



## External and internal elimination of supernumerary larvae in the whitefly parasitoid *Eretmocerus mundus* Mercet (Hymenoptera: Aphelinidae)

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### ABSTRACT

The solitary parasitoid *Eretmocerus mundus* Mercet (Hymenoptera: Aphelinidae) is one of the key biological control agents of the whitefly *Bemisia argentifolii* Bellows & Perring, also known as *B. tabaci* (Gennadius) B-biotype (Homoptera: Aleyrodidae). We present new information on its biology, and particularly about larval elimination during the first instar in cases of superparasitism. For the first time, physical elimination of supernumerary larvae was observed, both outside and inside the host. These findings are documented with confocal microscopy images and video recordings.

We observed more than 350 *B. argentifolii* nymphs, parasitized with one, two or more than two larvae. Physical attack took place only when parasitoid eggs were laid in contact with each other. In this case the percentage larval mortality outside the host was significantly higher (45.7%) than in cases of single larvae (12.0%) or larvae hatched under the same host but not in contact with each other (23.3%). These new findings are important in view of a possible horizontal transfer of a parthenogenesis inducing *Wolbachia* bacterium from a thelytokous to an arrhenotokous strain, with the aim of augmenting the biological control of *B. argentifolii*.

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