



## FACT SHEET

# BIOCONTROL OF COMMON GRAPEVINE INSECT PESTS: **BLACK PORTUGUESE MILLIPEDE**

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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 JULIDAE

### *Ommatoiulus moreleti*, black Portuguese millipede

**DESCRIPTION:** The invasive *Ommatoiulus moreleti*, black Portuguese millipede, is an unwelcome pest in vineyards, especially at harvest. It may damage the skins of berries by feeding on them, thereby predisposing the bunches to Botrytis cinerea and other bunch rots.

Their presence in grape ferments often results in wine taint as the defensive excretions produce unpleasant flavour compounds. Several species of native millipede occur in southern-Australia, but they are found infrequently in agricultural environments. The black Portuguese millipede is tolerant of much drier conditions than native species (Paoletti et al., 2007).

**DISTINCTIVE FEATURES:** The black Portuguese millipede has a smooth, cylindrical body measuring 30 to 45 mm. Adult millipede bodies consist of up to 50 segments with each segment having two pairs of legs. When disturbed, they either curl up in a tight spiral or thrash to escape.



**Figure 1.** (a) Black Portuguese millipede [Photo: Stuart Pettigrew], (b and c) millipedes in a grape bin at vintage.

**BREEDING CYCLE:** Black Portuguese millipedes lay most of their eggs in April and May. They usually mature after two years when they are in the tenth or eleventh stage of growth.

**WHEN TO MONITOR:** Throughout the year, especially in the lead up to harvest.

**SUGGESTED ACTION THRESHOLDS:** None established.



## Biocontrol options

**PREDATORY ARTHROPODS:** Highly repellent chemical compounds are ejected by the millipede from its defensive glands when attacked, rendering it inedible to most predatory arthropods and birds. However, *Iridomyrmex* sp., meat ants are one of the few predators that will consume black Portuguese millipedes (Crawford, 2015). Some spiders and beetles will eat millipedes, but these predators will not significantly reduce large populations.

**PARASITIC NEMATODES:** It is possible to reduce millipede populations in suburban settings via the release of the parasitic nematode *Rhabditis necromena*. They are available commercially and are typically distributed using baiting stations. The nematodes are ingested by millipedes and bore through their gut wall lining. Bacteria from the gut then infect millipedes, which kills them (Bailey and Baker, 2016). It may take several seasons after introduction for the nematodes to reduce millipede populations. It may also provide an effective, long-term, biocontrol option for the suppression of millipedes in vineyards. Further research is required to test this.



**Figure 2.** An example of a millipede baiting station, and a light trap with water bath, which can be used to prevent millipedes from invading well-lit dwellings, including a winery [Photos: Mary Retallack].

## FURTHER READING

For further information see [Millipedes! How to manage populations so they do not become damaging at vintage](#).

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](#).

## REFERENCES

Bailey P., Baker G. (2016) Fact sheet: Portuguese millipedes.

Crawford D.J. (2015) Garden pests, diseases and good bugs Harper Collins Publishers, Sydney.

Paoletti M.G., Osler G.H.R., Kinnear A., Black D.G., Thomson L.J., Tsitsilas A., Sharley D., Judd S., Neville P., D'Inca A. (2007) Detritivores as indicators of landscape stress and soil degradation. *Australian Journal of Experimental Agriculture* 47:412-423. DOI: 10.1071/ea05297.

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## ACKNOWLEDGEMENT OF COUNTRY

EcoVineyards proudly acknowledge the Aboriginal and Torres Strait Islander Peoples, and their ongoing cultural and spiritual 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.



