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FINAL IMPORT RISK ANALYSIS
FOR THE IMPORTATION OF
FRESH TABLE GRAPES [*Vitis vinifera* L.]
FROM THE STATE OF CALIFORNIA
IN THE UNITED STATES OF AMERICA

January 2000

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The following is my determination in relation to AQIS policy on the importation of fresh table grapes (*Vitis vinifera* L.) from California.

Importation of fresh table grapes will be permitted subject to the application of phytosanitary measures as specified in section 9 of this final import risk analysis (IRA) paper. These requirements maintain Australia's appropriate level of protection and accord with Australia's international rights and obligations under the WTO Agreement on the Application of Sanitary and Phytosanitary Measures. The import risk analysis has been conducted in accordance with *The AQIS Import Risk Analysis Process Handbook.*

This policy is to be applied in accordance with the *Quarantine Act 1908* and *Quarantine Proclamation 1998* as amended ('the Proclamation'). The phytosanitary measures specified in section 9 of this final IRA paper are designed to limit the quarantine risk to a level which is acceptably low consistent with section 70 of the Proclamation.

I am satisfied that my determination to adopt the recommendations of the IRA is not an environmentally significant action, nor is it desirable for other reasons to designate a proponent to achieve the object of the *Environment Protection (Impact of Proposals) Act 1974* and the Administrative Procedures made under that Act.

Brian Macdonald
A/g Executive Director
January 2000

Acknowledgments

This final IRA has been prepared by the Plant Quarantine Policy Branch, Policy and International Division with assistance from the Horticulture Program, Animal and Plant Programs Branch, Quarantine Export and Operations Division of the Australian Quarantine and Inspection Service.

Information Privacy

Information provided by any respondent in relation to this document may be released to other parties unless a request for anonymity is included in the response. Where a request for anonymity is not made, a respondent will be taken to have consented to the release of information including the respondent's identity and the substance of the response for the purposes of the Information Privacy Principle 11 in section 14 of the Privacy Act 1988.

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1. EXECUTIVE SUMMARY

The Australian Quarantine and Inspection Service (AQIS) received a formal application from the Animal and Plant Health Inspection Service (APHIS) of the United States of America in 1990 to consider the importation of fresh table grapes from California. In 1994, APHIS proposed a controlled atmosphere (CA) treatment that could be applied in transit as a risk management option to control quarantine pests. Results of treatment trials submitted to AQIS were determined to be deficient in experimental protocol and efficacy. Consequently, in 1997, APHIS requested that AQIS consider access using an interim methyl bromide fumigation as one of the risk management options for quarantine pests.

In accordance with *The AQIS Import Risk Analysis Handbook* AQIS commenced a routine Import Risk Analysis (IRA). The draft IRA identified 16 arthropod pests of quarantine concern to Australia with imports of table grapes from California. No diseases associated with the fruit importation pathway were determined to be of quarantine concern. A draft IRA paper (AQIS, 1999a) that presented the outcome of a pest risk analysis and considered management options for pests of quarantine concern was circulated to stakeholders for comment. All technical comments were reviewed and where found valid, incorporated into the final IRA document.

The final IRA has identified 19 arthropod pests of quarantine concern to Australia with imports of table grapes from California. Of these, 12 species were assessed to have low quarantine risk that will be addressed by phytosanitary inspection. Phytosanitary inspection and mandatory methyl bromide fumigation will address the remaining medium- and high-risk species. “Pest Free Area” or “Non-Host Status”, verified by export crop inspection and testing, will address the risk of 11 additional pests of potential quarantine concern identified through the IRA process. Table grapes will be required to be free from weed seeds and trash. Sulfur dioxide treatment will address the risk of introduction of the black widow spider, *Lactrodectus mactans*. This spider is considered a regulated non-plant pest that is of concern to human health in Australia.

2. AUSTRALIAN QUARANTINE AND INSPECTION SERVICE POSITION

It is recommended that the importation into Australia of fresh table grapes (*Vitis vinifera* L.) from the state of California, USA be permitted subject to the phytosanitary requirements set out in Section 9 of this document.

3. INTRODUCTION

This final import risk analysis[1] (IRA) paper outlines the risk analysis of the proposed importation of table grapes (*Vitis vinifera* L.) from California, USA and the phytosanitary measures to be implemented. It includes consideration of technical issues raised by stakeholders on the basis of a draft IRA circulated previously.

The IRA was conducted using the routine IRA process outlined in *The AQIS Import Risk Analysis Process Handbook* (AQIS, 1998) and in accordance with the *International Standards for Phytosanitary Measures – Principles of Plant Quarantine as Related to International Trade, ISPM No. 1* (FAO, 1995), the *International Standards for Phytosanitary Measures – Guidelines for Pest Risk Analysis, ISPM No. 2* (FAO, 1996), and other standards being developed by the Secretariat of the International Plant Protection Convention (IPPC) of the Food and Agriculture Organization of the United Nations (FAO). For the purpose of the document the term "pest" is 'any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products' as defined by FAO (1997b). Pests also include weeds.

The primary purpose of an IRA is to identify regulated pests (quarantine pests[2] and regulated non-quarantine pests[3]) potentially associated with the commodity, to analyse their risk of introduction,

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[1] In this document the term import risk analysis is synonymous with the term pest risk analysis as defined in the FAO Glossary of Phytosanitary Terms (FAO, 1997b).

[2] FAO definition of a quarantine pest (FAO, 1997b): 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.

[3] FAO definition of a regulated non-quarantine pest (FAO, 1997b): A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party.

establishment, spread and potential economic importance in Australia; and to evaluate candidate management options to mitigate such risks in the least trade restrictive manner. Having identified the quarantine pests associated with the importation, AQIS considers whether management options are available to reduce the risks of entry by those pests and of their subsequent establishment and spread to an acceptably low level.

The pest risk management measures proposed in this paper have been identified in accordance with the relevant provisions, in particular Article 5, of the WTO's Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement). They will achieve Australia's appropriate level of protection by mitigating the risk of introduction of quarantine pests to Australia.

4. HISTORY OF IMPORT ACCESS REQUEST

In 1990, AQIS received a request and supporting pest information from APHIS for access to Australia for table grapes from California. AQIS provided the results of a preliminary assessment of the pest information to APHIS to enable the development of a disinfestation treatment for several pests identified to be of quarantine concern to Australia.

In 1994, APHIS proposed a controlled atmosphere (CA) treatment with high carbon dioxide and low oxygen levels as a disinfestation treatment that could be applied in transit to control the pests. Since this was a novel treatment, AQIS requested that APHIS conduct research to evaluate its efficacy.

APHIS submitted the results of the CA treatment in 1996 in a research report by E.J. Mitcham and S. Zhou. The results contained in this report and additional data submitted in 1997 were determined by AQIS consultants from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to be deficient in experimental protocol and efficacy. CSIRO suggested that further research would be required. As this would take several years, APHIS asked that AQIS consider access for Californian table grapes using a methyl bromide fumigation treatment as an interim risk management option.

In December 1997, AQIS informed key stakeholders that it had received an application to consider the importation of table grapes from California and that AQIS would commence an IRA as outlined

in *The AQIS Import Risk Analysis Process Handbook*. In March 1998, AQIS informed stakeholders that the IRA process would be undertaken by the routine process. In October 1998, AQIS arranged for a technical specialist to visit California to investigate the status of a number of quarantine pests and their management. On 19 March 1999, AQIS released its draft IRA (AQIS, 1999a) with a 60-day consultation period, for stakeholder comments. Based on stakeholder responses, additional information on several new pest incursions in California was sought from APHIS in June 1999 and incorporated in the final IRA.

5. SUMMARY OF FINAL IRA

Risk Identification

The IRA process took into account factors such as the biology, host range, distribution, entry potential, establishment potential, spread potential and economic damage potential of the pests and diseases that may be associated with table grapes from California.

The pest risk analysis document (AQIS, 1999b) identified the pests of quarantine concern to Australia. Options for their management to meet Australia's appropriate level of protection were presented for stakeholder comment in the draft IRA (AQIS, 1999a). The final IRA identified a total of 140 insects, 12 mites, 63 fungi, 3 bacteria, 29 viruses, 4 virus-like disorders, 6 viroids, 2 phytoplasmas and 13 nematodes associated with table grapes in USA.

Following circulation of the draft IRA, *Euschistus conspersus* (consperse stink bug) was reassessed to be of quarantine concern. Two new pests, *Homalodisca coagulata* (glassy-winged sharpshooter) and *Planococcus ficus* (vine mealybug) were included as quarantine pests based on information received from APHIS and in response to stakeholder comments. Full data-sheets for these three quarantine pests are presented in Appendix 3.

Seventeen weed species known to occur in Californian vineyards were determined to be of potential quarantine concern. The full list of the weeds assessed using the AQIS weed risk assessment process is found in Appendix 2. The black widow spider, *Lactrodectus mactans*, was also identified as a non-plant pest of human health concern.

Of the plant pests, 15 insect and four mite pests were determined to be quarantine pests that had a high risk of being associated with fresh table grape imports from California and required management procedures to reduce the risk to an acceptable level.

Following consideration of management options for the arthropod pests and weeds of quarantine concern, and taking into account technical comments from stakeholder, AQIS has concluded that the risk posed by these pests can be managed with appropriate phytosanitary measures. The measures proposed to address the risk posed by these pests are set out below.

Risk Management

A summary of the risk management measures to be implemented for quarantine arthropod pests that may be associated with imported table grapes from California is presented in Table 1. These measures are additional to commercial pest management and crop handling procedures that also contribute to the management of pests.

Of the 19 arthropod pests of quarantine concern, 12 species were assessed to be of low quarantine risk, four species to be of medium quarantine risk and three species to be of high quarantine risk. Those with a low risk level can be managed by phytosanitary inspection that afford the least trade restrictive measure. However, treatment with methyl bromide will be required to eliminate arthropod species belonging to medium or high quarantine risk categories because of the difficulty of detecting them by visual inspection. Methyl bromide is recommended as a mandatory treatment to effectively manage pests of both categories and will also be effective against the low risk species. Methyl bromide treatment will be permitted either pre-export or post-arrival in Australia as per Section 9, page 28.

Methyl bromide fumigation will provide an acceptable level of protection against the introduction of the orange tortrix, (*Argyrotaenia citrana)*, the omnivorous leafroller, (*Platynota stultana*) and the vine mealy bug, (*Planococcus ficus*). These pests directly infest the grape berries and bunch and are difficult to detect by visual inspection.

Should any live quarantine pest for which the official control program is a post harvest disinfestation treatment and/or phytosanitary inspection be intercepted at the border in a consignment, the consignment will be re-exported, destroyed or re-treated. Further imports will be suspended until AQIS is satisfied that remedial action has been undertaken.

Table 1. Summary of phytosanitary measures for the 19 quarantine arthropod pests associated with table grapes

	Quarantine Pest	Common Name	Quarantine Risk Level	Inspection	Methyl Bromide Fumigation
1	*Amyelois transitella*	navel orangeworm	Low	√	
2	*Argyrotaenia citrana*	orange tortrix	High		√
3	*Caliothrips fasciatus*	bean thrips	Low	√	
4	*Colomerus vitis* – strain c	grape leaf bud mite - leaf curl strain	Medium		√
5	*Desmia funeralis*	grape leaffolder	Low	√	
6	*Drepanothrips reuteri*	eastern flower thrips	Low	√	
7	*Eotetranychus carpini*	hornbeam mite	Low	√	
8	*Eotetranychus willamettei*	willamette spider mite	Low	√	
9	*Estigmene acrea*	salt marsh caterpillar	Low	√	
10	*Euschistus conspersus*	consperse stink bug	Low	√	
11	*Frankliniella minuta*	minute flower thrips	Low	√	
12	*Frankliniella occidentalis*	western flower thrips	Low	√	
13	*Harrisina brillians*	western grape leaf skeletoniser	Low	√	
14	*Homalodisca coagulata*	glassywinged sharp shooter	Medium		√
15	*Planococcus ficus*	vine mealybug	High		√
16	*Platynota stultana*	omnivorous leaf roller	High		√
17	*Pseudococcus maritimus*	grapevine mealybug	Medium		√
18	*Scirtothrips citri*	California citrus thrips	Low	√	
19	*Tetranychus pacificus*	Pacific spider mite	Medium		√

In addition to the 19 arthropod pests of quarantine concern, AQIS identified a further nine pests of grapes that occur in the USA but have not been reported on grapes in California. These pests are subject to official control programs to maintain California as a "Pest Free Area" (Table 2). AQIS also identified a further two pests that are known to occur on grapes elsewhere and are present in California but not yet recorded on grapes. APHIS assured AQIS that grapes are not a host of these two pests in California (Table 2). Should any pests that are managed by "Pest Free Area" or "Non Host Status" be intercepted dead or live, imports will be suspended until AQIS is satisfied that either remedial action has been taken or an alternative treatment has been developed and approved. Any consignment in which such pests are intercepted live will be re-exported, re-treated or destroyed.

