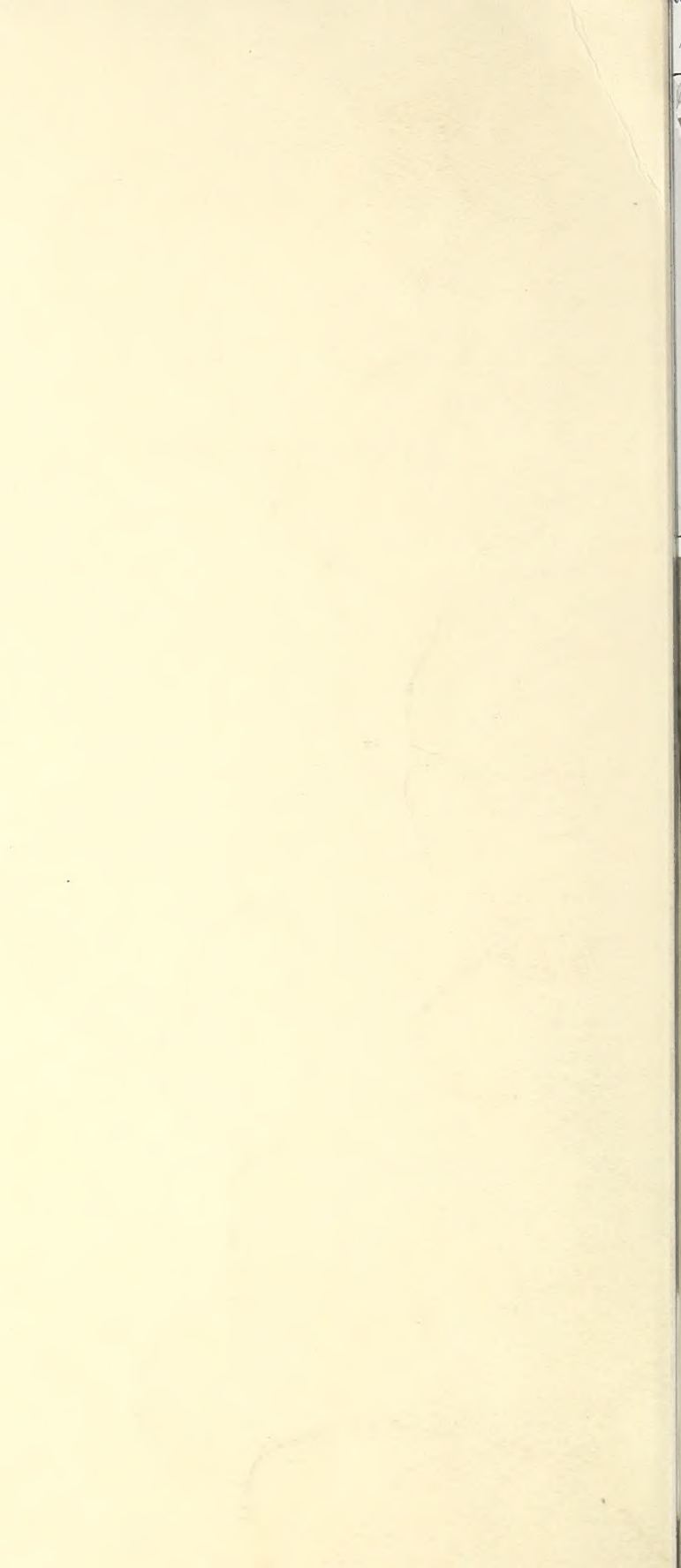


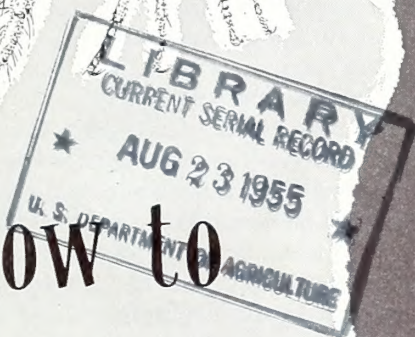
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# FLEAS



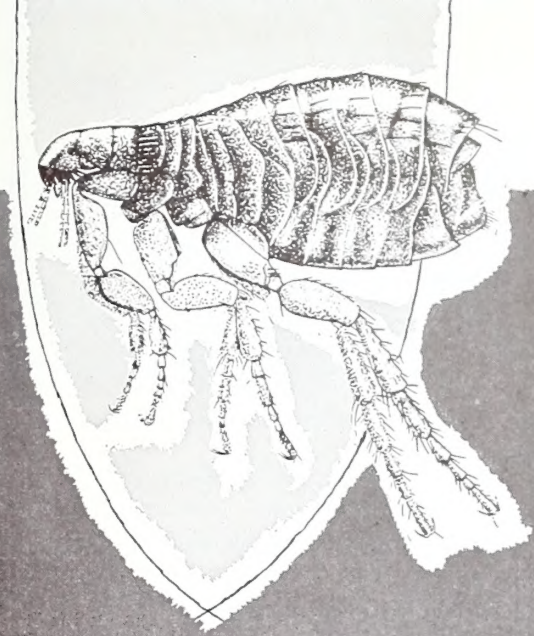
how to  
control  
them

LEAFLET NO. 392

U. S. Department of Agriculture



The Cat Flea.



