



Chrysopa or green lacewing larvae are voracious predators of many aphid species. They can eat up to 50 aphids per day and a total of 600 during their entire development. The last larval stage is the most voracious one, responsible for 75% of total consumption. Adult females search for large aphid colonies to lay their eggs. One female can lay an average of 20 eggs per day and up to 400 eggs during its lifespan. Only the larval stages feed on aphids. Adults can feed on nectar, honeydew and pollen. Chrysopa can be used in vegetable, fruit, medicinal and ornamental crops and performs well even in crops where large temperature and/or relative humidity variations occur. Chrysopa can also be used to help control mealybugs, spider mites, whiteflies, small caterpillars, moth eggs and difficult to control thrips.

Product Specifications

Commercial name	Characteristics
Chrysopa-System - 1,000	500 ml tube: 1,000 larvae - Carrier: buckwheat
Chrysopa-System - 10,000	5 L bucket: 10,000 larvae - Carrier: buckwheat
Chrysopa-E-System - 100,000 (loose)	137 ml tube 100,000 eggs
Chrysopa-E-System - 10K (100/card)	100 cards 100 eggs/card

Storage

Use immediately upon receipt. If not possible, product can be briefly stored horizontally at 50-54°F (10-12°C) for 1 to 2 days.

Upon receipt of Chrysopa-E-System, eggs will be green. If it is not possible to release immediately, eggs can be held at room temperature and be released in the crop as soon as they begin to turn grey. (This can take up to 4 days - check daily). Chrysopa-E-System hatch rate will decrease with storage.

CHRYSOPA-SYSTEM[®] and CHRYSOPA-E-SYSTEM[®] *Chrysoperla rufilabris*

Features

- Only predacious in the larval stage
- Biological control of aphids (preventively and curatively)
- Larvae are highly voracious and generalists
- Ability to attack large prey
- Adults feed on nectar, honeydew and pollen
- Withstands broad variation in temperature and relative humidity

Targets

- Aphids
- Mealybugs
- Thrips
- Spider mite
- Whitefly
- Small caterpillars
- Moth eggs

Crops

Performs in a broad range of crops

- Vegetables / Herbs
- Fruits / Melons
- Grapes
- Ornamentals
- Cannabis / Hemp
- Public greens



CHRYSOPA-SYSTEM and CHRYSOPA-E-SYSTEM

Rates

Mode	Dosage	Area	Repeat
Chrysopa-System			
Preventative	2-5 ind./m ²	Full field	1 time Weekly
Low curative	5-10 ind./m ²	Hotspots and surroundings	4-5 times Weekly
High curative	10-20 ind./m ²	Hotspots and surroundings	As needed until control achieved
Chrysopa- E-System			
Preventative	20-150 ind./m ²	Full field	Weekly/ Bi-weekly
Curative	150-300 ind./m ²	Hotspots and surroundings	As needed until control achieved

*Rates will vary depending on crop and farm history. Check with your Biobest representative to find out what rates are right for your farm.

Instructions

Chrysopa-E-System - Chrysoperla rufilabris eggs

Loose

- Add to Bio-Boxes (Bio-Box helps beneficials stay in the crop instead of falling down during application). Hang the boxes from affected plants (best method).
- If canopy is overlapping, the eggs can be directly sprinkled onto canopy using a shaker lid or mixed with predatory mites in sawdust or bran and applied with a Makita blower and Nutri-App. Hatch rates are best if eggs are applied to foliage or Bio-Boxes rather than the floor or potting media.

Cards

- Fold cards once or twice on the perforated line and gently tear apart. Do not place your fingers on the exposed eggs on the surface of the card.
- Hang the cards on plants or from the rim of pots with the pupae facing towards the plant, out of direct sunlight and sprays.

Supplemental Feeding: Can be fed with Nutricards to maintain population in the absence of the pest.

Environment: Performs well in crops with a broad variation in temperature and/or relative humidity. The larvae work best at 12-35°C (54-95°F).

Chrysopa-System - Chrysoperla rufilabris larvae

- Release immediately! Larvae are cannibalistic.
- Release bulk material over the canopy or in hot spots at the base of the plants or in Bio-Boxes.
- Provide Nutrimac™ or Nutricards as a food supplement.

Timing of Application

Start releasing Chrysopa-System when prey density increases and first hotspots appear.

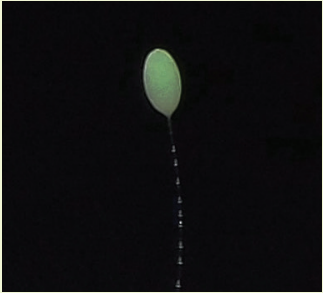
Eggs are better suited early in the crop as a preventative measure and larvae in hotspots for immediate action when necessary.

Monitoring

- The efficacy can be checked by observing a reduction in pest population, reduced hot-spots, and healthy plant growth, free of honeydew or sooty mold.
- Adults of *C. rufilabris* rarely establish a resident population in the crop, since they will mostly leave the greenhouse after hatching.
- The presence of eggs, larvae and pupae of *C. rufilabris* can be seen on the leaves.
- Some adults can be seen during the evenings and at night when they are attracted by light sources.
- Attacked aphids can be recognized by their shriveled and desiccated appearance.

CHRYSOPA-SYSTEM and CHRYSOPA-E-SYSTEM

Life cycle and appearance

Egg	Larva	Pupa	Adult
• Oval shaped • Pale green to gray color • 0.7 mm long • Deposited separately or in groups on stalks • Duration: 3-6 days*	• 3 larval stages • Brown color • Pair of pincer-like mandibles • 1-8 mm long • Duration: 14-21 days*	• Circular, silk-like cocoon • 4-6 mm long • Duration: 14-21 days*	• Pale green color • Long, transparent, fine-veined wings • Golden or copper-colored eyes • 12-20 mm long • Lifespan: 4-6 weeks*
			

*At an average temperature of 68-77°F (20-25°C).

