



Effects of factitious prey on the biology and growth rate of the predatory mites *Neoseiulus californicus* (McGregor) (Acari: Phytoseiidae)*

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Neoseiulus californicus (McGregor) (Acari: Phytoseiidae) is being used on a commercial scale to control *Tetranychus urticae* Koch in open fields and greenhouses (Schausberger and Walzer 2001; Sato *et al.* 2007; Rezaie *et al.* 2017). To reduce the cost of rearing, phytoseiid mites are often cultured using factitious prey. To find out the most suitable factitious prey species for rearing *N. californicus* in this study, the development and reproduction of the predatory mite were assessed when fed on four factitious prey species: *Carpoglyphus lactis*, *Lepidoglyphus destructor*, *Tyrophagus putrescentiae*, *Rhizoglyphus robini* and the natural prey *Tetranychus urticae* (control). The results showed that *N. californicus* could survival on all prey species, however, their populations could increase when fed on *C. lactis*, *L. destructor*, and *T. urticae*. The life cycles of *N. californicus* fed on *C. lactis* and *L. destructor* (5.13 and 5.17 days respectively) were significantly shorter than those fed on *T. urticae* (5.89 days). The total number of eggs per female *N. californicus* fed on *L. destructor* was the highest (51.48 eggs/female), intermediate on *T. urticae* (45.11 eggs/female) and the lowest on *C. lactis* (38.68 eggs/female). When fed on *L. destructor* and *T. urticae*, the sex ratios (% female) in the 2nd generation of *N. californicus* reached approx. 70%—significantly higher than those predators fed on *C. lactis* (58.65%). The intrinsic rate of increase of *N. californicus* fed on *L. destructor* (0.338) was significantly higher than those females fed on *C. lactis* (0.304) and *T. urticae* (0.314). In conclusion, the factitious prey *L. destructor* is the best food source for mass rearing the predatory mite *N. californicus*.

Keywords: factitious prey, mass rearing, life table, biology

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