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Review of policy: importation of grapevine (*Vitis* species) propagative material into Australia

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Submissions
This draft report has been issued to give all interested parties an opportunity to comment and draw attention to any scientific, technical, or other gaps in the data, misinterpretations and errors. Any comments should be submitted to the Department of Agriculture, Fisheries and Forestry within the comment period stated in the related Biosecurity Advice on the website. The draft report will then be revised as necessary to take account of the comments received and a final report prepared.

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Acronyms and abbreviations

Term or abbreviation	Definition
ALOP	Appropriate level of protection
APPPC	Asia and Pacific Plant Protection Commission
APPD	Australian Plant Pest Database
CABI	CAB International
CMI	Commonwealth Mycological Institute
COSAVE	Comité de Sanidad Vegetal del Cono Sur
CPPC	Caribbean Plant Protection Commission
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
EPPO	European and Mediterranean Plant Protection Organisation
FAO	Food and Agriculture Organization of the United Nations
IAPSC	Inter African Phytosanitary Council
IMF	Immunofluorescence
IPC	International Phytosanitary Certificate
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
IRA	Import Risk Analysis
ISPM	International Standard for Phytosanitary Measures
JUNAC	Comisión del Acuerdo de Cartagena
NAPPO	North American Plant Protection Organization
NPPO	National Plant Protection Organization
OEPP	Organisation Européenne et Méditerranéenne pour la Protection des Plantes
PCR	Polymerase chain reaction
PEQ	Post-entry quarantine
PRA	Pest risk analysis
RT-PCR	Reverse-transcription polymerase chain reaction
SPS	Sanitary and phytosanitary
TEM	Transmission electron microscopy
WTO	World Trade Organisation

Summary

Australia initiated this review as new pathogens have been identified on grapevines (*Vitis* species) and several pathogens have extended their global range. Uncontrolled movement of infected propagative material has helped to spread these pathogens into new areas. Additionally, the Grape and Wine Research and Development Corporation requested Plant Biosecurity to review and develop PEQ protocols for *Vitis* nursery stock that will minimise the time imported cultivars spend in quarantine, while maintaining quarantine integrity. Currently, grapevine propagative material is allowed entry into Australia from any source as dormant cuttings, tissue cultures (microplantlets) and seed; requiring mandatory on arrival inspection, mandatory treatment and growth in a closed government post-entry quarantine (PEQ) facility, with pathogen screening.

As part of this revision, the quarantine status of grapevine pathogens was reviewed and several new pests of quarantine concern were identified. Consequently, Plant Biosecurity evaluated the appropriateness of existing risk management measures for the identified risks and proposed additional measures where required. The existing post-entry quarantine arrangements for grapevine propagative material use a range of techniques to ensure freedom from pests of concern. These techniques include: fumigation with methyl bromide; hot water treatment; visual screening for disease symptoms in post-entry quarantine (PEQ); and active testing (biological indexing using woody/herbaceous indicators).

Proposed significant changes

The current review proposes several changes to the existing policy that will protect plant health while reducing the PEQ growth period for grapevine dormant cuttings and tissue culture (microplantlets). Major proposed changes for non-approved sources are:

- **All grapevine propagative material:**
  - Replacing woody indexing for grapevine virus B (corky bark strains) with mandatory molecular testing; and
  - Introducing mandatory electron microscopy for detection of viruses.
- **Dormant cuttings:**
  - Introducing mandatory surface sterilisation (1% sodium hypochlorite solution for 5 minutes);
  - Increasing hot water treatment time from 20 to 30 minutes at 50 °C; and
  - Introducing additional molecular testing, thereby reducing the PEQ period from 24 months to a minimum of 16 months.
- **Tissue cultures (microplantlets):**
  - Reducing the PEQ period from 24 months to a minimum of 12 months; and
  - Replacing hot water treatment with mandatory PCR for detecting *Xylella fastidiosa.*
- **Seed for sowing:**
  - Increasing the PEQ period from 3 months to 9 months.

Proposed risk management measures

The ultimate goal of phytosanitary measures is to protect plant health and prevent the introduction of identified quarantine pests associated with grapevine propagative material.

Plant Biosecurity considers that the risk management measures proposed in this draft review of policy will be adequate to mitigate the risks posed by the identified quarantine pests and pathogens.

The proposed risk management measures for propagative material are detailed below.

All sources (unknown health status)

Dormant cuttings

- Mandatory on-arrival inspection; fumigation; hot water treatment; and surface sterilisation;
- Mandatory growth in a closed government PEQ facility for a minimum period of 16 months for pathogen screening (visual observation; culturing; and electron microscopy); and
- Active pathogen testing through herbaceous host indexing and molecular tests including, but not limited to, PCR or ELISA.

Tissue cultures (microplantlets)

- Mandatory on-arrival inspection;
- Mandatory growth in a closed government PEQ facility for a minimum period of 12 months for pathogen screening (visual observation; culturing; and electron microscopy); and
- Active pathogen testing through herbaceous host indexing and molecular tests including, but not limited to, PCR or ELISA.

Seed

- Mandatory on-arrival inspection, surface sterilisation, fungicidal treatment, and growth in a closed government PEQ facility for a minimum period of nine months for pathogen screening (visual observation and electron microscopy); and
- Active pathogen testing through herbaceous host indexing and molecular tests including, but not limited to, PCR.

Approved sources (High health sources)

Foundation Plant Services, California, USA is currently an approved source to supply pathogen tested grapevine propagative material to Australia. However, Plant Biosecurity will consider requests for approval of other overseas sources (e.g. institutions, NPPOs), based on the framework proposed in this review.

The proposed changes to import requirements for dormant cuttings and tissue cultures from non-approved sources will also apply to material from approved sources (e.g. the PEQ period will be reduced to 16 months for dormant cuttings and 12 months for tissue cultures). Seed for sowing from approved sources is currently not subject to PEQ and this is recommended to continue.

Plant Biosecurity invites comments on the technical aspects of the proposed risk management measures for grapevine propagative material. In particular, comments are sought on their appropriateness and any other measures stakeholders consider would provide equivalent risk management outcomes.

1 Introduction

1.1 Australia's biosecurity policy framework

Australia's biosecurity policies aim to protect Australia against the risks that may arise from exotic pests[1] entering, establishing and spreading in Australia, thereby threatening Australia's unique flora and fauna, as well as those agricultural industries that are relatively free from serious pests.

The pest risk analysis (PRA) process is an important part of Australia's biosecurity policies. It enables the Australian Government to formally consider the risks that could be associated with proposals to import products into Australia. If the risks are found to exceed Australia's appropriate level of protection (ALOP), risk management measures are proposed to reduce the risk to an acceptable level. If it is not possible to reduce the risks to an acceptable level, then no trade will be allowed.

Successive Australian governments have maintained a conservative, but not a zero risk, approach to the management of biosecurity risks. This approach is expressed in terms of Australia's ALOP, which reflects community expectations through government policy and is currently described as providing a high level of protection aimed at reducing risk to a very low level, but not to zero.

Australia's PRAs are undertaken by Plant Biosecurity and Animal Biosecurity (formerly conjointly known as Biosecurity Australia), within the Department of Agriculture, Fisheries and Forestry (DAFF), using teams of technical and scientific experts in relevant fields. PRAs involve consultation with stakeholders at various stages during the process. Plant Biosecurity and Animal Biosecurity provide recommendations for animal and plant quarantine policy to Australia's Director of Animal and Plant Quarantine (the Secretary of the Australian Department of Agriculture, Fisheries and Forestry). The Director or delegate is responsible for determining whether or not an importation can be permitted under the *Quarantine Act 1908*, and if so, under what conditions. Plant Import Operations, within DAFF (formerly the Australian Quarantine and Inspection Service), is responsible for implementing appropriate risk management measures.

More information about Australia's biosecurity framework is provided in the *Import Risk Analysis Handbook 2007* (update 2009) located on the DAFF website www.daff.gov.au/ba.

1.2 This review of existing policy

Australia has an existing policy to import grapevine propagative material from all countries. However, this policy has not been reviewed for some time. Propagative material represents one of the highest plant quarantine risks, as it can harbour various forms of pathogens and arthropod pests. The introduction of plant pathogens, especially with latent infection, is of particular concern in propagative material. A range of exotic arthropod pests and pathogens can be introduced and established via propagative material when imported in a viable state for ongoing propagation.

1.2.1 Background

Many pathogens are associated with the production of grapevines worldwide. Like other

[1] A pest is any species, strain or biotype of plant, animal, or pathogenic agent injurious to plants or plant products (FAO 2009).

vegetatively propagated crops, grapevines are infected by numerous pathogens, among which viroids, viruses and phytoplasmas play a major role, causing degenerative diseases, heavy losses and sometimes plant death. As grapevines are propagated mainly by vegetative means, there is a considerable risk of introducing and spreading these pathogens through international trade of grapevine propagative material. The introduction of economically important grapevine pests into Australia could result in substantial costs in eradication, containment or control. Pest establishment and spread could also lead to an increase in the use of chemical controls and could jeopardize export markets.

Australia's existing policy allows importation of grapevine propagative material (dormant cuttings, tissue culture and seed) from any source. The policy includes on-arrival inspection and mandatory treatment and growth in a government post-entry plant quarantine (PEQ) facility, with appropriate disease screening. Separate conditions also exist for approved sources for dormant cuttings, tissue culture and seeds. Plant Biosecurity initiated this review as new pathogens have been identified on grapevines (*Vitis* species) and several pathogens have extended their global range. Uncontrolled movement of infected propagative material has helped to spread these pathogens into new areas. Additionally, the Grape and Wine Research and Development Corporation requested Plant Biosecurity to review and develop PEQ protocols for *Vitis* nursery stock that will minimise the time imported cultivars spend in quarantine, while maintaining quarantine integrity.

Quarantinable pests

Current pests of quarantine concern to Australia for grapevine propagative material are provided in Table 1.1.

Table 1.1 Current regulated pests of grapevine propagative material

Pathogen type	Common name
BACTERIA	
Xylella fastidiosa (Wells *et al*.)	Pierce's disease
Xylophilus ampelinus (Panagopoulos) Willems *et al*.	Grapevine bacterial necrosis
FUNGI	
Guignardia bidwellii (Ellis) Viala & Ravaz	Grapevine black rot
Mycosphaerella angulata WA Jenkins	Grapevine angular leaf spot
Physopella ampelopsidis (Diet. & P. Syd.) Cumm. & Ramachar[2]	Grapevine rust
Pseudopezicula tetraspora Korf *et al*.	Angular leaf scorch
Pseudopezicula tracheiphila Korf *et al*.	Rotbrenner
VIRUSES	
Arabis mosaic virus	AMV
Grapevine ajinashika virus	GAV
Grapevine Bulgarian latent virus	GBLV
Grapevine chrome mosaic virus	GCMV
Grapevine corky bark-associated virus	GCBaV
Grapevine fanleaf virus	GFLV
Grapevine Joannes Seyve virus	GJSV
Tomato ringspot virus	ToRSV
PHYTOPLASMA	
ELM YELLOWS GROUP	
Flavescence dorée phytoplasma	
Palatinate phytoplasma	

[2] *Phakopsora ampelopsidis* is the current name of this fungus

Pathogen type	Common name
STOLBUR GROUP	
Bois noir phytoplasma	
Vergilbungskrankheit	
ASTER YELLOWS GROUP	
VGY-I phytoplasma	
Other phytoplasmas	
WX PHYTOPLASMA	
VGY-III phytoplasma	
Other phytoplasmas	

As a result of this review, changes have been made to the list of quarantine pathogens.

1.2.2 Scope

Vitis propagative material can currently be imported as dormant cuttings, tissue cultures (microplantlets) or seed. Whole plants (other than tissue cultures) of *Vitis* are not allowed entry into Australia, due to their significantly higher risk in comparison to other types of nursery stock commodities. Therefore, whole plants are not considered in this review. The scope of this review of existing policy is limited to:

- the identification of biosecurity risks associated with grapevine propagative material (dormant cuttings, tissue cultures and seed) from all sources;
- the evaluation of existing risk management measures for the identified risks; and
- the proposal of additional measures where appropriate.

This review does not consider existing phytosanitary measures during the pest risk assessment. Existing phytosanitary measures are only considered during the development of risk management measures, if they are required, following the pest risk analysis.

1.2.3 Existing import policy for grapevine propagative material

There are a number of grapevine species (*Vitis* species) that are currently permitted entry into Australia as propagative material (dormant cuttings, tissue cultures and seed), subject to specific import conditions. These conditions are available on the Import CONditions database (ICON) at http://www.aqis.gov.au/icon. The list of *Vitis* species currently permitted entry into Australia (C 16904) from all sources is provided in Table 1.2 'Grapevine propagative material' will hereafter refer to the dormant cuttings, tissue cultures and/or seed of these permitted species only.

Table 1.2 List of *Vitis* species permitted entry into Australia from all sources

Scientific names	Synonyms
Vitis aestivalis x (*labrusca x vinifera*)	-
Vitis aestivalis x Vitis vinifera	-
Vitis brevipedunculata (Maxim.) Dippel	*Ampelopsis glandulosa* (Wall.) Momiy. var. *brevipedunculata* (Maxim.) Momiy, *Ampelopsis brevipedunculata* (Maxim.) Trautv)
Vitis glandulosa Wall.	*Ampelopsis glandulosa* (Wall.) Momiy. var. *glandulosa*
Vitis heterophylla Thunb	*Ampelopsis glandulosa* (Wall.) Momiy. var. *heterophylla* (Thunb.) Momiy.
Vitis himalayana (Royle) Brandis	*Parthenocissus semicordata* (Wall.) Planch. var. *roylei* (King) Raizada & H. O. Saxena
Vitis hypoglauca (A. Gray) F. Mueller	*Cissus hypoglauca* A. Gray

Scientific names	Synonyms
Vitis quadrangularis (L.) Wall. ex Wight	*Cissus quadrangularis* L.
Vitis rhombifolia (Vahl) Baker	*Cissus alata* Jacq.; *Cissus rhombifolia* Vahl
Vitis riparia Michx.	-
Vitis rupestris Scheele	-
Vitis sicyoides (L.) Miq.	*Cissus verticillata* (L.) Nicolson & C. E. Jarvis subsp. *verti*; *Cissus sicyoides* L.; *Viscum verticillatum* L.
Vitis striata (Ruiz & Pav.) Miq.	*Cissus striata* Ruiz & Pav. subsp. *Striata*
Vitis vinifera L.	*Vitis vinifera* L. subsp. *vinifera*, *Vitis vinifera* L. subsp. *sativa* (DC.) Hegi *Vitis vinifera* L. subsp. *sylvestris* (CC Gmel.) Hegi; *Vitis sylvestris* CC Gmel.

Dormant cuttings

Currently, grapevine dormant cuttings of permitted species are allowed entry from approved sources (Foundation Plant Services, University of California) and all countries (non-approved sources) subject to specific import conditions (C7307, C7309). The dormant cuttings from approved sources and non-approved sources are also subject to the 'General import requirements, nursery stock for all species' (C7300), which specifies that:

- An import permit and a Phytosanitary Certificate is required; and
- On-arrival inspection of dormant cuttings is required to verify freedom from soil, disease symptoms and other extraneous contamination of quarantine concern.

In addition to these general requirements, grapevine dormant cuttings are subjected to the following specific import conditions:

- Mandatory on-arrival methyl bromide fumigation (T9060);
- Mandatory on-arrival hot water treatment (50 ^{o}C for 20 minutes [T9504]); and
- Mandatory growth in closed government PEQ facilities for a minimum of 24 months with disease screening (or until the required disease screening/testing is completed). This includes 12 months in a closed PEQ facility (glasshouse) with disease screening and viral indexing and then transfer to a screen house with bacterial and fungal screening for an additional 12 months.
- No material will be released from quarantine until all testing and screening procedures have been completed and the material is found to have no evidence of quarantine pests.

The only difference between approved and non-approved sources is that material from approved sources is exempt from pathogen screening/testing conducted overseas. However, imported cuttings still require 24 months in PEQ facilities.

Tissue cultures (microplantlets)

Currently, tissue cultures (microplantlets) of permitted species are allowed entry from approved sources (Foundation Plant Services, University of California) and non-approved sources (all countries) subject to specific conditions (C7306, C7308). The requirements for *Vitis* species tissue culture from approved sources and non-approved sources specify that:

- an import permit and a Phytosanitary Certificate is required without any additional declaration (non-approved sources) or a Phytosanitary Certificate is required that specifies which pathogenic organisms have been indexed by the suppliers (approved sources); and
- on-arrival inspection of plantlets is required to verify freedom from bacterial and fungal infection, disease symptoms, live insects and other extraneous contamination of quarantine concern.

In addition to these general measures, grapevine tissue cultures are subjected to the following specific quarantine measures (for both approved and non-approved sources):

- Mandatory growth in closed government PEQ facilities for a minimum of 24 months with disease screening (or until the required disease screening/testing is completed). This includes 12 months in a closed PEQ facility (glasshouse) with disease screening and viral indexing and then transfer to a screen house with bacterial and fungal screening for an additional 12 months; and
- Mandatory hot water treatment (T9504) of established plants.

Seed for sowing (from approved sources)

Foundation Plant Services, University of California, USA is an approved source to supply grape seed for sowing sourced from virus tested mother plants to Australia (C6980). The requirements for grape seeds from approved sources are available from ICON. The requirements include:

- an import permit;
- a Phytosanitary Certificate (seed was sourced from virus tested mother plants grown in the USA and free of *Arabis mosaic nepovirus* (ArMV), *Blueberry leaf mottle nepovirus* (BLMV), *Grapevine Bulgarian latent nepovirus* (GBLN), *Peach rosette mosaic nepovirus* (PRMN), *Raspberry ringspot nepovirus* (RpRSV), *Strawberry latent ringspot nepovirus* (SLRSV), *Tomato blackring nepovirus* (TBRV), *Tomato ringspot nepovirus* (ToRSV) and *Tobacco ringspot nepovirus* (TRSV); and
- on-arrival inspection of seed to verify freedom from soil, disease symptoms and other extraneous contamination of quarantine concern.

In addition to these general measures, the grape seeds from approved sources are subjected to the following specific import conditions:

- mandatory surface sterilisation (1% sodium hypochlorite solution for 10 minutes, then rinsed and dried [T9371]);
- mandatory fungicidal treatment (seed dusted with Thiram [T9420]); and
- release from quarantine without further quarantine impediment.

Seed for sowing (from non-approved sources)

Currently, grape seeds are allowed entry from European countries (C9786), Japan (C8963) and the USA (C18428), subject to specific import conditions:

- an import permit and a Phytosanitary Certificate is required (seeds were sourced from mother plants grown either in Europe, Japan or the USA); and
- on-arrival inspection of seed is required to verify freedom from live insects, soil, disease symptoms, prohibited seeds, other plant material (e.g. leaf, stem material, fruit pulp, pod material, etc.), animal material (e.g. animal faeces, feathers, etc.) and any other extraneous contamination of quarantine concern.

In addition to these requirements, the grape seeds are subjected to the following specific import conditions:

- mandatory surface sterilisation (1% sodium hypochlorite solution for 10 minutes, then rinsed and dried [T9371]);
- mandatory fungicidal treatment (seed dusted with Thiram [T9420]); and
- mandatory growth in a government PEQ facility or at a DAFF approved post-entry quarantine facility for a minimum of three months, during which time the plants must be virus indexed and visually screened for diseases.

2 Pest risk analysis

Plant Biosecurity has conducted this pest risk analysis (PRA) in accordance with the International Standards for Phytosanitary Measures (ISPMs), including ISPM 2: *Framework for pest risk analysis* (FAO 2007) and ISPM 11: *Pest risk analysis for quarantine pests, including analysis of environmental risks and living modified organisms* (FAO 2004). The standards provide a broad rationale for the analysis of the scientific evidence to be taken into consideration when identifying and assessing the risk posed by quarantine pests.

Following ISPM 11, this pest risk analysis process comprises of three discrete stages:

- Stage 1: Initiation of the PRA
- Stage 2: Pest Risk Assessment
- Stage 3: Pest Risk Management

Phytosanitary terms used in this PRA are defined in ISPM 5 (FAO 2009).

2.1 Stage 1: Initiation

The *initiation* of a risk analysis involves identifying the reason for the PRA and the identification of the pest(s) and pathway(s) that should be considered for risk analysis in relation to the identified PRA area.

This commodity-based pest risk assessment was initiated by Plant Biosecurity as a basis for a review and possible revision of the existing phytosanitary regulations to import grapevine propagative material into Australia. Additionally, the Grape and Wine Research and Development Corporation requested Plant Biosecurity to review and develop PEQ protocols for *Vitis* nursery stock that will minimise the time imported cultivars spend in quarantine, while maintaining an appropriate level of protection from the threat of exotic pests and diseases. The review was also necessary as new pathogens have been identified on grapevine and several pathogens have extended their global range.

In the context of this PRA, grapevine propagative material (dormant cuttings, tissue culture and seed) is a potential import ‘pathway’ by which a pest can enter Australia.

A list of pests associated with grapevines worldwide was tabulated from published scientific literature, such as reference books, journals and database searches. This information is set out in Appendix A and forms the basis of the pest categorisation.

For this PRA, the ‘PRA area’ is defined as Australia for pests that are absent from Australia or of limited distribution and under official control in Australia.

2.2 Stage 2: Pest Risk Assessment

A pest risk assessment is the ‘evaluation of the probability of the introduction and spread of a pest and of the magnitude of the associated potential economic consequences’ (FAO 2009, p. 13). The pest risk assessment provides technical justification for identifying quarantine pests and for establishing phytosanitary import requirements.

This is a commodity-initiated pest risk analysis and risk is estimated through a standard set of factors that contribute to the introduction, establishment, spread or potential economic impact of pests. This pest risk assessment was conducted using three consecutive steps: pest categorisation; assessment of the probability of entry, establishment and spread; and assessment of potential consequences.

2.2.1 Pest categorisation

Pest categorisation is a process to examine, for each pest identified in Stage 1 (*Initiation of the PRA process*), whether the criteria for a quarantine pest is satisfied. In the context of propagative material, pest categorisation includes all the main elements of a full pest risk assessment. However, assessment of entry, establishment and spread is done in less detail for propagative material as pests are already with, or within, a suitable, living host that will be grown under favourable conditions to ensure the survival of the host plant. In addition, pests can spread from infected propagative material not only by natural dispersal, but also by domestic trade of infected nursery stock. The process of pest categorisation is summarised by ISPM 11 (FAO 2004) as a screening procedure based on the following criteria:

- identity of the pest;
- presence or absence in the endangered area;
- regulatory status;
- potential for establishment and spread in the PRA area; and
- potential for economic consequences in the PRA area.

Pests are categorised according to their association with the pathway; their presence or absence or regulatory status; their potential to establish or spread; and their potential for economic consequences. Pests associated with grapevines listed in Appendix A were used to develop a pathway-specific pest list for all pathways (dormant cuttings, tissue cultures and seed). This list identifies the pathway association of pests recorded on grapevines and their status in Australia; their potential to establish or spread; and their potential for economic consequences. Pests likely to be associated with grapevine propagative material, and absent or under official control in Australia, may be capable of establishment or spread within Australia if suitable ecological and climatic conditions exist.

The quarantine pests of grapevines from all sources identified in the pest categorisation are listed in Table 2.1. These pathogens fulfil the IPPC criteria for a quarantine pest, specifically:

- these pests are economically important (as they cause a variety of direct and indirect economic impacts, such as reduced yield, reduced commodity value and/or loss of foreign or domestic markets); and
- these pests are not present in Australia or have a limited distribution and are under official control.

Table 2.1 Quarantine pests for grapevine propagative material

Pest type	Pathway association[3]		
	Dormant cuttings	Tissue cultures	Seed
ARTHROPODS			
ACARI (mites)			
Brevipalpus chilensis Baker [Acari: Tenuipalpidae]	✓		
Colomerus vitis Pagenstecher strain c [Acari: Eriophyidae]	✓		
COLEOPTERA (beetles, weevils)			
Sinoxylon perforans Schrank [Coleoptera: Bostrichidae]	✓		
Sinoxylon sexdentatum Olivier [Coleoptera: Bostrichidae]	✓		

3 This review considers that certain pathogens (bacteria, phytoplasma, viroids and viruses) may not be excluded from the pathway and remains associated with micropropagated plantlets (tissue culture). In contrast, it considers that fungal or fungal-like pathogens are not on the pathway of micropropagated plantlets.

Pest type	Pathway association[3]		
	Dormant cuttings	Tissue cultures	Seed
HEMIPTERA (aphids, leafhoppers, mealybugs, psyllids, scales, true bugs, whiteflies)			
Planococcus ficus Signoret [Hemiptera: Pseudococcidae]	✓		
Planococcus lilacinus Cockerell [Hemiptera: Pseudococcidae]	✓		
Planococcus kraunhiae [Hemiptera: Pseudococcidae]	✓		
Targionia vitis Signoret [Hemiptera: Diaspididae]	✓		
LEPIDOPTERA (moths, butterflies)			
Paranthrene regalis Butler [Lepidoptera: Sesiidae]	✓		
Zeuzera coffeae Nietner [Lepidoptera: Cossidae]	✓		
PATHOGENS			
BACTERIA			
Xanthomonas campestris pv. *viticola* (Nayudu) Dye	✓	✓	
Xylella fastidiosa (Wells *et al*.) – grapevine strain	✓	✓	
Xylophilus ampelinus (Panagopoulos) Willems *et al*.	✓	✓	
FUNGI			
Alternaria viticola Brunaud	✓		
Cadophora luteo-olivacea (J.F.H Beyma) T.C. Harr. & McNew	✓		
Cadophora melinii Nannf.	✓		
Eutypella leprosa (Pers.) Berl.	✓		
Eutypella vitis (Schwein.:Fr.) Ellis & Everhart	✓		
Fomitiporia mediterranea M. Fischer	✓		
Fomitiporia polymorpha M. Fischer	✓		
Guignardia species (*Guignardia bidwellii*, *Guignardia bidwellii* f. *euvitis*, *Guignardia bidwellii* f. *muscadinii*)	✓		
Inocutis jamaicensis (Murrill) Gottlieb *et al*.	✓		
Monilinia fructigena Honey	✓		
Phaeoacremonium species (*P. alvesii, P. angustius, P. argentinense*, *P. armeniacum*, *P. austroafricanum P. cinereum*, *P. croatiense*, *P. globosum*, *P. griseorubrum*, *P. hispanicum*, *P. hungaricum*, *P. inflatipes*, *P. iranianum*, *P. krajdenii*, *P. mortoniae*, *P. occidentale*, *P. rubrigenum*, *P. scolyti, P. sicilianum*, *P. subulatum*, *P. tuscanum*, *P. venezuelense*, *P. viticola*)	✓		
Phakopsora species (*Phakopsora euvitis*, *Phakopsora muscadiniae*, *Phakopsora uva*)	✓		
PHYTOPLASMA			
Candidatus Phytoplasma asteris [**16SrI** – Aster yellows group]	✓	✓	
Candidatus Phytoplasma fraxini [**16SrVII-A]** (Ash yellows group)	✓	✓	
Candidatus Phytoplasma pruni [**16SrIII** – peach X-disease phytoplasmas group]	✓	✓	
Candidatus Phytoplasma solani **[16 SrXII-A]** (Stolbur group)	✓	✓	
Candidatus Phytoplasma ulmi [**16SrV–A**] (Elm yellows group EY group)	✓	✓	
Candidatus Phytoplasma vitis [**16SrV**] (Elm yellows group)	✓	✓	
European stone fruit yellows Phytoplasma **16SrX-B** (Apple proliferation group)	✓	✓	
Phytoplasma **16SrIX**	✓	✓	
VIRUSES			
Arabis mosaic virus (ArMV) – grape strain	✓	✓	✓
Artichoke Italian latent virus (AILV)	✓	✓	
Blueberry leaf mottle virus (BLMoV) New York (NY) strain	✓	✓	✓
Cherry leafroll virus (CLRV) – grape isolate	✓	✓	

Pest type	**Pathway association**[3]		
	Dormant cuttings	**Tissue cultures**	**Seed**
Grapevine ajinashika virus (GAgV)	✓	✓	
Grapevine Anatolian ringspot virus (GARSV)	✓	✓	
Grapevine angular mosaic-associated virus (GAMaV)	✓	✓	✓
Grapevine asteroid mosaic associated virus (GAMV)	✓	✓	
Grapevine berry inner necrosis virus (GINV)	✓	✓	
Grapevine Bulgarian latent virus (GBLV)	✓	✓	✓
Grapevine chrome mosaic virus (GCMV)	✓	✓	✓
Grapevine deformation virus (GDefV)	✓	✓	
Grapevine fanleaf virus (GFLV)	✓	✓	✓
Grapevine leafroll associated virus (GLRaV – 6,7,10, 11)	✓	✓	
Grapevine line pattern virus (GLPV)	✓	✓	✓
Grapevine red globe virus (GRGV)	✓	✓	
Grapevine rupestris vein feathering virus (GRVFV)	✓	✓	
Grapevine syrah virus-I (GSyV-I)	✓	✓	
Grapevine Tunisian ringspot virus (GTRSV)	✓	✓	
Grapevine virus B (strains associated with corky bark) (GVB)	✓	✓	
Grapevine virus E (GVE)	✓	✓	
Peach rosette mosaic virus (PRMV)	✓	✓	✓
Petunia asteroid mosaic virus (PeAMV)	✓	✓	
Raspberry ringspot virus (RpRSV) – grapevine strain	✓	✓	
Sowbane mosaic virus (SoMV) – grape infecting strain	✓	✓	
Strawberry latent ringspot virus (SLRSV)	✓	✓	
Tobacco necrosis virus (TNV) – grape strain	✓	✓	
Tomato black ring virus (TBRV)	✓	✓	✓
Tomato ringspot virus (ToRSV)	✓	✓	✓

2.2.2 Assessment of the probability of entry, establishment and spread

Details of how to assess the ‘probability of entry’, ‘probability of establishment’ and ‘probability of spread’ of a pest are given in ISPM 11 (FAO 2004).

In the case of propagative material imports, the concepts of entry, establishment and spread have to be considered differently. Propagative material intended for ongoing propagation purposes is deliberately introduced, distributed and aided to establish and spread. This material will enter and then be maintained in a suitable habitat, potentially in substantial numbers and for an indeterminate period. Significant resources are utilised to ensure the continued welfare of imported propagative material. Therefore, the introduction and establishment of plants from imported propagative material in essence establishes the pests and pathogens associated with the propagative material. Pathogens, in particular, may not need to leave the host to complete their life cycles, further enabling them to establish in the PRA area. Furthermore, propagative material is expected to be shipped at moderate temperatures and humidity, which is unlikely to adversely affect any pest that is present during shipment.

Several key factors contribute to the increased ability of pests and pathogens associated with propagative material to enter, establish and spread in Australia.

Probability of entry

- Association with host commodities provides the opportunity for the pest to enter Australia. Their ability to survive on, or in, propagative material acts to ensure their viability on route to, and during distribution across, Australia.
- Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected. Therefore, propagative material provides a pathway for viruses.
- Propagative material is assumed to come from areas where these pests specifically occur and no phytosanitary measures have been applied. The primary conditions for survival of pests are fulfilled by the presence of the live propagative material and the associated environmental conditions. Therefore, association with propagative material can provide long term survival for the pests.
- Infected propagative material is the main pathway for the introduction of the pests into new areas. This mode of introduction is greatly enhanced because of latency periods before conspicuous symptoms develop. Long latency periods can lead to the propagation and distribution of infected propagative material and can therefore assist in the introduction of these pests into Australia.
- The pests associated with propagative material may be systemic or are associated with the vascular system (or occur internally in the nursery stock) and they are unlikely to be dislodged during standard harvesting, handling and shipping operations. Therefore, pests associated with propagative material are likely to survive during transport.
- Seeds will be maintained at a suitable temperature and humidity to maintain seed viability. Seed-borne and seed-transmissible pathogens will therefore be maintained within the seed for subsequent propagation.

Probability of establishment

- Association with the host will facilitate the establishment of pests of propagative material, as they are already established with, or within, a suitable host. As host plant material is likely to be maintained in places with similar climates to the area of production, climatic conditions are expected to favour the pest’s establishment.
  - Some pest specific factors are likely to impact upon a pest’s ability to establish in Australia. For example, the likelihood of establishment will vary if an alternative host is required for the pest to complete its life cycle or if multiple individuals are required to form a founder population. Where appropriate, these considerations are addressed in the potential for establishment and spread field of the pest categorisation.
- Propagative material, including grapevine cuttings, tissue culture and seed, is intended for ongoing propagation or horticultural purposes and therefore is deliberately introduced, distributed and aided to establish. This material will enter and then be maintained in a suitable habitat, potentially in substantial numbers and for an indeterminate period. Therefore, the introduction and establishment of plants from imported propagative material in essence establishes the pests and pathogens associated with the propagative material.
- The latent period of infection before visible symptoms appear may result in non-detection of these pathogens; therefore, the pathogens will have ample time to establish into new areas.

Probability of spread

- The ability of the pest to be introduced and distributed throughout Australia on propagative material through human mediated spread is a high risk for continued spread post-border in Australia. Pest related factors that aid the spread of the pest once it has established in Australia (such as wind, water or mechanical transmission) will increase the pest's ability to spread from an already high baseline.

- In the absence of statutory control, there is a high probability that the pests will spread quickly in Australia by trade of propagative material. Planting of infected propagative material will bring the pests into the environment. Climatic conditions, such as those found in propagation houses, may be sufficient for pest survival and spread.
- The systemic nature of some of the pests associated with propagative material is a major pathway for dispersal. Accordingly, local and long-distance spread of these pathogens has been associated with the movement of infected propagative material.
- The symptomless nature of several pathogens may contribute to the inadvertent propagation and distribution of infected material that will help spread these pathogens within Australia. Additionally, insect vectors present in Australia will help spread viruses from infected plants to healthy plants.
  - Viruses may differ in particle morphologies, disease symptoms induced and means of natural spread by insect or nematode vectors. However, each virus is readily carried and dispersed in nursery stock.
  - In some instances, pathogens may be introduced via infected plants into a viticulture region where native vector species reside resulting in secondary spread to neighbouring grapevines or to surrounding vineyards.

As a result of these pathway specific factors, it would be inappropriate to assess the probability of entry, establishment and spread using the processes described in ISPM 11 (FAO 2004). For the purposes of this PRA, the overall likelihood for the probability of entry, establishment and spread is considered to be high for pests entering Australia on grapevine propagative material.

2.2.3 Assessment of potential consequences

The purpose of assessment of potential consequences in the pest risk assessment process is to identify and quantify, as much as possible, the potential impacts that could be expected to result from a pest's introduction and spread.

The basic requirements for the assessment of consequences are described in the SPS Agreement, in particular Article 5.3 and Annex A. Further detail on assessing consequences is given in the "potential economic consequences" section of ISPM 11. This ISPM separates the consequences into "direct" and "indirect" and provides examples of factors to consider within each.

The introduction of pests which meet the criteria of a quarantine pest will have unacceptable economic consequences in Australia as these pests will cause a variety of direct and indirect economic impacts. The identified pests are of economic concern and do not occur in Australia. A summary and justification is provided below:

- Direct impacts of the introduction and spread of multi-host pests in Australia will not only affect the imported host but also other hosts.
- Introduction and establishment of quarantine pests in Australia would not only result in phytosanitary regulations imposed by foreign or domestic trading partners, but also in increased costs of production, including pathogen control costs.
- Quarantine pest introduction and establishment would also be likely to result in industry

adjustment. The potential economic impact for the nursery trade is high. Without controls, these pests have the potential to spread further in the trade network and could potentially expand their host range.

- Grapevines that are vegetatively propagated may be exposed to attack by a variety of pests and pathogens. Of these pests, infectious intracellular agents (viruses, viroids, bacteria and phytoplasmas) play a major role, causing heavy yield loss, shortening the productive life of vineyards and endangering the survival of affected vines (Martelli and Boudon-Padieu 2006).
- Both phytoplasmas and viruses are able to affect fruit development and ripening, possibly as a result of phloem disruption. This blockage can hinder berry sugar accumulation and delay ripening.
- Grapevine viruses cause yield loss, reduced fruit quality, reduced vine growth, vine decline and vine death. For example, leafroll viruses and rugose wood viruses are associated with yield losses (Guidoni *et al*. 2000; Mannini and Credi 2000; Kovacs *et al*. 2000, 2001; Tomazic *et al*. 2000, 2005; Komar *et al*. 2007). Leafroll viruses also cause poor fruit quality (Woodham *et al.* 1983; Komar *et al*. 2007). Grapevine fanleaf virus and Arabis mosaic virus are associated with significant yield loss, reduced fruit quality, reduced vine vigour, vine decline and vine death (Auger *et al*. 1992; Martelli 1993; Walter and Martelli 1998; Golino *et al.* 2003; Legorburu *et al*. 2009; Santini *et al*. 2009). Rugose wood complex viruses are associated with vine death (Tomazic *et al*. 2005).
- The identified pests are considered important as they cause a variety of direct and indirect economic impacts, such as reduced yield, reduced commodity value and loss of foreign or domestic markets. Therefore, these pests have a potential for economic consequences in Australia. For example, some of these pathogens are identified by COSAVE, EPPO, NAPPO and other countries as pests of quarantine concern. The presence of these pests and pathogens in Australia would impact upon Australia's ability to access overseas markets.

Pests and pathogens listed in Table 2.1 are of economic significance and are either absent from Australia, or if present, are under official control. Therefore, they meet the IPPC criteria for a quarantine pest and phytosanitary measures are justified to manage these pests and pathogens.

2.3 Stage 3: Pest Risk Management

ISPM 11 (FAO 2004) provides details on the identification and selection of appropriate risk management options. Pest risk management describes the process of identifying and implementing phytosanitary measures to manage risks posed by identified quarantine pests, while ensuring that any negative effects on trade are minimised.

Pest risk management evaluates and selects risk management options to reduce the risk of entry, establishment or spread of identified pests for the identified import pathways. To effectively prevent the introduction of pests associated with an identified pathway, a series of important safeguards, conditions or phytosanitary measures must be in place. Propagative material represents a direct pathway for pests identified by the pest categorisation. This pathway is direct since the end-use is the planting of a known host plant.

2.3.1 Identification and selection of appropriate risk management options

Phytosanitary measures to prevent the establishment and spread of quarantine pests may include any combination of measures, including pre- or post-harvest treatments, inspection at various points between production and final distribution, surveillance, official control, documentation, or certification. A measure or combination of measures may be applied at any one or more points along the continuum between the point of origin and the final destination. Pest risk management explores options that can be implemented (i) in the exporting country, (ii) at the point of entry or (iii) within the importing country. The ultimate goal is to protect plants and prevent the introduction of identified quarantine pests.

Examples of phytosanitary measures which may be applied to propagative material consignments include:

- Import from pest free areas only (**ISPM 4, 10**)—the establishment and use of a pest free area by an NPPO provides for the export of plants from the exporting country to the importing country without the need for application of additional phytosanitary measures when certain requirements are met.
- Inspections or testing for freedom from regulated pests—this is a practical measure for visible pests or for pests which produce visible symptoms on plants.
- Inspection and certification (**ISPM 7, 12, 23**)—the exporting country may be asked to inspect the shipment and certify that the shipment is free from regulated pests before export.
- Specified conditions for preparation of the consignment—the importing country may specify steps that must be followed in order to prepare the consignment for shipment. These conditions can include the requirement for plants to be produced from appropriately tested parent material.
- Pre-entry or post-entry quarantine—the importing country may define certain control conditions, inspection and possible treatment of shipments upon their entry into the country. Post-entry quarantine (PEQ) of dormant cuttings, seed and even *in vitro* plantlets can help avoid introduction of new viruses or allied pathogens into the importing countries.
- Removal of the pest from the consignment by treatment or other methods—the importing country may specify chemical or physical treatments that must be applied to the consignment before it may be imported.

Measures can range from total prohibition to permitting import subject to visual inspection. In some cases more than one phytosanitary measure may be required in order to reduce the pest risk to an acceptable level.

3 Risk management measures for grapevine propagative material from all sources

To effectively prevent the introduction of plant pests associated with propagative material a series of important safeguards, conditions, or phytosanitary measures must be in place. Australia has a well established policy for the importation of grapevine propagative material from all countries.

3.1 Existing risk management measures

Australia's existing policy to import grapevine (*Vitis* species) permitted species (C16904) propagative material (dormant cuttings, tissue cultures and seed) is based on on-shore risk management (phytosanitary measures implemented in the importing country). These risk management measures include on-arrival inspection, mandatory treatment and growth in a closed government post-entry quarantine (PEQ) facility, with pathogen screening. Grape propagative material can currently be imported into Australia as dormant cuttings, tissue cultures or seed. Currently, there are two separate sets of conditions that apply to grapevine propagative material: conditions for sourcing propagative material from (1) all sources (non-approved sources) and (2) approved sources.

3.1.1 All sources (non-approved sources)

All imported grape propagative material (dormant cuttings, tissue cultures and seed) are subject to the quarantine/biosecurity measures set out in Condition C7309 (dormant cuttings from non-approved sources); C7308 (tissue cultures from non-approved sources); C9786, C8963, C18428 (seed for sowing from non-approved sources) and C7300 (general nursery stock). A summary of the existing policy for grapevine propagative material from approved sources and non-approved sources is provided in the Table 3.1.

Table 3.1 Summary of existing import conditions for grapevine propagative material

Conditions	Dormant cuttings	Tissue cultures	Seed[1]
GENERAL CONDITIONS			
An import permit is required	Yes	Yes	Yes
A Phytosanitary Certificate is required	Yes (without AD)	Yes (without AD)	Yes (with AD)[2]
On arrival Inspection to verify freedom from soil, disease symptoms and other extraneous contamination of quarantine concern	Yes	Yes	Yes
SPECIFIC CONDITIONS			
Mandatory methyl bromide fumigation	Yes		
Mandatory hot water treatment	Yes	Yes[4]	
Mandatory surface sterilisation			Yes
Mandatory fungicidal treatment			Yes
Mandatory growth in the closed PEQ[3]	Yes	Yes	Yes

AD Additional declaration

1 Grape seeds for sowing are currently permitted from the EU, Japan and the USA.

2 A Phytosanitary Certificate is required stating that seeds were sourced from the EU, Japan or the USA.

3 Dormant cuttings and tissue cultures from all sources are grown for 24 months in closed government PEQ facilities and are subject to disease screening and virus indexing. Seeds from non-approved sources are grown for three months in PEQ.

4 Plants established from tissue cultures (two years) require hot water treatment for *Xylella fastidiosa*.

3.1.2 Approved sources

Currently, Foundation Plant Services, University of California, USA is an approved source to supply grapevine propagative material (dormant cuttings, tissue culture, and seed for sowing) to Australia. All imported grape propagative material from this approved source is subject to the quarantine/biosecurity measures set out in Condition C7307 (dormant cuttings from approved sources); C7306 (tissue cultures from approved sources); C6980 (seed for sowing from approved sources); and C7300 (general nursery stock). However, there is no significant difference in risk mitigation measures applied in Australia for dormant cuttings and tissue culture from this approved source. If testing is done by the Foundation Plant Services and certified accordingly, dormant cuttings and tissue cultures may be exempt from tests already conducted overseas. However, the material still has to be grown in a government PEQ facility for 24 months. Seed for sowing imported from approved sources does not require growth in PEQ whereas seeds from non-approved sources must be grown in PEQ for a minimum of three months.

3.2 Evaluation of existing measures for grapevine propagative material from all sources

As part of the review, the quarantine status of the pests and pathogens of grapevine was reassessed and several new pests were identified. Consequently, Plant Biosecurity evaluated the appropriateness of existing risk management measures to determine if alternative or additional measures are required.

3.2.1 Dormant cuttings

All sources

The appropriateness of existing measures for dormant cuttings from all sources has been evaluated as follows:

- The existing requirement for imported grapevine cuttings to be restricted to one-year-old dormant cuttings (with 2–3 internodes to allow for propagation) is recommended to continue.
  - Restricting cuttings to one-year-old material reduces the risk of infection by grapevine pathogens, since canes are exposed to infection for a shorter period.
  - Cuttings are less likely to have been damaged, providing fewer infection sites for opportunistic wound pathogens.
  - Disease symptoms are also more obvious on young tissue.
  - Most wood rot in living plants is confined to the older central wood of roots, trunks and branches and therefore would not be associated with one-year-old dormant cuttings.
- The existing requirement for mandatory on-arrival inspection of imported dormant cuttings to verify freedom from disease symptoms, live insects, soil and other extraneous contaminants of quarantine concern is recommended to continue.
- The existing requirement for mandatory on-arrival fumigation (T9060) of grapevine dormant cuttings to manage the risk posed by arthropod pests from all sources is recommended to continue.
- The existing requirement for mandatory hot water treatment (50 °C for 20 minutes, T9504), with a slight modification, is recommended to continue to minimise the risk of accidental introduction of pathogens, particularly phytoplasmas.
- The existing requirement for growth in a post-entry-quarantine facility is an appropriate

phytosanitary measure for the safe introduction of grapevine dormant cuttings. Additional testing procedures are proposed where appropriate. Plant Biosecurity considers that:

- Pathogen screening (visual screening) during growth in PEQ is proposed to continue for the detection of symptomatic pathogens. Fungal and bacterial pathogens associated with grapevines may produce distinct symptoms that make them easy to identify by visual inspection during the growth period in PEQ. Although visual inspection is an important method for screening some pathogens, grapevine propagative material may be infected and not produce any obvious disease symptoms due to cultivar susceptibility, environmental conditions or other related factors:
  - Grapevines infected with some pathogens (especially viruses) may never show any obvious symptoms. The concentration of viruses may be so low that no symptoms develop, or the infection may be latent. Such latent infections can only be detected with reliable pathogen testing methods.
  - Viruses generally occur in mixed infections. The symptoms of a given virus will be expressed only when it encounters favourable conditions. The other viruses remain in a latent state. In addition, one virus may stimulate expression of the symptoms of other viruses. Because of the range and overlap of symptoms, visual diagnosis of virus diseases is unreliable.
- Therefore the existing requirement for biological indexing is recommended to continue, but a combination of biological indexing and molecular testing is proposed to improve the efficacy of pathogen detection and to reduce the PEQ growth period.
  - Grapevine viruses are transmissible entities; they can be detected and identified on herbaceous and woody indicator plants. Herbaceous host indexing assays may be completed in a matter of weeks whereas woody indicator assays require a lengthier incubation period (up to two years) to complete (Rowhani *et al*. 2005). Herbaceous hosts are used to test for sap transmissible nepoviruses, whereas woody indicator plants are used to test for phloem limited viruses (Rowhani *et al*. 2005). Woody indexing can be replaced with molecular methods
  - Therefore a combination of biological indexing and molecular testing including serological and molecular tests is proposed.

3.2.2 Tissue cultures (microplantlets)

All sources

The appropriateness of existing measures for tissue cultures (microplantlets) from all sources has been evaluated as follows:

- The existing requirement for pathogen screening (visual screening) during growth in the PEQ is adequate to detect symptomatic pathogens.
- The existing requirement for biological indexing using herbaceous indicators proposed to continue, but the introduction of a combination of traditional and modern techniques for pathogen screening is recommended to improve the efficacy of pathogen detection.
- Additional molecular testing is proposed, thereby leading to a reduction of the PEQ growth period from a minimum of 24 months (previously required to complete pathogen screening, including woody indexing) to a minimum of 12 months.

Approved sources

The appropriateness of existing measures for tissue cultures from approved sources has been evaluated as follows:

- The existing requirement for tissue cultures to be exempt from tests already conducted overseas is proposed to continue.

- The existing requirement for tissue cultures from approved sources to be subject to all other measures that apply to tissue cultures from non-approved sources is proposed to continue.
- These measures adequately address the risk posed by tissue cultures from approved sources and additional measures are not required.

Seed for sowing

All sources

The appropriateness of existing measures for seed for sowing from all sources has been evaluated as follows:

- The existing requirements for grape seed for sowing imported from non-approved sources, including mandatory on-arrival inspection and treatments (sodium hypochlorite [T9371], fungicidal dusting [T9420]), are adequate to address the risk posed by superficial fungal and bacterial contaminants.
- Growth in a PEQ facility for three months may not be sufficient for establishment of a plant from seed and to complete pathogen screening. Therefore, an increased PEQ growth period is proposed.

Approved sources

The appropriateness of existing measures for seed for sowing from approved sources has been evaluated as follows:

- The existing requirements for grape seed for sowing imported from approved sources; including phytosanitary certification endorsed with freedom from viruses of quarantine concern, certification mandatory on-arrival inspection and treatments (sodium hypochlorite [T9371], fungicidal dusting [T9420]) and exception from growth in PEQ; are proposed to continue.
- These measures adequately address the risk posed by seed for sowing from approved sources and additional measures are not required.

3.3 Proposed risk management measures for grapevine propagative material from all sources

The current review proposes pro-active testing and a reduction in the growth period in PEQ for dormant cuttings and tissue cultures from all sources. Proposed testing procedures are based on active testing for quarantine pathogens, using traditional and modern techniques. This approach allows dormant cutting imports to be screened for a minimum period of 16 months in PEQ instead of the current 24 months and tissue cultures to be screened for a minimum period of 12 months in PEQ instead of the current 24 months.

3.3.1 Dormant cuttings

The restriction of grapevine to one year old dormant cuttings with 2–3 internodes from all sources (approved or non-approved sources) is proposed to continue. Fully dormant canes should be imported during January to February from the Northern Hemisphere and July to September from the Southern Hemisphere. If this does not occur there may be delays in the release of planting material because of a too shorter growth period and thereby insufficient material to conduct required testing.

Mandatory on-arrival inspection

The existing requirement for mandatory on-arrival inspection of imported dormant cuttings to verify freedom from disease symptoms, live insects, soil and other extraneous contaminants of quarantine concern is proposed to continue.

Mandatory on-arrival fumigation

The existing requirement for mandatory on-arrival methyl bromide fumigation (T9060) of grapevine dormant cuttings to manage the risk posed by arthropod pests from all sources is proposed to continue.

Alternative treatments to methyl-bromide fumigation for grapevine dormant cuttings, if requested by an exporting country, will be considered by Plant Biosecurity on a case by case basis. Prior to the acceptance of an alternative treatment for grapevine dormant cuttings, Plant Biosecurity would need to assess the efficacy of that fumigant to ensure it gives an equal level of protection to methyl-bromide for all pests likely to be associated with the commodity.

Mandatory hot water treatment

It is proposed that dormant cuttings be subjected to hot water treatment at 50 °C for 30 minutes (instead of 20 minutes) to minimise the risk of phytoplasmas.

- Hot water treatment at 50 °C for 30 minutes is effective against some phytoplasmas (Caudwell *et al*. 1997) and in eliminating most known fungal pathogens and endophytes from grapevine cuttings, including pathogens associated with young grapevine decline (Crous *et al*. 2001).
- After hot water treatment, dormant cuttings must be plunged into cold water to quickly lower the temperature and minimise heat damage to the tissue (Waite *et al*. 2005).

Mandatory sodium hypochlorite treatment

It is proposed that dormant cuttings be subjected to sodium hypochlorite treatment (1% NaOCl for 5 minutes) for surface sterilisation. Sodium hypochlorite treatment of dormant grapevine cuttings has been recommended to facilitate the safe introduction of grapevine propagative material (Frison and Ikin 1991). Treatment with sodium hypochlorite should be undertaken after the hot water treatment outlined above; this should allow some residual effect and increase the efficacy of the sodium hypochlorite treatment.

Mandatory culturing

It is proposed that following hot water and sodium hypochlorite treatments, macerated buds from dormant cuttings be cultured to detect bacterial and fungal pathogens. This broad spectrum culturing test is useful to screen imported dormant cuttings for fungal and bacterial pathogens.

