



# ATTS Group

## Vole Damages

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Voles are small, mouse-like rodents that can cause serious damage to trees, especially young fruit trees and ornamental species. Alberta has several species of voles (12 species), the most common being the meadow vole (*Microtus pennsylvanicus*) and the prairie vole (*Microtus ochrogastor*). Although they are often mistaken for mice, voles differ in behavior and habitat. They typically live in grassy areas, gardens, orchards, and landscapes where vegetation provides shelter and food. During winter and early spring, vole damage becomes more noticeable because food sources are limited, forcing these rodents to feed on tree bark, roots, and lower stems.

### Pest ID and Symptoms

It has a stout body (3 to 9 inch long), short tail, and brownish-gray fur that helps it blend into vegetation. Like many rodents, voles have a short lifespan, but they reproduce very rapidly. A single female vole can produce 5 to 10 litters each year, with an average of 3 to 5 young per litter. Voles may build shallow nests lined with grass on the ground or create small underground tunnels about 4 to 5 inches deep for nesting. Their populations tend to fluctuate in cycles, with major population increases, or "booms," occurring every 3 to 5 years.

Meadow voles are active year-round and reproduce quickly, causing populations to increase rapidly under favorable conditions (deep snow and warm weather). They feed on grasses, roots, seeds, and the bark of young trees, often damaging orchards, shelterbelts, and gardens during winter. Their tunneling and feeding habits can harm crops and landscaping.



Picture 1. Vole damage on young pine ( L ), severe vole damages in fruit orchard ( C ) vole damages on apple trees ( R ) including damage on thin plastic bark



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## Damage

The signs of vole damage are usually easy to identify. Gnawed bark near the base of trees is one of the clearest indicators. Unlike rabbits, which leave clean cuts at an angle, voles create irregular chewing marks and narrow grooves. One of the most common types of vole damage is girdling. Girdling occurs when voles chew around the circumference of a tree trunk, removing the bark and cambium layer. The cambium is essential because it transports water and nutrients between the roots and leaves. When this layer is destroyed, the tree can no longer function properly. Young trees are especially vulnerable because their bark is thin and tender. Complete girdling often results in tree death, while partial girdling weakens the tree and reduces growth and productivity.

Voles also damage trees by feeding on roots beneath the soil surface. Root damage is more difficult to detect because it occurs underground. Trees with damaged roots may show symptoms such as wilting leaves, reduced vigor, stunted growth, and poor fruit production. In severe cases, trees may lean or collapse because their root systems can no longer anchor them securely. Root feeding is particularly harmful during winter when voles tunnel beneath snow cover and feed undisturbed.

Several factors contribute to vole infestations around trees. Thick grass, mulch, weeds, and dense ground cover provide ideal shelter and nesting sites. Snow cover in winter offers additional protection from predators, allowing vole populations to increase rapidly. Orchards and landscapes with little maintenance are often more susceptible because voles can hide easily and move unnoticed. Mild winters may also lead to larger vole populations because more individuals survive until spring.

## Management and Control

Effective management on trees involves an integrated approach, combining cultural, biological, and maybe some chemical control methods:

- One effective strategy is habitat management. Keeping grass and weed trimmed around trees reduces shelter for voles and makes the area less attractive.
- During heavy snow accumulation in orchard settings removing snow (blowing away) around tree trunks (6 inches) would discourage voles to nest
- Mulch should be kept several inches away (6 inches) from the tree trunk to discourage nesting.
- Physical barriers are among the best protective measures for young trees. Plastic tree guards can be wrapped around trunks to prevent gnawing. These guards should extend several inches below the soil surface and at least 3 to 4 feet above ground level to provide adequate protection.



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- White plastic guard also protect young fruit tree bark from sunscald damage as well as from rabbits and deer damages. Put plastic guard in fall and remove in may allowing bark to thicken.
- Regular inspection is important because guards that are too tight can restrict tree growth.
- Natural predators also help control vole populations. Owls, hawks, foxes, badger, snakes, and domestic cats feed on voles and can reduce their numbers.
- In some cases, traps and rodenticides are used to manage severe infestations, but these methods should be applied carefully to avoid harming non-target animals and the environment.
- Removing debris, wood piles, and dense vegetation can also limit vole activity.

