



# Moles and Voles

## Pest Note



Photos courtesy of: Michael David Hill; Ohio State University Extension; Hugh Griffith



**Mole**

Photo: City of Calgary



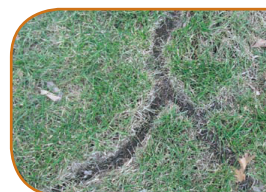
**Vole**

Photo: Laurie Smith, USDA Photo



**Vole damage**

Photo: Minnesota Department of Natural Resources Archive, Bugwood.org



**Vole damage**

Photo: University of Nebraska-Lincoln

### Moles and voles – what are they?

The adult mole measures from 12 to 20 cm in length and has dark grey or brown velvety fur. Its eyes are small and its broad front feet have strong claws for digging in soil. Moles are insectivores. Most do not eat plants, but feed mainly on earthworms, insects and grubs. Some moles may damage tubers and the roots of garden plants but any plant damage is most likely incidental, or may be blamed on other small herbivorous animals using the tunnel. Moles do not hibernate but remain active day or night all year long. During the winter, the mole looks for food deep below the frost line. Most surface activity happens in the spring and fall. Moles are solitary animals, and it is likely that only one or two moles are responsible for the damage to your lawn or garden. Moles have only one litter of 3 to 4 young in the spring. These young will stay with the female in her tunnels for about one month, and then will start creating their own tunnels, reaching adult size in four to eight weeks.

Voles resemble house mice, but have a shorter tail, a rounded muzzle and head, and small ears. Like all rodents, voles have a single pair of large chisel-like incisors in the upper jaw that continue to grow from the roots as the tips wear away. The vole has a dark brown coat with a greyish belly that turns white in the winter. In contrast, the house mouse is uniformly grey. Voles search for green plants and seeds during the day or night, and in winter, they travel in tunnels beneath the insulating snow, making round holes in the snow when coming up to the surface.

### What can they do?

The mole can be considered beneficial in some ways since it consumes insects, including grubs and other insect larvae, and slugs. Moles also feed on earthworms and some will even eat small snakes and mice.

However, the mole and its tunnels can destroy lawns, gardens, parks, golf courses and cemeteries. They can kill plants when tunnelling by removing soil around roots. The unprotected roots dry out and die. Plant diseases may also be spread by the mole's movements. Pests like voles, field mice and other rodents use these tunnels as well to feed on exposed roots. In search for food, moles create an extensive network of tunnels, many of which are used only once.

Temporary surface tunnels are where the sod is raised and appears as ridges. These feeding tunnels are used a few times, then abandoned. Deeper tunnels from which the mole must excavate dirt, forming molehills, are used mainly as the living quarters.

Signs of vole infestation are when the bark has been removed completely around the base of a tree (girdling), or the sight of 1 to 2 inch wide dead strips (surface runways) through matted grass leading to shallow underground burrows. Small piles of brownish feces and short pieces of grass along the runways are another sign of vole activity.

Female voles can start producing litters from the age of three weeks and can produce a large number of litters in one year since their gestation period lasts only 21 days and they can breed all year round. Local populations can vary from one animal to thousands per hectare on a three to four-year cycle. When the vole population peaks, predators such as foxes, wolves or hawks feed on nothing else.



### Responsible Pesticide Use

#### Before Purchasing a Pesticide

- Identify the pest correctly.
- Use physical control methods and alternatives to pesticides.
- Read the label directions and safety precautions before buying the product. The label must include the name of the pest to be controlled and the treatment location (e.g., indoor, outdoor, garden uses, pet treatment).
- Purchase only the quantity of product needed for the treatment.
- Consider hiring a licensed pest control operator.

#### Using a Pesticide

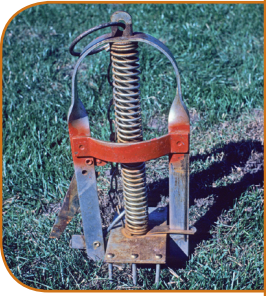
- Carefully read all label instructions and precautions before using pesticides.
- Do not drink, eat or smoke while applying pesticides.
- Persons and pets should vacate the area during treatment. Cover or remove aquaria.
- If kitchen area is to be treated, cover or remove food, dishes and utensils.

#### After Using a Pesticide

- Always wash your hands thoroughly after handling any pesticide product.







