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U.S. Fish and Wildlife Service, Augusta, ME

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THE MEADOW VOLE SITUATION IN MAINE ORCHARDS

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Maine orchards produce quality apples--primarily MacIntosh, Cortland, red and golden delicious. We have about 400,000 trees on 7,000 acres. Our production is still in standard trees that are widely spaced, although almost all newer plantings are going to dwarfing stocks. The average orchard is quite small--between 50 and 100 acres. There are several over 200 acres. The largest is 700 acres and is in a class by itself. Most Maine orchards are relatively old and in heavy sod, consequently have heavy grass and weed cover.

Fall meadow mouse populations of more than 200 per acre have been recorded in some Maine orchards. About 70% of the orchardists employ herbicides for grass control. All orchards have problems with meadow voles and bait at least in trouble spots. Mouse guards, wire or plastic, are universally needed in young trees. With continuous snow cover of 1 to 4 feet for a period of 3-4½ months, conditions favor at least minor damage annually. Partial girdling or patch damage in voids in guards and hanging limbs is common. Complete girdling above and below guards happens occasionally.

In light soils, or old, previously mulched orchards, sporadic below-guard trunk and root damage is caused by meadow voles. The pine vole is not known to occur in the state at the present time. Damage to apples in storage by mice introduced with boxes is often a problem.

Commercial zinc-phosphide orchard mouse grain bait is the only rodenticide employed. The usual application is a broadcast of 6-10 lb. per acre made immediately following harvest. Delay at this period often results in poor control and subsequent damage. Some growers apply one treatment before harvest to minimize storage damage and also to guarantee at least one application before snowfall. The second application is applied after harvest as time and weather permit. Testing the effectiveness of each application is recommended and practiced. Indications of meadow vole presence is followed by spot or selective baiting.

Less than 20% (some 1,200 acres) of total orchard acreage is treated by aerial application. The majority of smaller growers hand bait or machine broadcast. Control is usually effective; severe damage is seldom encountered. However, the desire for cheaper, more positive control exists and an alternate control choice could be readily marketed.

Permits to treat individual orchards are required and are issued upon application by Maine Dept. of Inland Fisheries and Wildlife. The safety record of zinc-phosphide bait has been excellent. Isolated delayed springtime poisoning of waterfowl (Canada geese) has been attributed to fall baiting, but the almost total lack of poisoning incidents is a very positive plus for continued use of this material in Maine.