SUSTAINABLE CROP MANAGEMENT

TECHNICAL DATA SHEET

MATRICARIAE-SYSTEM

Aphidius matricariae

Aphidius matricariae is a parasitic wasp of several aphid species. The female wasps search for aphid nymphs or adults by sensing the odor of infested plants and the aphid's honeydew secretion. Using her ovipositor, the female will insert an egg inside the aphid host. When the egg hatches, the larva begins to eat the aphid from the inside out, causing its death. It uses the aphid skin to form a golden cocoon (mummy). A new adult emerges through a round exit hole at the back of the mummy. Each female wasp can lay up to 100 eggs, most of them during the first 4 days of adulthood. The presence of a parasitic wasp can cause aphids to drop from the plant in a panic reaction, in an attempt to escape. A. matricariae performs well even at lower temperatures, compared to other parasitic wasps, therefore it is widely used preventatively, especially early in the spring.

Product Specifications

Commercial name	Specifications
Matricariae-System - 500	• 30 ml vial: 500 pupae • Carrier: sawdust
Matricariae-System - 5,000	• 250 ml bottle: 5,000 pupae • Carrier: sawdust

Features

- Parasitic wasp
- Effective control of tobacco aphid (Myzus persicae var nicotianae), red morph of the green peach aphid (Myzus persicae)
- Contributes to the control of Foxglove aphids (Aulacorthum solani)
- Performs well in cool temperatures
- Great searching capacity

Targets

- Attacks 40 different aphid species

Crops (Indoor / Outdoor)

- Vegetables / Herbs
- Fruits
- Ornamentals
- Cannabis / Hemp

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Storage
Use immediately upon receipt. If not possible, product can be stored in a dark place, at 43-46°F (6-8°C) and a RH of 85%.

Rates

Mode	Dosage	Area	Repeat
Preventative	0.25 – 0.5 ind./m^2	Full Field	Weekly
Light Curative	0.5-1 ind./m^2	Infested areas and hotspots	Weekly
High Curative	1-3 ind./m^2	Infested areas and hotspots	As needed until control is achieved

Instructions
Timing of application
Matricariae-System can be used preventatively. When aphids are detected, increase the dosage rate in line with pest density. In case of curative treatments a simultaneous release of the gall midge Aphidoletes aphidimyza (Aphidoletes- System) or the lacewing Chrysoperla rufilabris (Chrysopa- System) is advised. More severe infestations can be tackled in combination with the ladybird Adalia bipunctata (Adalia- System).

Release method
Gently rotate the bottle horizontally to ensure homogeneous distribution within the carrier. Sprinkle the contents onto flat leaves, on top of slabs, or into Bio-boxes hung in plants. Do not place the mummies directly onto soil or substrate. Make sure the material remains dry and is not moved from its introduction site for at least a few days or until adults have emerged.

The optimal temperature for A. matricariae is between 64-77°F (18-25°C), and a relative humidity of 60-80%. Matricariae-System should only be used when temperatures are above 50°F (10°C) the efficacy decreases at temperatures higher than 87°F (30°C).

Monitoring
- Mummies can be observed on leaves of the crop 10-14 days after the first introduction, depending on temperature.
- The presence of a perfect round hole at the back of the mummy indicates that an adult of A. matricariae has emerged.
- Control is achieved when 80% of the aphids are parasitized.
- The efficacy can be checked by observing an increase in the number of mummies, a reduction in pest population, reduced number of hotspots, and healthy plant growth, free of honeydew or sooty mold.
- Monitor for jagged exit holes in mummies which indicates hyperparasitism. Presence of hyperparasitoids can crash your Aphidius population.

Life cycle and appearance

Egg	Larva / Pupa	Adult
• Eggs are laid inside the host aphid • Duration: 2-3 days*	• Larva develops inside the host • The larvae fixes the aphid on the leaf and starts to pupate • Parasitized aphids swell and change into golden-brown mummies • Larval stage duration: 7 days* • Pupal stage duration: 5 days*	• Emerges through an exit hole in the mummy • Slender black body with brown legs, long antennae and noticeable wing venation • 2-3 mm long • Lifespan: 2-3 weeks*



*At an average temperature of 70°F (21°C).