SUSTAINABLE CROP MANAGEMENT

DACNUSA-SYSTEM

TECHNICAL DATA SHEET

Targets

- Leafminer

Crops

- Vegetable crops
- Ornamental crops
- Medicinal cannabis

Registration number

- Costa Rica: 033
- Latvia: reg. No. 0659
- Norway: 2007.49.09/ 2018.33/2018.52
- Switzerland: W-4798

What is Dacnusa-System?

- *Dacnusa sibirica*
- Parasitic wasp
- Efficient biological control agent of leafminers, especially *Liriomyza trifolii* and *Liriomyza bryoniae*
- Parasitizes effectively, even at low prey density and in colder weather conditions
- Excellent searching capacity

Mode of action

- *Dacnusa* females will deposit an egg in a leafminer larva, preferably of the 1st and 2nd stage.
- Out of the egg a *Dacnusa* larva emerges, that will feed on the leafminer larva.
- A new adult parasitic wasp will leave the mine through a round hole in the upper side of the leaf.
- Depending on temperature, one female can lay a total of 40 to 200 eggs during its entire lifespan. Temperatures around 15 °C/59 °F will result in the highest egg production.
- At a temperature between 15 °C/59 °F and 20 °C/68 °F One female will lay approximately 11-14 eggs a day.
- Female parasitic wasps will only lay their eggs in non-parasitized larvae, making them even more efficient

Product specifications

Product	Package size	Package content
Dacnusa-System 250	250 ml	250 adults(1)

(1) On a carrier of filter paper

Storage

Use immediately upon receipt. If not possible, product can be briefly stored horizontally at 6-8°C/43-47°F. Always respect the use-by-date.

Dose rate

Mode	Dosage	Area	Repeat
Low curative	0.25 ind./m^2	Full field	3-5 releases Weekly interval
High curative	0.5 ind./m^2	Hotspots and surroundings	3-5 releases Weekly interval

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Application

Release moment

Introduce Dacnusa-System at the first signs of leafminers.

Release method & conditions

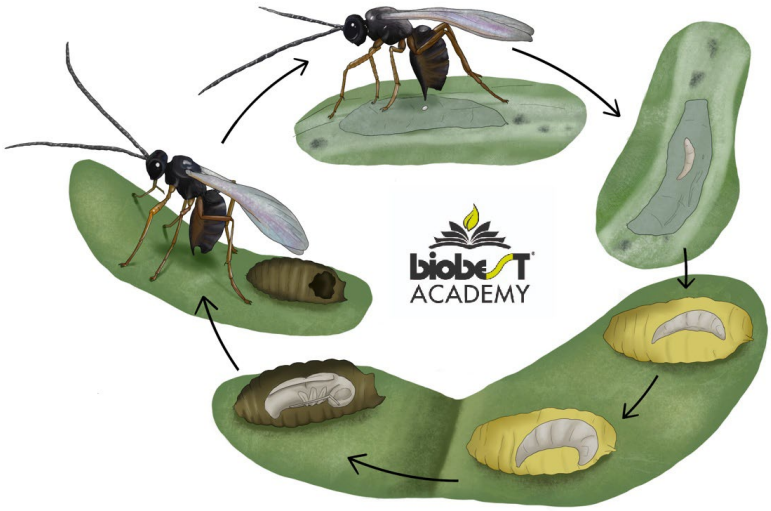
Apply in the morning or in the evening.

To introduce Dacnusa-System, the tube should be held low in the crop, in order to enable the wasps to fly out and start looking for leafminer larvae. *D. sibirica* is active at temperatures of 15 °C/59 °F .

Dacnusa-System is recommended at low levels of infestation. As *D. sibirica* is active even in the colder period of the year, start using it at the beginning of the season. When temperatures rise, complement its action with Diglyphus-System

Life cycle and appearance

Egg	Larva	Pupa	Adult
- Females deposit an egg in a leafminer larva - The development of egg to adults takes around 20 days.* This is approximately 10 days faster than an unparasitized leafminer.	- The first instar evolves in the leafminer larva - Only when the leafminer larva pupates, does the *Dacnusa* larva move to the 2nd and 3rd instar - Larva can over winter in leafminer pupae	- Pupation of *Dacnusa* takes place in the leafminer larva	- Dark brown to black color with brown legs - Long segmented antennae - 2-3 mm long - Lifespan: 3 weeks*



*At an average temperature of 20 °C/68 °F

Monitoring

- Adults may be visible in the crop
- Parasitised larvae continue to feed, so it is not easy to tell if they have been parasitised by *D. sibirica*, unlike Diglyphus-System, which paralyses the larva before oviposition
- There are no external signs of the developing parasitoid. It is best to collect samples and monitor emergence. For control, approximately 70% of samples should be parasitised.
- New leaves should be free of damage (feeding spots and galleries) when *D. sibirica* has established control over the leafminers

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