2004. *Abstracts. XXII International Congress of Entomology, 15-21 August 2004. Brisbane, Australia*

Abstract 8_4075

Parasitoid mark-release-recapture techniques: development of marking and trapping techniques for small parasitoids

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Small parasitoids of Bemisia argentifolii were marked with the purified protein, rabbit immunoglobulin G (IgG). When marked parasitoids were assayed using an anti-rabbit IgG ELISA, virtually all of the marked Eretmocerus sp. contained enough protein to be distinguished from unmarked parasitoids. A field mark-release-recapture study was conducted to examine the dispersal characteristics of Eretmocerus emiratus. Parasitoids were released on three separate dates into the center of a cotton field bordered by cantaloupe and okra. A total of 1388, 637, and 397 marked and unmarked wasps were captured in suction traps over the three trials, respectively. The majority of parasitoids were captured between 0600 and 0800 h. Our traps consistently contained more males which suggests gender-specific differences in the dispersal behavior of E. emiratus. The distribution of the marked parasitoids revealed two distinct patterns. First, almost all of the marked parasitoids recaptured in the cotton plot were in suction traps adjacent to the release site. Second, marked parasitoids were recaptured more frequently in distant traps located in the cantaloupe plot than in distant traps located in the cotton and okra plots, suggesting that the parasitoids were moving toward the cantaloupe plots.