Mandatory growth in PEQ facilities

It is proposed that imported grapevine cuttings be grown in a closed government PEQ facility for a minimum period of 16 months instead of 24 months. The purpose of growth in PEQ facilities is to screen imported grapevine propagative material for pathogens in order to prevent the introduction of quarantine pests into Australia. It is proposed that newly established plants are maintained at 20–25 °C for 12 months in closed quarantine followed by four months growth in screen houses. During growth in PEQ, plants must be subject to pathogen screening, visual inspection and pathogen testing, as outlined below.

Pathogen screening

It is proposed that during PEQ growth period, plants and plantlets are subjected to visual inspection, electron microscopy and active testing, including biological indexing and molecular testing.

Visual inspection

Pathogen screening (visual screening) during growth in PEQ is proposed to continue for the detection of symptomatic pathogens. Fungal and bacterial pathogens associated with grapevines may produce distinct symptoms that make them easy to identify by visual inspection during growth period in PEQ.

Pathogen testing

The proposed pathogen testing during growth in PEQ will include active testing for quarantine pathogens, using traditional and modern techniques. Laboratory methods, including culturing, biological indicators, electron microscopy and molecular tests (PCR) may be used to detect grapevine pathogens.

Bacterial pathogens

- Active pathogen testing including molecular tests for *Xylella fastidiosa*, in addition to hot water treatment and visual inspection is proposed.
- Diagnostic tests, including culturing and microscopy, are proposed for *Xanthomonas campestris* pv. *viticola* and *Xylophilus ampelinus*. However, if symptoms develop during growth in PEQ, molecular testing (including PCR) for *Xanthomonas campestris* pv. *viticola* (Trindade *et al*. 2005) and *Xylophilus ampelinus* (Botha *et al*. 2001) is proposed.

Fungal pathogens

- Newly established plants (from imported propagative material) will be subject to growing season inspection and if symptoms develop during the PEQ period, further diagnostic testing; including culturing, microscopy and molecular tests is proposed.

Phytoplasmas

- Newly established plants (from imported propagative material) will be subject to growing season inspection and active pathogen testing, including a generic PCR.

Proposed pathogen testing procedures are summarised in Table 3.2.

Table 3.2 Proposed screening procedures for bacteria, fungi and phytoplasma

Pathogen type	Mandatory screening			Additional tests[4]	Reference(s)
	Growing season inspection	Culture & microscopy	PCR		
BACTERIA					
Xanthomonas campestris pv. *viticola*	✓	✓		PCR	Trindade *et al*. 2005
Xylella fastidiosa	✓		✓		Luck *et al*. 2012
Xylophilus ampelinus	✓	✓		PCR	Botha *et al*. 2001

[4] If disease symptoms develop

Pathogen type	Mandatory screening			Additional tests[4]	Reference(s)
	Growing season inspection	Culture & microscopy	PCR		
Fungi					
Alternaria viticola	✓	✓			
Cadophora luteo-olivacea	✓	✓			
Cadophora melinii	✓	✓			
Eutypella leprosa	✓	✓			
Eutypella vitis					
Fomitiporia mediterranea	✓	✓		PCR	Pilotti *et al*. 2010
Fomitiporia polymorpha					
Guignardia species	✓	✓			
Inocutis jamaicensis	✓	✓			
Monilinia fructigena	✓	✓			
Phaeoacremonium species	✓	✓		PCR	Aroca and Raposo 2007
Phakopsora species	✓	✓			
Phytoplasma					
Candidatus Phytoplasma asteris	✓		✓		Deng and Hiruki 1991; Lee *et al*. 1995; Schneider *et al*. 1995
Candidatus Phytoplasma fraxini					
Candidatus Phytoplasma pruni					
Candidatus Phytoplasma solani					
Candidatus Phytoplasma ulmi					
Candidatus Phytoplasma vitis					
European stone fruit yellows Phytoplasma					
Phytoplasma 16SrIX					

Viruses

Grapevine viruses are transmissible entities; they can be detected and identified on herbaceous and woody indicator plants. Herbaceous host indexing assays may be completed in a matter of weeks whereas woody indicator assays require a lengthier incubation period (up to two years) to complete (Rowhani *et al*. 2005). Herbaceous hosts are used to test for sap transmissible nepoviruses, whereas woody indicator plants are used to test for phloem limited viruses (Rowhani *et al*. 2005). Laboratory methods; including electron microscopy and molecular tests (PCR); can also be used to detect grape infecting viruses.

- As woody indexing is time consuming, molecular tests are proposed to replace woody indexing, thereby leading to a reduction of the PEQ growth period from a minimum of 24 months to a minimum of 16 months.
- Molecular tests (PCR, RT-PCR, and qPCR) target the genetic material of plant pathogens and specifically test for molecular sequences that are unique to a particular pathogen. Molecular tests can be used for the detection of grapevine pathogens because each pathogen has its own unique genetic code (Van Guilder *et al*. 2008). However, these molecular tests may not detect different strains or variants of a particular virus. Therefore, a combination of biological indexing and molecular tests is proposed to increase the likelihood of detecting viruses and their variants.

Effective and robust diagnostic methods based on a well established combination of biological, serological, and/or molecular tests are required to detect viruses. Proposed mandatory general methods for viruses include:

- Electron microscopy for the identified viruses.
- Herbaceous host indexing for nepoviruses (*Chenopodium quinoa, Chenopodium amaranticolor, Cucumis sativus* and other species may be used as herbaceous indicators).
- Generic molecular tests for *Ampelovirus, Ilarvirus, Maculavirus, Nepovirus* and *Vitivirus*.
- Specific RT-PCR for GVB (strains associated with corky bark).

Proposed diagnostic methods for virus groups are as follows:

<u>Ampeloviruses</u>

- Detection of ampeloviruses will include, but will not be limited to, the following tests:
  - Mandatory generic PCR for GLRaV-6, 10, 11 using the dHSP-nest2 / LR5 clusdoL primers (Maliogka *et al*. 2008b); and
  - Mandatory specific one step RT-PCR for GLRaV-7 using the primer pair LR7-F/ LR7-R (Engel *et al.* 2008).

<u>Ilarviruses</u>

- Detection of ilarviruses will include, but will not be limited to, the following tests:
  - Herbaceous host indexing, including *Cucumis sativus* or *Nicotiana glutinosa* (grapevine line pattern virus); and
  - Mandatory genus specific nested PCR for ilarviruses (GAMV, GLPV) using the Ilar2F5/Ilar2R9 primer pair (Untiveros *et al*. 2010).

<u>Maculaviruses</u>

- Detection of maculaviruses will include, but will not be limited to, the following test:
  - Mandatory genus specific nested PCR for maculaviruses (GAMaV, GRGV) using the primer pair RD1/RGAP (Sabanadzovic *et al*. 2000).

<u>Nepoviruses</u>

- Herbaceous host indexing using a range of herbaceous indicators, that include but are not limited to:
  - *Chenopodium quinoa* (ArMV, BLMoV, CLRV, GARMV GBLV, GCMV, GDefV, GFLV, GTRSV, PRMV, RpRSV, SLRV, TBRV, ToRSV);
  - *Chenopodium amaranticolor* (ArMV, BLMoV, CLRV, GARMV, GBLV, GCMV, GDeF, GFLV, PRMV, RpRSV, SLRV, TBRV, ToRSV);
  - *Cucumis sativus* (AILV, SLRV, TBRV, ToRSV); and
- Generic PCR testing for nepoviruses (Digiaro *et al*. 2007; Wei and Clover 2008). If nepoviruses are detected, then virus specific tests must be performed. Virus specific tests may include (but are not limited to):
  - ArMV and GFLV using the primer pair M2/M3 (Wetzel *et al.* 2002);
  - CLRV using the primer pair CLRV-5/CLRV-3 (Werner *et al.* 1997);
  - GARSV using the primer pair A34-1/ A34-2 (Gokalp *et al.* 2003);
  - GCMV and TBRV using the primer pair P1/P2 (Le Gall *et al.* 1995);
  - GDefV using the primer pair N66-1/ N66-2 (Cigsar *et al.* 2003);

  - PRMV using the primer pair PRMVV1/ PRMVC1 (Kheder *et al.* 2004);
  - RpRSV using the primer pair RpRSVF1/ RpRSVR1 (Ochoa-Corona *et al.* 2006);
  - SLRSV using the primer pair SLRSV-5D / SLRSV-3D (Faggioli *et al.* 2002); and
  - ToRSV using the primer pair D1/U1 (Griesbach 1995).

<u>Vitiviruses</u>

- Detection of vitiviruses will include, but will not be limited to, the following tests:
  - Mandatory specific RT-PCR for GVB (strains associated with corky bark) (Minafra and Hadidi 1994); and

<u>Tombusviruses</u>

- Detection of tombusviruses will include, but will not be limited to, the following tests:
  - Mandatory genus specific nested PCR for *Tombusvirus* (PetAMV) using the pairs TomCPR/TomCPR (Russo *et al*. 2002) or TBSVGralF1/ TBSVGralR1 (Harris *et al*. 2006).

3.3.2 Tissue cultures (microplantlets)

It is proposed that imported tissue cultures (microplantlets) should be well rooted prior to arrival as this helps in their establishment out of agar into the growth media.

Mandatory on-arrival inspection

The existing requirement for mandatory on-arrival inspection of tissue culture (microplantlets) to verify freedom from bacterial and fungal infection, disease symptoms, live insects and other extraneous contamination of quarantine concern is proposed to continue.

Mandatory culturing

It is proposed that direct culturing be undertaken to screen imported tissue cultures (microplantlets) for bacterial pathogens.

Mandatory growth in PEQ facilities and pathogen screening

The existing requirements for imported tissue culture (microplantlets) to be grown in a closed government PEQ facility is proposed to continue.

It is proposed that mandatory hot water treatment of plants established from tissue cultures (that requires two years) be replaced by mandatory PCR for detecting *Xylella fastidiosa*. Additionally, mandatory indexing for corky bark associated virus using LN 33 is replaced by a mandatory PCR.

The introduction of mandatory molecular testing leads to a reduction of the PEQ period. Therefore, it is proposed tissue cultures (microplantlets) be grown in a PEQ facility for a minimum of 12 months for pathogen screening, including biological indexing and molecular tests (Table 3.2 [bacteria and phytoplasma] and 3.3 [virus indexing]).

A summary of proposed grapevine virus indexing procedures is provided in Table 3.3.

Table 3.3 Proposed grapevine virus indexing procedures

Pathogen type	Mandatory tests: Electron microscopy	Mandatory tests: Herbaceous indexing	Mandatory tests: PCR or RT-PCR	Additional tests[5]	Reference(s)
Arabis mosaic virus (ArMV) – grape strain	✓	✓	◆	RT-PCR	Wetzel *et al*. 2002
Artichoke Italian latent virus (AILV)		✓	◆	RT-PCR	Minafra *et al*. 1994
Blueberry leaf mottle virus (BLMoV) New York strain		✓	◆		
Cherry leafroll virus (CLRV) – grape isolate		✓	◆	RT-PCR	Werner *et al*. 1997
Grapevine ajinashika virus (GAgV)[6]					
Grapevine Anatolian ringspot virus (GARSV)		✓	◆	RT-PCR	Gokalp *et al*. 2003
Grapevine angular mosaic-associated virus (GAMaV)			✡		Sabanadzovic *et al*. 2000
Grapevine asteroid mosaic associated virus (GAMV)			★		Untiveros *et al*. 2010
Grapevine berry inner necrosis virus (GINV)		✓	◘		Yoshikawa *et al*. 1997
Grapevine Bulgarian latent virus (GBLV)		✓	◆		
Grapevine chrome mosaic virus (GCMV)		✓	◆		Le Gall *et al*. 1995
Grapevine deformation virus (GDefV)		✓	◆	RT-PCR	Cigsar *et al*. 2003
Grapevine fanleaf virus (GFLV)		✓	◆	RT-PCR	Wetzel *et al*. 2002
Grapevine leafroll associated virus (GLRaV–6,10, 11)			●		Maliogka *et al*. 2008b
Grapevine leafroll associated virus (GLRaV–7)			◘		Engel *et al*. 2008
Grapevine line pattern virus (GLPV)		✓	★		Untiveros *et al*. 2010
Grapevine red globe virus (GRGV)			✡		Sabanadzovic *et al*. 2000
Grapevine rupestris vein feathering virus (GRVFV)		✓	◘		Abou Ghanem-Sabanadazovic *et al*. 2003
Grapevine syrah virus-I (GSyV-I)			✡		Sabanadzovic *et al*. 2000
Grapevine Tunisian ringspot virus (GTRSV		✓	◆		
Grapevine virus B (corky bark strains) (GVB)			Δ		Minafra and Hadidi 1994
Grapevine virus E (GVE)			⇧		Dovas and Katis 2003
Peach rosette mosaic virus (PRMV)		✓	◆		Kheder *et al*. 2004
Petunia asteroid mosaic virus (PeAMV)			☒		Russo *et al*. 2002; Harris *et al*. 2006
Raspberry ringspot virus (RpRSV) – grapevine strain		✓	◆		Ochoa-Corona *et al*. 2006
Sowbane mosaic virus (SoMV) – grape infecting strain		✓			
Strawberry latent ringspot virus (SLRSV)		✓	◆		Faggioli *et al*. 2002
Tobacco necrosis virus (TNV) – grape strain		✓	◆		Digiaro *et al*. 2007
Tomato black ring virus (TBRV)		✓	◆		Le Gall *et al*. 1995
Tomato ringspot virus (ToRSV)		✓	◆		Griesbach 1995

◆ Generic *Nepovirus* PCR (Digiaro *et al*. 2007)

☒ Genus specific nested PCR for *Tombusvirus* (Russo *et al*. 2002 or Harris *et al*. 2006)

[5] If disease symptoms develop

[6] No PCR or commercial ELISA test are available, but the disease could possibly be diagnosed based on electron microscopy and biological indexing onto the cultivar Koshu (Martelli 1993).

- ◘ Specific RT-PCR test (Yoshikawa *et al*. 1997; Abou Ghanem-Sabanadazovic *et al*. 2003; or Engel *et al*. 2008)
- ● Genus specific PCR for *Ampelovirus* (Maliogka *et al*. 2008b)
- ★ Genus specific nested PCR for ilarviruses (Untiveros *et al*. 2010)
- ✡ Genus specific nested PCR for maculaviruses (Sabanadzovic *et al*. 2000)
- Δ Strain specific PCR (Minfra and Hadidi 1994)
- ⇮ Generic PCR test for *Vitivirus* (Dovas and Katis 2003)

Plant Biosecurity acknowledges that advances in serological or molecular techniques is an on-going process and therefore the proposed PCR tests can be replaced when more up-to-date testing procedures are validated.

3.3.3 Seed for sowing (non-approved sources)

Although several nepoviruses are recorded on grapevines, not all of them are seed-borne (Richardson 1990). Seed-borne viruses of grapevine include ArMV, BLMoV-NY, GAMaV, GCMV, GBLV, GFLV, GLPV, GRSPaV, PRMV, TBRV and ToRSV (Uyemoto 1975; Uyemoto *et al*. 1977; Martelli 1978; Lazar *et al*. 1990; Richardson 1990; Lehoczky *et al*. 1992; Girgis *et al*. 2009). Therefore during growth in PEQ, seedlings must be visually inspected for symptoms of viruses.

Mandatory on arrival inspection

The existing requirement for mandatory on-arrival inspection of grapevine seed to verify freedom from live insects, soil, disease symptoms, prohibited seeds, other plant material (e.g. leaf, stem material, fruit pulp, pod material etc.), animal material (e.g. animal faeces, feathers etc.) and any other extraneous contamination of quarantine concern is proposed to continue.

Mandatory sodium hypochlorite treatment

The existing requirement for mandatory surface sterilisation with sodium hypochlorite treatment (1% NaOCl for 10 minutes) of imported grape seed is proposed to continue.

Mandatory seed fungicide treatment

The existing requirement for mandatory fungicide treatment of imported grape seed with Thiram fungicide prior to sowing is proposed to continue.

Mandatory growth in PEQ facilities

Mandatory propagation and growth of imported grape seeds in a closed government PEQ facility is proposed to continue. However growth in the PEQ facility for three months may not be sufficient for establishment of plant from seed and to complete pathogen screening. Therefore a change in the PEQ growth period is proposed—from three months to nine months.

Mandatory virus testing

It is proposed that in addition to visual inspection for symptoms during growth in PEQ facility, the following procedures are required to detect viruses:

- Electron microscopy is mandatory for the identified seed-borne viruses.
- Herbaceous host indexing and generic PCR for nepoviruses is mandatory. Detection of nepoviruses on indicator plants will require further testing, including virus specific PCR, RT-PCR, or qPCR (Table 3.3).
- Detection of ilarviruses will include, but will not be limited to, the following tests:
  - Herbaceous host indexing; and
  - Mandatory molecular testing PCR (Table 3.3).

3.4 Proposed measures for grapevine propagative material from approved sources

Existing measures for grapevine propagative material from approved sources are proposed to continue and additional requirements are not proposed. However, proposed changes to import requirements for material from non-approved sources will also apply to material from approved sources (e.g. the PEQ period will be reduced from 24 months to 16 months for dormant cuttings and 12 months for tissue cultures).

If the required pathogen screening is completed at an overseas approved source then Plant Biosecurity may reduce further the proposed PEQ growth requirement.

3.4.1 Seed for sowing (approved sources)

Curently seeds sourced from approved sources (Foundation Plant Services, University of California, USA) are permitted entry into Australia. The existing policy requires certification that the seeds were sourced from mother plants grown in the USA which were tested and found to be free of *Arabis mosaic nepovirus* (ArMV), *Blueberry leaf mottle nepovirus* (BLMV), *Grapevine Bulgarian latent nepovirus* (GBLN), *Peach rosette mosaic nepovirus* (PRMN), *Raspberry ringspot nepovirus* (RpRSV), *Strawberry latent ringspot nepovirus* (SLRSV), *Tomato blackring nepovirus* (TBRV) and *Tomato ringspot nepovirus* (ToRSV).

As part of the review of policy, the current seed-borne list of visuses associated with grapevine seed was revised and updated.

- *Grapevine angular mosaic-associated virus* (GAMaV) and *Grapevine fanleaf virus* (GFLV) were added to the list as these seed-borne viruses are present in the USA;
- *Raspberry ringspot nepovirus* (RpRSV) and *Strawberry latent ringspot nepovirus* (SLRSV) were removed from the list as there is no published evidence that these viruses are seed-borne in grapevine; and
- *Tobacco ringspot nepovirus'* (TRSV) was removed from the list as it is present in Australia.

Based on this review, the new proposed conditions for grapevine seeds from Foundation Plant Services, University of California, USA includes:

- an import permit;
- a Phytosanitary Certificate (seed was sourced from virus tested mother plants free of '*Arabis mosaic nepovirus*(ArMV), *Blueberry leaf mottle nepovirus* (BLMV), *Grapevine angular mosaic-associated virus* (GAMaV), *Grapevine Bulgarian latent nepovirus* (GBLN), *Grapevine fanleaf virus* (GFLV), *Peach rosette mosaic nepovirus* (PRMN), *Tomato blackring nepovirus* (TBRV) and *Tomato ringspot nepovirus* (ToRSV)'; and
- on-arrival inspection of seed to verify freedom from soil, disease symptoms and other extraneous contamination of quarantine concern.

Specific conditions including surface sterilization (T9371), fungicidal treatment (T9420) and release from quarantine is supported to continue.

4 Framework for approval of high health sources and production requirements

4.1 Framework for approval of high health sources

Foundation Plant Services, California, USA is currently the only source approved to supply pathogen tested grapevine propagative material to Australia. However, Plant Biosecurity will consider requests for approval of other overseas sources (e.g. institutions, NPPOs) based on the compliance with international standards and a rigorous examination of the proposed facilities. The key factors for approval of high health sources include:

- **Capacity for National Authority oversight—**facilities producing pathogen tested propagative material must be authorized/approved or operated directly by the National Plant Protection Organization (NPPO), as import conditions routinely require phytosanitary certification to be provided by the NPPO.
- **Capacity to produce pathogen tested propagative material—**facilities must demonstrate their capacity to produce and maintain high health plant material through appropriate disease screening/testing and monitoring.
- **Capacity to meet containment and security requirements—**facilities for the establishment of pest-free propagative material and testing for pest freedom must be subject to strict physical containment and operational requirements to prevent contamination or infestation of material.
- **Audits and inspections**—all facilities producing pathogen tested propagative material should be officially audited by DAFF to ensure that they continue to meet Australia's requirements.
- **Identity preservation systems—**all facilities must be able to demonstrate their ability to maintain adequate and verifiable safeguards to ensure that propagative material undergoing post-entry quarantine procedures are not diverted, contaminated or intermingled with other material during and following completion of the quarantine measures.
- **On arrival verification—**the requirement for the health status of all consignments of high health propagative material to be verified on-arrival through supporting documentation (e.g. Phytosanitary Certificate, NPPO reports, audit report etc.) and testing as required.

Based on this framework, Australia will consider replacing the conditions for on-arrival pathogen screening with an equivalent set of conditions for approved sources. The key elements of material produced in approved sources are:

- Pathogen screening/testing must be equivalent to Australia's post-entry quarantine screening/testing;
- Each consignment must have a certificate of testing with results, dates and details of the testing methods used issued by the approved source and certified by the NPPO of the exporting country;
- Imported propagative material may be subjected to verification testing for a range of pathogens during growth in a closed government PEQ facility; and
- Where any accredited source does not undertake the complete range of pathogen screening/testing required, those missing tests will be performed during growth in a closed government PEQ facility in Australia.

5 Conclusion

The findings of this draft review of policy are based on a comprehensive analysis of the scientific literature. As part of this revision, the quarantine status of grapevine pathogens was reviewed and several new pests of quarantine concern were identified. Consequently, Plant Biosecurity evaluated the appropriateness of existing risk management measures for the identified risks and proposed additional measures where required.

Proposed significant changes

The current review proposes several changes to the existing policy that will protect plant health while reducing the amount of time required for grapevine dormant cuttings and tissue culture to be grown in PEQ facilities. Major proposed changes are:

- **All grapevine propagative material:**
  - Replacing woody indexing for grapevine virus B (corky bark strains) with mandatory molecular testing; and
  - Introducing mandatory electron microscopy for detection of viruses.
- **Dormant cuttings:**
  - Introducing mandatory surface sterilisation (1% sodium hypochlorite solution for 5 minutes);
  - Increasing hot water treatment time from 20 to 30 minutes at 50 °C; and
  - Reducing the PEQ period from 24 months to a minimum of 16 months.
- **Tissue culture:**
  - Reducing the PEQ period from 24 months to a minimum of 12 months; and
  - Replacing hot water treatment with mandatory PCR for detecting *Xylella fastidiosa*.
- **Seed for sowing:**
  - Increasing the PEQ period from 3 months to 9 months.

Proposed risk management measures

The ultimate goal of phytosanitary measures is to protect plant health and prevent the introduction of identified quarantine pests associated with grapevine propagative material. Plant Biosecurity considers the risk management measures proposed in this draft review of policy will be adequate to mitigate the risks posed by the identified quarantine pests and pathogens.

The proposed risk management measures for propagative material are detailed below.

All sources (unknown health status)

Dormant cuttings

- Mandatory on-arrival inspection fumigation; hot water treatment; and surface sterilisation;
- Mandatory growth in a closed government PEQ facility for a minimum period of 16 months for pathogen screening (visual observation; culturing; and electron microscopy); and
- Active pathogen testing through herbaceous host indexing and molecular tests including, but not limited to, PCR or ELISA.

Tissue cultures (microplantlets)

- Mandatory on-arrival inspection;

- Mandatory growth in a closed government PEQ facility for a minimum period of 12 months for pathogen screening (visual observation; culturing; and electron microscopy); and
- Active pathogen testing through herbaceous host indexing and molecular tests including, but not limited to, PCR or ELISA.

Seed

- Mandatory on-arrival inspection, surface sterilisation; fungicidal treatment; and growth in a closed government PEQ facility for a minimum period of nine months for pathogen screening (visual observation and electron microscopy); and
- Active pathogen testing through herbaceous host indexing and molecular tests including, but not limited to, PCR.

Approved sources (high health sources)

Foundation Plant Services, California, USA is currently the only source approved to supply pathogen tested grapevine propagative material to Australia. However, Plant Biosecurity will consider requests for approval of other overseas sources (e.g. institutions, NPPOs etc), based on the framework proposed in this review. If the requirements of the framework are met, Plant Biosecurity will consider replacing the existing conditions with an alternative set of conditions for approved sources.

The proposed changes to import requirements for dormant cuttings and tissue cultures from non-approved sources will also apply to material from approved sources (e.g. the PEQ period will be reduced to 16 months for dormant cuttings and 12 months for tissue cultures). Seed for sowing from approved sources is currently not subject to PEQ and this is recommended to continue.

Appendices

Appendix A: Initiation and pest categorisation of pests associated with *Vitis* species worldwide

Initiation identifies the pests that occur on *Vitis* species, their status in Australia and their pathway association. In this assessment, **pathway** is defined as *Vitis* propagative material (one-year-old dormant cuttings, seed and tissue culture). Restricting budwood to one-year-old material reduces the risk of opportunistic wound pathogens and wood rots. In addition, dormant cuttings are semi-hardwood and have not developed mature bark. Therefore, pests associated with the hardwood and mature bark of older grapevines is not considered to be on the pathway. As grapevine cuttings are harvested when they are dormant, pests associated with new plant growth (e.g. developing buds, new shoots, tendrils and fruit) do not occur on the pathway. Dormant grapevine cuttings are also free of roots and leaves, consequently pests associated with roots and leaves are not considered to be on the pathway. Please note that the 'Potential to be on pathway' column usually specifies the association of pests with dormant cuttings. Bacteria, phytoplasmas and viruses occurring on tissue culture are considered to be the same as those occurring on dormant cuttings. Seeds are only referred to in the pathway column if the pest is known to be associated with seeds.

Pest categorisation identifies the potential for pests associated with grapevine propagative material to enter, establish, spread and cause economic consequences in Australia, to determine if they qualify as quarantine pests.

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
ARTHROPODS					
ACARI (mites)					
Brevipalpus californicus Banks 1904 [Acari: Tenuipalpidae]	Yes (Naumann 1993)	Assessment not required			
Brevipalpus chilensis Baker 1949 [Acari: Tenuipalpidae]	Not known to occur	**Yes**: Mites lay eggs on the young shoots and leaves or in the unopened buds of grapevines (González 1968, 1983). This mite overwinters as fertilised females, usually in colonies under the bark crevices of host plants (Jeppson *et al*. 1975). Therefore, semi-hardwood dormant cuttings provide a pathway for this mite.	**Yes:** This mite has established in areas with a wide range of climatic conditions (Waterhouse and Sands 2001). It has a wide host range (Waterhouse and Sands 2001), has four to five generations per year (González 1968) and can spread naturally in infested propagative material. Therefore, this mite has the potential for establishment and spread in Australia.	**Yes**: This mite is recognised as a significant pest of grapes in Chile and causes as much as 30% crop loss (González 1983). This mite is regarded as a quarantine pest by trading partners. Therefore, this mite may potentially increase production costs by triggering trading partners to issue specific control measures. As such, this mite has the potential for significant economic consequences in Australia.	**Yes**

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
Brevipalpus lewisi McGregor 1949 [Acari: Tenuipalpidae]	Yes (Naumann 1993)	Assessment not required			
Brevipalpus obovatus Donnadieu 1875 [Acari: Tenuipalpidae]	Yes (Naumann 1993)	Assessment not required			
Brevipalpus phoenicis Geijskes 1936 [Acari: Tenuipalpidae]	Yes (Naumann 1993)	Assessment not required			
Calepitrimerus vitis Nalepa 1905 [Acari: Eriophyidae]	Yes (Naumann 1993)	Assessment not required			
Colomerus vitis Pagenstecher 1857 strain a [Acari: Eriophyidae]	Yes (James and Whiteney 1993)	Assessment not required			
Colomerus vitis Pagenstecher 1857 strain b [Acari: Eriophyidae]	Yes (James and Whiteney 1993)	Assessment not required			
Colomerus vitis Pagenstecher 1857 strain c [Acari: Eriophyidae]	Not known to occur	**Yes**: Mites lay eggs on dormant buds (Carew *et al*. 2004) and overwinter as adults inside grapevine buds (Jeppson *et al.* 1975). Therefore, dormant cuttings may provide a pathway for this mite.	**Yes:** This mite has established in areas with a wide range of climatic conditions (Afonin *et al*. 2008). It has several generations per year (Jepson *et al.* 1975; Carew *et al*. 2004) and can independently spread in infested plant material and by human activities (Jeppson *et al*. 1975; Gonzalez 1983). Therefore, this mite has the potential for establishment and spread in Australia.	**Yes:** *Colomerus vitis* is associated with short shoot syndrome of grape vines (Bernard *et al*. 2005). This mite causes deformation of the primordial bud cluster, distortion of the basal leaves, stunting of the main growing point of the buds and often death of the overwintering buds (Pfeiffer and Schultz 1986). Bud burst failure and high yield losses have been attributed to this mite (Walton *et al*. 2007). This mite may cause yield losses of up to 56% when uncontrolled (Dennill 1991). Therefore, this mite has the potential for economic consequences in Australia.	**Yes**
Bryobia praetiosa Koch 1836 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Bryobia rubrioculus Scheuten 1857 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Eotetranychus carpini Oudemans 1905 [Acari: Tetranychidae]	Not known to occur	No: Tetranychid mites belonging to the genus *Eotetranychus* are foliage feeders and lay eggs on leaves (Jeppson *et al*. 1975); Karban *et al*. 1991; EPPO 2006). These mites overwinter as females under the bark and become active with the new plant growth (HYPPZ 1998). Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for these mites.	Assessment not required		
Eotetranychus lewisi (McGregor 1943) [Acari: Tetranychidae]	Not known to occur		Assessment not required		
Eotetranychus sexmaculatus Riley (1890) [Acari: Tetranychidae]	Yes (CSIRO 2005)		Assessment not required		
Eotetranychus willametti McGregor 1917 [Acari: Tetranychidae]	Not known to occur		Assessment not required		
Eutetranychus orientalis Klein (1936) [Acari: Tetranychidae]	Yes (CSIRO 2005)	Assessment not required			
Oligonychus coffeae Nietner 1861 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Oligonychus mangiferus Rahman & Sapra 1940 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Oligonychus punicae Hirst 1926 [Acari: Tetranychidae]	Yes (CSIRO 2005)	Assessment not required			
Oligonychus vitis Zaher & Shehata 1965 [Acari: Tetranychidae]	Not known to occur	No: Tetranychid mites belonging to *Oligonychus* genus are foliage feeders (Jeppson *et al*. 1975; Gonzalez 1983; Gutierrez and Schicha 1983). Therefore, foliage free dormant cuttings do not provide a pathway for these mites.	Assessment not required		
Oligonychus yothersi McGregor 1914 [Acari: Tetranychidae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Panonychus citri McGregor 1916 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Panonychus ulmi Koch 1836 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Petrobia latens Müller 1776 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Polyphagotarsonemus latus Banks 1904 [Acari: Tarsonemidae]	Yes (Naumann 1993)	Assessment not required			
Tetranychus cinnabarinus (Boisduval) Boudreaux 1956 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Tetranychus desertorum Banks 1900 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Tetranychus kanzawai Kishida 1927 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Tetranychus ludeni Zacher 1913 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
Tetranychus pacificus McGregor 1919 [Acari: Tetranychidae]	Not known to occur	No: These species feed and oviposit on the under surface of leaves (Jeppson *et al*. 1975; McLaren *et al*. 1999; Rieger 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this mite.	Assessment not required		
Tetranychus telarius (Linnaeus 1758) [Acari: Tetranychidae]	Yes (PHA 2001)	Assessment not required			
Tetranychus urticae Koch 1836 [Acari: Tetranychidae]	Yes (Naumann 1993)	Assessment not required			
COLEOPTERA (beetles, weevils)					
Acalolepta vastator Newman 1847 [Coleoptera: Cerambycidae]	Yes (Naumann 1993)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Acrothinium gaschkevitschii (Motschulsky 1860) [Coleoptera: Chrysomelidae]	Not known to occur	No: This species feeds externally on the buds, leaves and flowers of grapevines (Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Adoretus sinicus Burmeister 1855 [Coleoptera: Scarabaeidae]	Not known to occur	No: These scarabaeid beetles lay eggs in the soil, larvae feed on roots and adults feed on the leaves of grapevines (NIIR 2004; Zhang 2005). Therefore, root free and foliage free dormant cuttings do not provide a pathway for these species.	Assessment not required		
Adoretus versutus Harold 1869 [Coleoptera: Scarabaeidae]	Not known to occur		Assessment not required		
Agriotes lineatus Linnaeus 1767 [Coleoptera: Elateridae]	Not known to occur	No: This species lays eggs on or in the soil and larvae feed on roots (Bournier 1976). Therefore, root free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Anomala corpulenta Motschulsky 1854 [Coleoptera: Scarabaeidae]	Not known to occur	No: These scarabaeid beetles lay eggs in the soil, larvae feed on the roots and adults feed on leaves and flowers (Bhuiyan and Nishigaki 1997; Larsson *et al*. 2001; Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for these species.	Assessment not required		
Anomala cuprea Hope 1839 [Coleoptera: Scarabaeidae]	Not known to occur		Assessment not required		
Altica gravida Blackburn 1896 [Coleoptera: Chrysomelidae]	Yes (AFD 2008)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Altica ampelophaga Guérin-Meneville-Menevil 1858 [Coleoptera: Chrysomelidae]	Not known to occur	No: Grape flea beetles overwinter as adults under the soil surface, in wood crevices, under stones, sticks or logs and in or around vineyards (Galvan *et al.* 2007). These beetles emerge in early spring when grapevine buds begin to swell and lay eggs either at the base of the buds, on the buds and bark crevices of grapevines (Benvenuti and Lucchi 2005; Galvan *et al.* 2007), or on the underside of leaves (Alford 2007). Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for these species.	Assessment not required		
Altica chalybea Illiger 1807 [Coleoptera: Chrysomelidae]	Not known to occur	No: Grape flea beetles overwinter as adults under the soil surface, in wood crevices, under stones, sticks or logs and in or around vineyards (Galvan *et al.* 2007). These beetles emerge in early spring when grapevine buds begin to swell and lay eggs either at the base of the buds, on the buds and bark crevices of grapevines (Benvenuti and Lucchi 2005; Galvan *et al.* 2007), or on the underside of leaves (Alford 2007). Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for these species.	Assessment not required		
Altica torquata (LeConte 1859) [Coleoptera: Chrysomelidae]	Not known to occur	No: Grape flea beetles overwinter as adults under the soil surface, in wood crevices, under stones, sticks or logs and in or around vineyards (Galvan *et al.* 2007). These beetles emerge in early spring when grapevine buds begin to swell and lay eggs either at the base of the buds, on the buds and bark crevices of grapevines (Benvenuti and Lucchi 2005; Galvan *et al.* 2007), or on the underside of leaves (Alford 2007). Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for these species.	Assessment not required		
Altica woodsi Isely 1920 [Coleoptera: Chrysomelidae]	Not known to occur	No: Grape flea beetles overwinter as adults under the soil surface, in wood crevices, under stones, sticks or logs and in or around vineyards (Galvan *et al.* 2007). These beetles emerge in early spring when grapevine buds begin to swell and lay eggs either at the base of the buds, on the buds and bark crevices of grapevines (Benvenuti and Lucchi 2005; Galvan *et al.* 2007), or on the underside of leaves (Alford 2007). Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for these species.	Assessment not required		
Ampeloglypter ampelopsis Riley 1869 [Coleoptera: Curculionidae]	Not known to occur	No: Grape cane gallmakers overwinter as adults in the debris on the ground (Riedl and Taschenberg 2008). Grape cane gallmakers lay eggs in new canes in spring and adults start emerging in midsummer (Riedl and Taschenberg 2008). No life stage is associated with dormant cuttings. Therefore, these species are not on the pathway.	Assessment not required		
Ampeloglypter ater LeConte 1876 [Coleoptera: Curculionidae]	Not known to occur	No: Grape cane gallmakers overwinter as adults in the debris on the ground (Riedl and Taschenberg 2008). Grape cane gallmakers lay eggs in new canes in spring and adults start emerging in midsummer (Riedl and Taschenberg 2008). No life stage is associated with dormant cuttings. Therefore, these species are not on the pathway.	Assessment not required		
Ampeloglypter sesostris LeConte 1876 [Coleoptera: Curculionidae]	Not known to occur	No: Grape cane gallmakers overwinter as adults in the debris on the ground (Riedl and Taschenberg 2008). Grape cane gallmakers lay eggs in new canes in spring and adults start emerging in midsummer (Riedl and Taschenberg 2008). No life stage is associated with dormant cuttings. Therefore, these species are not on the pathway.	Assessment not required		
Anoplistes halodendri Kozlovi (Semenov & Znojdo 1934) [Coleoptera:	Not known to occur	No: The wood-boring larvae of this beetle damage	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
Cerambycidae]		grapevines and other woody plants (Luo *et al*. 2005). However, semi-hardwood dormant cuttings are not preferred sites for egg laying for this species. Therefore, dormant cuttings do not provide a pathway for this species.			
Anoplophora glabripennis Motschulsky 1853 [Coleoptera: Cerambycidae]	Not known to occur	No: The wood-boring larvae of this beetle damage grapevines and other woody plants (Lingafelter and Hoebeke 2002). Adults also feed on the leaves, stems and bark of many woody plant species (Yang *et al*. 1995). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for this species.	Assessment not required		
Asynonychus cervinus Boheman (1840) [Coleoptera: Curculionidae]	Yes (CSIRO 2005)	Assessment not required			
Athlia rustica Erichson 1835 [Coleoptera: Scarabaeidae]	Not known to occur	No: This species feeds externally on leaves, buds and flowers of host plants (Gonzalez 1983). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Atrichonotus taeniatulus Berg (1881) [Coleoptera: Curculionidae]	Yes (CSIRO 2005)	Assessment not required			
Aulacophora femoralis chinensis Weise 1923 [Coleoptera: Chrysomelidae]	Not known to occur	No: Adults feed on the leaves of grapes, pears, apples and leaf vegetables while the larvae live in the soil and feed on young plant roots (Li 2004). Therefore, foliage and root free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Bostrychopsis jesuita Fabricius 1775 [Coleoptera: Bostrichidae]	Yes (PHA 2001)	Assessment not required			
Bromius obscurus Linnaeus 1758 [Coleoptera: Chrysomelidae]	Not known to occur	No: Larvae of this species feed on grapevine roots while adults feed on leaves, green bark of canes and cut shallow grooves in berries (Peacock 1992). Eggs are laid in clusters on old loose bark in crevices (BCMAL 2010). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this species.	Assessment not required		
Byctiscus betulae (Linnaeus, 1758) [Coleoptera: Rhynchitidae]	Not known to occur	No: These weevils mostly feed on leaves (Bournier 1976; Zhang 2005) and lay eggs inside of rolled leaves (Trdani and Valič 2004). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Byctiscus lacunipennis (Jekel 1860) [Coleoptera: Rhynchitidae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Callideriphus laetus Blanchard 1851 [Coleoptera: Cerambycidae]	Not known to occur	No: This species primarily feeds on downed logs, stumps and dead or dying branches (Klein-Koch and Waterhouse 2000). Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Carpophilus dimidiatus Fabricius 1992 [Coleoptera: Nitidulidae]	Yes (CSIRO 2005)	Assessment not required			
Carpophilus hemipterus Linnaeus 1758 [Coleoptera: Nitidulidae]	Yes (CSIRO 2005)	Assessment not required			
Carpophilus humeralis Fabricius 1758 [Coleoptera: Nitidulidae]	Yes (Hossain and Williams 2003)	Assessment not required			
Cerasphorus albofasciatus (Laporte and Gory 1835) [Coleoptera: Cerambycidae]	Not known to occur	No: This species is a trunk borer (MAF 2009). Borers generally require thick wood for egg laying and development (Goodwin 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Ceresium sinicum ornaticolle Pic 1907 [Coleoptera: Cerambycidae]	Not known to occur	No: Larvae of this species attack woody parts of grapevines as internal feeders (Luo *et al*. 2005). Borers generally require thick wood for egg laying and development (Goodwin 2005). Semi-hardwood dormant cuttings are not preferred	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.			
Cerosterna scabrator Fabricius 1781 [Coleoptera: Cerambycidae]	Not known to occur	No: This longicorn beetle attacks the main stem and branches of host plants. The female oviposits in the stem and larvae feed inside the stems (Ranga Rao *et al*. 1979). Borers generally require thick wood for egg laying and development (Goodwin 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Chlorophorus annularis Fabricius 1787 [Coleoptera: Cerambycidae]	Yes (PHA 2001)	Assessment not required			
Chlorophorus quatuordecimmaculatus (Chevrolat 1863) [Coleoptera: Cerambycidae]	Not known to occur	No: Larvae bore through larger stems of grapevines while adults eat the flowers (Zhang 2005). Borers generally require thick wood for egg laying and development (Goodwin 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
Colaspis brunnea Fabricius 1798 [Coleoptera: Chrysomelidae]	Not known to occur	No: Larvae of this beetle feed on roots and the adults feed on foliage (Pfeiffer and Schultz 1986). Eggs are laid in the soil (Eaton 1978). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Colaspoides foveiventris Lea 1926 [Coleoptera: Chrysomelidae]	Yes (Naumann 1993)	Assessment not required			
Colaspoides heroni Lea 1915 [Coleoptera: Chrysomelidae]	Yes (AFD 2008)	Assessment not required			
Colaspoides picticornis Lea 1915 [Coleoptera: Chrysomelidae]	Yes (PHA 2001)	Assessment not required			
Coniontis parviceps Casey 1890 [Coleoptera: Tenebrionidae]	Not known to occur	No: The larvae of soil-dwelling tenebrionid are root feeders (Allsopp 1980) and adults are bud and foliage feeders (Flaherty *et al*. 1992). Therefore, foliage and root free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Corticaria japonica Reitter (1877) [Coleoptera: Latridiidae]	Yes (PHA 2001)	Assessment not required			
Cotinis nitida Linnaeus 1764 [Coleoptera: Scarabaeidae]	Not known to occur	No: Adults of this species feed on grape fruits (Brown and Hudson 2005). Eggs are laid in the soil, where the hatching larvae then feed on decaying organic matter (OSU 2010). Therefore, dormant cuttings do not provide a pathway for	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		this species.			
Craponius inaequalis Say 1831 [Coleoptera: Curculionidae]	Not known to occur	No: The grape curculionid lays eggs in the fruit and developing larvae feed on seed and pulp (Bournier 1976). Therefore, dormant cuttings do not provide a pathway for this species. Larvae are not reported to feed internally in seeds; therefore seeds also do not provide a pathway for this species.	Assessment not required		
Didymocantha obliqua Newman (1840) [Coleoptera: Bostrichidae]	Yes (PHA 2001)	Assessment not required			
Dilochrosis atripennis MacLeay 1863 [Coleoptera: Scarabaeidae]	Yes (PHA 2001)	Assessment not required			
Dryocoetiops coffeae (Eggers 1923) [Coleoptera: Scolytinae]	Not known to occur	No: Scolytine beetles are associated with woody plant products (Luo *et al*. 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.			
Egiona viticola Luo [Coleoptera: Curculionidae]	Not known to occur	No: This wood-boring pest of grapevines requires hardwood to lay eggs (Luo *et al*. 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		this species.			
Fidia viticida Walsh 1867 [Coleoptera: Chrysomelidae]	Not known to occur	No: Grape rootworm beetles lay eggs under the bark of grapevine trunks. Immature grubs feed on the roots and adults feed on grape foliage (Dennehy and Clark 2008). Therefore, semi-hardwood foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Gametis jucunda (Faldermann 1835) [Coleoptera: Scarabaeidae]	Not known to occur	No: Larvae of this species feed on roots while adults feed on grapevine flowers (Zhang 2005). Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Glyptoscelis squamulata Crotch 1873 [Coleoptera: Chrysomelidae]	Not known to occur	No: Adult beetles feed on buds, immature leaves and young flowers (Flint 2006). Eggs are laid in cracks and under the bark (Stern and Johnson 1984). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this species.	Assessment not required		
Hayashiclytus acutivittis (Kraatz 1879) [Coleoptera: Cerambycidae]	Not known to occur	No: This cerambycid beetle is associated with grapevines (Zhang 2005). Cerambycid larvae generally feed internally on woody plant material, while adults feed on flowers or foliage (CSIRO	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		1991). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.			
Heteronychus arator Fabricius 1775 [Coleoptera: Scarabaeidae]	Yes (Naumann 1993)	Assessment not required			
Holotrichia diomphalia (Bates 1888) [Coleoptera: Scarabaeidae]	Not known to occur	No: The larvae of this Scarabaeid beetle feed on roots while adults feed on shoots, young leaves and flowers (AQSIQ 2007). Therefore, foliage and root free dormant cuttings do not provide a pathway for these species.	Assessment not required		
Holotrichia oblita (Faldermann 1835) [Coleoptera: Scarabaeidae]	Not known to occur		Assessment not required		
Hoplia callipyge (LeConte 1856) [Coleoptera: Scarabaeidae]	Not known to occur	No: This species lays eggs in the soil (Perry 2002), larvae are root feeders and adults feed on leaves and flowers (Evans and Hogue 2006). Therefore, foliage and root free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Hypothenemus javanus (Eggers 1908) [Coleoptera: Scolytinae]	Not known to occur	No: Scolytine beetles are associated with woody plant products (Luo *et al*. 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for			
Hypothenemus erectus Leconte 1876 [Coleoptera: Scolytinae]	Not known to occur				

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		this species.			
Hypothenemus eruditus Westwood 1836 [Coleoptera: Scolytinae]	Yes (PHA 2001)	Assessment not required			
Leptopius robustus (Olivier 1807) [Coleoptera: Curculionidae]	Yes (Naumann 1993)	Assessment not required			
Limonius canus Leconte 1853 [Coleoptera: Elateridae]	Not known to occur	No: Click beetle lays eggs in soil and newly hatched larvae feed on roots (Berry 1998).These pests overwinter as larvae or as recently developed adults in the soil. Adults feed on buds in spring (Bentley *et al*. 2008). Therefore, root free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Linda fraterna Chevrolat 1852 [Coleoptera: Cerambycidae]	Not known to occur	No: Longicorn beetles attack mature trees (Smith 1996). Adult beetles lay eggs into crevices or cracks in the bark on the trunk or main branches of host plants (Smith 1996). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Liparetrus atriceps Macleay 1864 [Coleoptera: Scarabaeidae]	Yes (PHA 2001)	Assessment not required			
Listroderes difficilis Germain 1895 [Coleoptera: Curculionidae]	Yes (Ronald and Jayma 1992)	Assessment not required			
Listroderes costirostris Schönherr 1826 [Coleoptera: Curculionidae]	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Macrodactylus subspinosus Fabricius 1775 [Coleoptera: Scarabaeidae]	Not known to occur	No: Adults feed externally on flowers, buds, foliage and fruits (OARDC 2008) and eggs of this species are laid in the soil (McLeod and Williams 1990). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Maladera orientalis (Motschulsky 1857) [Coleoptera: Scarabaeidae]	Not known to occur	No: Larvae feed on the roots of grapevines while adults feed on the young shoots, leaves, and flowers of grapes (Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Melalqus confertus LeConte [Coleoptera: Bostrichidae]	Not known to occur	No: This wood-boring beetle lays eggs in protected areas and emerging larvae bore into dead wood where they continue to feed (Flaherty *et al*.1992). During bud swell, adults feed on buds and bore into canes directly through buds or burrow into the canes at the bud axils destroying the bud and weakening the twig (Flaherty *et al*. 1992). Strong wind can cause infested canes to twist and break at feeding sites (Flaherty *et al*. 1992). Dormant canes are not preferred for adult feeding and	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		larval boring, and therefore do not provide a pathway for this species.			
Melolontha melolontha Fabricius 1775 [Coleoptera: Scarabaeidae]	Not known to occur	No: This species lays eggs in the soil (AgroAtlas 2009c) and larvae feed on roots and other underground plant parts (Bournier 1976). Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Micrapate humeralis (Blanchárd 1851) [Coleoptera: Bostrichidae]	Not known to occur	No: Bostrichids are associated with hardwoods, shrubs and woody vines (Booth *et al*. 1990). Eggs are laid in vine trunks and hatching larvae penetrate into the wood and construct a gallery in which they live and feed (Gonzalez 1983). These species overwinter as larvae, pupae and adults. Semi-hardwood dormant cuttings are not the preferred site for adult feeding and larval boring. Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Micrapate scabrata (Erichson 1847) [Coleoptera: Bostrichidae]	Not known to occur		Assessment not required		
Monolepta australis Jacoby 1882 [Coleoptera: Chrysomelidae]	Yes (PHA 2001)	Assessment not required			
Monolepta divisa Blackburn 1888 [Coleoptera: Chrysomelidae]	Yes (PHA 2001)	Assessment not required			
Naupactus leucoloma Boheman 1840	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Coleoptera: Curculionidae]					
Naupactus xanthographus Germar Sturm 1826 [Coleoptera: Curculionidae]	Not known to occur	No: Larvae of this species damage the roots and adults feed on the foliage of grapevines (Gonzalez 1983). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Neoclytus caprea Say 1824 [Coleoptera: Cerambycidae]	Not known to occur	No: This species is associated with dead wood (Hovore 1983). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Neoterius mystax Blanchard 1851 [Coleoptera: Bostrichidae]	Not known to occur	No: This opportunistic borer is found in trunks and branches of host plants (Gonzalez 1983). Bostrichids require hard wood for egg laying (Madge 2007). Semi-hardwood dormant cuttings are not preferred sites for egg laying and development. Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Oides decempunctata Billberg 1808 [Coleoptera: Chrysomelidae]	Not known to occur	No: *Oides* species lay eggs either in the soil or on the soil surface (Park *et al.* 2001) or beneath the bark (Joshi and Gupta 1988). Chrysomelid	Assessment not required		
Oides scutellata Hope 1831 [Coleoptera: Chrysomelidae]	Not known to occur		Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		adults and larvae feed on young foliage, flowers and roots (Booth *et al*. 1990). Therefore, root and foliage free dormant cuttings do not provide a pathway for these species.			
Orthorhinus cylindrirostris Schoenherr 1825 [Coleoptera: Curculionidae]	Yes (PHA 2001)	Assessment not required			
Orthorhinus klugi Boheman 1835 [Coleoptera: Curculionidae]	Yes (Farquhar and Williams 2000)	Assessment not required			
Oryzaephilus surinamensis Linnaeus 1758 [Coleoptera: Silvanidae]	Yes (PHA 2001)	Assessment not required			
Otiorhynchus cribricollis Gyllenhal 1834 [Coleoptera: Curculionidae]	Yes (Farquhar and Williams 2000)	Assessment not required			
Otiorhynchus rugosostriatus Goeze 1777 [Coleoptera: Curculionidae]	Yes (Naumann 1993)	Assessment not required			
Otiorhynchus singularis Linnaeus 1829 [Coleoptera: Curculionidae]	Not known to occur	No: This species lays eggs at a shallow depth in the soil and hatching larvae feed on roots (Alford 2007). Adults of this species feed externally on buds (Alford 2007). Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Otiorhynchus sulcatus Germar 1824 [Coleoptera: Curculionidae]	Yes (Naumann 1993)	Assessment not required			
Paracotalpa ursina Horn 1867 [Coleoptera: Scarabaeidae]	Not known to occur	No: This species is an external feeder of buds and very young shoots (Pimentel	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		2007). Therefore, foliage free dormant cuttings do not provide a pathway for this species.			
Paraphloeostiba gayndahensis MacLeay 1873 [Coleoptera: Staphylinidae]	Yes (Thayer 2001)	Assessment not required			
Pelidnota punctata (Linnaeus 1758) [Coleoptera: Scarabaeidae]	Not known to occur	No: Larvae of grapevine beetles feed and live in decaying hardwood stumps, roots and logs, and adults feed on foliage (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Peritelus sphaeroides (Germar 1824) [Coleoptera: Curculionidae]	Not known to occur	No: This bud weevil lays eggs in the soil and hatching larvae feed on roots. Adults attack buds, young foliage and flowers (Alford 2007). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Phlyctinus callosus Boheman 1834 [Coleoptera: Curculionidae]	Yes (Farquhar and Williams 2000)	Assessment not required			
Phymatodes albicinctus Bates 1873 [Coleoptera: Cerambycidae]	Not known to occur	No: Larvae of this species feed internally on woody parts of the grapevine (Luo *et al*. 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		do not provide a pathway for this species.			
Phymatodes mediofasciatus Pic 1933 [Coleoptera: Cerambycidae]	Not known to occur	No: Larvae of this species feed internally on woody parts of the grapevine (Cherepanov 1991). Semi-hardwood dormant cuttings are not preferred sites for egg laying. Therefore, dormant cuttings do not provide a pathway for this species.	Assessment not required		
Popillia japonica Newman 1841 [Coleoptera: Scarabaeidae]	Not known to occur	No: Scarabaeid larvae feed on plant roots and adults feed on foliage or flowers (Flaherty 1992 *et al.*). *Popillia* species lay eggs in the soil and emerging larvae feed on the roots (Zhang 2005; EPPO 2006, Tan *et al*. 1998). Feeding adults skeletonise plant leaves and can cause complete defoliation (Regniere *et al*. 1983). Therefore, foliage free and root free dormant cuttings do not provide a pathway for *Popollia* species.	Assessment not required		
Popillia mutans Newman 1838 [Coleoptera: Scarabaeidae]	Not known to occur		Assessment not required		
Popillia quadriguttata Fabricius 1787 [Coleoptera: Scarabaeidae]	Not known to occur		Assessment not required		
Proagopertha lucidula Faldermann 1835 [Coleoptera: Scarabaeidae]	Not known to occur	No: This scarabaeid beetle lays eggs in the soil, larvae feed on roots and adults feed on leaves and flowers (Lee *et al*. 1973). Therefore, foliage free and root free dormant cuttings do not provide a	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		pathway for this beetle.			
Protaetia brevitarsis Lewis 1879 [Coleoptera: Scarabaeidae]	Not known to occur	No: Larvae feed on roots of grapevines while adults feed on buds, leaves, flowers and fruit of grapes (Zhang 2005). Therefore, foliage free and root free dormant cuttings do not provide a pathway for this beetle.	Assessment not required		
Rhyparida dimidiate Baly 1861 [Coleoptera: Chrysomelidae]	Yes (Naumann 1993)	Assessment not required			
Rhyparida polymorpha Lea 1915 [Coleoptera: Chrysomelidae]	Yes (AFD 2008)	Assessment not required			
Scelodonta brevipilis Lea 1915 [Coleoptera: Chrysomelidae]	Yes (PHA 2001)	Assessment not required			
Scelodonta lewisii Baly 1874 [Coleoptera: Chrysomelidae]	Not known to occur	No: These chrysomelid beetles damage the sprouting buds and also feed on tender shoots, pedicels, leaves and tendrils (Sun *et al*. 1992; NHB 2007). Therefore, foliage free dormant cuttings do not provide a pathway for these beetles.	Assessment not required		
Scelodonta strigicollis Motschulsky 1866 [Coleoptera: Chrysomelidae]	Not known to occur		Assessment not required		
Sinoxylon perforans Schrank 1789 [Coleoptera: Bostrichidae]	Not known to occur	**Yes:** These species lay eggs into branches and emerging larvae tunnel into new shoots (Filip 1986; Moleas 1988). Adults are twig borers and feeds on shoots and branches and have a long life cycle. Therefore, dormant cuttings may harbour larvae and may provide a pathway for these	**Yes:** These species occur naturally in temperate climates (Filip 1986; Moleas 1988) and would find both climatic conditions and host plants suitable for survival and establishment in Australia. Independent spread is facilitated by active flying (Fettig 2005). Therefore,	**Yes**: *Sinoxylon perforans* is recorded as infesting 30–40% of grapevines in Romania (Filip 1986) and is becoming a serious pest in Italy (Ragazzini 1996). *Sinoxylon sexdentatum* has been recorded as causing severe infestations (28%) in a two year old vineyard in Italy (Moleas 1988). Therefore, these pests	**Yes**
Sinoxylon sexdentatum Olivier 1790 [Coleoptera: Bostrichidae]	Not known to occur				**Yes**

