



**DOVE**  
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## Information

### **Biological Control - VINE WEEVIL**

An adult black vine weevil (*Otiorhynchus sulcatus*) is black with occasional dark yellow specks and measure 10-12mm in length. During the daylight hours the weevils hide near the soil surface, under stones or in soil litter. Adult weevils become active at night and feed on plant leaves, cutting tell-tale semi-circle notches from the leaf edge. The first sign of larval damage is often stunted plants, wilting if water stressed or lower stems that are unsteady in the pot. Plant death may result from severe feeding damage.

#### **LIFE CYCLES OF THE WEEVIL**

Outdoors, there is generally only one black vine weevil generation per year. However, under protection, the life cycle can be modified. Adult weevils generally start to feed in May, lay eggs about four weeks later and egg laying activity can continue through to late September. The weevil larvae hatch immediately and begin to feed on plant roots.

#### **BIOLOGICAL CONTROL AGENTS**

There are three key nematode species that come from two different families that can control vine weevil larvae. They are *Steinernema kraussei*, *Heterorhabditis megidis* and *H. bacteriophera*. They can occur naturally in UK soils and are harmless to the crop, humans and the environment and beneficial to insects. The nematodes move through the water films around soil particles and actively search for black vine weevil larvae. After locating the insect larva the nematodes invade through natural body openings and eject a pellet of bacteria into the insect. The bacteria develop and the insect dies of septicaemia. Under optimum conditions the larva may die within 12-24 hours. Insect mortality will depend on the environmental temperature, which should be between 14°C and 25°C under glass, however the nematode will remain active at temperatures below 14°C, but the bacteria will not function until the temperature rises. *Steinernema kraussei* (Nemasys L) can be used at much lower soil/compost temperatures (>5°C) compared to the other types which are available for higher soil/compost temperatures (>12°C).

#### **APPLICATION RATES**

The product consists of a bottle containing beneficial nematodes in a water dispersible granular formulation. Conventional spray equipment can be used, but should be washed through before use. Do not allow the pressure in the sprayer system to exceed 3 bars (45psi) or you can damage the nematodes through pressure and ensure good agitation during application. The size of the sprayer is not important because the application is a product to area ratio NOT water to area. The recommended rate is 0.5 million nematodes per m<sup>2</sup>.

### **Read the label before you buy – use pesticides safely**

Dove Associates shall in no event be liable for any loss or damage caused by the use of productions mentioned in this document.

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