Fleas often breed in tremendous numbers where pets and livestock are kept. They spread through homes, buildings, and yards. They attack pets (such as dogs and cats), livestock, poultry, and people.

A home overrun by fleas is almost impossible to live in.

Pets infested with fleas scratch and bite almost constantly in an effort to get rid of them. Their coats become soiled and roughened. Scratching and biting cause skin irritation.

Domestic animals are sorely annoyed by fleas, and young chickens and other poultry are sometimes killed by heavy infestations.

Fleas can be controlled easily by applying proper insecticides.

# FLEAS<sup>x</sup>

## how to control them<sup>x</sup>

### COMMON KINDS

Several kinds of fleas attack animals and people in the United States.

The dog flea<sup>1</sup> and the cat flea<sup>2</sup> are the most widespread and abundant. Dog and cat fleas look alike. Each kind attacks either dogs or cats.

The human flea<sup>3</sup> is a severe pest in many areas. It may live on many different animals. It is often found on hogs, and it breeds in the litter of hog houses. It also lives on dogs, cats, goats, and domestic rats, and on wild animals such as skunks, coyotes, and badgers. It occurs most frequently in the Mississippi Valley, in Texas, and westward to the Pacific Coast.

The sticktight flea<sup>4</sup> infests poultry and occasionally annoys people and pets in the Southern States.

Several species of rat fleas, particularly the oriental rat flea,<sup>5</sup> infest houses and buildings that harbor rats, and may bite man.

### DEVELOPMENT

All fleas require the blood of animals or birds in order to reproduce. Some feed on certain kinds of animals or birds, and others on almost any warm-blooded animal.

Fleas pass through four stages of development—adult, egg, larva (or maggot), and pupa. The females of most species lay eggs while they are on animals or birds. The eggs drop to the ground, floor, or animal bedding, where they hatch in a few days into larvae. The larvae, which feed on organic matter, become full grown in about 2 weeks. They spin tiny cocoons in which they change into pupae. In about 1 week the pupae change into adults, and the adults emerge from the cocoons.

Adult fleas can live several weeks without food. This fact explains why people who own dogs or cats sometimes find their homes overrun with fleas when they return from a vacation, even though no adult fleas were in the homes when the people left them.

Contrary to a belief sometimes held, successive generations of fleas do not develop and live in sand without feeding on animals. Several kinds of fleas often develop in sandy areas, and newly emerged adults may live there until a suitable host animal comes along.

<sup>1</sup> *Ctenocephalides canis*.

<sup>2</sup> *C. felis*.

<sup>3</sup> *Pulex irritans*.

<sup>4</sup> *Echidnophaga gallinacea*.

<sup>5</sup> *Xenopsylla cheopis*.

### CONTROL WITH INSECTICIDES

The kind of insecticide and formulation to use depends on the type of host animal and on whether an infestation is inside a home or outside. Recommendations for destroying fleas in a home differ from those for destroying fleas in other places, such as a barn. Control of fleas on animals is necessary to prevent infestations in homes, animal quarters, and yards.

### FLEAS ON ANIMALS

#### Dogs and Cats

Commercial powders containing rotenone or pyrethrum will control fleas on dogs and cats. Other powders—DDT, lindane, and chlordane—are also effective on dogs but are not recommended for pups under 2 months old or for cats. Methoxychlor powder may be used on pups and cats.

Apply the powder with a shaker-type dispenser, a puff duster, or any garden-type hand duster.

Use about 1 tablespoonful of powder on an average-size short-haired dog, such as a fox terrier. Reduce or increase this amount according to the size of the animal and the length and thickness of the hair. In applying powder, pay particular attention to the back, the neck, and the top of the head. Rub the powder thoroughly into the hair.

Use insecticides on animals carefully. Follow the recommendations on the container.

Don't be alarmed if the animal shows discomfort for a few minutes after the application. DDT and other insecticides often cause increased activity by the fleas in their last moments of life.

If the animal has free run, treatments may have to be made weekly in order to keep fleas under control. If the

Applying powder to dog for control of fleas.



animal is confined to an area free of fleas, one treatment usually is enough.

**Rotenone.**—Rotenone is effective but slow acting. Buy a powder that contains at least 1 percent of rotenone.

**Pyrethrum.**—Use a pyrethrum powder containing 1 percent of pyrethrins or a powder containing 0.2 percent of pyrethrins fortified with a synergist (2 percent of piperonyl butoxide or sulfoxide).