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		bostrichids.	these species have the potential to establish and spread in Australia.	have the potential for economic consequences in Australia.	
Sitona discoideus Gyllenhal 1834 [Coleoptera: Curculionidae]	Yes (PHA 2001)	Assessment not required			
Stenygrinum quadrinotatum Bates 1873 [Coleoptera: Cerambycidae]	Not known to occur	No: Larvae of this species attack woody parts of grape plants as internal borers (Luo *et al*. 2005).Semi-hardwood dormant cuttings are not preferred sites for egg laying and development. Therefore, semi-hardwood dormant cuttings do not provide a pathway for this species.	Assessment not required		
Trichoferus campestris Faldermann 1835 [Coleoptera: Cerambycidae]	Not known to occur	No: This species is a timber borer that has been intercepted in dunnage (Iwata and Yamada 1990; Grebennikov *et al*. 2010). Borers require thick wood for egg laying and development (Goodwin 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying and development. Therefore, semi-hardwood dormant cuttings do not provide a pathway for this species.	Assessment not required		
Tristaria grouvellei Reitter 1878 [Coleoptera: Bostrichidae]	Yes (PHA 2001)	Assessment not required			
Trogoxylon impressum Comolli 1837	Yes (PHA 2001)	Assessment not required			

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
[Coleoptera: Lyctidae]					
Xyleborus cristatulus Schedl 1953 [Coleoptera: Curculionidae]	Not known to occur	No: Scolytine beetles are associated with woody plant products (Luo *et al*. 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying and development. Therefore, semi-hardwood dormant cuttings do not provide a pathway for this species.			
Xylobosca bispinosa MacLeay 1872 [Coleoptera: Bostrichidae]	Yes (Naumann 1993)	Assessment not required			
Xylopsocus gibbicollis MacLeay 1872 [Coleoptera: Bostrichidae]	Yes (Naumann 1993)	Assessment not required			
Xylotrechus pyrrhoderus Bates 1873 [Coleoptera: Cerambycidae]	Not known to occur	No: Larvae bore into the roots, stems and branches of grapevines (Zhang 2005). Borers require thick wood for egg laying and development (Goodwin 2005). Semi-hardwood dormant cuttings are not preferred sites for egg laying and development. Therefore, semi-hardwood dormant cuttings do not provide a pathway for this species.	Assessment not required		
DERMAPTERA (earwigs)					
Forficula auricularia Linnaeus 1758 [Dermaptera: Forficulidae]	Yes (Weiss and McDonald 1998)	Assessment not required			
DIPTERA (flies)					
Bactrocera dorsalis (Hendel 1912)	Not known to	No: This species damages			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Diptera: Tephritidae]	occur	fruit (White and Elson-Harris 1992). None of the life stages are associated with dormant cuttings; therefore this pest is not on the pathway.			
Bactrocera tryoni Froggatt 1897 [Diptera: Tephritidae]	Yes (Maliptail *et al*. 1996)	Assessment not required			
Ceratitis capitata Wiedemann 1824 [Diptera: Tephritidae]	Yes (Smith *et al*. 1997)[7]	Assessment not required			
Ceratitis rosa Karsch 1887 [Diptera: Tephritidae]	Not known to occur	No: This species damages fruits (White and Elson-Harris 1992; Smith *et al*. 1997). None of the life stages are associated with dormant cuttings; therefore this pest is not on the pathway.	Assessment not required		
Contarinia johnsoni Felt 1909 [Diptera: Cecidomyiidae]	Not known to occur	No: Grape blossom midges lay eggs in unopened grape flower buds and hatching larvae eat the inner portions of the flower (Williams *et al*. 2011). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Drosophila melanogaster Meigen 1830 [Diptera: Drosophilidae]	Yes (Naumann 1993)	Assessment not required			
Drosophila simulans Sturtevant 1919 [Diptera: Drosophilidae]	Yes (PHA 2001)	Assessment not required			
Drosophila suzukii matsumura 1931 [Diptera: Drosophilidae]	Not known to occur	No: This species preferentially lays eggs on fully ripened fruits of host plants (Kanzawa	Assessment not required		

[7] Restricted distribution

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		1936). Therefore, dormant cuttings do not provide a pathway for this species.			
Lasioptera vitis Osten Sacken 1862 [Diptera: Cecidomyiidae]	Not known to occur	No: Eggs are laid either on or in leaves, leaf petioles, tendrils or cluster stems, causing gall formation on these plant parts (Williams *et al*. 2011). The emerging larvae feed within the gall and later on larvae leave the galls, fall to the soil and pupate. Dormant cuttings are not egg laying sites for gall-forming flies and therefore do not provide a pathway for this pest.	Assessment not required		
HEMIPTERA (aphids, leafhoppers, mealybugs, psyllids, scales, true bugs, whiteflies)					
Acia lineatifrons Naude 1926 [Hemiptera]	Not known to occur	No: This species lays eggs on the underside of leaves (Marais 1997) and adults feed on leaves and suck sap from the phloem (Marais 1997). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Aleurolobus taeonabe (Kuwana 1911) [Hemiptera: Aleyrodidae]	Not known to occur	No: Adults and nymphs suck plant juice from the leaves and grape berries (Li 2004). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Amblypelta lutescens lutescens Distant 1911 [Hemiptera: Coreidae]	Yes (Naumann 1993)	Assessment not required			
Aonidiella aurantii Maskell 1879 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Aonidiella orientalis Newstead 1894 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Aphis craccivora Koch 1854 [Hemiptera: Aphididae]	Yes (Naumann 1993)	Assessment not required			
Aphis fabae Scopoli 1763 [Hemiptera: Aphididae]	Not known to occur	No: These aphid species overwinter as eggs on their primary hosts (Cammell 1981; Mackenzie and Dixon 1990; OHU 2010) and adults move to secondary hosts, in the summer months and attack the foliage, flowers and twigs of host plants (Mackenzie 1996; Liburd *et al*. 2004; Graham 2007). Therefore, foliage free dormant cuttings do not provide a pathway for these aphids.	Assessment not required		
Aphis illinoisensis Shimer 1866 [Hemiptera: Aphididae]	Not known to occur		Assessment not required		
Aphis spiraecola Patch 1914 [Hemiptera: Aphididae]	Yes (Naumann 1993)	Assessment not required			
Arboridia adanae Diabola 1957 [Hemiptera: Cicadellidae]	Not known to occur	No: These leafhoppers feed on the leaf-mesophyll tissue of *Vitis* species (Bournier 1976). *Arboridia adanae* eggs are laid on the leaves (Kharizanov 1969). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Arboridia apicalis Nawa 1913 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Arboridia hussaini Ghauri 1963 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Arboridia Kermanshah Dlabola 1963 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Arboridia viniferata Sohi & Sandhu 1971	Not known to		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Hemiptera: Cicadellidae]	occur				
Aspidiotus destructor Signoret 1869 [Hemiptera: Diaspididae]	Yes (PHA 2001)	Assessment not required			
Aspidiotus nerii Bouché 1966 [Hemiptera: Diaspididae]	Yes (PHA 2001)	Assessment not required			
Asterolecanium pustulans Cockerell 1892 [Hemiptera: Asterolecaniidae] (synonym: *Russellaspis pustulans pustulans* Cockerell)	Not known to occur	No: Oleander pit scale is found on the leaves, bark, stems and fruit of host plants (Hamon 1977), including grapevines (Ben-Dov *et al*. 2012). The severity of pit development around the scale is dependent on the susceptibility of host plants (Hamon 1977). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Balclutha hebe Kirkaldy 1976 [Hemiptera: Cicadellidae]	Not known to occur	No: This species feeds and lays eggs on the leaves of host plants (Abu-Yaman 1967). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Ceroplastes rusci Linnaeus 1758 [Hemiptera: Coccidae]	Yes (CSIRO 2005)	Assessment not required			
Chrysomphalus aonidum Linnaeus 1758 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Chrysomphalus dictyospermi Morgan 1889 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Cicadella viridis Linnaeus 1758 [Hemiptera: Cicadellidae]	Not known to occur	No: This species often occurs in fens and marshes (Nickel	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		and Remane 2002) and in vineyards (Mazzoni *et al*. 2001). This leafhopper species feeds on the leaves of host plants (Silverside 2006). Therefore, foliage free dormant cuttings do not provide a pathway for this leafhopper.			
Coccus hesperidum Linnaeus 1758 [Hemiptera: Coccidae]	Yes (Naumann 1993)	Assessment not required			
Colgar peracutum Walker 1858 [Hemiptera: Flatidae]	Yes (Naumann 1993)	Assessment not required			
Creontiades dilutus Stal 1859 [Hemiptera: Miridae]	Yes (Naumann 1993)	Assessment not required			
Daktulosphaira vitifolii Fitch 1855 [Hemiptera: Phylloxeridae]	Yes (Naumann 1993)	Assessment not required			
Diaspidiotus ancylus Putnam 1878 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Diaspidiotus perniciosus (Comstock) Cockerell 1899 [Hemiptera: Diaspididae]	Yes (PHA 2001)	Assessment not required			
Diaspidiotus uvae Comstock 1881 [Hemiptera: Diaspididae]	Not known to occur	No: Grape scale is associated with two year old wood and spends most of its life under the protection of its waxy scale cover (Williams *et al*. 2011). Therefore, one year old dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Dolycoris baccarum (Linnaeus 1758) [Hemiptera: Pentatomidae]	Not known to occur	No: Nymphs and adults suck sap from young buds, leaves, young shoots and fruit of	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		grapevines (Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this insect.			
Draeculacephala minerva Ball 1927 [Hemiptera: Cicadellidae]	Not known to occur	No: Sharpshooters are xylophagous and feed on leaves, buds, shoots and stems of grapevine (Hill and Purcell 1997; Feil *et al*. 2000; Irvin and Hoddle 2005; Flint 2006). Egg masses are laid under the lower leaf epidermis of host plants (Bentley *et al*. 2008). Adults are mobile and are highly unlikely to remain on shoots and stems following harvest, while egg masses are not associated with shoots or stems. Therefore, foliage free dormant cuttings do not provide a pathway for this insect.	Assessment not required		
Dysdercus sidae Montrouzier 1861 [Hemiptera: Pentatomidae]	Yes (Naumann 1993)	Assessment not required			
Empoasca decipiens Paoli 1930 [Hemiptera: Cicadellidae]	Not known to occur	No: *Empoasca* leafhoppers lay eggs on leaves and adults feed on leaves (Boll and Herrmann 2001; Backus *et al*. 2005). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Empoasca fabae Harris 1841 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Empoasca punjabensis Singh-Pruthi 1940 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Empoasca vitis Gothe 1875 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Erythroneura bistrata McAtee 1920 [Hemiptera: Cicadellidae]	Not known to occur	No: *Erythroneura* leafhoppers lay eggs on foliage (MacGill 1932; Paxton and Thorvilson 1996) and feed primarily on the leaf (Martinson *et al*. 1997; Flint 2006). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Erythroneura calycula McAtee 1920 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura coloradensis Gillette 1892 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura comes Say 1825 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura elegantula Osborn 1828 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura pallidifrons Edwards 1924 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura tricincta Fitch 1851 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura variabilis Beamer 1929 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura vitifex Fitch 1856 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura vitis Harris 1831 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura vulnerata Fitch 1851 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erythroneura ziczac Walsh 1862 [Hemiptera: Cicadellidae]	Not known to occur		Assessment not required		
Erthesina fullo (Thunberg 1783) [Hemiptera: Pentatomidae]	Not known to occur	No: Nymphs and adults feed on young buds, leaves and young shoots of grapevines (Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this insect.	Assessment not required		
Eulecanium pruinosum Coquillet [Hemiptera: Coccidae]	Yes (Malipatil *et al*. 1996)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Eulecanium tiliae (Linnaeus 1758) [Hemiptera: Coccidae]	Yes (CSIRO 2005)	Assessment not required			
Euschistus conspersus Uhler 1979 [Hemiptera: Pentatomidae]	Not known to occur	No: Pentatomine stink bugs are mostly associated with fruits but also feed on stems and leaves (Weaver 1976; McPherson and McPherson 2000). This pest lays eggs on groundcover crops and occasionally on the leaves of host fruit trees (Borden and Madsen 1951). Therefore, foliage free dormant cuttings do not provide a pathway for this stink bug.	Assessment not required		
Ferrisia virgata Cockerell 1893 [Hemiptera: Pseudococcidae]	Yes (Naumann 1993)	Assessment not required			
Graphocephala atropunctata Signoret 1854 [Hemiptera: Cicadellidae]	Not known to occur	No: Sharpshooters are xylophagous and feed on leaves, buds, shoots and stems of grapevines (Hill and Purcell 1997; Feil *et al*. 2000; Irvin and Hoddle 2005; Flint 2006). Eggs are laid under the lower leaf epidermis (CABI 2012a). Adults are mobile and are highly unlikely to remain on shoots and stems following harvest, while egg masses are not associated with shoots or stems. Therefore, foliage free dormant cuttings do not provide a pathway for this insect.	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Halyomorpha halys (Stål 1855) [Hemiptera: Pentatomidae]	Not known to occur	No: Nymphs and adults suck sap from young buds, leaves, young shoots and fruit of grapevines (Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this insect.	Assessment not required		
Heliococcus bohemicus Sulc 1912 [Hemiptera: Pseudococcidae]	Not known to occur	No: This species feeds on the leaves of herbaceous plants and on the bark of woody plants (Ben-Dov *et al*. 2012). This insect has been recorded on the foliage of grapes (Zorloni *et al*. 2006). Therefore, foliage free dormant cuttings do not provide a pathway for this mealybug.	Assessment not required		
Helopeltis antonii Signoret 1858 [Hemiptera: Miridae]	Not known to occur	No: This insect sucks the sap of young plants and the tender new growth of host plants (Siswanto *et al*. 2008). Tender shoots, leaves, petioles and immature fruits of new growth flushes are the sites of egg laying as well as feeding (Sundararaju and Babu 2000; Siswanto *et al*. 2008). Dormant cuttings are not the preferred site for egg laying and therefore do not provide a pathway for this insect.	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Hemiberlesia lataniae Signoret 1869 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Hemiberlesia rapax Comstock 1881 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Homalodisca coagulata Say 1832 [Hemiptera: Cicadellidae]	Not known to occur	No: Sharpshooters are xylophagous and feed on leaves, buds, shoots and stems of grapevine (Hill and Purcell 1997; Feil *et al*. 2000; Irvin and Hoddle 2005; Flint 2006). Eggs are laid under the lower leaf epidermis (CABI 2012a). Therefore, foliage free dormant cuttings do not provide a pathway for this insect.	Assessment not required		
Hyalesthes obsoletus Signoret 1865 [Hemiptera: Cixiidae]	Not known to occur	No: The eggs and larvae of this species are associated with roots while adults feed on foliage (Riolo *et al*. 2007; Forte *et al*. 2010). Therefore, root and foliage free dormant cuttings do not provide a pathway for this planthopper.	Assessment not required		
Icerya palmeri Riley & Howard 1890 [Hemiptera: Margarodidae]	Not known to occur	No: This species is associated with *Vitis* species (Morales 1991). Other members of this genus lay eggs within an egg sac and crawlers move to and settle on the underside of the leaves. The older nymphs continue to feed but migrate to the larger twigs, and finally, as adults, they settle on the	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		larger branches and trunk (Fasulo and Brooks 2010). Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for this scale.			
Icerya purchasi Maskell 1878 [Hemiptera: Margarodidae]	Yes (Naumann 1993)	Assessment not required			
Icerya seychellarum Westwood 1855 [Hemiptera: Margarodidae]	Yes (Smith *et al*. 1997)	Assessment not required			
Jacobiasca lybica Bergevin & Zanon 1922 [Hemiptera: Cicadellidae]	Not known to occur	No: The green leaf hopper lays eggs on the underside of leaves and adults are foliage feeders (Gonzalez-Andujar *et al*. 2006). Therefore, foliage free dormant cuttings do not provide a pathway for this plant hopper.	Assessment not required		
Lepidosaphes ulmi Linnaeus 1758 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Lygus lineolaris (Palisot de Beauvois 1818) [Hemiptera: Miridae]	Not known to occur	No: The nymphs and adults feed on leaves and flowers of grapevines (Bostanian *et al*. 2003; Fleury *et al*. 2006) from early spring until grape harvest (Bostanian *et al*. 2003). This bug overwinters in fallen plant litter, including dead leaves (Cleveland 1982; Wheeler and Stimmel 1988). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Lygus lucorum Meyer-Duer 1843 [Hemiptera: Miridae]	Not known to occur	No: This species lays eggs on the tips of vegetative branches of host plants (Guo *et al*. 2005). Both nymphs and the adults damage young shoots and leaves causing withering and perforation in grapes (Lee *et al*. 2002; Liu *et al*. 2004). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Maconellicoccus hirsutus Green 1908 [Hemiptera: Pseudococcidae]	Yes (Gullan 2000)	Assessment not required			
Macrosiphum euphorbiae Thomas 1778 [Hemiptera: Aphididae]	Yes (Naumann 1993)	Assessment not required			
Magicicada septendecim (Linnaeus 1758) [Hemiptera: Cicadidae]	Not known to occur	No: Adult females of cicadas injure grapevines by making ovipositional slits in the young canes. The canes then may break at the slits (Williams *et al*. 2011). Dormant cuttings are not preferred sites for egg laying and therefore do not provide a pathway for these pests.	Assessment not required		
Magicicada cassinii (Fisher 1851) [Hemiptera: Cicadidae]	Not known to occur		Assessment not required		
Magicicada septendecula Alexander & Moore 1962 [Hemiptera: Cicadidae]	Not known to occur		Assessment not required		
Margarodes brasiliensis Wille 1922 [Hemiptera: Margarodidae]	Not known to occur	No: Adult ground pearls lay eggs in the vicinity of roots and hatching larvae feed on root tissues (de Klerk 2010). Pupation also occurs in the soil (de Klerk 1987; de Klerk 2010). Therefore, root free	Assessment not required		
Margarodes capensis Giard 1897 [Hemiptera: Margarodidae]	Not known to occur		Assessment not required		
Margarodes greeni Brain 1915 [Hemiptera: Margarodidae]	Not known to occur		Assessment not required		
Margarodes meridionalis Morrison 1927	Not known to		Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
[Hemiptera: Margarodidae]	occur	dormant cuttings do not provide a pathway for these ground pearls.			
Margarodes prieskaensis (Jakubski 1965) [Hemiptera: Margarodidae]	Not known to occur		Assessment not required		
Margarodes vitis (Philippi 1884) [Hemiptera: Margarodidae]	Not known to occur		Assessment not required		
Margarodes vredendalensis De Klerk 1980 [Hemiptera: Margarodidae]	Not known to occur		Assessment not required		
Metcalfa pruinosa Say 1830 [Hemiptera: Flatidae]	Not known to occur	No: Frosted moth-bugs lay eggs and overwinter in the corky parts of the bark or under the bark of host plants (Lucchi and Santini1993; Kahrer 2005). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Mictis profana Fabricius 1803 [Hemiptera: Coreidae]	Yes (PHA 2001)	Assessment not required			
Myzus persicae Sulzer 1776 [Hemiptera: Aphididae]	Yes (Naumann 1993)	Assessment not required			
Nezara viridula Linnaeus 1758 [Hemiptera: Aphididae]	Yes (Smith *et al*. 1997)	Assessment not required			
Nipaecoccus viridis Newstead 1894 [Hemiptera: Pseudococcidae]	Yes (Gullan 2000)	Assessment not required			
Nysius ericae (Schilling 1829) [Hemiptera: Lygaeidae]	Not known to occur	No: Nymphs and adults of *Nysius* species attack the leaves of host plants (Malipatil *et al*. 1996; Flint 2006). Adults suck sap from the leaves and fruits of host plants (Malipatil *et al*. 1996; Flint 2006). Therefore, foliage free dormant cuttings do not	Assessment not required		
Nysius niger Baker 1906 [Hemiptera: Lygaeidae]	Not known to occur		Assessment not required		
Nysius raphanus Howard 1872 [Hemiptera: Lygaeidae]	Not known to occur		Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		provide a pathway for these pests.			
Nysius vinitor Bergroth 1891 [Hemiptera: Lygaeidae]	Yes (Naumann 1993)	Assessment not required			
Oxycarenus arctatus Walker 1872 [Hemiptera: Oxycarenidae]	Yes (Naumann 1993)	Assessment not required			
Parasaissetia nigra Nietner 1861 [Hemiptera: Coccidae]	Yes (PHA 2001)	Assessment not required			
Parlatoria oleae Colvée 1880 [Hemiptera: Diaspididae]	Yes (Naumann 1993)	Assessment not required			
Parthenolecanium corni Bouché 1844 [Hemiptera: Coccidae]	Yes (Naumann 1993)	Assessment not required			
Parthenolecanium pruinosum Coquillett 1891 [Hemiptera: Coccidae]	Yes (PHA 2001)	Assessment not required			
Perissopneumon ferox Newstead 1900 [Hemiptera: Margarodidae]	Not known to occur	No: This species lays eggs in the soil (Srivastava and Verghese 1985) and adults feed on fruit stalks, inflorescences and fruit (Srivastava 1997). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Pinnaspis strachani Cooley 1899 [Hemiptera: Diaspididae]	Yes (PHA 2001)	Assessment not required			
Planococcus citri Risso 1813 [Hemiptera: Pseudococcidae]	Yes (Gullan 2000)	Assessment not required			
Planococcus ficus Signoret 1875 [Hemiptera: Pseudococcidae]	Not known to occur	**Yes:** The vine mealybug is capable of feeding on many different parts of grapevines, including trunks, canes, leaves, clusters and sometimes the roots (Bournier	**Yes:** *Planococcus ficus* is polyphagous and has established in areas with a wide range of climatic conditions (Walton and Pringle 2004) and can spread	**Yes**: This species is reported as one of the most important pests of grape industries in South Africa. It causes progressive weakening of vines through early leaf loss, which results in	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		1976; Fuchs 2007; Bentley *et al*. 2008). Therefore, dormant cuttings may provide a pathway for vine mealybugs.	naturally in infested propagative material. (Haviland *et al*. 2005). Therefore, this species has the potential for establishment and spread in Australia.	significant yield reduction. Therefore, vine mealybugs have the potential for economic consequences in Australia.	
Planococcus lilacinus Cockerell 1905 [Hemiptera: Pseudococcidae]	Not known to occur	**Yes:** Mealybugs may be concealed under the bark or may be spread over different parts of the host plant (Flint 2006). This mealybug has been intercepted on host cuttings (MacLeod 2006). Therefore, dormant cuttings may provide a pathway for this mealybug.	**Yes**: Coffee mealybug is polyphagous (Ben-Dov 1994) and has established in areas with a wide range of climatic conditions (Williams 1982; Ben-Dov 1994). It can spread naturally in infested propagative material (Williams 1982) as it has been intercepted on host cuttings (MacLeod 2006). Therefore, coffee mealybug has the potential for establishment and spread in Australia.	**Yes**: This species causes damage to a wide variety of economically important crops. It is considered a potential threat to citrus, grapes, guavas and mangoes (Tandon and Verghese 1987; Cox 1989). This species causes severe damage to young trees by killing the tips of branches and roots of many economically important species (Tandon and Verghese 1987). Therefore, it has the potential for economic consequences in Australia.	**Yes**
Planococcus kraunhiae (Kuwana 1902) [Hemiptera: Pseudococcidae]	Not known to occur	**Yes:** This mealybug is reported on grapes (Narai and Murai 2002) and is found on leaves and branches of grapes (NPQS 2007). Therefore, dormant cuttings may provide a pathway for this mealybug.	**Yes**: This mealybug is polyphagous (Ben-Dov 1994) and has established in areas with a wide range of climatic conditions (Ben-Dov 1994). It can spread naturally in infested propagative material. Therefore, this mealybug has the potential for establishment and spread in Australia.	**Yes:** This sap sucking insect reduces productivity and quality and promotes the growth of sooty mould through production of honeydew (CABI 2012a). Although the mouth parts of mealybugs rarely penetrate beyond the fruit epidermis, their feeding activities can also cause fruit spotting and distortion (CABI 2012a). Therefore, it has the potential for economic consequences in Australia.	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Plautia affinis Dallas 1851 [Hemiptera: Pentatomidae]	Yes (Coombs and Khan 1998)	Assessment not required			
Plautia stali Scott 1874 [Hemiptera: Pentatomidae]	Not known to occur	No: Adults feed on fruit when ripe or near ripe (Mau and Mitchell 1978; Schaefer and Panizzi 2000). Therefore, fruit free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Pseudococcus calceolariae Maskell 1879 [Hemiptera: Pseudococcidae]	Yes (Gullan 2000)	Assessment not required			
Pseudococcus longispinus Targioni-Tozzetti 1867 [Hemiptera: Pseudococcidae]	Yes (Gullan 2000)	Assessment not required			
Pseudococcus maritimus Ehrhorn 1900 [Hemiptera: Pseudococcidae]	Yes (PHA 2001)	Assessment not required			
Pseudococcus viburni Signoret 1875 [Hemiptera: Pseudococcidae] (synonym: *Pseudococcus affinis* Maskell 1894)	Yes (Gullan 2000)	Assessment not required			
Pulvinaria innumerabilis Putnam 1880 [Hemiptera: Coccidae]	Not known to occur	**Yes**: *Pulvinaria* species overwinter as immature females attached to the twigs and small branches of host plants (University of Illinois 2004). Therefore, dormant cuttings provide a pathway for these scales.	**Yes**: These scales have established in areas with a wide range of climatic conditions (Ben-Dov *et al*. 2012) and can spread naturally in infested propagative material. Establishment will be favoured by the wide host range in Australia. Therefore, these scales have the potential to establish and spread in Australia.	No: *Pulvinaria* species damage shoots and foliage by sucking sap (Bournier 1976; Fuchs 2007). Although *Pulvinaria innumerabilis* and *P. vitis* are vectors of Grapevine leafroll-associated virus 1 and 3 (Fuchs *et al*. 2007), these viruses are already present in Australia. Therefore, these scales are not of economic significance to Australia.	
Pulvinaria vitis Linnaeus 1758 [Hemiptera: Coccidae]	Not known to occur				
Quadraspidiotus perniciosus Comstock	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
1881 [Hemiptera: Diaspididae]					
Rastrococcus iceryoides Green 1908 [Hemiptera: Pseudococcidae]	Not known to occur	No: This species is reported to occur on grapevine (Ben-Dov *et al*. 2012). Adults usually feed on the tender terminal shoots, inflorescences and fruit whereas first instars nymphs feed on the underside of leaves (Rawat and Jakhmola 1970). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Rhizoecus falcifer Kunchel d'Herculais 1878 [Hemiptera: Pseudococcidae]	Yes (CSIRO 2005)	Assessment not required			
Rhizoecus kondonis Kuwana 1923 [Hemiptera: Pseudococcidae]	Not known to occur	No: The citrus ground mealybug exists entirely below the soil surface and sucks the liquid from small feeder roots (Blodgett 1992). Therefore, root free dormant cuttings do not provide a pathway for citrus ground mealybugs.	Assessment not required		
Saissetia coffeae Walker 1852 [Hemiptera: Coccidae]	Yes (Naumann 1993)	Assessment not required			
Saissetia oleae Olivier 1791 [Hemiptera: Coccidae]	Yes (Naumann 1993)	Assessment not required			
Scaphoideus titanus Ball 1931 [Hemiptera: Cicadellidae]	Not known to occur	No: Juveniles and adults feed on shoots near the root stock and leaves. Females lay eggs beneath the bark of two year old wood where they	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		overwinter (Lessio and Alma 2004a, b; Boudon-Padieu and Maixner 2007). Therefore, one year old dormant cuttings do not provide a pathway for vine leafhopper.			
Scolypopa australis Walker 1851 [Hemiptera: Ricaniidae]	Yes (Smith *et al.* 1997)	Assessment not required			
Scutiphora pedicellata Kirby 1826 [Hemiptera: Scutelleridae]	Yes (PHA 2001)	Assessment not required			
Spissistilus festinus Say 1830 [Hemiptera: Membracidae]	Not known to occur	No: This hopper is a pest of soybean (Rice and Drees 1985) and feeds on leaves and stems and lays eggs in the stems of soybean (Hudson and Adams 2008). Dormant grapevines are not preferred sites for egg laying. Therefore, this species is not on the pathway of grapevine propagative material.	Assessment not required		
Targionia vitis Signoret 1876 [Hemiptera: Diaspididae]	Not known to occur	**Yes**: The black vine scale feeds on stems and branches, especially under bark flakes (Stathas and Kontodimas 2001; Watson 2005). Therefore, dormant cuttings may harbour mated females and provide a pathway for black vine scale.	**Yes**: The black vine scale has a wide host range (Watson 2005), has established in areas with a wide range of climatic conditions (Ben-Dov *et al*. 2012) and can spread naturally in infested propagative material. Therefore, this scale has the potential to establish and spread in Australia.	**Yes**: This species is reported as one of the most important pests of table grapes in Italy (Guario and Laccone 1996). Heavy infestations of black vine scale may encrust the bark with several layers of scale covers (Watson 2005) and may cause defoliation, splitting of bark, twig dieback and an overall decline in host plant health (Beardsley and Gonzalez 1975). Therefore, this scale has the potential for	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
				economic consequences in Australia.	
Tettigades chilensis Amyot & Serville 1843 [Hemiptera: Cicadidae]	Not known to occur	No: This plant hopper feeds on the branches and roots of host plants (Gonzalez 1983). Adults are mobile and are unlikely to remain on grapevine cuttings following harvesting. The young cicada nymphs live underground and feed on the roots of trees. Therefore, dormant cuttings do not provide a pathway for this leafhopper.	Assessment not required		
Trialeurodes vaporariorum 1856 Westwood [Hemiptera: Aleyrodidae]	Yes (PHA 2001)	Assessment not required			
Zygina rhamni Ferrari 1882 [Hemiptera: Cicadellidae]	Not known to occur	No: Adults of Italian grape leafhopper overwinter in the shelter of evergreens. In late spring they migrate to summer host plants, including grapes (Alford 2007). Eggs have been recorded on *Vitis vinifera* in summer (Mazzoni *et al*. 2008). Larvae feed on leaves (Bournier 1976). Therefore, foliage free dormant cuttings do not provide a pathway for this leafhopper.	Assessment not required		
HYMENOPTERA (wasps, ants)					
Ametastegia glabrata Fallén 1808 [Hymenoptera: Tenthredinidae]	Yes (CSIRO 2005)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Ceratina dentipes Friese 1914 [Hymenoptera: Apidae]	Not known to occur	No: These wasps lay eggs on the stem and after hatching larvae bore into the stem and feed on woody parts of the grapevine (Luo *et al*. 2005). Grape dormant cuttings are not preferred sites to lay eggs. Therefore, this species is not on the pathway.	Assessment not required		
Ceratina viticola Sinich [Hymenoptera: Apidae]	Not known to occur		Assessment not required		
Erythraspdes vitis (Harris) [Hymenoptera: Tenthredinidae]	Not known to occur	No: This species lays eggs on the underside of grape leaves and larvae feed at the edge of the leaf (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Evoxysoma vitis (Saunders 1869) [Hymenoptera: Vespidae]	Not known to occur	**Yes**: This species lays eggs in grape berries and hatching larvae feed on the seeds and overwinter within grape seed on the ground (Williams *et al*. 2011). Dormant cuttings do not provide a pathway for this species. However, grape seeds may provide a pathway for this species.	**Yes**: This chalcid has established in areas with a wide range of climatic conditions (Webb 2003) and distribution of infested seed will facilitate the spread of this species. Therefore, this chalcid has the potential for establishment and spread in Australia.	No: Outbreaks of this species are rare and are generally confined to wild grapes (Williams *et al*. 2011). This chalcid is not reported to cause significant economic consequences. Therefore, this species is unlikely to be of economic consequence in Australia.	
Iridomyrmex humilis Mayr 1868 [Hymenoptera: Formicidae]	Yes (CSIRO 2005)	Assessment not required			
Solenopsis xyloni McCook 1879 [Hymenoptera: Formicidae]	Yes (PHA 2001)	Assessment not required			
Vespula germanica Fabricius 1793 [Hymenoptera: Vespidae]	Yes (Naumann 1993)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
ISOPTERA					
Coptotermes acinaciformis Froggatt 1898 [Isoptera: Rhinotermitidae]	Yes (AFD 2008)	Assessment not required			
Incisitermes minor Hagen 1858 [Isoptera: Kalotermitidae]	Not known to occur	No: Colonies of these termites are often found in dead downed logs, and large, dead branches on the ground (Cabrera and Scheffrahn 2005). Therefore, dormant cuttings do not provide a pathway for western dry wood termites.	Assessment not required		
Neotermes chilensis Blanchard [Isoptera: Kalotermitidae]	Not known to occur	No: Damp wood termites feed on the heartwood (dead tissue) of vines and usually avoid the living sapwood (Rust 1992). Therefore, semi-hardwood dormant cuttings do not provide a pathway for damp wood termite.	Assessment not required		
Paraneotermes simplicicornis Banks & Snyder 1920 [Isoptera: Kalotermitidae]	Not known to occur	No: Desert damp wood termites may girdle young grapevines below the soil line in desert areas (Ebeling 2002). Therefore, root free dormant cuttings do not provide a pathway for desert damp wood termite.	Assessment not required		
LEPIDOPTERA (moths, butterflies)					
Abagrotis barnesi (Benjamin 1921) [Lepidoptera: Noctuidae]	Not known to occur	No: Cutworms conceal themselves underneath loose bark or beneath the grape trellis during the day and	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		crawl up the trunk to feed on swelling buds at night (Williams *et al*. 2011). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this pest.			
Accuminulia buscki Brown 2000 [Lepidoptera: Tortricidae]	Not known to occur	No: The larvae of these species bore into grape berries (Brown 1999). Therefore, fruit free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Accuminulia longiphallus Brown 2000 [Lepidoptera: Tortricidae]	Not known to occur		Assessment not required		
Acosmeryx castanea Rothschild & Jordan 1903 [Lepidoptera: Sphingidae]	Not known to occur	No: These species have been reported from grapevines (Pittaway and Kitching 2006). The larvae of sphingids generally feed on foliage (Common 1990; USDA 2005). Therefore, foliage free dormant cuttings do not provide a pathway for these species.	Assessment not required		
Acosmeryx naga (Moore 1858) [Lepidoptera: Sphingidae]	Not known to occur		Assessment not required		
Acosmeryx sericeus (Walker 1856) [Lepidoptera: Sphingidae]	Not known to occur		Assessment not required		
Acosmeryx shervillii Boisduval 1875 [Lepidoptera: Sphingidae]	Not known to occur		Assessment not required		
Acronicta rumicis (Linnaeus 1948) [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of this noctuid moth feed on the foliage of host plants (Thompson and Nelson 2003). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Actias ningpoana Felder 1862 [Lepidoptera: Saturniidae]	Not known to occur	No: Larvae of this species feed on grapevine foliage (Zhang 2005). Therefore, foliage free dormant cuttings	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		do not provide a pathway for this species.			
Agrotis ipsilon Hufnagel 1766 [Lepidoptera: Noctuidae]	Yes (Common 1990)	Assessment not required			
Agrotis munda Walker 1856 [Lepidoptera: Noctuidae]	Yes (Naumann 1993)	Assessment not required			
Agrotis segetum Denis & Schiffermüller 1775 [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of these noctuid moths feed on grape buds and young stems during spring (AgroAtlas 2009a; Wright *et al*. 2010). These cutworms occur in the soil and litter during the day and climb grapevines to feed on swelling buds at night (Wright *et al*. 2010). Therefore, dormant cuttings do not provide a pathway for these species.	Assessment not required		
Agrotis vetusta (Walker 1856) [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Alypia octomaculata (Fabricius 1775) [Lepidoptera: Noctuidae]	Not known to occur	No: Eggs are laid on grape shoots and leaves and larvae feed on foliage (Williams *et al*. 2011). This species overwinters as pupae in tunnels built in old wood or trash just beneath the soil surface (Arnold 1982; Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Ampelophaga khasiana Rothschild 1895 [Lepidoptera: Sphingidae]	Not known to occur	No: These species have been reported from grapevines (Pittaway and Kitching 2006).	Assessment not required		
Ampelophaga rubiginosa Bremer & Grey	Not known to		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
1853 [Lepidoptera: Sphingidae]	occur	The larvae of sphingids generally feed on foliage (Common 1990; Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for these species.			
Amphipyra pyramidoides Guenée 1852 [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of pyramidal fruit worm feed on new foliage (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Amyelois transitella Walker 1863 [Lepidoptera: Pyralidae]	Not known to occur	No: This species is associated with postharvest fruit and dried grape fruits (Johnson 2007). Eggs are laid on dried, fallen fruit (Siegel *et al*. 2006). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Antispila viticordifoliella Clemens 1860 (Lepidoptera: Heliozelidae).	Not known to occur	No: Leaf miner larvae feed between the upper and lower surfaces of leaves (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Aporia crataegi (Linneaus 1758) [Lepidoptera: Pieridae]	Not known to occur	No: Larvae of this species feed on foliage of many fruiting plants including grapes (Robinson *et al*. 2008, Grichanov and Ovsyannikova	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		2009). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.			
Argyrotaenia citrana Fernald 1889 [Lepidoptera: Tortricidae]	Not known to occur	No: These species lay eggs on the leaves and shoots (Zalom *et al.* 2008, EPPO 2002b) or newly set grape clusters during spring (Williams *et al*. 2011). Larvae of these tortricid moths feed during spring on buds and leaves and later feed on berries (Bentley *et al*. 2008). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Argyrotaenia ljungiana Thunberg 1797 [Lepidoptera: Tortricidae]	Not known to occur		Assessment not required		
Argyrotaenia velutinana (Walker 1863) [Lepidoptera: Tortricidae]	Not known to occur		Assessment not required		
Artena dotata (Fabricius 1794) [Lepidoptera: Noctuidae]	Not known to occur	No: This fruit piercing moth feeds on the grapevine fruit (Li 2004). Therefore, fruit free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Autographa gamma (Linnaeus 1758) [Lepidoptera: Noctuidae]	Not known to occur	No: This species lays eggs on the underside of leaves (AgroAtlas 2009b) and larvae feed externally on young grapevine buds and shoots (Bournier 1976). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Calyptra emarginata Fabricius	Not known to	No: Larvae of these fruit-	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
[Lepidoptera: Noctuidae]	occur	piercing moths are foliage feeders and adults are associated directly with the fruit and fruit clusters of grapevines (Hanken 2002, Lee *et al*. 1970). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.			
Calyptra lata (Butler 1881) [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Calyptra thalictri (Borkhusen 1790) [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Cechenena lineosa (Walker 1856) [Lepidoptera: Sphingidae]	Not known to occur	No: Larvae of sphingid moths are generally foliage feeders (Common 1990). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Cechenena minor (Butler 1875) [Lepidoptera: Sphingidae]	Not known to occur		Assessment not required		
Clania variegata (Snellen 1879) [Lepidoptera: Psychidae] (synonym *Eumeta variegata* (Snellen))	Not known to occur	No: The larvae of this species feed on foliage and also chew the skin of grapes (Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Cnephasia longana Haworth 1811 [Lepidoptera: Tortricidae]	Not known to occur	No: This omnivorous leafroller lays eggs on rough barked trunks (Rosenstiel and Ferguson 1944) and larvae feed on grapevine leaves (Norton 1991). Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Conogethes punctiferalis Guenée 1854 [Lepidoptera: Crambidae]	Yes (Nielsen *et al*. 1996)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Cryptophlebia leucotreta Meyrick 1913 [Lepidoptera: Tortricidae]	Not known to occur	No: This tortricid moth lays eggs on the fruit (Grové *et al*. 1999) and larvae feed within the fruit (Carter 1984). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Ctenopseustis obliquana Walker 1863 [Lepidoptera: Tortricidae]	Not known to occur	No: This tortricid moth lays eggs on buds and larvae feed on the leaves, fruits and buds of hosts (Kay 1979). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Dasychira feminula (Hampson 1891) [Lepidoptera: Lymantriidae]	Not known to occur	No: These species have been recorded on grapevines (Robinson *et al.* 2008). Larvae of Lymantriid moths are foliage feeders (Common 1990). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Dasychira tenebrosa Walker 1865 [Lepidoptera: Lymantriidae]	Not known to occur		Assessment not required		
Deilephila elpenor Swinhoe 1884 [Lepidoptera: Sphingidae]	Not known to occur	No: This species lays eggs on leaves (CABI 2012a) and larvae feed on the leaves of host plants (Owen 1991). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Desmia funeralis Hübner 1796 [Lepidoptera: Pyralidae]	Not known to occur	No: The grape leaf folder lays eggs on both sides of leaves	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		(AliNiazee 1974) and larvae attack leaves (Mead and Webb 2001). Therefore, foliage free dormant cuttings do not provide a pathway for pest.			
Diaphania indica (Saunders 1851) [Lepidoptera: Pyralidae]	Yes (Nielsen *et al*. 1996)	Assessment not required			
Elibia dolichus (Westwood 1847) [Lepidoptera: Sphingidae]	Not known to occur	No: This moth has been recorded from grapes (Robinson *et al*. 2008). The larvae of sphingids generally feed only on foliage (Common 1990). Therefore, foliage free dormant cuttings do not provide a pathway for this species	Assessment not required		
Endopiza viteana Clemens 1860 [Lepidoptera: Tortricidae] (synonym: *Paralobesia viteana* Clemens 1860)	Not known to occur	No: This moth lays eggs on berries, where the larvae then feed (Botero-Garces and Isaacs 2003). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Epiphyas postvittana Walker 1863 [Lepidoptera: Noctuidae]	Yes (Nicholas *et al.* 1994)	Assessment not required			
Estigmene acraea Drury 1773 [Lepidoptera: Arctiidae]	Not known to occur	No: This species feeds on the leaves of host plants (Stracener 1931). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Eudocima fullonia Clerck 1764 [Lepidoptera: Noctuidae]	Yes (Smith *et al.* 1997)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Eudocima tyrannus (Guenée 1852) [Lepidoptera: Noctuidae]	Not known to occur	No: This species lays eggs on the underside of leaves of host plants and sometimes on the bark (Kumar and Lal 1983; CABI 2012a). Adults feed on fruit (Hanken 2002). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Eupoecilia ambiguella (Hübner 1796) [Lepidoptera: Tortricidae]	Not known to occur	No: The larvae of this species feed internally on berries and unripe seed of grapes (Frolov 2009). Therefore dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Eulithis diversilineata Hübner 1812 [Lepidoptera: Geometridae]	Not known to occur	No: Larvae of lesser grapevine looper are foliage feeders (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this insect.	Assessment not required		
Eumorpha achemon (Drury 1773) [Lepidoptera: Sphingidae]	Not known to occur	No: This moth lays eggs on the upper surface of the leaves and larvae feed on the foliage (Bournier 1976; Anon 2008). Therefore, foliage free dormant cuttings do not provide a pathway for the Achemon sphinx moth.	Assessment not required		
Eupoecilia ambiguella Hübner 1796 [Lepidoptera: Tortricidae]	Not known to occur	No: This moth lays eggs on buds, bracts and anthophores, less often on	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		young sprouts or on immature berries (AgroAtlas 2011a). Larvae feed on flower buds and flowers (AgroAtlas 2011a). Therefore, dormant cuttings do not provide a pathway for grape moth.			
Euproctis paradoxa (Butler 1886) [Lepidoptera: Lymantriidae]	Yes (CSIRO 2005)	Assessment not required			
Euxoa messoria Harris 1841 [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of these noctuid moths feed on the swelling grape buds (Wright *et al*. 2010; Williams *et al*. 2011). Therefore, dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Euxoa scandens Riley 1869 [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Euxoa tessellata (Harris 1841) [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Euxoa ochrogaster (Guenée 1852) [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Feltia subgothica (Haworth 1809) [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of this noctuid moth feed on the swelling grape buds (Williams *et al*. 2011). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Geina persicelidactylus (Fitch) 1855 [Lepidoptera: Pterophoridae]	Not known to occur	No: This moth lays eggs on foliage and hatched larvae feed on the upper surfaces of grape leaves (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Harrisina americana Guérin-Meneville 1844 [Lepidoptera: Zygaenidae]	Not known to occur	No: The grape leaf skeletonizer lays eggs and	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		feeds on the leaves of grapevine (Mead and Webb 2001). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.			
Helicoverpa armigera Hübner 1809 [Lepidoptera: Noctuidae]	Yes (Nielsen *et al.* 1996)	Assessment not required			
Helicoverpa punctigera Wallengren 1860 [Lepidoptera: Noctuidae]	Yes (Smith *et al.* 1997)	Assessment not required			
Herpetogramma luctuosalis (Guenée 1854) [Lepidoptera: Pyralidae]	Not known to occur	No: The larvae of this moth feed on grape leaves by rolling the leaves into a cylinder and feeding on them from the inside (Li 2004). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Hippotion celerio (Linneaus 1758) [Lepidoptera: Sphingidae]	Present (Common 1990)	Assessment not required			
Hyphantria cunea Drury 1770 [Lepidoptera: Arctiidae]	Not known to occur	No: This species lays eggs on the underside of leaves of host plants (Johnson and Lyon 1988). Developing larvae feed on foliage (Warren and Tadic 1970). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Illiberis tenuis (Butler 1877) [Lepidoptera: Zygaenidae]	Not known to occur	No: Larvae feed on young shoots, flowers and leaves of grapevines (Zhang 2005). Therefore, foliage free	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		dormant cuttings do not provide a pathway for this species.			
Ischyja manlia (Cramer 1776) [Lepidoptera: Noctuidae]	Yes (Nielsen *et al*. 1996)	Assessment not required			
Lacinipolia meditata (Grote 1873) [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of these noctuid moths feed on swelling grape buds (Williams *et al*. 2011). Therefore, dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Lacinipolia renigera (Stephens 1829) [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Lithophane antennata (Walker 1858) [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of green fruit worm feed on new foliage (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Lobesia botrana Denis & Schiffermüller 1775 [Lepidoptera: Tortricidae]	Not known to occur	No: Larvae of this tortricid moth feed on flowers and berries (Varela *et al*. 2010). Eggs are laid either near, or in, flower clusters or on berries (Varela *et al*. 2010). Therefore, dormant cuttings free of flowers and berries do not provide a pathway for this pest.	Assessment not required		
Loepa katinka (Westwood 1847) [Lepidoptera: Saturniidae]	Not known to occur	No: Larvae of saturniid moths are foliage feeders (Common 1990). Therefore, foliage free dormant cuttings do not provide a pathway for this	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		pest.			
Mamestra brassicae Linnaeus 1758 [Lepidoptera: Noctuidae]	Not known to occur	No: Larvae of this noctuid moth feed on foliage and lay eggs on the underside of the leaves of host plants (CABI 2012a). Older larvae can also feed on ripening grapes (Voigt 1974). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Marumba gaschkewitschii (Bremer & Grey 1852) [Lepidoptera: Sphingidae]	Not known to occur	No: Larvae of this moth feed on foliage (Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Nippoptilia vitis Sasaki 1913 [Lepidoptera: Pterophoridae] (synonym: *Stenoptilia vitis* Sasaki)	Not known to occur	No: Larvae of this species feed on leaves, stems, and fruit (APHIS–USDA 2002). Larvae may also feed internally on the fruit and seeds of grape, usually causing the young fruit to drop (Li 2004; Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Oraesia emarginata (Fabricius 1794) [Lepidoptera: Noctuidae]	Yes (Nielsen *et al*. 1996)	Assessment not required			
Oraesia excavata (Butler 1878) [Lepidoptera: Noctuidae]	Not known to occur	No: Adults shelter in foliage and feed on fruits (Li 2004). Therefore, foliage free	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		dormant cuttings do not provide a pathway for this pest.			
Orthodes rufula Grote 1849 [Lepidoptera: Noctuidae]	Not known to occur	No: This moth occurs on grapevines from the time of bud swell to when shoots are several inches long. The larvae feed on grapevine buds and injured buds may fail to develop (Bentley *et al*. 2008). Dormant cuttings are not preferred feeding sites for this insect and therefore do not provide a pathway for this moth.	Assessment not required		
Orthosia hibisci Guenée 1852 [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of this insect feed on new foliage (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Paranthrene regalis Butler 1878 [Lepidoptera: Sesiidae]	Not known to occur	**Yes:** The newly hatched larvae of grape clear-wing moth bore into the tender stems of grapevines; they then develop, overwinter and pupate within the stem of grapevines (Zhou 1991). Dormant cuttings may harbor overwintering larvae and therefore provide a pathway for grape clear-wing moth.	**Yes**: Grape clear-wing moth is distributed in China and Korea (Zhou 1991; Seung-Tae *et al*. 2006). There are similar natural and built environments in parts of Australia that would be suitable for the establishment and spread of this pest.	**Yes**: This species damages vines and may cause defoliation and a decline in yield (Li 2004). This species is listed as an insect that can endanger commercial grapevine production in China (Li 2004). Therefore, this moth has the potential for economic consequences in Australia.	**Yes**
Paropta paradoxus Herrich-Schäffer 1851 [Lepidoptera: Cossidae]	Not known to occur	No: This cossid moth lays eggs on the underside of	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		loose bark or on the older wood of grapevines (Plaut 1973). Hatched larvae settle under loose bark and begin feeding. The larvae burrow into the stems and branches of grapevine through dried stubs of pruned canes and excavate galleries along the axes of stems and branches (Plaut 1973). Larvae may also develop under dry bark. This cossid moth overwinters as active immature larvae and diapausing mature prepupal larvae (Plaut 1973). One year old semi-hardwood dormant cuttings are not preferred sites for egg laying and therefore do not provide a pathway for this cossid moth.			
Pergesa acteus (Cramer 1779) [Lepidoptera: Sphingidae]	Not known to occur	No: This species has been recorded on grapevines (Pittaway and Kitching 2006) and larvae feed on foliage (Common 1990). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Peridroma saucia Hübner 1803 [Lepidoptera: Noctuidae]	Not known to occur	No: This moth is associated with *Vitis* species (Dibble *et al.* 1979; CABI 2012a) and larvae feed on swelling grape buds (Williams *et al*. 2011).	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		Therefore, dormant cuttings do not provide a pathway for this noctuid moth.			
Phalaenoides glycinae Lewin 1805 [Lepidoptera: Noctuidae]	Yes (CSIRO 2005)	Assessment not required			
Platynota stultana Walsingham 1884 [Lepidoptera: Tortricidae]	Not known to occur	No: Omnivorous leafrollers lay eggs on the leaves and newly hatched larvae feed on buds (AliNiazee and Stafford 1972). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Proeulia auraria Clarke 1949 [Lepidoptera: Tortricidae]	Not known to occur	No: These species lay eggs on leaves (Campos *et al*. 1981) and larvae feed on foliage and fruit (Brown and Passoa 1998; Brown 1999). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Proeulia chrysopteris Butler 1883 [Lepidoptera: Tortricidae]	Not known to occur		Assessment not required		
Proeulia triquetra Obraztsov 1964 [Lepidoptera: Tortricidae]	Not known to occur		Assessment not required		
Psychomorpha epimenis (Drury 1782) [Lepidoptera: Noctuidae]	Not known to occur	No: This species lays eggs on or near new foliage and hatched larvae feed on foliage (Williams *et al*. 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Rhagastis castor aurifera (Butler 1875) [Lepidoptera: Sphingidae]	Not known to occur	No: These species have been recorded on grapevines (Pittaway and Kitching 2006) and larvae feed on foliage	Assessment not required		
Rhagastis confusa Rothschild and Jordan 1903 [Lepidoptera: Sphingidae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Rhagastis mongoliana (Butler 1876) [Lepidoptera: Sphingidae]	Not known to occur	(Common 1990; Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for these species.	Assessment not required		
Rhynchagrotis cupida (Grote 1864) [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of these moths feed on the swelling grape buds (Williams *et al*. 2011). Therefore, dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Rhynchagrotis placida (Grote 1876) [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Sarbanissa subflava (Moore 1877) [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of these moths feed on young shoots and leaves of grapevines (Zhang 2005). Therefore, dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Sarbanissa transiens (Walker 1855) [Lepidoptera: Noctuidae]	Not known to occur		Assessment not required		
Spaelotis clandestina (Harris 1862) [Lepidoptera: Noctuidae]	Not known to occur	No: The larvae of this noctuid moth feed on the swelling grape buds (Williams *et al*. 2011). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Sparganothis pilleriana Denis & Schiffermüller 1776 [Lepidoptera: Tortricidae]	Not known to occur	No: This moth lays eggs on the upper surface of grape leaves (HYPPZ 2008). Hatching larvae shelter under the trunk bark to hibernate. In spring, larval withdrawal from diapause coincides with bud swelling and blossoming and with growth of young leaves (AgroAtlas 2011b). The larvae feed on buds, leaves and	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		young branches and pupate in the folds of leaves (HYPPZ 2008). Therefore, foliage free semi-hardwood dormant cuttings do not provide a pathway for this species.			
Sphecodina caudata (Bremer & Grey 1853) [Lepidoptera: Sphingidae]	Not known to occur	No: The larvae of this moth feed on leaves of grapevines (Zhang 2005). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Spirama retorta (Clerck 1764) [Lepidoptera: Noctuidae]	Not known to occur	No: Larvae of this moth feed on young foliage and new shoots, whereas adults feed on fruits (Kim and Lee 1985; Sambath and Joshi 2004). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Spodoptera exigua (Hübner 1803) [Lepidoptera: Noctuidae]	Yes (Naumann 1993)	Assessment not required			
Spodoptera frugiperda Smith & Abbot 1797 [Lepidoptera: Noctuidae]	Not known to occur	No: *Spodoptera* species lay eggs on leaves, often near blossoms (Capinera and Fasulo 2006). Larvae and adults feed on leaves, buds and flowers (Balikai *et al*. 1999; Papademetriou and Dent 2001; Capinera 2008). Therefore, foliage free dormant cuttings do not provide a pathway for this	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		species.			
Spodoptera litura Fabricius 1775 [Lepidoptera: Noctuidae]	Yes (Naumann 1993)	Assessment not required			
Spodoptera praefica Grote 1875 [Lepidoptera: Noctuidae]	Not known to occur	No: *Spodoptera* species lay eggs on leaves, often near blossoms (Capinera and Fasulo 2006). Larvae and adults feed on leaves, buds and flowers (Balikai *et al*. 1999; Papademetriou and Dent 2001; Capinera 2008). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Sylepta lunalis Guenee 1854 [Lepidoptera: Pyralidae]	Not known to occur	No: Larvae of this species feed on foliage and destroy the parenchyma tissue of the leaves (Bournier 1976). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Theretra alecto (Linneaus 1758) [Lepidoptera: Sphingidae]	Not known to occur	No: These species have been recorded on grapevines (Pittaway and Kitching 2006). Sphingid larvae generally feed only on foliage (Common 1990). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Theretra boisduvalii (Bugnion 1839) [Lepidoptera: Sphingidae]	Not known to occur		Assessment not required		
Theretra clotho Drury 1773 [Lepidoptera: Sphingidae]	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Theretra japonica (Boisduval 1869) [Lepidoptera: Sphingidae]	Not known to occur	No: Sphingid larvae feed on grapevine leaves (Zhang 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Theretra latreillei Macleay 1827 [Lepidoptera: Sphingidae]	Yes (Common 1990)	Assessment not required			
Theretra oldenlandiae Fabricius 1775 [Lepidoptera: Sphingidae]	Yes (Naumann 1993)	Assessment not required			
Theretra pallicosta (Walker 1856) [Lepidoptera: Sphingidae]	Not known to occur	No: This species has been recorded on grapevines (Pittaway and Kitching 2006). Sphingid larvae generally feed only on foliage (Common 1990). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Vitacea polistiformis Harris 1854 [Lepidoptera: Sesiidae]	Not known to occur	No: This species is a root borer and caterpillars damage roots (Bournier 1976). Therefore, root free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Xestia c-nigrum (Linneaus 1958) [Lepidoptera: Noctuidae]	Not known to occur	No: Larvae of this species feed on developing shoots and buds (Dibble *et al*. 1979). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Zeuzera coffeae Nietner 1861 [Lepidoptera: Cossidae]	Not known to occur	**Yes:** Newly hatched larvae enter young twigs and later move into larger branches or	**Yes:** This species has established in areas with a wide range of climatic	**Yes:** No information is available on losses caused by this moth on grapevines, but it causes	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		trunks (Cheng 1984). Eggs are laid in strings in cracks of the bark of branches. Therefore, dormant cuttings may harbour larvae of this species and provide a pathway.	conditions (Waller *et al.* 2007) and can spread naturally in infested propagative material. Therefore, this species has the potential to establish and spread in Australia.	considerable damage in coffee trees due to destruction of branches through boring activity (Waller *et al.* 2007). Therefore, this moth has the potential for economic consequences in Australia.	
ORTHOPTERA (grasshoppers, crickets)					
Austracris guttulosa Walker 1870 [Orthoptera: Acrididae]	Yes (Coombe and Dry 1992)	Assessment not required			
Austroicetes cruciata Saussure 1888 [Orthoptera: Acrididae]	Yes (PHA 2001)	Assessment not required			
Chortoicetes terminifera Walker 1870 [Orthoptera: Acrididae]	Yes (PHA 2001)	Assessment not required			
Melanoplus devastator Scudder 1778 [Orthoptera: Acrididae]	Not known to occur	No: This species feeds on young foliage (Schell *et al*. 2007). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Phaulacridium vittatum Sjöstedt 1920 [Orthoptera: Acrididae]	Yes (PHA 2001)	Assessment not required			
Valanga irregularis Walker 1870 [Orthoptera: Acrididae]	Yes (PHA 2001)	Assessment not required			
PSOCOPTERA (booklice)					
Ectopsocus briggsi McLachlan 1899 [Psocoptera: Ectopsocidae]	Yes (Ahadiyat and Zangeneh 2007)	Assessment not required			
Graphopsocus cruciatus Linnaeus 1768 [Psocoptera: Ectopsocidae]	Not known to occur	No: This species feeds on the microflora on leaves (Greenwood 1988). Therefore, foliage free	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		dormant cuttings do not provide a pathway for this pest.			
THYSANOPTERA (thrips)					
Aeolothrips fasciatus (Linnaeus 1758) [Thysanoptera: Aeolothripidae]	Yes(PHA 2001)	Assessment not required			
Aeolothrips intermedius Bagnall 1934 [Thysanoptera: Aeolothripidae]	Not known to occur	No: These species are associated with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for these thrips.	Assessment not required		
Aeolothrips melaleucus Haliday 1852 [Thysanoptera: Aeolothripidae]	Not known to occur		Assessment not required		
Aeolothrips vittatus Haliday 1836 [Thysanoptera: Aeolothripidae]	Not known to occur		Assessment not required		
Caliothrips fasciatus Pergande 1895 [Thysanoptera: Thripidae]	Not known to occur	No: This species feeds on the leaves, stems, buds and flowers (Mound 2008). The eggs are laid in leaf tissue (Harman *et al*. 2007). Therefore, foliage free dormant cuttings do not provide a pathway for this species.	Assessment not required		
Chirothrips manicatus Haliday 1836 [Thysanoptera: Thripidae]	Not known to occur	No: These *Chirothrips* species are associated with foliage and inflorescences of grapevines (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Chirothrips molestus Priesner 1926 [Thysanoptera: Thripidae]	Not known to occur		Assessment not required		
Dendrothrips saltatrix Uzel 1895 [Thysanoptera: Thripidae]	Not known to occur	No: This thrip is associated with the foliage and	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		inflorescences of grapevines (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.			
Dictyothrips betae Uzel 1895 [Thysanoptera: Thripidae]	Not known to occur	No: This species is associated with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Drepanothrips reuteri Uzel 1895 [Thysanoptera: Thripidae]	Not known to occur	No: Grape thrips lay eggs on the young leaves and buds of *Vitis vinifera* (Marullo 2009) and feed on shoot tips and leaves (Flint 2006). Dormant cuttings are not the preferred egg laying site and therefore do not provide a pathway for grape thrips.	Assessment not required		
Frankliniella australis Morgan 1925 [Thysanoptera: Thripidae]	Not known to occur	No: This species feeds and lays eggs in the flowers of host plants (Borbon *et al*. 2008). Therefore, dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Frankliniella intonsa (Trybom 1895) [Thysanoptera: Thripidae]	Not known to occur	No: This species is associated with the foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		dormant cuttings do not provide a pathway for this pest.			
Frankliniella occidentalis Pergande 1895 [Thysanoptera: Thripidae]	Present (PHA 2001)	Assessment not required			
Frankliniella tritici Fitch 1855 [Thysanoptera: Thripidae]	Not known to occur	No: This species feeds on flowers and lays eggs on leaf petioles (Reitz 2002). Therefore, foliage and flower free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Haplothrips acanthoscelis (Karny 1909) [Thysanoptera: Phlaeothripidae]	Not known to occur	No: These *Haplothrips* species are associated with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Haplothrips aculeatus (Fabricius 1803) [Thysanoptera: Phlaeothripidae]	Not known to occur		Assessment not required		
Haplothrips froggatti Hood 1918 [Thysanoptera: Phlaeothripidae]	Yes (PHA 2001)	Assessment not required			
Haplothrips kurdjumovi Karny 1913 [Thysanoptera: Phlaeothripidae]	Not known to occur	No: This species is associated with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Haplothrips leucanthemi (Schrank 1781) [Thysanoptera: Phlaeothripidae]	Yes (PHA 2001)	Assessment not required			
Haplothrips victoriensis Bagnall 1918 [Thysanoptera: Phlaeothripidae]	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Heliothrips haemorrhoidalis Bouché 1833 [Thysanoptera: Thripidae]	Present (Naumann 1993)	Assessment not required			
Heliothrips sylvanus Faure 1933 [Thysanoptera: Thripidae]	Not known to occur	No: This species is associated with foliage (Roditakis and Roditakis 2007). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Neohydatothrips gracilicornis (Williams1916) [Thysanoptera: Thripidae]	Not known to occur	No: This species is associated with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Retithrips syriacus Mayet 1890 [Thysanoptera: Thripidae]	Not known to occur	No: This species feeds on leaves (Doganlar and Yigit 2002) and lays eggs on the leaf surface (CPPDR 1994). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Rhipiphorothrips cruentatus Hood 1991 [Thysanoptera: Thripidae]	Not known to occur	No: This species feeds on foliage (Bournier 1976; Dahiya and Lakra 2001) and lays eggs on the underside of leaves (Kulkarni *et al*. 2007). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Rubiothrips vitis (Priesner 1933)	Not known to	No: This species is associated	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Thysanoptera: Thripidae]	occur	with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.			
Scirtothrips citri Moulton 1909 [Thysanoptera: Thripidae]	Not known to occur	No: *Scirtothrips* species are associated with the foliage of *Vitis* species (Arpaia and Morse 1991; Roditakis and Roditakis 2007; Nietschke *et al*. 2008). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Scirtothrips dorsalis Hood 1919 [Thysanoptera: Thripidae]	Yes (PHA 2001)	Assessment not required			
Scirtothrips mangiferae Priesner 1932 [Thysanoptera: Thripidae]	Not known to occur	No: *Scirtothrips* species are associated with the foliage of *Vitis* species (Arpaia and Morse 1991; EPPO 2005; Roditakis and Roditakis 2007; Nietschke *et al*. 2008). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
Thrips australis Bagnall 1915 [Thysanoptera: Thripidae]	Yes (Naumann 1993)	Assessment not required			
Thrips fulvipes Bagnall 1923 [Thysanoptera: Thripidae]	Not known to occur	No: This species is associated with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009).	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		Therefore, foliage free dormant cuttings do not provide a pathway for this pest.			
Thrips hawaiiensis Morgan 1913 [Thysanoptera: Thripidae]	Yes (PHA 2001)	Assessment not required			
Thrips imagines Bagnall 1926 [Thysanoptera: Thripidae]	Present (Naumann 1993)	Assessment not required			
Thrips physapus Linnaeus 1758 [Thysanoptera: Thripidae]	Not known to occur	No: These thrips species are associated with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for these pests.	Assessment not required		
Thrips pillichi Priesner 1924 [Thysanoptera: Thripidae]	Not known to occur		Assessment not required		
Thrips tabaci Lindeman 1889 [Thysanoptera: Thripidae]	Yes (Naumann 1993)	Assessment not required			
Thrips validus Uzel 1895 [Thysanoptera: Thripidae]	Not known to occur	No: This species is associated with foliage and inflorescences (Vasiliu-Oromulu *et al*. 2009). Therefore, foliage free dormant cuttings do not provide a pathway for this pest.	Assessment not required		
PATHOGENS					
BACTERIA					
Pantoea agglomerans (Beijerinck 1888) Gavini *et al*. 1989 [Enterobacteriales: Enterobacteriaceae]	Yes (PHA 2001)	Assessment not required			
Pseudomonas fluorescens Migula 1895 [Pseudomonadales:	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Pseudomonadaceae]					
Pseudomonas syringae subsp. *syringae* van Hall 1902 [Pseudomonadales: Pseudomonadaceae]	Yes (Whitelaw-Weckert *et al*. 2011)	Assessment not required			
Pseudomonas viridiflava Burkholder 1930) Dowson 1939 [Pseudomonadales: Pseudomonadaceae]	Yes (PHA 2001)	Assessment not required			
Rhizobium radiobacter (Beijerinck and van Delden 1902) Pribram 1933 [Rhizobiales: Rhizobiaceae]	Yes (PHA 2001)	Assessment not required			
Rhizobium vitis (Ophel & Kerr 1990) Young *et al*. [Rhizobiales: Rhizobiaceae]	Yes (Gillings and Ophel-Keller 1995)	Assessment not required			
Xanthomonas campestris pv. *viticola* (Nayudu 1972) Dye 1978 [Xanthomonadales: Xanthomonadaceae]	Not known to occur	**Yes**: *Xanthomonas campestris* pv. *viticola* (Xcv) survives in infected plants as an epiphyte on aerial plant parts and may be carried in infected transplants and cuttings (Nascimento and Mariano 2004; Peixoto *et al*. 2007). Therefore, dormant cuttings may provide a pathway for this bacterium.	**Yes**: Xcv has established in areas with a wide range of climatic conditions (Trindade *et al*. 2005) and may spread naturally in infected propagative material (Nascimento and Mariano 2004; Peixoto *et al*. 2007). Multiplication and marketing of infected propagative material will help spread this bacterium within Australia. Therefore, this bacterium has the potential for establishment and spread in Australia.	**Yes**: This bacterium causes leaf blight and cankers on stems and petioles and causes extensive foliage death. It also causes irregular colour and size in berries and may cause necrotic lesions (Nascimento and Mariano 2004), reducing the yield and quality of the grapes. The development of grapevine bacterial canker in Brazil has caused severe crop losses (Nascimento *et al*. 2005). Therefore, this bacterium has the potential for economic consequences in Australia.	**Yes**
Xanthomonas campestris pv.	Not known to	Assessment not required[8]			

