Beneficial Insects
TECHNICAL DATA SHEET

SUSTAINABLE CROP MANAGEMENT

PLANTPRODUCTS®
A member of Biobest Group

DIGLYPHUS-SYSTEM
Diglyphus isaea

***Diglyphus isaea* is a parasitic wasp of leaf miners. It controls the pest via two mechanisms, by puncturing and paralyzing leaf miner larvae and by host feeding, both result in the death of the prey. Once a female Diglyphus locates a late 2nd or 3rd stage leaf miner larva, it paralyzes it and deposits an egg inside the mine, close to or over the surface of the leaf miner larva. Diglyphus is an ectoparasitoid (lays its eggs outside the host), which is the reason it needs to paralyze its moving prey before ovipositing. Diglyphus larva will develop inside the mine, feeding on the leaf miner larva. A new adult parasitic wasp will leave the mine by cutting a round hole in the upper side of the "leaf". During its entire lifespan one female can lay 200 to 300 eggs in total. Diglyphus females feed by puncturing host larvae in their late 1st or 2nd stage and sucking them empty (host feeding). One female can kill about 70 larvae by host feeding. At temperatures above 59°F (15°C). Diglyphus develops faster than its host. Diglyphus can be used curatively to control large populations of leaf miners.**

Features
- Parasitic wasp
- Efficient biological control agent of leaf miners
- Both Diglyphus larvae and adults feed on leaf miner larvae
- Fast population build-up enables Diglyphus to control an increasing leaf miner population in a short time span
- Suitable for curative control
- Long lived adults (32 days) at 68°F (20°C)

Targets
- Leaf miner

Crops
- Vegetables / Herbs
- Ornamentals
- Cannabis / Hemp

Product Specifications

Commercial name	Specifications
Diglyphus-System - 250	• 30 ml vial: 250 adults • Carrier: shredded paper

Storage
Use immediately upon receipt. If not possible, product can be briefly stored at 50-59°F (10-15°C).

Everything you **need to grow**

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DIGLYPHUS-SYSTEM

Rates

Mode	Dosage	Area	Repeat
Low curative	0.1-0.5 ind./m^2	Infested areas	Release at least 3x weekly
High curative	0.5-2 ind./m^2	Infested areas	Release at least 3x weekly

Instructions

Release moment

Introduce Diglyphus-System at the first signs of leaf miners.

Release method and conditions

Apply in the morning or in the evening.

To introduce Diglyphus-System, the tube should be held low in the crop, in order to enable the wasps to fly out and start looking for leaf miner larvae. *Diglyphus isaea* is active at temperatures of 59°F (15°C). Diglyphus can be used in combination with foliar sprays of the nematode Steinernema-System and Dacnusa-System and Bug-Scan® yellow sticky traps and rolls placed horizontally.

Monitoring

- Predated leaf miner larvae can be recognized by a short mine that stopped early.
- Larvae and pupae of *D. isaea* are easily detectable, which facilitates the follow-up of the population growth.

Life cycle and appearance

Egg	Larva	Pupae	Adult
• The female paralizes the leaf miner larva and deposits an egg in a mine • Duration: 1-2 days* **Note:** Picture shows a female depositing an egg in a mine.	• 3 larval stages; 1st instar is transparent, 2nd instar is yellowish and 3rd instar is translucent green • Duration: 5 days*	• Green to black color • To pupate the larva will build 6 columns of excrements that be easily seen as 6 black spots on the leaf • Duration: 5-6 days*	• Black color • 2-3 mm long • Short segmented antennae • Females have a yellow stripe on the hind legs • Lifespan: 10 days*
			

*At an average temperature of 77°F (25°C).