

# Morphology and Life History of *Opius caricivorae* (Hymenoptera: Braconidae)<sup>1</sup>

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## Abstract

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The wasp *Opius caricivorae* Fischer is an arrhenotokous, solitary endoparasitoid of the leafminer *Liriomyza sativae* Blanchard. The fertility of the female wasp is not affected by mating experience. Males mated many times (8–17 times) in a lifetime, but most females mated only once (4.5% mated 2–4 times). The premating period was 1.1 h. Female wasps fed on leafminers without killing them. The peak of emergence of wasps was between 0500 and 0800 h while the peak of oviposition was between 0500 and 0900 h. The development of wasps was not affected by the host instar. At 25°C, averaged duration for egg, larval, prepupal, pupal, and egg to pupal stage was 2.2, 5.0–5.1, 1.6–1.8, 5.9–6.1 and 14.9–15.0 days, respectively. Averaged survival from egg to pupal stage was 86.5–91.6%. When wasps were provided with 40–50 3rd instar larvae of *L. sativae* daily, the longevity of female and male wasps averaged 21.9 and 22.8 days, respectively. The fertility for a female wasp was 277 progenies. The ratio of female progeny was 0.62. Numbers of eggs, percentage of superparasitism and host utilization rate of wasps varied with host density. At low host density (1, 2 and 5 leafminers), the number of eggs per female wasp was low (4.4–7.6 eggs) and the percentage of superparasitism was high (66.5–87.5%), but at high host density (20, 30 and 40 leafminers), the number of eggs per female wasp was high (19.1–24.0 eggs) and the percentage of superparasitism was low (0.9–5.5%). Host utilization rates by wasps were high (80.0–100%) at low host density (1, 2, 5, 10 and 20 leafminers), however host utilization rates by wasp were low (62.9 and 59.4%) at high host density (30 and 40 leafminers).

**Key words:** *Opius caricivorae*, *Liriomyza sativae*, Morphology, Life history.

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