[8] V. *campestris* pv.*vitiscarnosae* attacks *V. carnosa*. *Vitis carnosa* is not an important species of *Vitis* for commercial viticulture, scion cultivars, rootstocks or in breeding programs and therefore will

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
vitiscarnosae (Moniz & Patel 1958) Dye 1978 [Xanthomonadales: Xanthomonadaceae]	occur				
Xanthomonas campestris pv. *vitistrifoliae* (Padhya *et al*. 1965) Dye 1978) Dye [Xanthomonadales: Xanthomonadaceae]	Not known to occur	Assessment not required[9]			
Xanthomonas campestris pv. *vitiswoodrowii* (Patel & Kulkarni 1951) Dye 1978 [Xanthomonadales: Xanthomonadaceae]	Not known to occur	Assessment not required[10]			
Xylella fastidiosa (Wells *et al*. 1987)[11] – grapevine strain [Xanthomonadales: Xanthomonadaceae]	Not known to occur	**Yes**: *Xylella fastidiosa* multiplies and spreads exclusively within the xylem (Purcell 2001). Diseased stems often mature irregularly and show patches of brown and green tissue. The grapevine strain of *X. fastidiosa* proliferates only in xylem vessels, in roots, stems and leaves. Therefore, propagative material provides a pathway for Grapevine strain of *X. fastidiosa*.	**Yes**. Grapevine strain of *X. fastidiosa* has established in areas with a wide range of climatic conditions (Mizell *et al.* 2008) and may spread naturally in infected propagative material (Frison and Ikin 1991). Multiplication and marketing of infected propagative material will help spread this bacterium within Australia. CLIMEX predictions indicate that grape growing regions across southern Australia would be highly	**Yes**. Grapevine strain of *X. fastidiosa* causing Pierce's disease is a major constraint on grapevine production in the USA and tropical America (CABI/EPPO 1990). Grapevines affected by this pathogen usually die within 1–5 years of infection (Pearson and Goheen 1988). *X. fastidiosa* is an EPPO A1 quarantine pest and is also of quarantine significance for COSAVE. Presence of this bacterium in Australia would impact upon Australia's ability to	**Yes**

not be imported into Australia. Additionally, *Vitis carnosa* is currently not permitted entry into Australia. Consequently, V. *campestris* pv.*vitiscarnosae* is not on the pathway.

[9] V. *campestris* pv. *vitistrifoliae* attacks *V. trifolia*. *Vitis trifolia* is not an important species of *Vitis* for commercial viticulture, scion cultivars, rootstocks or in breeding programs and therefore will not be imported into Australia. Additionally, *Vitis trifolia* is currently not permitted entry into Australia. Consequently, V. *campestris* pv.*vitistrifoliae* is not on the pathway.

[10] *Xanthomonas campestris* pv. *vitiswoodrowii* attacks *V. woodrowii*. *Vitis woodrowii* is not an important species of *Vitis* for commercial viticulture, scion cultivars, rootstocks or in breeding programs and therefore will not be imported into Australia. Additionally, *Vitis woodrowii* is currently not permitted entry into Australia. Consequently, V. *campestris* pv.*vitiswoodrowii* is not on the pathway.

[11] Strains of this bacterium are the causal agent of phony peach disease (PPD), plum leaf scald, Pierce's disease (PD) of grapes, citrus variegated chlorosis (CVC) and leaf scorch of almond, coffee, elm, oak, oleander pear, and sycamore (Mizell *et al*. 2008). Only information on Pierce's disease (PD) grape strain has been used in this section.

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
			suitable for this bacterium (Hoddle 2004). Therefore, this bacterium has the potential for establishment and spread in Australia.	access overseas markets. Therefore, this bacterium has the potential for significant economic consequences in Australia.	
Xylophilus ampelinus (Panagopoulos1969) Willems *et al*. 1987 [Xanthomonadales: Xanthomonadaceae]	Not known to occur	**Yes**: *Xylophilus ampelinus* is a systemic pathogen infecting xylem (Grall and Manceau 2003) and overwinters in plant tissue. Primary infection occurs on one or two year old shoots (Ridé *et al*. 1977). This bacterium often presents as a latent infection (Ridé *et al*. 1983; Panagopoulos 1987). This may lead to the propagation and distribution of infected propagative material, suggesting that this bacterium could be introduced into Australia.	**Yes:** *Xylophilus ampelinus* has established in areas with a wide range of climatic conditions (Botha *et al*. 2001; Manceau *et al*. 2005; CABI/EPPO 1999; Dreo *et al*. 2005) and has spread naturally in infected propagative material (Frison and Ikin 1991). Multiplication and marketing of latently infected propagative material will help spread this bacterium within Australia. Therefore, this bacterium has the potential for establishment and spread in Australia.	**Yes**. *Xylophilus ampelinus* is a destructive pathogen of multiple grapevine cultivars (Serfontein *et al*. 1997). *Xylophilus ampelinus* is an EPPO A2 quarantine organism (OEPP/EPPO 1984) and is also of quarantine significance for NAPPO and the IAPSC. Presence of this bacterium in Australia would impact upon Australia's ability to access overseas markets. Therefore, this bacterium has the potential for economic consequences in Australia.	**Yes**
FUNGI					
Acanthonitschkea tristis (Pers.) Nannf. [Coronophorales: Nitschkiaceae]	Not known to occur	No: This species is found on the decaying wood and bark of host plants (Miller and Huhndorf 2009). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Acremonium alternatum Link [Hypocreales: Unassigned]	Not known to occur	No: This fungus is a mycoparasite and consequently feeds on other pathogens occurring on the	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		plant (Romero *et al*. 2003). For instance, it is known to control powdery mildews (Romero *et al*. 2003). Therefore, dormant cuttings do not provide a pathway for this fungus.			
Acremonium charticola (Lindau) W. Gams [Hypocereales: Incertae sedis]	Not known to occur	**Yes:** This fungus is isolated from vascular tissues of grapevines (Halleen *et al*. 2005). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes:** This fungus has a wide distribution (Farr and Rossman 2011) and parts of Australia would be suitable for its establishment and spread. Distribution of infected propagative material would help spread this fungus in Australia. Therefore, this species has the potential for establishment and spread in Australia.	No: This fungus is considered to be non-pathogenic (Halleen *et al*. 2005). There is no evidence that it has the potential for economic consequences in Australia.	
Acremonium strictum W. Gams [Hypocereales: Incertae sedis]	Yes (McGee 1989; PHA 2001)	Assessment not required			
Acrogenotheca ornata Deighton & Pirozynski [Unassigned]	Not known to occur	No: Other members of this genus are associated with sooty molds (Reynolds 1971). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Acrospermum viticola Ikata & Hitomi [Acrospermales: Acrospermaceae]	Not known to occur	No: This fungus is associated with grapevine foliage (Li 2004). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Acrostalagmus luteoalbus (Link) Zare *et*	Not known to	No: This species is commonly	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
al. [Hypocreales: Hypocreaceae]	occur	found in soil (Thormann and Rice 2007). Therefore, root free dormant cuttings do not provide a pathway for this fungus.			
Actinomucor elegans (Eidam) CR Benj. & Hesselt [Mucorales: Mucoraceae]	Yes (PHA 2001)	Assessment not required			
Aecidium cissigenum Welw. [Pucciniales: Unassigned]	Not known to occur	**Yes**: *Aecidium* species produce small yellowing pustules, either scattered or densely distributed on the lower leaf surface and occasionally on petioles, young shoots and rachises of host plants (Pearson and Goheen 1988). Therefore, dormant cuttings may provide a pathway for these rust fungi.	**Yes**: Grape rusts have established in areas with a wide range of climatic conditions (Pearson and Goheen 1988), and could spread naturally in infested propagative material. Therefore, these fungi have the potential for the establishment and spread in Australia.	No**:** There is limited information on these species. Although these species are reported to occur on *Vitis* species (Pearson and Goheen 1988), a literature search failed to provide information on the economic importance of these *Aecidium* species. Therefore, these species are not considered to be economically significant.	
Aecidium guttatum Kunze [Pucciniales: Unassigned]	Not known to occur				
Aecidium vitis Smith [Pucciniales: Unassigned]	Not known to occur				
Aleurodiscus botryosus Burt [Russulales: Stereaceae]	Not known to occur	No: This species occurs on dead stems (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Alternaria alternata (Fr.) Keissl. [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Alternaria tenuis Link [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Alternaria tenuissima (Kunze) Wiltshire [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Alternaria viticola Brunaud [Pleosporales: Pleosporaceae]	Not known to occur	**Yes**: *Alternaria viticola* mainly attacks young, tender stalks (Ma *et al.* 2004). This fungus overwinters on tendrils,	**Yes:** *Alternaria viticola* has established in areas with a wide range of climatic conditions (Ma *et al.* 2004)	**Yes:** *Alternaria viticola* can cause serious drop off of flowers and young fruit. Grape production has been seriously	**Yes**

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		branches and in bud scales (Ma *et al.* 2004). Therefore, dormant cuttings may provide a pathway for this fungus.	and may spread naturally in infected propagative material. Therefore, this fungus has the potential for establishment and spread in Australia.	damaged in some areas of China. Yield losses of 30–40% have been reported from Xinjiang province (Ma *et al*. 2004) and 30–50% in southeast Shandong (Zhu *et al*. 2006). Therefore, this fungus has the potential for economic consequences in Australia.	
Alternaria vitis Cavara [Pleosporales: Pleosporaceae]	Not known to occur	No: *Alternaria vitis* is associated with the foliage of grapevines (Suhag *et al*. 1982). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Amerosporium concinnum Petr. [Helotiales: Sclerotiniaceae]	Not known to occur	No: This species occurs on the dead stems of host plants (Hayova and Minter 2009). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Ampelomyces quisqualis Ces [Anamorphic Phaeosphaeriaceae]	Yes (PHA 2001)	Assessment not required			
Amphisphaeria sylvana Saccardo & Spegazzini [Xylariales: Amphisphaeriaceae]	Not known to occur	No: Members of this genus are associated with the dried stems of host plants (Rao 1965). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Apiospora montagnei Saccardo [Incertae sedis: Apiosporaceae]	Yes (PHA 2001)	Assessment not required			
Aplosporella beaumontiana S. Ahmad [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	No: Fungi in this genus are associated with thin dead	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Aplosporella fabaeformis (Pass. & Thüm.) Petr. & Syd. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	twigs (Damm *et al*. 2007). Therefore, dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Armillaria limonea (G. Stev.) Boesew. [Agaricales: Physalacriaceae]	Not known to occur	No: Members of the genus *Armillaria* occur in the roots of the host plant and cause root rot (Farr *et al*. 1989; van der Kamp and Hood 2002; CABI 2012a). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Armillaria luteobubalina Watling & Kile [Agaricales: Physalacriaceae]	Yes (Cook and Dubé 1989)	Assessment not required	.		
Armillaria mellea (Vahl) P. Kumm. [Agaricales: Physalacriaceae]	Not known to occur	No: This soil-borne fungus survives in infected wood and roots below ground (Flaherty *et al*. 1992). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Armillaria novae-zelandiae (G. Stev.) Boesew. [Agaricales: Physalacriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Armillaria tabescens (Scop.) Emel [Agaricales: Physalacriaceae]	Not known to occur	No: Members of the genus *Armillaria* occur in the roots of the host plant and cause root rot (Farr *et al*. 1989; van der Kamp and Hood 2002; CABI 2012a). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Arxiomyces vitis (Fuckel) P.F. Cannon &	Not known to	No: This fungus occurs on the	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
D. Hawksw. [Melanosporales: Ceratostomataceae]	occur	bark of woody shrubs and trees (Ferreira *et al*. 2005). Therefore, dormant cuttings do not provide a pathway for this fungus.			
Ascochyta ampelina Sacc. [Pleosporales:Incertae sedis]	Not known to occur	No: *Ascochyta ampelina* has been recorded on grapes, causing leaf spot (Kiewnick 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Ascospora viticola Nasyrov [Incertae sedis]	Not known to occur	No: This fungus has been recorded on *Vitis* species, causing leaf spot (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Aspergillus aculeatus Iizuka [Eurotiales: Trichocomaceae]	Not known to occur	No: Members of this genus occur on the fruits and seeds of the host plant, causing storage rot (Farr *et al*. 1989; Leong *et al*. 2006; CABI 2012a). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Aspergillus carbonarius (Bainier) Thom [Eurotiales: Trichocomaceae]	Yes (Leong *et al*. 2006)	Assessment not required			
Aspergillus flavus Link. [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Aspergillus glaucus (L.) Link [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Aspergillus niger var. *niger* Tiegh.	Yes (Cook and	Assessment not required			

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
[Eurotiales: Trichocomaceae]	Dubé 1989)				
Aspergillus wentii Wehmer [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Asperisporium minutulum (Sacc.) Deighton [Unassigned]	Not known to occur	No: These species occur on the leaves of the plant, causing leaf spot (Farr *et al*. 1989; Farr and Rossman 2011). *Asperisporium vitiphyllum* also occurs on fruit (USDA 2005). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Asperisporium vitiphyllum (Speschnew) Deighton [Unassigned]	Not known to occur		Assessment not required		
Asterina viticola AK Kar & SN Ghosh [Capnodiales: Asterinaceae]	Not known to occur	No: *Asterina viticola* has been recorded on leaves of *Vitis* species (Hosagoudar 2003). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Athelia arachnoidea (Berk.) Jülich [Atheliales: Atheliaceae]	Not known to occur	No: This fungus occurs on the wood and roots of plants (Farr *et al.* 1989; Farr and Rossman 2011). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Aureobasidium pullulans var. *pullulans* (de Bary) G. Arnaud [Dothideales: Dothioraceae]	Yes (Simmonds 1966)	Assessment not required			
Bactrodesmium pallidum MB Ellis [Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		mentioned. However, on other hosts this fungus occurs on wood (Tsui *et al.* 2003). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.			
Bartalinia robillardoides Tassi [Xylariales: Amphisphaeriaceae]	Yes (PHA 2001)	Assessment not required			
Berkleasmium corticola (P. Karst.) R.T. Moore [Pelopsporales Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this fungus occurs on dead wood (Farr *et al*. 1989). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Bertia vitis R. Schulzer [Coronophorales: Bertiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, *Bertia* species are mainly associated with wood and dead limbs of forest trees (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Bipolaris papendorfii (Aa) Alcorn [Pleosporales: Pleosporaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Biscogniauxia capnodes var. *capnodes*	Not known to	No: These fungi have been	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
(Berk.) YM Ju & JD Rogers [Xylariales: Xylariaceae]	occur	recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts these fungi occur on wood (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for these fungi.			
Biscogniauxia mediterranea var. *mediterranea* (De Not.) Kuntze [Xylariales: Xylariaceae]	Not known to occur		Assessment not required		
Bispora antennata (Pers.) EW Mason [Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this dematiaceous fungus is saprobic on wood (Ellis and Ellis 1997). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Botryodiplodia palmarum (Cooke) Petr. & Syd. [Diaporthales: Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts fungus causes sett rot (Sharma and Sharma 2006). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Botryodiplodia vitis Sousa da Câmara [Diaporthales: Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		mentioned. Since being reported on *Vitis* species in 1969 in Pakistan (Farr and Rossman 2011), it has not been reported from any other country. This indicates that dormant cuttings do not provide a pathway for this fungus.			
Botryosphaeria australis Slippers *et al*. [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Fusicoccum australe* Slippers *et al*.; *Neofusicoccum australe* (Slippers *et al*.) Crous *et al*.)	Yes (Taylor *et al*. 2005)	Assessment not required			
Botryosphaeria corticola A.J.L. Phillips, A. Alves & J. Luque [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Diplodia corticola* Phillips *et al*.)	Not known to occur	**Yes**: This fungus has been recorded on *Vitis* species (Carlucci and Frisullo 2009). This fungus is reported to cause cankers in the vascular tissue of one year old canes, spurs and cordons in Texas (Úrbez-Torres *et al*. 2010b). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes**: This fungus has established in areas with a wide range of climatic conditions (Carlucci and Frisullo 2009, Úrbez-Torres *et al*. 2010b) and may spread naturally in infected propagative material. Therefore, this fungus has the potential for establishment and spread in Australia.	No: This fungus causes dieback of young shoots, defoliation, sub cortical brown streaks on the canes, and wedge-shaped necrotic areas within trunks and branches (Carlucci and Frisullo 2009). This fungus causes cankers, vascular necrosis and dieback in oak (*Quercus*) species (Dreaden *et al*. 2011). While this species can have strong pathogenic effects on cork oak, the fungus only colonises decorticated trunks after cork extraction (Luque *et al.* 2008). It is considered to be one of the less virulent of the *Botryosphaeriaceae* species (Gubler *et al*. 2010)	
Botryosphaeria dothidea (Moug.) Ces. &	Yes (Pitt *et al*.	Assessment not required			

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
De Not. [Botryosphaeriales: Botryosphaeriaceae]	2009)				
Botryosphaeria lutea AJL Phillips [Botryosphaeriales: Botryosphaeriaceae] (synonyms: *Fusicoccum luteum* Pennycook & Samuels; *Neofusicoccum luteum* (Pennycook & Samuels) Crous *et al*.)	Yes (Qui *et al*. 2011)	Assessment not required			
Botryosphaeria obtusa (Schwein.) Shoemaker [Botryosphaeriales: [Botryosphaeriaceae]	Yes (Castillo-Pando *et al*. 2001)	Assessment not required			
Botryosphaeria parva Pennycook & Samuels) [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Fusicoccum parvum* Pennycook & Samuels; *Neofusicoccum parvum* (Pennycook & Samuels) Crous *et al*.)	Yes (Pitt *et al*. 2009)	Assessment not required			
Botryosphaeria rhodina (Berk. & M.A. Curtis) Arx [Botryosphaeriales: [Botryosphaeriaceae] (synonym: *Lasiodiplodia theobromae* (Pat.) Griffon & Maubl.)	Yes (Taylor *et al*. 2005)	Assessment not required			
Botryosphaeria ribis Grossenb. & Duggar [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Fusicoccum tingens* Goid.)	Yes (Constable and Drew 2004)	Assessment not required			
Botryosphaeria stevensii Shoemaker [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Diplodia mutila* (Fr.) Mont.)	Yes (Taylor *et al*. 2005)	Assessment not required			
Botryosphaeria viticola AJL Phillips & J Luque [Botryosphaeriales: Botryosphaeriaceae] (*Dothiorella viticola* AJL Phillips & J Luque)	Yes (Wunderlich *et al*. 2008)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Botrytis ampelophila Speg[Helotiales: Sclerotiniaceae]	Not known to occur	No: This fungus has been recorded on *Vitis riparia* (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its report on *Vitis riparia* in 1973 in Argentina (Farr and Rossman 2011), it has not been reported from any other country, indicating that dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Botrytis cinerea Pers. [Helotiales: Sclerotiniaceae]	Yes (Rogiers *et al*. 2005)	Assessment not required			
Briosia ampelophaga Cavara [Unassigned]	Not known to occur	No: This species is associated with foliage and causes leaf spot in *Vitis* (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Cadophora luteo-olivacea (JFH Beyma) TC Harr. & McNew [Helotiales: Leotiomycetidae] (synonym: *Phialophora luteo-olivacea* JFH Beyma)	Not known to occur	**Yes**: This endophytic fungus attacks young grapevines (Gramaje *et al*. 2010; Navarrete *et al*. 2010) and has been isolated from the vascular tissue of grapevines (Halleen *et al*. 2007). Infection of this fungus can be symptomatic (Navarrete *et al*. 2010) or asymptomatic (Halleen *et al*. 2007). Therefore, this fungus has the	**Yes**: This fungus has established in areas with a wide range of climatic conditions (Prodi *et al*. 2008; Gramaje and Armengol 2011) and may spread naturally in infected propagative material. Therefore, this fungus has the potential for establishment and spread in Australia.	**Yes**: This species is involved in the decline of young grapevines in vineyards and nurseries (Gramaje *et al*. 2010) and is common on grapevines affected by esca and Petri disease in parts of its current range (Gramaje and Armengol 2011). This species has also been reported as the causal agent of kiwifruit leader dieback (Riccioni *et al*. 2007; Prodi *et al*. 2008).	**Yes**

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		potential to be on the pathway of grapevine dormant cuttings.		Therefore, this fungus has the potential for economic consequences in Australia.	
Cadophora melinii Nannf. [Helotiales: Leotiomycetidae] (synonym: *Phialophora melinii* (Nannf.) Conant)	Not known to occur	**Yes**: This species is associated with trunk diseases of young grapevines (Gramaje *et al*. 2010). Therefore, this species has the potential to be on the pathway of dormant grapevine cuttings.	**Yes**: This fungus has established in areas with a wide range of climatic conditions (Prodi *et al*. 2008; Gramaje *et al*. 2010; Navarrete *et al*. 2010) and may spread naturally in infected propagative material. Therefore, this fungus has the potential for establishment and spread in Australia.	**Yes**: This fungus has been isolated from young grapevines affected by esca and Petri disease (Gamaje *et al*. 2010; Gramaje *et al*. 2011). There is no evidence that this species is an economically important pathogen of grapevines, however it is associated with trunk hypertrophy and elephantiasis in kiwifruit (Prodi *et al*. 2008; Gramaje *et al*. 2011; Spadaro *et al*. 2011) resulting in reduced foliage and small, unsalable fruits (Prodi *et al*. 2008). Therefore, this species has the potential for economic consequences in Australia.	**Yes**
Calonectria kyotensis Terash. 1968 [Hypocreales: Nectriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Camarosporium viniferum S. Ahmad [Botryosphaeriales: Unassigned]	Not known to occur	**Yes**: This species occurs on *Vitis* branches (Farr and Rossman 2011). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes**: This fungus has established in areas with a wide range of climatic conditions (Farr and Rossman 2011) and may spread naturally in infected propagative material. Therefore, this fungus has the potential for establishment and spread in Australia.	No: There is no evidence that this species has the potential for economic consequences.	
Campylocarpon fasciculare Schroers *et*	Not known to	No: These species are	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
al. [Hypocreales: Nectriaceae]	occur	associated with grapevine roots causing sunken necrotic root lesions (Halleen *et al*. 2006a). Therefore, root free dormant cuttings do not provide a pathway for these fungi.			
Campylocarpon pseudofasciculare Halleen *et al*. [Hypocreales: Nectriaceae]	Not known to occur		Assessment not required		
Capnodinula tonduzii Speg. [Incertae sedis: Pseudoperisporiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its report on *Vitis* species from Costa Rica in 1973 (Farr and Rossman 2011), it has not been reported from any other country, indicating that dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Capnodium elongatum Berk. & Desm. [Capnodiales: Capnodiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this fungus occurs on leaves (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Capnodium salicinum Mont [Capnodiales: Capnodiaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Capronia mansonii (Schol-Schwarz)	Not known to	No: This fungus has been	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Müller *et al*. [Chaetothyriales: Herpotrichiellaceae]	occur	recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this fungus occurs on leaves (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.			
Cephalotrichum microsporum (Sacc.) PM Kirk [Microascales: Microascaceae] (synonym: *Doratomyces microsporus* (Sacc.) F.J. Morton & G. Sm.)	Yes (Eicker 1973; PHA 2001)	Assessment not required			
Cephalotrichum stemonitis (Pers.) Nees [Microascales: Microascaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Cercospora coryneoides Săvul. & Rayss [Capnodiales: Mycosphaerellaceae]	Not known to occur	No: These *Cercospora* species have been recorded on *Vitis* species (Farr and Rossman 2011). Generally, *Cercospora* species occur on the leaves of host plants and cause leaf spot (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Cercospora daspurensis AK Kar & M Mandal [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Cercospora fuckelii (Thüm.) Jacz. [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Cercospora judaica Rayss [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Cercospora sessilis Sorokīn [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Cercospora truncata Ellis & Everh. [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Cercospora truncatella G.F Atk. [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Cercospora vitiphylla (Speschnew) Barbarin. [Capnodiales:	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Mycosphaerellaceae]					
Cercospora vitis-heterophyllae Hennings. [Capnodiales: [Mycosphaerellaceae]	Not known to occur		Assessment not required		
Cercospora vulpinae Ellis & Kellerm [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Cercosporidium vitis MS Patil & Sawant [Capnodiales: Mycosphaerellaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, *Cercosporidium* species are associated with foliage and cause late leaf spot in host plants (Meena 2010). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Chaetospermum chaetosporum (Pat.) AL Smith & Ramsb. [Unassigned]	Yes (PHA 2001)	Assessment not required			
Chalara ampullula (Sacc.) Sacc. [Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, *Chalara* species are associated with wood and dead leaves in other host plants (Farr *et al.* 1989). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Cladosporium asperulatum Bensch *et al*. [Capnodiales: Davidiellaceae]	Not known to occur	**Yes:** *Cladosporium* species are saprobic on dead plant	**Yes**. These fungi have established in areas with a	No: *Cladosporium* species cause minor foliage diseases or fruit rot	

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Cladosporium autumnale Kübler [Capnodiales: Davidiellaceae]	Not known to occur	material (Farr *et al*. 1989), are associated with foliage and cause leaf spot (Pearson and Goheen 1988; Farr and Rossman 2011) or are associated with canes (Pearson and Goheen 1988). Therefore, dormant cuttings may provide a pathway for these fungi.	wide range of climatic conditions (Farr and Rossman 2011) and may spread naturally in infected propagative material. Therefore, these fungi have the potential for establishment and spread in Australia.	in storage (Pearson and Goheen 1988). Two *Caldopsorium* species (*C. cladosporioides* and *C. herbarum*) associated with berry rot causing yield losses and reducing wine quality (Briceño and Latorre 2008) are present in Australia. These species are not associated with berry rot (Briceño and Latorre 2008) and are therefore not economically important.	
Cladosporium baccae Verwoerd & Dippen. [Capnodiales: Davidiellaceae]	Not known to occur				
Cladosporium cladosporioides (Fresen.) G.A. de Vries [Capnodiales: Davidiellaceae]	Yes (PHA 2001)	Assessment not required			
Cladosporium fasciculatum Corda [Capnodiales: Davidiellaceae]	Not known to occur	**Yes**: *Cladosporium* species are saprobic on dead plant material (Farr *et al*. 1989), are associated with foliage and cause leaf spot (Pearson and Goheen 1988; Farr and Rossman 2011) or are associated with canes (Pearson and Goheen 1988). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes**. *Cladosporium* species have established in areas with a wide range of climatic conditions (Farr and Rossman 2011) and may spread naturally in infected propagative material. Therefore, these fungi have the potential for establishment and spread in Australia.	No: *Cladosporium* species cause minor foliage diseases or fruit rot in storage (Pearson and Goheen 1988). The two *Cladopsorium* species (*C. cladosporioides* and *C. herbarum*) associated with berry rot, causing yield losses and reducing wine quality (Briceño and Latorre 2008), are present in Australia. *C. fasciculatum* is not associated with berry rot (Briceño and Latorre 2008) and is therefore not economically important.	
Cladosporium herbarum (Pers.) Link [Capnodiales: Davidiellaceae]	Yes (Cook and Dubé 1989)	Assessment not required			
Cladosporium longipes Sorokīn [Capnodiales: Davidiellaceae]	No records found	**Yes**: *Cladosporium* species are saprobic on dead plant material (Farr *et al*. 1989), are	**Yes**. *Cladosporium* species have established in areas with a wide range of climatic	No: *Cladosporium* species cause minor foliage diseases or fruit rot in storage (Pearson and Goheen	

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		associated with foliage and cause leaf spot (Pearson and Goheen 1988; Farr and Rossman 2011) or are associated with canes (Pearson and Goheen 1988). Therefore, dormant cuttings may provide a pathway for this fungus.	conditions (Farr and Rossman 2011) and may spread naturally in infected propagative material. Therefore, these fungi have the potential for establishment and spread in Australia.	1988). The two *Cladopsorium* species (*C. cladosporioides* and *C. herbarum*) associated with berry rot, causing yield losses and reducing wine quality (Briceño and Latorre 2008), are present in Australia. *C. longipes* is not associated with berry rot (Briceño and Latorre 2008) and is therefore not economically important.	
Cladosporium macrocarpum Preuss [Capnodiales: Davidiellaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Cladosporium oxysporum Berk. & M.A. Curtis [Capnodiales: Davidiellaceae]	Yes (PHA 2001)	Assessment not required			
Cladosporium roesleri Catt. [Capnodiales: Davidiellaceae]	No records found	**Yes**: *Cladosporium* species are saprobic on dead plant material (Farr *et al*. 1989), are associated with foliage and cause leaf spot (Pearson and Goheen 1988; Farr and Rossman 2011) or are associated with canes (Pearson and Goheen 1988). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes**. *Cladosporium* species have established in areas with a wide range of climatic conditions (Farr and Rossman 2011) and may spread naturally in infected propagative material. Therefore, these fungi have the potential for establishment and spread in Australia.	No: *Cladosporium* species cause minor foliage diseases or fruit rot in storage (Pearson and Goheen 1988). The two *Cladopsorium* species (*C. cladosporioides* and *C. herbarum*) associated with berry rot, causing yield losses and reducing wine quality (Briceño and Latorre 2008), are present in Australia. *C. roesleri* is not associated with berry rot (Briceño and Latorre 2008) and is therefore not economically important.	
Cladosporium tenuissimum Cooke [Capnodiales: Davidiellaceae]	Yes (PHA 2001)	Assessment not required			
Cladosporium uvarum McAlpine [Capnodiales: Davidiellaceae]	Yes (Dugan *et al*. 2004)	Assessment not required			
Cladosporium viticola Ces.	No records found	**Yes**: *Cladosporium* species	**Yes**. *Cladosporium* species	No: *Cladosporium* species cause	

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Capnodiales: Davidiellaceae]		are saprobic on dead plant material (Farr *et al*. 1989), are associated with foliage and cause leaf spot (Pearson and Goheen 1988; Farr and Rossman 2011) or are associated with canes (Pearson and Goheen 1988). Therefore, dormant cuttings may provide a pathway for this fungus.	have established in areas with a wide range of climatic conditions (Farr and Rossman 2011) and may spread naturally in infected propagative material. Therefore, these fungi have the potential for establishment and spread in Australia.	minor foliage diseases or fruit rot in storage (Pearson and Goheen 1988). The two *Cladopsorium* species (*C. cladosporioides* and *C. herbarum*) associated with berry rot, causing yield losses and reducing wine quality (Briceño and Latorre 2008), are present in Australia. *C. viticola* is not associated with berry rot (Briceño and Latorre 2008) and is therefore not economically important.	
Clathrospora turkestanica Domashova [Pleosporales: Pleosporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011) but affected plant parts are not mentioned. Since its report on *Vitis* species from Central Asia in 1973 (Farr and Rossman 2011), it has not been reported from any other country, indicating that grapevine propagative material does not provide a pathway for this fungus.	Assessment not required		
Cochliobolus bicolor AR Paul & Parbery [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Cochliobolus geniculatus RR Nelson [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Colletotrichum acutatum J.H. Simmonds [Incertae sedis: Glomerellaceae]	Yes (Whitelaw-Weckert *et al*. 2007a)	Assessment not required			
Colletotrichum ampelinum Cavara	Not known to	No: *Colletotrichum* species	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Incertae sedis: Glomerellaceae]	occur	are foliar pathogens (Mohanan 2005). This fungus is associated with grapevines, causing anthracnose in China (Anon 2005). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.			
Colletotrichum capsici (Syd. & P. Syd.) E.J. Butler & Bisby [Incertae sedis: Glomerellaceae]	Yes (Shivas 1989)	Assessment not required			
Colletotrichum crassipes (Speg.) Arx [Incertae sedis: Glomerellaceae]	Yes (PHA 2001)	Assessment not required			
Colletotrichum gloeosporioides (Penz.) Penz. & Sacc. [Incertae sedis: Glomerellaceae]	Yes (Shivas 1989)	Assessment not required			
Colletotrichum simmondsii RG Shivas & YP Tan [Incertae sedis: Glomerellaceae]	Yes (Shivas and Tan 2009)	Assessment not required			
Coniella castaneicola (Ellis & Everh.) B. Sutton [Diaporthales: Schizoparmaceae]	Yes (PHA 2001)	Assessment not required			
Coniella diplodiella (Speg.) Petr. & Syd. [Diaporthales: Schizoparmaceae]	Yes (PHA 2001)	Assessment not required			
Coniella fragariae (Oudem.) B. Sutton [Diaporthales: Schizoparmaceae]	Yes (PHA 2001)	Assessment not required			
Coniella granati (Sacc.) Petr. & Syd. [Diaporthales: Schizoparmaceae]	Yes (PHA 2001)	Assessment not required			
Coniella petrakii B. Sutton [Diaporthales: Schizoparmaceae]	Not known to occur	No: This soil-borne fungus has been recorded on *Vitis* species, causing white root rot (König *et al.* 2009). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Corticium cremeoalbidum (MJ Larsen & Nakasone) MJ Larsen [Corticiales: Corticiaceae] (synonym: *Laeticorticium cremeoalbidum* MJ Larsen & Nakasone)	Not known to occur	No: This fungus has been recorded on the wood of *Vitis* species (CABI 2012b). There is no evidence that this species occurs on the young stems of grapevines. Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Coryneopsis microsticta Grove [Xylariales: Amphisphaeriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Corynespora calicioidea (Berk. & Broome) M.B. Ellis [Pleosporales: Corynesporascaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, other *Corynespora* species are associated with wood, bark and dead wood (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Corynespora kamatii (VG Rao) MB Ellis. [Pleosporales: Corynesporascaceae]	Not known to occur		Assessment not required		
Coryneum discolor Fautrey [Diaporthales: Pseudovalsaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, *Coryneum* species occur on twigs and foliage of other hosts (Schloemann 2003-2004; Farr and Rossman 2011). Therefore, foliage free	Assessment not required		
Coryneum microstictum Berk. & Broome [Diaporthales: Pseudovalsaceae]	Not known to occur		Assessment not required		
Coryneum vitiphyllum Speschnew [Diaporthales: Pseudovalsaceae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		dormant cuttings do not provide a pathway for these fungi.			
Crepidotus amarus Murrill [Agaricales: Inocybaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, *Crepidotus* species occur on bark and wood of hardwoods on other hosts (Farr and Rossman 2011). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Cryptophaeella trematosphaeriicola Frolov [Pleosporales: Montagnulaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its report on *Vitis* species from Central Asia in 1973 (Farr and Rossman 2011), it has not been reported from any other country. This indicates that dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Cryptosphaeria pullmanensis Glawe [Xylariales: Diatrypaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species and has been isolated from cankered wood (Trouillas and Gubler 2010). Generally, *Cryptosphaeria* species occur	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		on bark of host plants (Romero and Carmaran 2003). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.			
Cryptostictis hysterioides Fuckel [Xylariales: Amphisphaeriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Cryptostictis inaequalis Tehon & Stout [Xylariales: Amphisphaeriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this fungus occurs on the leaves (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Cryptovalsa ampelina Fuckel [Incertae sedis: Incertae sedis]	Yes (Sosnowski *et al*. 2007)	Assessment not required			
Cryptovalsa protracta (Pers.) De Not. [Unassigned]	Yes (Yuan 1996)	Assessment not required			
Cryptovalsa rabenhorstii (Nitschke) Sacc. [Unassigned]	Yes (Trouillas *et al*. 2011)	Assessment not required			
Cylindrocarpon destructans var. *destructans* (Zinssm.) Scholten [Hypocreales: Nectriaceae]	Yes (Sweetingham 1983)	Assessment not required			
Cylindrocarpon lichenicola (C. Massal.) D. Hawksw. [Hypocreales: Nectriaceae]	Yes (Brayford 1987)	Assessment not required			
Cylindrocarpon liriodendri JD MacDonald & EE Butler [Hypocreales: Nectriaceae]	Yes (Whitelaw-Weckert *et al*. 2007b)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Cylindrocarpon macrodidymum Schroers *et al*. [Hypocreales: Nectriaceae]	Yes (Whitelaw-Weckert 2008)	Assessment not required			
Cylindrocarpon obtusisporum (Cooke & Harkn.) Wollenw [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Cylindrocarpon pauciseptatum Schroers & Crous [Hypocreales: Nectriaceae]	Not known to occur	No**:** This species is associated with black foot disease in grapevines (Schroers *et al*. 2008; Martin *et al*. 2011a). This fungus has reported to occur in the roots (Alaniz *et al*. 2007), stem vascular tissue and brown wood of young grapevines (Martin *et al*. 2011a). Semi-hardwood, root free dormant cuttings therefore do not provide a pathway for this fungus.	Assessment not required		
Cylindrocladiella lageniformis Crous *et al*. [Hypocreales: Nectriaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts these fungi occur on the roots (van-Coller *et al*. 2005). Therefore, root free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Cylindrocladiella parva (P.J. Anderson) Boesew [Hypocreales: Nectriaceae]	Not known to occur		Assessment not required		
Cylindrocladiella peruviana (Bat. *et al*.) Boesew) [Hypocreales: Nectriaceae]	Not known to occur		Assessment not required		
Daldinia concentrica sensu auct. [Xylariales: Xylariaceae]	Yes (PHA 2001)	Assessment not required			
Daldinia vernicosa (Schwein.) Ces. & De Not. [Xylariales: Xylariaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		(Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts, this fungus occurs on burnt wood (Rhoads 1918; Whalley and Watling 1980; Farr and Rossman 2011). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.			
Dendrophoma pleurospora Sacc [Xylariales: Xylariaceae] (synonym: *Dinemasporium pluerospora* (Sacc.) Shkarupa)	Not known to occur	No: This fungus is associated with *Vitis* species and has been isolated from the necrotic and healthy stem tissue of older grapevines (Serra *et al*. 2000). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Dendryphiella infuscans (Thüm.) M.B. Ellis [Pleosporales: Pleosporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this fungus occurs on dead stems (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Dendryphion acinorum Ellis & Everh. [Pleosporales: Pleosporaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but	Assessment not required		
Dendryphion harknessii var. *leptaleum*	Not known to		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Ellis [Pleosporales: Pleosporaceae]	occur	affected plant parts are not mentioned. Since their report on *Vitis* species in the United States in 1952 (Farr and Rossman 2011), they have not been reported from any other country indicating that dormant cuttings do not provide a pathway for these fungi.			
Dermatella viticola Ellis & Everh. [Helotiales: Dermateaceae]	Not known to occur	No: This species is associated with dead shoots (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Diaporthe australafricana Crous & Niekerk [Diaporthales: Diaporthaceae]	Yes (Van Niekerk *et al*. 2005)	Assessment not required			
Diaporthe eres Nitschke [Diaporthales: Diaporthaceae] (synonym *Diaporthe ambigua* Nitschke)	Yes (PHA 2001)	Assessment not required			
Diaporthe kyushuensis Kajitani & Kanem [Diaporthales: Diaporthaceae]	Not known to occur	**Yes**: This fungus is associated with *Vitis* species, causing leaf and cane spot (Kajitani and Kanematsu 2000). Small black spots appear at the base of the green shoot which later coalesces to form a blackened zone (Kajitani and Kanematsu 2000). Infection may also be latent (Kajitani and Kanematsu 2000). Therefore, propagative	**Yes:** This fungus has established in areas with a wide range of climatic conditions and it can spread naturally in infected propagative material (Kajitani and Kanematsu 2000). Propagation and distribution of infected material will help spread this fungus within Australia. Therefore, this fungus has the potential to establish and spread in	No. This species has been reported on grapes, causing canker in the1960s in Japan (Kajitani and Kanematsu 2000). Since then, no economic losses have been reported. Therefore, this fungus is not of economic concern for host plants.	

