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UPDATE OF PINE VOLE RESEARCH
AT THE KEARNEYSVILLE EXPERIMENT FARM

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As reported in the 1979 Proceedings of the Third Eastern Pine and Meadow Vole Symposium, an air and ground broadcast and hand placement in runs and mouse-ateria bait stations (tubes) experiment was started on December 5, 1978. Treatments were to apply brodifacoum (Volak) at 10.0 lb./A and diphacinone (Ramik-Brown) at 10.0 lb. and 20.0 lb./A air broadcast and 10.0 lb./A ground broadcast and hand placement. The air broadcast treatments were not evenly distributed. Ground catch of the air broadcast of brodifacoum resulted in one portion of the treated area receiving 24% more toxicant. The air broadcast treatments of diphacinone resulted in 12.5 lb. and 37.5 lb./A instead of the desired 10.0 lb. and 20.0 lb./A toxicant distribution. A second diphacinone application was made January 5, 1979 to all diphacinone treatments except for the two air broadcast plots. These two plots were treated January 25, 1979 by ground application equipment.

At the time of the first toxicant applications, activity sites selected for apple placement to determine treatment effectiveness were 100% active. Treatment activity ratings made December 27, 1978, January 26, 1979, March 9, May 24 and June 16, 1979 were based upon a 0-10 scale (0 = no part of apple eaten, 3 = less than 50% of flesh eaten, 5 = 50 to 80% of flesh eaten, 8 = 100% of flesh eaten, 10 = flesh and skin completely consumed.) Table I gives the results of vole activity for March, May and June.

The high reduction of vole activity in the non-toxicant control plots might be the result of standing water of more than a week in the spring for part of the area.

Two research experiments started in 1979 were: first, a cultural-herbicide treatment comparing very close (short growth) mowing of row middle throughout the year with that of very limited mowing of 1 to 3 times per year, which would allow the indigenous vegetation to grow tall. The cultural-herbicide treatments are in an area where vole activity has been greatly reduced through the use of chemical toxicant treatment. The purpose being to find out the influence of a short and tall vegetation cultural system has on the ease of vole control. The second experiment being that of brodifacoum treatments comparing loose bait with the packet material placed

under shingle bait stations and in mouse-arterial bait stations.

Various fescue grass plantings started previously will be monitored for vole activity. These grass plantings have not become very well established in old orchard sites.

Table 1. Vole activity expressed as percent of reduced activity from the 100 percent activity at start of the experiment.

<u>Treatment</u>	<u>Percent Activity Reduction</u>		
	<u>March 9</u>	<u>May 24</u>	<u>June 16</u>
CONTROL			
No Toxicant	28	46	19
BRODIFACOUM			
Hand placement-runs	61	89	72
Hand placement-tubes	86	72	56
Broadcast-ground	80	88	83
Broadcast-air 14.2 lb.	83	68	98
Broadcast-air 8.7 lb.	53	86	89
Average	73	81	72
DIPHACINONE			
Hand placement-runs	30	1	13
Hand placement-tubes	70	53	15
Broadcast-air 20.0 lb.	14	49	25
Broadcast-air 10.0 lb.	9	1	15
Broadcast-ground 10.0 lb.	13	0	17
Average	27	21	17