

Mole and Gopher Control
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Moles

Insectivores

Eat insects, white grubs, 45 to 50
Pounds of earthworms per year

Eat 70 - 100% of weight daily

Adult length: 3 - 8 inches

Adult weight: 4 oz.

Color: gray, brown, silver

Eyes: none visible

Ears: small openings

One litter per year (March - April)

Litter size: 3 - 5

Life span: 1 to 2 years

Visible surface tunnels

Tunnel depth: 1 - 2 inches

Digging speed: 18 feet per hour

Traveling speed: 80 feet per minute

Control: Trapping with spike / harpoon,
loop and scissor traps, poison bait or
barriers

Gophers

Herbivores

Eat alfalfa, roots of any garden plants
and orchards, Bermuda grass rhizomes

Can eat electric lines and irrigation pipe

Adult length: 6 - 13 inches

Adult weight: 4 - 16 oz.

Color: light to dark brown

Eyes: visible

Ears: external ears

One or two litters in spring and fall

Litter size: 1 - 6

Life span: 1 to 3 years

Surface mounds

Tunnel depth: 4 - 15 inches

May create 300 mounds and move
4 tons of soil in a year

Can move as fast backward as forward
Can turn around in tunnel

Control: Trapping with Victor Black
Box, McAbee, Easy Set traps, Trapline
Products, poison bait or barriers

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Mole Trapping Tips

Instinct is to remove obstacles and open tunnels.

Multiple traps increase chance of success.

Proper trap placement and making guide holes for spike traps are important.

Move traps every one or two days.

Don't leave traps out in the yard through winter.

Clean traps before putting them up.

Keep trap spikes sharp and oil moving parts.

Gopher Trapping Trips

Instinct is to plug openings in tunnels.

Attack freshest mounds first.

Make sure wire traps fit in tunnels snugly, but still function.

Placing wire traps back in tunnels 8" - 12" improves chances of success.

Make sure that no other tunnels intersect in front of wire traps.

Back Box traps are easy to set and simple to see a successful catch.

One pair of traps per burrow is usually enough.

After success, sometimes reset traps in same burrow.

Sometimes covering set traps is effective.

If there's no activity in two days, the burrow may be abandoned.

Three to five burrows usually indicate only one gopher.

Clean traps before putting them up.



Managing POCKET GOPHER Damage

Pocket gophers are burrowing rodents which live almost entirely underground. Gophers are well adapted to their underground existence, with stout forelegs and strong curved claws for digging. They have prominent, yellow incisor teeth and large, fur-lined external cheek pouches in which food is carried. Pocket gophers have poor eyesight, but their other senses are acute. Their tails are sensitive and are used as feelers when the animals travel backward in their burrows.

Pocket gophers are rarely seen because they spend most of their lives in underground tunnel systems. Their presence in an area is indicated by the characteristic mounds they create. Pocket gophers should not be confused with moles, which are insectivorous and sometimes construct tunnels and mounds resembling those made by pocket gophers.

Gophers are solitary animals except during the mating season and when young are being cared for. Otherwise, there is only one gopher in each tunnel system. Pocket gophers dig extensive tunnels or runways that consist of a main tunnel with several short lateral tunnels. A single gopher may have a burrow system that extends as much as 800 feet, covers an acre of ground, and ranges from a few inches to several feet deep. Runways vary from 2 to 5 inches in diameter depending on the gopher species. These runways serve as

homes, storehouses and routes for underground searches for food. The shallow runways, 4 to 15 inches below the surface, are used primarily to search for food. The gopher pushes soil from the burrows to the surface with its forefeet and chest, forming a characteristic horseshoe shaped mound approximately 8 to 24 inches in diameter and 6 inches high. The mounds are at the ends of short, lateral tunnels which branch off the main runway. The surface opening, used to expel dirt from the burrow, is plugged by pushing dirt into it. This results in a depression on one side of the mound (Fig. 1).

Biology and Reproduction

Adult weight: Up to 1 pound.