Table 2. List of pests for which the official control program is "Pest Free Area" (PFA) or "Non-Host Status" (NHS).

	Pest	Common Name	Official Control Program in California	Presence in California	Presence in Australia
	Insects				
1	*Ceratitis capitata*	Medfly	Pest Free Area	no	yes (official control)
2	*Craponius inaequalis*	grape curculio	Pest Free Area	no	no
3	*Eulithis diversilineata*	grape looper	Pest Free Area	no	no
4	*Fidia viticida*	grape root worm	Pest Free Area	no	no
5	*Polychrosis viteana*	grape berry moth	Pest Free Area	no	no
6	*Tetranychus mcdanieli*	Mcdaniel spider mite	Non Host Status	yes (not on grapes)	no
7	*Scirtothrips persea*	Californian thrips, avocado thrips	Non Host Status	yes (not on grapes)	no
	Diseases				
8	*Guignardia bidwellii*	black rot	Pest Free Area	no	no
9	*Mycosphaerella angulata*	angular leaf spot	Pest Free Area	no	no
10	*Physopella ampelopsidis*	rust	Pest Free Area	no	no
11	*Pseudopezicula tetraspora*	angular leaf scorch	Pest Free Area	no	no

AQIS has determined that grape shipments must undergo mandatory off-shore treatment with sulfur dioxide plus carbon dioxide to reduce the risk of introduction of the black widow spider, *Lactrodectus mactans*. This spider is a regulated non-plant pest in Australia because of its potential to adversely affect human health.

Weed Risk Assessment

AQIS identified 17 weeds that are known to occur in vineyards in California that are of quarantine concern to Australia. There are a total of 106 weed genera and species reported in California (Appendix 2). Of the weeds associated with vineyards *Amsinckia intermedia, Chloris virgata, Digitaria sanguinalis, Eriochloa gracilis, Erodium cicutarium, Euphorbia maculata, Gnaphalium* spp., *Lactuca serriola, Malva parviflora, Montia perfoliata, Salsola iberica* and *Sisymbrium irio* have not been recorded in Australia. *Amsinckia intermedia, Cenchrus* spp., *Eremocarpus setigerus, Solanum elaeagnifolium, Sorghum halepense,* and *Xanthium strumarium* are declared noxious weed species and are not permitted entry into Australia. AQIS believes that the risk of introducing weed seeds of these species to Australia in bunches of table grapes from California is minimal and that the risk can be managed by phytosanitary inspection. Should any of these weeds be intercepted, the consignment will be cleaned or treated. If no treatment is available the consignment will be re-exported or destroyed.

Environmental Impact Assessment

AQIS considered the potential environmental impact of imports of table grapes from California in the draft IRA. AQIS is satisfied that importation of table grapes under the specified conditions will present negligible risk to the environment, and accordingly that the obligations arising from the Administrative Procedures made under the Environment Protection (Impact of Proposals) ACT 1974 and Part IIA of Schedule 1 of the Quarantine Amendment Bill 1998 have been met. The latter stipulates that a Director of Quarantine is required to seek the advice of the Environment Minister before making a decision which is likely to cause significant harm.

Implementation

AQIS will develop an arrangement protocol with APHIS, based on the phytosanitary import conditions, that details the phytosanitary procedures required for the importation of fresh table

grapes from California. The requirements of this protocol will be subjected to on-going monitoring and will be reviewed by AQIS at the end of the first year of trade.

6. STAKEHOLDER CONSULTATION

AQIS circulated the draft IRA to 280 stakeholders and received 45 written responses comprising 24 responses from industry groups representing grape growers, one response from an individual grape grower, five from fruit wholesalers/exporters/importers, three from other fruit industry groups, six from Australian State or Territory Departments of Primary Industry/Agriculture, one from a State Department of Natural Resources and Environment, one from the South Pacific Trade Commission, and four from the USA – Paramount Export Company, Californian Table Grape Commission (CTGC), University of California and the US Department of Agriculture's Animal and Plant Health Inspection Service (APHIS). Seven of the respondents in their submissions requested confidentiality and therefore are not listed in Section 11 - List of Respondents.

In summary:

- Some respondents either supported or did not oppose the importation. Several of these respondents suggested modifications to the import conditions proposed in the draft IRA.
- Industry groups and a grower respondent opposed the importation on the grounds that the risk of exotic pests entering Australia and causing economic damage to the viticulture industry would be too great.
- Three arthropod pests: *Homalodisca coagulata* (glassy winged sharpshooter), *Planococcus ficus* (vine mealybug) and *Tetranychus mcdanieli* (Mcdaniel spider mite); and three fungal diseases: *Cylindrocarpon destructans* (black-foot disease), *Cylindrocarpon obtusisporum* (black-foot disease) and *Phaeoacremonium* sp. (young grape vine decline) were identified by the respondents as additional to those listed in the draft IRA. One insect species, *Euschistus conspersus* (consperse stink bug), was reassessed by AQIS to be of quarantine concern.
- The weed species of quarantine concern to Australia were revised and the list expanded to include additional species identified by respondents.
- The black widow spider (*Lactrodectus mactans*), although a non-plant pest was identified to be of sanitary (public health) concern.

The matters raised by the respondents are detailed in Section 10 - Issues Raised by Stakeholders in Response to AQIS draft IRA.

7. VARIATIONS TO PHYTOSANITARY IMPORT REQUIREMENTS DETAILED IN THE DRAFT IRA

AQIS has amended several conditions proposed in the draft IRA on the basis of further consideration of issues and in the light of technical comments received from stakeholders. The principal changes are:

- Registration of vineyards and fumigation centres (Option A) in California will be completed by APHIS before exports will be permitted, to enable traceback in the event of breaches of import conditions.
- Imports under Option B requiring mandatory on-arrival methyl bromide fumigation, are allowed through designated ports from June to September, which provides equivalent protection to Option A.
- The quarantine risk levels of 19 quarantine pests have been categorised into high (three), medium (four) and low (twelve) as outlined in section 5.2 Risk Management.
- Phytosanitary inspection, as opposed to methyl bromide fumigation, is considered sufficient to address the risk associated with low-risk quarantine pests.
- Mandatory methyl bromide disinfestation is determined to provide an appropriate level of protection against the introduction of medium- and high-risk quarantine pests.
- APHIS is to provide evidence to verify the maintenance of "Pest Free Area" and "Non-Host Status" of 11 potential pests that have not been reported on table grapes in California and which are of quarantine concern to Australia.
- Consignments must be free from trash.
- Consignments must be free from seeds of 17 specified weed species and genera that are of quarantine concern to Australia. Their absence in consignments is to be verified by pre-shipment phytosanitary inspection and on-arrival inspection.
- Treatment of all consignments with a mixture of sulfur dioxide and carbon dioxide is proposed to reduce the risk of introducing the black widow spider, *Lactrodectus mactans*.
- The Specific Commodity Understanding (SCU) document specified in the draft IRA will be substituted by a protocol that will be prepared in consultation with APHIS prior to the commencement of trade.

8. BIOLOGICAL ASSESSMENT OF POTENTIAL QUARANTINE PESTS OF CONCERN TO AUSTRALIA

Of the 152 arthropod species reported on grapes in USA, 113 species are reported to occur in California. Of these 113 species, 40 also occur in Australia. Of the 40 species, two insect pests (grape phylloxera and western flower thrips) are under official control in some states in Australia. However, one insect species (grape phylloxera) is not found on the fruit and is therefore not of concern for imported grapes. Of the 113 species present in California, 19 are of quarantine concern as they do not occur in Australia or are under official control in some states in Australia; can cause economic damage; and have been determined to be present in the fruit importation pathway. The pathway herein refers to any means that allows the entry or spread of a pest (FAO, 1995).

There are 120 micro-organisms (fungi, bacteria, nematodes, viruses etc.) reported on grapes in USA, of which 88 have been reported to occur in California. Of these, 66 also occur in Australia. None of the 120 micro-organisms are of quarantine concern as they are not on the fruit importation pathway.

Table 3 presents the assessment of the quarantine status of pests (excluding weeds) associated with table grapes in California. The table does not include ectoparasitoids, endoparasitoids and social insects that are not deemed as direct pests of grapes in California. The 17 weed species and genera of quarantine concern have been discussed separately under 5.3 Weed Risk Assessment.

Table 3. Pests associated with table grapes in California: assessment of quarantine status and phytosanitary requirements[4]

Species		Common Name	Present in		Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
			USA	California				
Arthropods (Insects)								
1	*Acia lineatifrons*	leafhopper	yes	no	no	quarantine	no	
2	*Agrotis ipsilon*	greasy (black) cutworm	yes	yes	yes	non-quarantine	no	

[4] Data on the presence of pests in USA and California were obtained from relevant scientific publications and personal communication with scientific experts as documented in the Pest Risk Analysis (PRA) and draft IRA papers.

Species		Common Name	Present in		Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
			USA	California				
3	*Aleurocanthus woglumi*	citrus black fly; blue grey fly; citrus spring white fly	yes	no	no	quarantine	no	
4	*Altica ampelophaga*	flea beetle	yes	no	no	quarantine	no	
5	*Altica chalybea*	grape flea beetle	yes	yes	no	quarantine	no	
6	*Altica torguata*	grape vine flea beetle (leaf beetle)	yes	yes	no	quarantine	no	
7	*Amanthes c-nigrum*	spotted cutworm	yes	yes	no	quarantine	no	
8	*Ampeloglypter ater*	grape cane girdler	yes	yes	no	quarantine	no	
9	*Ampeloglypter sesostris*	grape cane gallmaker	yes	yes	no	quarantine	no	
10	*Amyelois transitella*	navel orangeworm	yes	yes	no	quarantine	yes (low)	inspection
11	*Aonidiella aurantii*	California red scale	yes	yes	yes	non-quarantine	no	
12	*Aphis fabae* (syn. *A. citricola)*	aphid	yes	yes	no	quarantine	no	
13	*Aphis gossipyii*	cotton aphid	yes	yes	yes	non-quarantine	no	
14	*Aphis illinoisensis*	grape vine aphid	yes	no	no	quarantine	no	
15	*Arboridia adanae*	grape leafhopper	yes	no	no	quarantine	no	
16	*Arboridia apicalis*	grape leafhopper	yes	no	no	quarantine	no	
17	*Argyrotaenia citrana*	orange tortrix	yes	yes	no	quarantine	yes (high)	methyl bromide fumigation, inspection
18	*Argyrotaenia velutinana*	red-banded leaf roller	yes	no	no	quarantine	no	
19	*Asterolecanium pustulans*	pustule scale, oleander pit scale, akee fringed scale	yes	yes	no	quarantine	no	
20	*Aspidiotus nerii*	oleander scale	yes	yes	yes	non-quarantine	no	
21	*Blapstinus* sp.	darkling ground beetle	yes	yes	no	quarantine	no	
22	*Bromius obscurus*	western grape root worm	yes	yes	no	quarantine	no	
23	*Cadra figulilella*	raisin moth	yes	yes	yes	non-quarantine	no	
24	*Caliothrips fasciatus*	bean thrips	yes	yes	no	quarantine	yes (low)	inspection
25	*Carnocephala fulgida*	leafhopper	yes	no	no	quarantine	no	
26	*Carpophilus* sp.	dried fruit beetle	yes	no	yes	non-quarantine	no	
27	*Cerasphorus albofasciatus*	grape trunk borer	yes	no	no	quarantine	no	
28	*Ceratitis capitata*	Mediterranean fruit fly	yes	no	yes (official control)	quarantine	no	
29	*Ceresa bubalus*	leafhopper	yes	no	no	quarantine	no	

