

## Monitoring practice for lightbrown apple moth eggs and caterpillars

Current titles in this LBAM VitiNote series include:

1. Developing a cost-effective monitoring program for lightbrown apple moth
2. Monitoring practice for lightbrown apple moth eggs and caterpillars
3. Options for effective management of lightbrown apple moth

Each female lightbrown apple moth (LBAM) lays a number of pale blue-green, scale-like egg masses made up of 10-60 eggs over her 2-3 week life span.

These hatch 1-3 weeks later (about 1 week in summer) into pale green-yellow caterpillars approximately 1mm long.

Adult caterpillars grow to approximately 1.5cm in length and are pale green, with a dark green central stripe. They construct a webbing 'leaf' roll and pupate to emerge as moths.

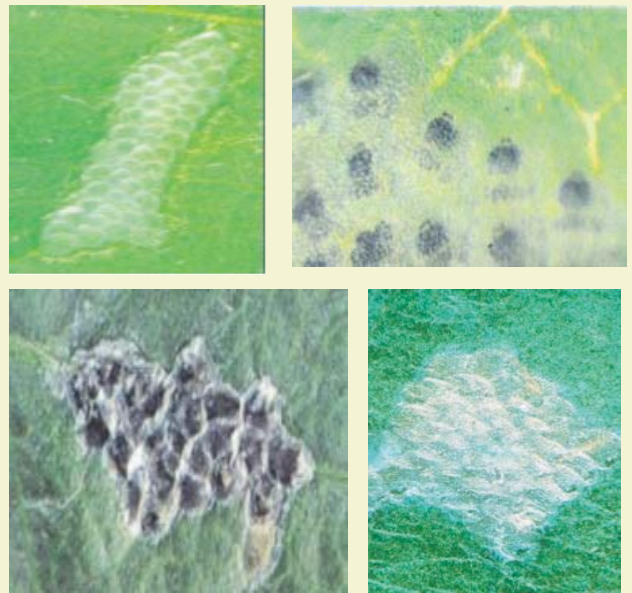
In spring, the cycle from egg to moth is around 7-9 weeks, while in summer it is around 6 weeks.

Several generations may occur in a season. However, in warmer regions the summer LBAM population is often reduced by hot weather, which kills eggs and young caterpillars. In cooler regions, the summer generation is more likely to persist and subsequently cause damage to bunches.

The LBAM causes no damage to vines, but the caterpillars feed on leaves, stems and berries; opening the way for Botrytis infection in bunches.

### MONITORING FOR EGG MASSES

Eggs are most commonly laid on the upper surfaces of expanded grapevine leaves. When egg masses are found, they should be marked so they can be located easily again to check on their progress\*.



Clockwise from top left: Freshly laid egg mass, eggs nearly ready to hatch (the caterpillar heads can be seen with a x10 hand lens), black egg mass parasitised by *Trichogramma* wasp, transparent hatched egg mass.

# VitiNotes

Look for egg masses:

- in spring, most commonly on vine leaves near the base of shoots (when laid on partially expanded leaves in spring egg masses often detach and dry out as the leaf grows);
- in summer, on vine leaves in the middle of the shoot; and
- in autumn, both in vines and on broadleaf weeds such as capeweed and dock, or on cover crops such as clover and medic.

**\*NOTE:** Young caterpillars hatched in the summer generation may also move immediately into bunches.

The autumn generation of caterpillars can survive over winter in vines or other host plants.

Look for over-wintering caterpillars:

- in bunch residues on vines;
- on broadleaf weeds and suitable cover crop plants between rows and under vines; and
- in native bush or other vegetation adjacent to the vineyard.

In late Winter to early Spring, some of these older caterpillars may move onto new vine growth at budburst.

**\*NOTE:** Only green, green/blue or yellow egg masses with a black spot are viable and need to be monitored. Egg masses which are black all over have been parasitised and will hatch wasps not caterpillars. White or clear egg masses have already hatched and do not need to be monitored.

## MONITORING FOR CATERPILLARS

After each egg lay, monitoring of the egg masses will indicate when caterpillars are ready to emerge.

Look for young caterpillars (~2mm long):

- on the undersides of leaves along leaf veins at the tips of shoots;
- at nodes; and
- within bunches, often between the stem and the berry.

As caterpillars grow they construct webbing shelters and leaf rolls, often webbing together a number of leaves. Later in the season they have the potential to infest whole bunches.

Look for older, larger caterpillars:

- next to veins, on the underside of expanding leaves;
- just below the shoot tip; and
- in developing inflorescences and bunches\*.

Clockwise from top:  
*Small 2<sup>nd</sup> instar caterpillar, LBAM larva can be found on broad leaf weeds, older larva and webbing in bunch residue*



## ACKNOWLEDGEMENTS

The Cooperative Research Centre for Viticulture would like to acknowledge the contribution of Dr DeAnn Glenn and David Braybrook in the preparation of this Vitinote.

## FURTHER INFORMATION

Product or service information is provided to inform the viticulture industry about available resources and should not be interpreted as an endorsement.

A useful reference is:

- Nicholas P, Magarey PA and Wachtel M, (Eds.) (1994) Diseases and pests, Grape Production Series 1, Hyde Park Press, Adelaide (a glove box edition of this book is also available).

*IPM Viticulture: Research to Practice™ is a training program whose delivery can be fine-tuned to suit each region.*

Visit the website for updates and more Vitinote titles:

[www.crcv.com.au/viticare/vitinotes/](http://www.crcv.com.au/viticare/vitinotes/)

©2006 Cooperative Research Centre for Viticulture

The CRC for Viticulture is a joint venture between the following core participants, working with a wide range of supporting partners.



AWRI



Government of South Australia  
Primary Industries and Resources SA



THE UNIVERSITY  
OF ADELAIDE  
AUSTRALIA



Wine Grape Growers' Australia  
WUGGA



Winemakers' Federation of Australia  
For the Industry by the Industry



Australian Government  
Grape and Wine Research and  
Development Corporation