**Mole trap**  
Photo: Kansas State University

## How can I manage moles?

Licensed pest control operators may offer a trapping service or traps can be rented from them or a farming co-op. Be sure to ask for instructions on the proper use of the mole traps if you decide to set one. To ensure success, trapping efforts should be concentrated on the main runways in the spring and fall. Look for tunnels that appear to directly connect two or more mounds that run parallel to permanent structures such as fences or concrete paths, or that follow a tree line bordering a grassy area. Another method of identifying an actively used run would be to lightly step on a small section of several tunnels so that they are disturbed, but not completely collapsed. Make sure that these disturbed sections are clearly marked. After a few days, the raised sections can be identified as active runs, and therefore good locations for traps.

To a certain extent, a healthy lawn where the risk of grub infestations is minimized will be less attractive to moles. Cats or dogs can also discourage a mole from entering a yard.

Baits are rarely taken by moles because they prefer to feed on soil insects. Some baits containing zinc phosphide are available only to licensed pest control operators. No registered baits are available to the general public.

## How can I manage voles?

Cleaning up all possible food sources like vegetables left in the garden at season's end will help keep voles and other rodents away from your yard. Proper vegetation management like removing mulch from the base of fruit trees in winter will help avoid an increase in vole numbers. If you intend to put mulch down on strawberries or other perennials, do so only after the soil freezes. If you do so before the soil freezes, you will be providing an ideal location for rodents to gain access to roots in unfrozen soil.

Use metal or glass rodent-proof containers to store seeds and bird feed. Composters should also be inaccessible to rodents. Gravel or cinder barriers around garden plots are an effective and easy means of protection. The barrier should be 20 cm (6 to 8 inches) deep and a foot or more wide. The sharpness of cinder particles deters voles from pushing their noses into the soil. Commercial plastic tree guards, a piece of chicken wire or small mesh wrapped around the base of trees and extending below the soil will help prevent tree-girdling. Consult with your local tree specialist for the proper use of these materials.

Traditional snap mouse traps can be used. Place them in areas where voles are known to be. Barricades may be used that allow only voles to enter a trap. Buy a large number of snap-traps and set them all out at once for a one or two night period. A good technique is to bait the traps with a tiny dab of peanut butter or bacon for two or three nights without setting the traps. When the traps are finally set, voles are less likely to shy away from them. Always exercise extreme caution when handling a trap and keep them out of the reach of children and pets.

Natural predators including cats, owls and snakes can help keep the vole population down.

If populations have built up, the use of treated baits may be necessary. Baits containing the active ingredient chlorophacinone are available in home garden centres and are registered for the control of voles. Licensed pest control operators can use commercial baits containing chlorophacinone or zinc phosphide.

Denatonium benzoate, sprayed on plant surfaces to be protected, deters voles from chewing. This animal repellent works because it has an extremely bitter and unpleasant taste. It should not be used on food, edible plants or directly on the fruits or nuts of trees. Do not use it on sugar maple trees if the sap is to be used to make syrup, since the taste of the maple syrup may be affected.



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HC Pub: 091060  
ISBN: 978-1-100-15308-7  
Catalogue Number: H113-1/10-2010E

### Health Canada Pest Management Regulatory Agency

2720 Riverside Drive, Ottawa ON K1A 0K9  
Phone from inside Canada: 1-800-267-6315  
Phone from outside Canada: 613-736-3799 (long distance charges apply)  
Fax: 613-736-3798  
[www.healthcanada.gc.ca/pmra](http://www.healthcanada.gc.ca/pmra)



- Do not permit persons or pets to contact treated surfaces until residue has dried completely.
- Provide adequate ventilation of treated areas after use.
- Wipe clean all surfaces that come in direct contact with food, such as counters, tables and stovetops, including indoor and outdoor surfaces.
- Always store pesticides out of reach of children and pets and away from food and beverages.

#### Accidental Poisoning

- Call a poison control centre immediately and seek medical attention.
- Take the pesticide container or label with you to the emergency facility or physician.
- Follow first aid statements on the label.
- In case of accidental poisoning of pets seek veterinary attention immediately.
- Report pesticide incidents to manufacturers (phone number on label). They are required to send them to Health Canada.

#### Disposing of Pesticides

- Do not reuse empty pesticide containers. Wrap and dispose of in household garbage.
- Follow the product label instructions or contact provincial authorities for disposal of pesticides.

**Note:** These are general recommendations. Consult the label for specific instructions. When in doubt, contact a professional.

#### Health Canada

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