Species		Common Name	Present in		Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
			USA	California				
30	*Chrysomphalus aonidum*	Florida red scale	yes	yes	yes	non-quarantine	no	
31	*Cicada septemdecim*	periodical cicada	yes	yes	no	quarantine	no	
32	*Cicadella viridis*	green leafhopper	yes	no	no	quarantine	no	
33	*Coccus hesperidum*	soft brown scale	yes	yes	yes	non-quarantine	no	
34	*Collaspis brunnea*	grape colaspis beetle	yes	no	no	quarantine	no	
35	*Coniontis parviceps*	dark brown beetle	yes	yes	no	quarantine	no	
36	*Conoderus* sp.	wire worm clickbeetle	yes	yes	yes	non-quarantine	no	
37	*Contarina* sp.	grape flower midges	yes	no	no	quarantine	no	
38	*Craponius inaequalis*	grape curculio	yes	no	no	quarantine	no	
39	*Desmia funeralis*	grape leaf-folder	yes	yes	no	quarantine	yes (low)	inspection
40	*Diaspidiotus uvae*	grape scale	yes	yes	no	quarantine	no	
41	*Draeculacephala minerva*	green sharpshooter	yes	yes	no	quarantine	no	
42	*Drepanothrips reuteri*	eastern flower thrips (grape vine thrips)	yes	yes	no	quarantine	yes (low)	inspection
43	*Drosophila melanogaster*	vinegar fly	yes	yes	yes	non-quarantine	no	
44	*Empoasca fabae*	potato leafhopper	yes	yes	no	quarantine	no	
45	*Empoasca punjabensis*	leafhopper	yes	no	no	quarantine	no	
46	*Empoasca vitis*	grape leafhopper	yes	no	no	quarantine	no	
47	*Erythraspides vitis*	grape sawfly	yes	no	no	quarantine	no	
48	*Erythroneura calycula*	eastern grape leafhopper	yes	no	no	quarantine	no	
49	*Erythroneura coloradensis*	eastern grape leafhopper	yes	no	no	quarantine	no	
50	*Erythroneura comes*	eastern grape leafhopper	yes	yes	no	quarantine	no	
51	*Erythroneura elegantula*	western grape leafhopper	yes	yes	no	quarantine	no	
52	*Erythroneura maculator*	three-banded grape leafhopper	yes	no	no	quarantine	no	
53	*Erythroneura tricincta*	three-banded grape leafhopper	yes	no	no	quarantine	no	
54	*Erythroneura variabilis*	variegated eastern grape leafhopper	yes	yes	no	quarantine	no	
55	*Erythroneura vitifex*	leafhopper	yes	no	no	quarantine	no	
56	*Erythroneura vitis*	leafhopper	yes	no	no	quarantine	no	
57	*Erythroneura vulerata*	leafhopper	yes	no	no	quarantine	no	

Species		Common Name	Present in		Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
			USA	California				
58	*Erythroneura ziczac*	leafhopper	yes	no	no	quarantine	no	
59	*Estigmene acrea*	salt marsh caterpillar	yes	yes	no	quarantine	yes (low)	inspection
60	*Eulithis diversilineata*	grape vine looper	yes	no	no	quarantine	no	
61	*Euschistus conspersus*	consperse stink bug	yes	yes	no	quarantine	yes (low)	inspection
62	*Eumorpha achemon*	achemon sphinx moth	yes	yes	no	quarantine	no	
63	*Euxoa messoria*	dark-sided cutworm	yes	yes	no	quarantine	no	
64	*Evoxysoma vitis*	grape seed chalcid	yes	no	no	quarantine	no	
65	*Fidia viticida*	grape root worm	yes	no	no	quarantine	no	
66	*Forficula auricularia*	European earwig	yes	yes	yes	non-quarantine	no	
67	*Frankliniella minuta*	minute flower thrips	yes	yes	no	quarantine	yes (low)	inspection
68	*Frankliniella occidentalis*	western flower thrips	yes	yes	yes (official control : VIC; TAS)	quarantine	yes (low)	inspection
69	*Frankliniella tritici*	eastern flower thrips	yes	yes	no	quarantine	no	
70	*Glyptoscelis squamulata*	grape bud beetle	yes	yes	no	quarantine	no	
71	*Graphocephala atropunctata*	blue-green sharpshooter	yes	yes	no	quarantine	no	
72	*Harrisina americana*	grape-leaf skeletonizer	yes	no	no	quarantine	no	
73	*Harrisina brillians*	western grape-leaf skeletonizer	yes	yes	no	quarantine	yes (low)	inspection
74	*Hemiberlesia rapax*	greedy scale	yes	yes	yes	non-quarantine	no	
75	*Henosepilachna dorycae*	lady bird beetle	yes	yes	no	non-quarantine	no	
76	*Heterotermes aureus*	subterranean termite	yes	yes	no	quarantine	no	
77	*Hoplia callipyge*	hoplia beetle	yes	yes	yes	non-quarantine	no	
78	*Homalodisca coagulata*	glassy-winged sharpshooter	yes	yes	no	quarantine	yes (medium)	methyl bromide fumigation, inspection
79	*Hyles lineata*	white-lined sphinx moth	yes	yes	yes	non-quarantine	no	
80	*Hyphantria cunea*	American white moth (full web worm)	yes	yes	no	quarantine	no	
81	*Icerya purchasi*	cottony cushion scale	yes	yes	yes	non-quarantine	no	
82	*Incisitermes minor*	western drywood termite	yes	yes	no	quarantine	no	
83	*Iridomyrmex humilis*	Argentine ant	yes	yes	yes	non-quarantine	no	
84	*Jacobiasca lybica*	leafhopper	yes	no	no	quarantine	no	
85	*Lasioptera vitis*	grape tomato gall midge	yes	no	no	quarantine	no	

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			USA	California				
86	*Lecanium corni*	European fruit lecanium scale	yes	yes	no	quarantine	no	
87	*Lepidosaphes ulmi*	oyster shell scale	yes	yes	yes	non-quarantine	no	
88	*Limonius canus*	click beetle (Pacific coast wireworm)	yes	yes	no	quarantine	no	
89	*Maconellicoccus hirsutus*	pink hibiscus mealy bug	yes	yes	yes	non quarantine	yes	
90	*Macrodactylus subspinosus*	rose chafer	yes	no	no	quarantine	no	
91	*Margarodes meridionalis*	ground pearls	yes	yes	no	quarantine	no	
92	*Melalqus confertus*	branch & twig borer	yes	yes	no	quarantine	no	
93	*Melanoplus devastator*	devastating grasshopper	yes	yes	no	quarantine	no	
94	*Metoponium abnorm*	black beetle	yes	yes	no	quarantine	no	
95	*Myzus persicae*	green peach aphid	yes	yes	yes	non-quarantine	no	
96	*Nysius raphanus*	false chinch bug	yes	yes	no	quarantine	no	
97	*Oedaleonotus enigma*	valley grasshopper	yes	yes	no	quarantine	no	
98	*Orthodes rufula*	brassy cutworm	yes	yes	no	quarantine	no	
99	*Oryzaephilus surinamensis*	saw-toothed grain beetle	yes	yes	yes	non-quarantine	no	
100	*Otiorhynchus cribricollis*	apple weevil	yes	yes	yes	non-quarantine	no	
101	*Otiorhynchus sulcatus*	black vine weevil	yes	yes	yes	non-quarantine	no	
102	*Paracotalpa ursina*	little bear beetle	yes	yes	no	quarantine	no	
103	*Paraneotermes simplicicornis*	desert dampwood termite	yes	yes	no	quarantine	no	
104	*Parlatoria oleae*	olive scale	yes	yes	yes	non-quarantine	no	
105	*Parthenolecanium corni*	European fruit lecanium scale	yes	yes	no	quarantine	no	
106	*Parthenolecanium persicae*	European peach scale (grapevine scale)	yes	yes	yes	non-quarantine	yes	
107	*Parthenolecanium pruinosum*	frosted scale	yes	yes	yes	non-quarantine	no	
108	*Pelidnota punctata*	grapevine beetle	yes	no	no	quarantine	no	
109	*Peridroma saucia*	variegated cutworm	yes	yes	no	quarantine	no	
110	*Planococcus ficus*	vine mealybug	yes	yes	no	quarantine	yes (high)	methyl bromide fumigation, inspection
111	*Platynota stultana*	omnivorous leaf roller	yes	yes	no	quarantine	yes (high)	methyl bromide fumigation, inspection

Species		Common Name	Present in		Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
			USA	California				
112	*Platypedia minor*	minor cicada	yes	yes	no	quarantine	no	
113	*Plodia interpunctella*	Indian meal moth	yes	yes	yes	non-quarantine	no	
114	*Polychrosis viteana* (Syn: *Endopisa viteana*)	grape berry moth (American vine moth)	yes	no	no	quarantine	no	
115	*Popilia japonica*	Japanese beetle	yes	no	no	quarantine	no	
116	*Pseudococcus affinis*	obscure mealybug	yes	yes	yes	non-quarantine	yes	
117	*Pseudococcus calceolariae*	citrophilus mealybug	yes	yes	yes	non-quarantine	yes	
118	*Pseudococcus longispinus*	long-tailed mealybug	yes	yes	yes	non-quarantine	yes	
119	*Pseudococcus maritimus*	grapevine mealybug	yes	yes	no	quarantine	yes (medium)	methyl bromide fumigation, inspection
120	*Pulvinaria innumerablis*	cottony maple scale	yes	yes	no	quarantine	no	
121	*Pulvinaria vitis*	cottony maple scale	yes	yes	no	quarantine	no	
122	*Quadraspidiotus juglansregiae*	walnut scale	yes	yes	no	quarantine	no	
123	*Quadraspidiotus perniciosus*	San Jose scale	yes	yes	yes (official control in Tasmania)	non-quarantine	no	
124	*Reticulitermes hesperus*	western subterranean termite	yes	yes	no	quarantine	no	
125	*Rhizoecus falcifer*	ground root mealybug	yes	yes	no	quarantine	no	
126	*Rhizoecus kondonis*	ground root mealybug	yes	yes	no	quarantine	no	
127	*Saissetia oleae*	black scale	yes	yes	yes	non-quarantine	no	
128	*Scaphoideus* spp.	leafhopper	yes	yes	no	quarantine	no	
129	*Schistocerca alutacea shoshone*	green valley grasshopper	yes	yes	no	quarantine	no	
130	*Schistocerca nitens nitens*	vagrant grasshopper	yes	yes	no	quarantine	no	
131	*Scirtothrips citri*	California citrus thrips	yes	yes	no	quarantine	yes (low)	inspection
132	*Solenopsis xyloni*	California fire ant	yes	yes	no	quarantine	no	
133	*Spodoptera exigua*	beet (lesser) army worm	yes	yes	yes	non-quarantine	no	
134	*Spodoptera praefica*	western yellow striped army worm	yes	yes	no	quarantine	no	
135	*Spissistilus festinus*	three-cornered alfalfa hopper	yes	yes	no	quarantine	no	
136	*Trialeurodes vaporariorum*	greenhouse whitefly	yes	yes	yes	non-quarantine	no	
137	*Trialeurodes vittatus*	grape whitefly	yes	yes	no	quarantine	no	

Species		Common Name	Present in		Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
			USA	California				
138	*Vitacea polistiformis*	grape root borer	yes	yes	no	quarantine	no	
139	*Viteus vitifoliae*	grape phylloxera (cochineal scale, vine louse)	yes	yes	yes (official control - SA, VIC, NSW)	quarantine	no	
140	*Zygnidia artvinicus*	leafhopper	yes	no	no	quarantine	no	
Arthropods (Mites)								
141	*Brevipalpus californicus*	bunch mite	yes	yes	yes	non-quarantine	yes	
142	*Brevipalpus lewisi*	bunch mite, citrus flat mite	yes	yes	yes	non-quarantine	yes	
143	*Calepitrimerus vitis*	grape-leaf rust mite	yes	yes	yes	non-quarantine	yes	
144	*Colomerus vitis strain a*	grape-leaf blister mite	yes	yes	yes	non-quarantine	yes	
145	*Colomerus vitis strain b*	grape-leaf bud mite	yes	yes	yes	non-quarantine	yes	
146	*Colomerus vitis strain c*	grape-leaf bud mite	yes	yes	no	quarantine	yes (medium)	methyl bromide fumigation, inspection
147	*Eotetranychus carpini borealis (Syn:Tetranychus flavus)*	hornbeam mite	yes	yes	no	quarantine	yes (low)	inspection
148	*Eotetranychus willamettei*	Willamette spider mite	yes	yes	no	quarantine	yes (low)	inspection
149	*Panonychus ulmi*	European red mite	yes	yes	yes (official control in WA)	quarantine	no	
150	*Tetranychus mcdanieli*	Mcdaniel spider mite	yes	yes	no	quarantine	no	
151	*Tetranychus pacificus*	Pacific spider mite	yes	yes	no	quarantine	yes (medium)	methyl bromide fumigation, inspection
152	*Tetranychus urticae*	two-spotted mite	yes	yes	yes	non-quarantine	yes	
FUNGI								
1	*Alternaria* spp.	raisin mould, bunch rot	yes	yes	yes	non-quarantine	yes	
2	*Alternaria tenuis*	grape rot	yes	yes	yes	non-quarantine	yes	
3	*Anthostomella pullulans*	brulure	yes	yes	yes	non-quarantine	no	
4	*Armillaria mellea*	*Armillaria* or shoe string root rot	yes	yes	yes	non-quarantine	no	
5	*Ascochyta* spp.	bunch rot	yes	yes	yes	non-quarantine	yes	
6	*Aspergillus aculeatus*	bunch rot	yes	yes	yes	non-quarantine	yes	
7	*Aspergillus niger*	bunch rot	yes	yes	yes	non-quarantine	yes	
8	*Asperisporium minutulum*	leaf spot	yes	yes	no	quarantine (occurs only on *Vitis californica*)	no	

