



FACT SHEET

BIOCONTROL OF COMMON GRAPEVINE INSECT PESTS: AUSTRALIAN GRAPEVINE MOTH

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FINDING THE BALANCE... NATURALLY!

Healthy and diverse populations of predatory arthropods (insects and spiders) and parasitoids (wasps and flies) can help prevent grapevine pests from reaching economically damaging thresholds.

Growers can support healthy predator populations by providing a habitat that provides food, shelter and alternative prey/hosts and minimise the use of pesticides that are toxic to natural enemies.

Biocontrol options for common Australian grapevine pests are explored in this series of fact sheets.

FAMILY NOCTUIDAE

Phalaenoides glyciniae, Australian grapevine moth

DESCRIPTION: The Australian grapevine moth is a moth belonging to the family Noctuidae. The larvae may cause feeding damage to developing bunches and/or defoliation of grapevine leaves if populations are left unchecked. It is reported if caterpillars are accidentally fermented during the winemaking process, the resulting wine may have an elevated cineol (eucalyptol) concentration if the caterpillars have been eating Eucalyptus leaves.

DISTINCTIVE FEATURES: Grapevine moth eggs are commonly laid on the underside of leaves and resemble spherical domes. They are slightly ribbed and have a diameter of about 0.3 mm. The caterpillars grow to about 40 mm. They have striking black, white, yellow, and orange markings with a light brown head capsule and a big red rump. Adult moths have tufts of orange hair projecting from their abdomen and the base of their legs, contrasting with the black and white markings of their wings and body. The wingspan is about 50 mm.



Figure 1. (a) *Phalaenoides glyciniae*, grapevine moth egg, (b) larva, and (c) adult [Photos: Mary Retallack].

BREEDING CYCLE: Moths emerge from over-wintering pupae in early spring and lay eggs on stems and leaves. There are two to three annual generations with larvae first typically appearing on vines in October, and the second generation of moths appearing in December. In areas with warm to hot summers, a third generation may occur between late summer and autumn.

WHEN TO MONITOR: Monitor from late October onwards.

SUGGESTED ACTION THRESHOLDS: Growers are encouraged to develop their own action thresholds based on data collected from monitoring and damage assessments at harvest over several seasons to reduce the likelihood of defoliation (especially later in the season leading up to harvest).

Biocontrol options

Many natural enemies, including insectivorous birds, microbats, predatory arthropods, and parasitic wasps, attack grapevine moth. Because it causes damage to vine foliage very rapidly once it is established, this pest is unlikely to be controlled satisfactorily through the reactive use of commercially available biological control agents. However, a functional diversity of predators will help to reduce the likelihood of populations reaching damaging levels. Alternatively, the strategic use of *Bt* sprays coupled with a feeding attractant may provide effective control.

PARASITOIDS: Parasitoids, such as tachinid flies and parasitoid wasps, contribute towards biocontrol. *Euplectrus agaristae*, chalcid wasp, is a parasitoid of the Australian vine moth larvae (Bernard et al., 2006a) and is present in Coonawarra vineyards along with *Echthromorpha intricatoria*, cream-spotted ichneumon, and *Lissopimpla semipunctata*, orchid dube wasp (Thomson and Hoffman, 2006).

PREDATORY ARTHROPODS: Important predators include *Cermatulus nasalis*, glossy shield bug, and *Oechalia schellenbergii*, predatory shield bug (Cordingley, 1981), ladybird larvae and spiders.

***Bacillus thuringiensis (Bt)*:** Bt products can be used anytime throughout the growing season. The *Bt* bacterium is toxic to moth larvae and, once consumed, it results in the paralysis of the digestive tract and larvae starve to death.

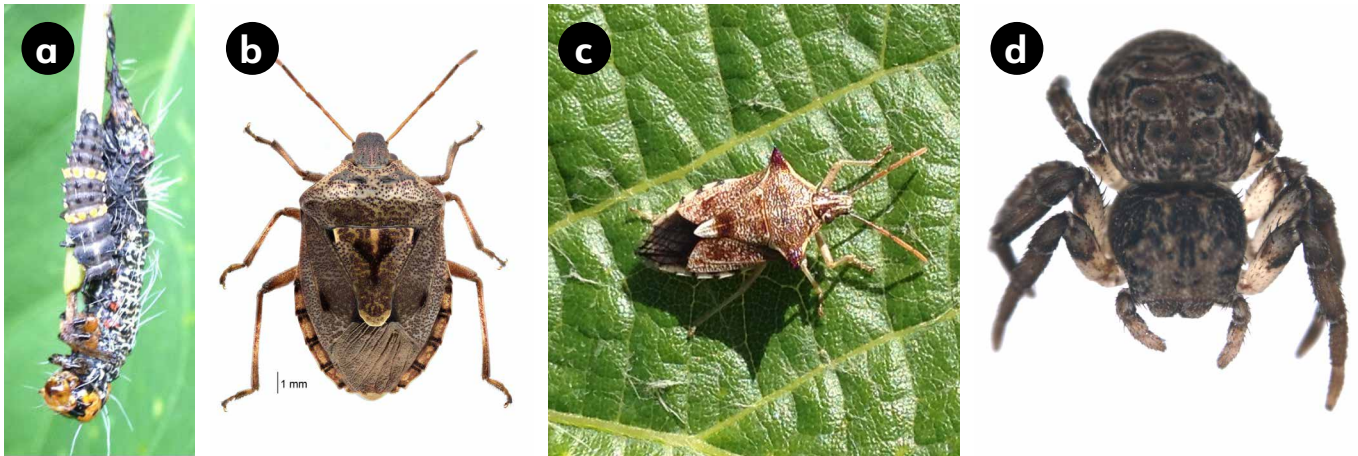


Figure 2. (a) ladybird beetle larva feeding on the Australian grapevine moth [Photo: Mary Retallack], (b) *Cermatulus nasalis*, glossy shield bug, [Landcare Research CC-BY 4.0], (c) *Oechalia schellenbergii*, predatory shield bug, and (d) *Cymbacha* sp., crab spider [Photos: Mary Retallack].

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