



Biosecurity

The *GWRDC Strategic RD&E Plan 2012–17* identifies the wine sector being prepared for any prioritised exotic pest incursion as a priority.

Discussion paper

Background

Australia's geographic isolation and quarantine systems have meant that it has remained relatively free of many pests that cause significant issues for grape production overseas. Freedom from exotic pests provides both a yield advantage as well as real trade benefits for the Australian wine sector. Biosecurity planning provides a mechanism for the wine sector, government and other relevant stakeholders to assess current biosecurity practices and future biosecurity needs. This is achieved through determining which pests are not currently present in Australia and analysing the risks they pose to the Australian wine sector. Biosecurity planning also identifies procedures that can be put in place to reduce the chance of pests reaching our borders or minimise the impact if a pest incursion occurs.

Plant Health Australia (PHA) works with the wine sector, through Wine Grape Growers' of Australia (WGGA) and (indirectly) the Winemakers' Federation of Australia, and other parts of the viticulture industry, represented by the Australian Table Grape Association and Australian Dried Fruit Association, and Government members to identify, prioritise, and manage key plant health risks. An important step in this process was the development and implementation of the Viticulture Industry Biosecurity Plan (IBP).

The Viticulture IBP was first developed in 2006 and provides a framework for biosecurity risk mitigation measures in the sector. The plan outlines significant pests of interest and are categorised based on their level of risk to the industry in terms of economic, environmental and social implications.

Situation analysis

In the process of developing the IBP, a number of potential plant pest threats to the viticulture industry were identified. *Details of all these pests and their potential risk are presented in the Threat Summary Tables in Appendix 1 of the IBP version 2.* Thirteen of these pests were identified as high-priority plant pests and ranked based on their potential emergence, establishment, spread, economic impact and likelihood of control/eradication (Table 1).

The way in which these pests should be managed in the event of an incursion is covered under the Emergency Plant Pest Response Deed (EPPRD). This is a formal legally binding agreement between PHA, the Australian Government, all state and territory Governments and plant industry signatories covering the management and funding of responses to Emergency Plant Pest (EPP) incidents. WGGA is the wine sector signatory under this Deed.

Emergency Plant Pests (EPPs) are defined as those that meet one or more of the following criteria:

- a. It is a **known exotic plant pest**, the economic consequences of an incident of which would be economically or otherwise harmful for Australia and for which it is considered to be in the regional or national interest to be free of the plant pest

- b. It is a **variant form of an established plant pest**, which can be distinguished by appropriate investigative and diagnostic methods and which, if established in Australia, would have a regional or national impact
- c. It is a **serious plant pest of unknown or uncertain origin**, which may, on the evidence available at the time, be an entirely new plant pest, and which if established in Australia would have an adverse economic impact regionally and or nationally
- d. It is a plant pest of potential economic importance to the area endangered thereby and **not yet present** there or **widely distributed and being officially controlled**, but is occurring in such a fulminant outbreak form, that an emergency response is required to ensure that there is not either a large scale epidemic of regional or national significance or serious loss of market access.

Table 1. High-priority plant pests for viticulture and their risk* rating

Common name	Scientific name	Entry potential	Establishment potential	Spread potential	Economic impact	Total risk
Grape phylloxera (exotic strain)	<i>Daktulosphaira vitifoliae</i>	Med-high	High	Medium	Med-high	Low-high
Yellow vine mite	<i>Eotetranychus carpini</i>	Medium	Medium	Med-high	High	Medium
Flavescence dorée	Grapevine flavescence dorée phytoplasma	Medium	Medium	Unknown	High	
Black rot	<i>Guignardia bidwellii</i>	High	Medium	High	High	High
Glassy-winged sharpshooter	<i>Homalodiscaq coagulata</i>	High	High	High	High	High
Grapevine leaf rust	<i>Phakopsora euvitis</i>	High	High	High	Medium	Medium
Vine mealybug	<i>Planococcus ficus</i>	Med-high	Med-high	Medium	Med-high	Low-high
Omnivorous leafroller	<i>Platynota stultana</i>	High	High	High	Medium	Medium
Grape mealybug	<i>Pseudococcus maritimus</i>	Med-high	Med-high	Medium	Med-high	Low-high
Angular leaf scorch	<i>Pseudopezicula tetraspora</i>	Medium	Medium	High	High	Medium
Rotbrenner	<i>Pseudopezicula tracheiphila</i>	Medium	Medium	High	High	Medium
Bacterial blight	<i>Xanthomonas ampelina</i>	High	Medium	Medium	High	Medium
Pierce's disease	<i>Xylella fastidiosa</i>	High	High	High	High	High

