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## FAQ: Moles

Moles are tunneling underground, and my lawn is being ruined. How can I get rid of the moles?

**Moles leave raised tunnels and/or mounds in lawns.**

### Remedies include:

- Kill traps (must be set in active tunnel; difficult to set correctly).
- Castor bean-based repellents (e.g. "Scoot-Mole"® and "Mole-Med"®). (Follow label directions. These are often quite effective, but must be re-applied after heavy rain).
- Fumigation ("smoke bombs" readily available, but difficult to set properly, and rarely succeed at full control. More toxic fumigants are potentially dangerous and require license to use).
- Toxic chemicals (insecticides) to reduce mole food supply (insects and larvae, esp. "grubs"). (Poor solution; many insecticides are harmful to people, pets, and wildlife. Moles eat more than grubs—such as worms, slugs, small vertebrates not controlled by insecticides at normal application).
- Rolling lawn, direct killing of observed "working" moles. (Sometimes effective but very time consuming!)

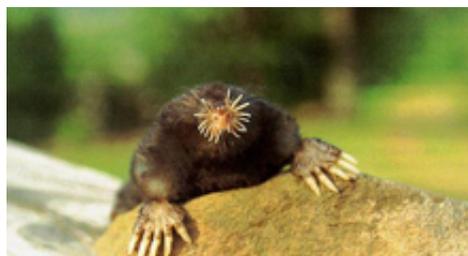


eastern mole

## More Detailed Information

**It's said that you have to "know your enemy" so let's take a look at a little mole biology!**

Moles, along with their relatives the shrews, are members of the mammal order Insectivora, which literally (and appropriately) means "insect eater." Moles are specially adapted for a life underground—they have short thick fur (that can lie comfortably in any direction), tiny eyes, and ear openings that are hidden under the fur. Their bodies are rather narrow and compact, their snouts are pointed, and they have large claws on the toes of their powerful, shovel-like front feet. Under the right soil conditions, moles can tunnel at a speed of 15 feet per hour! (No wonder it seems like they can ruin a lawn almost overnight!)



There are two species of moles in southern Michigan: Eastern moles are by far the most common species in suburban yards, while star-nosed moles are found mostly in damp soils near ponds, marshes, or other wetlands, and sometimes even swim and feed underwater. The eastern has a short, almost naked tail, while the star-nosed has a longer, furry tail and (as the name implies) distinctive tentacle-like



star-nosed mole

projections around its snout.

In warmer, damper weather, eastern moles make their well-known feeding tunnels just under the surface; they push up the soil to form the long, winding ridge that most annoys homeowners. In drier weather, and in winter, they create deeper tunnels, at times over 2 feet down; the excess soil may be pushed upward, forming the the well-known "molehills." Both mole species can create surface-breaking tunnels and "spoil" hills and (contrary to popular belief) you cannot always discriminate between the species on the basis of the shape or size of these hills, though in general eastern moles tend to create larger, more irregular hills, while star-nosed moles create lower, more neatly rounded hills, at least in wetter soils.

Typically in May a female mole gives birth to 3 to 5 naked babies in a cozy nest usually in one of the deeper burrows. They grow quickly and leave the nest in about a month, and are independent and making their own burrows by late summer or fall. Eastern moles tend to be rather solitary animals, and possibly territorial. Though it may seem like your yard must be inhabited by hundreds of moles, it is more likely that the maze of tunnels criss-crossing your lawn was made by only a few moles, and quite possibly only one!

Moles have huge appetites, and may eat up to a third of their weight in food each day. The diet includes mostly earthworms and adult and larval insects, along with a few centipedes, spiders, slugs, snails, and a bit of vegetable matter such as roots and seeds. Moles occasionally attack the underground nests of yellowjackets and other wasps.

All in all, moles are beneficial animals, consuming numbers of potential insect pests and aerating the soil. However, there is no doubt that they are highly attracted to the bounty to be found in well-watered and fertilized lawns, and here they become quite a nuisance! So how can you eliminate or at least discourage moles in the yard?

