# Effect of Temperature on the Anonaepestis Bengalella Rogonot in Sugar Apple (Annona spumosa)

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## SUMMARY

The atis moth borer, Anonaepestis bengalella Rogonot, was major pest on sugar apple in Taitung district. The egg larvae and pupa of A. bengalella were reared respectively urder 20, 23, 25, 28 and 30 °C in growth chambers with 80±5% relative humidity and 12L:12D photoperiod. It would find the egg, larval pupal stages and completing a generation from 7.2 to 2.9 days, 80.2 to 33.7 days, 12.8 to 6.8 days and 112.7 to 45.0 days, respectively. To estimate the threshold temperature of development were 13.8, 12.7, 10.1 and 13.2 °C, respectively, and the effective accumulated temperature were 47.9, 580.3, 134.0 and 764.1 day degree, respectively. By using the effective accumlated temperature and the fluctuation of A. bengalella in orchards could show that it had about five generations a year in Taitung district of Taiwan, and the adults from the first to fifth generation appeared on March, May, July, Sept. and Nov., respectively, and the data could be used for prediction of fluctation of A. begalella. We also found that the optimum temp., low deadly temp. and high deadly temp zone of the old

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instar larvae were from 9.1 to 35.2, 4.1 and 49.3 °C, respectively. By using the effective accumulated temp. of pupal stage and the lowest air temp. of orchards from 1985 to 1987 could find that it was the best survival for this insect making pupa stage overwinter.