Species		Common Name	Present in USA	Present in California	Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
9	*Botryosphaeria dothidea*	*Botryosphaeria* rot and necrosis (*Macrophoma* rot)	yes	yes	yes	non-quarantine	yes	
10	*Botryosphaeria stevensii*	black dead arm	yes	no	yes	quarantine	no	
11	*Botrytis cinerea*	*Botrytis* bunch rot or grey mould	yes	yes	yes	non-quarantine	yes	
12	*Briosia ampelophaga*	leaf blotch	yes	no	no	quarantine	no	
13	*Cephalosporium* spp.	wood rot (black measles)	yes	yes	no	quarantine	no	
14	*Cladosporium herbarum*	*Cladosporium* rot (harvest mould)	yes	yes	yes	non-quarantine	yes	
15	*Cladosporium viticola*	*Cladosporium* leaf spot	yes	no	no	quarantine	no	
16	*Colletotrichum gloeosporioides*	ripe rot	yes	yes	yes	non-quarantine	yes	
17	*Coniella diplodiella*	white rot	yes	no	yes	non-quarantine	no	
18	*Cristulariella moricola*	zonate leaf spot (target spot)	yes	no	no	quarantine	no	
19	*Cylindrocarpon destructans*	black-foot disease	yes	yes	no	quarantine	no	
20	*Cylindrocarpon obtusisporum*	black-foot disease	yes	yes	no	quarantine	no	
21	*Didymosphaeria sarmentii*	*Eutypa* canker gummosis	yes	yes	no	quarantine	no	
22	*Diplodia natalensis*	*Diplodia* cane die-back	yes	yes	yes	non-quarantine	no	
23	*Elsinoe ampelina*	anthracnose and bird's eye rot (black rot)	yes	no	yes	non-quarantine	no	
24	*Eutypa lata*	Eutypa die-back	yes	yes	yes	non-quarantine	no	
25	*Fusarium* spp.	*Fusarium* root rot	yes	yes	yes	non-quarantine	no	
26	*Glomerella cingulata*	ripe rot	yes	yes	yes	non-quarantine	yes	
27	*Greeneria uvicola*	bitter rot	yes	no	yes	non-quarantine	no	
28	*Guignardia bidwellii*	black rot	yes	no	no	quarantine	no	
29	*Helminthosporium* spp.	bunch rot	yes	yes	yes	non-quarantine	yes	
30	*Metschnikowia pulcherrima*	autumn leaf spot	yes	yes	no	quarantine	no	
31	*Monilinia fructicola*	bunch rot	yes	no	yes	non-quarantine	no	
32	*Mycosphaerella angulata*	angular leaf spot of muscadines	yes	no	no	quarantine	no	
33	*Mycosphaerella personata*	leaf blight (Isariopsis leaf spot)	yes	yes	yes	non-quarantine	no	
34	*Penicillium* sp.	bunch rot (blue mould)	yes	yes	yes	non-quarantine	yes	

Species		Common Name	Present in		Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
			USA	California				
35	*Phaeoacremonium* sp.	young grapevine decline	yes	yes	no	quarantine	no	
36	*Phaeoramularia heterospora*	leaf spot	yes	yes	no	quarantine	no	
37	*Phellinus igniarius*	esca wood rot (black measles)	yes	yes	no	quarantine	no	
38	*Phoma vitis*	fruit rot	yes	yes	yes	non-quarantine	yes	
39	*Phomopsis viticola*	*Phomopsis* cane and leaf spot (grape dead arm)	yes	yes	yes (except TAS)	non-quarantine	no	
40	*Phyllosticta spermoides*	leaf spot	yes	yes	no	quarantine	no	
41	*Phymatotrichopsis omnivora*	*Phymatotrich-um* root rot (cotton root rot)	yes	yes	no	quarantine	no	
42	*Physopella ampelopsidis*	rust	yes	no	no	quarantine	no	
43	*Phytophthora cinnamomi*	crown and root rot	yes	yes	yes	non-quarantine	no	
44	*Phytophthora citricola*	*Phytophthora* crown and root rot	yes	yes	yes	non-quarantine	no	
45	*Phytophthora megasperma*	*Phytophthora* crown and root rot	yes	yes	yes	non quarantine	no	
46	*Plasmopara viticola*	grape downy mildew	yes	yes (on wild *vitis* species)	yes (official control - WA)	quarantine	no	
47	*Pseudopezicula tetraspora*	angular leaf scorch	yes	no	no	quarantine	no	
48	*Pseudopezicula tracheiphila*	rot brenner	yes	no	no	quarantine	no	
49	*Pyrenochaeta vitis*	leaf spot	yes	no	no	quarantine	no	
50	*Pythium aphanidermatum*	root rot	yes	yes	yes	non-quarantine	no	
51	*Rhizopus* spp.	bunch rot	yes	yes	yes	non-quarantine	yes	
52	*Rhytisma vitis*	tar spot	yes	no	no	quarantine	no	
53	*Rhizopus arrhinus*	fruit rot	yes	yes	yes	non-quarantine	yes	
54	*Roesleria subterranea*	grape root rot (*Roesleria* root rot)	yes	no	no	quarantine	no	
55	*Sclerotinia sclerotiorum*	shoot blight (fruit green rot)	yes	yes	yes	non-quarantine	no	
56	*Sclerotium rolfsii*	collar rot	yes	yes	yes	non-quarantine	no	
57	*Septoria ampelina*	*Septoria* leaf spot	yes	no	no	quarantine	no	
58	*Stemphylium botryosum*	bunch rot	yes	yes	yes	non-quarantine	yes	
59	*Stereum hirsutum*	black measle, esca	yes	yes	yes	non-quarantine	no	

Species		Common Name	Present in USA	Present in California	Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
60	*Thielaviopsis basicola*	black root rot	yes	yes	yes	non-quarantine	no	
61	*Torula* spp.	bunch rot	yes	yes	yes	non-quarantine	yes	
62	*Uncinula necator*	powdery mildew or oidium	yes	yes	yes	non-quarantine	yes	
63	*Verticillium dahliae*	*Verticillium* wilt	yes	yes	yes	non-quarantine	no	
BACTERIA								
1	*Agrobacterium tumefaciens*	crown gall	yes	yes	yes	non-quarantine	no	
2	*Agrobacterium vitis*	crown gall	yes	yes	yes	non-quarantine	no	
3	*Xylella fastidiosa*	Pierce's disease	yes	yes	no	quarantine	no	
VIRUSES								
1	Alfalfa mosaic *alfamovirus*	alfalfa mosaic virus	yes	yes	yes	non-quarantine	no	
2	Bratislava mosaic virus	bratislava mosaic virus	yes	no	no	quarantine	no	
3	Broad bean wilt *fabavirus*	broad bean wilt virus	yes	yes	yes	non-quarantine	no	
4	Grapevine corky bark-associated *closterovirus*	corky bark virus	yes	yes	no (different strain)	quarantine	no	
5	Grapevine fan leaf *nepovirus* (GFLV)	fan leaf virus	yes	yes	yes	non-quarantine	no	
6	Tomato ring spot *nepovirus* (TRSV)	grape yellow vein virus	yes	yes	no (recorded only once in 1983)	quarantine	no	
7	Grapevine fleck virus	grapevine fleck virus	yes	no	yes	non-quarantine	no	
8	Grapevine stunt virus	grapevine stunt virus	yes	yes	no	quarantine	no	
9	Grapevine leafroll associated *closterovirus 1*	grapevine leafroll associated closterovirus 1	yes	yes	yes	non-quarantine	no	
10	Grapevine leafroll associated *closterovirus 2*	grapevine leafroll associated closterovirus 2	yes	yes	yes	non-quarantine	no	
11	Grapevine leafroll associated *closterovirus 3*	grapevine leafroll associated closterovirus 3	yes	yes	yes	non-quarantine	no	
12	Grapevine leafroll associated *closterovirus 4*	grapevine leafroll associated closterovirus 4	yes	yes	yes	non-quarantine	no	
13	Grapevine leafroll associated *closterovirus 5*	grapevine leafroll associated closterovirus 5	yes	yes	yes	non-quarantine	no	
14	Grapevine leafroll associated *closterovirus 6*		yes	yes	yes	non-quarantine	no	

Species		Common Name	Present in		Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
			USA	California				
15	Grapevine leafroll associated *closterovirus 7*	grapevine leafroll associated closterovirus 7	yes	yes	yes	non-quarantine	no	
16	Grapevine leafroll associated *closterovirus 8*	grapevine leafroll associated closterovirus 8	yes	yes	yes	non-quarantine	no	
17	Joannes seyve virus	Joannes seyve virus	yes	no	no	quarantine	no	
18	Sowbane mosaic *sobemovirus*	sowbane mosaic virus	yes	yes	yes	non-quarantine	no	
19	Tobacco mosaic *tobamovirus*	tobacco mosaic virus	yes	no	yes	non-quarantine	no	
20	Tobacco necrosis *necrovirus*	tobacco necrosis virus	yes	yes	yes	non-quarantine	no	
American nepoviruses								
21	Blueberry leaf mottle *nepovirus*	blueberry leaf mottle virus	yes	no	no	quarantine	no	
22	Peach rosette mosaic *nepovirus*	peach rosette mosaic virus	yes	no	no	quarantine	no	
23	Tobacco ringspot *nepovirus*	tobacco ringspot virus	yes	yes	yes	non-quarantine	no	
24	Tomato ringspot *nepovirus*	tomato ringspot virus decline	yes	yes	no (recorded only once in 1983)	quarantine	no	
European nepoviruses								
25	Arabis mosaic *nepovirus*	arabis mosaic virus	yes	no	yes	non-quarantine	no	
26	Grapevine bulgarian latent *nepovirus*	grapevine bulgarian latent (GBLV) virus	yes	no	no	quarantine	no	
27	Raspberry ringspot *nepovirus*	raspberry ringspot virus	yes	no	no	quarantine	no	
28	Strawberry latent ringspot *nepovirus*	strawberry latent ringspot virus	yes	no	yes	non-quarantine	no	
29	Tomato black ring *nepovirus*	tomato black ring virus	yes	no	no	quarantine	no	
VIRUS-LIKE DISORDERS								
1	Asteroid mosaic (virus like)	asteroid mosaic	yes	yes	no	quarantine	no	
2	Enation disease (virus like)	enation	yes	no	yes	non-quarantine	no	
3	Rupestris stem pitting (virus like)	rupestris stem pitting (legno riccio)	yes	yes	yes	non-quarantine	no	
4	Vein necrosis (virus like)	vein necrosis	yes	yes	yes	non-quarantine	no	
VIROIDS								
1	Australian grapevine viroid (AGVd)	Australian grapevine viroid	yes	yes	yes	non-quarantine	no	
2	Citrus exocortis viroid (CEVd-g)	citrus exocortis A viroid	yes	yes	yes	non-quarantine	no	