**There are several options:**

- Repelling eastern moles from an area is often possible using one of the castor oil-based liquid products (such as Mole-Med® and Scoot-Mole®). These are sprayed on the lawn with a standard garden or hose-end sprayer (follow label directions). Noticeable results may occur after several days; heavy rains will dilute the effect and necessitate reapplication. These products are thought to be relatively non-toxic to people, pets, and wildlife when used as directed.



hairy-tailed mole

- Other repellent methods may also be effective in small garden areas, including devices (like "mole windmills") that vibrate the ground, and the dense planting of certain plants like "gopher purge" (*Euphorbia*), castor bean, marigold, and *Fritillaria*.
- Some other often-suggested remedies are usually ineffective and often unsafe; these including placing human hair, "chewed" bubble gum, broken glass, engine oil, or mothballs in the mole tunnels, or trying to flood out the moles with a garden hose. (Oil should never be spread in the home environment, and moles may eject mothballs and glass onto the surface, where they are hazardous to children, pets, and wildlife. Flooding won't work in porous sandy soils, but may have some utility in heavy, dry clay soil.)
- Cats and dogs sometimes learn to catch moles; cats are poor at digging and more often catch shrews on the surface (which some people mistake for moles!). Certain dog breeds take great joy in digging out moles, but often cause considerable additional damage to the lawn in the process!
- Direct killing of moles will certainly help the problem, but catching them is not easy.
- Sometimes by flattening mole tunnels and then patiently watching for active digging, you can locate the mole and quickly flip it out of its burrow with a shovel. Activity is usually

greatest (or at least most observable) at dawn and after sunset.



eastern mole

- Trapping is a bit tricky, but can be effective. There are several trap types on the market; the two most common styles are the "harpoon" trap (with several long, sharp metal spikes on the business end) and the "choker" type (which grabs the critter with a metal loop). Start by stamping down sample sections of the mole tunnels in your yard and noting which ones are quickly pushed back up each day; these are the ones to target. Follow the directions of the trap manufacturer. In hard, dry ground, the harpoon traps may not work unless the soil is loosened or the trap is staked down. Once the trap is set, place extra soil over any openings over the

tunnel, as light shining in will scare the mole. Star-nosed Moles can be trapped by digging into the tunnel below one of the mounds; refill the hole with loose dirt and set the trap over the hole.

- Fumigation of mole tunnels using smoke cartridges is another option, but this tactic rarely achieves full control without frequent and time-consuming reapplication. Follow package instructions for cartridge placement and ignition, and keep children and pets away during use. A number of the cartridges must be introduced simultaneously into the active tunnels, perhaps every 5 to 10 feet, and tunnels must be re-sealed after ignition to prevent smoke from escaping.
- Reducing the mole's food supply by using lawn insecticides may discourage moles by reducing the numbers of beetle grubs and other insects that attracted the moles to the area in the first place. However pesticides must be used judiciously and with due caution - nearly all involve certain risks, even when used as directed. Two formerly widely used lawn insecticides, diazinon and chlorpyrifos (Dursban), are reportedly (December 2000) being phased out for residential use by the U.S. Environmental Protection Agency due to unacceptable risks to children, and are also known to be toxic to birds and other wildlife. Other chemicals may be sold in home and garden centers for residential lawn use, but read and follow label directions carefully. For information on the uses and safety of any pesticide, the [U.S. EPA website](#) is an excellent resource.
- Other stronger, mole-control substances, including poison baits and toxic fumigants, may be available for use by licensed pest control companies, but are generally not otherwise available to the homeowner. Again, no poisonous substance is completely risk-free, and one should weigh carefully the choice of introducing these chemicals into the home environment to eliminate an annoying but otherwise harmless pest. It is always wise to start with the least risky control methods for any pest, and then gradually "escalate the battle" as necessary.

## Acknowledgement

Portions of this section were adapted and edited from earlier material written by Glenn R. Dudderar, former MSU Extension Wildlife Specialist.

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star-nosed mole