

Effect of different temperatures on life developmental stages of *Hippodamia variegata* Goeze (Col., Coccinellidae), feeding on *Aphis fabae* Scopoli (Hem., Aphididae)

R. Jafari^{1*}, R. Vafaei Shoushtari²

1- Agricultural faculty, Islamic Azad University, Broujerd Branch, Iran

2- Department of Entomology, Agricultural faculty, Islamic Azad University, Arak Branch, Arak, Iran

Abstract

The effect of different temperatures, 20, 25 and 30°C on each stage duration of the coccinellids *Hippodamia variegata* Goeze was studied under laboratory conditions, feeding on *A. fabae*. The threshold temperatures and constant degree day requirement for each stage were also calculated using linear regression. The development periods from egg to adult were 27.75, 21.3 and 15.4 days in 20, 25 and 30°C. The threshold temperatures ranged from 2.47 for the first instar larvae to 14.63 for the pupae. However, the threshold temperatures and thermal constant for whole generation from egg to adult were 7.93 with ± 1 range feeding on *A. fabae* Scopoli, 65 \pm 5 RH and 16:8 (L:D) photoperiod. Under laboratory conditions at 20 \pm 1, 25 \pm 1 and 30 \pm 1°C developmental period from egg to adult lasted 27.75 \pm 38, 21.35 \pm 39 and 15.40 \pm 33 days respectively. The minimum thermal developmental threshold ranged from 2.47 and 14.63 for 1st larval instar and pupa, respectively. However, the minimum temperature growth threshold from egg to adult stage was 7.93 °C and 346.4 DD.

Key word: *Hippodamia variegata*, Lower threshold, Thermal constant, Developmental stages

* Corresponding Author, E-mail: jafari-po@yahoo.com
Received: 21 May 2009 – Accepted: 18 Jan. 2010