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		material may provide a pathway for this fungus.	Australia.		
Diaporthe medusaea Nitschke [Diaporthales: Diaporthaceae]	Yes (PHA 2001)	Assessment not required			
Diaporthe perjuncta Niessl. [Diaporthales: Diaporthaceae]	Yes (Van Niekerk *et al*. 2005)	Assessment not required			
Diaporthe viticola Nitschke [Diaporthales: Diaporthaceae]	Yes (Scheper *et al*. 2000)	Assessment not required			
Diatrype nigerrima Ellis & Everh. [Xylariales: Diatrypaceae]	Not known to occur	No: Most species of diatrypaceous fungi have been regarded as saprobes (Glawe and Rogers 1984). Species in the Diatrypaceae family have been isolated from the cankered wood of grapevines (Trouillas and Gubler 2010). Therefore, semi-hardwood dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Diatrype oregonensis (Wehm.) Rappaz [Xylariales: Diatrypaceae]	Not known to occur		Assessment not required		
Diatrype stigma (Hoffm.) Fr. [Xylariales: Diatrypaceae]	Not known to occur		Assessment not required		
Diatrype vitis Ellis & Everh. [Xylariales: Diatrypaceae]	Not known to occur		Assessment not required		
Diatrype whitmanensis J.D. Rogers & Glawe [Xylariales: Diatrypaceae]	Not known to occur		Assessment not required		
Diatrypella verruciformis (Ehrh.) Fr. [Xylariales: Diatrypaceae]	Not known to occur	No: Species in the Diatrypaceae family have been isolated from the cankered wood of grapevines (Trouillas and Gubler 2010). Pathogenicity studies indicate that this species is saprophytic rather than pathogenic on grapes (Trouillas and Gubler 2010). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Diatrypella vulgaris Trouillas *et al*.	Yes (Trouillas *et*	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Xylariales: Diatrypaceae]	*al*. 2011)				
Dichomera viticola Cooke & Harkn. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	No: This species occurs on the dead stems of the plant (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Dictyosporium elegans Corda [Pleosporales: Unassigned]	Yes (PHA 2001)	Assessment not required			
Didymosphaeria sarmenti (Cooke & Harkness) Berl. & Voglino [Pleosporales: Didymosphaeriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, the majority of *Didymosphaeria* species are saprobes that grow mostly on dead plant material (Aptroot 1995). Therefore, dormant cuttings are unlikely to provide a pathway for this fungus.	Assessment not required		
Diplodia ampelina (Cooke) [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	**Yes:** These species have been isolated from cankered grapevines (Phillips *et al*. 2008; Úrbez-Torres and Gubler 2009). These species are endophytic (Paoletti *et al*. 2007) and both saprophytic and pathogenic (Úrbez-Torres 2011) and have isolated from the shoots of grapevines (Aroca *et al*. 2010). Therefore, dormant cuttings may provide a pathway for these fungi.	**Yes:** These species occur in a wide range of climates (Farr and Rossman 2011). Therefore, parts of Australia will be suitable for the establishment and spread of these species. Distribution of infected propagative material will assist the establishment and spread these fungi in Australia.	No: There is no evidence that these species cause significant economic consequences. Therefore, these species do not have the potential for economic consequences in Australia.	
Diplodia porosum Van Niekerk & Crous [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Phaeobotryosphaeria porosa* (Van Niekerk & Crous) Crous & A.J.L. Phillips)	Not known to occur				

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Diplodia seriata De Not [Botryosphaeriales: Botryosphaeriaceae]	Yes (Pitt *et al*. 2009)	Assessment not required			
Diplodina vitis Brunaud [Diaporthales: Gnomoniaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its report on *Vitis* species in Central Asia in 1973 (Farr and Rossman 2011), it has not been reported from any other country, indicating dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Discohainesia oenotherae (Cooke & Ellis) Nannf [Unassigned]	Yes (PHA 2001)	Assessment not required			
Discosia artocreas (Tode) Fr. [Xylariales: Amphisphaeriaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts *Discosia* species occur on leaves (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Discosia vitis Schulzer [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Discostroma corticola (Fuckel) Brockmann [Xylariales: Amphisphaeriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Dothidella confluens (Welw. & Curr.) Sacc. [Incertae sedis: Polystomellaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		mentioned. However, on other hosts this fungus is associated with foliage and causes leaf spot (Chee 1976). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.			
Dothiorella americana Úrbez-Torres *et al*. sp. nov. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	**Yes**: This fungus is associated with die-back of *Vitis* species and has been isolated from grapevine vascular tissue (Urbez-Torres *et al*. 2012). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes:** This fungus has established in areas with a wide range of climatic conditions (Urbez-Torres *et al*. 2012). Propagation and distribution of infected material will help spread this fungus within Australia. Therefore, this fungus has the potential to establish and spread in Australia.	No: Although this fungus is associated with die-back, it is considered a weak pathogen of grapevines (Urbez-Torres *et al*. 2012). Other *Dothiorella* species are also generally considered weak pathogens of grapevines (Urbez-Torres *et al*. 2006; Urbez-Torres and Gubler 2009). This *Dothiorella* species has not been recorded to have economic consequences. Therefore, this fungus is not of economic concern to Australia.	
Dothiorella iberica Phillips *et al*. [Botryosphaeriales: Botryosphaeriaceae]	Yes (Wunderlich *et al*. 2008, Pitt *et al*. 2009)	Assessment not required			
Dothiorella sarmentorum (Fr.) Phillips *et al*. [Botryosphaeriales: Botryosphaeriaceae] (synonym *Diplodia sarmentorum* (Fr.) Fr.)	Not known to occur	**Yes:** This species has been isolated from the trunks of grapevines (Gramaje *et al*. 2009b). *Dothiorella* species have been isolated from the vascular tissue of grapevines (Urbez-Torres *et al*. 2012). Therefore, dormant cuttings may provide a pathway for	**Yes:** This species is distributed across a wide range of climates (Gramaje *et al*. 2009b; Farr and Rossman 2011). Parts of Australia have suitable climatic conditions for the establishment and spread of this species. Propagation and distribution of infected	No: This species occurs on a range of hosts, including elms, grapevines, *Malus* species and *Prunus* species (Phillips *et al*. 2008; Gramaje *et al*. 2009b; Gramaje *et al*. 2012). *Dothiorella* species are generally considered weak pathogens of grapevines (Urbez-Torres *et al*. 2006;	

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		this fungus.	material will help spread this fungus within Australia.	Urbez-Torres and Gubler 2009). This *Dothiorella* species has not been recorded to have significant economic consequences. Therefore, this fungus is not of economic concern to Australia.	
Drechslera tetramera (McKinney) Subram. & B.L. Jain [Pleosporales: Pleosporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this fungus is associated with roots (Nan 1995). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Ellisembia brachypus (Ellis & Everh.) Subram. [Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this species occurs on dead wood (Sivichai *et al*. 2000). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Elsinoë ampelina Shear [Myriangiales: Elsinoaceae]	Yes (Magarey *et al.* 1993)	Assessment not required			
Endothia radicalis (Schwein.) De Not. [Diaporthales: Cryphonectriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		mentioned. However, this species is saprophytic and occurs in dead stems on other hosts (Hoegger *et al*. 2002). Therefore, dormant cuttings do not provide a pathway for this fungus.			
Epicoccum nigrum Link [Pleosporales: Pleosporaceae] (synonym: *Epicoccum granulatum* Penz.)	Yes (PHA 2001)	Assessment not required			
Eriosphaeria oenotria Sacc. & Speg. [Trichosphaeriales: Trichosphaeriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its report on *Vitis* species in Italy in 1973 (Farr and Rossman 2011), it has not been reported from any other country, indicating that dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Erysiphe necator Schwein. [Erysiphales: Erysiphaceae]	Yes (Magarey *et al*. 1997)	Assessment not required			
Eutypa lata (Pers.) Tul. & C. Tul [Xylariales: Diatrypaceae]	Yes (Constable and Drew 2004)	Assessment not required			
Eutypa leptoplaca (Mont.) Rappaz [Xylariales: Diatrypaceae]	Yes (Trouillas *et al*. 2010)	Assessment not required			
Eutypa ludibunda Sacc. [Xylariales: Diatrypaceae]	Not known to occur	No: This fungus occurs on the dead wood of host plants (Rolshausen 2004). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Eutypella citricola Speg [Xylariales: Diatrypaceae]	Yes (Trouillas *et al*. 2011)	Assessment not required			
Eutypella fraxinicola (Cooke & Peck) Sacc. [Xylariales: Diatrypaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, this fungus occurs on dead branches of *Fraxinus* and *Ulmus* species (Vasilyeva and Stephenson 2006; Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Eutypella leprosa (Pers.) Berl. [Xylariales: Diatrypaceae]	Not known to occur	Yes: This fungus has been isolated from grapevines showing canker symptoms and vascular necrosis of trunks, arms and spurs (Diaz *et al*. 2011). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes:** This fungus has established in areas with a wide range of climatic conditions (Diaz *et al*. 2011; Farr and Rossman 2011) and it may spread naturally in infected propagative material. Therefore, this fungus has the potential to establish and spread in Australia.	**Yes:** This fungus causes cankers and vascular necrosis of trunks, arms and spurs, along with general decline and dieback of grapevines (Diaz *et al*. 2011). Therefore, this fungus has potential for economic consequences in Australia.	**Yes**
Eutypella microtheca Trouillas *et al*. [Xylariales: Diatrypaceae]	Yes (Trouillas *et al*. 2011)	Assessment not required			
Eutypella vitis (Schwein.Fr.) Ellis & Everhart [Xylariales: Diatrypaceae] (synonym: *Eutypella aequilinearis* (Schwein. Fr.) Starb.)	Not known to occur	**Yes**: This fungus is associated with Eutypa dieback and has been isolated from the trunks and branches of *Vitis* species (Catal *et al*. 2007). Therefore, dormant cuttings may provide	**Yes:** This fungus has established in areas with a wide range of climatic conditions (Catal *et al*. 2007; Farr and Rossman 2011) and it may spread naturally in infected propagative material.	**Yes**. *Eutypella vitis* has been identified as an additional causal agent of Eutypa dieback, an important disease of grapevine (Navarrete *et al*. 2010). Therefore, this fungus has potential for economic	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		a pathway for this fungus.	Therefore, this fungus has the potential to establish and spread in Australia.	consequences in Australia.	
Exosporium sultanae Du Plessis [Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, *Exosporium* species occur on the leaves of other hosts (Pitta 1994). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Favolus tenuiculus P. Beauv. [Polyporales: Polyporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, this saprobic mushroom species occurs on decaying hardwood (Ruan-Soto *et al*. 2006). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Fomes fomentarius (L.) J. Kickx [Polyporales: Polyporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, this mushroom species occurs on decaying hardwood (Monthey and Cross 2000). Therefore,	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		semi-hardwood dormant cuttings do not provide a pathway for this fungus.			
Fomitiporia australiensis Fischer *et al*. [Hymenochaetales: Hymenochaetaceae]	Yes (Pascoe *et al*. 2005)	Assessment not required			
Fomitiporia mediterranea M. Fischer [12] [Hymenochaetales: Hymenochaetaceae]	Not known to occur	**Yes**: *Fomitiporia* species are associated with wood decay of grapevines showing esca symptoms (Cortesi *et al*. 2000; Sparapano *et al*. 2000; Ciccarone *et al*. 2004; Fischer 2006; Amalfi *et al*. 2010). *Fomitiporia* species cause spongy wood decay in the trunks of growing *Vitis* plants (Sparapano *et al*. 2000; Amalfi *et al*. 2010). Therefore, dormant cuttings may provide a pathway for these fungi.	**Yes:** These fungi have been established in areas with a wide range of climatic conditions (Cortesi *et al*. 2000; Sparapano *et al*. 2000; Ciccarone *et al*. 2004; Fischer 2006; Amalfi *et al*. 2010) and may spread naturally in infected propagative material. Propagation and distribution of infected material will help spread these fungi within Australia. Therefore, these fungi have the potential to establish and spread in Australia.	**Yes:** *Fomitiporia* species constitute the complex of pathogens associated with the diseases forming the esca complex (Abou-Mansour *et al*. 2009). Esca is a complex trunk disease including a vascular disease and an internal white rot of the trunk, which gradually changes the hard wood to a soft, friable, spongy mass (Graniti *et al*. 1994; Mugnai *et al*. 1999). Grapevine trunk diseases cause a slow decline and yield loss in grapevines at all stages of growth, the death of spurs, arms, and cordons, and the eventual death of the vines due to a progressive wood necrosis and decay of plant tissue (Andolfi *et al*. 2011). Therefore, these fungi have potential for economic consequences in parts of Australia.	**Yes**
Fomitiporia polymorpha M. Fisch. [Hymenochaetales: Hymenochaetaceae]	Not known to occur				**Yes**
Fusarium acuminatum Ellis & Everh	Yes (Wong *et al*.	Assessment not required			

[12] *Fomitporia punctata* has been mentioned in literature as being associated with grapevines however, these records of *Fomitiporia punctata* on grapevine have more recently been attributed to *Fomitiporia mediterranea* (Fischer 2002); grapevine is no longer considered a host of this species.

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Hypocreales: Nectriaceae]	1985)				
Fusarium anthophilum (A. Braun) Wollenw. [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Fusarium avenaceum (Fr.) Sacc. [Hypocreales: Nectriaceae]	Yes (Summerell *et al*. 2011)	Assessment not required			
Fusarium culmorum (W.G. Sm.) Sacc. [Hypocreales: Nectriaceae]	Yes (Summerell *et al*. 2011)	Assessment not required			
Fusarium equiseti (Corda) Sacc. [Hypocreales: Nectriaceae]	Yes (Wong *et al*. 1985)	Assessment not required			
Fusarium moniliforme J. Sheld. [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Fusarium oxysporum f. sp. *herbemontis* (Tochetto) W.L. Gordon [Hypocreales: Nectriaceae]	Not known to occur	No: This fungus is associated with grapevines causing Fusarium wilt (de Andrade *et al.* 1995). It occurs in the root vascular system of the plant, causing vascular root discolouration (Gallotti 1991). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Fusarium oxysporum Schltdl. [Hypocreales: Nectriaceae]	Yes (Summerell *et al*. 2011)	Assessment not required			
Fusarium poae (Peck) Wollenw. [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Fusarium proliferatum (Matsush.) Nirenberg ex Gerlach & Nirenberg [Hypocreales: Nectriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Fusarium schweinitzii Ell. & Hark. [Hypocreales: Nectriaceae]	Not known to occur	No: This fungus has been recorded on the dead wood of *Vitis* species (Farr and Rossman 2011). Therefore, dormant cuttings do not	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		provide a pathway for this fungus.			
Fusarium solani (Mart.) Sacc. [Hypocreales: Nectriaceae]	Yes (Summerell *et al*. 2011)	Assessment not required			
Fusarium sporotrichioides Sherb. [Hypocreales: Nectriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Fusarium subglutinans (Wollenw. & Reinking) Nelson *et al*. [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Fusarium volutella Ellis & Everh. [Hypocreales: Nectriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011). *Fusarium* species are soil-borne, causing root rot (Lew *et al.* 1996; Farr and Rossman 2011). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Fusicladium viticis M.B. Ellis [Pleosporales: Venturiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Fusicladium* species occur on foliage (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Fusicoccum macroclavatum Burgess *et al*. [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Neofusicoccum macroclavatum*	Yes (Burgess *et al*. 2005)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
(Burgess *et al.*) Burgess *et al.*)					
Fusicoccum viticlavatum Niekerk & Crous [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Neofusicoccum viticlavatum* (Van Niekerk & Crous) Crous *et al.*)	Not known to occur	**Yes**: These fungi have been recorded on *Vitis* species causing brown wood streaking and internal necrotic lesions (Van Niekerk *et al*. 2004). Therefore, dormant cuttings may provide a pathway for these fungi.	**Yes**. These fungi have established in areas with a wide range of climatic conditions (Van Niekerk *et al*. 2004) and may spread naturally in infected propagative material. Therefore, these fungi have the potential for establishment and spread in Australia.	No: These species have been recorded on grapevines causing canker in association with other species (Van Niekerk *et al*. 2004). However, no information is available on the losses caused by these pathogens. Therefore, these fungi are not of economic concern for host plants.	
Fusicoccum vitifusiforme Niekerk & Crous [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Neofusicoccum vitifusiforme* (Van Niekerk & Crous) Crous *et al.*)	Not known to occur				
Gliocladium roseum Bainier [Hypocreales: Hypocreaceae] (synonym *Clonostachys rosea* (Link) Schroers *et al*.)	Yes (PHA 2001)	Assessment not required			
Gloeosporium sarmenticola Speg. [Helotiales: Dermateaceae]	No records found	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its report on *Vitis* species in Argentina in 1973 (Farr and Rossman 2011), it has not been reported from any other country, indicating dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Glonium clavisporum Seaver [Hysteriales: Hysteriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts *Glonium* species occur on bark and dead wood (Farr	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		et al. 1989; Farr and Rossman 2011). Therefore, dormant grapevine cuttings do not provide a pathway for this fungus.			
Greeneria uvicola (Berkley & M.A. Curtis) Punithalingam [Diaporthales: Unassigned]	Yes (Castillo-Pando *et al*. 1999; Sergeeva *et al*. 2001)	Assessment not required			
Grovesinia pyramidalis M.N. Cline, J.L. Crane & S.D. Cline [Helotiales: Sclerotiniaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this fungus causes leaf spot (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.			
Guignardia bidwellii (Ellis) Viala & Ravaz [Botryosphaeriales: Botryosphaeriaceae] (synonym: *Greenaria uvicola* (Berk. & M.A. Curtis) Punith.)	Not known to occur	**Yes**: These fungi are associated with the foliage, shoots, tendrils, cluster stems and fruit of *Vitis* species (University of Illinois 2001; Ellis 2008; Ullrich *et al*. 2009). These fungi overwinter in infected canes, tendrils, fallen leaves and in mummified fruit on vines or on the ground (Kummuang 1996; Ellis 2008). Therefore, dormant grapevine cuttings may provide a pathway for these fungi.	**Yes**: These fungi have established in areas with a wide range of climatic conditions (Farr and Rossman 2011) and can spread naturally in infected propagative material. Multiplication and marketing of infected propagative material will help spread these fungi within Australia. Ascospores and conidia are the primary inoculum and are spread by air and rain	**Yes**. These fungi cause black rot, an important disease of grapevine that affects the foliage, petioles, shoots, tendrils, cluster stems and fruit (University of Illinois 2001; Ellis 2008; Ullrich *et al*. 2009). These fungi can cause substantial economic losses (Ramsdell and Milholland 1988; Wilcox 2003). For instance, crop loss due to black rot can range from 5–100% (Kummuang *et al*. 1996; Eyres *et al*. 2006). Therefore,	**Yes**
Guignardia bidwellii f. *euvitis* Luttrell [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				**Yes**
Guignardia bidwellii f. *muscadinii* Luttrell [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				**Yes**

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
			(Pearson and Goheen 1988).Therefore, these fungi have the potential to establish and spread in Australia.	these fungi have the potential for significant economic consequences in parts of Australia.	
Hapalopilus nidulans (Fr.) P. Karst. [Polyporales: Polyporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, this species grows on decaying logs, sticks or hardwood debris and causes white rot (Kuo 2003). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Helicobasidium mompa Nobuj. Tanaka [Helicobasidiales: Helicobasidiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, this species infects the below ground part of a variety of host plants (Matsubara *et al*. 2000). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Helminthosporium decacuminatum Thüm. & Pass. [Pleosporales: Massarinaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts these fungi occur on	Assessment not required		
Helminthosporium siliquosum Berk. & MA Curtis [Pleosporales: Massarinaceae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		dead and dying plant material (Farr *et al*. 1989). Therefore, dormant cuttings do not provide a pathway for these fungi.			
Helminthosporium velutinum Link [Pleosporales: Massarinaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Helotium sarmentorum De Not [Helotiales: Helotiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its report on *Vitis* species in Portugal in 1941 (Farr and Rossman 2011), it has not been reported from any other country, indicating dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Hendersonia cookeana Speg. [Pleosporales: Phaeosphaeriaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Species of the genus are foliar pathogens (Sinclair *et al*. 1987; Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Hendersonia corticalis Ellis & Everhart [Pleosporales: Phaeosphaeriaceae]	Not known to occur		Assessment not required		
Hendersonia sarmentorum Westend. [Pleosporales: Phaeosphaeriaceae]	Not known to occur		Assessment not required		
Hendersonia tenuipes McAlpine [Pleosporales: Phaeosphaeriaceae]	Not known to occur		Assessment not required		
Hendersonia viticola S. Ahmad [Pleosporales: Phaeosphaeriaceae]	Not known to occur		Assessment not required		
Hinomyces moricola (I. Hino) Narumi & Y. Harada [Helotiales: Sclerotiniaceae]	Not known to occur	No. This species has been recorded on *Vitis* species causing leaf spot (Li 2004). Therefore, foliage free	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		dormant cuttings do not provide a pathway for this fungus.			
Hyphodontia pruni (Lasch) Svrček [Hymenochaetales: Schizoporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts this fungus causes wood rot (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Hypocrea gelatinosa (Tode) Fr. [Hypocreales: Hypocreaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, this species occurs on dead wood and other decaying matter on other hosts (Farr *et al.* 1989). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Hypoderma commune (Fr.) Duby [Rhytismatales: Rhytismataceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, this species occurs on dead stems of many herbaceous plants (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		this fungus.			
Hypoxylon rubiginosum var. *rubiginosum* (Pers.) Fr. [Xylariales: Xylariaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, these species occur on hardwoods and cause heart rot (Farr and Rossman 2011). Therefore, semi-hardwood dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Hypoxylon tinctor (Berk.) Cooke [Xylariales: Xylariaceae]	Not known to occur		Assessment not required		
Hysterographium flexuosum (Schwein.) Sacc. [Hysteriales: Hysteriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, congeneric species are saprobic or hemibiotrophic (Barr 1990) on wood and bark or on fallen branches (Lorenzo and Messuti 2009). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Hysterographium mori (Schwein.) Rehm [Hysteriales: Hysteriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Hysterographium viticola (Cooke & Peck) Rehm [Hysteriales: Hysteriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, species of this fungus are saprobic or	Assessment not required		
Hysterographium vulvatum (Schwein.) Rehm [Hysteriales: Hysteriaceae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		hemibiotrophic (Barr 1990) on wood and bark or on fallen branches (Lorenzo and Messuti 2009). Therefore, semi-hardwood dormant cuttings do not provide a pathway for these fungi.			
Inocutis jamaicensis (Murrill) Gottlieb *et al*. [Hymenochaetales: Hymenochaetaceae]	Not known to occur	**Yes**: This species is associated with grapevines, causing white rot in the trunk and main branches (Pérez *et al*. 2008) and has also been isolated from esca-affected grapevine stems (Fischer 2006). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes:** The fungus has established in areas with a wide range of climatic conditions (Fischer 2006; Pérez *et al.* 2008) and may spread naturally in infected propagative material. Multiplication and marketing of infected propagative material would help spread this fungus into new areas. Therefore, this fungus has the potential for establishment and spread in Australia.	**Yes:** This fungus is associated with Esca disease of grapevine, which is one of the most important diseases of grapevine worldwide (Romanazzi *et al*. 2009).This fungus is able to colonise wide variety of hosts, including grapevine and *Eucalyptus*, in diverse conditions (Pérez *et al*. 2008). The wine industry and native *Eucalyptus* plantations in Australia could be severely affected by this fungus. Therefore, this fungus has potential for economic consequences in parts of Australia.	**Yes**
Irpex lacteus (Fr.) Fr. [Polyporales: Meruliaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, this species occurs on trunks, dead stems and wood of host plants (Farr *et al*. 1989). Therefore, dormant cuttings do not provide a pathway for	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		this fungus.			
Isariopsis clavispora (Berk. & MA Curtis) Sacc. [Capnodiales: Mycosphaerellaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Isariopsis fuckelii (Thüm.) du Plessis [Capnodiales: Mycosphaerellaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, this species is associated with the foliage of host plants (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Kuehneola vitis (E.J. Butler) Syd. & P. Syd. [Pucciniales: Phragmidiaceae]	Not known to occur	No: This fungus infects fully grown leaves or older leaves and may cause leaf rust (Papademetriou and Dent 2001). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Lachnella alboviolascens (Alb. & Schwein.) Fr. [Agaricales: Niaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Lachnella macrochaeta Speg. [Agaricales: Niaceae] (synonym *Trichopezizella macrochaeta* (Speg.) Gamundí)	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. There is little information on the biology of these species. However, generally *Lachnella* species	Assessment not required		
Lachnella myceliosa WB Cooke [Agaricales: Niaceae]	Not known to occur		Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		occur on dead twigs, dead shoots, dead stems and bark (Ellis and Everhart 1897; Seaver 1911). Some *Lachnella* species have also been reported to occur on the young shoots of herbaceous species such as senecio (McKenzie and Foggo 1989), but are not reported to occur on the living stems or shoots of grapevines. Therefore, dormant cuttings do not provide a pathway for these fungi.			
Lasiodiplodia crassispora TI Burgess & Barber [Botryosphaeriales: Botryosphaeriaceae]	Yes (Burgess *et al*. 2006)	Assessment not required			
Lasiodiplodia missouriana Úrbez-Torres *et al*. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	**Yes**: These species cause cankers in the vascular tissue of grapevines (Úrbez-Torres *et al*. 2012). Therefore, dormant cuttings may provide a pathway for these fungi.	**Yes**. These fungi have established in areas with a wide range of climatic conditions (Úrbez-Torres *et al*. 2012) and may spread naturally in infected propagative material. Therefore, these fungi have the potential for establishment and spread in Australia.	No: These species have been recorded on grapevines causing canker in association with other species (Úrbez-Torres *et al*. 2012). However, no information is available on the losses caused by these pathogens. Therefore, these fungi are not of economic concern for Australia.	
Lasiodiplodia viticola Úrbez-Torres *et al*. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				
Lepteutypa cupressi (Nattrass *et al*.) HJ Swart [Xylariales: Amphisphaeriaceae] (synonym: *Monochaetia unicornis* (Cooke & Ellis) Sacc. & D. Sacc.)	Yes (PHA 2001)	Assessment not required			
Leptosphaeria ampelina Curzi & Barbaini [Pleosporales:	Not known to occur	No: These *Leptosphaeria* species occur on dead stems	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
Leptosphaeriaceae]		and dry runners of grapevine and on wood and dead plant material (Grand and Vernia 2004; Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for these fungi.			
Leptosphaeria cerlettii Speg. [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptosphaeria chaetostoma Sacc. [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptosphaeria cirricola Pass. [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptosphaeria cookei Pirotta [Pleosporales: Leptosphaeriaceae][13]	Yes (Shivas 1989)	Assessment not required			
Leptosphaeria gibelliana Pirotta [Pleosporales: Leptosphaeriaceae]	Not known to occur	No: These *Leptosphaeria* species occur on dead stems and dry runners of grapevine and on wood and dead plant material (Grand and Vernia 2004; Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Leptosphaeria ogilviensis (Berk. & Broome) Ces. & De Not. [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptosphaeria pampini (Thüm.) Sacc. [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptosphaeria vinealis Pass. [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptosphaeria viticola Fautrey & Roum. [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptosphaeria vitigena (Schulzer) Sacc [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptosphaeria vitis Schulzer ex Sacc. [Pleosporales: Leptosphaeriaceae]	Not known to occur		Assessment not required		
Leptothyrium passerinii Thüm. [Incertae sedis]	Not known to occur	No: This species has been recorded on grape clusters (Pearson and Goheen 1988). Therefore, foliage free dormant cuttings do not provide a pathway for this	Assessment not required		

[13] Listed as *Phoma vitis* (Shivas 1989)

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		fungus.			
Leptoxyphium fumago (Woron.) RC Srivastava [Capnodiales: Capnodiaceae] (synonym: *Fumago vagans* Pers.)	Yes (Phillips 1994)	Assessment not required			
Lewia scrophulariae (Desm.) ME Barr & EG Simmons [Pleosporales: Pleosporaceae]	Not known to occur	No: This species is a saprophyte (Bahcecioglu *et al*. 2006). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Lopharia crassa (Lév.) Boidin [Polyporales: Polyporaceae]	Yes (PHA 2001)	Assessment not required			
Lophiostoma elegans (Fabre) Sacc. [Pleosporales: Lophiostomataceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Lophiostoma* species occur on bark, dead wood and dead stems of various herbaceous plants (Farr *et al*.1989; Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Lophiostoma macrostomum (Tode) Ces. & De Not. [Pleosporales: Lophiostomataceae]	Not known to occur		Assessment not required		
Lophiostoma rhopalosporum Ellis & Everh. [Pleosporales: Lophiostomataceae]	Not known to occur		Assessment not required		
Lophiostoma stenostomum Ellis & Everh. [Pleosporales: Lophiostomataceae]	Not known to occur		Assessment not required		
Lycoperdon radicatum Durieu & Mont. [Agaricales: Agaricaceae]	Not known to occur	No: *Lycoperdon* species are saprobic and occur on soil or decayed wood in deciduous woodland (Pegler *et al*. 1995). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Macrophoma farlowiana (Viala & Sauv.) Tassi [Botryosphaeriales:	Not known to occur	**Yes**: These *Macrophoma* species have been recorded	**Yes**: These fungi have established in areas with a	No: There is no information on economic impact of these fungi	

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Botryosphaeriaceae]		on *Vitis* species occurring on foliage, twigs, stems and fruits (Pearson and Goheen 1988; Farr and Rossman 2011). Therefore, dormant cuttings may provide a pathway for these fungi.	wide range of climatic conditions (Farr and Rossman 2011) and may spread naturally in infected propagative material. Multiplication and marketing of infected propagative material would help spread these fungi into new areas. Therefore, these fungi have the potential for establishment and spread in Australia.	on grape production in areas where these fungi are recorded on this host. These *Macrophoma* species have not been recorded to have economic consequences. Therefore, these fungi are not of economic concern for host plants.	
Macrophoma flaccida (Viala & Ravaz) Cavara [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				
Macrophoma longispora (Thüm. & Pass.) Berl. & Voglino [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				
Macrophoma peckiana (Thüm.) Berl. & Voglino [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				
Macrophoma reniformis (Viala & Ravaz) Cavara [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				
Macrophoma rimiseda (Sacc.) Berl. & Voglino [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				
Macrophoma sicula Scalia [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur				
Macrophomina phaseolina (Tassi) Goid. [Botryosphaeriales: Botryosphaeriaceae]	Yes (PHA 2001)	Assessment not required			
Marssonina viticola (I. Miyake) F.L. Tai [Helotiales: Dermateaceae]	No records found	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. *Marssonina* species generally occur on leaves and cause leaf diseases on host species (Farr *et al.* 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Massarina microcarpa (Fuckel) Sacc.	Not known to	No: This fungus has been	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
[Pleosporales: Massarinaceae]	occur	recorded on *Vitis* species (Farr *et al*. 1989), but affected plant parts are not mentioned. *Massarina* species generally have been detected on dead stems (Kirk and Cooper 2009). Therefore, dormant cuttings do not provide a pathway for this fungus			
Meliola vitis Hansford [Meliolales: Meliolaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Hosagoudar and Archana 2009), but affected plant parts are not mentioned. *Meliola* species are associated with foliage, causing black mildew (Hosagoudar *et al*. 2010). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Micropera ampelina Saccardo & Fairman [Unassigned]	Not known to occur	No: This fungus occurs on the living limbs of *Vitis vinifera* (Farr and Rossman 2011). However, since being reported on *Vitis* species from New York in 1906 (Farr and Rossman 2011), it has not been reported from any other country, indicating dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Mollisia cinerea f. *cinerea* (Batsch) P. Karst. [Helotiales: Dermateaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Mollisia melaleuca (Fr.) Sacc. [Helotiales: Dermateaceae]	Not known to occur	(Farr and Rossman 2011), but affected plant parts are not mentioned. *Mollisia* species are generally associated with leaves, dead wood, and old stems (Farr *et al*. 1989). Therefore, dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Mollisia pullata (WR Gerard) Dennis [Helotiales: Dermateaceae]	Not known to occur		Assessment not required		
Monilinia fructicola (G. Winter) Honey [Helotiales: Sclerotiniaceae]	Yes (PHA 2001)	Assessment not required			
Monilinia fructigena Honey [Helotiales: Sclerotiniaceae]	Not known to occur	Yes: This species is associated with *Vitis* species (CABI 2012a). Cankers may develop on infected twigs and branches (Mackie 2005). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes:** This pathogen is established in areas with a wide range of climatic conditions (Machowicz-Stefaniak and Zalewska 2002; Mackie 2005) and may spread naturally in infected propagative material. Therefore, it has the potential for establishment and spread in Australia.	**Yes:** This pathogen is less damaging on grapes (CABI 2012a); however it is of significant economic importance for apples, pears, peaches and apricots (Mackie 2005). This pathogen can cause fruit losses of 5%–35% (Mackie 2005). If introduced to Australia, it is likely to cause serious losses to apple and pear industries in particular (Mackie 2005). Therefore, this fungus has potential for economic consequences in parts of Australia.	**Yes**
Monilinia laxa (Aderh. & Ruhland) Honey [Helotiales: Sclerotiniaceae]	Yes (PHA 2001)	Assessment not required			
Monochaetia ellisiana var. *affinis* Sacc. & Briard [Xylariales: Amphisphaeriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Monochaetia sarmenti (Pass.) Sacc.) [Xylariales: Amphisphaeriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Monochaetia uniseta (Tracy & Ellis)	Not known to	No: These fungi have been	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
Sacc. [Xylariales: Amphisphaeriaceae]	occur	recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. *Monochaetia* species are generally associated with foliage or dead leaves (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.			
Monochaetia viticola (Cavara) Sacc. & D. Sacc. [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Monochaetinula ampelophila (Speg.) Nag Raj [Xylariales: Amphisphaeriaceae] (synonym: *Monochaetia ampelophila* Speg)	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. These fungi are generally associated with foliage or dead leaves (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Monochaetinula terminaliae (Bat. & J.L. Bezerra) Muthumary *et al*. [Xylariales: Amphisphaeriaceae] (synonym: *Monochaetia terminaliae* Bat. & J.L. Bezerra)	Not known to occur		Assessment not required		
Mucor circinelloides Tiegh. [Mucorales: Mucoraceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, this fungus occurs in soils and on a variety of organic substrates (Farr *et al*. 1989). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Mucor racemosus Fresen. [Mucorales:	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Mucoraceae]					
Mycosphaerella angulata W.A. Jenkins [Capnodiales: Mycosphaerellaceae]	Not known to occur	No: These *Mycosphaerella* species are associated with *Vitis* species (Farr and Rossman 2011) and cause leaf spot (Farr *et al*. 1989), resulting in premature defoliation (Pearson and Goheen 1988). These fungi overwinter in dead leaves (Pearson and Goheen 1988). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Mycosphaerella cuboniana (D. Sacc.) Tomilin [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Mycosphaerella manganottiana (C. Massal.) Tomilin [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Mycosphaerella personata B.B. Higgins [Capnodiales: Mycosphaerellaceae]	Yes (Simmonds 1966)	Assessment not required			
Mycosphaerella vitis Koshk. [Capnodiales: Mycosphaerellaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Mycosphaerella* species are associated with foliage, causing leaf spot (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.			
Mycovellosiella vitis Y.L. Guo & X.J. Liu [Capnodiales: Mycosphaerellaceae] (synonym: *Passalora vitis-piadezkii* U. Braun & Crous)	Not known to occur	No: This fungus has been recorded on leaves of *Vitis* species (Kirk 2012). Therefore, foliage free dormant cuttings do not	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		provide a pathway for this fungus.			
Myxosporium viticola Dearn. & House [Unassigned]	Not known to occur	No: There is one record of this fungus occurring on the stems of *Vitis* species in Alabama in 1960 (Farr and Rossman 2011). However, this fungus has not been recorded from any other location, indicating propagative material does not provide a pathway for this fungus.	Assessment not required		
Nattrassia mangiferae (Syd. & P. Syd.) B. Sutton & Dyko [Botryosphaeriales: Botryosphaeriaceae]	Yes (PHA 2001)	Assessment not required			
Nectria cinnabarina (Tode) Fr. [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Nectria coccinea (Pers.) Fr. [Hypocreales: Nectriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Nectria* species are associated with hardwood trees and soil (Farr *et al*. 1989). Therefore, semi-hardwood, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Nectria haematococca Berk. & Broome [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Nectria radicicola Gerlach & L. Nilsson [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Nectria ramulariae (Wollenw.) E. Müller [Hypocreales: Nectriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		(Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Nectria* species are associated with hardwood trees (Farr *et al*. 1989). Therefore, semi-hardwood, root free dormant cuttings do not provide a pathway for this fungus.			
Nectria viticola Berk. & Curt. [Hypocreales: Nectriaceae]	Not known to occur	No: This fungus has been recorded on the limbs of *Vitis* species in Alabama in 1960 (Farr and Rossman 2011). However, this fungus has not been recorded since from any other location, indicating that propagative material does not provide a pathway for this fungus.	Assessment not required		
Neofusicoccum mediterraneum Crous *et al*. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	**Yes:** This fungus has been recorded on grapevines (Úrbez-Torres *et al*. 2010a) and has been isolated from the vascular tissue and brown wood of young, declining grapevines (Úrbez-Torres *et al*. 2010a; Martin *et al*. 2011b). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes:** This fungus has established in areas with a wide range of climatic conditions (Úrbez-Torres *et al*. 2010a; Martin *et al*. 2011b) and may spread naturally in infected propagative material. Therefore, this fungus has the potential for establishment and spread in Australia.	No: This fungus causes Botryosphaeria canker in association with other species (Úrbez-Torres *et al*. 2010a). However, no information is available on the losses caused by this pathogen. Therefore, this fungus is not of economic concern.	
Neonectria fuckeliana (C. Booth) Castl. & Rossman [Hypocreales: Nectriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species causing basal rot (Halleen *et al*. 2006a, b). Therefore, root-	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		free dormant cuttings do not provide a pathway for this fungus.			
Neonectria macrodidyma Halleen *et al*. [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Neonectria mammoidea W. Phillips & Plowr. [Hypocreales: Nectriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species causing basal rot (Halleen *et al*. 2006a, b). Therefore, root-free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Neonectria radicicola (Gerlach & L. Nilsson) Mantiri &. Samuels [Hypocreales: Nectriaceae]	Yes (PHA 2001)	Assessment not required			
Pareutypella sulcata YM Ju & JD Rogers [Xylariales: Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts it is recorded on fallen twigs (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Passalora dissiliens (Duby) U. Braun & Crous [Capnodiales: Mycosphaerellaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts these fungi are associated with foliage, causing leaf spots (Farr *et al.* 1989; Farr and Rossman	Assessment not required		
Passalora vitis (MS Patil & Sawant) Poonam Srivastava [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Passalora vitis-ripariae (U. Braun) U. Braun & Crous [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		2011). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.			
Patellaria atrata (Hedw.) Fr. [Patellariales: Patellariaceae]	No records found	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since they were reported on *Vitis* species in 1973 in Central Asia (*P. atrata*) and Spain (*P. viticola*) (Farr and Rossman 2011), there have been no reports from any other country, indicating dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Patellaria viticola Pers. [Patellariales Patellariaceae]	Not known to occur		Assessment not required		
Penicillium adametzioides S. Abe ex G. Sm. [Eurotiales: Trichocomaceae]	Not known to occur	No: *Penicillium* species occur in soil, on decaying plant debris, decomposing fruits and stored products (Jones and Aldwinkle 1991; Shim *et al.* 2002; Schmidt *et al*. 2006; Okafor *et al*. 2007). Dormant cuttings therefore do not provide a pathway for these species.	Assessment not required		
Penicillium ardesiacum Novobr. [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Penicillium aurantiogriseum Dierckx [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Penicillium brevicompactum Dierckx [Eurotiales: Trichocomaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Penicillium canescens Sopp [Eurotiales: Trichocomaceae]	Not known to occur	No: *Penicillium* species occur in soil, on decaying plant	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Penicillium chrysogenum var. *chrysogenum* Thom [Eurotiales: Trichocomaceae]	Not known to occur	debris, decomposing fruits and stored products (Jones and Aldwinkle 1991; Shim *et al.* 2002; Schmidt *et al*. 2006; Okafor *et al*. 2007). Dormant cuttings therefore do not provide a pathway for these species.	Assessment not required		
Penicillium citrinum Thom [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Penicillium decumbens Thom [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Penicillium digitatum (Pers.) Sacc. [Eurotiales: Trichocomaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Penicillium elongatum Dierckx [Eurotiales: Trichocomaceae]	Not known to occur	No: *Penicillium* species occur in soil, on decaying plant debris, decomposing fruits and stored products (Jones and Aldwinkle 1991; Shim *et al.* 2002; Schmidt *et al*. 2006; Okafor *et al*. 2007). Dormant cuttings therefore do not provide a pathway for this species.	Assessment not required		
Penicillium expansum Link [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Penicillium funiculosum Thom [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Penicillium glabrum (Wehmer) Westling [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Penicillium griseoroseum Dierckx [Eurotiales: Trichocomaceae]	Not known to occur	No: *Penicillium* species occur in soil, on decaying plant debris, decomposing fruits and stored products (Jones and Aldwinkle 1991; Shim *et al.* 2002; Schmidt *et al*. 2006;	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		Okafor *et al*. 2007). Therefore, dormant cuttings do not provide a pathway for this species.			
Penicillium italicum Wehmer [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Penicillium janthenellum Biourge [Eurotiales: Trichocomaceae]	Not known to occur	No: *Penicillium* species occur in soil, on decaying plant debris, decomposing fruits and stored products (Jones and Aldwinkle 1991; Shim *et al.* 2002; Schmidt *et al*. 2006; Okafor *et al*. 2007). Dormant cuttings therefore do not provide a pathway for these species.	Assessment not required		
Penicillium kloeckeri Pitt [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Penicillium purpurascens (Sopp) Biourge [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Penicillium rolfsii Thom [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Penicillium solitum var. *crustosum* (Thom) Bridge *et al*. [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Penicillium thomii Maire [Eurotiales: Trichocomaceae]	Yes (PHA 2001)	Assessment not required			
Penicillium variabile Sopp [Eurotiales: Trichocomaceae]	Not known to occur	No: *Penicillium* species occur in soil, on decaying plant debris, decomposing fruits and stored products (Jones and Aldwinkle 1991; Shim *et al.* 2002; Schmidt *et al*. 2006; Okafor *et al*. 2007). Dormant cuttings therefore do not provide a pathway for these species.	Assessment not required		
Penicillium viridicatum Westling [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Penicillium vitis Novobr. [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Penicillium vulpinum (Cooke & Massee) Seifert & Samson [Eurotiales: Trichocomaceae]	Not known to occur		Assessment not required		
Peniophora albobadia (Schwein.) Boidin [Russulales: Peniophoraceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		mentioned. Generally, *Peniophora* species are saprobic and found on dead, bark-covered branches (Farr *et al*. 1989). Therefore, dormant cuttings do not provide a pathway for this fungus.			
Perenniporia medulla-panis (Jacq.) Donk [Polyporales: Polyporaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Perenniporia tenuis var. *tenuis* (Schwein.) Ryvarden [Polyporales: Polyporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. This species occurs on bark or wood causing white rot (Gilbertson and Bigelow 1998; Farr and Rossman 2011). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Periconia byssoides Pers. [Pleosporales: Unassigned]	Yes (PHA 2001)	Assessment not required			
Pestalotia briardii Lendn. [Xylariales: Amphisphaeriaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, members of this genus are secondary pathogens; they are saprophytic on dead and dying plant tissues (CAES	Assessment not required		
Pestalotia europaea Grove [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Pestalotia malicola Hori. [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Pestalotia menezesiana Bres. & Torrend [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Pestalotia monochaetoidea var. *affinis*	Not known to		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Sacc. & Briard [Xylariales: Amphisphaeriaceae]	occur	2008). Therefore, dormant cuttings do not provide a pathway for these fungi.			
Pestalotia pezizoides De Not. [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Pestalotia pitospora MEA Costa & Sousa da Câmara [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Pestalotia quadriciliata Bubak & Dearness [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Pestalotia thuemenii Speg. [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Pestalotia uniseta Tracy & Earle [Xylariales: Amphisphaeriaceae]	Not known to occur		Assessment not required		
Pestalotia viticola Cavara [Xylariales: Amphisphaeriaceae]	Yes (Sergeeva *et al.* 2005)	Assessment not required			
Pestalotiopsis funerea (Desm.) Steyaert [Xylariales: Amphisphaeriaceae]	Yes (PHA 2001)	Assessment not required			
Pestalotiopsis guepinii (Desm.) Steyaert [Xylariales: Amphisphaeriaceae]	Yes (PHA 2001)	Assessment not required			
Pestalotiopsis menezesiana (Bres. & Torrend) Bissett [Xylariales: Amphisphaeriaceae]	Yes (Sergeeva *et al*. 2005)	Assessment not required			
Pestalotiopsis uvicola (Speg.) Biss. [Xylariales: Amphisphaeriaceae]	Yes (Sergeeva *et al*. 2005)	Assessment not required			
Phaeoacremonium aleophilum Gams *et al*. [Diaporthales: Togniniaceae]	Yes (Edwards and Pascoe 2004)	Assessment not required			
Phaeoacremonium alvesii Mostert *et al*. [Diaporthales: Togniniaceae]	Not known to occur	**Yes**: *Phaeoacromonium* species[14] colonise the	**Yes**: These fungi have established in areas with a	**Yes**. *Phaeoacremonium* species are involved in Petri disease in	**Yes**

