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Michigan State University Extension-Oakland County

Controlling Voles



General Description

Identification — The meadow mouse (or vole) is small when compared to a chipmunk. However, it is the largest mouse living in Michigan weighing about 1¼ ounces when full grown. The upper parts of the vole are slate gray to dark brown in color. The sides are covered with lighter color fur. The hairs on the under parts are silver-tipped. The ears are usually concealed by dense fur. The tail is twice the length of its hind foot.

Habitat — Meadow voles are found statewide and make shallow tunnels in the ground and surface runways in the grass. They also girdle tree trunks in fall and winter. Pine voles prefer scattered tree roots. Prairie voles are found in southwestern Michigan and the evidence of their presence resembles both meadow and pine voles. Voles can also be found in the following places: hay bales, under boards, in crates, and brush piles.



Diet — Voles eat a wide variety of plants, most frequently grasses and forbs. In late summer and fall, they store seeds, tubers, bulbs and rhizomes. They eat bark primarily in fall and winter and will eat crops, especially when their populations are high. Occasional food items include snails, insects, and animal remains.

Reproduction — Voles may breed throughout the year but most commonly in spring and summer. In the field they have 1 to 5 litters per year. Litter sizes range from 1 to 11, but usually average 3 to 6. The gestation period is about 21 days. Life spans are short, ranging from 2 to 16 months.

Damage Identification

Voles cause damage by feeding off the bark of trees and shrubs. Vole damage to trees and shrubs generally occurs in the winter under snow cover. However, in many instances, the damage is not noted until spring after the snow has melted. Their runways (travel lanes) can be identified as narrow, shallow depressions in the sod. They are generally covered with grass. An abundance of small mouse holes, runways, mouse droppings, grass clippings and girdling on trees and shrubs indicate the presence and relative abundance of voles.

Damage Prevention Methods

Exclusion — Wire netting “mouse guards”

have been popular and effective in reducing the damage in orchards, tree nurseries and residential areas. Set the netting (1/4 inch mesh hardware cloth) around the base of fruit or ornamental trees 3-4 inches from the ground level (to prevent rabbit damage.) Wire mouse guards have several important advantages: they provide protection for several years after initial labor and material cost, there is little maintenance expense involved, and a minimum number of inspections are needed.

Habitat Modification — Eliminate weeds, groundcover, and litter in and around crops, lawns, and cultivated areas to reduce vole populations. Lawn and turf should be mowed regularly. Mulch should be cleared 3 feet or more from the bases of trees. Soil tillage is effective in reducing vole damage as it removes cover, destroys existing runway-burrow systems and kills some voles outright.

Repellents — Voles can be repelled from trees and shrubs for up to 90 days by applying a solution of 10-20% thiram and sticker (an adhesive) to all bark surfaces.

Toxicants — Vole populations can be reduced in fruit orchards and tree plantations by evenly applying or broadcasting toxic baits containing zinc phosphide, diphacinone

and chlorophacinone. However, these are restricted-use pesticides and must be applied by a certified applicator. They should be applied to grassy areas in and around vulnerable trees.

Anticoagulant baits are also effective in controlling voles. Anticoagulants are slow-acting toxicants requiring from 5 to 15 days to take effect. Multiple feedings are needed for most anticoagulants to be effective. In many states, one or more anticoagulant baits are registered for controlling voles.

Trapping — Trapping is an effective method for controlling voles if the damage is over a limited area (less than an acre) and a sufficient number of traps are used (two to three per runway and/or hole). Set single mouse snap traps perpendicular to vole runways with the triggers in the runways, or set two traps together within the runways with the triggers facing away from each other. Bait is not required. If you prefer to use bait, smear peanut butter mixed with oatmeal on trap triggers. Baited traps should be covered with a box with a 1-inch hole cut in it, to reduce attractiveness and access to birds and squirrels. Make sure boxes are securely positioned and of sufficient size to allow free action of the snap traps. Good enclosures can be made of PVC pipe and cardboard milk cartons.

Would you like additional information?

Additional information is available on-line. Please see [MSU Extension-Oakland County's publications](#) as well as [MSU Extension's Bulletin Office](#) on campus.

Please contact our office (248/858-0880) for assistance.