Sublethal effects of spirotetramat and cypermethrin residues on reproductive parameters and longevity of a *Bemisia tabaci* parasitoid *Eretmocerus mundus* (Hymenoptera: Aphelinidae)

Natalia Francesena¹; Teodoro Stadler²; Marcela I. Schneider¹

¹CEPAVE (CONICET La Plata-UNLP), La Plata-Bs. As., Argentina. Email: nfrancesena@gmail.com ²IMBECU (CONICET MendozaCRICyT)-Mza, Argentina.

*Bemisia tabaci* (Hemiptera: Aleyrodidae) is one of the most significant agricultural pest in Argentina. Pest management for *B. tabaci* has been focused on the use of broad-spectrum insecticides. *Eretmocerus mundus* (Hymenoptera: Aphelinidae) is the main natural enemy of *B. tabaci*, but its role as a biological control agent could be disrupted by use of insecticides. The aim of this study was evaluate the side effects of spirotetramat and cypermethrin on *E. mundus* females, focusing on its reproductive parameters. Maximum field recommended concentration (MFRC) for each insecticide was used in the bioassays. Besides, for cypermethrin, the half of its MFRC was incorporated to bioassays due the high mortality recorded. Adults of *E. mundus* (1-3 days old) were treated by residual exposure. After that, pairs of survivors were coupled for 24 hours making sure they mate. Subsequently, *E. mundus* females were placed individually in plastic vials containing a pepper leaf (*Capsicum annuum*), infested with *B. tabaci* second instar nymphs. *E. mundus* females were exposed to its host for periods of 24 hours in the term of 5 consecutive days. The analyzed endpoints were: effective parasitism, sex ratio and offspring size at the first exposition day and those cumulated during 5 days. Cypermethrin at MFRC reduced drastically the survival of females and none progeny was obtained. Although the half of MFRC of this insecticide did not reduce the effective parasitism and the size of the progeny, it reduced the longevity of females and the sex ratio was biased to males (0.92). Spirotetramat neither reduce the effective parasitism, the size of cumulative progenies or the females longevity. However, it decreased the number of females (26% more of males) in the offspring. We conclude that the reduction in the number of females in the progenies, regarding these insecticides effects, could cause failures in the biological control of whiteflies because these are responsible for host parasitism.

**Key Words:** *Eretmocerus mundus, Bemisia tabaci,* pesticide susceptibility.