viti-notes

[pests and diseases]

Research to Practice

Characteristics of lightbrown apple moth

Viti-note Summary:

- Damage and Botrytis risk
- Factors influencing susceptibility
- Description and life cycle

Damage and Botrytis risk

Lightbrown apple moth (LBAM) caterpillars feed on leaves, flowers and bunches, but the significant cost of this feeding is linked to the increased risk of botrytis infection that accompanies damaged green tissue. LBAM is a greater threat to regions and varieties susceptible to botrytis.

The cost of applying a treatment (chemical or biological) needs to be considered against the potential cost, in terms of crop loss or impacts on quality, of no treatment.

Factors influencing susceptibility

- Cool regions and seasons are more conducive to LBAM as it is susceptible to hot weather.
- Broad leaf weeds and some native vegetation (wattles) are host plants to the moth and can provide an alternative food source and increase pest numbers. Host plants also provide sites where the moth can survive over winter.
- Some agricultural chemicals can have a negative impact on the natural enemies of LBAM and create a more comfortable environment for the pest. Vineyards with low levels of natural predators and parasites are more conducive to higher LBAM numbers.
- Susceptible grape varieties are those that are prone to botrytis such as Chardonnay, Pinot Noir, Sauvignon Blanc.

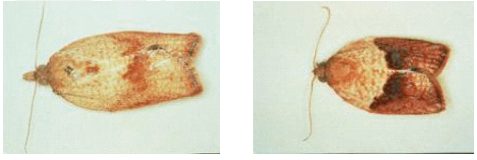

Figure 1. Lightbrown apple moth: female (L) and male (R).

Description and life cycle

The adult LBAM is about 10 mm long and yellowish/brown. The males have darker brown markings on the forewings while females often have a dark brown spot on the hind margin of the forewing (figure 1.). The moths shelter during the day with flight activity occurring for a few hours after sunset and sunrise.

The female will lay numerous pale blue-green 'scale-like' egg masses made up of 10-60 eggs over her 2-3 week life span. Eggs are laid on the upper surface of smooth leaved host plants. The time taken to hatch into 1mm long, pale green/yellow caterpillars can vary from 5 to 30 days depending on temperature. Newly hatched larvae feed on the underside of leaves and will spin a protective cover of fine webbing. Feeding can occur in leaves, flowers and bunches. Disturbed larvae wriggle actively, retreat to shelter or drop to the ground.

The larval period usually lasts 6-8 weeks but under ideal conditions can be as short as 3 weeks. Mature larvae (1.5 cm in length) become pupae within the feeding shelter. This stage lasts 1-4 weeks depending on temperature before moths emerge.

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 moth itself causes no damage to vines, but the caterpillars feed on leaves, stems and berries and open the way for infection by Botrytis.

Other topics in this Viti-Notes series include:

- *Characteristics of lightbrown apple moth*
- Monitoring lightbrown apple moth
- Managing lightbrown apple moth

Acknowledgement

The Australian Wine Research Institute would like to acknowledge:

- Cooperative Research Centre for Viticulture (CRCV) and all involved in the VitiNotes series (1996 - 2006).

Further information

Training

For regional specific training in pest and disease control, the AWRI is running Research to Practice: Integrated Pest Management for changing viticultural environments.

Contact

Marcel Essling: rtp@awri.com.au for more information.

Agrochemical information

Agrochemicals registered for use in Australian Viticulture - updated annually.

Visit www.awri.com.au for the latest version.

Useful references

Nicholas, P., Magarey, P.A. 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).

For images of grapevine symptoms visit www.winetitles.com/diagnosis/index.asp.

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

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