
GENERAL

Before introducing beneficials, the greenhouse and plants should be free of harmful pesticide residues.

Before the beginning of your cultivation discuss with your advisor a plan of approach for the whole season.

SCOUTING AND MONITORING

Use yellow Bug-Scan® sticky traps for (timely) detection of flying insects. During the heating of the greenhouse hang min. 20 yellow sticky traps per ha to detect the first flying insects.

Also use yellow Bug-Scan® sticky traps during the cultivation. Count and register during **minimum the first 10 weeks** of your cultivation the different species of flying insects which are captured on the sticky traps.

CONTACT WITH BENEFICIALS

Follow up carefully the user's instructions; always pay attention to the icons on the packing. If necessary consult the Icon Guide.

Introduce beneficials preferably early in the morning.

If you want to store the beneficials for a short time, you have to reckon with the storage temperature and the use by date which are mentioned on the packing.

CHEMICAL CORRECTIONS

If a chemical correction has been inevitable, use as much as possible selective chemical crop protection products. Try to apply chemical corrections on local spots.

In case of doubt about the side effects of pesticides, contact your advisor or consult the Side Effects Manual which is available on www.biobest.be.

BIOLOGICAL CONTROL OF SPIDER MITE

Phytoseiulus-System

(predatory mite - *Phytoseiulus persimilis*)



- As soon as the first spider mite hot spots are detected, introduce as soon as possible minimum 20 *Phytoseiulus*/m². The exact amount of *Phytoseiulus* depends on the severeness of the spider mite damage. Introduce in and around the spider mite hot spots minimum 40 *Phytoseiulus*/m².
- Check the spider mite hot spots weekly and introduce *Amblyseius californicus* and/or *Phytoseiulus* if necessary.
- Remark: Spray the spider mite hot spots a few times a week, the moist circumstances which are created will provide a quicker building of the number of predatory mites in the crop.

Feltiella-System

(gall midge - *Feltiella acarisuga*)



- In combination with *Phytoseiulus* at spider mite hot spots.
- Introduce locally 1 pot (250 pupae) during 4 - 6 weeks.
- Remark: The gall midges have an excellent ability to search, but they can become disorientated by frequent use of a sulphur steamer.

Californicus-System

(predatory mite - *Amblyseius californicus*)

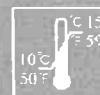


- Can be introduced preventive against spider mite (from the beginning of the bloom).
- Introduce preventive 8-10 *Amblyseius californicus*/m², all over the crop.
- *Amblyseius californicus* can hibernate in frost-free greenhouses.

BIOLOGICAL CONTROL OF THRIPS

Orius-System

(predatory bug - *Orius* spp.)



- Introduce *Orius* starting from the first bloom, minimum 2 x 0,5 *Orius*/m², with an interval of 1 to 2 weeks. (in total 1 *Orius*/m²)
- In cases of severe thrips damage: introduce minimum 5 to 10 *Orius*/m² in and around thrips hot spots.

Amblyseius-Breeding-System (A.B.S.)

(predatory mite - *Amblyseius cucumeris* in sachets)



- Introduce minimum 5.000 sachets/ha.
- Start at the first bloom.
- Repeat after 6 - 8 weeks in consultation with your advisor.
- Warning:

The products Amblyseius-Breeding-System (ABS) and Amblyseius-Slow-Release-System (ASR), which contain the predatory mite *Amblyseius cucumeris* delivered in breeding sachets, also contain Mold mites (*Tyrophagus putrescentiae*) and bran. Under certain circumstances such as a moist greenhouse climate or when using large quantities of breeding sachets, Mold mite population can increase to the point of causing damages in some crops (e.g. cucumbers). When planning to use these products in crops where they have never been used before, we recommend to first perform a small-scale trial or to discuss this with your Biobest advisor or supplier.

Amblyseius-System(predatory mite - *Amblyseius cucumeris* in 1 L - sprinkler)

- If no ABS is used, *Amblyseius cucumeris* can be introduced as sprinkling material (25.000 *Amblyseius cucumeris* per liter). Apply only when there is sufficient bloom.
- Introduce minimum 2 x 500.000 *Amblyseius*/ha on the crop, with an interval of 1 to 2 weeks.
- Warning:
The products Amblyseius-Breeding-System (ABS) and Amblyseius-Slow-Release-System (ASR), which contain the predatory mite *Amblyseius cucumeris* delivered in breeding sachets, also contain Mold mites (*Tyrophagus putrescentiae*) and bran. Under certain circumstances such as a moist greenhouse climate or when using large quantities of breeding sachets, Mold mite population can increase to the point of causing damages in some crops (e.g. cucumbers). When planning to use these products in crops where they have never been used before, we recommend to first perform a small-scale trial or to discuss this with your Biobest advisor or supplier.

BIOLOGICAL CONTROL OF MEALYBUG**Leptomastix-System**(parasitic wasp - *Leptomastix dactylopii*)

- The parasitic wasps have to be introduced in the neighbourhood of citrus mealybug spots.
- Small infestation: it is advisable to work with *Leptomastix*.
- Quick detection of a hot spot: introduce during minimum 3 weeks 200 parasitic wasps.

Cryptolaemus-System(ladybird - *Cryptolaemus montrouzieri*)

- *Cryptolaemus* is as predator which is very effective to control mealybug populations.
- Introduce 2 to 3 adult beetles/m².
- *Cryptolaemus* controls beside mealybug also aphids and/or scale insects.

BIOLOGICAL CONTROL OF BLACK VINE WEEVILS**Heterorhabditis-System**(insect parasitic nematodes - *Heterorhabditis megidis*)

- Dose: 1 million nematodes/m².
- Pay attention: substratum must be moist during 14 days and the temperature must be higher than 12°C.

BIOLOGICAL CONTROL OF CATERPILLARS & CITRUS MEALYBUG

Attract[®] pheromone lures



- For the detection of the first moths in the greenhouse.
- Hang minimum 2 **Attract[®]** pheromone lures per ha; we are mostly interested in the detection of *Lobesia botrana* (Grapeberry moth) and *Planococcus citri* (Citrus mealybug).

⇒ Hang the **Attract[®]** pheromone lures minimum 50 m from each other to prevent a mixture of the pheromones.
⇒ Replace the pheromone capsules regularly (every 4 weeks).