

## CODLING MOTH HIBERNATION IN BANDED TREES \*

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## ABSTRACT

This paper is an attempt to answer the questions propounded by apple growers regarding the percentage of larvae of the Codling Moth *Carpocapsa pomonella* Linne, hibernating under treated paperbands placed around the trunks of the trees and the proportion wintering in other situations. Studies were made in orchards in southern Illinois during two winters on two ages of trees. The following table summarizes the data collected in these studies.

## CODLING MOTH HIBERNATION IN BANDED APPLE TREES.

TABLE 1

*A Comparison of Larvae in Band, on Tree, and on Ground.*

	Per cent of Larvae Found in		
	Band	Tree	Ground
5 Trees 15-18 years. Winter 1932-33.....	90%	3%	7%
9 Trees 25-28 years. Winter 1932-33.....	77.8%	10%	12.2%
14 Trees Both ages. Winter 1932-33.....	81.4%	8%	10.4%
3 Trees 25-26 years. Winter 1931-32.....	78.8%	17.2%	3.5%
12 Trees 25-28 years. Both winters.....	78.6%	14.8%	6.5%

TABLE 2

*Distribution of Larvae over Tree*

(Not including those in Band or Ground)

	1931-32	1932-33	Both Years
Base Line.....	9%	5%	8%
Base to Main Crotches.....	11%	9%	10%
Main Crotches.....	3%	9%	5%
Branches.....	76%	75%	76%

TABLE 3

*Height above ground of the larvae in the branches*

	1931-32	1932-33	Both Years
4-10 ft. above ground.....	65.3%	73.7%	71.5%
10 ft. and up.....	34.7%	26.2%	28.3%

\* Contribution from Project 9.1 of the Ill. State Nat. His. Survey.

TABLE 4  
Location of Larvae according to Types of Cover  
(Not including those in Band)

## (1) On Tree

	1932-33
Rough bark.....	38%
Punky wood (knot holes, etc.).....	29%
Split branches.....	25%
Crotches.....	4%
Pruned branch ends.....	2%

## (1) On Ground

	1931-33
Decayed twigs, old prunings.....	11%
Aphis injured roots.....	30%
Apples or apple mummies.....	24%
Sprouts.....	15%
Old pieces of bark.....	3%
Dead weeds.....	9%
Trash, artificial cover.....	11%

TABLE 5  
Location of Larvae in present season's prunings

Three trees, 25 years old, averaged 10 larvae per tree in the prunings just cut off, which was 37% of all on tree except band.

## CONCLUSIONS

- (1) Treated bands are well worth while, catching over  $\frac{3}{4}$  of the larvae wintering on the tree and the ground under it.
- (2) Of those larvae not in the band a larger part are usually found on the tree than on the ground.
- (3) Of those on the tree  $\frac{3}{4}$  are found in the branches, and in trees of this size, 20-25 feet high,  $\frac{2}{3}$  of them will be wintering within 10 feet of the ground.
- (4) Of those on the tree more than a third are under pieces of rough bark, but many of the rest of them are in places rather inaccessible to birds and to any spray material which may be developed.
- (5) It is evidently advisable to burn prunings since they contain an appreciable percentage of the larvae on the tree.