

ABSTRACT

Diapause is a period of arrested development, which is most frequently a change in day length (photoperiods), rather than in temperature or humidity which may be very variable. Termination of diapause in bamboo borer has never studied. The objective of this research was to determine the clue to terminate diapausing period of bamboo borer larvae and pupae.

In total, 600 hundreds larvae were kept at 5, 10, 15, 20, 25 and 30°C. In total, 324 larvae were exposed to photoperiod 8 hr and 10 hr. In total, 250 larvae were kept in plastic cup with wet cotton buds at room temperature 26-28°C with a photoperiod L:D 10:14. In total, 300 larvae were kept at room temperature in plastic box simply by covered with a tissue paper. In total 788 larvae were used in this experiment. The larvae were divided into two groups. The group-A was treated with food (fresh culm), and the culm were changed once a week. The group-B did not feed. The pupae were sexually (males and females) separated from each other and they were separately hung on chopsticks and kept at room temperature (26-28°C).

The results suggest that the larvae of bamboo borers were unable to tolerate low temperature (5°C) and high temperature (30°C). The optimum temperature for survival of larvae was between 10-14°C. The light intensity (photoperiods LD: 08:16 hr and 10:14hr did not terminate diapause. Subsequently, nutrients did show positive effect. However, as long as the food available, larvae can survive, but in absent of food, larvae use body fat. The water could be a key factor they can terminate diapause. The results suggest that diapausing pupae can be terminate with high temperature. In conclusion, the diapausing period of bamboo borer larvae cannot be terminated; it is probably that this species is a univoltine species.

In further study, it is recommended to focus on water as a key factor to terminate diapausing larvae, temperature effects on diapausing pupae and should also focus on the juvenile hormone (JH). Because, JH governs diapause in almost all insect.