ECO VINEYARDS
GROWING RESILIENCE NATURALLY

FACT SHEET

BIOCONTROL OF COMMON GRAPEVINE INSECT PESTS: LONG-TAILED MEALYBUG

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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. For a broader discussion about functional biodiversity please see the EcoVineyards best practice management guide on functional biodiversity in Australian vineyards and to read the other fact sheets in this series please visit the EcoVineyards knowledge hub.

FAMILY PSEUDOCOCCIDAE

Pseudococcus longispinus, long-tailed mealybug

DESCRIPTION: The long-tailed mealybug is a common pest of grapevines. It feeds on sap and produces honeydew that encourages the growth of damaging sooty mould. Mealybugs are often tended by ants that feed on their excreted honeydew. Mealybugs prefer humid, sheltered situations and favour conditions that promote vigorous vine growth and dense foliage. Mealybugs also have the capacity to transmit grapevine viruses.

Figure 1. (a) *Pseudococcus longispinus*, long-tailed mealybug, (b) on the back of a grapevine leaf, (c) on a developing bunch of grapes and at harvest [Photos: Mary Retallack].

DISTINCTIVE FEATURES: Adults are 3 to 4 mm long with a mealy wax cover and long tail filaments (as long, or longer than the body). When squashed the body fluids appear pale yellow.

BREEDING CYCLE: Mealybugs overwinter in cracks and crevices under vine bark, then migrate to new vine growth in spring. Three to four generations of mealybugs develop each year, with major population peaks in spring and autumn. During summer the life cycle is completed in around 6 weeks (about 12 weeks in winter). The adult females produce several hundred eggs at a time. These hatch into crawlers immediately after being laid.

WHEN TO MONITOR: By late spring/early summer, mealybugs can be found on the backs of leaves, especially in the centre of the vine where they are more sheltered.

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. Intervention may be required if infestation levels exceed a threshold of 10% of the 100 leaves or bunches sampled.

Biocontrol options

PARASITOID WASPS: A range of parasitoid wasps contribute to biocontrol of mealybugs, including *Anagyrus fusciventris*, *Tetracnemoidea brevicornis*, *Tetracnemoidea sydneyensis*, *Leptomastix* ssp., *Ophelosia* ssp., and *Coccophagus gurneyi*.

PREDATORY ARTHROPODS: A range of predators feed on soft-bodied pests, including ladybird beetles (*Cryptolaemus montrouzieri*, mealybug destroyer, *Coccinella transversalis*, transverse ladybird beetle, *Harmonia conformis*, common spotted ladybird beetle, *Rhyzobius lophanthae*, scale-eating ladybird), spiders, as well as lacewing and hoverfly larvae.

Biological controls, such as the mealybug destroyer ladybird beetle and green lacewing, are commercially available for release. The mealybug destroyer is a voracious feeder of the pest in both the larval and adult stages. Its larvae resemble the mealybug (a case of mimicry).

Release biocontrol agents early (mid to late spring) before pest populations increase and become difficult to control.

