



FACT SHEET

Orchard Rodent Control

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The meadow vole, which is often referred to as the orchard mouse, can cause significant damage to orchards under the right conditions.

Meadow voles may be present in the orchard year round, inhabiting the orchard floor and developing a network of surface trails through the ground cover. These voles primarily feed on grass seeds, fleshy herbs and bulbs during the spring and summer while shifting to bark in the fall and winter when these food supplies are scarce.

Occasionally, feeding on bark during the spring and summer months has been observed when the preferred food sources are scarce. When feeding on the bark they can chew down to the wood destroying the cambium layer. The cambium layer is an area of cell division (growth) and conductivity of nutrients.

Tree mortality will occur when a sufficient area of the cambium is destroyed or removed. Tree vigour and productivity is decreased proportionately with the circumferential area of cambium destroyed. Feeding is generally restricted to the trunk and lower limbs but can extend upwards with increasing snow depth.

Meadow voles are not far ranging, with most of their activity being within an area of 200 square meters. Voles are prolific breeders and thus a few over-wintering voles can lead to high populations by the fall.

Orchard growers should be checking for the presence of mice throughout the growing season with a thorough check in the fall. Particular attention should be given to young orchards, which are more susceptible to damage. Mouse populations vary greatly from year to year and a winter of little damage can easily be followed by a winter of extensive damage.

A general estimate can be made by looking for surface runways, which will involve parting the grass within the tree row to look for runways and chewed apples. Where mulch is being used for weed and moisture control, check under the mulch for signs of voles.

For winters with extensive snow cover, growers would be advised to check their orchard periodically for vole feeding. If signs of feeding are observed, growers can take control steps to reduce the extent of damage. Waiting until spring can bring nasty surprises.

Control

A season-long approach is the most effective for controlling voles. They are in the orchard because they can obtain food, shelter and minimum exposure to predators. Denying them these three criteria season-long means vole populations will not flourish.

Cultural Practices

Mowing the orchard floor to maintain below 25 cm (preferably 10 cm) will expose voles to natural predators. The use of a herbicide strip to kill vegetation in the tree row and removing brush and weedy areas around the orchard will eliminate habitat. Clean up tree prunings and do not allow trash piles to remain anywhere in the orchard. Remove rootsucker growth, which attract voles. Clean up drop apples in the fall as they provide a source of food. Keep the border of the orchard as clean as possible. Vole activity is greatly diminished when there is less than 40 per cent vegetative cover.

Tree Guards

Plastic or wire guards provide a physical barrier to vole feeding and are effective provided they are installed properly (unless snow depth exceeds the guard height.) Voles tunnel through snow to any depth; in years of heavy snowfall more extensive damage is observed as compared to those with little or no snow cover. The guard should be buried a minimum of 5 cm and be a minimum of 45 cm in height.

The most commonly used guard in the Annapolis Valley is a plastic spiral guard because of their availability, cost and ease of installation. These guards, however, do have a drawback in that they should be removed each spring and replaced in the fall. If the guards are not removed they should at least be checked and adjusted on an annual basis to prevent the guard from interfering with trunk expansion.

Tree bores seem to prefer trees with wraps and with their use the bark remains tender and hardens off slowly. European canker can also develop under the wrap and removal will reveal new canker lesions, which can be cut out before they have a chance to enlarge.

On larger trees the wraps may not fit properly leaving exposed strips of bark, which the voles can feed upon. Problems can also occur on trees with uneven trunks such as those on the rootstock M26 where there is a swelling of the trunk at the graft union. The wraps may not fit correctly leaving exposed bark. Tree guards made from heavy gauge wire or plastics are very effective and do not have the drawbacks plastics wraps. These guards are generally more expensive than the wraps and make take longer to install.

Poison Baits

The use of poisons bait should be used only when necessary. If monitoring indicates that there is a risk of economic losses then poisons bait should be used. Growers have the option of using two types of baits those containing zinc phosphide or an anticoagulant. The anticoagulants are diphacinon (Ramik Brown) and chlorophacinone (Rozol, Ground Force).

Baits containing zinc phosphide should only be applied when several days of dry weather are predicted. Wet weather will reduce the potency of the wait and make it less palatable. Voles are also less active during periods of wet weather and dark days.

The anticoagulant bates are more effective with regards to wet weather as they are incorporated into a weather resistant pellet. Broadcasting baits can be fast and effective, however growers are encouraged to hand bait to reduce the risk of poisoning other non-targeted wildlife species and pets.

Hand baiting involves the selective placement of bait in active vole trails or in established bait stations. This method is more labour intensive and time consuming compared to broadcasting however it makes more efficient use of the bait. A number of products from used car tires to shingles can be used for bait station.

A number of growing areas promote the use of T bait stations built from 1.5 inch ABS pipe. These stations are held upright by a stake or tied to the tree trunk and when capped will keep the bait dry. The suggested number of bait stations per hectare is 25. When had baiting be sure to wear rubber gloves and follow label directions.

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