Losses Caused by The Greater Wax Moth

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Louisiana

LARVAE of the greater wax moth (*Galleria mellonella* L.) may cause considerable damage to honey combs. They are most destructive in tropical and subtropical areas at low latitudes where the winter temperature is not low enough to kill adults, larvae, or eggs. In the southern states of the United States, colonies probably harbor some stage of the wax moth most of the time. If colonies become weak through failing queens, the application of insecticides, or other reasons, the combs are likely to be damaged or destroyed within a relatively short time. Combs stored in a building, unless properly fumigated, are apt to be destroyed by wax worms.

Seven Louisiana commercial beekeepers were asked about wax worm damage in 1958. They reported a loss of 13,500 standard combs in that year. Two of the beekeepers had an additional loss of 3,300 baby nuclei combs.[1] Professor Frank A. Robinson obtained information relative to wax worm damage from 150 Florida beekeepers. They had an average of 286 standard combs destroyed, at an estimated value of $133.00 per beekeeper.[2]

A short questionnaire concerning losses caused by wax worms was sent to each of 40 Louisiana beekeepers early in January, 1969. Replies were received from 18, but 3 of them, all commercial beekeepers, did not include any information on number of colonies nor losses of combs. This report sums up the data received in the other 15 replies.

Results

There were an estimated 83,000 colonies of honey bees in Louisiana in 1968.[3] The number of colonies owned by the 15 beekeepers referred to above was 12,539. They reported using 8,082 nuclei. Numbers of colonies per beekeeper ranged from 12 to 4,500; of nuclei from 0 to 5,000. Some replies were incomplete, consequently this report is not as complete as it should be.

A total of 4,400 standard combs and 2,130 nuclei combs were listed as destroyed by wax worms in 1968. The estimated total value of the standard combs was $2,216.00 and of the nuclei combs $400.00. The cost of cleaning the frames for reuse and inserting foundation was estimated at $504.00. A standard comb was given a value ranging from $0.12 to $1.00.[4] A nucleus comb was valued at $0.05 to $0.25. If the 12 cents value given for a comb seems unusually low, it may be that the beekeeper had depreciated the value over several years for tax purposes.

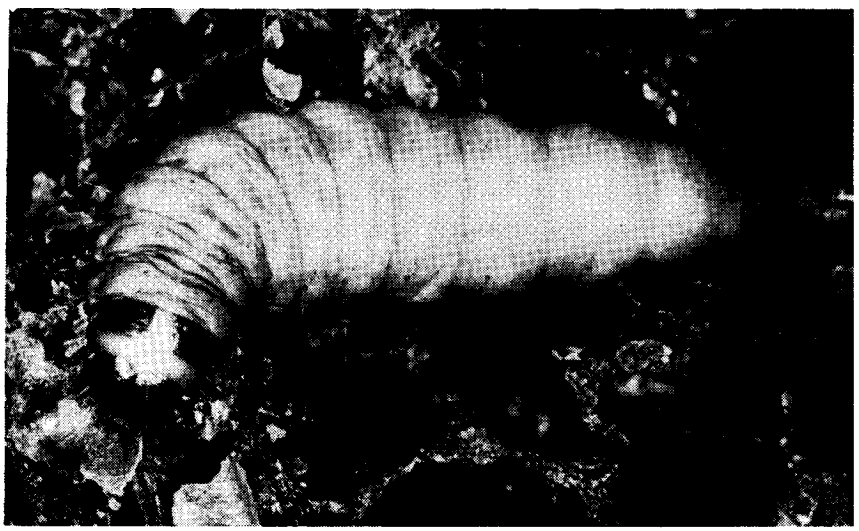
The value of colonies and nuclei whose combs were listed as damaged or destroyed by the wax worms was $1,244.00 and $56.00, respectively. Not listed in this group are 50 colonies with supers whose combs were damaged or destroyed during the summer because they were neglected at that time. The owner was unavoidably absent from the state. One reply noted that combs in several hundred nuclei were attacked by wax worms, but no value was given for the nonuse of the mating boxes. Two of the 15 beekeepers stated that they had had no losses from wax moth in 1968. One had 12 and the other 400 colonies.

Nearly all of the beekeepers commented that if colonies were maintained in a strong condition, there would be little or no wax worm damage. One commercial operator estimated an annual cost of $500.00 to check conditions of his colonies and to unite weak hives with stronger ones. Several noted that frequent visits to outapiaries and increased travel expense were necessary because of possible wax worm damage. Some noted that bottom boards had to be cleaned so that wax worms could not hide under debris or burr comb. Four replies noted that fumigation of stored combs was practiced. From $15.00 to $50.00 was listed for labor and fumigant. Probably most Louisiana beekeepers store empty combs on the colonies.

One commercial beekeeper listed direct loss of combs at $425.00. This did not include labor to remove combs and travel expense. Another commercial operator listed an expense of $1250.00 attributed to loss of combs and labor to renew the frames with foundation.

The replies from a small number of Louisiana beekeepers represent about 15% of the total estimated colonies in the state. If the $2,216.00 value of destroyed or damaged combs (mentioned above) is assumed to represent 15% of the financial loss, then the total loss is calculated to be about $15,500. If the 4,400 combs are valued at $1.00 each, and represent 15% of the loss, then the total loss by wax worms annually in the state is about $31,000.

Additional surveys in other states are needed to obtain comprehensive information concerning the direct and indirect costs caused by the wax worm. •



Greater wax moth larva. Photo by Pest Infestation Laboratory, Slough, England. Reprinted from ABJ, Vol. 106, No. 2.

[1] Oertel, E. Behavior studies of the greater wax moth. XI Internationaler Kongress für Entomologie, Band 2, Wien, 1962.

[2] I wish to express my appreciation to Prof. Robinson for the use of his data and to the Louisiana beekeepers who provided figures on losses in 1958 and 1968.

[3] U. S. Department of Agriculture, Statistical Reporting Service, Jan. 23, 1969.

[4] The writer believes that considering the high cost of labor and supplies, $1.00 per comb is not too large a value.