

Thanks to its polyphagous character and its adaptability to high temperatures, this gluttonous predatory mite plays an important role in biological crop protection. Whiteflies and thrips now have a tremendous adversary.

PREYS

Amblyseius (Typhlodromips) swirskii is a polyphagous predatory mite, meaning that it feeds on several preys. For a fast growth of its population, *A. swirskii* needs a satisfactory food source and prefers whitefly and thrips. *A. swirskii* also feeds on pollen and in a certain degree on spider mites and tarsonemid mites. This gluttonous predator can be used in pepper, cucumber, egg plant, strawberry and some ornamental crops.

Whitefly

The whitefly's larvae feed on plant juice and the surplus on sugar will be excreted as sticky honeydew. The honeydew improves the growth of moulds and this interferes in the photosynthesis and transpiration of the plant. Furthermore, whiteflies are true vectors of many viruses such as TYLCV.

It is especially the eggs in the primary larval stage of greenhouse whitefly as well as tobacco whitefly that *A. swirskii* feeds on.

Thrips

Thrips cause damages in many different ways in the crop. Plant cells emptied of their content by the feeding of thrips take a grey or silver colour. Also, thrips excrements can lower the value of ornamental crops. Eggs are laid in the leaf tissue and can be recognized as warty suberizations. Depending on the type of crop, deformations and discolorations of the leaf, fruit and flowers are detected. Thrips are also known vectors of many viruses.

A. swirskii mainly eats the young thrips larvae. The predator capacity can be compared with that of *A. cucumeris* which means that about 5 larvae are consumed a day.

AMBLYSEIUS (TYPHLODROMIPS)

SWIRSKII

Amblyseius swirskii originates from the Mediterranean. More specific in countries such as Greece, Turkey, Israel and Egypt we can generally find it in nature. Its original area also explains why *A. swirskii* works better at higher the temperatures. The optimal development temperature is between 25 °C and 28 °C and the predatory mite stays even active up to temperatures of 40 °C. Nevertheless under 15 °C it is inactive. The humidity has also a restrictive influence on the development of this predatory mite. The critical limit is about 70 % relative humidity. A significant decrease under this limit does not necessarily mean the end for *A. swirskii* thanks to the micro climate around the leaf area. However, if such dryer periods last too long, the laid eggs will dry out and will be no longer viable.

The predatory mite does not know a diapause and so it is also applicable during periods with less light.

In optimal climate and feeding conditions, its total life cycle will take 5 to 6 days and the females will lay about 2 eggs per day.

A population of *A. swirskii* will grow very fast and will spread among the crop as long as the ideal circumstances are guaranteed. We can find the predatory mite on the entire plant, but it has a slight preference for the upper part of pollinating crops. To stimulate the spread among the crop, it is recommended to disperse the mites well. The gland hairs on a tomato leaf, honeydew spots and spider webs obstruct the mite's mobility.

The external differences between *A. swirskii*, *A. cucumeris* or *A. californicus* can not be distinguished with the naked eye or under a magnifying glass. These differences can only be observed under the microscope.

FORMULATIONS AND DOSAGES

Biobest delivers *A. swirskii* in the following formulations:

Swirskii-System

The predatory mites are delivered per 10.000 or 25.000 in a 1 liter plastic pot. The composition of the carrier exists of bran and vermiculite.

Preventively disperse 20 pieces/m² on the leaves. As soon as the first preys are detected, spread 100 pieces/m² where whitefly or thrips were located.

Swirskii-Breeding-System

Thanks to the breeding sachets, preventative introduction is allowed in non-pollinating crops such as cucumber. At first, every breeding sachet contains approximately 250 *A. swirskii* in a carrier of bran and mites. These mites serve as an alternative prey. During a couple of weeks, every breeding sachet produces thousands of predatory mites. They can easily spread in the crop through a whole in the waterproof paper of the sachet, so there is no need to open the sachet.

Hang sachets of the Swirskii-Breeding-System on plants at a rate of 1 sachet/2 m². If necessary, repeat introduction every 6 weeks to maintain a continuous presence of *A. swirskii* in the crop.

Note

A. swirskii mainly predate young stages. Therefore it is recommended to introduce chalcid wasps for older larval stages of whitefly and *Orius* spp. for older thrips larvae and adults. *Phytoseiulus persimilis* is a favourable addition in spider mite infestations.

STORAGE AND STORAGE LIFE

The ideal storage temperature is 18 °C. At this temperature the predatory mites remain in optimal condition during maximum 1 week. Low temperatures have a negative influence on *A. swirskii*. Store the mites in a dark place with enough ventilation to avoid the narcotic effects of a possible CO₂ accumulation. Nevertheless, always introduce the predatory mites as soon as possible to prevent unpredictable temperature fluctuations!

ADVANTAGES

- Preventively applicable through breeding sachets, also in non-pollinating crops
- Wide range of preys
- Not sensitive to day length
- Can survive on pollen
- Applicable in many crops