

Soft Fruit Biocontrols

TECHNICAL ADVICE SHEET

Below are some common forms of biocontrol available for soft fruit crops, to use effectively you should consult a BASIS-trained advisor.

Once received, biocontrol products are best applied immediately. Store in a cool place according to the label. Most packets need to be kept horizontally. Keep them well mixed.

ORIOUS

Orius is a generalist predator that feeds on a wide range of pests, it is one of the few bio-controls that will feed on adult thrips. It can establish well on pollen rich crops and can take 4-8 weeks to establish a population.



Adult Orius feeding on thrips

- Size: 2-3 mm
- Feeds on: Pollen, thrips (main pest preference), Two spotted spider mite, whitefly, moth eggs and lygus nymphs.
- Optimum temperature: 18-25°C (minimum 15°C)
- Optimum humidity: 70%
- Lifespan: 3-4 weeks
- Preventative rate: 0.5 per m²
- Curative rates (Light/ Heavy): 3.5 per m²/ 5-10 per m².



Orius carrier mix

- Apply in clumps of 70- 100 individuals as it will encourage breeding and a population build up, it is best to not disturb the introduction areas for a few days after introduction.
- Orius lays most of its eggs on side shoots, it is best to apply after side shoots have been removed from the crop.
- Preventative applications shouldn't be done before first flowers are open as without prey they need pollen to survive.
- Apply in a cool morning or early evening avoiding bright sunlight.



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PREDATORY MITES – *AMBLYSEIUS (NEOSEIULUS) CUCUMERIS*

Amblyseius cucumeris are generalist predators that can survive on pollen, they are very good at attacking eggs, mites and larval thrips.



Amblyseius cucumeris on a leaf (Photo ©Bioline)

- Size: 0.3mm
- Feeds on: Thrips larvae, two spotted spider mite, Broad mite, cyclamen mite.
- Optimum temperature: 18- 31°C
- Optimum humidity: 65-75%
- Preventative rate: 50 per m²
- Curative rates (Light/ Heavy): 250 – 500 per m²/ 250-500 per m²



Example sachet dispersal method

- Predatory mites target a wide range of thrip species but it should be noted that they only target eggs and larvae, not adults.
- Disperses through the crop by leaves/ stems that are touching. The mites can feed on pollen as well as pests to allow for a preventative approach in the absence of pests.
- Sachets of predatory mites act as breeding units which include a food source and release a steady stream of mites over a few weeks.





PARASITOID WASPS

Parasitic wasps (known as parasitoids) lay eggs inside aphids which, after hatching feed on the aphid carcass, leaving a mummy behind. It pupates and then emerges ready to parasitise more aphids.



**Aphidius spp. near an aphid
Mummy (golden colour) on a leaf**

- Size: 2-4 mm
- Feeds on: Nectar
- Optimum temperature: Less than 28°C
- Preventative rate: 0.25 per m²
- Curative rates (Light/ Heavy):



- Parasitoid species target specific species of aphids so it is important to know which aphid you are targeting.
- A lot of products are a mix of parasitoid species to help cover different aphid species but take care reading the coverage.
- As they can fly, the wasps are able to move through the crop easily focusing on pheromones released by plants under aphid attack.
- For the best preventative approach smaller weekly applications should be made at peak aphid abundance.



NEMATODES SPP.- *STEINERNEMA FELTIAE* OR *STEINERNEMA KRAUSSEI*

These parasitic nematodes actively move through the soil zone and infect prey, they are harmless to crops and only attack their target pests.



Resuspended nematodes from a packet

- Size: <0.1 mm
- Feeds on: Sciarid flies (*Steinernema feltiae*), thrip larvae & Black vine weevil (*Steinernema kraussei*)
- Optimum temperature: 14-28°C



Dehydrated nematodes from a packet

- It is important to ensure that nematodes are well mixed in the tank for even distribution through the crop.
- The nematodes travel through the soil via moisture, if the soil is too dry then efficacy will drop as the nematodes struggle to operate.
- The nematodes locate prey by their waste products and infect through body openings.

For more information please see:

<https://www.biobestgroup.com/>

<https://www.biolineagrosciences.com/>

https://www.koppert.co.uk/?utm_term=redirect



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