Species		Common Name	Present in USA	Present in California	Present in Australia	Australian Quarantine Status	Present on Pathway	Phytosanitary Requirements
3	Grapevine viroid cucumber (GVd-c)	grapevine viroid cucumber	yes	yes	no	quarantine	no	
4	Grape vine yellow speckle I (GYSVd-1)	grape vine yellow speckle I viroid	yes	yes	yes	non-quarantine	no	
5	Grape vine yellow speckle 2 (GYSVd-2)	grape vine yellow speckle 2 viroid	yes	yes	yes	non-quarantine	no	
6	Hop stunt viroid (AGVd)	hop stunt viroid	yes	yes	yes	non-quarantine	no	
PHYTOPLASMAS (formerly mycoplasma like organisms)								
1	Phytoplasma	flavescence doree'	yes	no	no	quarantine	no	
2	Phytoplasma	grapevine yellows	yes	no	yes (official control - WA)	quarantine	no	
NEMATODES								
1	*Helicotylenchus* spp.	spiral nematode	yes	yes	yes	non-quarantine	no	
2	*Hemicycliophora* spp.	sheath nematode	yes	yes	yes	non-quarantine	no	
3	*Longidorus breviannulatus*	needle nematode	yes	no	no	quarantine	no	
4	*Macroposthonia xenoplax*	ring nematode	yes	yes	yes	non-quarantine	no	
5	*Meloidogyne arenaria*	root-knot nematode	yes	yes	yes	non-quarantine	no	
6	*Meloidogyne hapla*	root-knot nematode	yes	yes	yes	non-quarantine	no	
7	*Meloidogyne incognita*	root-knot nematode	yes	yes	yes	non-quarantine	no	
8	*Meloidogyne javanica*	root-knot nematode	yes	yes	yes	non-quarantine	no	
9	*Paratrichodorus minor*	stubby root nematode	yes	yes	yes	non-quarantine	no	
10	*Pratylenchus vulnus*	root-lesion nematode	yes	yes	yes	non-quarantine	no	
11	*Tylenchulus semipenetrans*	citrus nematode	yes	yes	yes	non-quarantine	no	
12	*Xiphinema americanum* (divided into at least 15 species with virus specificity)	dagger nematode	yes	yes	no$^{\Theta}$ (for most of the new species, including some virus vectors)	quarantine	no	
13	*Xiphinema index*	dagger nematode	yes	yes	yes (under control in phylloxera quarantine area)	quarantine	no	

Acronyms:

NT=Northern Territory; WA=Western Australia; SA=South Australia; VIC=Victoria; TAS=Tasmania; ACT=Australian Capital Territory; NSW=New South Wales;

Θ - Some spp./races are of limited distribution.

9 PHYTOSANITARY IMPORT REQUIREMENTS

This section describes all the phytosanitary import conditions required under two Options (Option A and B) to reduce risks of quarantine pests associated with the importation of table grapes from California. Imports under Option A require mandatory pre-shipment methyl bromide fumigation and are allowed throughout the year. Imports under Option B require mandatory on-arrival methyl bromide fumigation and are allowed through Adelaide, Hobart, Melbourne and Sydney from June to September. Environmental conditions at these ports of entry are unfavourable for pest establishment during this period and provide equivalent protection to Option A.

State Legislation in Western Australia currently prohibits the importation of fresh table grapes from areas where downy mildew disease occurs, including other States and Territories of Australia. This legislation is being reviewed and will be amended as necessary following completion of a joint risk analysis by AQIS and quarantine authorities in Western Australia. Until the review is completed, importation of table grapes from California into Western Australia will not be permitted.

Item 1. Registration of vineyards and fumigation facilities

APHIS is required to register all export vineyards (for Options A and B) and export fumigation facilities (for Option A only) prior to commencement of exports to enable traceback in the event of non-compliance. Fumigation facilities should comply with APHIS standards for export grade facilities. Registration will complement the existing “pallet tag system” in California.

Item 2. “Pest Free Area” and “Non-Host Status” quarantine pests

APHIS must provide scientific evidence to indicate the absence of the “Pest Free Area” or “Non-Host Status” pests in California (Table 2). APHIS must verify the maintenance of such status for these pests by routine crop monitoring/surveillance. AQIS must be notified immediately of any change in the “Pest Free Area” or “Non-Host” status of any of these pests.

Should any such pests be intercepted dead or live on arrival, imports will be suspended until AQIS is satisfied that either remedial action has been undertaken or an alternative treatment has been developed and approved. Any consignment in which live pests are intercepted will be re-exported, treated or destroyed.

Item 3. Table grape packing and labelling compliance

All table grapes for export must be free from trash and weed seeds and must meet Australia's import conditions. Trash refers to soil, splinters, twigs, leaves and other plant material. Table grapes should be packed into perforated transparent, polyvinyl bags and placed into new, extruded polystyrene (EPS) boxes or Toyon Kraft Veneer (TKV) boxes. The wooden slats for the TKV boxes must be of processed wood, veneer or chipboard and must not be more than three months old when sourced from USA or not more than 21 days old when sourced from Mexico. No unprocessed packing material of plant origin is allowed. All boxes must be labelled with the vineyard registration number and boxes/pallets with fumigation facility number. Stacking of boxes on pallets must be done in such a way as to facilitate permeation and diffusion of fumigant through the entire pallet. The pallets should be securely strapped only after phytosanitary inspection has been carried out following mandatory post-harvest treatments.

Item 4. Pre-shipment methyl bromide fumigation

All export shipments under Option A must undergo mandatory pre-shipment methyl bromide fumigation as follows:

Fumigation facilities must be registered and periodically audited by APHIS. Fumigation with methyl bromide must be carried out for a duration of 2 hours according to the specifications below:

$32g/m^3$ at a grape pulp temperature of 21°C or greater;
$40g/m^3$ at a grape pulp temperature of 16°C or greater but less than 21°C;
$48g/m^3$ at a grape pulp temperature of 11°C or greater but less than 16°C.

The loading ratio should not exceed 80% of the chamber volume or area enclosed by the tarpaulin. Fruit is not to be fumigated if the grape pulp temperature is below 11°C. Fruit must be held under secure conditions after fumigation.

Item 5. Sulfur dioxide treatment

Palletised table grapes must be treated with a mixture of 1% sulfur dioxide and 6% carbon dioxide for 30 minutes delivered using forced air or other methods that afford equivalent efficacy. This must be completed prior to phytosanitary inspection and be supervised by APHIS or its approved agents.

Item 6. Phytosanitary Inspection by APHIS

AQIS requires that APHIS sample and inspect all consignments[5] under both options in accordance with official procedures for all visually detectable quarantine pests including weeds and trash (as specified by AQIS in the final IRA document). Sample rates must achieve a 95% confidence level that not more than 0.5% of the units (grape bunches) in the consignment are infested. This equates to an acceptance level of zero units infested by quarantine pests in a random sample size of 600 units from the homogenous lots[6] in the consignment. The 600-unit sample must be selected randomly from every lot in a consignment. Inspection of grape consignments must be carried out at the point of origin in USA after post-harvest disinfestation treatments and prior to the issuance of a phytosanitary certificate.

Should any live quarantine pest (Table 1), or live or dead "Pest Free Area" or "Non-Host Status" pests (Table 2) be detected, the entire consignment must not be exported. AQIS should be notified of the presence of pests in the "Pest Free Area" and "Non-Host Status" categories. Should any weed seed of quarantine concern to Australia (Appendix 2) or trash be detected, APHIS must ensure that these consignments are removed from the shipment, cleaned or treated. If no treatment is available, then the consignment must be rejected.

[5] A consignment is the number of boxes of table grapes covered by one international phytosanitary certificate shipped via one port in California to a designated port in Australia for one consignee on the same vessel on the same day.

[6] A lot is the quantity of units (bunches) of grapes identifiable by its homogeneity of composition, vineyard, fumigation facility, etc. A lot may form part of a consignment, or comprise the entire consignment.

Item 7. Phytosanitary certification

APHIS is required to issue an international phytosanitary certificate (IPC) for each consignment upon completion of post-harvest disinfestation treatment and inspection. Each IPC should contain the following information:

- The appropriate pallet tag number, container seal number and date.
- A declaration stating "The grapes in this consignment have been produced in (specify area) California in accordance with the conditions governing the entry of fresh table grapes from California to Australia".
- If any mandatory pre-export disinfestation treatment is carried out, this must be stated and the fumigation facility number included. Details of methyl bromide fumigation including dosage, treatment duration, and grape pulp temperature, loading ratio and date must be provided.

Treated consignments of table grapes for export to Australia that have been inspected and certified by APHIS must be stored in a manner that will prevent mixing with fruit to other destinations, and if fumigated, to ensure that reinfestation would not occur.

Item 8. On-arrival methyl bromide fumigation (Option B only)

Table grapes imported into Australia under Option B must undergo fumigation with methyl bromide on arrival at designated ports in Australia. AQIS will arrange for the consignments to be fumigated by AQIS approved and registered fumigation companies. Fumigation with methyl bromide must be carried out for a duration of 2 hours according to the specifications below:

32g/m³ at a grape pulp temperature of 21°C or greater;
40g/m³ at a grape pulp temperature of 16°C or greater but less than 21°C;
48g/m³ at a grape pulp temperature of 11°C or greater but less than 16°C.

Fruit is not to be fumigated if the grape pulp temperature is below 11°C. All fumigated consignments must be placed in a secure and well-ventilated area to allow dissipation of the fumigant before inspection is carried out by AQIS inspectors.

Item 9. On-arrival inspection

All consignments must be inspected on arrival in Australia under Options A and B. Consignments arriving under Option B will be inspected after the product has been fumigated and ventilated. Inspection for quarantine pests will be carried out by AQIS on each consignment using the same sampling regime and procedures as detailed in Item 6. The full 600 unit inspection will be performed regardless of whether a quarantine pest or potential quarantine pest is found. The entire contents of the inspection sample will undergo visual examination, on an inspection bench, prior to samples being taken from each carton for closer inspection where required. Any grapes showing rot marks or bruising will be cut and examined for the presence of internal feeders.

All live pests, weed seeds or potential quarantine pests intercepted will be forwarded to the appropriate quarantine entomologist, weed specialist or plant pathologist for full identification prior to treatment being performed. This information will be forwarded to APHIS.

Item 10. Rejection of consignments on-arrival

Detection of trash

If trash is found, importers will be offered the options of cleaning of the consignment, re-export or destruction. If cleaning is chosen the consignment will be directed to an approved quarantine premise for removal of trash (soil, splinters, twigs, leaves and other plant materials) and repacking. Cleaning and repacking will be carried out under AQIS supervision.

Detection of weed seeds

If weed seeds are detected, samples will be taken by AQIS for confirmation of quarantine status by weed specialists. If seeds of weeds of quarantine concern (Section 5.3 Weed Risk Assessment and Appendix 2) are identified, importers will be given the option of cleaning or treating the consignment. If cleaning is not an acceptable option and no treatment is available, the consignment will be re-exported or destroyed.

Detection of live quarantine pests

Should any live quarantine arthropod pests (as listed in Table 1) be intercepted in a consignment arriving under Option A, the consignment will be re-fumigated, re-exported or destroyed. The cost of any rejection, re-treatment, destruction or re-export of consignments as result of pest detection will be borne by the importer. AQIS will inform APHIS of the suspension of table grape imports

pending investigation of the cause of the pest survival and the implementation of appropriate remedial measures.

Detection of “Pest Free Area” and “Non-Host Status” pests

Should any quarantine pests managed by “Pest Free Area” or “Non-Host Status” (Table 2), be intercepted dead or alive under either option, imports will be suspended until AQIS is satisfied that either remedial action has been undertaken or an alternative treatment has been developed and approved. Consignments with live pests will be re-exported, re-fumigated or destroyed.

Fumigation treatment failure

Should causes of pest infestation in a consignment be traced to fumigation facilities the relevant fumigation facility in California will be suspended and all future consignments rejected for export from that fumigator pending a full investigation of the cause of the fumigation failure by APHIS and implementation of corrective action. If consignments in-transit have been treated at such a fumigation facility prior to its suspension, APHIS should inform AQIS of these consignments so that they may be inspected on arrival for quarantine pests at a higher inspection rate and retreated if necessary.

In the event that live pests are found at inspection after on-arrival fumigation under Option B, the fumigation facility in Australia would be suspended pending investigation and implementation of corrective action. AQIS would assist the importer to arrange for re-treatment at another AQIS registered fumigation facility.

