Amblyline cu
Amblyseius (Neoseiulus) cucumeris
Thrips control

**Product description**

Amblyline cu. contains the predatory mite *Amblyseius cucumeris* (Oudemans) Phytoseiidae, Acari.

Available in a controlled release sachet (CRS) containing a breeding colony of mites, which gives continuous release of predators over a period of 6 weeks or more. Sachets are pre-perforated to allow mites to escape.

It is also available in our patented Gemini sachets. A unit holds 300 sachets, each containing a breeding colony of 1000 predators at the time of packing. Gemini sachets are water resistant, and can be used in crops with overhead irrigation, or those grown outside. Bugline cucumeris is also available for use in cut flower crops.

It is also available as loose bran/vermiculite or vermiculite-only formulations, for sprinkling directly onto the crop.

**How does it work?**

*Amblyseius cucumeris* is a predator that feeds on a wide range of small arthropod prey. It is used primarily for control of thrips, particularly *Frankliniella occidentalis*, but can also be used for control of Tarsonemid mites on a number of crops and can reduce Rust Mite (*Eriophyid*) populations. It will also prey on spider mites, but does not offer significant control.

Because *Amblyseius cucumeris* is small, it feeds only on the smallest thrips larvae and cannot attack large larvae or adults. For best results it is necessary to have as many predatory mites present as possible to prevent thrips larvae reaching maturity.

**What is the Controlled Release System (CRS)?**

The CRS system is an innovative release system pioneered by Syngenta Bioline in 1991, in response to the increasing damage caused by the pest *Frankliniella occidentalis*, which had newly arrived in Europe. Each CRS sachet is made of special non-porous paper, and contains a breeding colony of the predatory mite together with another mite, which serves as a food source. *Amblyseius cucumeris* emerge over an extended period at a regular rate, ensuring the continuous presence of predators on the crop throughout the life of the sachet. The average recorded emergence is approximately 400 mites per sachet per week, giving a total release of over 2,400 mites over the life of the sachet. Numbers will vary depending on temperature and conditions of use. Because the mites are emerging continuously, there is no need for them to establish on the target crop for them to offer thrips control.
When and where should you use it?

Because it can only attack small thrips, *Amblyseius cucumeris* is best used early, to prevent thrips establishment on the crop. For crops where thrips present a major problem, CRS sachets provide an ideal solution. They ensure that very large numbers of predatory mites are present on the crop for an extended period, so protection is provided even on plants where the mites will not establish. By attacking thrips larvae as they emerge from the egg large numbers of *Amblyseius cucumeris* can prevent the establishment of a population. Use this system on cucumbers, peppers, aubergines and ornamental plants under protection. Use the loose formulations on pollen rich crops where the *Amblyseius cucumeris* will be able to establish, or where thrips present a less significant risk. This is also the formulation of choice for control of Tarsonemid mites on strawberries.

How should you use it?

**CRS sachets.**
Hang these from the stems of the crop or the strings so that they remain in the shade. A standard rate would be one sachet /m², but this may be increased to one sachet /plant in some crops. Replace the sachets every six to eight weeks to ensure protection of your crop. Low humidity can reduce sachet life, so hang them away from heating pipes and out of direct sunlight.
Sachets must be applied preventively and used at the recommended spacing and frequency. Independent research has shown that early use can prevent damage on cucumber foliage, but even a two-week delay in application can allow damaging populations to develop with a consequent loss of 20% of the leaf area.

**Gemini sachets**
Individual Gemini sachets are packed flat into boxes in units of 300. To use the sachets, pick each sachet up with a finger and thumb at the central line. The twin compartments of the sachet should hang down from this central line, forming an inverted ‘V’ shape. Make sure that the printed face of the sachet is facing outwards, and that the un-printed face, on which the emergence holes are situated, is facing inwards. This ensures that water cannot enter the sachet.

