

## **Cucumeris [*Amblyseius* (=Neoseiulus) *cucumeris*] Thrips Predator**

### **Target pests**

Western flower thrips (*Frankliniella occidentalis*),

Onion thrips (*Thrips tabaci*); also cyclamen, bamboo and broad mites.

### **Description**

'Cucumeris' is a species of predatory mite that feeds on immature stages of thrips. It also feeds on pollen, two-spotted mites and other species of mites.

- Cucumeris adults are pear-shaped, tan coloured mites, less than 0.5 mm (1/50 inch) long.
- Eggs are round, transparent and 0.14 mm (0.01 inch) in diameter.

### **Use in Biological Control**

- Cucumeris is mainly used to control western flower thrips on greenhouse vegetable and flower crops (for information on thrips, see Sheet 320).
- Optimum conditions are 20-25°C (68-77°F) with relative humidity 66-70%.

### **Monitoring Tips**

Use a 10-15 X hand lens to inspect for mites, which are most often found along veins on the underside of leaves or inside mature flowers.

### **Life Cycle**

A complete life cycle takes 10-12 days at 20°C (68°F).

- Cucumeris populations have somewhat more females than males (64% females).
- Females lay 1-3 eggs per day for an average of 35 eggs over their lifetime. Eggs are laid on leaf hairs along the veins on the lower surface of leaves. They hatch in about 3 days.
- Newly hatched larvae do not feed until they moult at 2 days old. They feed for another 7 days before becoming adults.
- Adults live for up to 30 days and eat an average of 1 thrips/day.

Although in northern climates, outdoor populations of Cucumeris diapause in response to short days, the Cucumeris now sold for greenhouse use are non-diapausing strains and may be used year round.

### **Product Information**

Cucumeris adults and immatures are shipped mixed with a bran carrier. They are available in two types of packaging:

- Bulk cartons, containing 10,000 - 50,000 predators. The contents are gently shaken onto leaves throughout the greenhouse or placed on the rock wool block or growing media in contact with the plant stem. Upon receipt active predators should be visible at the top of containers at room temperature.

- Slow release bags, containing approximately 30 mL (1/8 cup) of carrier with predators and a food source. The bags act as miniature breeding units and are hung on plants throughout the greenhouse. Over four weeks, each bag can produce over 1000 predators under good conditions.

### **Introduction Rates**

Relatively high introduction rates are required because thrips can reproduce nearly twice as fast as Cucumeris, and Cucumeris only feeds on immature thrips, not adults.

### General Introduction Rates

- 10-100 Cucumeris/ plant, weekly, as needed.

### Using the Bulk Product

- Greenhouse peppers – 10 Cucumeris/plant. One introduction is sufficient early in the growing season if pollen is available as an alternate food source.
- Greenhouse cucumbers - As a starter culture for young plants, apply 25 Cucumeris/plant by placing a small pile of media touching the base of the stem at soon as they are planted out in the greenhouse. On larger plants use 50-100 Cucumeris/plant, weekly, until the percentage of leaves with predators is greater than that with thrips.
- Greenhouse tomatoes – 25 Cucumeris/plant, weekly, for two weeks, when thrips are detected.

### Using Slow release bags

- Greenhouse cucumbers – 1 bag/5 plants every 1-2 weeks, until there is 1 bag/plant in infested areas
- Interior plantscapes – 1 bag/large plant, every 6-8 weeks

Hang bags within 25 cm (10 inches) of the growing point on greenhouse crops, ensuring good contact with the stem and leaves. Bags should not be exposed to direct sunlight or overhead watering. Do not tear open pre-punched bags as they will become too dry.

Establishment of Cucumeris requires 4-8 weeks, so it should be applied before thrips problems develop. Because Cucumeris feed only on immature thrips stages, a decrease in future adult thrips populations will not occur for about 3 weeks. Adult thrips have a long life cycle (+30 days) so adults will continue to cause damage and adults should be controlled by releases of Orius or by using sticky traps.

### **For Best Results**

## SHEET 220 - CUCUMERIS

- Where Persimilis is being used for control of spider mite, avoid heavy applications of Cucumeris. Cucumeris feed on spider mite eggs, which may limit the food supply for immature Persimilis and reduce their effectiveness.
- Use Cucumeris along with other thrips predators such as Orius spp. (see Sheet 222) on flowering plants and Hypoaspis (see Sheet 230) to control thrips pupae in the growth media.

### **Using Pesticide**

Some insecticides and fungicides can be used with Cucumeris (see Sheet 180). Use of any water-based sprays with spreader stickers will kill some predators and wash them off the leaves.

There are no selective pesticides that will kill thrips and not harm Cucumeris, however, insecticidal soap sprays may be used in hot spots and will not leave harmful residues. Experience has shown that endosulfan (Thiodan<sup>®</sup>), used once at ½ label rate will reduce thrips numbers, but not kill all Cucumeris, thus allowing them to re-establish on the crop. DDVP (dichlorvos) fumigation may also be used one week before cucumeris is released to control adult thrips that are present.