

Research area: VITICULTURE

Regional cluster: WESTERN AUSTRALIA

Can timely harvester treatments manipulate bunch architecture to reduce bunch rots?

Background

Grapevine bunch rots are caused by fungal infections and reduce grape yields as well as having negative effects of grape and wine quality. Mechanical shaking using harvester machinery (originally employed to manipulate yield) has been shown to reduce Botrytis infection and bunch rot. This project aims to assess the application of harvester passes to remove grapevine trash and minimise bunch compaction to reduce the incidence and severity of bunch rots, in particular sour rot, on susceptible varieties Chenin Blanc and Semillon grown in Western Australian conditions.

Why is it important?

Botrytis and other bunch rots were estimated to cost the Australian viticulture sector \$52 million per annum in an economic review conducted in 2009 (Schofield and Robinson 2009). Bunch compaction or tightness is a major factor in the development of bunch rots close to harvest. Dense bunch architecture prevents the penetration of fungicides and creates microclimates within the bunch that are conducive to yeast, fungal and bacterial growth.

In the past five years, an increase in sour rot has been observed in vineyards in the Swan Valley region of Western Australia on the dense- to medium-dense bunch cultivars Chenin Blanc and Semillon. Once sour rot has appeared, secondary infection of sooty mould has resulted in costly refinement at the winery in order to clarify the juice prior to ferment.

Growers are now looking at alternative options to loosen clusters and thus reduce the potential for sour rot development. The use of harvesters at flowering with an appropriate beater speed has been shown to reduce the incidence of bunch rots on Sauvignon Blanc in New Zealand. As results can be variable due to interactions with climate and phenology, it is of interest to test these results on sour rot in susceptible varieties grown in Western Australia.

What would success look like?

Successful outcomes from this work would be quantifiable data to highlight optimal timing and beater speed of harvester applications at grapevine flowering to minimise bunch compaction and subsequent bunch rots in Western Australia vineyards. Demonstration of a viable, low-cost option for bunch rot control would be adopted widely by the sector.

For further information and to develop an application please contact:

Richard Fennessy: richard.fennessy@dpird.wa.gov.au