The EPPRD aims to manage the impact of EPPs by establishing an industry/government agreement to cover eradication of emergency pests, reducing delays in securing funding, providing industry with greater involvement in eradication efforts, and removing disincentives to report emergency pests. It should be recognised that the EPPRD only covers eradication to response to EPPs when based on an approved Emergency Plant Pest Response Plan. Weeds are not covered by the EPPRD at this stage. Under the EPPRD, both industry and government contribute to the total cost of the approved EPP Response, with the ratio of contribution based on the Category. Four categories are included in the EPPRD (Table 2) and six viticulture EPPs that have been categorised to date (Table 3).

Table 2. Cost-sharing categories under the EPPRD

Category	Funding share
Category 1: Very high public benefits	100% government
Category 2: High public benefits	80% government, 20% industry
Category 3: Moderate public benefits	50% government, 50% industry
Category 4: Mostly if not wholly private benefits	20% government, 80% industry

* For definitions of risk, refer to the *Industry Biosecurity Plan for Viticulture* pp. 27–28.

Table 3: The six viticultural Emergency Plant Pests that have been categorised.

Plant pest	Formal category
Texas root rot	2
Pierce's disease	2
Grape phylloxera (biotype B)	3
Black rot	3
Grapevine leaf rust	3
Grape root rot	3

There is a great deal of investment in plant biosecurity related research and development across the nation with over 850 projects currently being undertaken on both invertebrate and pathogens in all the major commodity sectors. Details of these projects are outlined in *The National Plant Biosecurity Status Report 2010* (Plant Health Australia, 2010). Of significance is Table 14 of this [Report](#), which highlights GWRDC investments in a range of RD&E activities on exotic and endemic pests. GWRDC has invested in additional biosecurity activities since this publication, which are described in Table 4 below.

An area of great value to the viticulture sector is diagnostic protocols. National diagnostic protocols are essential for the rapid identification of EPPs. Endorsed protocols provide verified techniques for diagnosing key exotic plant pests. Currently only one viticulture high-priority pest is covered by an endorsed National Diagnostic Protocol – Pierce's disease. There are another four at the draft stage – Black rot, Glassy-winged sharpshooter, Grapevine leaf rust and Bacterial blight.

Version 2 of the IBP is due for review in 2012–13. This review process is generally facilitated by PHA and requires industry involvement with reviewing the Threat Summary Tables, assessing the high-priority plant pests, their associated biosecurity risks, classifying their categorisation, and identifying potential biosecurity actions the industry should consider implementing.

A number of sectors e.g. grains, bananas, cotton, citrus, have taken the approach of developing Farm Biosecurity Manuals as a way of implementing their Industry Biosecurity Plan and increasing on-ground activities and awareness in relation to biosecurity. Other activities have included simulation exercises with cross-sectors that share similar high-priority plant pests. Currently, the viticulture sector does not have a Farm Biosecurity Manual.

Wine sector action

GWRDC has outlined biosecurity as a priority area in its Annual Operating Plan 2012–13 and endeavours to contribute to ensuring the sector is prepared in the event of an exotic pest incursion, in particular the high-priority ones, and seeks industry input and collaboration about how to best achieve this outcome.

Discussion questions

- How can the wine sector best prepare itself for an exotic pest incursion?
- What information or research and development is required to ensure we are best prepared for an exotic pest incursion?
- How do we best approach this topic collaboratively?
- How can we best deliver and extend this information to the sector so that risk management strategies are in place at the grassroots level?

