HELPLINE HAPPENINGS - FEBRUARY 2025

By: Kate Lasko

Moles and Voles and Shrews, Oh My!

Dorothy Gale and her friends worried about running into “lions and tigers and bears”; much less threatening but much more abundant is the gardener’s tiny trio of trouble: moles and voles and shrews. Despite their size, these pests can contaminate vegetables, kill plants, girdle trees, and riddle lawns with tunnel humps that look like hieroglyphics.

THE SHREW



(Smithsonian Magazine)

The most innocuous of the three is the shrew. Mouse-like in appearance and only three to four inches long (including tail), these tiny omnivores typically have one to three litters a year, each numbering two to ten pups. Their average lifespan is one to two years. They are easily distinguished from moles and voles by their long, pointed snouts.

Though classified as omnivores, shrews mostly eat insects but will also eat seeds and fungi. They immobilize prey using a venomous saliva which they inject through biting. Mainly nocturnal, they hunt for insects above ground and in tunnels made by moles and voles. Most often, shrews can be found living under leaf litter. Because they eat insects, some experts consider shrews beneficial; however, shrews can contaminate fruits and vegetables with their excretion.

Management strategies vary, but because they are more nuisance than enemy, non-toxicant methods are more popular. Mouse traps, small box traps, and pit traps can be set parallel to and inside a runway or parallel to walls around structures. Peanuts and rolled oats make an effective bait. To prevent them from entering structures, use hardware cloth of one-quarter inch mesh placed over potential entrances. According to Utah State, cats are adept at killing shrews. (I can corroborate their findings!)

Fun Fact about shrews: their brains and livers shrink in the winter to conserve energy when food is more scarce.

THE MOLE



(University of Maryland Extension)

The mole's pointed snout and large rounded front feet replete with stout claws make them powerful diggers. Generally six to eight inches long, moles have long gray to silver-gray fur that hides their ears and eyes. They live anywhere from three to six years and birth one litter per year of between two and five offspring.

This small carnivore eats earthworms, grubs, and insects and because of their diet, may actually benefit plants. Why, then, do homeowners hate them? Using their stout front claws, moles dig raised tunnel systems in lawns with nesting and feeding burrows in dry, warm soil under trees or solid structures. These tunnels are closed system tunnels, with no entrance hole. Because these systems provide moles with everything they need, they rarely come to the surface. In one night, moles can hollow out a 160 foot burrow (the human equivalent of a half-mile tunnel in the same amount of time). They seldom cause damage to plants; however, their tunnels disfigure lawns and gardens. (MSU Extension photo credit)



Lethal methods to manage moles involve using pesticide baits that mimic their food sources, like gummy worms or mole gel type baits which contain the neurotoxin bromethalin. (As with any pesticide, read the label carefully before application.) Traps are tricky to set, and soil type can impact effectiveness, for example, scissors-jawed and choker traps are more effective in loamy or clay soil. For biological control, use pesticides to control grub populations.

Fun Facts about moles: they eat 70-100 percent of their weight each day, and it is rare for more than two or three moles to occupy the same tunnel system.

THE VOLE



(RU Agricultural Experiment Station Photo Credit))

The vole claims top prize as the gardener's nemesis. Though they can be confused with mice, voles have some physical distinctions. Ranging in size from three-and-a-half to five inches, voles have short legs and tails, small eyes and ears partially hidden by dense fur and prominent orange teeth. They are short lived, between two and 16 months; however, they mature in 35-40 days and can produce one to five litters per year, with each litter averaging three to six young. Unlike the mole, voles can live in colonies numbering from a few to 300 members. A colony's home range can be as much as a quarter of an acre.

Voles are herbivores, eating roots, seeds, bark, and foliage. They dig short, shallow tunnels one to four inches deep which have openings about two inches wide that are often hidden by shrubs, mulch, or spreading plants. These surface runways link to underground tunnels that, unlike moles, do not have raised ridges. They forage in areas of about 10,000 feet. Because they are active all year round both day and night, voles can do a lot of damage; in short, they kill plants. In addition to their penchant for bulbs, roots, and stems, voles can girdle trees and saplings at the ground line. Their damage is especially evident during snowy winters where, hidden from predators, they may girdle trees to the point that shrubs may topple. (UNH Extension photo credit)



Lethal methods for vole management include using bait stations laced with zinc phosphide

placed only at active entrance holes or runways, and anticoagulant baits, which can take up to 15 days to be successful. As with all toxicants, follow manufacturer guidelines. (To ensure the legality of a particular toxicant in NJ, call the NJEPA Pesticide Program at 609- 530-4070.) Because voles are prolific breeders, using mouse traps can be expensive. Several cultural methods effective against voles include eliminating weeds, ground cover, litter, excess mulch, thatch, and mowing regularly. A weed free or vegetation-free buffer strip is an effective way to deter voles from areas needing protection. Homeowners can also encourage predators, like raptors and snakes, or, for protection of trees and saplings, construct metal barriers at least 12" high and with a mesh size of ¼ " or less. Barriers should be placed one to two inches from the trunk and buried six inches deep.

Fun Fact about voles: there is nothing fun about voles!

SOURCES USED

1. Rutgers Cooperative Extension Fact Sheet #399
2. Rutgers Cooperative Extension Plant and Pest Advisory
3. Penn State Extension: Identifying Moles, Voles, and Shrews
4. Purdue Extension: Moles and Voles - What's the Difference?
5. Alabama A&M and Auburn Universities: Controlling Damage From Moles and Voles
6. University of Maryland Extension - Shrews
7. Rhode Island Dept. of Environmental Management - Shrews
8. Utah State University - Shrew Damage and Control
9. Warren, Marshall, Johnston County (NC) Horticulture Extension Agent - Moles and Voles - How to Identify and Control Them in Your Home Landscape.