

Effects of Temperature on Development and Reproduction of a Predatory Beetle, *Nephus includens* Kirsch (Coleoptera: Coccinellidae)¹

Ramazan Canhilal, Nedim Uygun², and Gerald R. Carner

Department of Entomology, Clemson University,
113 Long Hall Box 340365,
Clemson, South Carolina 29634-0365 USA

J. Agric. Urban Entomol. 18(2): 117–125 (April 2001)

ABSTRACT The effect of different temperatures on some biological properties of *Nephus includens* Kirsch (Coleoptera: Coccinellidae) was investigated. This species is one of the most important predators of *Planococcus citri* Risso (Homoptera: Pseudococcidae). The development time, mortality and fecundity were determined at constant temperatures of 15, 20, 25, 30, and 35°C and at the variable temperatures, 25–35°C (12 hours 25°C, 12 hours 35°C). Life tables were also constructed for 25, 30, 35, and 25–35°C. The mortality was lower and the mean generation time was shorter at 30°C than at all other temperatures except 35°C. The intrinsic rate of increase was the highest at 30°C (0.081), followed by 0.076 at 25–35°C. The net reproductive rate was higher at 25–35°C than at 30°C. From biological data and population growth parameters calculated from the life tables, 30°C and 25–35°C were determined to be the most suitable temperatures for mass rearing of *Nephus includens*. However, mass rearing at a temperature as high as 35°C could cause deterioration of sprouted potatoes on which the citrus mealybug is reared. Therefore, 30°C would be better than 25–35°C.

KEY WORDS *Nephus includens*, citrus mealybug, mass-rearing, biological control

¹Accepted for publication 13 August 2001.

²Department of Plant Protection, Faculty of Agriculture, Cukurova University, Adana 01330 Turkey.