BIOLOGICAL SERVICES

Nesidiocoris

Nesidiocoris tenuis

Nesidiocoris tenuis (Nesidiocoris) is a voracious general predator, and a major natural enemy of pests such as whiteflies, moth eggs and small grubs. It also feeds on other pests such as thrips, two spotted mite and aphids.

Description and biology

Nesidiocoris is a predatory bug of the Miridae family and is found extensively in Mediterranean climates. It is naturally established in all states of Australia. Adults are bright green and are 5-6 mm in length with several black specks on their clear hind wings. Adults have striped antennae and can fly. Nymphs are 1-4 mm in length, are yellow green on hatching changing to a bright emerald green as they develop. Nymphs have red eyes and cannot fly. They are usually found on the underside of leaves and in the growing points of plants and will move very quickly if disturbed. They tend to blend very well with plant material and like to hide so can be difficult to see.

Eggs are laid into the plant tissue and cannot be seen with the naked eye. Eggs hatch after about 7 days depending on temperature, and nymphs take approximately 14 days to develop into adults. Nesidiocoris has a shorter life cycle when it feeds on eggs and larvae of whitefly or moths, than when feeding predominantly on thrips or mites.

They breed quickly at temperatures of 23 °C and above, but generations are much slower below 20 °C. Both adults and nymphs feed on pests.

Suitable crops

Nesidiocoris is recommended for use on tomato and eggplant (aubergine) crops for controlling both greenhouse whitefly (*Trialeurodes vaporariorum*) and silver leaf whitefly (*Bemisia tabaci*). Trials are being conducted in other crops.

Application

Nesidiocoris are supplied in 500 mL bottles containing adults and late instar juveniles in inert vermiculite. Ideally Nesidiocoris should be applied to young plants in the nursery about one week prior to planting out into production houses. If this isn't able to be done then release as soon as possible after planting out. One even release is generally enough to establish Nesidiocoris for the life of the crop. A top up release may be required for high pressure areas or hotspots. To apply simply sprinkle the contents of bottles evenly over the tops of the plants. 10-20 mL of media per release point is recommended to increase mating.

Nesidiocoris adult feeding on whitefly nymphs.

When pest levels are initially low it is suggested to first apply sterilised Ephestia moth eggs over the crop to give Nesidiocoris a food source and improve initial establishment. Releases should ideally occur in low light conditions, preferably early morning or late evening to reduce possible losses of adults flying directly to vents.

To optimise whitefly control, Nesidiocoris should be used in conjunction with *Encarsia formosa* and *Eretmocerus warrae* for best results.

Storage

Ideally release as soon as possible once received. Nesidiocoris may be stored at 8-12 °C for 1 day but only if really necessary. Bottles should be laid on their side, and kept in the dark.

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Chemical use

Please consult with Biological Services before applying any chemicals prior to and after release when using Nesidiocoris, for compatibility data. Confidor™ (imidacloprid) will remain toxic to Nesidiocoris for the life of the crop.

Important notice

Nesidiocoris will feed on plant tissues. Symptoms due to plant feeding are common and tend to occur in the following situations:

- When there is little or no prey available and Nesidiocoris numbers are moderate to high
- If high numbers of predatory bugs are present in the growing points of plants
- In hot weather conditions Nesidiocoris will breed more quickly and take more moisture from plants

Nesidiocoris feeding symtpoms on leaf (not economic) shows good signs of establishment.

Common feeding symptoms

- Spotting and holes in new leaves
- Necrotic feeding rings on soft plant stems and flower petioles

Some signs of feeding are normal and are expected. Minor to moderate symptoms will not cause damage and are a sign of good predator levels in your crop. Economic damage can be avoided by regular monitoring. If Nesidiocoris reach high levels and numbers are not lowered economic damage may occur including:

- Necrotic rings in the main stem near the heads
- Flower drop
- Uneven setting
- Feeding spots on fruit
- Irregular shaped flowers and/or fruit

Nesidiocoris feeding symptoms (economic). Rings on main stems may lead to economic damage.

Eggplants are less sensitive to damage than tomato. Some small fruiting tomato varieties such as cherry tomatoes may be more sensitive to mirid feeding, and lower numbers are suggested in these situations.

Control of Nesidiocoris

If Nesidiocoris populations increase towards damaging numbers, several controls may be used to reduce the population to avoid possible damage. Please contact Biological Services for further information, as recommendations will vary depending on the circumstances. In most instances the Nesidiocoris populations will need to be lowered from time to time without wiping it out. If need be the predators can be completely and quickly controlled.

Biological Services have no control over the use of the product once it has left their premises and therefore disclaim any liability for loss or damage that might occur from direct or indirect use, transport or storage of the product.

Ordering and accounts

Orders are sent via express courier services on Monday or Tuesday of each week, and usually arrive within a couple of days.