

Hyper-Mite™

Stratiolaelaps scimitus (formerly known as *Hypoaspis miles*), a predatory soil mite

Hyper-Mite™ is a soil-dwelling predatory mite that feeds on fungus gnats (mycetophilids, sciarid flies) and other insects, mites and nematodes in soil and growing media. It is also proving to be very useful against the pollen cap mite (*Tyrophagus neiswanderi*) in cymbidiums.

Hyper-Mite™ is useful in greenhouse vegetable and ornamental crops, including bulbs, as part of an integrated pest management programme.

The Pest – Fungus gnats

Fungus gnats are small, dark, two-winged flies with long legs similar to mosquitoes. Adults are approximately 3 mm long and are weak, erratic fliers. They are more prevalent in greenhouses, but may also become numerous outdoors.

The larvae of fungus gnats are white or transparent and are legless, and have a shiny black head. They are usually found just below the soil surface in association with decaying plant material, moss and algae.

The life cycle of fungus gnats takes approximately 25 days at temperatures above 20 °C.

Ideal conditions for fungus gnat outbreaks are high humidity, high soil or growing media organic matter, water-saturated soil or growing media, presence of moss and algae and decaying plant material.

Fungus gnat larvae cause damage to plants by feeding on the roots. Fungus gnats can also spread plant fungal disease throughout a greenhouse on adults, and by larvae through the soil.

Signs and symptoms of fungus gnats include:

- Plants lack vigour and leaves may turn yellow
- Small brown scars are evident on roots, and root hairs are eaten off
- With heavy larval infestations, plants can be weakened severely and die

The Solution – Hyper-Mite™

Hyper-Mite™ is a small pale brown, highly mobile mite with a lot of energy! Adult mites are 0.5-1.0 mm long and are commonly found in the top few centimetres of soil or compost.

Females lay their eggs near the soil surface, and these hatch into six-legged larvae. There are two further nymph stages and a life cycle can be completed in 10 days at 25 °C, but can vary from 7-30 days depending on temperature.

Below 12 °C, **Hyper-Mite™** becomes inactive, and development stops when temperatures fall below 8 °C. The species does not hibernate (diapause) and is able to survive for 6-8 weeks without prey by feeding on decaying organic matter.

Hyper-Mite™ uses its saw-like mouth parts to puncture and slice prey tissue which is then sucked up leaving a shrivelled prey body. They prefer feeding on younger fungus gnat larvae, and adults can consume 1-5 prey per day. Both adult and immature **Hyper-Mite™** are predatory.

Hyper-Mite™ is also a predator of thrips pupae in the soil, however, alone they do not provide sufficient control of thrips.

Hyper-Mite™ is not considered harmful to humans or animals, and no environmental effects are expected.

Environmental Conditions

Hyper-Mite™ survives well in most greenhouse conditions and is not harmed by regular watering, although flooded or waterlogged areas are not tolerated. Optimum conditions for development are 20-30 °C, and soil temperatures above 30 °C are harmful.

Hyper-Mite™ will survive in most potting mixes, rockwool and perlite.

Packaging

Hyper-Mite™ is supplied in a mixture of media and vermiculite with mould mites as a food source for the mites. There are 10,000 predatory mites per litre of mixture.

Release and Storage Instructions

Release **Hyper-Mite™** as soon as possible on arrival

- **Hyper-Mite™** can be stored for a maximum of 2 days at 10-15 °C
- DO NOT REFRIGERATE
- Sprinkle the mixture on the soil around infested plants, or incorporate into the growing media before potting-up plants

Release rate

Greenhouse crops: Use 1 litre per 50-100 square metres, or,
one litre per cubic metre growing media

Outdoor crops: Use 20 litres per hectare

Repeated applications may be needed for heavy pest infestations.

Post release

Hyper-Mite™ may take 2-3 weeks to exert an effect on pest populations. **Hyper-Mite™** can be hard to find in soil or growing media, therefore monitor pest numbers to determine the need for further releases.

Re-application of **Hyper-Mite™** is recommended to 'hot spots' should some pests remain.

Before introducing **Hyper-Mite™** into your crop please check residual chemical affects and ensure you know chemical compatibilities of products that may be applied.

A list of compatible pesticides and withholding periods can be found in the publication 'The Good Bug Book' Second Edition (2002), Editor Richard Llewellyn.

Price

PRICE: \$15.00 per litre (10,000 mites per litre, minimum order) plus GST and Freight