Light brown apple moth Fact sheet

Epiphyas postvittana

Jianhua Mo and Andrew Creek, NSW DPI, 2023

Table 1. Risk and monitoring period for light brown apple moth activity.

		Flowering	Fruit drop		Golf ball			Colour break			Maturation
Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
		High risk						Moderate risk			

Introduction

LBAM is a quarantine pest of concern for most export markets. There are additional requirements when exporting citrus to China and the USA.

Description

Eggs are pale green and laid in flat overlapping masses that look like fish scales (Figure 1). The eggs can be laid on leaves, stems and fruit.

Immature young caterpillars are pale yellow-green, while mature caterpillars are pale green with a brown head (Figure 2). They reside in a silk webbing, usually within a rolled-up leaf or in flower debris (Figure 3), before pupating.

Adult moths are light brown and bell-shaped. The females have a wingspan of about 18 mm, making them larger than the males. They can be distinguished not only by size but also by the pattern on their wings. Females have a dark spot in the centre of their wings while males have a dark band across their wings (Figure 4).

Figure 1. Light brown apple moth (*Epiphyas postvittana*) eggs.

Figure 2. Light brown apple moth (*Epiphyas postvittana*) Late instar larva.

Life cycle

After egg hatching, the larvae go through 6 developmental stages, reaching a maximum size of about 18 mm before pupating to become an adult moth. The life cycle is completed in 2 months.

Similar pests

LBAM is similar to *Helicoverpa* (often called Heliothis) and loopers, but LBAM is easily identified by its vigorous wriggle backwards when disturbed. Also, *Helicoverpa* tend to have distinct stripes and setae protruding from tubercles.

Damage

LBAM larvae feed beneath the calyx of young fruit (<25 mm diameter), leaving a halo-like scar (Figure 5), which causes packed fruit to be downgraded. Larvae can also bore into mature fruit, causing it to drop.

Monitoring

LBAM attacks all varieties of citrus. The most critical time for monitoring is from flowering to December when they scar young fruitlets (T1). Monitor fortnightly, checking flowers and fruitlets. Maturing fruit are monitored in the field for eggs and larvae. Fruit inspections that include lifting calyces (buttons) in the packing house ensure shipment freedom.

Pheromone traps can be used to indicate the timing of high LBAM moth activity.

Figure 3. Light brown apple moth larva and silk webbing on a leaf.

IPDM for the citrus industry

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Figure 4. Light brown apple moth adults (female on left, male on right).

Figure 5. Halo scarring from light brown apple moth damage.

Figure 6. A light brown apple moth mating disruption, pheromone tie twisted on a branch.

Management and control

Biological: *Trichogramma* wasps parasitise moth eggs.

Natural predators of the larvae include:

- parasitic wasps *Dolichogenidea arisanus* and *Xanthopimpla* spp.
- parasitic flies *Goniozus* spp. and *Zosteromyia* spp.
- predatory bug *Ochalia shellembergii*, also known as shield bug or soldier bug
- green lacewings
- jumping spiders
- various pathogens.

Cultural: pheromone ties (Figure 6) can be used in larger blocks with moderate to high LBAM infestation as a mating disruption tool. This can reduce the need for insecticide application.

Chemical: consider spraying only if monitoring indicates an unacceptable number of LBAM larvae. Selective chemical options that preserve beneficial insect populations in the orchard are available. Some broad-spectrum insecticides can be used if monitoring indicates other pests also require treatment.

More information

Light brown apple moth in citrus

Light brown apple moth development calculator

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