

FRUIT NOTES



Vol. 23, No. 4

October - December 2008

Voles

A vole is a small rodent resembling a mouse. However, a vole has a stouter body, smaller eyes and ears, a slightly rounder head and a shorter, hairy tail. While there are about 70 species of voles, three of them – the pine vole, the meadow vole and the prairie vole – may cause damage to fruit crops in Tennessee.

Voles can be very destructive in many fruit crops. Depending on the type of vole, damage may occur on the lower portion of the trunk, the root collar or on major feeder roots. This damage can result in death to the aboveground portion of the plant as a result of the girdling of the trunk and roots or secondary infection.

Meadow voles are found in East Tennessee, western North Carolina and South Carolina, and in states north of Tennessee. Prairie voles have been found from West and Middle Tennessee to the eastern edge of the Cumberland Plateau. Pine voles are found throughout the state. Both the meadow vole and the prairie vole are surface feeders. They construct shallow tunnels just above or just below the soil surface in weeds and grasses. Moving aside vegetation or mulches on the soil surface may reveal these runways. Pine voles spend most of their time underground and construct a series of tunnels several inches deep in the soil. The only evidence of their presence may be a spongy feeling when you walk on the soil above their tunnels or a small mound of soil with an opening about 1½ inches in diameter, which is used as a breather hole.

The preferred diet of a vole consists of seeds, tubers and various green vegetation such as grass and clover. When these food sources become limited, the voles may revert to feeding on the bark of trees, shrubs and vines. Frequently, vole damage is not evident until the plant

begins to show signs of severe stress, at which point it is generally too late to prevent death of the plant.

Vole populations tend to be cyclical. Although many factors may impact the cycle, it tends to run about four to five years. Vole populations are generally lowest in the spring with populations potentially increasing very rapidly in late summer and fall. Voles may have from four to six litters with several young per litter. Young voles become sexually mature in about one month. Their reproductive life spans about 15 to 18 months.

Due to their voracious appetite (a vole may eat its weight in forage each day) and the tremendous potential for population explosions, it is important to monitor for the presence of voles in orchards and other fruit plantings and take the necessary steps to minimize the potential for damage from them. With a good food supply, a vole may live in an area of less than ½ acre. Several hundred voles per acre may exist some years, thus presenting a tremendous potential for damage.

Young trees are more susceptible to vole damage than older trees due to the more succulent inner bark. Because of the smaller trunk diameter, significant damage to young trees can occur with a smaller vole population.

In tree fruits, apples appear to be the most preferred by voles. Apple trees on dwarfing rootstock are most susceptible to vole damage, probably due to their being more palatable. Malling 9 seems to be a favorite. Pear, peach, nectarine and cherry trees are attacked less often by voles; however, serious damage to them can occur under certain conditions. In small fruits, vole damage in blueberries, blackberries and raspberries can be serious. Mulching, as is recommended in blueberries, provides a favored area for voles to construct their runways.

Floor management practices can affect the potential for vole problems. With clean cultivated areas throughout the year, little food or protection is available for voles and they tend to avoid such areas. Where a permanent sod cover is used, food and cover are available for voles throughout the year so the likelihood of vole problems is increased. Maintaining an area devoid of vegetation extending about three feet out from the base of the plant will discourage meadow and prairie vole travel. Keeping the sod in and around the planting closely mowed will discourage vole movement into the fruit planting. Attention should be paid to cleaning up ditch banks, hedgerows and overgrown fencerows near the planting as voles can move from these areas into the planting. Where little cover is available, voles are more exposed to predators, which can be important in keeping a low to moderate vole population in check.

Monitoring for the presence of voles throughout the growing season is important. If voles are seen in the planting when mowing or conducting other practices, the use of a rodenticide in the fall may be warranted. Other monitoring practices include examining the floor for the presence of active tunnels. The presence of small piles of brownish droppings and short grass clippings in the tunnels signifies an active runway. How close the vegetation is clipped along the sides of the runways and the width of the runway will give a fair idea of population size. Inactive runways may readily become reinvaded, so checking them periodically is a good idea.

Concentration stations can be useful in determining whether an active vole population exists and, if it does, serving as a place to put baits. Place a board, piece of shingle or a similar object on the sod – not on bare ground – in late summer. After a couple months, lift up the station to see if there are tunnels beneath it. If so, an active vole population exists.

The use of snap traps in runways is a good way to monitor for the presence of voles. A mixture of 50 percent peanut butter and 50 percent oat flakes makes a good bait for the traps. For meadow voles and prairie voles, set the traps at the same level as the base of the runways with the bait in the runway. While it is important to cover the trap and runway with grass, be careful to leave enough room for the trap to function properly. For pine voles, it is necessary to dig down to the tunnel to place the trap.

Sweeping the ground under plants in fall to remove dropped fruit, fallen leaves, weeds and grasses and

chopping this material will lessen the food supply and cover for voles near the base of the plants.

In some years, the cultural practices outlined above may not be enough to prevent serious vole damage. The use of a rodenticide may be needed to further reduce vole populations. Zinc phosphide baits are labeled for use in Tennessee and most other states. Zinc phosphide is an acute toxicant and in most cases, one pellet of the bait will be a lethal dosage for a vole. Anticoagulant baits (chlorophacinone and/or diphacinone) are labeled for use in some other states. To be effective, anticoagulant baits require repeated feedings by voles to achieve a lethal dosage. Rodenticides are restricted use materials. Users should possess or be under the close supervision of someone possessing a state certified pesticide applicators license. Rodenticides should be used according to label directions.