[14] Taxonomy of this genus has been repeatedly reviewed, with new species described in recent years. Several species of *Phaeoacremonium* have been isolated from grapevines, although their pathogenicity has not been demonstrated for all of them (Aroca and Raposo 2009). Four species (*P. aleophilum, P. angustius, P. inflatipes*, and *P. parasiticum*) were described based on

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Phaeoacremonium angustius Gams *et al*. [Diaporthales: Togniniaceae]	Not known to occur	vascular system of plants (Chicau *et al*. 2000; Marco *et al*. 2004; Eskalen *et al.* 2005; Mostert *et al*. 2006b; Gramaje *et al.* 2007; Essakhi *et al*. 2008; Gramaje *et al*. 2009a). These fungi have been found in apparently healthy asymptomatic grapevines (Ridgway *et al*. 2003; Aroca and Raposo 2009). Therefore, propagative material from countries where *Phaeoacremonium* species occur may provide a pathway for these pathogens.	wide range of climatic conditions (Chicau *et al*. 2000; Marco *et al*. 2004; Eskalen *et al.* 2005; Mostert *et al*. 2006b; Gramaje *et al.* 2007; Essakhi *et al*. 2008; Gramaje *et al*. 2009a) and can spread naturally in infected propagative material (Mugnai *et al.* 1999; Ridgway *et al*. 2003; Giménez-Jaime *et al*. 2006; Aroca and Raposo 2009). Multiplication and marketing of infected propagative material will help spread these pathogens within Australia. Additionally, these fungi are also known to be wind-borne (Rooney-Latham *et al*. 2005) or spread by grafting (Halleen *et al*. 2003) and pruning tools (Mugnai *et al*. 1999). Therefore, they have the potential to establish and	young vines and esca in adult vines (Mostert *et al.* 2006a,b; Aroca and Raposo 2009, Gramaje *et al*. 2009a). Petri disease pathogens act as pioneer organisms that facilitate the invasion of the wood decay fungi that cause the typical symptoms of Esca disease inside the trunk and branches (Larignon and Dubos 1997). Petri disease and Esca disease limit both vineyard longevity and productivity as woody parts of the vine are killed (Urbez- Torres *et al*. 2012) and affect yield, wine quality and berry quality (White 2010). Consequently, *Phaeoacremonium* species have great impact on the wine, table grape and raisin industries (White 2010). Therefore, *Phaeoacremonium* strains from grapevines have the potential for economic consequences in	**Yes**
Phaeoacremonium argentinense Mostert *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium armeniacum Graham *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**

morphological and cultural characteristics (Crous *et al*. 1996). Two additional species (*P. viticola* and *P. mortoniae*) were described based on phenotypic characters, the internal transcribed spacer (ITS) regions 1 and 2, the 5.8S rDNA (Dupont *et al*. 2000) and the b-tubulin gene (Groenewald *et al*. 2001). Subsequent studies based on actin and calmodulin gene regions identified seven additional species (*P. australiense, P. austroafricanum, P. iranianum, P. krajdenii, P. scolyti, P. subulatum, P. venezuelense*) from grapevines (Mostert *et al.* 2005, 2006b). Recently, four more species of *Phaeoacremonium* (*P. croatiense, P. hungaricum, P. sicilianum, P. tuscanum*) from grapevine has been described (Essakhi *et al*. 2008). Additionally, three more species of *Phaeoacremonium* (*P. alvesii, P. griseorubrum, P. rubrigenum*) previously known from humans have been reported on grapevines (Essakhi *et al*. 2008). More recently two species (*P. cinereum, P. hispanicum*) have been identified based on combined DNA sequences of the actin and b-tubulin genes (Gramaje *et al.* 2009a). *Phaeoacremonium* species occur as part of a disease complex with *Phaeomoniella chlamydospora* causing Petri disease in younger vines and with several basidiomycete species causing esca in older vines (Mugnai *et al*. 1999, Edwards and Pascoe 2004, Fischer 2006).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
			spread in Australia.	Australia.	
Phaeoacremonium australiense Mostert *et al*. [Diaporthales: Togniniaceae]	Yes (PHA 2001)	Assessment not required			
Phaeoacremonium austroafricanum Mostert *et al*. [Diaporthales: Togniniaceae]	Not known to occur	**Yes**: *Phaeoacromonium* species colonise the vascular system of plants (Chicau *et al*. 2000; Marco *et al*. 2004; Eskalen *et al.* 2005; Mostert *et al*. 2006b; Gramaje *et al.* 2007; Essakhi *et al*. 2008; Gramaje *et al*. 2009a). *Phaeoacremonium* species have been found in apparently healthy asymptomatic grapevines (Ridgway *et al*. 2003). Therefore, propagative material from countries where *Phaeoacremonium* species occur may provide a pathway for these pathogens.	**Yes**: These fungi have established in areas with a wide range of climatic conditions (Chicau *et al*. 2000; Marco *et al*. 2004; Eskalen *et al.* 2005; Mostert *et al*. 2006b; Gramaje *et al.* 2007; Essakhi *et al*. 2008; Gramaje *et al*. 2009a) and can spread naturally in infected propagative material (Mugnai *et al.* 1999; Ridgway *et al*. 2003; Giménez-Jaime *et al*. 2006; Aroca and Raposo 2009). Multiplication and marketing of infected propagative material will help spread these pathogens within Australia. Additionally, these fungi are also known to be wind-borne or spread by grafting and pruning tools (Mugnai *et al*. 1999). Therefore, they have the potential to establish and spread in Australia.	**Yes**. *Phaeoacremonium* species are involved in Petri disease in young vines and esca in adult vines (Mostert *et al.* 2006a,b; Aroca and Raposo 2009, Gramaje *et al*. 2009a). Petri disease pathogens act as pioneer organisms that facilitate the invasion of the wood decay fungi that cause the typical symptoms of Esca disease inside the trunk and branches (Larignon and Dubos 1997). Petri disease and Esca disease limit both vineyard longevity and productivity as woody parts of the vine are killed (Urbez- Torres *et al*. 2012) and affect yield, wine quality and berry quality (White 2010). Consequently, *Phaeoacremonium* species have great impact on the wine, table grape and raisin industries (White 2010). Therefore, *Phaeoacremonium* strains from grapevines have the potential for economic consequences in Australia.	**Yes**
Phaeoacremonium cinereum Gramaje *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium croatiense Essakhi *et al.* [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium globosum Graham *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium griseorubrum Mostert *et al.* [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium hispanicum Gramaje *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium hungaricum Essakhi *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium inflatipes Gams *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium iranianum Mostert *et al.* [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium krajdenii Mostert *et al.* [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium mortoniae Crous & W. Gams [Diaporthales: Togniniaceae] (synonym *Togninia fraxinopennsylvanica* (T.E. Hinds) Hausner *et al.*)	Not known to occur				**Yes**
Phaeoacremonium occidentale Graham *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium parasiticum (Ajello *et al.*) Gams [Diaporthales: Togniniaceae]	Yes (Mostert *et al*. 2006b)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Phaeoacremonium rubrigenum Gams *et al*. [Diaporthales: Togniniaceae]	Not known to occur	**Yes**: *Phaeoacromonium* species colonise the vascular system of plants (Chicau *et al*. 2000; Marco *et al*. 2004; Eskalen *et al.* 2005; Mostert *et al*. 2006b; Gramaje *et al.* 2007; Essakhi *et al*. 2008; Gramaje *et al*. 2009a). *Phaeoacremonium* species have been found in apparently healthy asymptomatic grapevines (Ridgway *et al*. 2003). Therefore, propagative material from countries where *Phaeoacremonium* species occur may provide a pathway for these pathogens.	**Yes**: These fungi have established in areas with a wide range of climatic conditions (Chicau *et al*. 2000; Marco *et al*. 2004; Eskalen *et al.* 2005; Mostert *et al*. 2006b; Gramaje *et al.* 2007; Essakhi *et al*. 2008; Gramaje *et al*. 2009a) and can spread naturally in infected propagative material (Mugnai *et al.* 1999; Ridgway *et al*. 2003; Giménez-Jaime *et al*. 2006; Aroca and Raposo 2009). Multiplication and marketing of infected propagative material will help spread these pathogens within Australia. Additionally, these fungi are also known to be wind-borne or spread by grafting and pruning tools (Mugnai *et al*. 1999). Therefore, they have the potential to establish and spread in Australia.	**Yes**. *Phaeoacremonium* species are involved in Petri disease in young vines and esca in adult vines (Mostert *et al.* 2006a,b; Aroca and Raposo 2009, Gramaje *et al*. 2009a). Petri disease pathogens act as pioneer organisms that facilitate the invasion of the wood decay fungi that cause the typical symptoms of Esca disease inside the trunk and branches (Larignon and Dubos 1997). Petri disease and Esca disease limit both vineyard longevity and productivity as woody parts of the vine are killed (Urbez- Torres *et al*. 2012) and affect yield, wine quality and berry quality (White 2010). Consequently, *Phaeoacremonium* species have great impact on the wine, table grape and raisin industries (White 2010). Therefore, *Phaeoacremonium* strains from grapevines have the potential for economic consequences in Australia.	**Yes**
Phaeoacremonium scolyti. Mostert *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium sicilianum Essakhi *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium subulatum Mostert *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium tuscanicum Essakhi *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium venezuelense Mostert *et al*. [Diaporthales: Togniniaceae]	Not known to occur				**Yes**
Phaeoacremonium viticola J. Dupont [Diaporthales: Togniniaceae].	Not known to occur				**Yes**
Phaeomoniella chlamydospora (Gams *et al*.) Crous & W. Gams [Chaetothyriales: Herpotrichiellaceae]	Yes (Edwards and Pascoe 2004)	Assessment not required			
Phakopsora ampelopsidis Dietel & P.	Not known to	No[15]: This fungus is host	Assessment not required		

[15] Recent taxonomic studies partly clarified the situation of *Phakopsora* species causing grapevine rust. *Phakopsora ampelopsidis* was previously identified as the pathogen causing grape leaf rust

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Syd. [Pucciniales: Phakopsoraceae]	occur	specific and does not occur on grapevines (Ono 2000) and therefore is not on the pathway.			
Phakopsora cronartiiformis Dietel [Pucciniales: Phakopsoraceae]	Not known to occur	No[16]: This fungus is host specific and does not occur on grapevines (Ono *et al.* 1990) and therefore is not on the pathway.	Assessment not required		
Phakopsora euvitis Y. Ono [Pucciniales: Phakopsoraceae]	Not known to occur[17]	**Yes**[18]: These fungi are associated with grapevine causing leaf rust (Chatasiri and Ono 2008). These rust species generally infect leaves (Ono 2000; Weinert *et al*. 2003; Hennessy *et al*. 2007; Chatasiri and Ono 2008), however they can overwinter as mycelium in grapevine shoots (EPPO 2002a) or dormant buds (Weinert *et al*. 2003; Hennessy *et al*. 2007). Therefore, dormant cuttings	**Yes:** These rust fungi have established in areas with a wide range of climatic conditions (EPPO 2002a; Chatasiri and Ono 2008) and can spread naturally in infected propagative material (EPPO 2002a). Distribution of propagative material carrying mycelium in dormant buds will help spread these rust fungi within Australia. Additionally, spores are dispersed by wind and rain splash (EPPO 2002a). These dispersal	**Yes**. These rust fungi are serious pathogens of grapevines (Leu 1988; EPPO 2002a; Angelotti *et al*. 2008) and have potential to be destructive under favourable conditions (Tessmann *et al*. 2004; Angelotti *et al*. 2008). Heavy infection causes necrosis of leaves and in severe cases can lead to defoliation of the host plant. The disease can cause poor shoot growth, reduction of fruit quality and yield loss in commercial grapevine production (Leu 1988;	**Yes**
Phakopsora muscadiniae Buritica [Pucciniales: Phakopsoraceae]	Not known to occur				**Yes**
Phakopsora uva Buriticá & J.F. Hennen [Pucciniales: Phakopsoraceae]	Not known to occur				**Yes**

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of *Vitis* spp., *Amelopsis brevipendunculata* and *Parthenocissus tricuspidata* (Hiratsuka 1935 cited in Hennessy *et al*. 2007). However, recent studies based on differences in host specificity, lifecycle and morphology of *Phakopsora ampelopsidis* isolated from these hosts indicated that this fungus consists of three taxonomically distinct species (Ono 2000). *Phakopsora ampelopsidis* and *Phakopsora vitis* are host specific and occur on *Ampelopsis brevipendunculata* and *Parthenocissus tricuspidata* respectively (Hennessy *et al*. 2007). Therefore *Phakopsora ampelopsidis* is not considered in this assessment. Based on the work by Ono (2000), the records of *P. ampelopsidis* on *Vitis* species are assumed to be *P. euvitis*.

[16] *Phakopsora cronartiiformis* has previously been recorded on grapevine, however, further studies indicated that it is host specific and occurs on *Parthenocissus semicordata* (Ono *et al*. 1990). Therefore *Phakopsora cronartiiformis* is not considered in this assessment.

[17] *Phakopsora euvitis* was detected in Darwin in 2001 (Weinert *et al*. 2003) and declared eradicated in 2006 (Liberato *et al*. 2007).

[18] Three rust fungi namely *Phakopsora euvitis* (Asian grapevine leaf rust), *Phakopsora muscadiniae* and *Phakopsora uva* (American grapevine leaf rust) are associated with grapevines in Asian and Americas (Chatasiri and Ono 2008).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		may provide a pathway for these rust fungi.	mechanisms would facilitate spread within Australia. Therefore, these rust fungi have the potential to establish and spread in Australia.	EPPO 2002a; Angelotti *et al.* 2008). Therefore, *Phakopsora* species have the potential for economic consequences in Australia.	
Phakopsora vitis P. Syd. [Pucciniales: Phakopsoraceae]	Not known to occur	No[19]: This fungus is host specific and does not occur on grapevines (Hennessy *et al*. 2007) and therefore is not on the pathway.	Assessment not required		
Phanerochaete flavidoalba (Cooke) S.S. Rattan [Polyporales: Phanerochaetaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. On other hosts, these species are associated with dead branches of fallen trees and cause white rot of hardwood, conifer and other woody debris (Burdsall 1985). Therefore, dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Phanerochaete viticola (Schwein.) Parmasto [Polyporales: Phanerochaetaceae]	Not known to occur		Assessment not required		
Phellinus gilvus (Schwein.) Pat. [Hymenochaetales: Hymenochaetaceae]	Yes (PHA 2001)	Assessment not required			
Phellinus igniarius (L.) Quél. [Hymenochaetales: Hymenochaetaceae]	Not known to occur	No: This fungus was considered the causal agent of esca disease in grapevines (Reisenzein *et al*. 2000). However, further studies	Assessment not required		

[19] *Phakopsora vitis* has previously been recorded on grapevine, however, further studies indicated that this fungus is host specific and occurs on *Parthenocissus tricuspidata* (Hennessy *et al*. 2007). Therefore *Phakopsora vitis* is not considered in this assessment.

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		indicate that the isolates from esca affected vines, identified as *P. igniarius*, were misidentifications of *Fomitiporia punctata* (Mugnai *et al*. 1999; Cortesi *et al*. 2000). Therefore, this species is not assessed.			
Phellinus noxius (Corner) G. Cunn. [Hymenochaetales: Hymenochaetaceae]	Yes (PHA 2001)	Assessment not required			
Phellinus viticola (Schwein.) Donk [Hymenochaetales: Hymenochaetaceae]	Not known to occur	No: Members of this genus occur on living or dead wood and cause wood rot (Farr *et al*. 1989; Brooks 2002; Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Phlyctibasidium polyporoideum (Berkeley & MA Curtis) Jülich [Unassigned]	Not known to occur	No: This species occurs on rotting wood (Gilbertson and Bigelow 1998). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Phoma ampelina Berk. & M.A. Curtis [Pleosporales: Incertae sedis]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Phoma* species are soil-borne, weakly parasitic or saprophytic species and are associated with roots, dead stems and foliage of host plants	Assessment not required		
Phoma ampelocarpa Pass. [Pleosporales: Incertae sedis]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		(Boerema 1976; Farr *et al*. 1989; Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for these fungi.			
Phoma exigua Sacc. [Pleosporales: Incertae sedis]	Yes (PHA 2001)	Assessment not required			
Phoma glomerata (Corda) Wollenw. & Hochapfel [Pleosporales: Incertae sedis]	Yes (PHA 2001)	Assessment not required			
Phoma lenticularis Cavara [Pleosporales: Incertae sedis]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Phoma* species are soil-borne, weakly parasitic or saprophytic species and are associated with roots, dead stems and foliage of host plants (Boerema 1976; Farr *et al*. 1989; Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for these fungi.			
Phoma negriana Thüm. [Pleosporales: Incertae sedis]	Not known to occur		Assessment not required		
Phoma plurivora PR Johnston [Pleosporales: Incertae sedis]	Not known to occur		Assessment not required		
Phoma pomorum Thüm. [Pleosporales: Incertae sedis]	Yes (Cook and Dubé 1989)	Assessment not required			
Phomopsis longiparaphysata Uecker & KC Kuo [Diaporthales: Diaporthaceae]	Not known to occur	No: This fungus is known to occur on fruit (Uecker and Kuo 1992). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Phomopsis viticola (Sacc.) Sacc [Diaporthales: Diaporthaceae]	Yes (Savocchia *et al*. 2007)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Phyllachora picea (Berk. & M.A. Curtis) Sacc. [Phyllachorales: Phyllachoraceae]	Not known to occur	**Yes**: This species has been recorded on *Vitis* species and is associated with the stem (Farr and Rossman 2011). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes:** This fungus has established in areas with a wide range of climatic conditions (Farr and Rossman 2011) and it may spread in infected propagative material. Therefore, these fungi have the potential to establish and spread in Australia	No: This species has been reported on grapes but no economic losses have been reported for this fungus. Therefore, this fungus is not of economic concern to Australia.	
Phyllachora pomigena (Schwein.) Sacc. [Phyllachorales: Phyllachoraceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Phyllachora vitis MS Patil & AB Pawar [Phyllachorales: Phyllachoraceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. *Phyllachora* species are generally associated with foliage (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Phyllactinia ampelopsidis YX Yu & YQ Lai [Erysiphales: Erysiphaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Phyllactinia* species occur on foliage and cause powdery mildew (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Phyllactinia guttata (Wallr.) Lév. [Erysiphales: Erysiphaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Phyllosticta ampelophila Politis [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	No: These *Phyllosticta* species have been recorded on the foliage of *Vitis* species (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for these species.	Assessment not required.		
Phyllosticta badhami Cooke [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur		Assessment not required.		
Phyllosticta dzumajensis Bubák [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur		Assessment not required.		
Phyllosticta labruscae Thüm. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur		Assessment not required		
Phyllosticta microspila Pass. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur		Assessment not required.		
Phyllosticta pilispora Speschnew [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur		Assessment not required.		
Phyllosticta spermoides Peck. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur		Assessment not required.		
Phyllosticta vitis Sacc. [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur		Assessment not required.		
Phymatotrichopsis omnivora (Duggar) Hennebert [Pezizales: Rhizinaceae]	Not known to occur	No: This species is a soil-borne pathogen associated with the roots of host plants (Farr *et al*. 1989). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Physalospora baccae Cavara [Xylariales: Hyponectriaceae]	Not known to occur	No: This species infects grape berries, leaves, pedicels and peduncles (Zhang 2005). Therefore, foliage free dormant grapevine cuttings do not provide a pathway for this fungus.	Assessment not required		
Pilidiella diplodiopsis Crous & Van	Not known to	No: This fungus has been	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Niekerk [Diaporthales: Schizoparmaceae]	occur	recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, this species affects fruit (Lauber and Schuepp 1968). Therefore, dormant cuttings do not provide a pathway for this fungus.			
Pleospora betae (Berl.) Nevod. [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Pleospora herbarum (Pers.) Rabenh. [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Pleospora penicillus var. *penicillus* Fuckel [Pleosporales: Pleosporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Therefore, there is no evidence that propagative material provides a pathway for this fungus.	Assessment not required		
Pleospora phaeocomoides (Berk. & Broome) G. Winter [Pleosporales: Pleosporaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Pleospora vitis Catt. [Pleosporales: Pleosporaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Therefore, there is no evidence that propagative material provides a pathway for this fungus.	Assessment not required		
Pleospora vitis-viniferae Frolov [Pleosporales: Pleosporaceae]	Not known to occur		Assessment not required		
Pleurostomophora richardsiae (Nannf.) Mostert *et al*. [Calosphaeriales:	Not known to occur	No: This fungus has been isolated from cankered	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Pleurostomataceae]		grapevines (Varela *et al*. 2011) and cankers generally develop in the woody parts of the vine (Urbez-Torres *et al*. 2012). Therefore, semi-hardwood dormant cuttings do not provide a pathway for these fungi.			
Pleurotus ostreatus (Jacq.) P. Kumm. [Agaricales: Pleurotaceae]	Yes (PHA 2001)	Assessment not required			
Poria papyracea (Schwein.) Cooke [Polyporales: Polyporaceae]	Yes (May *et al*. 2003)	Assessment not required			
Pseudocercospora riachueli (Speg.) Deighton. [Capnodiales: Mycosphaerellaceae]	Yes (PHA 2001)	Assessment not required			
Pseudocercospora vitis (Lév.) Speg. [Capnodiales: Mycosphaerellaceae]	Yes (PHA 2001)	Assessment not required			
Pseudopezicula tetraspora Korf *et al*. [Helotiales: Helotiaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011) and occur on the leaves (Pearson and Goheen 1988). The pathogen overwinters in fallen leaves (Pearson and Goheen 1988). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Pseudopezicula tracheiphila (Müll.-Thurg.) Korf & WY Zhuang [Helotiales: Helotiaceae]	Not known to occur		Assessment not required		
Pseudovalsa viticola Ellis & Everh. [Diaporthales: Pseudovalsaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species and occurs on dead stems (Farr and Rossman 2011). Therefore, dormant cuttings do not provide a pathway for	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		this fungus.			
Pyrenochaeta vitis Viala & Sauv. [Pleosporales: Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species causing leaf spot (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Pyrenophora phaeocomes (Rebent.) Fr. [Pleosporales: Pleosporaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Pyrenophora* species are associated with foliage and cause leaf spot (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Ramularia khandalensis Patw. & A.K. Pande [Capnodiales: Mycosphaerellaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. *Ramularia* species generally occur on leaves and cause leaf spot (Farr *et al*.1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Resupinatus poriaeformis (Pers.) Thorn *et al*. [Agaricales: Tricholomataceae]	Not known to occur	No: Species of this genus occur on rotting logs and other herbaceous and woody	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		debris (Farr *et al.* 1989; Thorn *et al.* 2005). Therefore, dormant cuttings do not provide a pathway for this fungus.			
Rhabdospora ampelina (Thüm.) Sacc. [Capnodiales: Mycosphaerellaceae]	Not known to occur	**Yes**: These fungi have been recorded on *Vitis* species, occurring on stems (Farr and Rossman 2011). Therefore, dormant cuttings may provide a pathway for these fungi.	**Yes:** These fungi have established in areas with a wide range of climatic conditions (Farr and Rossman 2011) and it may spread in infected propagative material. Therefore, these fungi have the potential to establish and spread in Australia.	No: These fungi have been reported on grapes but no economic losses have been reported. Therefore, these fungi are not of economic concern to Australia.	
Rhabdospora labruscae Gonz. Frag. [Capnodiales: Mycosphaerellaceae]	Not known to occur				
Rhabdospora mueggenburgii (Pirotta) Sacc. [Capnodiales: Mycosphaerellaceae]	Not known to occur				
Rhabdospora vitis Koshk. & Frolov [Capnodiales: [Mycosphaerellaceae]	Not known to occur				
Rhacodiella vitis Sterenberg [Helotiales: Sclerotiniaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011) and causes spotted necrosis on woody vines (Winkler *et al*. 1974; Cline and Farr 2006). This fungus only affects grapevines that have been subject to the poor management practice of covering vines with soil over winter (Winkler *et al*. 1974). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Rhizoctonia solani JG Kuhn [Ceratobasidiales: Ceratobasidiaceae]	Yes (Neate *et al*. 1988)	Assessment not required			
Rhizopus arrhizus var. *arrhizus* A. Fisch [Mucorales: Mucoraceae]	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Rhizopus stolonifer var. *stolonifer* (Ehrenb.) Vuill. [Mucorales: Mucoraceae]	Yes (PHA 2001)	Assessment not required			
Rhytisma vitis Schwein. [Rhytismatales: Rhytismataceae]	Not known to occur	No: This species occurs on leaves and causes the formation of black spots (Pearson and Goheen 1988). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Robillarda sessilis (Sacc.) Sacc. [Unassigned]	Yes (PHA 2001)	Assessment not required			
Robillarda vitis Prillieux & Delacroix [Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Other species in the genus *Robillarda* occur on foliage and cause leaf spots (Giri *et al*. 1996). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Roesleria subterranea (Weinm.) Redhead [Incertae sedis: Roesleriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species and causes root rot (Farr and Rossman 2011). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Rosellinia amblystoma Berl. & F. Sacc. [Xylariales: Xylariaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		affected plant parts are not mentioned. Members of the genus *Rosellinia* occur on roots and cause root rot (Petrini and Petrini 2005). Therefore, root free dormant cuttings do not provide a pathway for this fungus.			
Rosellinia aquila (Fr.) Ces. & De Not. [Xylariales: Xylariaceae]	Yes (PHA 2001)	Assessment not required			
Rosellinia langloisii Ellis & Everh. [Xylariales: Xylariaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Members of the genus *Rosellinia* occur on roots and cause root rot (Petrini and Petrini 2005). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Rosellinia necatrix Berl. ex Prill. [Xylariales: Xylariaceae]	Yes (PHA 2001)	Assessment not required			
Rosellinia pulveracea (Ehrh.) Fuckel [Xylariales: Xylariaceae]	Yes (PHA 2001)	Assessment not required			
Rosellinia rosarum Niessl [Xylariales: Xylariaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Members of the genus *Rosellinia* occur on roots and cause root rot (Petrini and Petrini 2005). Therefore, root free dormant			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		cuttings do not provide a pathway for this fungus.			
Sacidium viticola Cooke [Mucorales: Pilobolaceae]	Not known to occur	No: These fungi have been recorded on the leaves of *Vitis* species (Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Sacidium vitis Ellis & Everh. [Mucorales: Pilobolaceae]	Not known to occur		Assessment not required		
Schizophyllum commune Fr. [Agaricales: Schizophyllaceae]	Yes (PHA 2001)	Assessment not required			
Schizopora paradoxa (Schrad.) Donk [Hymenochaetales: Schizoporaceae]	Yes (PHA 2001)	Assessment not required			
Schizoxylon insigne (De Not.) Rehm [Ostropales: Stictidaceae]	Not known to occur	No: This species has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. There is no evidence of this species occurring on grapevine stems. Therefore this species is not on the pathway of dormant grapevine cuttings.	Assessment not required		
Sclerotinia sclerotiorum (Lib.) de Bary [Helotiales: Sclerotiniaceae]	Yes (Shivas 1989)	Assessment not required			
Sclerotium rolfsii Sac [Helotiales: Sclerotiniaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Scytinostroma alutum Lanq. [Russulales: Lachnocladiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, this species occurs on dead wood (BCCM 2012). Therefore,	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		dormant cuttings do not provide a pathway for this fungus.			
Sebacina incrustans (Pers.) Tul. & C. Tul. [Sebacinales: Sebacinaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. This fungus occurs on woody stems, leaves and plant debris (Farr *et al*. 1989). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Seimatosporium hysterioides (Fuckel) Brockmann [Xylariales: Amphisphaeriaceae]	Yes (Sergeeva *et al*. 2005)	Assessment not required			
Seimatosporium lonicerae (Cooke) Shoemaker [Xylariales: Amphisphaeriaceae]	Yes (Shivas 1989)	Assessment not required			
Seimatosporium macrospermum (Berk. & Broome) B. Sutton [Xylariales: Amphisphaeriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. There is no evidence that this species occurs on the stems of grapevines. Therefore, this species is not on the pathway of dormant grapevine cuttings.	Assessment not required		
Seimatosporium parasiticum (Dearn. & House) Shoemaker [Xylariales: Amphisphaeriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Septoria ampelina Berk. & M.A. Curtis	Not known to	No: These fungi have been	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Capnodiales: Mycosphaerellaceae]	occur	recorded on the foliage of *Vitis* species (Pearson and Goheen 1988; Farr *et al*. 1989; Farr and Rossman 2011). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.			
Septoria badhami Berk. & Broome [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Septoria kellermaniana Thüm. [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Septoria melanopsis Pat. [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Septoria tassiana Syd [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Septoria vineae Pass [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Septoria viticola Berk. & M.A. Curtis [Capnodiales: Mycosphaerellaceae]	Not known to occur		Assessment not required		
Septosporium heterosporum Ellis & Galloway [Unassigned] (synonym: *Passalora heterosporella* U. Braun & Crous, *Phaeoramularia heterospora* (Ellis & Galloway) Deighton)	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. On other hosts, this species occurs on leaves (Deighton 1976). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Setosphaeria rostrata K.J. Leonard [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Sorosphaera viticola Kirchmair *et al*. [Plasmodiophorida: Plasmodiophoraceae]	Not known to occur	No: This species has been recorded on *Vitis* species and is associated with roots (Kirchmair *et al*. 2005). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Sphaceloma viticola Sawada ex Jenkins	Not known to	No: This fungus has been	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
& Bitanc [Myriangiales: Elsinoaceae]	occur	recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its first report on *Vitis* species in Taiwan in 1944 (Farr and Rossman 2011), it has not been reported from any other country, indicating dormant cuttings do not provide a pathway for this fungus.			
Sphaeria antiqua Ellis & Everh [Xylariales: Xylariaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since its first report on *Vitis* species in New Jersey in 1954 (Farr and Rossman 2011), it has not been reported from any other country, indicating propagative material does not provide a pathway for this fungus.	Assessment not required		
Sphaeropsis ampelos (Schwein.) Cooke [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011); however, no information is provided on plant parts affected by these fungi. *Sphaeropsis* species are generally associated with the foliage, cones, bark and wood of host plants (Farr *et al.*	Assessment not required		
Sphaeropsis vitigena Ellis & Everh [Botryosphaeriales: Botryosphaeriaceae]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		1989). Therefore, semi-hardwood dormant cuttings do not provide a pathway for these fungi.			
Sporidesmium rauii Ellis & Harkn. [Pleosporales: Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since being reported on *Vitis* species from Pennsylvania in 1954 and 1959 (Farr and Rossman 2011), it has not been reported from any other country, indicating dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Sporocadus rhododendri (Schwein.) M. Morelet [Xylariales: Amphisphaeriaceae]	Yes (Sergeeva *et al*. 2005)	Assessment not required			
Stachybotrys chartarum (Ehrenb.) SJ Hughes [Hypocreales: Unassigned]	Yes (PHA 2001)	Assessment not required			
Stagonospora bulgarica Vanev [Pleosporales: Phaeosphaeriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. *Stagonospora* species are generally associated with foliage (Farr *et al.* 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Stemphylium botryosum Sacc. [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Stereum albobadium (Schwein.) Fr. [Russulales: Stereaceae]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Stereum* species are associated with hardwood (Farr *et al*. 1989). Therefore, semi-hardwood dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Stereum crassum (Lév.) Fr. [Russulales: Stereaceae]	Not known to occur		Assessment not required		
Stereum hirsutum (Willd.) Pers. [Russulales: Stereaceae]	Yes (Tovar *et al*. 2008)	Assessment not required			
Stereum purpureum Pers. [Russulales: Stereaceae]	Yes (Cook and Dubé 1989)	Assessment not required			
Stigmina esfandiarii Petr. [Capnodiales: Mycosphaerellaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Members of this genus occur on foliage, bark and dead twigs (Farr *et al.* 1989). Therefore, foliage free, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Strickeria sylvana (Sacc. & Speg.) Cooke [Unassigned]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since they were reported on *Vitis* species in Poland (*S. sylvana*) and Central Asia (*S. trabicola*) in	Assessment not required		
Strickeria trabicola (Fuckel) G. Winter [Unassigned]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		1973 (Farr and Rossman 2011), they have not been reported from any other country, indicating dormant cuttings do not provide a pathway for these fungi.			
Synchytrium parthenocissi M.T. Cook [Chytridiales: Synchytriaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Since it was reported on *Vitis* species in Louisiana in 1964 (Farr and Rossman 2011), it has not been reported elsewhere, indicating dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Teichospora winteriana Berl. [Pleosporales: Dacampiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Other species of this genus have been recorded on dead branches and stems of host plants (Rao 1966). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Thelephora atra Weinm. [Thelephorales: Thelephoraceae]	Yes (May *et al*. 2003)	Assessment not required			
Thielaviopsis basicola (Berk. & Broome) Ferraris [Microascales: Ceratocystidaceae]	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Thyridium vitis Ellis & Everh. [Incertae sedis: Thyridiaceae]	Not known to occur	No: This species is recorded on the dead shoots of *Vitis* species (Anon 2011). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Tilletiopsis minor Nyland [Unassigned]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts they occur on leaves (Farr *et al.* 1989). Therefore, foliage free dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Tilletiopsis washingtonensis Nyland [Unassigned]	Not known to occur		Assessment not required		
Tomentella bryophila (Pers.) MJ Larsen [Thelephorales: Thelephoraceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. However, on other hosts it occurs on wood (Farr *et al.* 1989). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Trametes hirsuta (Wulfen) Lloyd [Polyporales: Polyporaceae]	Yes (PHA 2001)	Assessment not required			
Trametes ochracea (Pers.) Gilb. & Ryvarden [Polyporales: Polyporaceae]	Yes (GBIF 2012)	Assessment not required			
Trametes versicolor (L.) Lloyd [Polyporales: Polyporaceae]	Yes (Tovar *et al*. 2008)	Assessment not required			
Trematosphaeria vitigena Ellis & Everhart [Pleosporales:	Not known to occur	No: This fungus has been recorded on *Vitis* species	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Pleomassariaceae]		(Farr and Rossman 2011), but affected plant parts are not mentioned. Since it was reported on *Vitis* species in West Virginia in 1954 (Farr and Rossman 2011), it has not been reported from any other country, indicating dormant cuttings do not provide a pathway for this fungus.			
Trichocladium asperum Harz [Sordariales: Chaetomiaceae]	Yes (PHA 2001)	Assessment not required			
Trichoderma koningii Oudem. [Hypocreales: Hypocreaceae]	Yes (PHA 2001)	Assessment not required			
Trichoderma viride Pers. [Hypocreales: Hypocreaceae]	Yes (PHA 2001)	Assessment not required			
Trichothecium roseum (Pers.) Link [Hypocreales: Incertae sedis]	Yes (PHA 2001)	Assessment not required			
Trullula melanochlora (Desm.) Höhn. [Unassigned]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011) and is associated with cane bleaching (Phillips 2000). Therefore, dormant cuttings may provide a pathway for this fungus.	**Yes:** This fungus has established in areas with a wide range of climatic conditions (Phillips 2000) and it may spread in infected propagative material. Therefore, this fungus has the potential to establish and spread in Australia.	No: This fungus has been reported on grapes, but no economic losses have been reported (Phillips 2000). Therefore, this fungus is not of economic concern to Australia.	
Truncatella angustata (Pers.) S. Hughes [Xylariales: Amphisphaeriaceae]	Yes (Sergeeva *et al.* 2005)	Assessment not required			
Tryblidaria indica Tilak [Patellariales Patellariaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		mentioned. Since it was reported on *Vitis* species in India in 1966 (Farr and Rossman 2011), it has not been reported from any other country, indicating dormant cuttings do not provide a pathway for this fungus.			
Tubercularia acinorum Cavara [Hypocreales: Nectriaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Tubeufia pezizula (Berk. & M.A. Curtis) M.E. Barr [Pleosporales: Tubeufiaceae]	Yes (Farr and Rossman 2011)	Assessment not required			
Typhula viticola (Peck) Berthier [Agaricales: Typhulaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. *Typhula* species generally occur on fallen, rotting leaves (Farr *et al.* 1989). Therefore, foliage free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Ulocladium atrum Preuss [Pleosporales: Pleosporaceae]	Yes (PHA 2001)	Assessment not required			
Uredo cissicola Cummins [Unassigned]	Not known to occur	No: These fungi have been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. *Uredo* species generally occur on leaves and cause leaf rust (Farr *et al*. 1989). Therefore, foliage free dormant cuttings do not	Assessment not required		
Uredo cissi-pterocladae Hirats. [Unassigned]	Not known to occur		Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		provide a pathway for these fungi.			
Uromyces cladomanes Traverso [Pucciniales: Pucciniaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. *Uromyces* species are generally associated with leaf and stem rust (Farr *et al.* 1989). However, since it was reported on *Vitis* in 1937, it has not been reported from any other country, indicating that dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Valsa ceratosperma (Tode) Maire [Diaporthales: Valsaceae]	Yes (PHA 2001)	Assessment not required			
Valsa vitigera Cooke [Diaporthales: Valsaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Most *Valsa* species affect the dead twigs and bark of mature trees (Jones and Aldwinkle 1991, Farr and Rossman 2011). Therefore, semi-hardwood dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Valsaria insitiva (Tode) Ces. & De Not. [Diaporthales: Valsaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but	Assessment not required		

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		affected plant parts are not mentioned. Generally, this species is saprobic on dead wood (Farr *et al.* 1989; Ellis and Ellis 1997). Therefore, dormant cuttings do not provide a pathway for this fungus.			
Vararia pectinata (Burt) DP Rogers & HS Jacks. [Russulales: Lachnocladiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Vararia* species occur on wood and dead branches (Farr *et al*. 1989). Therefore, dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Vermicularia compacta Cooke & Ellis [Incertae sedis: Glomerellaceae]	Yes (PHA 2001)	Assessment not required			
Verticillium albo-atrum Reinke & Berthold [Incertae sedis: Plectosphaerellaceae]	Yes (Walker 1990)	Assessment not required			
Verticillium dahliae Kleb. [Incertae sedis: Plectosphaerellaceae]	Yes (Harding and Wicks 2007)	Assessment not required			
Xenosporium berkeleyi (M.A. Curtis) Piroz. [Pleosporales: Tubeufiaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, this species occurs on decaying, woody substrates (Farr and Rossman 2011). Therefore, semi-hardwood dormant	Assessment not required		

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		cuttings do not provide a pathway for this fungus.			
Xylaria arbuscula Sacc. [Xylariales: Xylariaceae]	Not known to occur	No: This fungus has been recorded on *Vitis* species (Farr and Rossman 2011), but affected plant parts are not mentioned. Generally, *Xylaria* species cause decay of dead stumps and hardwood timber (Sivanesan and Holliday 1972). Therefore, semi-hardwood dormant cuttings do not provide a pathway for these fungi.	Assessment not required		
Xylaria hypoxylon (L.) Grev. [Xylariales: Xylariaceae]	Yes (PHA 2001)	Assessment not required			
Xylaria polymorpha (Pers.) Grev. [Xylariales: Xylariaceae]	Yes (PHA 2001)	Assessment not required			
STRAMINOPILA					
Phytophthora cactorum (Lebert & Cohn) J. Schröt. [Peronosporales: Peronosporaceae]	Yes (Golzar *et al.* 2007)	Assessment not required			
Phytophthora cambivora (Petri) Buisman [Peronosporales: Peronosporaceae]	Yes (Wicks and Hall 1990)	Assessment not required			
Phytophthora cinnamomi Rands [Peronosporales: Peronosporaceae]	Yes (Cahill *et al*. 2008)	Assessment not required			
Phytophthora citricola Sawada [Peronosporales: Peronosporaceae]	Yes (Stukely *et al.* 2007)	Assessment not required			
Phytophthora cryptogea Pethybr. & Laff. [Peronosporales: Peronosporaceae]	Yes (Stukely *et al.* 2007)	Assessment not required			
Phytophthora drechsleri Tucker [Peronosporales: Peronosporaceae]	Yes (Stukely *et al.* 2007)	Assessment not required			
Phytophthora megasperma Drechsler	Yes (Stukely *et al.*	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Peronosporales: Peronosporaceae]	2007)				
Phytophthora nicotianae Breda de Haan [Peronosporales: Peronosporaceae]	Yes (Stukely *et al.* 2007)	Assessment not required			
Plasmopara viticola (Berk. & M.A. Curtis) Berl. & De Toni [Peronosporales: Peronosporaceae]	Yes (Constable and Drew 2004)	Assessment not required			
Pythium acanthicum Drechsler [Pythiales: Pythiaceae]	Yes (Vaartaja 1965)	Assessment not required			
Pythium aphanidermatum (Edson) Fitzp. [Pythiales: Pythiaceae]	Yes (Male and Vawdrey 2010)	Assessment not required			
Pythium debaryanum R. Hesse [Pythiales: Pythiaceae]	Yes (Wong *et al.* 1985)	Assessment not required			
Pythium irregulare Buisman [Pythiales: Pythiaceae]	Yes (Vaartaja 1965)	Assessment not required			
Pythium mamillatum Meurs [Pythiales: Pythiaceae	Yes (Vaartaja 1965)	Assessment not required			
Pythium middletonii Sparrow [Pythiales: Pythiaceae]	Yes (Irwin and Jones 1977)	Assessment not required			
Pythium parasiticum S. Rajagop. & K. Ramakr. [Pythiales: Pythiaceae]	Not known to occur	No: *Pythium* species are soil-borne and infect the roots of host plants, causing various rots, lesions, damping-off, discoloration, abnormal growth, dieback and death (Farr and Rossman 2011). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Pythium rostratum E.J. Butler [Pythiales: Pythiaceae]	Yes (Vaartaja 1965)	Assessment not required			
Pythium spinosum Sawada [Pythiales: Pythiaceae]	Yes (Wong *et al.* 1985)	Assessment not required			
Pythium splendens Hans Braun	Yes (PHA 2001)	Assessment not required			

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Pythiales: Pythiaceae]					
Pythium sylvaticum WA Campbell & FF Hendrix [Pythiales: Pythiaceae]	Not known to occur	No: *Pythium* species are soil-borne and infect the roots of host plants, causing various rots, lesions, damping-off, discoloration, abnormal growth, dieback and death (Farr and Rossman 2011). Therefore, root free dormant cuttings do not provide a pathway for this fungus.	Assessment not required		
Pythium ultimum Trow [Pythiales: Pythiaceae]	Yes (Vaartaja 1965)	Assessment not required			
Pythium vexans de Bary [Pythiales: Pythiaceae]	Yes (Irwin and Jones 1977)	Assessment not required			
PHYTOPLASMA[20]					
Buckland Valley grapevine yellows (BVGY) Phytoplasma [**16SrI–**related]	Yes (Constable 2010)	Assessment not required			
Candidatus Phytoplasma asteris [**16SrI** – Aster yellows group][21] (Virginia	Not known to occur	**Yes:** Phytoplasmas are obligate parasitic, phloem-	**Yes:** *Candidatus* phytoplasma asteris has established in	**Yes:** The aster yellows group of phytoplasmas are associated	**Yes**

[20] Phytoplasmas are classified on the basis of molecular data obtained from 16S rDNA and other conserved genes into distinct groups, subgroups and species belonging to the newly established '*Candidatus* Phytoplasma' taxon (IRPCM 2004). Initially, differentiation of the phytoplasma was based on the geographical origins of the diseases, the specific hosts and insect vectors and the symptoms exhibited by the host plant. However, given that the same phytoplasma strain may induce different symptoms in different hosts and different strains may share common vectors or cause diseases showing similar symptoms, this approach did not provide an accurate means of phytoplasma classification (Weintraub and Jones 2010). Therefore, the designation of a new/distinct '*Candidatus* Phytoplasma' species is based on the nucleotide sequence of the 16S rRNA gene.

[21] Phytoplasmas classified in subgroups 16SrI-A, 16SrI-B and 16SrI-C ('*Candidatus* Phytoplasma asteris'-related strains) are associated with grapevine yellows in several countries (Bianco *et al*. 1994; Alma *et al*. 1996; Davis *et al*. 1998). 16SrI-B and 16SrI-C have sporadically been found in grapevine (the strains related to '*Ca*. Phytoplasma asteris' comprises of a large number of related phytoplasma worldwide, representing the most diverse and widespread phytoplasma group [Lee *et al*. 2004a]). Although there is relatively high similarity in the 16S rDNA sequence, the strains in this group occupy diverse ecological niches and show substaintial genetic variation (Firrao *et al*. 2005). Earlier studies placed Tomato big bud mycoplasma like organism and Tomato big bud phytoplasma in the 'Ca. Phytoplasma asteris group' (Firrao 2004). However, recent studies have placed Tomato big bud phytoplasma in the SrII-D ribosomal group (Constable 2010).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
grapevine yellows I (VGYI), Aster yellow phytoplasma)		restricted pathogens that cause grapevine yellows[22] (Weintraub and Jones 2010). Several molecularly distinct phytoplasma groups which cause grapevine yellows have been identified (Hren *et al*. 2009). Phytoplasmas are transmitted by propagative material (Caudwell *et al*. 1994). Propagative material therefore provides a pathway for this phytoplasma.	areas with a wide range of climatic conditions of different grapevine regions of the world (Constable 2010) and can spread naturally in infected propagative material (Caudwell *et al*. 1994; Matus *et al*. 2008; Constable 2010). Distribution of infected propagative material will help spread grape infecting phytoplasmas within Australia. Therefore, grape infecting phytoplasmas have the potential to establish and spread in Australia.	with over 100 economically important diseases worldwide (Lee *et al*. 2004a). Typical symptoms of grapevine yellows include leaf chlorosis and rolling, flower abortion or berry withering, uneven or total lack of lignification of canes and stunting (Olivier *et al*. 2009b). Therefore, this phytoplasma group has the potential for economic consequences in Australia.	
Candidatus Phytoplasma australiense [**16SrXII–B**] (strains: Australian grapevine yellows (AGY) Phytoplasma)	Yes (Constable 2010)	Assessment not required			
Candidatus Phytoplasma fraxini [**16SrVII-A]** (Ash yellows group) – Chile grapevine yellows strain	Not known to occur	**Yes:** Phytoplasmas are phloem restricted and symptoms include downward leaf rolling, yellowing or reddening of the leaves and incomplete shoot lignification (Gajardo *et al*. 2009). Mixed	**Yes:** Chile grapevine yellows has established in areas with a wide range of climatic conditions in different regions of the world (Gajardo *et al*. 2009). Phytoplasmas generally spread naturally in	**Yes:** This phytoplasma occurs on a range of hosts, including economically important crops such as peach (Zunnoon-Khan *et al*. 2010). It also causes devastating effects in ornamentals (Zunnoon-Khan *et*	**Yes**

[22] Grapevine yellows (GY) is a term that is used to refer to any of several grapevine diseases that are currently attributed to infection of grapevine plants by phytoplasmas. Grapevine yellows diseases include flavescence dorée, Palatinate grapevine yellows, and Bois noir (black wood, legno nero), reported in southern Europe and the Mediterranean region; North American grapevine yellows (Virginia grapevine yellows I, Virginia grapevine yellows III, New York grapevine yellows, and grapevine yellows in Canada); Australian grapevine yellows in Australia and New Zealand and Buckland Valley grapevine yellows in Australia; and grapevine yellows diseases that have been reported in other regions including South Africa and Chile. While the symptoms caused by different GY are similar, they show considerable differences in epidemiology due to the different life history of their respective vectors (Boudon-Padieu 2005). All vectors of GY identified so far are leafhoppers and planthoppers (Boudon-Padieu 2005).

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		phytoplasma infections and infections of phytoplasmas together with one or more viruses also occur (Gajardo *et al*. 2009). Phytoplasmas are transmitted by propagative material (Caudwell *et al*. 1994); therefore dormant cuttings provide a pathway for this phytoplasma.	infected propagative material (Constable 2010). Distribution of infected propagative material will help spread grape infecting phytoplasmas within Australia. Therefore, grape infecting phytoplasmas have the potential to establish and spread in Australia.	*al*. 2010). This phytoplasma causes leaf-reddening, yellowing, shortening of internodes, shoot proliferation, reduced fruit size and plant decline (Griffiths *et al*. 1999; Zunnoon-Khan *et al*. 2010). Therefore, this phytoplasma group has the potential for economic consequences in Australia.	
Candidatus Phytoplasma pruni [16SrIII – peach X-disease phytoplasmas group]	Not known to occur	**Yes:** Phytoplasmas are phloem restricted and symptoms include yellowing of the leaves and die-back of young shoot tips (Martelli and Boudon-Padieu 2006). Phytoplasmas are transmitted by propagative material (Caudwell *et al*. 1994); therefore dormant cuttings provide a pathway for this phytoplasma.	**Yes:** North American grapevine yellows has established in areas with a wide range of climatic conditions in different regions of the world (Martelli and Boudon-Padieu 2006). Phytoplasmas generally spread naturally in infected propagative material (Martelli and Boudon-Padieu 2006). Distribution of infected propagative material will help spread grape infecting phytoplasmas within Australia. Therefore, this phytoplasma group has the potential to establish and spread in Australia.	**Yes:** *Candidatus* Phytoplasma pruni is the causal agent for several diseases, previously known as peach leaf roll, peach rosette, little peach, red suture and cherry buckskin (Olivier *et al*. 2009a). Disease incidences of up to 10% have been reported in peach orchards in the United States (Olivier *et al*. 2009a). This phytoplasma group causes economic lossess associated with reduced fruit quality and yield (Olivier *et al*. 2009a). Therefore, this phytoplasma group has the potential for economic consequences in Australia.	**Yes**
Candidatus Phytoplasma solani **[16 SrXII–A]** (Stolbur group) (strains:	Not known to occur	**Yes:** Phytoplasmas are phloem restricted and	**Yes:** *Candidatus* Phytoplasma solani has	**Yes**: Bois noir Phytoplasma causes severe damage in	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Vergilbungskrankheit (VK) phytoplasma, Bois noir (BN) phytoplasma)[23]		symptoms include downward leaf rolling, yellowing or reddening of the leaves and incomplete shoot lignification (Gajardo *et al*. 2009). Mixed phytoplasma infections and infections of phytoplasmas together with one or more viruses also occur (Gajardo *et al*. 2009). Phytoplasmas are transmitted by propagative material (Caudwell *et al*. 1994); therefore dormant cuttings provide a pathway for this phytoplasma.	established in areas with a wide range of climatic conditions of different regions of the world (Constable 2010) and can spread naturally in infected propagative material (Constable 2010; Zorloni *et al*. 2011). Distribution of infected propagative material will help spread grape infecting phytoplasmas within Australia. Therefore, grape infecting phytoplasmas have the potential to establish and spread in Australia.	European vineyards (Mori *et al*. 2007). Existence of different strains and mixed infections of different strains (Pacifico *et al*. 2009) may increase the severity of damage in vineyards and sometimes infected vines die-off during winter (Riedle-Bauer *et al*. 2006). BN Phytoplasma is considered of quarantine concern by Canada. Presence of this phytoplasma group in Australia would impact upon Australia's ability to access overseas markets. Therefore, this phytoplasma group has the potential for economic consequences in Australia.	
Candidatus Phytoplasma ulmi [**16SrV–A**] (Elm yellows group EY group)[24]	Not known to occur	**Yes:** Phytoplasmas are found in the phloem sieve tubes of plants (Hren *et al*. 2009) causing grapevine yellows. Several molecularly distinct phytoplasma groups which	**Yes:** EY group infection of grapevines has established in areas with a wide range of climatic conditions in different regions of the world (Botti and Bertaccini 2007) and can	**Yes:** Many diseases inflicted by the EY group Phytoplasmas are economically important and are quarantine pathogens internationally (Lee *et al*. 2004b). Phytoplasmas generally reduce	**Yes**

[23] Bois Noir (BN) was considered a form of Flavescence doree (FD) phytoplasma with a possible common aetiology (Caudwell 1961). Further studies indicated that BN phytoplasma is different from FD phytoplasma as both phytoplasma have different vectors (Caudwell 1961, Sforza *et al*. 1998). BN phytoplasma is associated with the stolbur group and the name *Candidatus* Phytoplasma solani has been proposed as it infects various solanaceous plants (Firrao *et al*. 2005).'*Candidatus* Phytoplasma solani'-related strains; have been classified in group 16SrXII (the stolbur phytoplasmas group (STOL)) subgroup A (formerly called subgroup 16SrI-G). Three STOL types I, II and III have been identified and was shown to be associated with distinctive host plants (Langer and Maixner 2004, Berger *et al*. 2009). Type I and II are more common in grapevine but both have different alternative hosts (Pacifico *et al*. 2009).

