their life cycle. They engorge and complete the life cycle on the third animal host.

Each succeeding host animal usually is larger than the preceding one. The life cycle may be from one to several years.

In addition to the three common ticks, two other important species are spinose ear tick, *Otobius megnini*, which inhabits the ear and may be a pest of any animal, and the pigeon tick, *Argas reflexus*, which may parasitize birds.

Control of ticks probably will require treatment of both the animal and its living quarters. The tick species we have mentioned are well adapted to life in the kennel and around homes and garages. The same methods and products recommended for control of fleas and mites can be used for tick control.

Ticks climb to the top of grassy vegetation and wait for a host to brush against the vegetation which allows the tick to attach. Keeping the vegetation in the area around animal quarters mowed short makes it less attractive to ticks.

The American dog tick and the Rocky Mountain spotted fever tick may cause paralysis of dogs (or humans) if the females attach and engorge at the base of the skull or along the spinal column. This is caused by a toxic secretion produced by the tick while feeding. Recovery is rapid when the tick is removed.

Ticks should be removed by grasping the tick as near the skin as possible with a forceps, and pulling with a firm, even pull. Swabbing with rubbing alcohol may cause the tick to detach. The bite area should be disinfected.

## **Flies**

Stable and house flies may be pests around pets kept outdoors. Stable flies are blood-sucking and are attracted to the ears of dogs. House flies do not bite but are annoying.

Cleanliness around the pen area will keep the fly problem at a minimum because flies breed in manure and decaying organic matter. House flies rest ("roost") at night inside the kennel on the walls and ceiling. Stable flies rest in shady areas during the heat of the day.

Apply residual sprays to fly resting areas in the animal facility. Residual sprays should last several days unless washed off or exposed to direct sunlight. If stable flies are a problem, the dog's ears can be treated with biting insect repellents such as Off<sup>TM</sup>.

Rabbits and rodent pets may be subject to infestation by bot flies. These flies (*Cuterebridae*) deposit eggs on the animal or in the nesting area. The eggs hatch and larvae (called bots) penetrate the skin or gain entrance by natural openings, where they develop as an internal parasite. Infestations are not common but can be prevented only by screening animal enclosures. The bot emergence wound can become infected unless cleansed and disinfected.

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