Additional resources

[Industry Biosecurity Plan for the Viticulture Industry, Plant Health Australia, 2009](#)

[Australian Emergency Plant Pest Response Plan, Plant Health Australia, 2011](#)

[The National Plant Biosecurity Status Report, Plant Health Australia, 2010](#)

www.planthealthaustralia.com.au

www.crcplantbiosecurity.com.au

Table 4. GWRDC biosecurity investments between 1 January 2011 – 31 December 2011

Project title	Pest	Project type/location	Biosecurity area	Project value
Developing tools for predicting responses of viticultural pests and their natural enemies under climate change: modelling management and extension	Insect	Field-based (ecology)	Risk analysis and modelling	Very large (\$250,000+)
Incursion preparedness for Glassy winged sharpshooter and the plant pathogenic bacterium <i>Xylella fastidiosa</i>	Insect	Policy or office-based	Prevention	Medium (\$20,001-100,000)
Molecular and genetic strategies to reduce the susceptibility of wine grapes to fungal pathogens	Fungi	Laboratory-based (molecular)	Crop improvement	Very large (\$250,000+)
NWGIC Winegrowing Futures Program (theme II)	Multiple	Field-based (other)	Pest management	Very large (\$250,000+)
Provision of secretariat services to the Wine Industry Biosecurity Technical Reference Group	Multiple	Policy or office-based	Other	Medium (\$20,001-100,000)
Rootstock breeding program	Multiple	Field-based (other)	Crop improvement	Very large (\$250,000+)
Spring vine health field days	Multiple	Field-based (other)	Pest management	Medium (\$20,001-100,000)
Use of predatory mites for long-term prevention of rust mite, bud mite and other pest mite outbreaks in Australian vineyards	Insect	Field-based (ecology)	Pest management	Large (\$100,001-250,000)
Sustainable protection of grapevines from garden weevil	Insect	Field-based (other)	Pest management	Large (\$100,001-250,000)
The three Rs - Rootstock, Resistance and Resilience to grape phylloxera	Insect	Field-based (other)	Pest management	Very large (\$250,000+)
PhD support - Incursion Preparedness for Glassy-Winged Sharpshooter and the Plant Pathogenic Bacterium <i>Xylella Fastidiosa</i>	Multiple	Field-based (other)	Pest management	Medium (\$20,001-100,000)
Developing tools for predicting responses of viticultural pests and their natural enemies under climate change: modelling management and extension	Insect	Field-based (ecology)	Risk analysis and modelling	Very large (\$250,000+)
Australian Vine Quality Standards Scheme - Vine Assurance	Multiple	Field-based (other)	Other	Large (\$100,001-250,000)
Optimising management of eutypa dieback	Fungi	Field-based (other)	Pest management	Large (\$100,001-250,000)
Development of tools to increase knowledge and capacity of growers to implement sustainable pest management solutions	Multiple	Field-based (other)	Pest management	Medium (\$20,001-100,000)
Protecting vines in stress environments - early detection of phylloxera infestation & grapevine stress using chemical biomarkers	Insect	Laboratory-based (non-molecular)	Pest management	Medium (\$20,001-100,000)
Why are some parasitoids of light brown apple moth so uncommon in vineyards?	Insect	Field-based (ecology)	Pest management	Medium (\$20,001-100,000)
Comparison of bitter rot bunch rot fungi in the USA and Australia and associated study tour	Fungi	Field-based (other)	Pest management	Small (\$1-20,000)
Travel support for international presenters at the 'Below ground management for quality and productivity' Phylloxera and Grape Industry Board South Australia (PGIBSA) / Australian Society of Viticulture and Oenology (ASVO) seminar 28-29 July 2011	Multiple	Field-based (other)	Pest management	Small (\$1-20,000)
Provision of independent technical and secretarial services to the National Working Party for Pesticide Application (NWPPA)	Multiple	Policy or office-based	Risk analysis and modelling	Small (\$1-20,000)
A detailed evaluation of current international responses (regulation and research) to the management of pesticide spray drift	Multiple	Policy or office-based	Risk analysis and modelling	Small (\$1-20,000)
Botrytis bunch rots in Australian vineyards	Fungi	Field-based (other)	Pest management	Small (\$1-20,000)