



## *Aphelinus abdominalis* - Aphid parasitoid

*Aphelinus abdominalis* is a parasitoid wasp which attacks over 200 species of aphids. It is primarily a parasitoid of larger aphids (Foxglove-*Aulacorthum solani* or Glasshouse Potato Aphid-*Macrosiphum euphorbiae* and Green Peach Aphid-*Myzus species*) but also a significant predator. It is better able to withstand high temperatures than *Aphidius* species.

### Description and Biology:

*Aphelinus* are about 3mm long and black with a yellowish-brown abdomen. The legs and antennae are relatively short. Although winged, they do not often fly. Males are slightly smaller and darker (50:50 ratio). The female lays eggs singly into older nymphal stages of target aphids. The egg hatches after 2-3 days and the larva feeds on the aphid without immediately killing it. At 20°C, it pupates after 7 days and transforms the aphid into a distinctive black 'mummy'. Mummies first appear 2-3 weeks after introduction. The adult wasp chews a rough exit hole in the back to emerge 8 days later. Oviposition starts after 3-4 days. Direct killing through predatory feeding on non-parasitised younger nymphs, (and also species it doesn't parasitise), is also significant. *Aphelinus* has a relatively long life and oviposition period of several weeks and can lay 10-15 eggs/day.

### Suitable Crops:

*Aphelinus* can be used on all crops where aphids are present. It is primarily used in greenhouse production, but can also be used in field crops. Suitable crops include vegetables (capsicum, lettuce, tomatoes, eggplant), ornamentals (gerbera, chrysanthemum, rose), strawberries and herbs. It is most effective where host aphids for parasitisation are present.

### When to Release:

*Aphelinus* works best when used preventatively, or when aphids are first noticed in the crop. It is not a good disperser so needs to be carefully placed near aphid colonies for maximum efficacy. If aphid numbers are already high it is advisable to use a non-disruptive insecticide to lower the aphid population prior to release. Residual broad spectrum insecticides should not be used for at least four weeks prior to release.

### How to Release:

*Aphelinus* are sent as aphid mummies in a small vial. Each vial contains approximately 1000 mummies. When they arrive some adults may have emerged. *Aphelinus* should be released as soon as possible after emergence. Do not sprinkle mummies into the crop. Open vial in the greenhouse. Walk around the area to be treated, holding the open bottle at a 45° angle, releasing the emerged adults into the affected plants. Tap the vial lightly to distribute the adult parasites evenly over the area. Recap the vial and store at room temperature until more adults have emerged. Repeat the distribution of adults daily for 2-4 days until most adults have emerged. Finish by placing the open vial in the greenhouse horizontally next to a infected plants in case more emerge. For a corrective release, open the vial immediately adjacent to the aphid outbreak and rest it at the bases of the affected plant. Repeat this as necessary. *Aphelinus* can be stored for a few days at 8-10°C if necessary but emergence and performance may be affected.

### Release Rates:

Rates will vary depending on the species of aphid targetted and the level of infestation at the time of release. The following rates have been determined overseas for the control of *Aulacorthum solani* and *Macrosiphum euphorbiae* and can be used as a guide. Preventative: 0.5-2/m<sup>2</sup> fortnightly, 3 applications. After aphid detection: 2-4/m<sup>2</sup> weekly for at least 3 applications.

### Chemical use:

*Aphelinus* is sensitive to many pesticides, particularly pyrethroids, organophosphate and neonicotinoids. Residues on foliage and greenhouse structures may remain toxic for many weeks and negatively impact on their survival and ability to effect control. Check side-effects charts carefully and avoid using pesticides before and during *Aphelinus* use unless they are known to be safe. Contact Biological Services for specific information.