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“I’ve got moles, what should I do?”

There are many challenges to growing turfgrasses. We fret over the reseeding, watering, mowing and applying both fertilizers and herbicides--then along comes the mole. The classical Greek definition of a tragedy is something that is sad and unfortunate occurring to someone who really does not deserve it. The mole damage, to many, fits the definition of a lawn tragedy.

Moles or Gophers?

When the damage is first noticed, most of us will narrow the culprit down to either moles or gophers, although other critters such as armadillos, skunks and dogs are on the list of suspects. The key to deciding which is the presence of tunnels and the size and shapes of any dirt mounds. Both have underground tunnels, but only moles have superficial visible ones. Gopher tunnels are all too deep to be seen. Moles have few mounds, but when present, they are usually less than a foot across and round. Gophers typically have several mounds which are larger, kidney or horseshoe shaped and with a plug of dirt in the center. Therefore, if you have tunnels, you can be guaranteed, at least, of having moles.

Biological difference in Moles and Gophers

Moles and gophers are not closely related in the animal kingdom. While gophers are true rodents and eat vegetation, moles are insectivores and their diet consists of worms and insects. Not only do moles not eat plants or their roots, they do not have the teeth for eating plants. In recent years it has been learned that moles may eat 75% of their weight daily on a diet that mainly is earthworms. At one point it was believed that white grubs, the larval stage of several types of Scarab beetles (Japanese, June and Chafer beetles) were an important element of the diet. Strategies to eliminate the grubs were thought to drive out the moles. While moles do eat white grubs, this is not a major part of their diet and insecticides should be applied to lawns for control of grubs, not moles.

Moles are very territorial. While it may look like your lawn has a hoard of moles (actually a group of moles is called a “labor of moles”), there usually are only 2-3 per acre. The territorial nature of moles is a significant factor in control. After trapping or poisoning a mole, the territory may soon be claimed by a neighboring mole looking for a new home, causing the homeowner to conclude that his or her efforts are not productive.

Moles do not hibernate and usually have one springtime litter per year. This contrasts with gophers which have several litters and may have up to 20 animals per acre. Moles are amazing diggers; they may dig up to 18 feet of new tunnels per hour. They dig to find food and eat and rest in cycles over a 24 hour period. Their saliva has a chemical which paralyzes worms and when full, they may collect and store live paralyzed worms in a food vault for future use.

The superficial tunnels produced by moles, the ones visible, may be one-time feeding tunnels or ones used to travel from one feeding area to the other. The secret to control of moles is determining which of the tunnels is used repeatedly for traveling.

Controlling Moles

First of all we should understand what isn't effective. There is an old adage that states that when a single problem has multiple varied solutions, there is a strong likelihood that none are very effective. That seems to apply to the mole problem. People have used smoke bombs, red pepper, poison peanuts, razor blades, chewing gum, human hair, vibrating devices and a host of dangerous chemicals to attempt to eliminate the mole. There is no science to support the use of any of these recommendations. One chemical, castor oil, has been studied and found to possibly have a very temporary effect on repelling moles.

There are two approaches that are effective for mole control. Traps and poisoned gel worms.

Traps

Traps have been around for many years and have repeatedly been shown to be effective. However, talking to homeowners, you will hear a common line, “I tried those traps and they aren't worth a hoot. They don't work”. It is likely the trapper that is defective, not the trap.

There are 3 general types of traps: scissor traps, harpoons and loop traps. They are listed in order of their effectiveness. Professional mole trappers mostly use scissor traps, such as the Victor Out-of-Sight brand. These traps have large scissor-like blades that are inserted around the mole tunnel after collapsing a small area for the trigger. When the mole expands the collapsed part of the tunnel, the scissors catch and kill the mole. The other traps are variations of this, depending on the mole to re-expand a tunnel and triggering the trap. The harpoon, or spear trap seems to be the one most commonly available at home and garden centers. All of these traps have specific instructions on how to arm the device. Unless you follow the instructions to the letter you will not be successful. Also, all of these traps are dangerous once set. This is especially true for the loop trap, which may easily break a finger unless handled carefully. More information on moles and trapping may be found on the turfgrass web site of the University of Arkansas, <http://turf.uark.edu/publications/factsheets/fsa.htm>. Go to the article “Controlling the Eastern Mole”.

Poisoned gel worms

The poison gel worm is new to mole control. A lot of study went into the development of the worm and a large part of our understanding of moles, especially what they eat, comes from this data. The worm is similar to the plastic worms used for fishing, both in size and consistency. The poison is a potent rodenticide commonly used in rat and mouse control. It therefore is a serious poison and should not be used around pets and children. Two of the common brands of the poison worms which are available, Talpirid and TomCat, both have detailed specific instructions which must be followed to the letter to be successful. This includes wearing of rubber gloves to prevent your scent being transferred to the worm. Since being placed on the market these worms have been used extensively by professional groundskeepers who attest to their effectiveness. Independent scientific studies as to their effectiveness have not, as yet, been published.

The key to having success, both with the traps and with the gel worms, is to find an active tunnel. Most of the trappers that report the traps not working set the traps on an inactive feeding tunnel. To identify a traveling tunnel, you must go out and collapse a small area of several tunnels, marking the spot, and then re-check over a couple of days and see which tunnels are re-expanded. The re-expanded ones, indicating repeated use, are where traps or baits need to be placed. Tunnels that are more likely to be traveling ones seem to be those connecting feeding areas or those running adjacent to driveways, walks or garden bed edges.

To be successful, you must also prevent light and air currents from entering the tunnel where the gel worm or the trap has been placed. You may use loose dirt to fill in the gaps or some people cover the spot with a large bucket. Any opening left unfilled may prevent the mole from using the tunnel. Another common mistake is not completely collapsing the tunnel under the trap trigger allowing the mole to slip through the tunnel without releasing the trigger. Some experts believe that people using the harpoon or spear traps who find them sprung, but no mole, actually are more successful than they realize. They feel in many cases they have harpooned a mole which lies dead and undiscovered in the tunnel unable to be retracted by the nature of the trap.

One additional and less usual solution to moles, is a pet that has a knack for mole hunting. This is usually a dog, but one hears of cats with the talent as well. They patiently look and listen for the mole to tunnel and then rapidly dig up the mole. The downside of this strategy is that the holes dug by the pet are often worse than the mole damage.

Key take home points

- Moles are insect eaters and can't eat plants, gophers eat plants
- The mainstay of moles diet is earthworms, not white grubs
- There are usually only 2-3 moles per acre
- Moles have visible tunnels, gophers do not
- Both mole traps and poison gel worms are effective if used correctly
- To be successful with either trap or worm an active tunnel must be identified
- Light and air current must be excluded from the area of the tunnel where the trap or worm is placed.