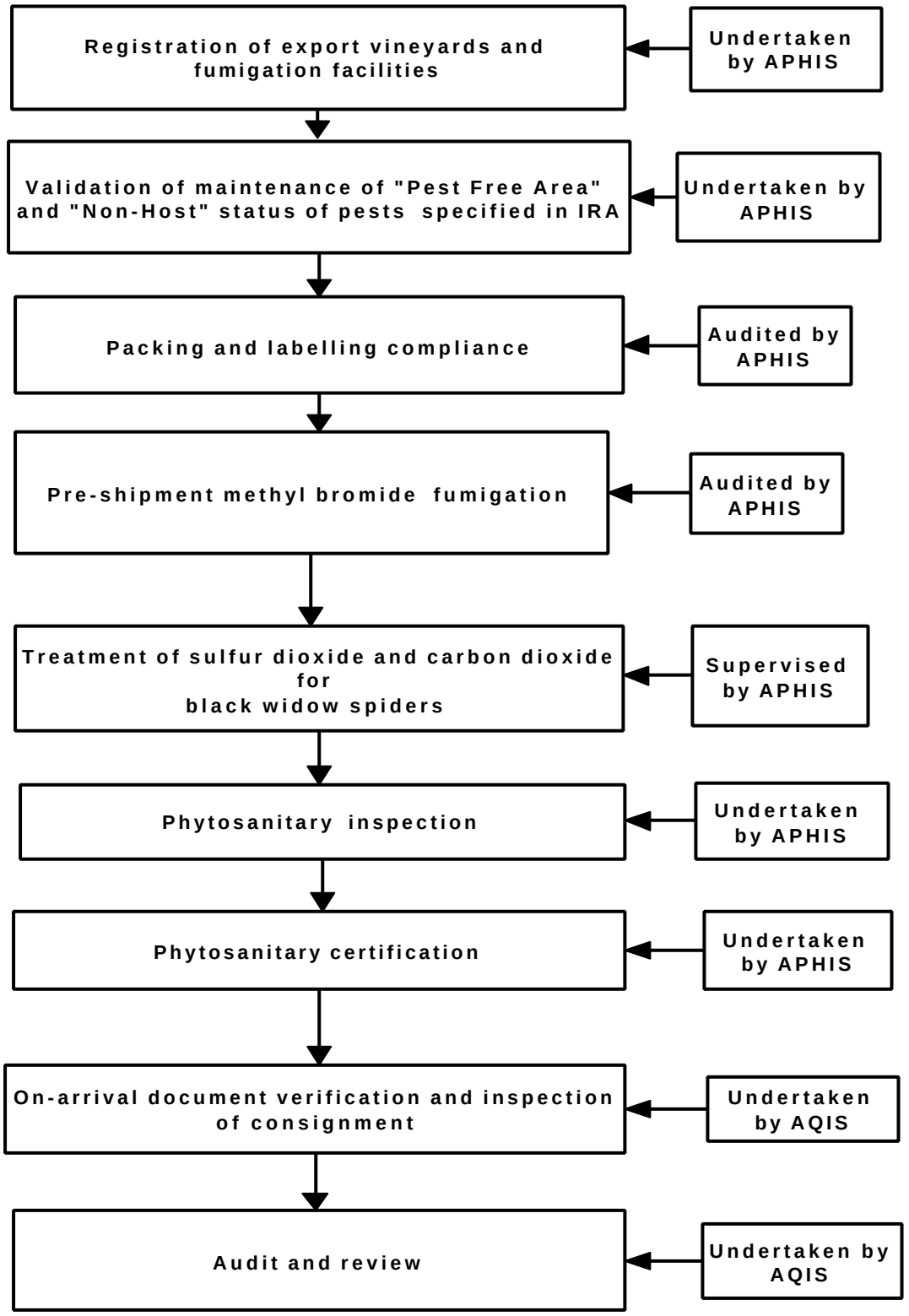
Item 11. Documentation errors

Any consignment with incomplete documentation, or with certification that does not conform to specifications, or for which seals of the containers are damaged or missing, will be held pending clarification and determination by AQIS in consultation with APHIS.

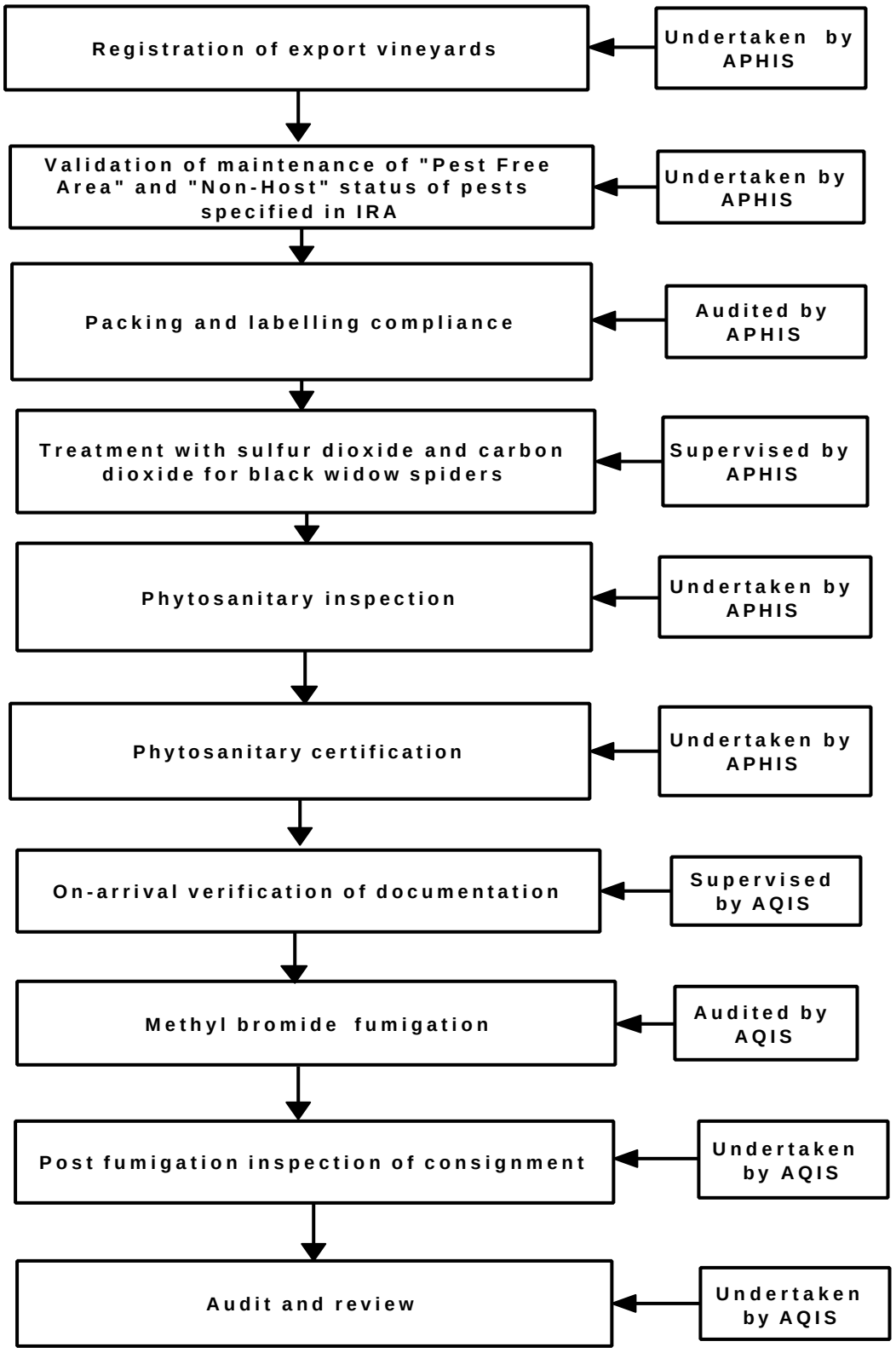
Item 12. Review of protocol

The protocol will be subject to random audit throughout the first year of trade and reviewed by AQIS at the end of the first year of exports.

Outline of phytosanitary and sanitary procedures for the importation of fresh table grapes from California to Australia under Option A - pre-shipment methyl bromide fumigation for year-round imports.



Outline of phytosanitary and sanitary procedures for the importation of fresh table grapes from California to Australia under Option B - on-arrival methyl bromide fumigation for imports from June to end of September.



10 ISSUES RAISED BY STAKEHOLDERS IN RESPONSE TO AQIS'S DRAFT IRA

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10 ISSUES RAISED BY STAKEHOLDERS IN RESPONSE TO AQIS'S DRAFT IRA

10.1 GENERAL ISSUES

10.1.1 Australian viticulture industry

Issue 1:

The statistics related to the Australian viticulture industry should be updated to reflect the true availability of grapes throughout the year. The value stated for production areas in Section 3.2.3 of the draft IRA should be corrected to read "the total volume of wine production in tonnes". The IRA also incorrectly said that wine grapes are not grown commercially in the NT.

AQIS position

Production information relating to the viticulture industry from the draft IRA has been updated based on the latest information provided by the Australian National Vine Health Steering Committee (NVHSC) and is included in Appendix 1.

10.1.2 Risk to Australian industry

Issue 2:

Importation should not be allowed because of devastating impact on the social and economic sustainability of the Australian viticultural industries and also on the almond, walnut, and stone fruit industries if certain pests and diseases were to be introduced.

AQIS position:

The potential social and economic impacts arising from the introduction of quarantine pests as a result of importation have been taken into account in the IRA. However, the potential competitive economic impact of prospective imports on domestic industries is not within the scope of the AQIS IRA process and has no bearing on the outcome of the IRA. The Department of Agriculture, Fisheries and Forestry - Australia undertakes an assessment of the potential economic impact on Australian agricultural industries if imports were to be permitted, in parallel with the AQIS IRA. The economic impact study provides advice to the Government on any structural adjustment assistance that may be warranted in the event that imports are predicted to have a significant effect on Australian primary producers.

Issue 3:

Unless there is a 100% guarantee that the risk of introduction of pests and diseases via table grape importation is zero, no importation of grapes from USA should be allowed.

AQIS position:

Prohibition of importation of table grapes from California is not justified by the risk analysis since appropriate management procedures can reduce the risk of introduction of pests to negligibly low levels. A zero risk approach is not practical and is not government policy; accordingly AQIS follows a policy of risk management when formulating phytosanitary measures. AQIS is required through the IRA process to maintain a highly conservative appropriate level of phytosanitary protection against pests of quarantine concern and to implement measures to ensure that level of protection is met.

10.1.3 IRA process

Issue 4:

There should be mandatory consultation with industry before any decision to import, as AQIS operations are based on fee for service that industry ultimately has to pay.

AQIS position:

AQIS has consulted several times with stakeholders throughout the IRA process. The draft IRA on Californian table grapes was conducted using the best available scientific evidence and in full consultation with stakeholders (including industry), to ensure that policy decisions are transparent and technically justified.

10.2 PEST RISK ASSESSMENT

10.2.1 General pest risk assessment issues

Issue 5:

Insufficient information has been provided on the basis of the decision by AQIS on the risk rating for each pest. AQIS should provide evidence of decisions, especially in quantifying low and medium risks.

AQIS position:

Risk rating is based on a determination of the quarantine status of a pest, which considers the potential for entry, establishment and spread of a pest, and its potential economic importance. The risk of introduction is then determined by analysing the potential for a pest to become established taking into account phytosanitary measures implemented in the pathway, the capacity of the pest to establish in Australia and the impact or consequences of the pest were it to become established. Each of these determinations was derived by interpreting technical information contained in a data sheet for each quarantine pest and presented as "estimated risk" in the PRA and draft IRA documents. The risk associated with each quarantine pest on the fruit importation pathway as assessed by AQIS is summarised in Table 1.

10.2.2 Weed seed contamination issues

Issue 6:

Field packing of table grapes could result in weed seed contamination and adhering weed seeds could be introduced via table grape shipments with impact on the wider environment and broad acre production in Australia. The IRA should state that the consignments would be rejected if weed seeds were found at the pre-export inspection.

AQIS position:

To reduce the risk of introduction of weed seeds as contaminants, AQIS has stipulated that all consignments must be free from seeds of the weed species that are of quarantine concern to Australia (see 5.3 Weed Risk Assessment and Appendix 2). Should any weed seed of quarantine concern to Australia be detected, APHIS must ensure that these consignments are removed from the shipment, cleaned or treated. Any breach of this import condition would result in rejection of consignments and re-export or destruction. AQIS is of the opinion that weed seed contamination in table grapes would be limited, as the grapes are hand-harvested, trimmed of leaves, and inspected before packing into bags.

Issue 7:

Consideration should be given to a list of further 40 species of weeds, which are present in California and North America.

AQIS position:

AQIS determined that 17 weed species and genera that are known to occur in vineyards in California are of potential quarantine concern. A total of 106 weed species and genera have been reported in California. Each species has been assessed using the AQIS Weed Risk Assessment (WRA) methodology. See also 5.3 Weed Risk Assessment and Appendix 2.

