B15

Effect of Temperature on the Development of *Copris* tripartitus Waterhouse(Coleoptera: Scarabaeidae)

Hea-Son Bang, Young-Il Mah, Suk-Jo Hwang and K.G. Wardhaugh¹

Department of Sericultural and Entomology, NIAST,

¹CSIRO Entomology, Canberra, Australia

We compared preimaginal development, mortality, and size of Copris tripartitus Waterhouse at four temperature conditions (17.5, 20, 25 and 27.5 ± 0.5°C) under a photoperiod of 16 : 8(L : D). Total preimaginal development ranged from 118d at 17.5° C to 52.6d at 27.5° C. Egg period was 13.1, 10.6, 7.7 and 5.6 days, larval period was 101.9, 78.9, 49.6 and 46.6 days and pupal period was 37, 31, 18.4 and 14 days at 17.5, 20. 25, 27.5°C, respectively. Development threshold temperature(DT) and accumulated day degrees(DD) were 12.1° C, 82.7 DD for eggs, 7.6(I), 9.7(II), $6.8(III)^{\circ}$ C, 620.2 DD in larval stage, and 12.1°C, 225.7 DD for the pupal stage, respectively. Total preimaginal development required 816.2 DD above a temperature threshold of 10.83°C. A linear regression model could describe development of the Copirs tripartitus Waterhouse as a function of temperature(r²=0.811~0.997). These results show that the larval stage is more sensitive to the low temperature than the other stages. The optimum temperature for hatchability and development was estimated to the 25°C. The development and mortality provide data for establishing suitable rearing conditions for future studies on the ecology of Copirs tripartitus Waterhouse.