ABSTRACT

M.Sc. Thesis

SOME BIOLOGICAL PARAMETERS OF *Neoseiulus californicus* McGregor (ACARI : PHYTOSEIIDAE) IN LABORATORY CONDITIONS

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Development, fecundity and prey consumption of the Turkish strain of *Neoseiulus californicus* feeding on *Tetranychus cinnabarinus* were studied at different temperatures (15, 20, 25, 30, 35 ^{o}C), in the laboratory at 65 ± 10 % RH and 16L : 8D. The total developmental time (egg to adult) also decreased linearly with increasing temperature ($y = 0.012x - 0.093$; $R^2 = 0.950$). The developmental threshold obtained from regression analysis was estimated to be 7.8^{o}C. Across all treatments, *N. californicus* required on average 83.3 DD to complete its development from egg to adult. The mean total and daily fecundity were highest at 25 ^{o}C and statistically different from that obtained at 20 and 30 ^{o}C. The net reproductive rate (R_0) was highest at 25 ^{o}C. The longest mean generation time (T_0) occurred at 20 ^{o}C and the shortest at 30 ^{o}C. While the highest intrinsic rate of increase (r_m) for *N. californicus* was found at 25 ^{o}C, the lowest was obtained at 20 ^{o}C. The number of egg, larva, nymph and adult male stages of *T. cinnabarinus* eaten by *N. californicus* was significantly difference among prey densities. Regardless of prey density, eggs and larvae were consumed over nymphs and adult males. The functional response data of *N. californicus* fitted reasonably well to a type-II functional response of the Holling model. The number of eggs laid by a female fed with different stages of *T. cinnabarinus* was the highest when eggs were offered as prey.

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Key Words :
Development, fecundity, life history, longevity, Phytoseiidae, predation, *Tetranychus cinnabarinus*