10.2.3 Disease issues

Issue 8:

Grape downy mildew (Plasmopara viticola) *has been recorded on grapes in California as reported in agricultural magazines in California from time to time.*

AQIS position

The only records of *P. viticola* in California have been from wild *Vitis* spp. in the Californian mountains in 1958. This disease has not been reported on commercial table grapes in California. Its restricted occurrence has been attributed to the absence of rainfall in grape production regions during spring and summer that limits the development of the disease. Grape Downy mildew is widespread in Australia (see also Issue 17).

Issue 9:

Phytophthora crown/root rot (Phytophthora citricola) *is in Australia and hence should not be considered as a "quarantine pest".*

AQIS position:

AQIS has amended the status of this record accordingly. The revised status is included in Table 3.

Issue 10:

Has AQIS any records to indicate that Rot brenner caused by Pseudopezicula tracheiphila *(Pearson and Goheen, 1988; Pearson and Smith, 1988) is present in Australia?*

AQIS position:

AQIS has not found any published records to indicate that this disease is present in Australia.

Issue 11:

The synonym of Rhizopus arrhinus *(fruit rot) is* Rhizopus oryzae, *and* R. oryzae *is present in Australia.*

AQIS position:

AQIS has amended the status of this record accordingly. The revised status is included in Table 3 in this document.

Issue 12:

Is Armillaria mellea *(Shoe string root rot) present in Australia?*

AQIS position:

Species of the *A. mellea* complex have been identified in both Australia and California. The *A. mellea* complex has now been separated into several species. However, they do not occur on the fruit importation pathway and infection occurs through direct root contact. AQIS has amended the status of this record accordingly. The revised status is included in Table 3.

Issue 13:

Zonate leaf spot (Cristulariella moricola) *is an aggressive leaf pathogen with a wide host range which appears to be spreading in USA (Brenneman* et al*., 1993; Leahy, 1995; Reilly* et al*., 1996). However, the IRA provides no evidence to suggest that California is free from this species.*

AQIS position:

C. moricola has been reported to occur in Asia, Canada, and in Florida and North Carolina in USA on various hosts including *Vitis* spp.. The US National Fungus Database and Californian state records confirm that this fungus is not known to occur in California. Hence, the fungus is not of quarantine concern on grapes from California. California has a reliable surveillance system, which would pick up this fungus as soon as it appears in the state. APHIS is required to inform AQIS of the presence of pests of quarantine concern in a timely manner.

Issue 14:

The causal agent for esca disease needs to be properly detailed.

AQIS position:

A data sheet detailing the causal agents for esca is included in the pest risk analysis (PRA) document. Although esca disease has been known for a long time, the causal organism is still unknown (Pearson and Goheen, 1988). *Stereum hirsutum* and *Phellinus igniarius* are the fungi most frequently reported to be associated with deteriorated wood but their pathogenicity has not been confirmed. In California and Italy, *Phellinus* predominates whereas in France and Australia, *Stereum* is more commonly isolated. However, AQIS has identified esca disease not to be of quarantine concern as it does not occur on the fruit importation pathway.

Issue 15:

Phaeoacremonium *and* Cylindrocarpon *species that cause young grape decline and black foot diseases have not been assessed.*

AQIS position:

AQIS has assessed published literature and information provided by APHIS on 7 July 1999, and confirmed that the two fungal species are not of quarantine concern. APHIS has clarified that *Phaeoacremonium* and *Cylindrocarpon* species are associated with the decline of young (vegetative) grapevines, and are transmitted through infected propagative material. Both fungi affect grape plants before they develop commercial crops but do not affect grape berries and therefore are not of quarantine concern in respect of imports of grapes. The revised status of these two genera is included in Table 3.

Issue 16:

The possibility of Pierce's disease (Xylella fastidiosa)*, black measles* (Cephalosporium *spp.*, Phellinus igniarius)*, Autumn leaf spot* (Metschnikowia pulcherrima) *and other leaf spots (zonate-* Cristulariella moricola*, angular leaf scorch* – Pseudopezicula tetraspora*) being introduced on trash and on bunch stalks is of major concern to industry.*

AQIS position:

Pierce's disease and black measles infect the woody stem, and leaf spots occur on the leaf. Leaves are trimmed off during harvesting and packing of grapes. Pierce's disease is not known to be transmitted via grape clusters. Zonate leaf spot and angular leaf scorch do not occur in California. The disease organism that causes Pierce's disease itself has a low risk of entering Australia on grapes since Purcell and Saunders (1995) showed that it does not survive more than 24 hours on grapes when subjected to storage at 1^{o}C. Grapes would be stored at this temperature for up to 21

days in transhipment. The import conditions stipulate that the grape bunches should be free of trash including leaf material. If trash is found, importers will be offered the options of cleaning the grapes under AQIS supervision, re-export or destruction. Samples of leaf material would also be collected and forwarded to plant pathologists to be tested for the presence of pathogens of quarantine concern.

Issue 17:

The issue of fungicide resistant strains eg. dicarboximide resistant strains of powdery mildew (Uncinula necator) *and DMI (demethylation inhibition) resistant strains of grape downy mildew, not yet present in Australia are not considered.*

AQIS position:

There is no published evidence to suggest the existence of fungicide resistant strains of powdery or downy mildews in California. Both diseases have been assessed in the IRA to be not of quarantine concern. Powdery mildew occurs in both California and Australia. Grape downy mildew occurs in Australia but has not been reported on commercial grapes in California.

Issue 18:

There is a potential for disease spores to be on the imported grapes.

AQIS position:

No diseases were identified as being of quarantine concern on the fruit, therefore the presence of spores cannot be considered to be of quarantine concern.

Issue 19:

Bacterial blight (Xylophilus ampelinus) *could be introduced in to Australia via stems and stalks of table grapes.*

AQIS position:

X. ampelinus mainly occurs in Europe and southern Africa and is not known to occur in either Australia or USA. Therefore, it is not of quarantine concern.

Issue 20:

Grapevine yellows: This phytoplasma disease should be considered as a quarantine disease since recent research in USA has thrown doubt on the presence of Australian grapevine yellows and

indicated that at least two strains of grapevine yellows present in Virginia may not be present in Australia (Davis et al.*, 1998).*

AQIS position:

According to Davies *et al*., (1998), grapevine yellows occur in many viticultural areas of the world, but the phytoplasmas associated with the disease can be very different. The phytoplasma associated with grapevine yellows in Australia is different from that reported in Virginia. Grapevine yellows occur on grapes in Virginia but not in California. Therefore this phytoplasma is not of quarantine concern.

Issue 21:

Reliance on visual inspection for live insects or arthropods may be satisfactory. However, there is lack of scientific information to justify that viruses, viroids, phytoplasmas and nematodes that may be present asymptomatically would not enter into Australia.

AQIS position:

Viruses, viroids, phytoplasmas and nematodes are of quarantine concern on vegetative propagative material. These pests have been assessed not to be of quarantine concern in relation to imported fruit.

Issue 22:

Grapevine fan leaf nepovirus should be revised from a non-quarantine to a quarantine pest.

AQIS position:

The grapevine fan leaf nepovirus and its vector, *Xiphinema index*, are restricted to a region of Victoria referred to as the North East Vine Disease District. However, they have not been gazetted to be under official quarantine control in accordance with the Victorian Plant Health and Plant Products Act 1995. As such, the status of the virus remains as non-quarantine. Additionally, the virus and its vector do not occur on the fruit and so are not of quarantine concern.

Issue 23:

The quarantine status of grapevine corky bark-associated closterovirus, tobacco ringspot nepovirus, tomato ringspot nepovirus, arabis mosaic nepovirus and strawberry latent ringspot nepovirus should be evaluated.

AQIS position:

AQIS is of the opinion that some of the above viruses are of quarantine concern on vegetative propagative materials for planting purposes, but are not of quarantine concern on imported fruit.

10.2.4 Arthropod pest issues

10.2.4.1 Lepidoptera

Issue 24:

The biology of Harrisina brillians *(western grape leaf skeletonizer) indicates that visual inspection would be sufficient to detect this pest, especially since it is seldom found on grape clusters.*

AQIS position:

According to APHIS, *H. brillians* is not known to complete its life cycle in grape bunches since there would be inadequate fresh leaf material to do so. On the basis of the biology of this species, AQIS has revised the risk status from medium to low and considers that visual inspection is adequate to detect the conspicuous larvae if they are present within the fruit bunches. The revised status is included in Tables 1 and 3.

Issue 25:

The salt marsh caterpillar, Estigmene acreae*, is rarely found in grapes and if present, grapes would be "unsaleable".*

AQIS position:

According to information provided by APHIS this insect is so rarely found in grapes that "University of California Grape Pest Management Guidelines" do not provide control measures for it. AQIS considers that visual detection is adequate to detect the large larvae in grape bunches and the quarantine risk status has been changed from medium to low. The revised status is included in Tables 1 and 3.

Issue 26:

Spodoptera exigua *(beet lesser army worm) is common and present in Australia.*

AQIS position:

S. exigua (Hubner, 1808) is listed as present in Australia by Naumann (1993). AQIS confirms that this species occurs in Australia and is therefore not a species of quarantine concern. The revised status is included in Table 3.

Issue 27:

Risk analysis has not been conducted on the effect of the orange tortrix (Argyrotaenia citrana) *on other hosts such as* Eucalyptus *sp., lupins (*Lupinus *spp.), oats* (Avena sativa) *and barley* (Hordeum vulgare).

AQIS position

This moth is well known as an indiscriminate feeder and has a wide host range. The host list for this species is based on Basinger (1938) who lists 40 taxa as "record(s) of the known host plants of the orange tortrix". Plantation *Eucalyptus* species are much more widespread in California now than in 1938 but there are no recent records in California of *A. citrana* damaging *Eucalyptus*. Also there are no records of this species damaging other plants of economic significance in California, apart from grapes and citrus, since 1926. AQIS considers therefore that the risk of this pest on *Eucalyptus* and the other hosts mentioned is not significant.

Issue 28:

Visual inspection of bunches for "nests" of Platynota stultana*, the omnivorous leaf roller, is sufficient.*

AQIS position

Newly hatched larvae of *P. stultana* are less than 1.6 mm in length and occur within the fruit bunches. Flaherty *et al.* (1992) noted that this species is a major pest of vineyards in California and that the larvae feed directly on flowers and berries. AQIS considers that the estimated risk should therefore remain high. Methyl bromide fumigation should be mandatory for all consignments to reduce the risk of entry of this pest into Australia to an acceptable level.

Issue 29:

Which is the correct generic name, "Limonius" *or* "Limonium" *for* L. canus.

AQIS position

Limonius canus Lec. is the correct name for this insect species. *Limonium* is a plant genus belonging to the family Plumbaginaceae.

Issue 30:

Visual inspection is adequate to detect Desmia funeralis*, the grape leaf folder.*

AQIS position

The third brood larvae of this pest may feed in the bunches breaking the skins of the berries (Smith and Stafford, 1955). The eggs are laid on the undersides of the leaves along the veins and also on the leaf cases. The caterpillars construct envelopes on the edges of the leaves in which they pupate and overwinter. APHIS confirms that visual inspection for the presence of infested leaves and the requirement that consignments be free of leaf trash by trimming of leaves would eliminate any risks. AQIS agrees that visual inspection will provide the appropriate level of protection for this pest.

Issue 31:

Mandatory fumigation for the navel orange worm, Amyelois transitella*, is not needed, and visual inspection alone is adequate.*

AQIS position

The navel orange worm has not been listed as a pest of commercial table grapes in the University of California Grape Pest Management Guidelines. APHIS has clarified that the pest has not been recorded in export inspections of Californian table grapes. *A. transitella* is a major pest of citrus but may be present in dried or decaying or over-ripe grape berries. AQIS considers that the mature larvae, which may be 17-20 mm in length and deep reddish-pink to whitish-yellow/pink colour, would easily be detected by visual inspection. Hence, mandatory fumigation would not be required.

Issue 32:

Mandatory fumigation is not needed for the orange tortrix, Argyrotaenia citrana *and visual inspection is sufficient.*

AQIS position

A. citrana lays eggs on foliage, on stems or on fruit in masses or small groups. AQIS considers that immature larvae and small egg masses could escape visual inspection in grape clusters destined for

export especially since the newly hatched larvae are small and solitary. This species is also a serious pest of citrus. The estimated risk should therefore remain as high as both eggs and larvae can occur on the fruit. Methyl bromide fumigation should therefore be mandatory for this pest to provide an acceptable level of protection against its introduction.

