

# **Trichogramma wasps releases for lightbrown apple moth in vines**

## **Seasonal activity of LBAM**

Trichogramma releases should be made at the beginning of the egg laying period. The first major moth flight occurs from September to November. The warmer regions producing the earlier flights. Larvae produced from this flight will be present around flowering and can cause significant damage to flowers and young fruit and facilitates early infection with bunch rots.

The second moth flight occurs 6 to 8 weeks after the first flight. Larvae resulting from this flight can move into bunches before bunch closure where they are then very difficult to control with sprays.

The autumn flight produces larvae coming into winter. These larvae feed on weeds through the winter and then pupate in late winter/early spring producing moths several weeks later in spring. Large larvae found in early spring are from this earlier autumn flight. They may crawl off the weeds (cape weed, clover, dock etc) and up onto the vines at budburst especially if herbicides are used to kill off under vine weeds.

## **Pheromone traps**

Pheromone traps combined with crop monitoring can be used to determine the best time for Trichogramma releases and/or spray applications. The traps catch only male moths and are an indication of moth activity only, not a control measure. The traps consist of a semi enclosed box with a sticky inside base and a bud which emits pheromones (or scents) of the female moths. These scents attract male moths which are then caught on the sticky base.

Traps should be placed in the crop in the spring, a few weeks earlier than the usual moth appearance. The pheromone buds need to be replaced every five weeks. The buds should be replaced in a rotation, that is not all at the same time as a fresh bud may attract more moths than an old one and can give a false impression

of moth increases. Traps should be cleared every week and catches recorded. Moth flights are usually followed by a peak in an egg lay about one to two weeks later and then a peak in larvae hatch another 1 to 2 weeks later.

Trap catches may range from zero to 80+ moths per week. Trap catches over 10 per week are likely to result in an egg lay that will require action of some sort.

## **Monitoring for egg masses**

Monitoring of egg masses also helps with timing of Trichogramma releases or B.t./Mimic® sprays. In grape vines lightbrown apple moth females generally lay their eggs on the upper surface of mature, basal leaves.

A method used for determining the density of egg masses is to quickly look at 50 leaves per panel over 20 panels (1,000 leaves) and note the number of egg masses on a weekly basis.

Even 2 or 3 egg masses per 1,000 leaves is a level that warrants a Trichogramma release or will require sprays. Remembering that each egg mass may contain 50 or more eggs. Twenty egg masses found per 1,000 leaves represents a very high egg lay.

Leaves with egg masses can be marked with a tag and dated. You can then return to these tagged masses and observe whether they are parasitised by wasps (gone or going black) or if they remain unparasitised (going yellow green to brown) or have produced grubs (only the clear shells remain and grubs found nearby).

## **Trichogramma releases**

Releases should be made at the beginning of the egg laying period and continue as long as trap catches are high and/or fresh eggs are being laid on the vines. Trichogramma should be seen as a component in a wider IPM program. B.t. or other “soft” sprays should be applied as required for larvae emerging from unparasitised eggs.