Aphidius for Aphid Control

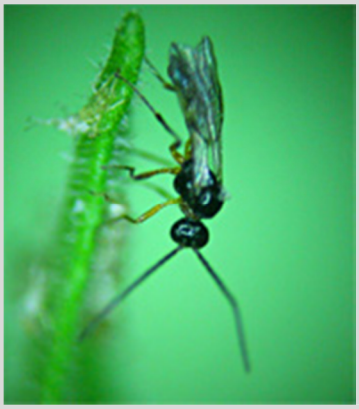
Aphidius colemani - Parasitic Wasp

Aphidius is a small parasitic wasp that specialises in parasitising green peach aphid (*Myzus persicae*), melon aphid (*Aphis gossypii*), cow pea aphid (*Aphis craccivora*) and many other aphid species.

Aphidius is known to be useful in indoor and outdoor crops such as, capsicum, cucumber, tomato, chrysanthemum and other ornamentals as part of an integrated pest management programme.

The Pest – Aphids

Many different species of aphid are present in New Zealand. Some species are quite specific to particular crops, while other species infest a wide range of crops.



Adult Aphidius

Aphids are soft-bodied insects that have globular bodies, long thin legs and antennae. Adult body length is normally 2-3 mm, and colour varies from pale yellow, green to dark brown or black. Some forms have wings and they can disperse rapidly.

Under optimum conditions, the life cycle of an aphid can be completed in 10-12 days. Many species reproduce asexually, and therefore populations can build up very rapidly.

Aphids feed with piercing-sucking mouthparts and can cause stunting and distortion, especially to younger leaves. Aphids are often plant virus vectors, and therefore rapid and effective control is essential to minimize crop losses.

Symptoms and signs of aphids include:

- Stunting and distortion of the leaves and flowers
- Yellowing and wilting of leaves
- Honey dew and sooty mould present on the plants
- Aphids visible on the stem, leaves and flower buds

The Solution – *Aphidius colemani*

Aphidius is a black wasp 3-5 mm in length.

The female wasp inserts and egg into the body of an aphid which hatches into a larva. The larva remains within the aphid's body feeding on the internal tissues and eventually kills it. Both immature and adult aphids, as well as winged and wingless forms of aphids can be parasitised.

The **Aphidius** larva then pupates within the aphid and spins a cocoon which, in turn, makes the aphid body wall appear gold or bronze in colour. This is known as an aphid "mummy".

The adult wasp will chew a neat circular hole in the abdomen of the mummy and emerge. This hole is visible once the **Aphidius** has emerged.

The development of **Aphidius** from egg to adult takes approximately 14 days at 21 ℃. An adult female can live for about 10 days at this temperature, and can lay up to 300 eggs in her lifetime. A sex ratio of two females to one male is common.

Aphidius adults feed on plant nectar and honey dew produced by the aphids. Females are very mobile and will actively search for a colony of aphids, even locating quite small colonies.

Aphidius are naturally occurring in the northern parts of New Zealand, and may be found in the home garden during late spring, summer and early autumn. Generally there are insufficient wasps present to provide effective control of aphids in these situations.

Aphidius is not considered harmful to humans or animals, and no environmental effects are expected.

Environmental Conditions

Aphidius is best suited to temperatures between 18℃ and 30℃, and sustained temperatures over 30℃ may reduce the effectiveness of this parasite.

Packaging

Aphidius is dispatched as "mummies packed in a Petri dish or vial, and sent via courier. Some **Aphidius** may emerge in transit, but this is normal.

Release rate

- 0.2 **Aphidius** mummies per m^2 as a **PREVENTATIVE** measure, preferably weekly or bi-weekly before aphids are found in the crop
- 1-5 **Aphidius** mummies per m^2 as a light to moderate **CURATIVE** measure, over several weeks as aphids are found in the crop
- Heavier infestations of aphids can benefit from the simultaneous release of **ladybird beetles** and/or **Orius,** or may require initial chemical intervention (contact Bioforce to discuss).

Because aphids breed very quickly, it is recommended that **Aphidius** is released at the first sign of aphid appearance. **Aphidius** can be hampered in summer from the presence of hyperparasites.

Release and Storage Instructions

Aphidius need the following handling and treatment:

- On arrival, release **Aphidius** into the crop as soon as possible
- Do not expose **Aphidius** to direct sunlight
- DO NOT REFRIGERATE
- Open the Petri dish or vial only once you are in the area in which **Aphidius** are to be released
- Release **Aphidius** near an aphid 'hot spot', and then evenly distribute the mummies throughout the area requiring treatment

Post Release

Aphidius will start parasitising aphids immediately on release, although you will not be able to confirm this until the parasitised aphid starts turning golden after 7 days (at 26℃) or longer if the average temperature is lower.

Before introducing Aphidius 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. Excerpts of the book can be obtained from the Aphidius page of the Australasian Biological Control Association website.

Price

PRICE: $10.00 per 100 mummies (minimum order) plus GST and Freight