

**Studies on mass production of *Phytoseiulus persimilis* Athias-Henriot
in greenhouse conditions**

A. HADIZADEH, H. DANESHVAR, K. KAMALI

Plant Pests & Diseases Research Institute Tehran; College of Agriculture
University of Shahid Chamran, Ahwaz

ABSTRACT

Phytoseiulus persimilis is one of the most important natural enemies of *Tetranychus urticae* Koch. Mass production conducted on five bean seedling (Kantander var.) sown in pots and infested with 100 *T. urticae*. After ten days they were inoculated with five predatory mites.

Fourteen days later the predatory mites were harvested with the average of 60 predator/leaf or 500 to 600 predators per pot, under $25 \pm 5^\circ\text{C}$, 65 ± 5 RH and 16:8 (L:D) photoperiod in laboratory. Suitable predator-prey ratio for initial inoculation in pots was to be 1:20. The minimum threshold of humidity for *P. persimilis* egg maintenance were 60% and the rate of egg to egg development was 0.154 Day^{-1} under current experimental conditions. Therefore it seems that mass production of the predatory mite is easily practicable under plastic tunnels in damp air of the north of Iran.

References

- BADII, M. H., and J. A. MCMURTRY. 1984. Life history of and life table parameters for *Phytoseiulus longipes* with comparative studies on *Phytoseiulus persimilis* and *Typhlodromus occidentalis* (Acarina:Phytoseiidae). *Acarologia*, 25: 111-123.

- GILSTRAP, F. E. 1977. Table-top production of Tetranychid mites (Acarina) and their natural enemies. *J. Kansas Entomol. Soc.*, 50: 229-233.
- HAMMAMURA, T.; N. SHINKAJI and W. ASHIHARA. 1978. Studies on low temperature storage of *Phytoseiulus persimilis* Athias-Henriot (Acarina:Phytoseiidae). *Bull. Fruit Tree Res. Stn.*, E2: 83-90.
- HADIZADEH, A. 1996. Studies on mass production methods of *Phytoseiulus persimilis* Athias-Henriot in Iran and its introduction for control of Urticae group in protected crops. A thesis for Ms degree in agricultural entomology. College of Agriculture, Tarbiat Modarres University, 180 pp. (in Farsi with English summary, non published).
- HOY, M. A.; D. CASTRO and D. CAHN. 1982. Two methods for large scale production of pesticide-resistant strains of the spider mite predator *Metaseiulus occidentalis* (Acarina:Phytoseiidae). *Z. Angew. Entomol.*, 94: 1-9.
- LEE, W. T.; C. C. HO and K. C. LO. 1990. Mass production of phytoseiids: I. Evaluation of eight host plants for the mass rearing of *Tetranychus urticae* Koch and *T. Kanzawai* Kishida (Acarina: Tetranychidae). *J. Agric. Res. China*, 39: 121-132.
- MCMURTRY, J. A. and G. T. SCRIVEN. 1975. Population increase of *Phytoseiulus persimilis* on different insectary feeding programmes. *J. Econ. Entomol.*, 68: 319-321.
- OSAKABE, M.; K. INUE and W. ASHIHARA, 1988. A mass rearing method for *Phytoseiulus persimilis* Athias-Henriot (Acarina: phytoseiidae II. prey densities and prey-predator ratios for efficient propagation of the phytoseiid mite. *Bull. Fruit Tree Res. stn. Japan*, E2 7: 59-70.
- SABELIS, M. W. 1985. Spider mites, Their Biology, Natural Enemies and Control. Vol. B. Elsevier, Amsterdam. pp. 43-53.
- SCOPES, N. E. A. and R. PICKFORD. 1985. Mass Production of Natural Enemies. In: N. W. Hussey and N. Scopes (Eds.). *Biological pest control the glasshouses experience*. Poole, Dorset, Blandford Press. pp. 197-210.

SVRIVEN, G. T. and J. A. MCMURTRY, 1971. Quantitative production and processing of tetranychid mites for large scale testing or predator production. J. Econ. Entomol. 64: 1255-1257.

Address of the authors: Eng. A. HADIZADEH and Dr. H. DANESHVAR Plant Pests and Diseases Research Institute. P. O. Box 1454-19395 Tehran, Dr. K. KAMALI, College of Agriculture, University of Shahid Chamran, Ahwaz