[24] The EY phytoplasma (16SrV) group consists of diverse phytoplasma strains, representing the third largest phytoplasma cluster after the aster yellows and X-disease phytoplasma groups (Gundersen *et al*. 1996, Lee *et al*. 2000). Other EY group phytoplasmas associated with diseases in grapevines include flavescence dorée (FD) and grapevine yellows phytoplasmas in the European grapevine (Bertaccini *et al*. 1997, Daire *et al*. 1997, Martini *et al*. 2002, Seemuller *et al*. 1994). Strains of 16SrV–A detected in grapevines are distinguishable from strains detected in elms indicating that the phytoplasma in the 16SrV group are able to modify their genome according to environmental conditions (Botti and Bertaccini 2007).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		cause grapevine yellows have been identified (Hren *et al*. 2009). Phytoplasmas are transmitted by propagative material (Caudwell *et al*. 1994); therefore dormant cuttings provide a pathway for these phytoplasmas.	spread naturally in infected propagative material (Constable 2010; Zorloni *et al*. 2011). Distribution of infected propagative material will help spread grape infecting phytoplasmas within Australia. Therefore, this phytoplasma group has the potential to establish and spread in Australia.	fruit yield and infected clusters have high levels of acid and low sugar content (Boudon-Padieu *et al.* 1989). Therefore, this phytoplasma group has the potential for economic consequences in Australia.	
Candidatus Phytoplasma vitis [**16SrV**] (Elm yellows group) (strains: Grapevine Flavescence dorée (FD) phytoplasma; German Palatinate grapevine yellows phytoplasma)[25]	Not known to occur	**Yes:** FD Phytoplasma is phloem restricted (Hren *et al*. 2009) and symptoms include downward leaf rolling, yellowing or reddening of the leaves and incomplete shoot lignification (Gajardo *et al*. 2009). FD and BN Phytoplasma has been reported in grapevine (Bertaccini *et al*. 1995; Daire *et al*. 1997). Most grapevine rootstocks are potentially symptomless (Caudwell *et al*.1994). This may lead to collection of budwood from symptomless parts of infected	**Yes:** FD Phytoplasma has established in areas with a wide range of climatic conditions in different regions of the world (Constable 2010) and can spread naturally in infected propagative material (Caudwell *et al*. 1994; Rott *et al*. 2007; Matus *et al*. 2008; Constable 2010). Phloem-feeding hemipterans acquire the pathogen for subsequent transmission (Boudon-Padieu *et al*. 1989). The symptomless nature of phytoplasmas may contribute to the inadvertent propagation and distribution of	**Yes:** Flavescence dorée is one of the most serious diseases of grapevine (Margaria *et al*. 2007). Phytoplasmas generally reduce fruit yield and infected clusters have high acid levels and a low sugar content (Boudon-Padieu *et al*. 1989). FD Phytoplasma is considered of quarantine concern by COSAVE and Canada. The presence of this phytoplasma group in Australia would impact upon Australia's ability to access overseas markets. Therefore, this phytoplasma group has the potential for economic	**Yes**

[25] Flavescence dorée is caused by several isolates which belong to the 16SrV-C and -D phytoplasma phylogenetic subgroups (Filippin *et al*. 2009). Based on sequence analysis three strain clusters of FD phytoplasma (FD-1, FD-2, FD-3) have been recognized (Arnaud *et al*. 2007). FD-1 is restricted to France and Italy, FD-2 is detected in France, Italy and Spain, whereas FD-3 has been detected in Italy, Serbia and Slovenia (Constable 2010). Recent evidence indicates that the German Palatinate grapevine yellows phytoplasma is related to alder-infecting strains and is a member of the flavescence dorée phytoplasma phylogenetic subclade (Arnaud *et al*. 2007). Alder yellows and Palatinate grapevine yellows diseases in Europe are also attributed to '*Ca.* Phytoplasma vitis'-related strains. Phytoplasma strains FD-associated belong to ribosomal subgroups 16SrV-C and 16SrV-D (Botti and Bertaccini 2007).

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		vines or from recently infected vines that have not developed symptoms (Martelli and Boudon-Padieu 2006). Propagative material therefore provides a pathway for these phytoplasmas.	infected material that will help spread grape infecting phytoplasmas within Australia. Therefore, grape infecting phytoplasmas have the potential to establish and spread in Australia.	consequences in Australia.	
European stone fruit yellows Phytoplasma 16SrX-B (Apple proliferation group)	Not known to occur	**Yes:** Phytoplasmas are found in the phloem sieve tubes of plants (Duduk *et al*. 2003; Hren *et al*. 2009) and cause leaf yellowing, leaf rolling and shoot drop (Varga *et al*. 2000). Phytoplasmas are transmitted by propagative material (Caudwell *et al*. 1994); therefore dormant cuttings provide a pathway for these phytoplasmas.	**Yes:** This phytoplasma has established in areas with a wide range of climatic conditions in different regions of the world (Varga *et al*. 2000; Duduk *et al*.2003) and can spread naturally in infected propagative material (Caudwell *et al*. 1994; Constable 2010). Distribution of infected propagative material will help spread grape infecting phytoplasmas within Australia. Therefore, grape infecting phytoplasmas have the potential to establish and spread in Australia.	**Yes:** European stone fruit yellows cause various diseases in European stone fruit (Laimer Da Câmara Machado *et al*. 2001). In apricots, it causes leaf rolling, leaf chlorosis, leaf reddening, phloem necrosis and sudden dieback (Laimer Da Câmara Machado *et al*. 2001). In addition, affected apricot trees produce shrunken, tasteless fruit that fall prematurely from the tree (Laimer Da Câmara Machado *et al*. 2001). Therefore, this phytoplasma group has the potential for economic consequences in Australia.	**Yes**
Phytoplasma 16SrIX	Not known to occur	**Yes**: Phytoplasmas associated with grape yellows are obligate parasites and phloem restricted. Infected grapevines show redness and inward curling of leaves (Canik *et al*. 2011). Phytoplasmas are transmitted by propagative material (Caudwell *et al*. 1994);	**Yes:** Chile grapevine yellows has established in areas with a wide range of climatic conditions in different regions of the world (Canik *et al*. 2011). Phytoplasmas generally spread naturally in infected propagative material (Constable 2010). Distribution of infected propagative	**Yes:** The 16SrIX group has been identified in grapevines in Turkey, and can cause severe diseases in host plants (Canik *et al.* 2011). Therefore, this phytoplasma group has the potential for economic consequences in Australia.	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		therefore dormant cuttings provide a pathway for these phytoplasmas.	material will help spread grape infecting phytoplasmas within Australia. Therefore, grape infecting phytoplasmas have the potential to establish and spread in Australia.		
Tomato big bud Phytoplasma [**16SrII-D**][26]	Yes (Constable 2010)	Assessment not required			
VIROIDS					
Australian grapevine viroid (AGVd) [Pospiviroidae: *Apscaviroid*]	Yes (Rezaian 1990)	Assessment not required			
Citrus exocortis viroid – grapevine (CEVd-g) [Pospiviroidae: *Pospiviroid*] (synonym: Grapevine *viroid* – slow (Gvd-s)	Yes (Hardy *et al.* 2008)	Assessment not required			
Grapevine yellow speckle viroid 1 (GYSVd1) [Pospiviroidae: A*pscaviroid*]	Yes (Koltunow *et al.* 1989)	Assessment not required			
Grapevine yellow speckle viroid 2 (GYSVd2) [Pospiviroidae: *Aspcaviroid*] synonym: Grapevine viroid (GV1B), Grapevine *viroid*-fast (Gvd-f)	Yes (Koltunow *et al.* 1989)	Assessment not required			
Grapevine yellow speckle viroid 3 (GYSVd3) [Pospiviroidae: *Aspcaviroid*] (synonym: Chinese grapevine viroid)	Yes (Benson *et al*. 2008).	Assessment not required			
Hop stunt viroid – grapevine (HSVd-g) [Pospiviroidae: *Hostuviroid*]	Yes (Koltunow *et al.* 1988)	Assessment not required			
VIRUSES					
Alfalfa mosaic virus (AMV) [Bromoviridae: Alfamovirus]	Yes (Garran and Gibbs 1982)	Assessment not required			

[26] The classification of phytoplasma is continuously reviewed resulting reclassification of some of these phytoplasmas.

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Arabis mosaic virus (ArMV) – grape strain [Secoviridae: Nepovirus]	Not known to occur[27]	**Yes**: ArMV-grape strain infections are often symptomless and expression varies based on type of rootstock, grape variety, and environmental conditions (Anon 2011). ArMV is also seed-borne in grapevines (Lazar *et al*. 1990). ArMV-grape strains may cause mottling and flecking on the leaves and leaf deformation, including enations (Anon 2011; Oklahama State University 2011). This may lead to the propagation and distribution of infected propagative material, suggesting that ArMV-grape strains could enter Australia on propagative material.	**Yes:** ArMV-grape strains have established in areas with a wide range of climatic conditions (Cadman *et al*. 1960; Kearns and Mossop 1984; MacKenzie *et al*. 1996; Delibašić *et al*. 2000; Abelleira *et al.* 2010) and can spread naturally in infected propagative material (Anon 2011). Distribution of infected propagative material will help spread ArMV-grape strains within Australia. Therefore, ArMV-grape strains have the potential to establish and spread in Australia.	**Yes**: Infected plants may have shortened internodes and exhibit vine decline symptoms (Oklahama State University 2011). This virus can also cause very poor fruit set in affected vines (Abelleira *et al*. 2010). ArMV can be present in a mixed infection with GFLV (Weber *et al*. 2002). ArMV-grape strains are considered of quarantine significance by some trading partners. Presence of ArMV-grape strains in Australia would impact upon Australia's ability to access overseas markets. Therefore, ArMV-grape strains have the potential for economic consequences in parts of Australia.	**Yes**
Artichoke Italian latent virus (AILV) [Secoviridae: Nepovirus]	Not known to occur	**Yes**: AILV is soil-borne (Kyriakopoulou 2008) and causes fanleaf symptoms in grapevine (Jankulova *et al.* 1978; Martelli and Boudon-Padieu 2006). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are	**Yes:** AILV has established in areas with a wide range of climatic conditions (Roca *et al*. 1975; Savino *et al*. 1977; Gallitelli *et al*. 2004; Kyriakopoulou 2008) and it can spread naturally in infected propagative material. Distribution of infected propagative material will help	**Yes:** AILV is an economically important virus due to its extensive host range and the yield losses it can cause in some hosts (Gallitelli *et al*. 2004). No information is available on economic losses caused by this virus in grapes, but AILV causes patchy chlorotic stunting disease in artichokes. Infected crops are	**Yes**

[27] Arabis mosaic virus (ArMV) has once been recorded on *Narcissus* species in Australia; however, ArMV has not been recorded in grapes in Australia (Constable and Drew 2004; Constable *et al*. 2010). ArMV strains may differ in host range, symptom expression and transmissibility by nematode vectors (Jones *et al*. 1989).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		infected (Bos1999). Therefore, propagative material does provide a pathway for AILV.	spread AILV within Australia. Therefore, AILV has the potential to establish and spread in Australia.	rendered unproductive (Brown *et al*. 1997). Therefore, AILV has the potential for economic consequences in parts of Australia.	
Blueberry leaf mottle virus (BLMoV) New York (NY) strain [Secoviridae: Nepovirus][28]	Not known to occur	**Yes**: NY strain is associated with fanleaf like symptoms (Oliver and Fuchs 2011) and is seed-borne in grapevines (Uyemoto *et al*. 1977). BLMoV-NY strain symptoms include pale green foliage and irregular elongation of shoots (Uyemoto *et al*. 1977). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for this virus.	**Yes:** BLMoV-NY strain has established in areas with a wide range of climatic conditions (Uyemoto *et al*. 1977) and it can spread naturally in infected propagative material. Distribution of infected propagative material will help spread BLMoV-NY strain within Australia. Therefore, BLMoV-NY strain has the potential to establish and spread in Australia.	**Yes**: Information on the economic consequences of BLMoV-NY strain on grapes is limited. However, as it is a part of the virus complex associated with fanleaf degeneration/decline disease (Oliver and Fuchs 2011), it may cause significant crop losses. BLMoV-NY strain induces delayed bud break and straggly fruit clusters (Uyemoto *et al*. 1977). This may reduce yield and fruit quality. Therefore, BLMoV-NY strain has the potential for economic consequences in Australia.	**Yes**
Broad bean wilt virus (BBWV) [Secoviridae: Fabavirus]	Yes (Schwinghamer *et al*. 2007)	Assessment not required			
Carnation mottle carmovirus (CarMV) [Tombusviridae: Carmovirus]	Yes (Moran 1994)	Assessment not required			

[28] A strain of blueberry leaf mottle virus (BLMoV) related to but different from Grapevine Bulgarian latent virus has been reported infecting grapes in the USA (Uyemoto *et al*. 1977).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Cherry leafroll virus (CLRV) – grape isolate [Secoviridae: Nepovirus]	Nor known to occur[29]	**Yes**: CLRV is associated with fanleaf like symptoms (Martelli and Boudon-Padieu 2006). The symptoms caused by CLRV on grapes include leaf yellowing, leaf chlorosis and yellow leaf mosaic symptoms (Ipach *et al*. 2003). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for CLRV.	**Yes:** CLRV has established in areas with a wide range of climatic conditions (Herrera and Madariaga 2001; Ipach *et al*. 2003) and it can spread naturally in infected propagative material. Distribution of infected propagative material will help spread CLRV within Australia. Therefore, CLRV has the potential to establish and spread in Australia.	**Yes**: Information on the economic consequences of this virus is almost non-existent. However, as it is a part of the virus complex associated with fanleaf degeneration/decline disease (Oliver and Fuchs 2011), it may cause significant crop losses. CLRV causes leaf yellowing, leaf chlorosis, yellow leaf mosaic symptoms, small fruit and premature berry abscission (Ipach *et al*. 2003). This may reduce yield and fruit quality. Therefore, this virus has potential for economic consequences in Australia.	**Yes**
Cucumber mosaic virus (CMV) – grape isolate (CMV-YA200) [Bromoviridae: Cucumovirus]	Nor known to occur[30]	**Yes:** CMV grape isolate naturally infects grapevine (Koklu *et al*. 1998) and infections are symptomless (Koklu *et al*. 1999). This may lead to the propagation and distribution of infected propagative material, suggesting that CMV grape	**Yes**: CMV grape isolate has established in areas with a wide range of climatic conditions (Paradies *et al*. 2000). The symptomless nature of this virus may contribute to the inadvertent propagation and distribution of infected material that will help	No: Information on the economic consequences of this virus is almost non-existent. CMV does not appear to be a threatening pathogen to grapes as infections are apparently symptomless (Paradies *et al*. 2000) and economic consequences are not reported. Therefore, this virus	

[29] *Cherry leafroll virus* (CLRV) has only been reported from rhubarb (Parmenter *et al*. 2009); however, CLRV has not been recorded in grapes in Australia (Constable and Drew 2004; Constable *et al*. 2010). Rhubarb isolate was identified using sequencing; the Australian isolate is substantially different from other important strains (Parmenter *et al*. 2009). CLRV isolates from different hosts may differ in their serological and molecular traits (Jones 1985; Jones *et al*. 1990; Rebenstorf *et al*. 2006) as well as in their host specificity and ability to induce symptoms (Jones 1973; Rowhani and Mircetich 1988). CLRV isolates segregate into six major groups based on the primary host: birch and cherry (group A); rhubarb, ash and ground elder (group B); raspberry, sorrel and chive (group C); walnut (groups D1 and D2); and elderberry (group E) (Rebenstorf *et al*. 2006).

[30] *Cucumber mosaic virus* (CMV) is recorded in Australia (Carpenter and Luckett 2003, Persley and Gambley 2010). However, this virus has not been recorded on grapevines in Australia. Grapevine isolates possesses a number of properties differing enough from those of other characterized CMV isolates (Paradies *et al*. 2000).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		isolate could enter Australia on propagative material.	spread CMV grape isolate within Australia. Therefore, CMV grape isolate has the potential to establish and spread in Australia.	does not have the potential for significant economic consequences in Australia.	
Grapevine ajinashika virus (GAgV) [Luteoviridae: Luteovirus]	Nor known to occur	**Yes:** GAgV is symptomless in grapevines (Namba *et al*. 1991b) and this may lead to the propagation and distribution of infected propagative material. GAgV is graft transmissible (Namba *et al*.1991b). Therefore, propagative material may provide a pathway for GAgV.	**Yes:** GAgV has established in areas with a wide range of climatic conditions (Namba *et al*. 1979) The symptomless nature of this virus may contribute to the inadvertent propagation and distribution of infected material that will help spread GAgV within Australia. Therefore, GAgV has the potential to establish and spread in Australia.	**Yes:** Grapevine ajinashika is the most important graft transmissible disease in Japan since the 1970s (Namba *et al*. 1991b). GAgV reduces the sugar content of grape berries, rendering table and wine grapes unmarketable (Namba *et al*. 1991b). Therefore, GAgV has potential for economic consequences in parts of Australia.	**Yes**
Grapevine Algerian latent virus (GALV) [Tombusviridae: Tombusvirus]	Not known to occur	**Yes**: GALV infections are symptomless in grapevines (Gallitelli *et al*. 1989; Brunt *et al*. 1996). This may lead to the propagation and distribution of infected propagative material. Therefore, GALV could enter Australia on propagative material.	**Yes:** GALV has established in areas with a wide range of climatic conditions (Gallitelli *et al*. 1989; Cannizzaro *et al*. 1990; Fuchs *et al*. 1994; Fujinaga *et al*. 2009). Trade of infected propagative material will help spread GALV within Australia. Therefore, GALV has the potential to establish and spread in Australia.	No: Information on the economic consequences of this virus is almost non-existent. (Gallitelli *et al*. 1989). GALV does not appear to be a threatening pathogen to grapes as infections are apparently symptomless (Gallitelli *et al*. 1989) and economic consequences are not reported. Therefore, this virus does not have the potential for significant economic consequences in Australia.	
Grapevine Anatolian ringspot virus (GARSV) [Secoviridae: Nepovirus]	Not known to occur	**Yes**: GARMV is associated with fanleaf degeneration/ decline disease (Goklap *et al*. 2003; Oliver and Fuchs 2011).	**Yes:** GARMV has established in areas with a wide range of climatic conditions (Cigsar *et al*. 2002; Gokalp *et al*. 2003)	**Yes**: Information on the economic consequences of this virus is almost non-existent as it has only recently been described	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		The symptoms consist of vein clearing, mottling and leaf deformation preceded by chlorotic or necrotic local lesions (Gokalp *et al*. 2003). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for GARMV.	and it can spread naturally in infected propagative material (Andret-Link *et al*. 2004; Oliver and Fuchs 2011). Distribution of infected propagative material will help spread GARMV within Australia. Therefore, GARMV has the potential to establish and spread in Australia.	(Gokalp *et al*. 2003). However, as it is a part of the virus complex associated with fanleaf degeneration/decline disease (Goklap *et al*. 2003; Oliver and Fuchs 2011), it may cause significant crop losses. Fanleaf diseases in grapevines are important diseases (Andret-Link *et al*. 2004) and cause substantial crop loss; reduced fruit quality and shortened longevity (Laimer *et al*. 2009; Oliver and Fuchs 2011). Therefore, this virus has the potential for economic consequences in Australia.	
Grapevine angular mosaic-associated virus (GAMaV) [Bromoviridae: Ilarvirus]	Nor known to occur	**Yes:** GAMaV naturally infects grapevine, causing angular mosaic on leaves and gradual decline and stunting of vines (Girgis *et al*. 2000, 2009). This virus is also transmitted through seed, pollen and grafting (Girgis *et al*. 2009). Therefore, propagative material provides a pathway for GAMaV.	**Yes:** GAMaV has established in areas with a wide range of climatic conditions (Girgis *et al*. 2000, 2009). It is graft transmissible (Girgis *et al*. 2009) and may therefore spread by propagative material. Multiplication and distribution of infected propagative material will help spread GAMaV within Australia. Therefore, GAMaV has the potential to establish and spread in Australia.	**Yes:** GAMaV causes a reduction in inflorescences, flower abortion, reduced berry size, gradual decline and stunting of the vine and can ultimately lead to the death of the plant (Girgis *et al.* 2009). Therefore, GAMaV has potential for economic consequences in parts of Australia.	**Yes**
Grapevine asteroid mosaic associated virus (GAMV) [Tymoviridae: Marafivirus]	Nor known to occur	**Yes**: GAMV naturally infects grapevines, causing leaf spot and the formation of	**Yes:** GAMV has established in areas with a wide range of climatic conditions (Martelli	**Yes:** Plants infected with this virus are stunted and can be damaged quite severely (Frazier	**Yes**

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		asymmetrical leaves (Martelli and Boudon-Padieu 2006). Grapevine varieties and rootstocks infected with a Marafivirus may be symptomless (Constable and Rodoni 2011a). This may lead to the propagation and distribution of infected propagative material, suggesting that GAMV could enter Australia on propagative material.	and Boudon-Padieu 2006) and it may spread naturally in infected propagative material (Martelli and Boudon-Padieu 2006). Multiplication and distribution of infected propagative material will help spread GAMV within Australia. Therefore, GAMV has the potential to establish and spread in Australia.	1970). GAMV, in combination with other viruses like *Grapevine rupestris vein feathering virus*, *Grapevine angular mosaic-associated virus* or *Grapevine Syrah virus-1*, may impact grapevine health. Therefore, GAMV has the potential for economic consequences in parts of Australia.	
Grapevine berry inner necrosis virus (GINV) [Betaflexividae: Trichovirus]	Nor known to occur	**Yes**: GINV naturally infects grapevines resulting in poor growth (Yoshikawa *et al*. 1997). The virus causes a reduction in vigour, late sprouting, inner necrosis of shoots, and mosaic patterns on leaves (Yoshikawa *et al*. 1997). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for GINV.	**Yes**: GINV has established in areas with a wide range of climatic conditions (Terai *et al*. 1993; Yoshikawa *et al*. 1997) and it may spread naturally in infected propagative material (Nishijima *et al*. 2000). Multiplication and distribution of infected propagative material and *Colomerus vitis* (Kunugi *et al*. 2000) will help spread GINV within Australia. Therefore, GINV has the potential to establish and spread in Australia.	**Yes**: In Japan, GINV is considered to be one of the most important viruses of certain varieties of grapevines (Martelli and Boudon-Padieu 2006). The virus has a significant impact on the health of the grapevines, resulting in poor growth and necrosis of berries (Yoshikawa *et al*. 1997). Therefore, this virus has the potential for economic consequences in Australia.	**Yes**
Grapevine Bulgarian latent virus (GBLV) [Secoviridae: Nepovirus]	Nor known to occur	**Yes**: GBLV is associated with fanleaf degeneration/ decline disease (Oliver and Fuchs 2011) and is seed-borne in grapes (Richardson 1990).	**Yes:** GBLV has established in areas with a wide range of climatic conditions (Martelli *et al*. 1978; Uyemoto *et al*. 1977; Sequeira and Mendonça	**Yes**: Information on the economic consequences of this virus is almost non-existent. However, as it is a part of the virus complex associated with	**Yes**

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		GBLV infections are symptomless (Martelli *et al*. 1977) and this may lead to the propagation and distribution of infected propagative material. Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for GBLV.	1992) and it can spread naturally in infected propagative material. The symptomless nature of this virus may contribute to the inadvertent propagation and distribution of infected material that will help spread GBLV within Australia. Therefore, GBLV has the potential to establish and spread in Australia.	fanleaf degeneration/decline disease (Oliver and Fuchs 2011), it may cause significant crop losses. A New York isolate caused delayed bud break and differential elongation of bud shoots and smaller fruit clusters with many aborted berries (Uyemoto *et al*. 1977). Therefore, this virus has potential for economic consequences in Australia.	
Grapevine chrome mosaic virus (GCMV) [Secoviridae: Nepovirus]	Nor known to occur	**Yes**: GCMV is associated with fanleaf degeneration/ decline disease (Oliver and Fuchs 2011). GCMV is seed-borne in grapevines (Lazar *et al*. 1990; Lehoczky 1991) and causes chrome yellow or white discolouration of the leaves with leaf and cane deformations (Martelli *et al*. 1970; Dimou *et al*. 1994). However, symptomless infection may occur (Martelli and Boudon-Padieu 2006). Therefore, propagative material provides a pathway for GCMV.	**Yes:** GCMV has established in areas with a wide range of climatic conditions (Uyemoto *et al*. 2009) and it can spread naturally in infected propagative material (Dimou *et al*. 1994). The symptomless nature of this virus may contribute to the inadvertent propagation and distribution of infected material that will help spread GCMV within Australia. Therefore, GCMV has the potential to establish and spread in Australia.	**Yes:** Infected vines show a remarkable reduction in vigour and progressive decline leading to low fruit yield (Martelli *et al*. 1970) and eventual death of the plants 5–6 years after infection (Martelli *et al*. 1970; Pozsár *et al*. 1969). This pathogen can also reduce chlorophyll production and CO_2 fixation (Pozsár *et al*. 1969), causing grapevine yield to decline by 66% and reducing grape sugar content (Lehoczky and Tasnády 1971). Therefore, GCMV has the potential for economic consequences in parts of Australia.	**Yes**
Grapevine deformation virus (GDefV) [Secoviridae: Nepovirus]	Nor known to occur	**Yes**: GDefV is associated with fanleaf-like symptoms (Martelli and Boudon-Padieu 2006). GDefV does not	**Yes:** GDefV has established in areas with a wide range of climatic conditions (Cigsar *et al*. 2003) and it can spread	**Yes:** Information on the economic consequences of this virus is almost non-existent. However, as it is a part of the	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		always display easily detectable symptoms (Cigsar *et al*. 2003). This virus can spread naturally in infected propagative material (Cigsar *et al*. 2003). Therefore, propagative material provides a pathway for GDefV.	naturally in infected propagative material (Cigsar *et al*. 2003). Multiplication and distribution of infected propagative material will help spread GDefV within Australia. Therefore, GDefV has the potential to establish and spread in Australia.	virus complex associated with fanleaf degeneration/decline disease (Oliver and Fuchs 2011), it may cause significant crop losses. Affected plants have depressed growth and straggly fruit clusters (Cigsar *et al*. 2003). This may reduce fruit yield and quality. Therefore, GCMV has the potential for economic consequences in parts of Australia.	
Grapevine fanleaf virus (GFLV) [Secoviridae: Nepovirus]	Not known to occur[31]	**Yes**: GFLV is associated with fanleaf (Martelli and Boudon-Padieu 2006) and is seed-borne in grapes (Richardson 1990). GFLV causes a variety of symptoms that differ in type and severity (Martelli 1993). Typical symptoms include distorted leaves, chlorotic mottling, yellow mosaic and cane malformation (Raski *et al*. 1983). However, leaf and cane malformation symptoms may not always be prominent (Martelli 1993). Therefore, propagative material provides	**Yes:** GFLV has established in areas with a wide range of climatic conditions (Andret-Link *et al*. 2004) and it can spread naturally in infected propagative material. Multiplication and distribution of infected propagative material will help spread GFLV within Australia. Therefore, GGLV has the potential to establish and spread in Australia.	**Yes:** GFLV is associated with fanleaf degeneration, causing substantial crop losses, reduced fruit quality and shortened longevity of vineyards (Andret-Link *et al*. 2004). Crop losses depend on the virulence of the virus isolate, the susceptibility of the cultivar and environmental factors (Bovey *et al*. 1990). GFLV also reduces fruit quality, with a substantial descrease in sugar content and titratable acidity (Andret-Link *et al*. 2004). Therefore, GFLV has the potential for economic	**Yes**

[31] Grapevine fanleaf virus (GFLV) has been reported from South Australia and Victoria (Taylor 1962; Taylor and Hewitt 1964; Meagher *et al.* 1976; Cirami *et al*. 1988). In South Australia, GFLV affected only a small number of grapevines and occurred in the absence of the vector (Cirami *et al*. 1988); and in Victoria, GFLV and its vector occurred only in the Rutherglen district and quarantine restriction (due to *Phyloxera*) prevented their movement to other regions (Krake *et al*. 1999). In recent years, there have been no reports of fanleaf disease in South Australia and Victoria (Constable *et al*. 2010). Specific strains of GFLV cause fanleaf, yellow mosaic and veinbanding diseases. Some isolates are associated with leaf enation, bark pitting, wood pitting and flat trunk diseases (Hewitt *et al*. 1970).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		a pathway for GFLV.		consequences in parts of Australia.	
Grapevine fleck virus (GFkV) [Tymoviridae: Maculavirus]	Yes (Habili *et al*. 2003)	Assessment not required			
Grapevine leafroll associated virus 1 (GLRaV-1) [Closteroviridae: Ampelovirus]	Yes (Habili *et al*. 2007)	Assessment not required			
Grapevine leafroll associated virus 2 (GLRaV-2) [Closteroviridae: Closterovirus]	Yes (Constable *et al.* 2010)	Assessment not required			
Grapevine leafroll associated virus 3 (GLRaV-3) [Closteroviridae: Ampelovirus]	Yes (Habili and Symons 2000)	Assessment not required			
Grapevine leafroll associated virus 4 (GLRaV-4) [Closteroviridae: Ampelovirus]	Yes (Constable *et al.* 2010)	Assessment not required			
Grapevine leafroll associated virus 5 (GLRaV-5) [Closteroviridae: Ampelovirus]	Yes (Constable *et al.* 2010)	Assessment not required		.	
Grapevine leafroll associated virus 6 (GLRaV-6) [Closteroviridae: Ampelovirus][32]	Not known to occur	**Yes**: GLRaVs colonize and reproduce in the grapevine phloem tissue (Martinson *et al*. 2008) and mixed infections of GLRaV are common (Hu *et al.* 1990; Zimmerman *et al*. 1990). Symptoms are not expressed on all infected vines (Fuchs 2007; Martinson	**Yes:** GLRaVs have established in areas with a wide range of climatic conditions (Cigsar *et al.* 2002; Kuniyuki *et al.* 2006; Martinson *et al*. 2008; Eddin *et al.* 2008; Mahfoudhi *et al.* 2009) and spread by propagative material (Weber	**Yes:** GLRaVs pose a significant threat to the grape industry through yield reduction, reduced fruit quality and the need to introduce control measures such as replanting vineyards (Maliogka *et al*. 2008a). Infected vines often have fewer clusters, lower yield (up to 30-50%) and	**Yes**
Grapevine leafroll associated virus 7 (GLRaV-7) [Closteroviridae: Unassigned]	Not known to occur				**Yes**

[32] The grapevine leafroll-associated viruses (GLRaVs) are a group of viruses (at least 9) that cause similar symptoms in infected grapevines (Martinson *et al*. 2008). GLRaVs most likely originated in the Eastern Mediterranean region and co-evolved with grapevines, later spreading throughout the world by the movement of infected vines and cuttings (Weber *et al*. 1993). Currently the GLRaV-4,-5, -6 and -9 are considered distinct Ampelovirus species. However based on their genome structure, serological relationships and biology there is a suggestion that the taxonomy will be contracted and that these GLRaV species along with GLRaV-Pr and -De will be considered strains of one species (Martelli 2009).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		et al. 2008). This may lead to the propagation and distribution of infected propagative material, suggesting that GLRaVs could enter Australia on propagative material.	*et al*.1993). Distribution of infected propagative material will help spread GLRaVs within Australia. Therefore, GLRaVs have the potential to establish and spread in Australia.	delayed fruit ripening (Martinson *et al*. 2008). Therefore, GLRaVs have the potential for economic consequences in parts of Australia.	
Grapevine leafroll associated virus 9 (GLRaV-9) [Closteroviridae: Ampelovirus]	Yes (Habili *et al*. 2003)	Assessment not required			
Grapevine leafroll associated virus 10 (GLRaV-10) [Closteroviridae: Ampelovirus][33]	Not known to occur	**Yes**: GLRaVs colonize and reproduce in the grapevine phloem tissue (Martinson *et al*. 2008) and mixed infections of GLRaV are common (Hu *et al.* 1990; Zimmerman *et al*. 1990). Symptoms are not expressed on all infected vines (Martinson *et al*. 2008, Fuchs 2007). This may lead to the propagation and distribution of infected propagative material, suggesting that GLRaVs could enter Australia on propagative material.	**Yes:** GLRaVs have established in areas with a wide range of climatic conditions (Cigsar *et al.* 2002; Kuniyuki *et al.* 2006; Martinson *et al*. 2008; Mahfoudhi *et al.* 2009) and spread by propagative material (Weber *et al*.1993). Distribution of infected propagative material will help spread GLRaVs within Australia. Therefore, GLRaVs have the potential to establish and spread in Australia.	**Yes:** GLRaVs pose a significant threat to the grape industry through yield reductions, reduced fruit quality and the need to introduce control measures such as replanting vineyards (Maliogka *et al*. 2008a). Infected vines often have fewer clusters, lower yield (up to 30-50% yield reduction) and delayed fruit ripening (Martinson *et al*. 2008). Therefore, GLRaVs have the potential for economic consequences in parts of Australia.	**Yes**
Grapevine leafroll associated virus 11 (GLRaV-11) [Closteroviridae: Ampelovirus][34]	Not known to occur				**Yes**
Grapevine line pattern virus (GLPV) [Bromoviridae: Ilarvirus]	Not known to occur	**Yes**: GLPV naturally infects grapevines (Martelli and Boudon-Padieu 2006). GLPV is seed-borne in grapevines	**Yes:** GLPV has established in areas with a wide range of climatic conditions and spreads by propagative	**Yes:** GLPV is known to impact on vine vigour and yield is progressively reduced (Martelli 1993). Infected vines show small	**Yes**

[33] GLRaV-De is referred to as GLRaV-10 (Maliogka *et al*. 2008a).

[34] GLRaV-Pr is referred to as GLRaV-11 (Maliogka *et al*. 2008a).

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		(Lehoczky *et al*. 1992). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for GLPV.	material (Martelli and Boudon-Padieu 2006). Distribution of infected propagative material and seed will help spread GLPV within Australia. Therefore, GLPV has the potential to establish and spread in Australia.	yellow spots and flecks on the leaf margins (Martelli 1993). Therefore, GLPV has the potential for economic consequences in parts of Australia.	
Grapevine red globe virus (GRGV) [Tymoviridae: Maculavirus]	Not known to occur	**Yes**: GRGV is part of the fleck complex of grapevines (Martelli and Boudon-Padieu 2006) causing latent or semi-latent infections in *Vitis vinifera* and most American *Vitis* species and rootstock hybrids (Martelli and Boudon-Padieu 2006). This may lead to the propagation and distribution of infected propagative material, suggesting that GRGV could enter Australia on propagative material.	**Yes:** GRGV has established in areas with a wide range of climatic conditions (Martelli and Boudon-Padieu 2006) and may spread naturally with propagative material. Distribution of infected propagative material will help spread GRGV within Australia. Therefore, GRGV has the potential to establish and spread in Australia.	**Yes:** Information on the economic consequences of this virus is almost non-existent. However, as it is a part of the fleck complex (Martelli and Boudon-Padieu 2006), it may cause significant crop losses. Adverse effects on vine vigour and rooting ability of root stocks have been reported as a result of fleck complex (Martelli and Boudon-Padieu 2006). Therefore, GRGV has the potential for economic consequences in parts of Australia.	**Yes**
Grapevine rootstock stem lesion closterovirus (GRSLaV = strain of GLRaV-2)	Yes (Constable and Drew 2004)	Assessment not required			
Grapevine rupestris stem pitting associated virus (GRSPaV) [Betaflexiviridae: Foveavirus]	Yes (Habili and Symons 2000)	Assessment not required			
Grapevine rupestris vein feathering virus (GRVFV) [Tymoviridae: Marafivirus]	Not known to occur	**Yes**: GRVFV in association with other viruses causes grapevine fleck complex or	**Yes:** GRVFV has established in areas with a wide range of climatic conditions (Al	**Yes:** Information on the economic consequences of this virus is almost non-existent.	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		Syrah Decline (Al Rwahnih *et al*. 2009; Uyemoto *et al*. 2009). In the absence of other viruses, GRVFV induces mild chlorosis of primary and secondary leaf veins (Uyemoto *et al*. 2009). Grapevine infected with a Marafivirus may be symptomless (Constable and Rodoni 2011a). Therefore, propagative material provides a pathway for GRVFV.	Rwahnih *et al*. 2009; Uyemoto *et al*. 2009) and spread by propagative material (Martelli and Boudon-Padieu 2006; Constable and Rodoni 2011a). Distribution of infected propagative material will help spread GRVFV within Australia. Therefore, GRVFV has the potential to establish and spread in Australia.	However, this virus is associated with Syrah decline, which causes leaf reddening and scorching, swelling of the graft union, superficial cracking and pitting of woody tissue, stem necrosis, and the eventual death of the vines (Al-Rwahnih *et al*. 2009). Therefore, GRVFV has the potential for economic consequences in parts of Australia.	
Grapevine syrah virus I (GSyV-I) [Tymoviridae: Marafivirus]	Not known to occur	**Yes:** GSyV-I, in association with other viruses, causes Syrah decline disease (Al-Rawhnih *et al*. 2009). Grapevine infected with a Marafivirus may be symptomless (Constable and Rodoni 2011a). Therefore, propagative material provides a pathway for GSyV-I.	**Yes:** GSyV-I has established in areas with a wide range of climatic conditions (Al Rwahnih *et al*. 2009; Engel *et al*. 2010) and spreads by propagative material (Engel *et al*. 2010; Constable and Rodoni 2011a). Distribution of infected propagative material will help spread GSyV-I within Australia. Therefore, GSyV-I has the potential to establish and spread in Australia.	**Yes:** Information on the economic consequences of this virus is almost non-existent. However, this virus is associated with Syrah decline, which causes leaf reddening and scorching, swelling of the graft union, superficial cracking and pitting of woody tissue, stem necrosis and eventual death of the vines (Al-Rwahnih *et al*. 2009). Therefore, GSyV-I has potential for economic consequences in parts of Australia.	**Yes**
Grapevine Tunisian ringspot virus (GTRSV) [Secoviridae: Nepovirus]	Not known to occur	**Yes**: GTRSV is found in vines with mild fanleaf-like symptoms (Mahfoudhi *et al*. 1998). Symptoms include mild mottling and leaf deformation (Ouertani *et al*. 1992). Viruses, as a rule, infect host	**Yes:** GTRSV has established in areas with a wide range of climatic conditions (Ouertani *et al*. 1992) and it can spread in infected propagative material. Multiplication and distribution of infected	**Yes:** Information on the economic consequences of this virus is almost non-existent. However, as a part of virus complex associated with fanleaf degeneration/decline disease (Oliver and Fuchs 2011), it may	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for GTRSV.	propagative material will help spread GTRSV within Australia. Therefore, GTRSV has the potential to establish and spread in Australia.	cause significant crop losses. Affected plants have depressed growth and straggly fruit clusters (Cigsar *et al*. 2003). This may reduce fruit yield and quality. Therefore, GCMV has potential for economic consequences in parts of Australia.	
Grapevine virus A (GVA) [Betaflexividae: Vitivirus]	Yes (Habili and Symons 2000)	Assessment not required			
Grapevine virus B virus (GVB) [Betaflexividae: Vitivirus]	Yes (Habili 2009)	Assessment not required			
Grapevine virus B (GVB) (strains associated with grapevine corky bark) [Betaflexividae: Vitivirus]	Not known to occur	**Yes**: This phloem limited virus associated with grapevine corky bark is latent (Golino 1993; Abdullah *et al*. 2003) or produces a mild reduction in plant vigour (Namba *et al*. 1991a). This may lead to the inadvertent propagation and distribution of infected propagative material. Therefore, propagative material may provide a pathway for GVB strains associated with corky bark.	**Yes:** GVB strains associated with grapevine corky bark have established in areas with a wide range of climatic conditions (Namba *et al*. 1991a; Abdullah *et al*. 2003) and it can spread naturally in infected propagative material (Abdullah *et al*. 2003). Multiplication and distribution of infected propagative material will help spread this virus within Australia. Therefore, this virus has the potential to establish and spread in Australia.	**Yes:** GVB strains associated with grapevine corkybark are of major importance to viticulture worldwide (Constable and Rodoni 2011b). This virus is associated with grapevine degeneration where grapevine yield is decreased by 66% and the grapes have reduced sugar content (Lehoczky and Tasnady 1971). Therefore, GVB strains associated with grapevine corky bark have the potential for economic consequences in parts of Australia.	**Yes**
Grapevine virus C (GVC) (strain of GLRaV-2) [35] [Betaflexividae: Vitivirus]	Yes (Constable *et al*. 2010)	Assessment not required			
Grapevine virus D (GVD)	Yes (Habili pers.	Assessment not required			

[35] GVC was considered to be related to the Vitiviruses but it is now considered to be a strain of GLRaV-2 (Masri *et al*. 2006). GLRAV-2 is present in Australia (Constable *et al.* 2010)

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
[Betaflexividae: Vitivirus]	comm. 2009)				
Grapevine virus E (GVE) [Betaflexividae: Vitivirus]	Not known to occur	**Yes**: This virus is associated with grapevine causing typical Shiraz disease symptoms including canes lacking lignifications, delayed leaf fall and reduced vigour (Coetzee *et al*. 2010). Canes may also not show symptoms and this may lead to the inadvertent propagation and distribution of infected propagative material. Therefore, propagative material may provide a pathway for GVE.	**Yes:** GVE has established in areas with a wide range of climatic conditions (Nakaune *et al*. 2008; Coetzee *et al*. 2010) and it may spread naturally in infected propagative material. Propagation and distribution of infected material will help spread GVE within Australia. Therefore, GVE has the potential to establish and spread in Australia.	**Yes:** Vitiviruses may display delayed bud burst, and thick, rough bark with an enlarged scion trunk (Uyemoto *et al.* 2009). Information on the economic consequences of this virus is almost non-existent. However, as it is a part of the virus complex associated with rugose wood (Martelli *et al*. 2007), it may cause significant crop losses. Therefore, GVE has the potential for economic consequences in parts of Australia.	**Yes**
Peach rosette mosaic virus (PRMV) [Secoviridae: Nepovirus]	Not known to occur	**Yes**: PRMV is seed-borne and soil-borne (Richardson 1990). It is associated with symptoms similar to those of fanleaf degeneration and decline (Martelli and Boudon-Padieu 2006). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for PRMV.	**Yes:** PRMV has established in areas with a wide range of climatic conditions (Uyemoto *et al*. 2009) and it can spread naturally in infected propagative material (Martelli and Boudon-Padieu 2006). Propagation and distribution of infected material will help spread PRMV within Australia. Therefore, PRMV has the potential to establish and spread in Australia.	**Yes:** PRMV causes delayed bud burst, small sized berries, stunted vines and a progressive decline in plant health, which can lead to grapevine death (Martelli and Boudon-Padieu 2006). Crop losses of up to 60% and death of susceptible *Vitis labrusca* cultivars and a number of American-French hybrids have been recorded (Martelli and Boudon-Padieu 2006). Therefore, this virus has the potential for economic consequences in Australia.	**Yes**
Petunia asteroid mosaic virus (PeAMV) [Tombusviridae: Tombusvirus]	Not known to occur	**Yes**: PeAMV is a soil-borne virus and infects plant systemically via roots (Kegler	**Yes:** PeAMV has established in areas with a wide range of climatic conditions (Bercks	**Yes:** Information on the economic consequences of this virus is almost non-existent.	**Yes**

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		and Kontzog 1990; Lovisolo 1990). The infections may be latent (Kegler and Kontzog 1990). This may lead to the inadvertent propagation and distribution of infected propagative material. Therefore, propagative material provides a pathway for PeAMV.	1967; Novák and Lanzová 1976; Smith *et al*. 1988; Koenig *et al*. 1989; Martelli 1993; Constable *et al*. 2010) and it can spread naturally in infected propagative material. Propagation and distribution of infected material will help spread PeAMV within Australia. Therefore, PeAMV has the potential to establish and spread in Australia.	However, PeAMV generally occur in mixed infections (Constable *et al*. 2010). PeAMV is associated with a serious disease—viral necrosis of sweet cherry—that causes heavy damage due to canker-like deformations on the shoots as well as bark splits, necrosis of leaf mid-veins and misshapen fruits with necrotic spots (Pfeilstetter *et al.* 1992). Therefore, this virus has the potential for economic consequences in Australia.	
Raspberry bushy dwarf virus (RBDV) [Unassigned: Ideaeovirus]	Yes (McGregor *et al*. 1996)	Assessment not required			
Raspberry ringspot virus (RpRSV) grapevine strain[36] [Secoviridae: Nepovirus]	Not known to occur	**Yes**: RpRSV grapevine strain causes symptoms similar to those of fanleaf degeneration disease (Stellmach and Querfurth 1978; Wetzel *et al*. 2006, Wetzel and Kraczal 2007). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative	**Yes:** RpRSV grapevine strain has established in areas with a wide range of climatic conditions (Martelli and Boudon-Padieu 2006; Wetzel *et al*. 2006) and it can spread naturally in infected propagative material. Propagation and distribution of infected material will help spread RpRSV within Australia. Therefore, RpRSV	**Yes**: RpRSV is a causal agent of grapevine fanleaf disease, one of the most widespread and damaging diseases of grapevine (Wetzel *et al*. 2006). Crop losses caused by RpRSV grapevine strain can be higher than 30% (Martelli and Boudon-Padieu 2006). Therefore, this virus has the potential for economic consequences in Australia.	**Yes**

[36] The grapevine strain of RsRSV is serologically very distantly related to the main serotypes Scottish and English. These differences strongly suggest that the grapevine infecting RsRSV may be a different viral species (Jones *et al*. 1994; Ebel *et al*. 2003). The type strain is transmitted by *Longidorus macrosoma* whereas grapevine strain is transmitted by *Paralongidorus maximus* (Jones *et al*. 1994). Two strains of different virulence occur (Ebel *et al*. 2003): Raspberry ringspot virus – cherry isolate (RpRSV - ch) in Germany and Raspberry ringspot virus – RAC815 isolate (RpRSV-RAC815) in Switzerland; both have also been recorded from grapevines (Wetzel *et al.* 2006).

Pest	**Present within Australia**	**Potential to be on pathway**	**Potential for establishment and spread**	**Potential for economic consequences**	**Quarantine pest**
		material provides a pathway for RpRSV grapevine strain.	grapevine strain has the potential to establish and spread in Australia.		
Sowbane mosaic virus (SoMV) – grape infecting strain [Unassigned: Sobemovirus]	Not known to occur[37]	Yes: SoMV grape infecting strain may be latent in naturally infected grapevines (Bercks and Querfurth 1969). This may lead to the inadvertent propagation and distribution of infected propagative material. Therefore, propagative material provides a pathway for SoMV grape infecting strain.	**Yes:** SoMV grape infecting strain has established in areas with a wide range of climatic conditions (Bercks and Querfurth 1969; Jankulova 1972; Pozdena *et al*. 1977) and it can spread naturally in infected propagative material. Therefore, SoMV grape infecting strain has the potential to establish and spread in Australia.	**Yes:** Information on the economic consequences of this virus is almost non-existent. However, SoMV grape infecting strain is considered of quarantine significance by some trading partners. Presence of SoMV grape infecting strain in Australia would impact upon Australia's ability to access overseas markets. Therefore, SoMV grape infecting strain has potential for economic consequences in parts of Australia.	**Yes**
Strawberry latent ringspot virus (SLRSV) [Comoviridae: Unassigned]	Not known to occur[38]	**Yes**: SLRSV is associated with symptoms similar to those of fanleaf degeneration (Martelli and Walter 1993 Constable *et al*. 2010; Oliver and Fuchs 2011). SLRSV infections are generally latent, but SLRSV may induce leaf deformity, chlorotic mottling on leaf, leaf roll symptoms, reddish discoloration of the tip	**Yes:** SLRSV has established in areas with a wide range of climatic conditions (Murant 1983; EPPO 2010a) and it can spread naturally in infected propagative material (Savino *et al*. 1987; Holleinova *et al*. 2009). The symptomless nature of this virus may contribute to the inadvertent propagation and	**Yes:** SLRSV is an economically important virus due to its extensive host range and the yield losses it can cause (Tzanetakis *et al*. 2006). SLRSV occurrence varies from 3% to 18% in grapevines (Akbas and Erdiller 1993; Komínek 2008; Holleinovà *et al*. 2009). Heavy yield losses (up to 80% of the crop) are associated with SLRSV	**Yes**

[37] Sowbane mosaic virus (SoMV) naturally occurs on *Atriplex suberecta, Chenopodium album* and *Chenopodium trigonon* in Australia (Teakle 1968; Guy 1982). However, this virus has not been recorded on grapevines in Australia (Constable and Drew 2004; Constable *et al*. 2010).

[38] In Australia, SLRSV has only once been reported from Rhubarb in South Australia (Cook and Dubé 1989). As there have been no further reports of this virus in Australia, it is considered to be eradicated. The natural vector of SLRSV is also absent from Australia.

