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CONTROLLING MOLE DAMAGE

There are several species of moles in the United States. The most common and widespread is the Eastern mole, Scalopus aquaticus, which is present throughout the eastern half of our country. Other species of moles with more restricted ranges occur in both the Atlantic and Pacific coastal regions. Moles do not exist in either the Great Plains or Rocky Mountain areas of central United States.

Moles are not rodents. Some characteristics that identify the moles are their short, powerful front legs with broad out-turned palms; short black or gray fur having a distinct silky luster; and tiny, hidden eyes.

Moles produce one litter of about four young each year. Nests are usually deep, beneath the protective cover of a large stone, tree, sidewalk, or roadway. These active insectivores have keen senses of smell, touch, and hearing, but are almost blind. They are most active on damp, cloudy days in spring and fall.

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The principal diet of moles consists of earthworms, grubs, beetles, and insect larvae. Vegetation occasionally makes up a small portion of their diet.

Moles destroy few plants or bulbs by direct feeding. The main damage is done when plant roots are dislodged as the animals tunnel through the soil in search of earthworms and insects.

CONTROL METHODS

Trapping

Time, patience, and some knowledge of mole habits are the only prerequisites of successful trapping. A few properly set traps, kept in good working condition, are adequate to take care of light mold infestations. The "harpoon" or "prong" type trap and the choker trap are the most common types used for catching Eastern moles. The scissors-jaw trap is preferred for trapping the Western moles. These traps are carried by hardware and garden supply stores and by some mail-order houses. Directions for setting the different kinds of traps are generally furnished by the manufacturer.

The best time to trap moles is early in the spring as soon as the first ridges are noted, or after the fall rains. The selection of a main or frequently used runway is of prime importance. The conspicuous ridges made by most moles are primarily feeding tunnels and may be used only once. To determine which runways are active, stamp down a short section of each runway. Observe daily for several days and re-stamp any raised sections. If a tunnel is raised daily, it is an active runway, and a trap should be set at this location. Move any trap that fails to catch a mole within one or two days.

The Star-nosed mole does not usually leave surface ridges, but its presence can be detected by mounds of dirt pushed up from its underground runways. It is necessary to set traps in a run connecting the mounds; therefore, some digging is required to locate the underground tunnels.

Reducing Food Supplies

If moles are deprived of their food supply, they will be forced to move to other areas. The use of insecticides will reduce insects and worms to a point where the soil will no longer provide adequate food to fulfill the daily requirements of moles. Chlordane and dieldrin are effective for controlling both earthworms and soil insects and can be purchased in many different formulations. The emulsifiable solutions and wettable powders may be applied as sprays, using a minimum of 25 gallons of spray per 1,000 square feet. Dusts, wettable powders, and granulated formulations should be applied dry, preferably with a home-type lime or fertilizer spreader.

The directions on the insecticide container should be followed carefully. If no directions for application are available, a suggested method is to

mix enough of the insecticide with fertilizer or sand so that 5 to 10 pounds of the mixture is applied per 1,000 square feet. A thorough watering should follow an application of the dry material. The treatment should last a minimum of four years. This method is comparatively expensive, but useful on small areas of high value such as lawns, golf courses, and nurseries.

The dosages listed below are general recommendations of State Entomologists and State Experimental Stations. Specific recommendations for local soil conditions should be obtained from these authorities.

	Insecticide	Amount Recommended Per 1,000 Square Feet	
Dry:	5% Chlordane, dust or granulated	5	Pounds
Dry:	5% Dieldrin, granulated	1-1/3	Pounds
Spray:	40% Chlordane, wettable powder	10	Ounces
	50% Chlordane, wettable powder	8	Ounces
	75% Chlordane, emulsifiable solution	4	Liquid ounces
Spray:	50% Dieldrin, wettable powder	2-1/2	Ounces
	18.6% Dieldrin, emulsifiable solution	6	Liquid ounces

If these materials are used over extensive areas, they may be injurious to local populations of insectivorous birds, reptiles, and amphibians. Care should be taken to prevent chemicals from getting into fish ponds and bird baths or water areas.

Barriers

Sometimes limited areas such as seed beds or small gardens sustain persistent mole damage. For areas like these, the installation of a barrier made of sheet metal or hardware cloth may be justified. Such a barrier should begin at the ground surface and go to a depth of at least 12 inches and then bend outward at a 90^{o} angle for an additional 10 inches. All connections in the barrier must be secure if it is to be effective.

Other Control Methods

Repellents introduced into mole runways seldom give satisfactory results; gassing is also ineffective because it is practically impossible to fill all the runways with gas.

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