

Efficiency of *Acerophagus papayae* on different host stage combinations of papaya mealybug, *Paracoccus marginatus*

ABSTRACT

Acerophagus papayae is a koinobiont endoparasitoid of the invasive papaya mealybug, *Paracoccus marginatus* and has been introduced as a classical bio-control agent of the mealybug in many countries. Considering the importance, parasitism efficiency of *A. papayae* against various life stages of *P. marginatus* was conducted in choice experiments. Results suggested that *A. papayae* showed higher parasitism efficiency towards third instar female nymphs and adult female *P. marginatus* in comparison to second instar male. However, second instar male nymphs were more preferred in comparison to second instar female nymphs. *Acerophagus papayae* exhibited a highly significant sex-biased development ratio as a female dominant progeny emerged while feeding on female hosts and vice versa. No difference was recorded in the developmental time of male and female *A. papayae*, however, females matured one day later than males. The only gregarious behaviour of *A. papayae* was recorded on adult female *P. marginatus* as more than one adult parasitoid emerged from a single host. Study results suggested that *A. papayae* has a tremendous potential to be utilized in classical biological control programs against *P. marginatus* as it showed more preference towards female hosts; hence not only reducing available pest population but also will affect the pest population of next generation.

Keyword: *Acerophagus papayae*; Papaya; Mealybug; *Paracoccus marginatus*; Parasitism