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Life Table and Functional Response of Scolothrips takahashii (Thysanoptera: Thripidae) on Tetranychus urticae (Acari:Tetranychidae)

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Abstract : Scolothrips takahashii Priesner (Thysanoptera: Thripidae) is a common predatory thrips which feeds on spider mites; it is considered an important natural enemy and a potential biological control agent against spider mites. In order to evaluate the efficacy of S. takahashii against tetranychid mites, life table and functional response study were conducted at 25±1°C, with Tetranychus urticae Priesner as prey. The intrinsic rate of increase (r), finite rate of increase (λ), net reproduction rate (R_0), mean generation time (T) were 0.1674 d^{-1}, 1.1822d^{-1}, 62.26 offspring/individual, and 24.68d. The net consumption rate (C_0) was 846.15, mean daily consumption rate was 51.92 eggs for females and 19.28 eggs for males. S. takahashii exhibited type III functional response when offered T. urticae deutonymphs. Based on the random predator equation, the estimated maximum attack rate (a) and handling time (Th) were 0.1376h^{-1} and 0.7883h. In addition, a life table experiment was conducted to evaluate the offspring sex allocation and population dynamic of Tetranychus ludeni Zacher under group-rearing conditions with different sex ratios. All bisexual groups produced offspring with similar sex allocation patterns, which started with the majority of females, then transited during the middle of the oviposition period and turned male-biased at the end of the oviposition period.

Keywords : Scolothrips takahashii, Tetranychus urticae, Tetranychus ludeni, two-sex life table, functional response, sex allocation
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