Fertility life table parameters, COI sequences and Wolbachia infection in populations of *Trichogramma brassicae* collected from *Chilo suppressalis*

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Abstract

*Trichogramma* wasps are frequently applied in the biological control of *Chilo suppressalis* (Walker), which causes economic damage to rice in Iran. A survey was carried out to collect local *Trichogramma brassicae* Bezdenko populations from *C. suppressalis* eggs in the northern Iran. Fertility life tables were constructed and the mitochondrial cytochrome oxidase subunit I (COI) sequences were determined to estimate the genetic distance between populations. Also, the prevalence of *Wolbachia* and its effect on host fitness was determined. Thirteen populations of *T. brassicae* were sampled in which two were infected by *Wolbachia*. Results revealed biological and molecular differences between populations collected from a single host species in a relatively small geographic region. A significant positive effect of *Wolbachia* infection was found in the host fitness such as net reproductive rate and intrinsic rate of increase. The genetic relationship among populations is discussed in the context of historical wasp releases in the rice fields of northern Iran.

Key words: striped stem borer, host fitness, population dynamics, Rickettsiaceae.

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