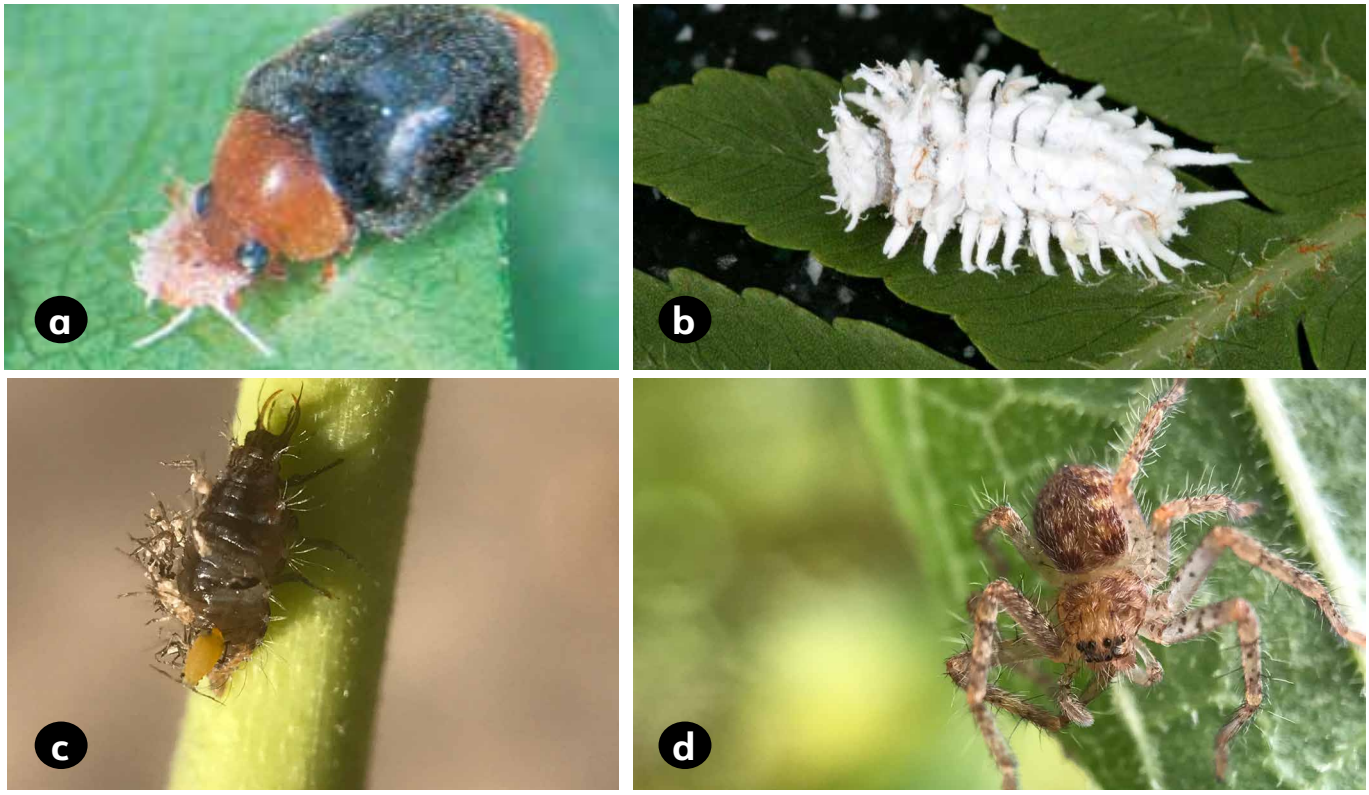

Figure 2. (a) *Cryptolaemus montrouzieri*, adult mealybug destroyer, [Photo: David Madge], (b) *C. montrouzieri* larva [Photo: David Cappaert], (c) green lacewing larva (aka 'junk bug'), and (d) huntsman spider [Photos: Mary Retallack].

Two other species of mealybug may also be found in Australian vineyards, *Pseudococcus calceolariae*, citrophilus mealybug, and *Pseudococcus affinis*, obscure mealybug.

FURTHER READING

For general information on mealybugs see the Wine Australia website page on mealybugs and AWRI website page on mealybugs.

For more information on natural enemies, please see natural predators of vineyards insect pests booklet and associated articles and fact sheets on the EcoVineyards knowledge hub.

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ACKNOWLEDGEMENT OF COUNTRY

EcoVineyards proudly acknowledge the Aboriginal and Torres Strait Islander Peoples, and their ongoing cutural and spirital connection to this ancient land on which we work and live.

As the Traditional custodians we recognise their wealth of ecological knowledge and the importance of caring for Country.

We pay our respect to elders past and present and extend this respect to all Aboriginal and Torres Strait Islander Peoples.


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