

**EFFECTS OF LABORATORY REARING CONDITIONS ON THE PREDATORY MITE
NEOSEIULUS WOMERSLEYI (SCHICHA) (ACARI: PHYTOSEIIDAE):
I. GENETIC DIVERSITY**

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ABSTRACT - *Neoseiulus womersleyi* (Schicha) (Acari: Phytoseiidae) is one of the most important predators of spider mites of the genus *Tetranychus* in Japan. We investigated the effects of laboratory rearing on the genetic diversity of *N. womersleyi*. Five geographical populations were reared under two conditions (in an artificial arena and a detached-leaf culture) that represent the most popular rearing methods for predatory mites. In the artificial arena, 40 to 60 adult females per arena were maintained per generation, whereas 10 females were maintained in each detached-leaf culture. Genetic analysis was conducted using microsatellite markers. After rearing of *N. womersleyi* in the artificial arena for 12 months (about 25 generations), neither allelic richness (*Rs*) nor gene diversity (*Hs*) changed. In contrast, after rearing for this period in the detached-leaf culture, both *Rs* and *Hs* decreased significantly. The genetic differentiation parameter (*Fst*) showed that populations reared in the artificial arena did not differ from the original populations, whereas those reared in the detached-leaf culture differed significantly from the original population. These results suggest that the artificial arena conserved the original genetic diversity, whereas the detached-leaf culture significantly decreased genetic diversity.

Key words - Acari, Phytoseiidae, predatory mite, biological control, genetic variation, microsatellite markers.

Abstract #10

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