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Jonathan Bart

New York Cooperative Wildlife Research Unit, Cornell University Ithaca, N.Y.

Milo E. Richmond

New York Cooperative Wildlife Research Unit, Cornell University Ithaca, N.Y.

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RECENT VOLE RESEARCH IN NEW YORK'S HUDSON VALLEY

Jonathan Bart
Milo E. Richmond
New York Cooperative Wildlife Research Unit
Cornell University
Ithaca, N.Y. 14853

During fall, 1977, four potential chemical methods for controlling pine voles (Pitymys pinetorum) were evaluated on 12, one hectare plots in three apple orchards in the lower Hudson River valley. Each plot consisted of 45 trees. Three plots were treated with endrin, applied at the recommended rate of 1.5 lbs. per acre; two were treated with 2% technical Vacor (RH 787), applied in an unpelletized meal formulation at a rate of 60-70 gms per tree; two received 10% Vacor in an egg-sugar mix (marketed for human consumption as "Marshmallow Fluff") applied at the rate of 5-10 grams per tree; two received Vydate, a systemic nematocide highly toxic to rodents, at the maximum recommended rate of 15 lbs/acre; and three served as controls. Prior to treatment, all plots were sampled by live trapping and use of an apple index to determine the presence and abundance of pine voles and meadow voles (Microtus pennsylvanicus).

Following treatment on November 16-18, the plots were re-examined on the 6th, 12th, and 30th days post-treatment. Vydate and Vacor (unpelletized and in Fluff) provided little or no control. Endrin was effective on one plot (80% of the trees active before treatment were inactive following treatment) but achieved only partial or no control on the other two plots. Further post-treatment surveys of these plots will be carried out during spring, 1978.

In a second study, pine vole distribution and abundance in abandoned orchards was investigated. We and others have noted that if an orchard is abandoned pine voles rapidly disappear and meadow voles become more abundant as the grass grows longer providing the cover they require. Furthermore, in active orchards we rarely find pine voles and meadow voles coexisting in close proximity. These observations coupled with other preliminary evidence suggest that in habitats providing the food and cover requirements of both species, meadow voles, which are nearly twice as large as pine voles, may be able to exclude pine voles. If this is true it might be possible to manage active orchards in order to favor the immigration of meadow voles, a species posing considerably less threat to apple trees than pine voles.

A first step in evaluating the use of meadow voles to control pine voles was to determine whether pine voles actually do decline in abandoned orchards. Five abandoned orchards were trapped for pine voles. For each orchard there was evidence that pine voles had been present prior to the orchard's abandonment. This evidence consisted of sub-surface girdling of trees, remnants of subsurface tunnel systems, and information supplied by growers. No pine voles were found in any of the orchards; all contained numerous meadow voles. Further investigations of the possibility of using meadow voles and habitat manipulation to control pine voles will be conducted during 1978.