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		of the spring shoots and reduced or stunted growth (Savino *et al*. 1987; Martelli and Walter 1993). Therefore, propagative material provides a pathway for SLRSV.	distribution of infected material that will help spread SLRSV within Australia. Therefore, SLRSV has the potential to establish and spread in Australia.	infections in grapevine (Rudel 1985; Martelli and Walter 1993). Therefore, this virus has the potential for economic consequences in Australia.	
Tobacco mosaic virus (TMV) [Unassigned: Tobamovirus]	Yes (Randles 1986)	Assessment not required			
Tobacco necrosis virus (TNV) grape strain [Tombusviridae: Necrovirus]	Not known to occur[39]	**Yes**: TNV grape strain causes yellowing and mottling on grapevine leaves (Cesati and Van Regenmortel 1969) and infections are systemic (Cesati and Van Regenmortel 1969). Therefore, propagative material provides a pathway for TNV grape strain.	**Yes:** TNV grape strain has established in areas with a wide range of climatic conditions (Cesati and Van Regenmortel 1969) and it is graft transmissible (Cesati and Van Regenmortel 1969). Propagation and distribution of infected material, and the presence of efficient vectors (*Olpidium* species), will help spread TNV grape strain within Australia. Therefore, TNV grape strain has the potential to establish and spread in Australia.	**Yes:** Information on the economic consequences of this virus on grapevines is almost non-existent. However, in other hosts TNVs cause significant yield losses. In strawberry in the Czech Republic, TNV has caused dwarfing and leaf and root necrosis (Martin and Tzanetakis 2006). Losses as high as 50% have been recorded in tulips and glasshouse grown cucumbers (CABI 2012a). Therefore, this virus has the potential for economic consequences in Australia.	**Yes**
Tobacco ringspot virus (TRSV) [Secoviridae: Nepovirus]	Yes (Randles 1986)	Assessment not required			

[39] The taxonomy of TNV has been revised to recognise that what was originally named TNV is actually a group of related virus species. *Tobacco necrosis virus A* (TNV-A) and *Tobacco necrosis virus D* (TNV-D) have been recognised as distinct species in the *Necrovirus* genus (Coutts *et al*. 1991; Meulewaeter *et al*. 1990) , as have *Chenopodium necrosis virus* (ChNV) and *Olive mild mosaic virus* (OMMV), which were previously considered TNV isolates (Tomlinson *et al*. 1983). TNV isolates from Nebraska and Toyama (TNV-NE and TNV-Toyama) are likely to represent two new species in the genus, but have not yet been officially recognised (Saeki *et al*. 2001; Zhang *et al*. 1993). Molecular sequence data indicates that other necroviruses originally labelled '*Tobacco necrosis virus*' are likely to be confirmed as distinct species (NCBI 2010). Viruses likely to be strains of TNVs A and D have been recorded in Victoria and Queensland (Finlay and Teakle 1969; Teakle 1988). TNV Nebraska isolate and grape infecting strain has not been recorded in Australia, nor have other TNVs that have since been renamed or have not yet been formally classified (Tomlinson *et al*. 1983; Zhang *et al*. 1993; Cardoso *et al*. 2005; NCBI 2010).

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
Tomato black ring virus (TBRV) [Secoviridae: Nepovirus]	Not known to occur	**Yes**: TBRV naturally infects grapevines and produces chlorotic spots, rings and lines on newly infected vines, and mottling of the older leaves (Stobbs and van Schagen 1984; Walker 2006). TBRV is seed-borne in grapevines (Martelli 1978). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for TBRV.	**Yes:** TBRV has established in areas with a wide range of climatic conditions (Harper *et al*. 2010) and it can spread naturally in infected propagative material. Multiplication and distribution of infected propagative material, and the presence of its nematode vectors in Australia (Stirling *et al*. 1992), will help spread TBRV within Australia. Therefore, TBRV has the potential to establish and spread in Australia.	**Yes**: Production losses caused by TBRV in grapevine are not known precisely, but they can be high (Uyemoto *et al*. 2009). Vines infected with TBSV are generally stunted with older leaves showing mottling, yellowing of leaf margins, vein bunching, leaf deformation, and small, poorly set berries (Stobbs and van Schagen 1984). This may reduce yield and fruit quality. Yield losses of up to 20% in raspberry (Taylor *et al*. 1965) and up to 40% on artichoke (Harper *et al*. 2010) have been reported due to TBRV. TBRV is of quarantine significance for NAPPO and New Zealand (Harper *et al*. 2010). Therefore, TBRV has the potential for economic consequences in parts of Australia.	**Yes**
Tomato mosaic virus (ToMV) [Unassigned: Tobamovirus]	Yes (PHA 2001)	Assessment not required			
Tomato ringspot virus (ToRSV) [Secoviridae: Nepovirus]	Not known to occur[40]	**Yes**: ToRSV naturally infects grapevines causing faint chlorotic mottling, small, distorted leaves, irregular,	**Yes:** ToRSV has established in areas with a wide range of climatic conditions (EPPO 2010b) and it can spread	**Yes**: ToRSV is an economically important pathogen. Vines infected with ToRSV show shortened internodes, distorted	**Yes**

[40] *Tomato ring spot virus* was reported more than two decades ago in *Pentas lanceolata* (Egyptian starflower) and *Cymbidium* orchid species in South Australia (Chu *et al*. 1983; Cook and Dubé 1989). The infected plants were removed and it has not since been reported to occur in South Australia (Cartwright 2009), suggesting the virus has not spread and is probably absent from Australia.

Pest	Present within Australia	Potential to be on pathway	Potential for establishment and spread	Potential for economic consequences	Quarantine pest
		ringlike line patterns on leaves and shortened internodes (Uyemoto *et al*. 2009; Schilder 2011). ToRSV is seed-transmitted in grapes (Uyemoto 1975). Viruses, as a rule, infect host plants systemically and all plant parts, including parts used for vegetative propagation, are infected (Bos 1999). Therefore, propagative material provides a pathway for ToRSV.	naturally in infected propagative material (Gooding and Téliv 1970; Schilder 2011). Multiplication and distribution of infected propagative material, and the presence of nematode vectors in Australia (Stirling *et al*. 1992), will help spread ToRSV within Australia. Therefore, ToRSV has the potential to establish and spread in Australia.	leaves and sparse fruit clusters with many berries aborting (Uyemoto 1975). Infected raspberries experience a gradual decline and up to 80% of fruiting canes may be killed in the third year of infection (EPPO 2010b). TomRSV is an A2 quarantine pest for EPPO (OEPP/EPPO 1982) and has quarantine significance for the Inter-African Phytosanitary Council (IAPSC). Therefore, ToRSV has the potential for economic consequences in parts of Australia.	
Tomato spotted wilt virus (TSWV) [Bunyavidiae: Tospovirus]	Yes (Persely *et al*. 2006)	Assessment not required			
DISEASES OF UNKNOWN AETIOLOGY					
Grapevine enation disease	Present (Krake *et al.* 1999)	Assessment not required			
Grapevine vein mosaic	Present (Uyemoto *et al*. 2009)	Assessment not required			
Grapevine vein necrosis	Present (Woodham and Krake 1984)	Assessment not required			
Summer mottle	Present (Woodham and Krake 1984)	Assessment not required			

Appendix B: Additional quarantine pest data

ARTHROPODS	
Quarantine pest	*Brevipalpus chilensis* Baker
Synonyms	
Common name(s)	Chilean false red mite
Main hosts	*Actinidia chinensis*; *Ampelopsis* sp.; *Annona cherimola*; *Antirrhinium* sp.; *Catalpa speciosa*; *Chrysanthemum* sp.; *Citrus limon*; *Citrus sinensis*; *Cydonia oblonga*; *Diospyros kaki*; *Ficus carica*; *Garcinia* sp.; *Jasminum angustifolium*; *Lugustrum sinensis*; *Malus pumila*; *Pelagonium* sp.; *Prunus armeniaca*; *Prunus dulcis*; *Pyrus communis*; *Rubus idaeus*; *Strongylodon macrobotrys*; *Viburnum* sp.; *Vinca* sp.; *Vitis vinifera* (Gonzalez 1983; Klein Koch and Waterhouse 2000; SAG/USDA 2002; CABI 2012a)
Distribution	Argentina, Chile
Quarantine pest	*Colomerus vitis* Pagenstecher - strain c
Synonyms	*Phytoptus vitis* Pagenstecher, *Eriophyes vitis* Pagenstecher
Common name(s)	Grapeleaf bud mite – leaf curl strain
Main hosts	*Diospyros* spp.; *Vitis* spp. (CABI 2012a)
Distribution	California, USA (Smith and Stafford 1948), South Africa (Schwartz 1986)
Quarantine pest	*Sinoxylon perforans* Schrank
Synonyms	*Bostrichus perforans* Shrank, *Sinoxylon muricatum* Duftschmid
Common name(s)	Branch borer, Twig borer, Vine borer
Main hosts	Hosts include *Quercus* spp. and *Vitis* spp., (Filip 1986; Taralashvii 1989; Ragazzini 1996). Other deciduous trees and orchards crops are also likely to be attacked (Solomon 1995)
Distribution	Central Asia, Europe including Russia (Filip 1986; Ragazzini 1996; Taralashvii 1989)
Quarantine pest	*Sinoxylon sexdentatum* Olivier
Synonyms	-
Common name(s)	-
Main hosts	*Vitis* spp. (Moleas 1988)
Distribution	Apulia (Italy) (Moleas 1988)
Quarantine pest	*Planococcus ficus* Signoret
Synonyms	*Dactylopius subterraneus, Pseudococcus vitis, Pseudococcus citriodes, Planococcus citriodes, Pseudococcus praetermissus* (Walton and Pringle 2004)
Common name(s)	Subterranean vine mealybug, Vine mealybug (Walton and Pringle 2004)
Main hosts	*Bambusa spp.*; *Cydonia oblonga*; *Dahlia* spp.; *Dichrostachys glomerata*; *Ficus benjamina*; *Juglans spp.*; *Malus domestica*; *Malus pumila*; *Mangifera indica*; *Nerium oleander*; *Persea americana*; *Phoenix dactylifera*; *Platanus orientalis*; *Prosopsis farcata*; *Salix spp.*; *Styrax officinalis*; *Theobroma cacao*; *Vitis vinifera*; *Zizyphus spina-christi* (Ezzat and McConnel 1956; Cox 1989; Walton and Pringe 2004).
Distribution	Found in most grape-production areas throughout the world with particular economic importance on grapevines in Argentina, the Mediterranean region, Pakistan and South Africa (Ben-Dov 1994; Walton and Pringle 2004).
Quarantine pest	*Planococcus lilacinus* Cockerell
Synonyms	*Dactvlopius crotonis, Planococcus citri, P. crotonis, P. lilacinus, P. tavabanus, Pseudococcus lilacinus, P. tavabanus, P. crotonis, P. deceptor, Tylococcus mauritiensis* (USDA 1995).

Common name(s)	Coffee mealybug, Cocoa mealybug
Main hosts	*P. lilacinus* is extremely polyphagous, feeding on tropical and sub-tropical fruit and shade trees within 35 families (Williams 1982; Cox 1989; Ben-Dov 1994). Hosts include *Adenophyllum* spp.; *Ailanthus* spp.; *Albizia lebbeck*; *Alphitonia incana*; *Annona* spp.; *Apium qraveolens*; *Arachis hypoqea*; *Asteraceae*; *Bauhinia monandra*; *Caianus* spp.; *Calophyllum inophyllum*; *Cananaa oderata*; *Castilloa elastic*; *Citrus aurantium*; *C. grandis*; *Cocos nucífera*; *Codiaeum* spp.; *Coffea canephora*; *C. sepahiiala*; *Cordia myxa*; *Couroupita quianensis*; *Dioscorea* spp.; *Dipterocarpus* spp.; *Ervthrin lithosperma*; *E. indica, E. variegata, Euphorbia pyrifolia, Euqenia mespiloides, Ficus rubra, Gladiolus carmels*; *Hibiscus rosa-sinensis*; *Hvmenaea* spp.; *Litchi* spp.; *Mallotus iaponicus*; *Mangifera indica*; *Nicotiana tabacum*; *Ochroma* sp; *Pandanus* spp.; *Phoenix dactylifera*; *Ponqamia pinnata*; *Prosopis iuliflora*; *Psidium quaiava*; *Púnica qranatum*;*Tamarindus indica*; *Tectona grandis*; *Theobroma cacao*; *Vitis vinifera*; *Zizvphus iuiuba* (Williams 1982; Cox 1989; Ben-Dov 1994; USDA 1995).
Distribution	Aden, Bangladesh, Borneo, Burma, Cambodia, Cocos Keeling Island, China, Comoros, Dominican Republic, El Salvador, Guyana, Haiti, India, Indonesia, Japan, Java, Madagascar, Mauritius, Papua New Guinea, Philippines, Rodriguez Island, Seychelles, Sri Lanka, Taiwan, Thailand, Vietnam, West Malayasia (USDA 1995).
Quarantine pest	*Planococcus kraunhiae* (Kuwana, 1902)
Synonyms	*Dactylopius kraunhiae* Kuwana 1902, *Planococcus siakwanensis* Borchsenius 1962, *Dactylopius krounhiae* Kuwana 1917, *Planococcus kraunhiae* Ferris 1950, *Pseudococcus kraunhiae* Fernald, 1903
Common name(s)	Japanese mealybug
Main hosts	*Actinidia* (kiwifruit), *Agave americana* (Century plant), *Artocarpus lanceolata*, *Broussonetia kazinoki* (Japanese paper mulberry), *Casuarina stricta* (she oak), *Citrus junos* (yuzu), *Citrus nobilis* (tangor), *Citrus paradisi* (grapefruit), *Codiaeum variegatum pictum* (variegated laurel), *Coffea arabica* (coffee), *Crinum asiaticum* (poison bulb), *Cucurbita moschata* (pumpkin)*, Cydonia sinensis* (quince), *Digitaria sanguinalis* (crab-grass), *Diospyros* kaki (Japanese kaki), *Ficus carica* (fig), *Gardenia jasminoides* (common gardenia), *Ilex* (holly)*, Magnolia grandiflora* (magnolia), *Mallotus japonicus* (green tiger lotus), *Morus alba* (white mulberry), *Musa basjoo* (Japanese banana), *Nandina domestica* (heavenly bamboo), *Nerium indicum* (Indian oleander), *Olea chrysophylla* (African olive), *Platanus orientalis* (oriental planetree), *Portulaca oleracea* (pigweeds), *Pyrus ussuriensis* (ornamental pear), *Rhododendron indicum* (azalea), *Trachycarpus exelsus fortunei* (wind-mill palm), *Wisteria floribunda* (Japanese wisteria) (Ben-Dov 1994).
Distribution	China, Japan, Philippines, South Korea, USA (Ben-Dov *et* al. 1994).
Quarantine pest	*Targionia vitis* Signoret 1876
Synonyms	*Aspidiotus vitis; Diaspis blanckenhorni; Diaspis blankenhornii; Targionia arbutus; Targionia suberi; Targionia vitis; Targionia vitis arbutus; Targionia vitis suberi, Targionia arbutus, Targionia* suberi (Ben-Dov *et al*. 2012).
Common name(s)	Grapevine black scale
Main hosts	*Arbutus unedo*; *Castanea crenata*; *Castanea sativa*; *Fagus sylvatica*; *Platanus orientalis*; *Quercus cerris*; *Q. coccifera*; *Q. dentate*; *Q. ilex*; *Q. lanuginose*; *Q. pubescens*; *Q. sessiliflora*;*Q. suber Salix spp*.;*Vitis vinifera* (CABI 2012a; Ben-Dov *et al*. 2012)
Distribution	Algeria, Armenia, Azerbaijan, Czech Republic, Corsica, Georgia, Greece, Hungary, Iran, Iraq, Israel, Italy, France, Malta, Morocco, Portugal, Romania, Russia, Sardinia, Spain, Turkey, Ukraine, Yugoslavia (Ben-Dov *et al*. 2012).
Quarantine pest	*Paranthrene regalis* Butler
Synonyms	*Paranthrene regale, Sciapteron regalis*
Common name(s)	grape clearwing moth

Main hosts	*Vitis vinifera* (grapevine) (CABI 2012a; Shao-Hua 2012)
Distribution	China (CABI 2012a; Shao-Hua 2012)
Quarantine pest	*Zeuzera coffeae* Nietner
Synonyms	*Zeuzera roricyanea*
Common name(s)	Carpenter worm, cocoa pod and stem borer, coffee leopard moth, red branch borer, red coffee borer, red twig borer, tea stem borer
Main hosts	*Z. coffeae* is highly polyphagous and has been recorded on over 40 hosts including: *Abelmoschus esculentus, Acacia auriculiformis, Acacia mangium, Artocarpus , Camellia sinensis, Carya , Castanea, Ceiba pentandra, Cinnamomum verum , Citrus, Clausena lansium, Coffea, Eucalyptus spp., Gossypium, Juglans regia, Leucaena leucocephala, Malus domestica, Manihot esculenta, Persea americana, Populus, Robinia pseudoacacia, Swietenia, Tectona grandis, Theobroma cacao* and *Vitis vinifera* (Mathew 1987; Chang 1988; Schoorl 1990; Griffiths *et al.* 2004).
Distribution	Bangladesh, China, Cambodia, India, Malaysia, Sri Lanka, Taiwan, Thailand, Vietnam, Papua New Guinea (Chang 1988; Waterhouse 1993; Griffiths *et al*. 2004; EPPO 2009)
BACTERIA	
Quarantine pest	*Xanthomonas campestris* pv. *viticola* (Nayudu) Dye
Synonyms	*Pseudomonas viticola* Nayudu sp. nov.
Common name(s)	Bacterial canker of grapevine
Main hosts	*Alternanthera tenella, Amaranthus* spp., *Glycine* spp. *Senna obtusifolia* and *Vitis vinifera* (Peixoto *et al*. 2007)
Distribution	Brazil and India (Trindade *et al*. 2005).
Quarantine pest	*Xylella fastidiosa* (Wells *et al*.) – grapevine strain
Synonyms	
Common name(s)	Pierce's disease
Main hosts	Wide host range
Distribution	Central America, North America, Peru (Janse and Obradovic 2010). Unconfirmed report in Kosovo (Janse and Obradovic 2010).
Quarantine pest	*Xylophilus ampelinus* (Panagopoulos 1969) Willems *et al*. 1987
Synonyms	*Xanthomonas ampelina* Panagopoulos 1969
Common name(s)	Canker of grapevine
Main hosts	*Vitis vinifera* (Panagopoulos 1988).
Distribution	France (Manceau *et al*. 2005); Greece, Italy (CABI/EPPO 1999); Slovenia (Dreo *et al*. 2005); South Africa (Botha *et al*. 2001)
FUNGI	
Quarantine pest	*Alternaria viticola* Brunaud
Synonyms	-
Common name(s)	Spike-stalk brown spot of grape, brown blotch, grape rachis blotch
Main hosts	*Vitis* species including some hybrid grapes (Liu *et al.* 1996; Ma *et al*. 2004).
Distribution	China (Liu *et al*. 1996; Ma *et al*. 2004)
Quarantine pest	*Cadophora luteo-olivacea* (J.F.H Beyma) T.C. Harr. & McNew
Synonyms	*Phialophora luteo-olivacea* J.F.H. Beyma
Common name(s)	-
Main hosts	Grapevines (Gramaje *et al*. 2011), kiwifruit (Prodi *et al*. 2008)

Distribution	California, Italy, New Zealand, Northeastern America, South Africa, Spain and Uruguay (Prodi *et al*. 2008; Gramaje and Armengol 2011).
Quarantine pest	*Cadophora melinii* Nannf.
Synonyms	*Phialophora melinii* (Nannf.) Conant
Common name(s)	-
Main hosts	Grapevines (Gramaje *et al*. 2011), kiwifruit (Prodi *et al*. 2008)
Distribution	Italy (Prodi *et al*. 2008), Spain (Gramaje *et al*. 2011), Uruguay (Navarrete *et al*. 2010)
Quarantine pest	*Eutypella leprosa* (Pers.) Berl.
Synonyms	*Sphaeria leprosa* Pers
Common name(s)	-
Main hosts	*Aesculus spp., Corylus spp. Fraxinus spp., Tilia spp., Vitis vinifera L.* (Vasilyeva and Stephenson 2006; Diaz *et al.* 2011; Farr and Rossman 2011).
Distribution	Chile (Diaz *et al.* 2011), USA (Vasilyeva and Stephenson 2006).
Quarantine pest	*Eutypella vitis* (Schwein.:Fr.) Ellis & Fischer
Synonyms	*Diatrype vitis* (Schwein.: Fr.) Berk, *Engizostoma vitis* (Schwein.: Fr.) Kuntze, *Eutypella aequilinearis*, *Sphaeria vitis* Schwein., Schrift, *Valsa vitis* (Schwein.: Fr.) M.A. Curtis, (Vasilyeva and Stephenson 2006; Catal *et al.* 2007)
Common name(s)	-
Main hosts	*Vitis* spp. (Catal *et al.* 2007; Vasilyeva and Stephenson 2006)
Distribution	Eastern United States in North America (Farr *et al*. 1989; Vasilyeva and Stephenson 2006)
Quarantine pest	*Fomitiporia mediterranea* M. Fisher
Synonyms	-
Common name(s)	Esca disease
Main hosts	*Acer negundo, Actinidia chinensis, Cornus mas, Corylus avellana, Lagerstroemia indica*, *Laurus nobilis*, *Ligustrum vulgare, Olea europaea, Quercus* spp.*, Quercus ilex, Robinia paeudoacacia, Vitis vinifera* (Fischer 2002; Fisher and Binder 2004; Fischer 2006; Amalfi *et al.* 2010; Pilotti *et al*. 2010).
Distribution	Algeria, Austria, France, Germany, Greece, Iran, Italy, Portugal, Slowenia, Spain, Switzerland (Karimi *et al.* 2001; Fischer 2002; Fischer 2006; Péros *et al.* 2008; Pilotti *et al*. 2010)
Quarantine pest	*Fomitiporia polymorpha M.* Fisher (recently described species, limited information)
Synonyms	-
Common name(s)	-
Main hosts	Hardwoods (Fisher and Binder 2004)
Distribution	North America, USA (Fisher and Binder 2004; Fischer 2006; Pilotti *et al*. 2010)
Quarantine pest	*Guignardia* spp. (*G. bidwellii, G. bidwellii f. euvitis, G. bidwellii f. muscadini*)
Synonyms	*Botryosphaeria bidwellii, Carlia bidwellii, Depazea labruscae*, *Greenaria uvicola*, *Laestadia bidwellii*, *Naemospora ampelicida*, *Phoma ustulata*, *Phoma uvicola* var. *labruscae*, *Phoma uvicola*, *Phyllosticta ampelicida*, *Phyllosticta ampelopsidis*, *Phyllosticta viticola*, *Phyllosticta vulpinae*, *Phyllostictina clemensae*, *Phyllostictina uvicola*, *Phyllostictina viticola*, *Physalospora bidwellii*, *Sacidium viticolum*, *Septoria viticola*, *Sphaeria bidwellii* (Ullrich *et al*. 2009; CABI 2012a).
Common name(s)	Black rot
Main hosts	*Ampelopsis, Asplenium nidus, Cissus , Citrus, Parthenocissus quinquefolia , P. tricuspidata, V. amurensis,Vitis arizonica , Vitis labrusca , Vitis rotundifolia, Vitis vinifera*

	(University of Illinois 2001; Eyres *et al.* 2006; Ullrich *et al.* 2009; CABI 2012a).
Distribution	Argentina, Austria, Barbados, Brazil, Bulgaria, Canada, Chile, China, Cuba, Cyprus, El Salvador, Former Yugoslavia, France, Germany, Guyana, Haiti, India, Iran, Italy, Jamaica, Japan, Korea, Martinique, Mexico, Morocco, Mozambique, Pakistan, Panama, Philippines, Romania, Russian Federation, Slovakia, Sudan, Switzerland, Turkey, Ukraine, Virgin Islands, Uruguay, USA and Venezuela (AQSIQ 2006; Eyres *et al.* 2006; AQSIQ 2007; Ullrich *et al*. 2009; CABI 2012a).
Quarantine pest	*Inocutis jamaicensis* (Murrill) J.E. Wright & Moncalvo
Synonyms	-
Common name(s)	Grapevine trunk disease – 'Hoja de malvon'
Main hosts	*Vitis vinifera, Eucalyptus globulus, Diostea* spp.*, Prunus* spp*, Quercus spp. Taxodium* spp. (Lupo *et al*. 2006; Fischer 2006; Perez *et al*. 2008)
Distribution	North America, South America (Fischer 2006; Lupo *et al*. 2006; Perez *et al*. 2008)
Quarantine pest	*Monilinia fructigena* (Aderh. & Ruhland) Honey
Synonyms	*Monilia fructigena* Schumach, *Sclerotinia fructigena* (J. Schröt.) Norton, *Sclerotinia fructigena* Aderh, *Stromatinia fructigena* (J. Schröt.) Boud (Ma 2006; CABI 2012a).
Common name(s)	Brown rot
Main hosts	*Amelanchier canadensis*, *Berberis*, *Capsicum*, *Cornus mas*, *Corylus avellana*, *Cotoneaster*, *Crataegus laevigata*, *Cydonia oblonga*, *Diospyros kaki*, *Eriobotrya japonica*, *Ficus carica*, *Fragaria* spp., *Solanum lycopersicum* , *Malus domestica*, *Mespilus germanica*, *Prunus* spp. , *Psidium guajava* , *Pyrus* spp., *Rhododendron* , *Rosa*, *Rubus* spp., *Sorbus*, *Vaccinium*, *Vitis vinifera* (Sharma and Kaul 1989; Mackie 2005; Ma 2006; CABI 2012a).
Distribution	China, Taiwan, Afghanistan, Armenia, Austria, Azerbaijan, Belarus, Belgium, Brazil, Bulgaria, Chile, Croatia, Cyprus, Czech Republic, Denmark, Egypt, Finland, France, Georgia, Germany, Greece, Hungary, India, Iran, Ireland, Israel, Italy, Japan, Latvia, Lebanon, Lithuania, Luxembourg, Moldova, Montenegro, Morocco, Nepal, North Korea, Norway, Netherlands, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, Uruguay, Uzbekistan, Yugoslavia (Mackie 2005; Ma 2006; AQSIQ 2007; CABI 2012a).
Quarantine pest	*Phaeoacremonium* spp. (*P. alvesii*, *P. angustus*, *P. argentinense, P. armeniacum*, *P. austroafricanum*, *P. cinereum*, *P. croatiense*, *P. globosum*, *P. griseorubrum*, *P. hispanicum, P. hungaricum*, *P. inflatipes*, *P. iranianum*, *P. krajdenii*, *P. mortoniae*, *P. occidentale*, *P. rubrigenum*, *P. scolyti*, *P. sicilianum*, *P. subulatum*, *P. tuscanum*, *P. venezuelense*, *P. viticola*)
Synonyms	-
Common name(s)	Petri and esca diseases
Main hosts	*Dodoneae viscose, Fraxinus excelsior*, *Fraxinus latifolia, Fraxinus pennsylvania*, *Nectandra* spp., *Quercus virginiana*, *Sorbus intermedia*, *Vitis vinifera* (Mostert *et al.* 2005; Mostert *et al*. 2006a ; Essakhi *et al*. 2008).
Distribution	Canada, Czech Republic, Chile, Costa Rica, Croatia, Democratic Republic of Congo, France, Germany, India, Iran, Italy, Japan, Norway, Portugal, South Africa, Spain, Sweden, Turkey, USA, Venezuela, Zaire (Mostert *et al.* 2005; Mostert *et al*. 2006a; Essakhi *et al*. 2008; Gramaje *et al*. 2009a)
Quarantine pest	*Phakopsora* spp. (*Phakopsora euvitis*, *Phakopsora muscadinae, Phakopsora uva***)**
Synonyms	Synonyms of *P. euvitis: Aecidium meliosmae-myrianthae*, *Phakopsora ampelopsidis*, *Physopella ampelopsidis*, *Physopella vialae*, *Physopella vitis*, *Uredo vialae*, *Uredo vitis* (Hennen *et al*. 2005; CABI 2012a). Note: *P. miuscadinae* has been determined to be conspecific with *P. uva* reported from Mexico (Hennessy *et al.* 2007). *P. uva* was reported

	to occur on unidentified species of *Vitis* in Colombia and in Mexico (Chalkley 2011).
Common name(s)	Grapevine rust, grapevine leaf rust
Main hosts	*Vitis* spp. (*V. amurensis*, *V. coignetiae*, *V. ficifolia*, *V. flexuosa., V. labrusca*, *V. vinifera*), *Meliosma* spp., *Meliosma dilleniifolia* subsp. *cuneifolia, Meliosma myriantha* (Ono 2000; Weinert *et al*. 2003; Chalkley 2011; CABI 2012a).
Distribution	Bangladesh, Barbados, Brazil, China, Colombia, Costa Rica, Cuba, Democratic People's Republic of Korea, Guatemala, Hondursas, India, Indonesia, Jamaica, Japan, Korea, Malaysia, Mexico, Myanmar, Nepal, Philippines, Puerto Rico, Russian Far East, Sri Lanka, Thailand, Trinidad and Tobago, USA, Venezuela, Vietnam, Virgin Islands (Ono 2000; Tessman *et al*. 2004; Chalkley 2011; CABI 2012a).
PHYTOPLASMAS	
Quarantine pest	*Candidatus* Phytoplasma asteris [**16SrI –Aster yellows group]**
Synonyms	
Strains	16SrI-A; 16SrI-B, 16SrI-C
Common name(s)	grapevine yellows, North American grapevine yellows, Virginia grapevine yellows I
Main hosts	Wide host including Grapevines (Firrao *et al*. 2005)
Distribution	On grapevines reported from Canada (Olivier *et al*. 2009b), Chile (Gajardo *et al*. 2009), Germany (Prince *et al.* 1993), Israel (Tanne and Orenstein 1997), Italy (Alma *et al*. 1996), South Africa (Engelbrecht *et al.* 2010), Tunisia (Mhirsi *et al*. 2004), USA (Davis *et al*. 1998) and Turkey (Canik *et al*. 2011).
Quarantine pest	*Candidatus* Phytoplasma fraxini [**16SrVII]**
Synonyms	
Strains	
Common name(s)	Chile grapevine yellows
Main hosts	*Fraxinus* spp. and grapevines (Gajardo *et al*. 2009)
Distribution	In grapes reported from Chile (Gajardo *et al*. 2009)
Quarantine pest	*Candidatus* Phytoplasma pruni **[16SrIII** – peach X-disease phytoplasmas group]
Synonyms	Western x Virginia grapevine yellows III
Strains	
Common name(s)	Grapevine yellows x disease
Main hosts	*Delphinium* spp. (Harju *et al*. 2008), grapevine (Davis and Dally 2001), *Prunus* spp. (Zhao *et al*. 2009).
Distribution	In grapevine reported from Israel (Tanne and Orenstein 1997), Italy (Bianco *et al*. 1996) and the USA (Davis and Dally 2001)
Quarantine pest	*Candidatus* Phytoplasma solani **[16SrXII–A Stolburg group]**
Synonyms	Bois noir Phytoplasma
Strains	STOL Type I; STOL Type II; STOL Type III (Langer and Maxiner 2004).
Common name(s)	Bois noir, Legno nero, Vergilbungskrankheit, Schwartzholzkrankheit
Main hosts	*Calystegia sepium* (Mori *et al*. 2007); *Vitis* species, *Convolvulus arvensis*, *Urtica dioica*, *Ranunculus* spp., *Solanum* spp., *Lavandula* spp. (Constable 2010). Type 1: *Urtica dioica;* Type II: *Calystegia sepium, Convolvulus arvensis;* Type III: *Calystegia sepium* (Mori *et al*. 2007).
Distribution	Bois noir Phytoplasma is widespread and occurs from Spain to Ukraine and from Germany and Northern France to Lebanon and Israel (Maixner 2011). It has also been reported from Canada (Rott *et al*. 2007), Syria (Contaldo *et al.* 2011), Turkey (Canik *et al*. 2011) and the USA (Davis *et al*. 1998). Additionally Stolbur group-related grapevine phytoplasmas have

	been also recently been reported from Iran (Karimi *et al*. 2009), Chile (Gajardo *et al*. 2009) and China (Duduk *et al*. 2010).
Quarantine pest	*Candidatus* Phytoplasma ulmi **[16SrV–A Elm yellows phytoplasma group**]
Synonyms	
Strains	
Common name(s)	Grapevine yellows disease
Main hosts	Wide host range including grapes
Distribution	In grapevine reported from Italy (Botti and Bertaccini 2007)
Quarantine pest	*Candidatus* Phytoplasma vitis [**16SrV–Elm yellows phytoplasma group]**
Synonyms	Grapevine Flavescence dorée Phytoplasma
Strains	FD-I, FD-II, FD-III, Phytoplasma strains FD-associated belong to ribosomal subgroups 16SrV-C, 16SrV-D.
Common name(s)	Flavescence dorée
Main hosts	*Vitis vinifera* (grapes), but *V. riparia* can also be infected naturally (Maixner and Pearson 1992).
Distribution	Crotia (Filippin *et al*. 2009), France (Steffek *et al*. 2006), Germany (Johannesen *et al*. 2008), Italy (Barba *et al*. 2006), Macedonia (Filippin *et al*. 2009), Portugal (DeSousa *et al*. 2003), Serbia (Duduk *et al*. 2003), Slovenia (Filippin *et al*. 2009), Spain (Batlle *et al*. 2000), Switzerland (Steffek *et al*. 2006).
Quarantine pest	European stone fruit yellows Phytoplasma [**16SrX –B Apple proliferation group]**
Synonyms	Grapevine yellows
Strains	
Common name(s)	Grapevine yellows
Main hosts	*Vitis vinifera* (grapes)
Distribution	In grape vine reported from Hungary (Varga *et al*. 2000) and Serbia (Duduk *et al*. 2003).
Quarantine pest	Phytoplasma 16SrIX
Synonyms	
Strains	
Common name(s)	Grapevine yellows
Main hosts	*Vitis vinifera* (grapes)
Distribution	Turkey (Canik *et al*. 2011)
VIRUSES	
Quarantine pest	*Arabis mosaic virus* – grape strains
Synonyms	None
Common name(s)	Arabis mosaic
Main hosts	The strain of ArMV infecting grapevine affects a range of host plants and produces characteristic symptoms (Fortusini *et al*. 1983; Belli *et al*. 1982)
Distribution	Balkans, Bulgaria, Canada, Croatia, Central Europe, France, Germany, Hungary, Israel, Italy, Japan, New Zealand, Romania, Switzerland, Ukraine Yugoslavia (Cadman *et al*. 1960; Kearns and Mossop 1984; MacKenzie *et al*. 1996; Delibašić *et al*. 2000), Iran (Pourrahim *et al.* 2004) and Spain (Abelleira *et al*. 2010)
Quarantine pest	*Artichoke Italian latent virus* (AILV)
Synonyms	
Common name(s)	Artichoke patchy chlorotic stunting disease, Yellowing disease of artichoke

Main hosts	*Cynara scolymus*, *Cichorium intybus*, *Crepis neglecta*, *Gladiolus* spp., *Helminthia echioides*, *Hypochoeris aetensis*, *Lactuca virosa*, *Urospermum dalechampii*, *Lamium amplexicaule*, *Pelargonium zonale*, *Sonchus* spp., *Vitis vinifera* (Brunt *et al*. 1996)
Distribution	Bulgaria (Savino *et al*. 1977), Greece (Kyriakopoulou 2008), Italy (Roca *et al*. 1975) and Russia (Gallitelli *et al*. 2004).
Quarantine pest	*Blueberry leaf mottle virus* (BLMoV) New York (NY) strain
Synonyms	
Common name(s)	Fanleaf degeneration/decline disease
Main hosts	Grapevines (Uyemoto *et al*. 1977)
Distribution	USA (Uyemoto *et al*. 1977)
Quarantine pest	*Cherry leafroll virus* – grapevine isolate (CLRV)
Synonyms	
Common name(s)	
Main hosts	*Vitis vinifera*
Distribution	Chile (Herrera and Madariaga 2001) and Germany (Ipach *et al*. 2003).
Quarantine pest	*Grapevine ajinashika virus* (GAgV)
Synonyms	
Common name(s)	Grapevine ajinashika disease
Main hosts	*Vitis vinifera* cv. Koshu (Namba *et al*. 1991b)
Distribution	Japan (Namba *et al*.1991b).
Quarantine pest	*Grapevine angular mosaic-associated virus* (GAMaV)
Synonyms	
Common name(s)	Grapevine angular mosaic
Main hosts	*Vitis vinifera* (Girgis *et al*. 2009).
Distribution	Greece (Girgis *et al*. 2009).
Quarantine pest	*Grapevine Anatolian ringspot virus* (GARSV)
Synonyms	
Common name(s)	Fanleaf degeneration/decline disease
Main hosts	*Vitis vinifera* cultivar Kizlar Tahasi (Goklap *et al*. 2003).
Distribution	Turkey (Cigsar *et al*. 2002; Gokalp *et al*. 2003; Laimer *et al*. 2009).
Quarantine pest	*Grapevine asteroid mosaic associated virus* (GAMV)
Synonyms	
Common name(s)	
Main hosts	*Vitis vinifera* (Martelli and Boudon-Padieu 2006).
Distribution	California, USA (Martelli and Boudon-Padieu 2006). Records from Italy and South Africa have not been confirmed experimentally and a record from Greece was proven to refer to Grapevine rupestris vein feathering (Martelli and Boudon-Padieu 2006).
Quarantine pest	*Grapevine berry inner necrosis virus (GINV)*
Synonyms	
Common name(s)	Grapevine berry inner necrosis disease
Main hosts	*Vitis vinifera* (Yoshikawa *et al*. 1997).
Distribution	Japan (Yoshikawa *et al*. 1997).

Quarantine pest	*Grapevine Bulgarian latent virus* (GBLV)
Synonyms	
Common name(s)	Fanleaf degeneration/decline disease
Main hosts	*Vitis vinifera* (Gokalp *et al*. 2003).
Distribution	Bulgaria (Martelli *et al*. 1977, 1978), Portugal (Sequeira and Mendonça, 1992) Yugoslavia, Czechoslovakia, former USSR, Hungary (Martelli 1993).
Quarantine pest	*Grapevine chrome mosaic virus*
Synonyms	*Bratislava mosaic virus, Hungarian yellow mosaic, Hungarian chrome mosaic virus*
Common name(s)	Fanleaf degeneration/decline disease
Main hosts	*Vitis vinifera* (Dimou *et al*. 1994).
Distribution	Austria, Croatia, the former Czechoslovakia, and Hungary (Uyemoto *et al*. 2009).
Quarantine pest	*Grapevine deformation virus*
Synonyms	
Common name(s)	Fanleaf degeneration/decline disease
Main hosts	*Vitis vinifera* (Cigsar *et al*. 2003).
Distribution	Turkey (Cigsar *et al*. 2003; Digiaro *et al*. 2003).
Quarantine pest	*Grapevine fanleaf virus* (GFLV)
Synonyms	*Grapevine arriciamento virus, Grapevine court-noué virus, Grapevine infectious degeneration virus, Grapevine Reisigkrankheit Virus, Grapevine roncet virus Grapevine urticado virus*
Common name(s)	Fanleaf disease
Main hosts	*Vitis* species (Andret-Link *et al.* 2004)
Distribution	Asia, Africa, Europe, New Zealand, North America and South America (Andret-Link *et al.* 2004).
Quarantine pest	*Grapevine leafroll associated virus 6* (GLRaV-6)
Synonyms	
Common name(s)	
Main hosts	*Vitis* species
Distribution	Brazil (Kuniyuki *et al.* 2008), Italy (Boscia *et al*. 2000), North Africa (Eddin *et al.* 2008, Mahfoudhi *et al.* 2009), Switzerland (Gugerli and Ramel 1993) Turkey (Cigsar *et al.* 2002), USA (Martinson *et al*. 2008, Fuchs 2007).
Quarantine pest	*Grapevine leafroll associated virus 7* (GLRaV-7)
Synonyms	
Common name(s)	
Main hosts	*Vitis* species
Distribution	Albania, Armenia, Greece, Italy, Jordan (Digiaro *et al*. 2000) and Portugal (Santos *et al*. 2000)
Quarantine pest	*Grapevine leafroll associated virus 10* (GLRaV-10)
Synonyms	*Grapevine leafroll associated virus De* (GLRaV-De)
Common name(s)	
Main hosts	*Vitis* species
Distribution	

Quarantine pest	*Grapevine leafroll associated virus* 11 (GLRaV-11)
Synonyms	*Grapevine leafroll associated virus Pr* (GLRaV-Pr)
Common name(s)	
Main hosts	*Vitis* species
Distribution	
Quarantine pest	*Grapevine line pattern virus* (GLPV)
Synonyms	
Common name(s)	Grapevine line pattern
Main hosts	*Vitis vinifera* (Martelli and Boudon-Padieu 2006).
Distribution	Hungary (Martelli and Boudon-Padieu 2006).
Quarantine pest	*Grapevine red globe virus*
Synonyms	
Common name(s)	None
Main hosts	*Vitis vinifera* (Martelli and Boudon-Padieu 2006).
Distribution	Albania, Italy (Sabanadzovic *et al*. 2000) and California (Martelli and Boudon-Padieu 2006).
Quarantine pest	*Grapevine rupestris vein feathering virus* (GRVFV)
Synonyms	
Common name(s)	Grapevine fleck complex, Syrah Decline
Main hosts	*Vitis vinifera* (Uyemoto *et al*. 2009).
Distribution	California, USA (Al Rwahnih *et al*. 2009), Greece, Italy (Uyemoto *et al*. 2009)
Quarantine pest	*Grapevine syrah virus I* (GSyV-I)
Synonyms	
Common name(s)	Syrah decline
Main hosts	*Vitis vinifera* (Uyemoto *et al*. 2009).
Distribution	Chile (Engel *et al*. 2010) and the US (Al Rwahnih *et al*. 2009)
Quarantine pest	*Grapevine Tunisian ringspot virus* (GTRSV)
Synonyms	
Common name(s)	
Main hosts	*Vitis* species (Ouertani *et al*. 1992)
Distribution	Tunisia (Ouertani *et al*. 1992)
Quarantine pest	*Grapevine virus B* (GVB) (strains associated with grapevine corky bark)
Synonyms	
Common name(s)	Corky bark disease
Main hosts	*Vitis vinifera*
Distribution	Brazil, Bulgaria, France, Italy, Japan, Mexico, South Africa, Spain, Switzerland, USA (California), Yugoslavia (Namba *et al*. 1991a), and Tunisia (Abdallah *et al*. 2003).
Quarantine pest	*Grapevine virus E* (GVE)
Synonyms	
Common name(s)	Grapevine rugose wood complex.
Main hosts	*Vitis vinifera*

Distribution	Japan (Nakaune *et al*. 2008) and South Africa (Coetzee *et al*. 2010)
Quarantine pest	*Peach rosette mosaic virus* (PeRMV)
Synonyms	*Rosette mosaic virus, Grape decline virus, Grapevine degeneration virus*
Common name(s)	
Main hosts	Blueberry, grapevine and peach (Ramsdell and Gillet 1998)
Distribution	Egypt (Fayek *et al*. 2009), Canada (Ontario) and USA (Michigan) (Ramsdell and Gillet 1998).
Quarantine pest	*Petunia asteroid mosaic virus* (PeAMV)
Synonyms	*Tomato bushy stunt virus – petunia strain*
Common name(s)	
Main hosts	Woody hosts (cherries, plums, grapes, privet and dogwood), hops and spinach. PeAMV has also been reported from the roots of *Chenopodium album*, *Cucumis melo*, *Plantago major* and *Stellaria media* (Lovisolo 1990).
Distribution	PeAMV is widely distributed in Asia, Europe and North America; however, on grapes it is reported only from Czechoslovakia, Italy and West Germany (Bercks 1967; Novák and Lanzová 1976; Koenig *et al.* 1989; Martelli 1993; Constable *et al.* 2010).
Quarantine pest	*Raspberry ringspot virus* (RpRSV) – Grapevine strain
Synonyms	
Common name(s)	Grapevine fanleaf disease
Main hosts	*Vitis vinifera*
Distribution	Germany (Martelli and Boudon-Padieu 2006; Wetzel *et al*. 2006)
Quarantine pest	*Sowbane mosaic virus* (SoMV) – grape strains
Synonyms	*Chenopodium mosaic virus, Apple latent virus 2, Chenopodium star mottle virus*
Common name(s)	
Main hosts	*Vitis vinifera* (grapevine) (Bercks and Querfurth 1969).
Distribution	Bulgaria, Czechoslovakia and Germany (Bercks and Querfurth 1969; Jankulova 1972; Pozdena *et al*. 1977)
Quarantine pest	*Strawberry latent ringspot virus*
Synonyms	*Aesculus line pattern virus, Rhubarb virus 5*
Common name(s)	
Main hosts	Wide host range 126 species belonging to 27 families (Tzanetakis *et al*. 2006) including asparagus, blackberries, black currants, celery, cherries, *Gladiolus*, *Narcissus*, grapes, plums, peaches, raspberries, red currants, roses, rhubarb, *Sambucus nigra* and strawberries.
Distribution	SLRSV has been reported from Europe and Israel, New Zealand, North America and Turkey (EPPO 2010a). However, in grapevines, SLRSV infections were reported in Czech Republic (Komínek 2008), France (Walter 1997), Germany (Bercks *et al.* 1977), Italy (Babini and Bertaccini 1982), Romania (Eppler *et al*. 1989), Turkey (Savino *et al*. 1987; Akbas and Erdiller 1993).
Quarantine pest	*Tobacco necrosis virus* – grape strain
Synonyms	
Common name(s)	*Tobacco necrosis virus*
Main hosts	Grapevine (Cesati and Van Regenmortel 1969).

	NTVs hosts include: *Brassica oleracea* (cabbage), *Chenopodium quinoa* (quinoa), *Cucumis sativus* (cucumber), *Cucurbita pepo* (zucchini), *Daucus carota* (carrot), *Fragaria × ananassa* (strawberry), *Glycine max* (soybean), *Malus pumila* (apple), *Nicotiana tabacum* (tobacco), *Lactuca sativa* (lettuce), *Olea europaea* (olive), *Phaseolus vulgaris* (common bean), *Solanum tuberosum* (potato), *Tulipa* spp. (tulip) (other hosts are infected but remain symptomless) (Kassanis 1970; Brunt and Teakle 1996; CABI 2012a; Zitikaite and Staniulis 2009).
Distribution	South Africa (Cesati and Van Regenmortel 1969). TNV probably worldwide but species and strain distributions are largely unknown) Belgium, Brazil, Canada, China, Czechoslovakia (former), Denmark, Finland, France, Germany, Hungary, India, Italy, Japan, Latvia, Netherlands, New Zealand, Norway, Romania, Russia, South Africa, Spain, Sweden, Switzerland, Turkey, United Kingdom (CABI 2012a).
Quarantine pest	*Tomato black ring virus*
Synonyms	*Potato bouquet virus*, *Potato pseudo-aucuba virus*, *Tomato black ring virus*.
Common name(s)	Ring spot of beet
Main hosts	Wide host range, including carrot, celery, cucumber, *Fragaria* species, *Prunus* spp., *Ribes* spp., *Rubus* spp., solanaceous species, *Vitis vinifera* and a number of weed and ornamental species (Harisson 1957, 1958; Pospieszny *et al*. 2004, Jonczyk *et al*. 2004).
Distribution	Europe, India, Japan, North and South America (Harper *et al*. 2010), Israel and Turkey (Uyemoto *et al*. 2009).
Quarantine pest	*Tomato ringspot virus* (TomRSV)
Synonyms	
Common name(s)	Ringspot virus decline
Main hosts	TomRSV infects a wide range including black currants, cherries and other *Prunus* spp., *Fraxinus americana*, *Gladiolus*, gooseberries, grapes, *Hydrangea*, peaches, *Pelargonium*, raspberries, *Rubus laciniatus*, strawberries. TomRSV also infects many common weeds in vineyards including common chickweed, dandelions, red clover and sheep sorrel (Schilder 2011).
Distribution	China, Canada, Egypt, Japan, Korea, USA (Fayek *et al*. 2009; EPPO 2010b).

Glossary

Term or abbreviation	Definition
Additional declaration	A statement that is required by an importing country to be entered on a Phytosanitary Certificate and which provides specific additional information on a consignment in relation to regulated pests (FAO 2009).
Appropriate level of protection	The level of protection deemed appropriate by the Member establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory (WTO 1995).
Area	An officially defined country, part of a country or all or parts of several countries (FAO 2009).
Plant Biosecurity	A branch within the Australian Government Department of Agriculture, Fisheries and Forestry, responsible for recommendations for the development of Australia's plant biosecurity policy.
Certificate	An official document which attests to the phytosanitary status of any consignment affected by phytosanitary regulations (FAO 2009).
Consignment	A quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single Phytosanitary Certificate (a consignment may be composed of one or more commodities or lots) (FAO 2009).
Control (of a pest)	Suppression, containment or eradication of a pest population (FAO 2009).
Endangered area	An area where ecological factors favour the establishment of a pest whose presence in the area will result in economically important loss (FAO 2009).
Entry (of a pest)	Movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled (FAO 2009).
Establishment	Perpetuation, for the foreseeable future, of a pest within an area after entry (FAO 2009).
Fruits and vegetables	A commodity class for fresh parts of plants intended for consumption or processing and not for planting (FAO 2009).
Host range	Species capable, under natural conditions, of sustaining a specific pest or other organism (FAO 2009).
Import Permit	Official document authorising importation of a commodity in accordance with specified phytosanitary import requirements (FAO 2009).
Import Risk Analysis	An administrative process through which quarantine policy is developed or reviewed, incorporating risk assessment, risk management and risk communication.
Infestation (of a commodity)	Presence in a commodity of a living pest of the plant or plant product concerned. Infestation includes infection (FAO 2009).
Inspection	Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to determine compliance with phytosanitary regulations (FAO 2009).
Intended use	Declared purpose for which plants, plant products, or other regulated articles are imported, produced, or used (FAO 2009).
Interception (of a pest)	The detection of a pest during inspection or testing of an imported consignment (FAO 2009).
International Standard for Phytosanitary Measures	An international standard adopted by the Conference of FAO [Food and Agriculture Organization], the Interim Commission on phytosanitary measures or the Commission on phytosanitary measures, established under the IPPC (FAO 2009).
Introduction	The entry of a pest resulting in its establishment (FAO 2009).
National Plant Protection Organisation	Official service established by a government to discharge the functions specified by the IPPC (FAO 2009).
Official control	The active enforcement of mandatory phytosanitary regulations and the application of mandatory phytosanitary procedures with the objective of eradication or containment of quarantine pests or for the management of regulated non-quarantine pests (FAO 2006).

Term or abbreviation	Definition
Pathway	Any means that allows the entry or spread of a pest (FAO 2009).
Pest	Any species, strain or biotype of plant, animal, or pathogenic agent injurious to plants or plant products (FAO 2009).
Pest categorisation	The process for determining whether a pest has or has not the characteristics of a quarantine pest or those of a regulated non-quarantine pest (FAO 2009).
Pest Free Area	An area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained (FAO 2009).
Pest free place of production	Place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period (FAO 2009).
Pest free production site	A defined portion of a place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this conditions is begin officially maintained for a defined period and that is managed as a separate unit in the same way as a pest free place of production (FAO 2009).
Pest Risk Analysis	The process of evaluating biological or other scientific and economic evidence to determine whether an organism is a pest, whether it should be regulated, and the strength of any phytosanitary measures to be taken against it (FAO 2009).
Pest risk assessment (for quarantine pests)	Evaluation of the probability of the introduction and spread of a pest and the magnitude of the associated potential economic consequences (FAO 2009).
Pest risk management (for quarantine pests)	Evaluation and selection of options to reduce the risk of introduction and spread of a pest (FAO 2009).
Phytosanitary Certificate	Certificate patterned after the model certificates of the IPPC (FAO 2009).
Phytosanitary measure	Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests (FAO 2009).
Phytosanitary regulation	Official rule to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests, including establishment of procedures for phytosanitary certification (FAO 2009).
Polyphagous	Feeding on a relatively large number of host plants from different plant families.
PRA area	Area in relation to which a Pest Risk Analysis is conducted (FAO 2009).
Quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled (FAO 2009).
Regulated article	Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harbouring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved (FAO 2009).
Restricted risk	Risk estimate with phytosanitary measure(s) applied.
Rhizomes	A horizontal plant stem with shoots above and roots below serving as a reproductive structure. Rhizomes may also be referred to as creeping rootstalks, or rootstocks
Spread	Expansion of the geographical distribution of a pest within an area (FAO 2009).
Stakeholders	Government agencies, individuals, community or industry groups or organizations, whether in Australia or overseas, including the proponent/applicant for a specific proposal, who have an interest in the policy issues.
Unrestricted risk	Unrestricted risk estimates apply in the absence of risk management measures.

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