Total length: 6 to 13 inches.

Color: Light brown to deep chocolate.

Body: Stocky, short-legged.

Gestation period: Depending on species, 18 to 51 days.

Litter size: Ranges from one to six, averaging two.

Litter number: May have two per year, usually born from March to July.

Life span: 1 to 2 years.

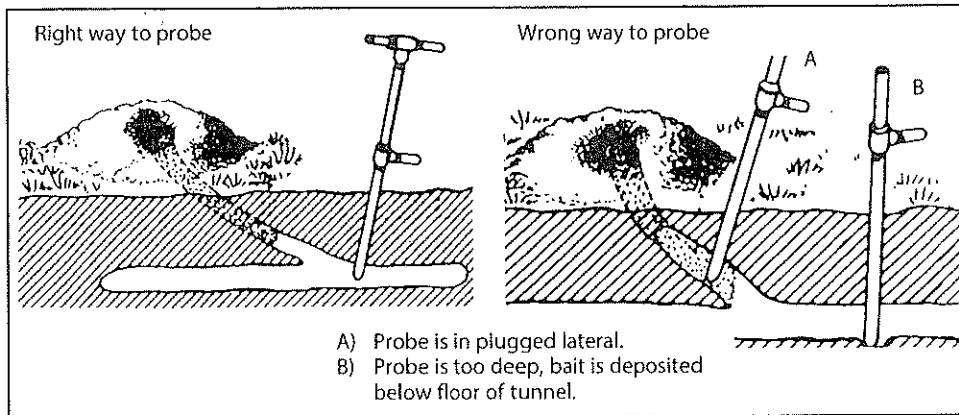


Figure 3. Right way and wrong way to probe.

made with a 3-foot section of a 3/4-inch gas pipe welded to a blunt point. Thread the cut end and fit it with a "T" joint. Four-inch nipples with the threads cut off of one end can be screwed into the "T" joint to form a handle. A moveable foot rest can be made of a 1-inch "T" joint slipped over the main probe and held in place with a set screw. A 4-inch nipple screwed into the "T" completes the foot rest.

3. Dig down with a trowel or shovel to locate the runway. The traps should be placed as far into the tunnel as possible. It may be necessary to enlarge the runways to allow the traps to operate properly. Leave the hole open, because the gopher will be attracted to the opening to plug it.

4. Secure the trap with a piece of small, flexible wire attached to a stake so the gopher cannot pull it into the tunnel.

5. If traps are set in the main runway, set and place two traps, one in each direction from the hole (Fig. 4A). If traps are set in lateral

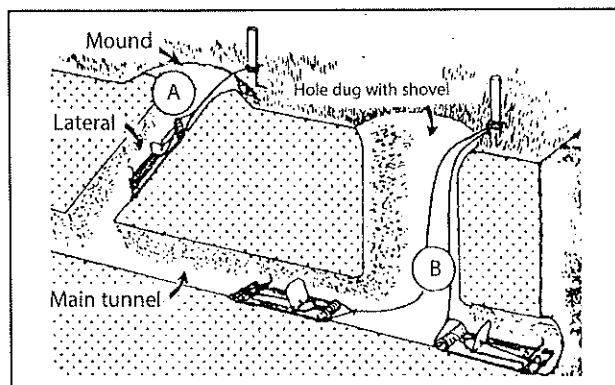


Figure 4.

runways, unplug the tunnel entrance at the mound. Place one trap, jaws forward, in the lateral tunnel with the trap jaws pointing toward the main runway (Fig. 4B). Do not block the main runway.

6. For best results, visit the trap-sets every half-hour.

Chemical Control

Effective control materials for gophers are strychnine-treated grain and zinc phosphide pellets. Toxic baits can be administered by the hand probe method or with a burrow builder. These methods are most efficient for large or heavily infested areas where trapping is not practical. Because the toxic grain is placed underground, it is relatively safe when used around other wildlife, pets and livestock. However, you should always carefully read and follow pesticide label instructions. Some of these products are classified as "restricted use" and require a certified pesticide applicator's license.