To be effective, rodenticides should not be applied when other food sources are plentiful. Baiting should be done in late fall. Since weather can affect the degree of control achieved, select a period when several days of nice weather are expected. Rain can wash the bait off and turn pellets into mush. In addition, voles are less active in inclement weather and are therefore less apt to encounter the bait in their travels.

For meadow voles and prairie voles, bait should be placed directly in active runways or holes. Machines that construct tunnels and place the bait in them also are effective. Baited areas should have vegetation pushed back over them so voles will continue to use the runways. For pine voles, seeding the bait into breather holes may be effective. Bait should not be placed on bare soil as voles do not travel in these areas, plus this method increases the potential for nontarget poisoning. Placing bait under shingles, boards, etc. where active vole runways exist is a good idea since the bait is somewhat protected from the weather and nontarget species are prevented from encountering the bait.

Evaluating the degree of vole control achieved following the use of a rodenticide is important. Use snap traps placed in suspected active runways and cover with vegetation to check for vole activity. Apple slices placed in the runways and covered with something like wood or shingles to exclude other types of animals will also provide a good indicator of vole activity. The day after placing the apple slices, check to see if they have been consumed as an indicator of continued vole presence.

Fall Urea Spray of Apples

A fall urea spray can be an inexpensive, effective way to head off some problems in the orchards, and perhaps in next year's crop. Mix a low biuret urea at the rate of 5 pounds per 100 gallons of water and spray both the trees and the ground under the trees when about 75 percent of the leaves have fallen off the tree. Urea will accelerate the decomposition of the leaves and any fruit on the ground. This accelerated decomposition will reduce both the food supply available for voles and eliminate some of the cover for them, thus increasing their exposure to predators. A reduction in the overwintering inoculum of some diseases has also been reported to be decreased by this spray, which could lessen problems in the upcoming growing season.

Quash Fungicide Labeled for Stone Fruits and Tree Nuts

Quash fungicide by Valent Chemical has received approval for use on stone fruits and tree nuts. In stone fruit, it shows effectiveness against brown rot blossom blight, powdery mildew, fruit brown rot and scab. For tree nuts, it will be active in the control of scab.

The preharvest interval for Quash is 14 days in stone fruits and 25 days in tree nuts. The maximum allowable application rate per acre is 4 ounces. Two sequential applications are allowed with a maximum of three applications in a season. Quash contains metconazole, a Group 3 fungicide (sterol biosynthesis inhibitor). Other fungicides in this group include Elite, Orius, Trisum, Indar, Nova, Orbit, Propi Max and Bumper, and should not be used as a substitute for Quash in a rotation.

Peach Leaf Curl

Peach leaf curl has not been a major problem in Tennessee peach orchards for several years. However, the potential for this disease exists yearly. Severe infections can result in loss of the first leaves on the tree and a potential reduction in fruit size as a result. Control of peach leaf curl is based on a preventive fungicide application during the dormant period. Once bud swell and bud scale separation have occurred, most controls for peach leaf curl will be ineffective. All varieties are susceptible to this disease, although some are more susceptible than others.

A single preventive spray should provide good protection from peach leaf curl. The spray needs to be applied after trees have lost their leaves in the fall and

before appreciable bud swell in late winter and spring. Copper is effective in the control of peach leaf curl. If used as a late dormant application, some reduction in bacterial leaf spot problems may also result. Ferbam used to be the best material for peach leaf curl control. However, lack of availability has necessitated the use of other fungicides. Chlorothalonil, Ziram and Thiram are also labeled for leaf curl control, although they are less effective than Ferbam. Ziram and Thiram are not labeled for use in plums.

For additional information concerning control of leaf curl, refer to the 2007 Southeastern Peach, Nectarine and Plum Pest Management and Culture Guide. To access this publication online, go to www.utextension.utk.edu and click on Publications, Commercial Horticulture, and then Production and Management. The guide will be one of the selections listed.

Meeting - 2008

Dec. 3–4 Deep South Fruit & Vegetable Conference, Riverview Plaza Hotel, Mobile, Ala. For additional information, check out the Web site at www.deepsouthfruitveg.com.

Meetings - 2009

Jan. 5–6 Kentucky Fruit & Vegetable Conference, Embassy Suites, Lexington, Ky. For additional information, contact Dr. John Strang at 859-257-5685 or jstrang@uky.edu.

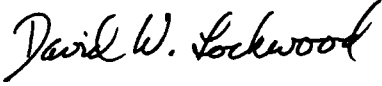
Jan. 6–7 Southeastern Apple Growers Meeting, Crowne Plaza Resort, Asheville, NC. For additional information, contact David Lockwood at 865-974-7421 or dlockwood@utk.edu.

Jan. 9–11 Southeast Regional fruit and Vegetable Conference, Savannah International Trade & Convention Center, Savannah, Ga. For additional information, contact David Lockwood at 865-974-7421 or dlockwood@utk.edu.

Jan. 29–31 Tennessee Horticulture Expo (combined meeting of the TN Fruit & Vegetable Association, TN Viticultural & Oenological Society, TN Farm Winegrowers Association,

Southern Section of the American Wine Society, TN Flower Growers Association and the TN Farmers Market Association. Marriott Nashville Airport Hotel, Nashville, Tenn. For additional information, contact David Lockwood at 865-974-7421 or dlockwood@utk.edu.

Feb. 1-7 North American Farmers Direct Marketing Association meeting, Savannah, Ga. For additional information, contact David Lockwood at 865-974-7421 or dlockwood@utk.edu.


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Fruit Notes

From:

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