

Vine Weevil Control

Nemasys® H

Nemasys® L



Grower Experience

Paul Dyer, business development and technical manager of Star Plant Nurseries, producer of shrubs and climbers based in Barnham in West Sussex reports on his battle with vine weevils.

“As a member of the Farplants group, quality is paramount. Vine weevils can be a devastating problem. Unlike thrips or aphids you have a hidden problem and can be lulled into a false sense of security. You have to constantly be aware that they can come at anytime from anywhere.



We have used nematodes for the past four years on our 13 acre site and seen very good results. But the arrival of **Nemasys® L** is really useful as it enables us to start earlier and ensures that were not missing any larvae seen in spring. It is very easy to use and it causes no disruption to our working practices, as staff aren't excluded from any growing areas during or after application. It is an extremely cost effective way of keeping on top of the vine weevil issue.”

David Chandler (Senior Research Scientist) of Warwick Horticulture International and his team, discovered **Nemasys® L** in Scotland. They conducted 10 years of extensive laboratory and field trials before partnering with Becker Underwood.



Becker Underwood

Becker Underwood is a global organisation with production units and offices in countries around the world. Becker Underwood is the market leader in Seed Enhancements, Landscape Colourants and Coatings and Turf and Ornamental Specialities.



Becker Underwood produces a wide range of Nematode based Bio-control products in the largest beneficial nematode fermentation facility in the world. All of our products are produced to strict quality control standards in accordance with our ISO 9001 accreditation.

For more information on Becker Underwood products contact your distributor or visit our website at www.beckerunderwood.com

The Problem

The black vine weevil (*Otiorhynchus sulcatus*) has an extensive geographic range and is an important pest of many economically important plants and crops. The adult feeding produces characteristic notching around leaf edges, but most economic damage is caused when larvae feed on roots causing reduced vigour and growth and, in severe infestations plant death. Many growers now use biological control in the form of nematodes as a solution.

The Solution

Nematodes are natural soil parasitic worms. Applied as a drench or through irrigation systems, they provide an effective, rapid and safe solution to the black vine weevil problem.

Nematode products contain nematodes in their vigorously infective stage. These aggressive organisms actively seek out vine weevil larvae and enter them through natural openings. Once inside they release symbiotic bacteria, quickly killing the insect pest, then the nematodes reproduce inside the insect and release a new generation of infective juveniles which disperse in search of further prey.

Control Strategies

Becker Underwood in conjunction with Horticulture Research International (HRI) has undergone extensive research to provide growers with the most effective biological solutions for vine weevil control for all growing situations.

Nemasys® H, based on the nematode *Heterorhabditis megidis*, provides rapid curative control, a powerful tool in high pest population situations where immediate knockdown is required. **Nemasys® H** characteristically turns infected larvae red providing easy visual assessment on performance.

Nemasys® L, based on *Steinernema kraussei*, also provides rapid curative control but has the important added advantage of being cold temperature tolerant. **Nemasys® L** will work in soil temperatures down to 5°C, this means it will infect and kill vine weevil larvae whenever the pests are active in the soil, extending the application window for control. This is of tremendous benefit when a vine weevil infestation is identified late in the autumn or early in the spring and a controlling strategy is required. Furthermore, and perhaps more importantly, late autumn applications can be far more effective at controlling vine weevil populations since all vine weevil eggs will have hatched. Often when applications are made in the summer a repeat application may be required in the late autumn to control the later hatching vine weevil pests, the longer application window for **Nemasys® L** allows for better targeted application timings.



Why use nematodes?

- Rapid curative control of vine weevil larvae
- Control at all times when the pest larvae are active
- No pest resistance problems
- No re-entry interval
- Approved for organic and conventional use
- Simply applied as a drench or through irrigation systems
- No requirement for protective clothing
- No disposal restrictions

Features summary

	
Effective against larvae at warm and low temperatures (5°C - 30°C)	Effective against larvae at warm temperatures (12°C - 30°C)
Application window: February to late November when larvae are present	Application window: Early April to October when larvae are present
Very robust, able to utilise reserves very efficiently	Very aggressive, has a tooth which enables fast penetration
Can withstand harsh conditions	Provides rapid kill under ideal conditions
Infected larvae turns yellow	Infected larvae turn red; easily identifiable

When should you use each product?

Use Nemasys® L for variable conditions:	Use Nemasys® H when conditions are stable and controlled:
<ul style="list-style-type: none"> • When soil temperatures fluctuate • For field and container application • To provide persistent control • For high and low pest population numbers • When soil is prone to drying 	<ul style="list-style-type: none"> • For soil temperatures above 12°C • When soil is always wet • For curative control of high populations • Especially successful in pots

Application

Nemasys® L Application (soil temperatures) range : 5°C - 30°C

Pack size	Beds/Field Grown Stock 1 million per m ²	Pot/Container Stock 0.5 million per m ²	Strawberry Rate 25,000 per plant
50 million	50m ²	100m ²	2000 plants
250 million	250m ²	500m ²	10,000 plants

Nemasys® H Application (soil temperatures) range : 12°C - 30°C

Pack size	Beds/Field Grown Stock 1 million per m ²	Pot/Container Stock 0.5 million per m ²	Strawberry Rate 25,000 per plant
50 million	50m ²	100m ²	2000 plants
250 million	250m ²	500m ²	10,000 plants

Drench/spray application

Nemasys® L and **Nemasys® H** can be applied with standard spray applicators. An application volume of 4 litres/m² is recommended. Lower volumes can be used when immediately followed with additional irrigation to the equivalent volume. For strawberries where an individual dose per plant can be made (25,000 nematodes), apply at 100 ml per plant.

Application through irrigation lines

As with all pesticides, accurate application is paramount for effective control. Therefore, the use of equipment specifically designed for pesticide application is the most recommended method. However, many growers prefer to make applications through irrigation lines (t-tape and dripper systems). When using irrigation lines it is important to remember that they are designed to deliver water and not a measured dose of control agents, therefore, there is the possibility of uneven applications. Using nematodes in these systems is crop safe since overdosing is of no concern, however, under dosing may result in inadequate plant protection. Here are some guidelines to minimise this risk:

- Apply at the label rate twice to compensate for the variability of distribution, apply once and then again two weeks later
- All systems must be in good repair, free of tears, leaks and blockages
- Remove all filters of 18 mesh or finer
- Prior to application irrigate the crop to flush the system clean and to ensure moist soil
- Minimum pressure at application should be 2 bar/30psi/2kPa to ensure nematodes don't settle in the lines
- Ensure the tape emitter/dripper is close to plant roots to deliver the nematode dose (double t-tape lines are helpful)
- After application pass additional water through the system to ensure all nematodes have been flushed through
- When using injectors like Dosatron use a pressure of 6bar/100psi//600kPa and remove all filters 18 mesh or finer

TO USE THESE PRODUCTS ALWAYS READ THE LABEL FOR FULL APPLICATION INSTRUCTIONS AND STORAGE DETAILS