

عنوان مقاله:

Influence of low-lethal concentrations of thiamethoxam on biological characteristics of *Neoseiulus californicus* (Acari: Phytoseiidae)

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خلاصه مقاله:

For successful implementation of integrated pest management (IPM) programs, having knowledge on lethal and low-lethal effects of pesticides on natural enemies is necessary. The present study evaluated the low-lethal effect of thiamethoxam on life table parameters of the subsequent generation of the predatory mite, *Neoseiulus californicus* McGregor (Acari: Phytoseiidae) fed on *Tetranychus urticae* Koch under laboratory conditions. The low-lethal concentrations LC_{50} , LC_{10} and LC_{20} were determined based on a dose-effect assay. The raw data were analyzed based on age-stage two sex life table analysis. Exposure to the low-lethal concentrations of thiamethoxam had no significant effects on developmental time of offspring of treated mites. Compared with control treatment, the oviposition period of treated mites with LC_{50} , LC_{10} and LC_{20} decreased significantly. The highest and lowest values of total fecundity were obtained at control (۳۵.۳ eggs/female/day) and LC_{20} (۲۳.۶ eggs /female/day), respectively. The net reproductive rate (R_0) decreased with increasing dose from LC_{50} (۲۲.۶ offspring) to LC_{20} (۱۵.۰ offspring). The intrinsic rate of increase (r) and finite rate of increase (λ), were not affected by increasing concentrations. The mean generation time (T) decreased significantly at upper dose (LC_{20} = ۱۳.۲ d), compared with control (۱۴.۷ d). In consequence, the low-lethal concentration influences of thiamethoxam in combination with *N. californicus* in order to design management programs of *T. urticae* are discussed.

کلمات کلیدی:

predatory mite, LC_{50} , *Tetranychus urticae*, toxicity, life-table

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