Fleas begin to leave the animal within a few minutes after the powder is applied, but they are only paralyzed and may recover. Treat the animal outdoors or in an enclosure where the paralyzed fleas can be swept up and destroyed.

**DDT.**—Apply a 5- or 10-percent DDT powder.

**Lindane, chlordane, methoxychlor.**—Apply a 1-percent lindane powder, a 5-percent chlordane powder, or a 10-percent methoxychlor powder.

#### **Other Animals**

An insecticide powder or spray will control the human flea on hogs, goats, and other animals. Apply it to the animals and to their quarters or pens.

To dust the animals, use DDT, lindane, chlordane, or methoxychlor in the strengths recommended for dogs. Use enough powder to treat the animals thoroughly. Apply it with any garden-type duster.

You may use any of these powders in treating the animals' quarters or pens; but if you use DDT powder, apply it in 10-percent strength.

To spray the animals, wet them thoroughly with an emulsion or a wettable-powder suspension containing 0.5 percent of DDT, methoxychlor, or chlordane, or 0.05 percent of lindane. Prepare the spray by mixing an emulsifiable concentrate or wettable powder with water (see chart). Apply it with a garden-type compressed-air sprayer or a hand sprayer.

Rubbing powder into dog's hair.



Dusting under dog house for control of fleas.

### **FLEAS IN ANIMAL QUARTERS AND YARDS**

To destroy fleas in barns and other animal quarters, in pens, yards, and lawns, and under houses, spray or dust with DDT, lindane, chlordane, methoxychlor, or malathion.

If animal quarters or pens are littered, remove the manure or debris before spraying or dusting.

#### **Spraying**

Use a spray containing 1 percent of DDT or methoxychlor, 0.5 percent of chlordane, or 0.25 percent of lindane or malathion.

Purchase a ready-to-use kerosene solution or prepare a spray by mixing an emulsifiable concentrate or wettable powder with water (see chart).

Apply the spray at the rate of 2 gallons to 1,000 square feet. Use a garden-type compressed-air sprayer or a small power sprayer. Do not apply a kerosene solution to vegetation.

#### **Dusting**

If you dust animal quarters or yards, use one of the following dusts: 10-percent DDT or methoxychlor, 5-percent chlordane, or 1-percent lindane or malathion. Apply it at the rate of 1 or 2 pounds to 1,000 square feet. Use any garden-type hand duster.

Dusts can often be blown under low buildings where spraying would be difficult.

### **FLEAS IN HOMES**

Sprays containing DDT, methoxychlor, or pyrethrum will destroy fleas in homes.

Apply a 5-percent DDT or methoxychlor kerosene solution, which may be purchased ready to use, to floors; apply it to baseboards and walls to a height of about 1 foot. . . . Apply a light mist to furniture upholstery, rugs, and other fabrics. . . . Before spraying, clean rooms and upholstered furniture with a vacuum cleaner.

Prepared household sprays containing pyrethrum may be applied in the same manner. Since these sprays usually contain low concentrations of insecticide, the treatment may have to be repeated in 7 to 10 days.

Apply any of these sprays at the rate of about 1 quart to 250 square feet. Use a hand sprayer, a household sprayer designed for treating surfaces, or a compressed-air sprayer. Apply a fine-mist spray; a heavy spray may stain fabrics.

### GUIDE FOR MIXING SPRAYS

Insecticides and some of the forms in which they may be purchased	Percentage of insecticide desired in spray	Approximate amount of purchased product to mix with 5 gallons of water
<b>DDT or Methoxychlor</b>		
50-percent wettable powder-----	{ 0.5-----	6 ounces.
	{ 1.0-----	12 ounces.
25-percent emulsifiable concentrate-----	{ 0.5-----	1 pint.
	{ 1.0-----	1 quart.
<b>Chlordane</b>		
50-percent wettable powder-----	0.5-----	6 ounces.
50-percent emulsifiable concentrate-----	0.5-----	½ pint.
<b>Lindane or Malathion</b>		
25-percent wettable powder-----	{ 0.05-----	1 ounce.
	{ 0.25-----	6 ounces.
20-percent emulsifiable concentrate-----	{ 0.05-----	2½ tablespoonfuls.
	{ 0.25-----	½ pint.

### PRECAUTIONS

Handle insecticides with care. Most of them are likely to poison people and animals if they are handled carelessly.

Store insecticides where children and pets cannot reach them.

Avoid unnecessary exposure to insecticides when handling them.

If concentrated material is spilled on the skin while mixing sprays, wash it off immediately. Remove clothing that may be wetted by the material.

Do not apply oil sprays near an open flame.

Do not permit children to play on treated lawns for at least 24 hours after the treatment.

This leaflet was prepared by the Entomology Research Branch, Agricultural Research Service. It supersedes Leaflet 152, How To Control Fleas.

Washington, D. C.

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