

## ORIOUS-SYSTEM

### TECHNICAL DATA SHEET



### Targets

- Thrips (main target pest)
- Aphids
- Spider mites
- Whiteflies
- Moth eggs
- *Lygus* nymphs

### Crops

- Vegetable crops: i.e. sweet pepper
- Ornamental crops
- Rosacea soft fruits
- Tree and shrub nursery

### Registration number

- AUT - Pfl. Reg. Nr. 2900
- ESP - N° MDF: 0039
- GRC - Αριθμός εγκρίσεως 7463/82436/18-7-2016
- LVA - Orius sistēma (Reg. Nr. 0467)

### What is Orius-System?

- Voracious oval pirate bug
- *Orius laevisgatus*
- Successfully controlling thrips in Europe for over 20 years
- Next to thrips also eats aphids, red spider mites, whiteflies, *Lygus* nymphs and moth eggs
- Can be combined with other thrips predators

### Mode of action

- Adults eat all thrips stages
- Nymphs mainly devour thrips larvae, they easily consume 50 thrips larvae during their development
- Female adults kill up to 20 thrips nymphs or 6 adults per day
- Adults and nymphs can survive on pollen present in your crop (e.g. pepper, strawberries, raspberries, gerbera...). However, it doesn't feed on Nutrimite™
- Often kills more thrips than needed for own feeding

### Product specifications

Product	Package size	Package content
Orius-System 500	125 ml	500 bugs, buckwheat and vermiculite carrier
Orius-System 2.000	250 ml	2.000 bugs, buckwheat and vermiculite carrier

### Storage

Use immediately upon receipt. If not possible, product can be briefly stored at 10-15 °C (50-59 °F) and RH > 85%. Always respect the use-by-date.

### Dose rate

Mode	Dosage	Area	Repeat
Preventative*	0,5-3 ind./m <sup>2</sup>	Sensitive areas (infestation history)	2-4 releases
Curative light**	3-5 ind./m <sup>2</sup>	Where first thrips appear (on hot spots)	1-3 releases
Curative strong**	5-10 ind./m <sup>2</sup>	Hot spots with heavy thrips population	1-3 releases

\* In pollen bearing crops

\*\* In absence of pollen in the crop, it is possible that the *Orius* disappears after cleaning up the pest.

## Instructions for use

### Release moment

- Preventive releases are done in pollen bearing crops as soon as the first flowers are open.
- Curative applications are done directly on hotspots and infested areas. These curative releases can occur in non-pollen bearing crops as a matter of spot treatment.

### Release method

- Apply immediately after receipt.
- Turn the bottle gently to homogenize.
- Introduce in piles of 75-100 bugs each on clean rockwool slabs, leaves or in Bioboxes.
- In hotspots sprinkle directly over the heads or on lateral leaves of the infested and surrounding plants.
- Keep the empty bottle for a couple of days in the crop, as these bottle may contain some remaining bugs.
- Combine with predatory mites such as Swirskii-System or Amblyseius-System, both loose and breeding sachets.

### Release conditions

- *Orius laevigatus* doesn't enter into diapause, therefore the critical climatic aspects are temperature and humidity.
- Optimum relative humidity is around 70%.
- Optimum temperature range is 18-25 °C (64-77 °F). The minimum temperature is 15 °C (59 °F).
- In absence of prey or pollen, *Orius* can show intraguild predation on predatory mites, gall midges and parasitized whitefly larvae by parasitic wasps. However, significant negative effect on biocontrol seems to be negligible.

## Life cycle and appearance

Egg	Young nymph	Mature nymph	Adult
<ul style="list-style-type: none"> <li>- Adult females start laying eggs after 2-3 days*</li> <li>- 60-120 of eggs/female</li> <li>- Embedded in leaf stem or leaf vein so barely visible with naked eye</li> <li>- Only a round lid of 0,13 mm stick out of the tissue</li> <li>- Hatch in 4-5 days*</li> </ul>	<ul style="list-style-type: none"> <li>- Yellow with orange spot</li> <li>- Red eyes</li> <li>- Duration: 2-3 days*</li> <li>- First instar can be mixed up with the first larva of thrips (use a magnifier to check)</li> </ul>	<ul style="list-style-type: none"> <li>- Yellowish-orange with orange-brown spots</li> <li>- Red eyes</li> <li>- Wing buds</li> <li>- Duration: 4-5 days*</li> </ul>	<ul style="list-style-type: none"> <li>- 2-3 mm</li> <li>- Head and thorax are brown-black</li> <li>- Forewings are light yellow-brown with dark brown wedge shape ends</li> <li>- Hind wing membranes are grey-white</li> <li>- Lifespan: 3-4 weeks*</li> </ul>



\* 25 °C (77 °F)

## Monitoring

- One week after release only young nymphs may be seen, it will take a few weeks to observe first evidence of a population establishment in the crop, such as nymphs and adults in flowers and on leaves, and signs of predation.
- After sucking a prey shrivelled drained bodies can be observed.
- A good protection is often considered when we achieve the installation level of 1 *Orius* per 1-3 flowers. The time necessary to achieve this depends on many factors such as applied dosage, temperature, crop, food availability and food quality.

### DISCLAIMER

Use plant protection products safely. Please read the label and product information before use. Please consult the instructions for use to prevent potential harm