**Loose bran or vermiculite formulations.**
Sprinkle these onto the crop where required to achieve uniform cover of the area. Use rates of 50-100 *Amblyseius cucumeris*/m², and repeat weekly or fortnightly for thrips control.

The vermiculite formulation is for use on crops that are sensitive to bran.

**Tarsonemid Mite.**
For control of Tarsonemid mites on strawberries, apply rates of up to 400/m² onto damaged plants, and those in a ring 2 metres around the foci of infestation. Apply at a lower rate of 50/m² for a further 2 or 3 metres, then at a rate of 20/m² over the rest of the crop.
INSTRUCTIONS FOR USE OF Amblyline cu (Amblyseius cucumeris)

- Carefully separate the CRS sachets along the perforations. Or lift each Gemini sachet out by the centre 'hinge' and allow the compartments to hang down to form a tent, with the printed side uppermost.
- Suspend each sachet amongst the foliage, so that it is, or will soon be, shaded from direct sunlight.
- DO NOT hang the sachets immediately adjacent to heating pipes, as this significantly reduces the life of the sachet.

STORAGE
- Use within 18 hours of receipt.
- Keep at 10°C - 15°C until ready to use.
- DO NOT REFRIGERATE

When should you not use it?

Do not use Amblyseius cucumeris at temperatures that remain below 15°C for long periods, or in very dry areas. Sachets are formulated to withstand constant humidity as low as 50% RH, or short periods of lower humidity. They will not perform well in humidity's that remain below this for longer periods.

No formulation of Amblyseius cucumeris will control large populations of thrips that are already well established, nor prevent damage from invading adult thrips. The best that can be expected is a reduction in the level of damage, although alternative methods may give enhanced control.

Other biological control agents suitable for control of thrips are: Orius spp, Amblyseius degenerans, Amblyseius swirskii and Verticillium lecani. Hypoaspis miles is also used as part of a thrips control programme. Refer to the product information about these beneficials for more details on their use. For very large thrips populations, or where there is a serious risk of virus transmission, the available insecticides should be used to reduce populations initially.

What will it do?

Amblyseius cucumeris will help to prevent thrips damage to crops when applied preventively. Careful use can keep damage below an economic threshold. It will also significantly reduce populations of Tarsonemid mites and reduce, but not prevent, the spread of damage by Eriophyid mites such as Aculops lycopersici.

What will it not do, and what are the control options?
No *Amblyseius cucumeris* formulation will fully control large existing thrips populations, nor prevent damage from invading adults. Neither can they remove damage that already exists, so always use the product as early as possible to prevent damage occurring.

**Chemical compatibility**

Many insecticides can be successfully combined with the use of *Amblyseius cucumeris*, particularly the sachet formulations. Thus selected compounds for control of whitefly and spider mite can be readily used, as can products for caterpillar and aphid control. While mites already on the plant may be damaged by the application of insecticides and fungicides, the sachet material itself affords protection to the colony within and mites will soon move out onto the plants.

There are unfortunately few chemical insecticides on the market at present that can be used for corrective treatment to reduce thrips populations without damaging *Amblyseius cucumeris* and other beneficials.

**Programme compatibility**

*Amblyseius cucumeris* in all its formulations is compatible with other beneficial mites, insects and nematodes, as well as fungal pathogens. The importance of *Frankliniella occidentalis* as a pest has made the CRS formulation of *Amblyseius cucumeris* one of the key building blocks for Integrated Crop Management programmes in Europe.

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<thead>
<tr>
<th>Product</th>
<th>Pest</th>
<th>Crops</th>
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<tr>
<td><em>Amblyseius cucumeris</em></td>
<td>Broad Mite and Cyclamen Mite</td>
<td>Aubergine</td>
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<td></td>
<td>(<em>Polyphagotarsonemus latus</em> and <em>Phytomenus pallidus</em>)</td>
<td>Blueberries</td>
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<td>Thrips - WFT (<em>Frankliniella occidentalis</em>)</td>
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<td>Onion thrip (<em>Thrips tabaci</em>)</td>
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