

Effect of Host and Instar Preference on the Development and Oviposition of the Endoparasitoid *Opius caricivora* (Hymenoptera: Braconidae)¹

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Abstract

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Opius caricivora Fischer is a larval-pupal endoparasitoid of the three leafminer species, *Liriomyza huidobrensis* (Blanchard), *Liriomyza sativae* Blanchard and *Liriomyza trifolii* (Burgess), in Taiwan. This study was conducted to determine biological control potential and mass-rearing method of this wasp by investigating effects of host species and different instars of hosts (*L. huidobrensis*, *L. sativae*, and *L. trifolii*) on the development, number of progeny and female proportion of *O. caricivora* at 25°C. Results showed that there were no significant ($P < 0.05$) effect among the three species of leafminer on survival and development of the wasp. Although female wasps could oviposit on larvae of all the three different instars of the three species of leafminers, the female wasps preferred to oviposit on the second and third instars in both experiments of no-choice and free-choice of instars. Also, effect of instars of leafminer was significant ($P < 0.05$) on number of progeny and female proportion of wasps, but was no significant ($P < 0.05$) on body size of wasps. The number of progeny from the parasitized, first instar leafminer decreased by 24.4–32.8% compared to the second and third instar leafminer. The proportion of female wasps from the parasitized, first instar leafminer decreased by 19.6–35.2% compared to the second and third instar leafminer. This study indicates that the second and third instar larvae of leafminer are suitably provided for rearing of *O. caricivora*.

Key words: *Opius caricivora*, *Liriomyza huidobrensis*, *Liriomyza sativae*, *Liriomyza trifolii*, Instars preference.

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