LEAFMINER PARASITE
Diglyphus isaea

Product: *Diglyphus isaea* is a parasitic/predatory wasp (Family: *Eulophidae)* that attacks several species of Dipterous leafminer pests. Adult wasps are black and metallic green, 2-3mm (1/8") long with a narrow waist and short, beaded antennae. The *Diglyphus* larvae are very inconspicuous, but the green and black pupae can easily be seen by viewing a leaf with the sun or a light behind it.

Target: Used to control 18 different species of leafminers in the genus *Liriomyza,* including the North American species: *L. trifolii* (serpentine leafminer), *L. huidobrensis* (pea leafminer) and *L. sativae* (vegetable leafminer). Commonly used in greenhouses producing vegetables such as tomatoes, and ornamentals such as chrysanthemum and gerbera. An adult female will locate and sting second- and third-instar larvae, paralyzing them. She then deposits and oval egg next to the leafminer larva. The *Diglyphus* larvae will feed eternally (as an ectoparasite) on the leafminer and then pupate in the leaf mine. The adult *Diglyphus* will emerge from the leaf about 3 weeks after egg laying. *Diglyphus* also kill a significant number of leafminers by host feeding.

Release: Release *Diglyphus* adults as soon as possible upon receipt, preferably in the evening, by opening the container and walking through the crop. Releases should be planned when leafminer feeding marks are first seen. Ideally releases should be made when the first of the second-instar leafminer larvae are seen.

Rate: Release rates are from 0.5-1/m^2 (10ft^2) or 700 per 0.4ha (1 acre). Leafminers have a very short period of susceptibility to the parasite and thus it is important to make several releases (every two weeks) until they are under control. For tomatoes release 0.1-0.2 per m^2 (10ft^2) to establish a colony.
If using Controlled Release Packs, for Greenhouse Cucumbers: 1 bag per 6-8 plants every 3-4 weeks; for Greenhouse Sweet Peppers: 1 bag per 8-12 plants every 3-4 weeks, or 1 bag per large specimen plant every 6-8 weeks (for interior plantscapes).

Notes:

- 60°-70°F (15 °-32 °C), 80% relative humidity. This is a warm weather parasitoid (use in the summer).
- Apply at the earliest sign of leafminer infestation.
- The adult *Diglyphus* chews a round hole in the upper surface of the leaf when it emerges. This round hole indicates that a parasitoid emerged from the mine rather than a leafminer, which chews a semicircular slit in a leaf prior to dropping out of the leaf to pupate.
- *Diglyphus* can be mixed with *Dacnusa sibirica* (Also available from NIC).

Please let us know within 24 hours of receipt if there are any problems with your Live Insect Order.

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