

Phasmarhabditis-System

Phasmarhabditis-System guarantees an effective biological control of slugs, which are harmful to agricultural and horticultural crops. This extraordinary product is based on a specially selected strain of the mollusc parasitizing nematode *Phasmarhabditis hermaphrodita*, which actively searches the soil for slugs in order to destroy them subsequently.

SLUGS

Biology

Slugs have become more important as crop pests in recent years and in many parts of the world

Some of the more known slug species are *Arion lusitanicus*, *Derocerus reticulatum* and *Lehmannia valentiana*.

Slugs need a humid environment in order to survive, reproduce and move around. 90 % of the slug population can almost always be found in the soil. Only 10 % of the population comes out at night to feed on plant material. Most slugs are hermaphroditic, so both male and female. They lay their eggs in groups of 15 to 50 in the soil or under plant waste. Under favorable conditions these eggs hatch immediately. Under unfavorable conditions they can survive for a long period until circumstances improve, in order to hatch only then.

Normally there are 2 generations of slugs each year. However, in a wet summer there can be more generations.

Depending on the species, adult slugs are 30 to 150 mm long.

Damage

Slugs can devour the equivalent of half their body weight within 24 hours. The damage they cause can occur both above and under the ground. Damage caused by slugs can be divided into 4 kinds:

- In very young crops, they hollow seeds, strip leaves and eat roots and emerging cotyledons.
- In older crops, damage to flowers, tubers and roots lead to a serious reduction of quality.
- Feeding damage permits the entry of many kinds of plant diseases.
- Mucous secretion, especially in flowers and lettuce, also results in loss of quality.

Maximum damage occurs during warm and humid periods when conditions are optimal for the slugs to feed.

HOW IT WORKS

Current methods of slug control, such as chemical molluscicides, sometimes provide inadequate control in horticultural crops, so there is a demand for improved and environmentally safe means of reducing crop damage.

Nematodes of the species *P. hermaphrodita* are microscopically small worms that are capable of effectively parasitizing and killing slugs. Some small snail species are susceptible as well.

These nematodes are applied as a drench to the soil surface. Following application of the nematodes, they actively search for prey and invade it through the respiratory opening under the slug mantle.

Once inside, they release symbiotic bacteria. An infected slug stops feeding within 3 to 5 days. The nematodes multiply inside the slug, displaying a typical swelling of the slug's mantle. Eventually the slug dies due to toxic compounds produced by the symbiotic bacteria. When it starts to decompose, a new generation of nematodes spreads and starts looking for the next prey.

PHASMARHABDITIS-SYSTEM

Phasmarhabditis-System gives a rapid and effective slug control provided that:

- it is used curatively to knockdown when slugs are present
- the soil or growing media temperatures should be between 5°C and 20°C. The optimum temperature is 15 °C.
- the soil or growing media is and must remain moist to obtain a proper penetration when applying the nematodes
- it is applied in the late afternoon or evening, as the slugs are active at night.
- the spraying pressure does not exceed 20 bar. The optimum is between 5 and 10 bar.

In the open field the period in which Phasmarhabditis-System is applied is between March and October. In sheltered crops this is practically the whole year round.

In order to protect young seedlings or cuttings against slugs, it is best to apply the nematodes 1 week in advance. In that way the damage will remain practically nil.

Application of Phasmarhabditis-System provides protection against slugs for at least 6 weeks.

PACKING

Phasmarhabditis-System is formulated (gel) in a specially developed inert carrier.

It is available in packs of 12 and 30 million nematodes, sufficient to treat respectively 40 and 100 m².

The nematodes are brought in suspension by mixing the product with water. This suspension can be spread across the surface to be treated by means of for instance a watering can in case of smaller surfaces or boom sprayer in case of large surfaces.

Repeat every 2 to 4 weeks. A totally of 3 applications are recommended.

For short duration crops or high pest pressure or application at low temperature triple the dosage rate, and sextuple for single applications to get a six week protection.

ADVANTAGES

- **Efficient and entirely biological way to control slugs**
- **Effective against slugs in the soil as well as those feeding on the surface;**
- **Safe as well for humans and animals as for the environment;**
- **Works at low temperature (from 5°C) at a high dosage rate;**
- **Effective for at least 6 weeks;**
- **No pest resistance problems;**
- **No crop residues**
- **No harvest interval;**
- **Practical and easy to use;**
- **No protective clothing required during application;**
- **No disposal problems.**