

Developmental biology of the tiger moth, *Atteva sciodoxa* Meyrick (Lepidoptera: Yponomeutidae) under laboratory conditions

ABSTRACT

The tiger moth, *Atteva sciodoxa* is a serious pest of tongkat Ali, *Eurycoma longifolia*. The morphology, development times and fecundity aspects were studied at $27\pm 2^{\circ}\text{C}$, $90\pm 5\%$ relative humidity and 12 h photoperiod. The eggs were yellow and ovoid in shape with a mean length and width of 1.19 ± 0.02 and 0.86 ± 0.02 mm, respectively. Width measurements of larval head capsules showed that *A. sciodoxa* undergoes five larval instar stages. The mean head capsule widths of the first to fifth instar larvae were 0.55 ± 0.01 , 0.89 ± 0.01 , 1.23 ± 0.02 , 1.52 ± 0.01 and 2.11 ± 0.02 mm, while the body lengths were 4.71 ± 0.1 , 8.63 ± 0.1 , 12.87 ± 0.1 , 16.29 ± 0.1 and 21.74 ± 0.2 mm, respectively. The mean male and female pupal body lengths were 10.36 ± 0.1 and 11.26 ± 0.2 mm, respectively. The mean male and female wing span were 21.63 ± 0.2 and 24.28 ± 0.2 mm, respectively. The mean pre-oviposition and oviposition periods were 6.2 ± 0.23 and 8.5 ± 0.28 days, respectively. A single female laid on average 106.1 ± 4.85 eggs with maximum production between days 8-15 of adult emergence. The maximum number of eggs laid per female per day was 20.1 ± 0.5 . The mean hatching time was 5.7 ± 0.1 days with a mean hatchability of $81.1\pm 0.6\%$. The mean larval, pupal and adult periods were 20.7 ± 0.2 , 6.2 ± 0.8 and 13.2 ± 0.5 days, respectively. The female pupal period and adult lifespan were significantly longer than the male. *Atteva sciodoxa* completed its life cycle in 46.28 ± 0.49 days.

Keyword: *Atteva sciodoxa*, Development, *Eurycoma longifolia*, Tongkat Ali