

Supawan Kongjarean 2006: Efficiency of Predatory Mite, *Neoseiulus longispinosus* (Evans) (Acari: Phytoseiidae) for biological control of Broad Mite, *Polyphagotarsonemus latus* (Banks) (Acari: Tarsonemidae). Master of Science (Entomology), Major Field: Entomology, Department of Entomology. Thesis Advisor: Associate Professor Wiwat Suasa-ard, Ph.D. 58 pages.
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Biological study of the predatory mite, *Neoseiulus longispinosus* was conducted in laboratory. By using *Polyphagotarsonemus latus* as prey, revealed that the duration period of Egg, larva, protonymph and deutonymph of *N. longispinosus* required 1.25 ± 0.26 , 0.30 ± 0.10 , 0.90 ± 0.20 and 0.65 ± 0.13 days, respectively. The longevity of female and male adults were 8.5 ± 0.68 and 6.55 ± 0.51 days, respectively. Prey preference study of *N. longispinosus* feeding on *P. latus* and *Tetranychus truncatus*, revealed that *T. truncatus* was suitable prey for *N. longispinosus*. Life tables of *N. longispinosus* were investigated by using *P. latus* and *T. truncatus* as prey indicated that net reproductive rate (R_0) of increase were 0.377 and 3.827, the cohort generation time (T_c) 7.9469 and 10.4102 days, the capacity for increase (r_c) were 0.1227 and 0.1289 and the finite rate of increase (λ) were 0.884 and 1.1375, respectively. The efficiency study of *N. longispinosus* for control *P. latus* both in laboratory and greenhouse conditions releasing predator: prey ratio at 1:100 1:50 1:25 1:10 and compare with non released treatment. *N. longispinosus* could be employed as biological agent at the predator: prey ratio of 1:10 and the highest efficiency percentage were 77.37 and 72.21, respectively. The predator: prey ratio was significant difference in each treatment.

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