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2-23-1978

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McGriff, Charles L., "The Meadow, Prairie, and Pine Vole Problem in Ohio" (1978). *Eastern Pine and Meadow Vole Symposia.* Paper 86.
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THE MEADOW, PRAIRIE, AND PINE VOLE PROBLEM IN OHIO

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Fruit growers, nurserymen, and Christmas tree growers in Ohio suffer economic loss each year if tree-girdling mice are present and not controlled. Unfortunately, in Ohio as elsewhere we have no practical method for arriving at the total value of loss from mouse damage. The grower's reports of losses are merely estimates.

Populations of meadow, prairie, and pine voles are present in Ohio, with pine voles most common in the Southern part. It is essential that the grower identify the species present, because control methods differ, and the same materials are not equally effective for all species.

The control material most widely used in Ohio has been, and still is, zinc phosphide. In the late 1950's and early 1960's experiments with endrin were conducted. This chemical never has been widely accepted, because of grower reports of fish kills in their ponds, and the death of rabbits and quail. The U. S. Fish and Wildlife Service has never recommended endrin for mouse control. Zinc phosphide apple cubes and grain baits are recommended for control of all three species of tree-girdling mice in Ohio.

It has been our experience that meadow and prairie mice are easier to control than pine mice. Zinc phosphide-treated apple cubes and grain baits have given good control when broadcast for meadow and prairie mice, but grain baits are a must for pine mouse control. For pine mice, the grain bait should be applied by hand trail baiting or by a trail builder machine, not broadcast. Hand trail baiting is an expensive, time consuming job, and needs to be done by dependable and well-trained personnel. The trail builder machine is fast and makes a nice burrow when soil moisture conditions are correct, but has never been a popular tool in the hilly terrain of Southern Ohio because soil moisture often is deficient in the fall when baiting normally is done.

Since the early 1970's cultural practices have become a part of our mouse control recommendations. Control of ground vegetation by mowing between the trees and the destruction of vegetation in a three or four foot radius around the tree trunk with chemical weed killers have discouraged mice from using this area. Tree guards are helpful in reducing summer and early fall damage. Cultural practices have definite limitations, especially when prairie and pine voles are present. The destruction of surface cover may have little or no effect on their underground activities.

Growers in Ohio feel zinc phosphide baits are not the complete answer to mouse control, even though these have been the universal baits for the past twenty years. They have been effective in meadow mouse control, but for prairie and pine mice do not meet grower expectations. We need a control tool that is environmentally safe, easy to apply, economical to use, and will do a good job on all three species. We need a method for accurately determining damage to orchards, nurseries, and Christmas tree plantings. Above all, we need to develop an educational

program that will reach more growers.