Hand Baiting

Two techniques are used to locate main runways so that bait can be properly placed. The first method is the same as the one described under "Mechanical Control." The second is to probe the area in a perpendicular line between two fresh mounds, assuming that the main runway makes a direct connection between them.

After locating the main runway, remove the probe and insert the recommended doses of bait material. Close the opening with grass or paper and cover it with dirt to keep out light and air. Do not cover the bait with soil. Determine the overall extent of the individual main runway. Place bait near each end, as well as at one or more locations in the central part of the system.

In predominantly sandy soil, or whenever the runway is difficult to locate with a probe, locate the burrow plug at the mound. This can be done by carefully scraping the dirt from a fresh mound



Managing MOLE Damage

There are several species of moles in the United States, but the only one found in Texas is the eastern mole (*Scalopus aquaticus*).

Moles are small, burrowing mammals that feed on insects. Moles have furless, pointed snouts, small eyes concealed in the fur, and no external ears. They have broadened, shovel-like front feet, webbed to the base of the claws, that enable them to dig effectively for insects. Moles have a keen sense of smell and touch but are almost blind. They are most active on damp, cloudy days in the spring and fall.

Moles live in the seclusion of underground burrows, coming to the surface only rarely, and then often by accident. Because of its secluded life underground, the mole has only a few natural enemies. Coyotes, dogs, badgers and skunks dig out a few of them, and occasionally a cat, hawk or owl surprises one above ground. Probably the greatest threat to moles is the flooding of lowlands during rainy seasons.

The principal diet of moles consists of earthworms, grubs, beetles and insect larvae. Vegetation occasionally makes up a small portion of their diet. They eat from 70 to 100 percent of their weight each day to compensate for the tremendous amount of energy expended in burrowing through soil. Because of their food requirements, moles must cover a larger area than most animals that live underground. Therefore, three to five moles per acre is considered a high population for most areas.

Damage

Moles destroy only a 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 insects. Their burrowing can disfigure lawns and parks, destroy flower beds, tear up the roots of grasses and create havoc in small garden plots.

Biology and Reproduction

Adult weight: 4 ounces.

Total length: 7 inches.

Color: Grayish-brown.

Gestation: 42 days.

Litter size: Three to five.

Litter number: One litter per year, born

March to early April.

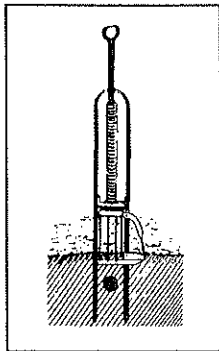
Weaning: 1 month.

Trapping

Trapping can be a satisfactory method of control when the habits and instincts of the mole are understood. A mole becomes suspicious when its sensitive nose encounters anything foreign in its runway. Therefore, it will back up and burrow around or under an ordinary trap set in its tunnel. It is not suspicious of dirt blocking the

age moles, contact your agricultural Extension agent for further information.

Sometimes, small areas such as seedbeds or gardens sustain persistent mole damage. In such areas the installation of a barrier made of sheet metal or hardware cloth may be justified. The barrier should begin at the ground surface, go to a depth of at least 12 inches, and bend outward at a 90-degree angle for an additional 10 inches. All seams in the barrier must be secure if it is to be effective.



Properly set harpoon trap.

Toxicants

Commercial baits are available at hardware, lawn and garden, or ranch supply stores. However, poisoning moles is usually not effective because moles normally do not eat grain baits.

Fumigants

Fumigants registered for use against moles include aluminum phosphide and gas cartridges. These may be restricted-use pesticides that can only be used by a licensed pest control operator or by a person who has a private applicator's license to use such chemicals. These fumigants are most effective if placed in the deep burrows rather than in the surface runways. Care should be taken when using chemicals, and the label instructions should be read, understood and followed precisely.

For additional information, contact the nearest office of Texas A&M AgriLife Extension Service - Wildlife Services.