WOW-en

SUSTAINABLE CROP MANAGEMENT

ERETMIX-SYSTEM

TECHNICAL DATA SHEET

Targets

- Greenhouse whitefly
- Tobacco whitefly

Crops

- Vegetable crops
- Ornamental crops
- Soft fruit

Registration number

- Costa Rica: 024
- Switzerland: W-4709
- Latvia: reg. No. 0465

What is Eretmix-System?

- Combination of the parasitic wasps *Encarsia Formosa* and *Eretmocerus eremicus*
- Parasitoids that control whitefly infestations
- Effective against both the tobacco whitefly *Bemisia tabaci* and the greenhouse whitefly *Trialeurodes vaporariorum*
- *E. formosa* is efficient at low temperatures and prefers to parasitize the greenhouse whitefly
- *E. eremicus* is efficient at high temperatures and prefers to parasitize the tobacco whitefly

Mode of action

- Female wasps will lay their eggs under (*E. eremicus*) or within (*E. formosa*) the whitefly larvae
- In the case of *E. eremicus*, when the egg hatches, the larva will enter the host
- Eggs can develop from the second to the fourth larval stage of whitefly
- If an egg is laid in the first larval stage, a developmental arrest occurs, and will last until the whitefly larva has reached the second larval stage
- A new adult emerges through a round exit hole on the back of the pupa
- Depending on species, one female can parasitize 150-450 whitefly larvae. *Eretmocerus eremicus* will parasitize fewer whitefly, but has increased host feeding
- Both species of adult wasps can kill whitefly larvae as well through host feeding

Product specifications

Product	Package size	Package content
Eretmix-System (100-5.000)	50 cards	100 pupae/card; 5.000 pupae[1]
Eretmix-System (50-5.000)	100 cards	50 pupae/card; 5.000 pupae[1]
Eretmix-System (100-10.000)	100 cards	100 pupae/card; 10.000 pupae[1]
Eretmix-System 10.000	100 ml	10.000 pupae[2]

[1]Pupae are provided on a card with hook/[2]Loose pupae are provided on a carrier of sawdust

Storage

Use immediately upon receipt. If not possible, product can be briefly stored horizontally at 6-8°C/43-46°F. Always respect the use-by-date.

Dose rate

Mode	Dosage	Area	Repeat
Preventative	0.5-1 ind./m^2	Full field	Min. 4 times Every week
Low curative	1-2 ind./m^2	Hotspots and surroundings	Weekly Until good control
High curative	5-15 ind./m^2	Hotspots and surroundings	Weekly Until good control

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Application

Release moment

Eretmix-System can be used preventatively. When whitefly larvae are detected, increase the dosage rate in line with pest density. In severe whitefly infestations, complement its action with Delphastus-System.

Release method

Loose pupae: Gently rotate the bottle horizontally to ensure homogenous distribution. Pupae can be spread very easily in the crop, either on the leaves or using a Bio-Box. It is very important to scatter the pupae on a dry surface avoiding direct sunlight.

On cards: Bend and tear off the cards opposite from the mounting hook. Suspend the cards in the crop by the hook, if possible, approximately 75cm below the top of the plants. Avoid direct sunlight. Spread the cards equally over the surface that has to be treated to guarantee the best result. To prevent from damage, be careful to not touch the pupae while loosening and hanging the cards in the culture.

Release conditions

Conditions for optimal activity of Eretmix-System require a minimum average greenhouse temperature of 20°C/68°F. However, successful introduction is possible at lower temperatures. While the lifespan of *E. formosa* is considerably reduced at temperatures above 30°C/86°F, *E. eremicus* remains active at high temperatures. *E. formosa* does not like large whitefly colonies, as excessive honeydew can hamper it mobility.

E. eremicus is less sensitive to pesticide application than *E. formosa*.

Life cycle and appearance

Egg	Pupa of parasitized whitefly	Adult
- *E. eremicus* eggs are not detectable as they are laid under the host's larva - *E. formosa* oviposition can be evident through observation of sting marks in the dorsum of whitefly hosts. - Duration: 2-4 days[1] Note: Picture show a non-parasitized whitefly	- Whitefly pupae that have been parasitized by *E.* eremicus appear beige in color (left) - Whitefly pupae that have been parasitized by *E.* encarsia appear black in color (right) - Wasp larva passes through three instars inside the host - Larval & pupal stage duration: 12 days[1]	- *E. eremicus*: Pale yellow color with green eyes - *E. formosa*: Black with a pale yellow abdomen, clubbed antennae - 0.5-1 mm long - One female lays 5-35 eggs/day[2] - Lifespan: 6-12 days[1]





[1] In case of an average temperature of 25°C/77°F. [2] Depending on the whitefly and parasitoid species

Monitoring

- Parasitized whitefly larvae can be observed in the crop 10-14 days after the first application
- The presence of a perfect round hole in the pupae indicates that an adult has emerged
- Control is achieved when 80% of the whitefly larvae are parasitized
- The efficacy can be checked by observing a reduction in pest population, reduced hotspots, healthy plant growth, free of honeydew or sooty mould and the presence of black whitefly pupae

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