CONTROLLING VERTEBRATE DAMAGE

moles

(Scalopus aquaticus and Condylura cristata)

Extension Bulletin E-863 **April 1977**

See also the first in this series: Extension Bulletin E-860 on "General Considerations."

BY GLENN DUDDERAR, Extension Wildlife Specialist

THE TWO SPECIES OF MOLE found in Michigan are the eastern mole and the starnosed mole. The starnosed mole usually occurs in wet soils. Moles are not rodents, but insectivores. They lack the rodents' longer incisor teeth for gnawing. Thus, their main diet consists of earthworms, grubs and other insect larvae. Although these moles sometimes eat vegetative matter, they are often blamed for damage to bulbs, roots or seedlings caused by mice.

Moles make long, winding ridges in sod or soil as they tunnel just below the surface. Excavated soil pushed up from the burrows becomes the familiar mole hill. Generally, they are beneficial. They destroy large numbers of insects, and their tunneling aerates and irrigates the soil. However, when they become obnoxious or destructive, landowners often feel that the disadvantages outweigh the advantages. At this point, control is often desired.

HABITAT ALTERATION

Rolling lawn areas sometimes effectively eliminates moles from lawns, especially if done in the early morning or late evening. Borders of marigolds or castor beans may repel moles from gardens. (**Note:** Castor beans are very poisonous.)

REPULSION

Moles can be repelled from plant bulbs by spraying the bulbs with 11% thiram before planting.

POPULATION REDUCTION

Trapping

The prong or harpoon type trap is the trap most commonly available in hardware and farm and garden supply stores. Operating directions are furnished by the manufacturer.

It is important to place the trap on an active burrow that is used daily and not on a foraging burrow that is used only once. To determine which tunnels are active, flatten a short section of the burrows. Those sections that are raised within 24 hours are active burrows. Place the traps on those sections. Move any trap that fails to catch a mole within three days.

Gassing

Moles can be destroyed by fumigating their active burrows:

Fumigant	Formulation
gas cartridges	¾-3 oz.

Amount Used

Make openings large enough for the gas cartridges in active burrows every 15-20 ft. Light fuse, insert cartridge in burrow and close with an inverted piece of sod.

Reduction of Food Supply

If the insects and worms in a given area are destroyed, the moles will be forced to move to other areas to find food. Spraying or dusting with chlordane* will eliminate these insects and worms. The chart below gives rates and dosages:

Chlordane must be watered well into the soil. One treatment should last for 4 years. Although expensive, this treatment is useful on small areas of high value. Do not use on food crops.

The dosages listed in the chart are general. Obtain specific recommendations for local soil conditions if large areas are to be treated. Keep in mind that chlordane can injure insectivorous birds, reptiles, amphibians and fish. Furthermore, if carelessly applied, chlordane may injure pets, especially cats, and people.

**(At present, the manufacture of chlordane has been suspended. Only that material presently in inventory is available for purchase.)*

Form of chlordane	Amount of material per 1,000 sq. ft.	Minimum amount of water in spray or following dry application per 1,000 sq. ft.
Dry: 10% granulated applied with sand or fertilizer	2 lb.	25 gal.
Spray:		
40% wettable powder	10 oz.	25 gal.
50% wettable powder	8 oz.	25 gal.
75% emulsifiable solution	4 oz.	25 gal.

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bats

(Myotis species)

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BY GLENN DUDDERAR, Extension Wildlife Specialist

BATS, the only truely flying mammal, benefit man by consuming immense numbers of flying insects. However, when they roost in large numbers in man-made structures, their accumulated droppings, odors, mites and lice cause problems. There is also the potential threat of rabies, but this is rare.

EXCLUSION

The best way to exclude bats permanently from a building is to prevent their gaining entrance. To do this, brightly illuminate the inside of the roosting area at night and, from the outside, observe where the light can be seen.

As an alternative for detecting the openings, observe the darkened roosting area from the inside during a bright day. Close these openings with wood, caulking, hardware cloth or masonry. Close all but one or two openings wherever convenient and close the remaining openings just after sunset when the bats are outside.

REPULSION

Sound—Bats are sensitive to high frequency sounds and can be repelled by commercial high-frequency sound devices. An inexpensive device can be made by attaching two or three silent dog whistles to an air pump, such as a large aquarium pump. Place the device in the roosting area and run continually until the bats leave.

Light—Bats may also be repelled by brightly illuminating their roosting area at all times. The attic of an average size house may require four or more 100 watt bulbs to drive out the bats. Place the light bulbs to illuminate all potential roosting sites. The bats should leave after several days of illumination. Reapply if necessary.

Odor—Bats may be repelled by the odor of napthalene. Spread 100% granules or flakes on floors or between walls. Use at least 5 lb. per 2,000 cu. ft. of air space in the roosting area. Large openings, such as a garage door or large ventilators, must be closed if this technique is to be effective.

Sanitation—Since bats may be attracted by the odor of bat urine and droppings, all droppings should be cleaned up and the roost area washed with a disinfectant, if possible, after the bats are repelled.

POPULATION REDUCTION

Because of their beneficial value, bats should not be killed. In some circumstances, however, there may be no alternative. Professional pest control operators can apply lethal chemicals to the roosting surface, or fumigation may be used.