10.2.4.2 Diptera

Issue 33:

Greenhouse whitefly (Trialeurodes vaporariorum) *is common and present in Australia.*

AQIS position

T. vaporariorum (Westwood) is recorded by Naumann (1993) as present in Australia. AQIS confirms that this is not a species of quarantine concern. The revised status is included in Table 3.

Issue 34:

*Mediterranean fruit fly (*Ceratitis capitata*) is not under official control in all of WA.*

AQIS position

Mediterranean fruit fly is endemic to southwestern Western Australia but it has been contained in the Kununurra and Ord River regions. Monitoring activities are conducted for the species but there is currently no official control program operating unless populations are detected in the regions specified. The IRA has been amended accordingly.

10.2.4.3 Hemiptera

Issue 35:

Aphis citricola *van der Goot, is reported to occur in Australia.*

AQIS position

This species should be referred to as *Aphis fabae* Scopoli, 1763. The synonym was published by Eastop and Blackman (1988) in "Aphids on the World's Crops: an Identification Guide" (Blackman and Eastop, 1984). *A. citricola* is reported from Australia (CABI, 1998). A more recent reference is Remaudière and Remaudière (1997), in which the 1988 synonym is noted. It is also noted by these authors that recent authors referring to *A. citricola* had identified the species incorrectly.

AQIS considers that a correct interpretation of all the literature is that *Aphis fabae*, synonym *Aphis citricola,* does not occur in Australia.

Issue 36:

Threats are posed by the recently detected new strain of Phylloxera (Viteus vitifoliae).

AQIS position

This pest is endemic to wild vines in the eastern states of the US and many strains of the pest have now been detected in that country. *D. vitifoliae* appears to evolve different strains on different host vine rootstocks.

A strain named "biotype B", was detected in California for the first time in the late 1980s and is distinguished by its ability to kill the rootstock AxR#1. This rootstock was resistant to the original form of the pest present in vineyards (designated biotype A). Biotypes are functional designations based on the behaviour of phylloxera and not necessarily based on genetic differences. It is now recognised that biotypes A and B from California consist of several genetically different forms or strains, and additional strains that differ from A and B have also been detected. The different biotypes or strains present in California exhibit different behavioural traits and host tolerances but could be difficult to differentiate in the field. The relationships of the different forms to each other and to their hosts are still largely unknown but appears to be highly dynamic with genetically new strains adapting relatively rapidly to new cultivars. Recent research (Corrie *et al.* 1997, 1998) has demonstrated that there are several genetically distinct biotypes or strains of phylloxera present in Australia.

A new unnamed strain reported by APHIS is said to have been in California for two to three years and is confined to root stocks and leaves, in nurseries (California Department of Food and Agriculture, 1998). This new strain has apparently never been found on bearing *V. vinifera* nor on fruit bunches in California. AQIS therefore considers the risk of introducing this new strain to Australia in table grape fruits from California to be negligible.

Issue 37:

Crawlers of Phylloxera (Viteus vitifoliae) *may be present on the canopy of grapevines and on the rachis.*

AQIS position

This is very rare as the pest's habitat is normally on other parts of the vine apart from fruit, ie foliage, trunk, canes and bark. AQIS is of the opinion that should crawlers of Phylloxera be present on fruit, methyl bromide used in combination with other phytosanitary measures will provide security against the introduction of this pest.

Issue 38:

A winged-form of Phylloxera (Viteus vitifoliae) *occurs in Californian vineyards. The pest may be wind-dispersed.*

AQIS position

It has been shown (King and Buchanan, 1986) that wind dispersal of phylloxera crawlers and alates (winged-forms) can occur up to distances of 100m downwind. Winged-forms are an occasional stage in the life cycle of phylloxera strains whose progeny must develop in leaf galls. The leaf gall forms are almost non-existent on Australian vines. Therefore propagation of these forms is virtually impossible.

Issue 39:

The newly discovered strain of Phylloxera (Viteus vitifoliae) *in California feeds on the foliage.*

AQIS position

The foliar-feeding form of this pest is virtually restricted to wild *Vitis* species and is very rare on grapevines in California, USA. It has been observed in Australia but only rarely and then under exceptionally moist conditions (Buchanan and Hardie, 1978).

Issue 40:

The newly detected vector of Pierce's disease (PD), the glassywinged sharpshooter, Homalodisca coagulata*, is not mentioned. There is a potential for eggs of sharpshooters to be present on grape shipments.*

AQIS position

H. coagulata has only recently appeared in southern California (1990) and since then has spread rapidly into coastal viticultural areas and to the north. The first record of this species was published in 1996 (Sorensen and Gill, 1996). *H. coagulata* was first recorded in the main table grape growing areas of the Central Valley in 1998 where the vast majority of California's table grapes are grown.

It is also present in the Coachella Valley in the south, where the season's earliest grapes come from. *H. coagulata* is a large sharpshooter insect species that could be present within the fruit clusters. Eggs are normally deposited into plant tissues, usually into slits in stems and under bark. APHIS has clarified that individuals tend to move away rapidly when disturbed as during trimming and packing. However, the biology and mobility of the insect and the field packing of grapes also suggest that the species can hitchhike onto packed grapes in the cartons. Consequently, AQIS considers the risk of the pest to be medium and that visual inspection is not adequate for adults and that mandatory methyl bromide fumigation is required (Data sheet in Appendix 3). The revised status is included in Table 3.

Issue 41:

What is the potential for Australian insect species to transmit Pierce's disease (PD)?

AQIS position

Purcell, in two articles (Purcell, 1989; Hill and Purcell, 1995), says that "most if not all xylem-feeding suctorial insects are potentially Pierce's disease vectors". This statement, which has been widely quoted, is considered by AQIS to be an overstatement and simplification of the situation as many other features of the biology of any xylem feeding insect will determine whether it is a vector of Pierce's disease or not. The small group of cicadelline genera, to which the common name "sharpshooters" is applicable, is restricted to North America (Purcell, 1989, Purcell *et al.*, 1979) and this common name has not been applied to the Cicadellini generally. The sharpshooter genera in North America include *Draeculacephala, Carneocephala, and Graphocephala = Hordnia* and *Homalodisca*. None of these genera occur in Australia. Only Hemiptera that feed by piercing the xylem can be vectors of Pierce's disease. All Cicadelloidea belonging to the tribe Cicadellini are xylem feeders. Although there are 14 species of Cicadellini in Australia (Day and Fletcher, 1994), none have been recorded on Vitaceae. The most likely candidates for transmission of Pierce's disease are species in the genus *Ishidaella* because they are known to have broad host ranges. However, species in this genus have also never been recorded on Vitaceae in Australia; hence it is believed that the risk of transmission of Pierce's disease is negligible.

Other Australian leafhoppers in subfamilies Typhlocybinae, Agallinae, Iassinae and Deltocephalinae are unlikely to be vectors since Typhlocybinae are parenchyma feeders and the others are phloem feeders and are less likely to transmit diseases of this type.

Issue 42:

Vine mealybug (Planococcus ficus)*:*

- *there is a lack of information on this species in the draft IRA; is it a vector for bunch rot?*
- *what is the risk of introduction of this species?*
- *this species is also a pest of avocado.*

AQIS position

P. ficus (Signoret, 1875) was recognised relatively recently (Cox and Ben-Dov, 1986) as it has previously been misidentified as *P. vitis* (Nedzilskii, 1869). The first detection in California was in 1994 but it is thought to have been present for some years before a correct identification was made. This mealybug was found for the first time in Fresno by W. Bentley on October 15, 1998 (California Department of Food and Agriculture, 1999). It is spreading rapidly, and is now present in all major table grape production areas in the Coachella, San Joaquin and Central Valleys (Bentley, 1999; Bryant, 1999; Warner, 1999). Its presence has been confirmed by APHIS. A new pest data sheet for this species is presented in Appendix 3. There is no published evidence that *P. ficus* is a vector of bunch rot.

It appears that *P. ficus* may be more frequently found within the fruit bunches than the grape mealybug, *Pseudococcus maritimus*, but it can be found on all parts of the grapevine at one time or another. *P. ficus* also produces more honeydew than *P. maritimus* and is said to be more damaging. It shows a preference for warmer grape growing regions and therefore is likely to spread if introduced into Australia.

As visual inspection alone is not sufficient to provide adequate protection against this high-risk species entering Australia because the species occurs commonly within fruit bunches, AQIS considers that mandatory fumigation is justified. APHIS has confirmed that methyl bromide treatment will be efficacious against this insect.

AQIS is aware that *P. ficus* has been recorded as a pest of avocado (*Persea americana*).

Issue 43:

Grape mealybug (Pseudococcus maritimus)*:*

- *the synonymy of this species is incorrect;*

- *this species has only been detected four times in the last 3 years in the phytosanitary inspections and has not otherwise been detected in export; visual inspection should be sufficient.*

AQIS position

The synonymy of this species has been corrected in the data sheet in the draft IRA.

AQIS accepts APHIS clarification that this pest has been detected only four times in the last three year in the phytosanitary inspections. Mealybugs are parthenogenetic so a single female from discarded fruit would be sufficient for colonisation. The relevant New Zealand Import Health Standard (Ministry of Agriculture, and Forestry, 1997) requires that shipments of grapes be fumigated should live *P. maritimus* be detected. Small immature individuals and adult females may cluster around the rachis near the base of the fruit and escape visual detection. For this reason AQIS considers that methyl bromide fumigation is required to reduce the risk of introducing this pest to Australia to an acceptably low level.

Issue 44:

Scale insects (Coccidae, Diaspidae) are not considered.

AQIS position

Table 3 lists 19 species of scale insects that are pests of grapes in USA. Twelve of these are already present in Australia and so are not of quarantine concern. The remaining seven are not present on the fruit so the risk of these pests being introduced into Australia on table grapes from Californian is negligible. AQIS considers that all quarantine species of scale insects have been adequately considered in the IRA document.

10.2.4.4 Thysanoptera

Issue 45:

Minute flower thrips (Frankliniella minuta) *is rarely found on grapes and is not reported to cause economic damage; inspection for this species is preferred.*

AQIS position

F. minuta is recorded as a pest of grapes by Flaherty *et al.* (1992). The species does not occur in Australia. It is reported to damage young fruit mainly when infestations are moderate to high.

AQIS therefore considers this a species of quarantine concern, but that with appropriate field controls the quarantine risk of the species is low. AQIS has reviewed the available information and considers that visual inspection is sufficient to reduce the risk of introducing *F. minuta* to Australia to acceptable levels. The revised status is included in Tables 1 and 3.

Issue 46:

Western flower thrips (Frankliniella occidentalis)*:*

- *is there a potential for insecticide resistant strains of this species entering Australia?*
- *what is the quarantine status of this species in Australia? Domestic policies should be aligned with international policies.*

AQIS position

AQIS has reviewed the available information and considers that visual inspection is sufficient to reduce the risk of introducing *F. occidentalis* to Australia to acceptable levels. There is no published report on the existence of resistant strains of this insect species on grapes. The revised status is included in Tables 1 and 3. The phytosanitary import requirement of visual inspection will reduce the potential for insecticide resistant strains of this pest entering Australia. To help in the detection AQIS will use a funnel extraction procedure during on-arrival inspection.

F. occidentalis is absent from Tasmania, and parts of Victoria. It is therefore a pest of quarantine concern. However the domestic policies of individual states are under review.

Issue 47:

Bean thrips (Caliothrips fasciatus)*:*

- *mandatory treatment for this species is not needed as it is not a pest of grapes;*
- *there are no records of detection of this species in exports to New Zealand;*
- *trade should not be suspended if there is detection as this species is not present in California;*
- *this species is already in Australia and not of quarantine concern.*

AQIS position

C. fasciatus is recorded as a pest of grapes in California by Flaherty *et al.* (1992). However, it does not feed on grape clusters since vineyard weeds are the main hosts. It could be considered more of a contaminant species as it is predominantly a hitchhiking pest. AQIS has revised its status to low

with a requirement for visual inspection instead of mandatory fumigation. The revised status is included in Tables 1 and 3.

The bean thrips has been detected in fruit exports, such as oranges, from California entering New Zealand (Manson, 1981; Anon., 1985) and by AQIS on citrus from California, indicating that the species does occur in California.

This species does not occur in Australia (Mound, 1996). AQIS therefore considers *C. fasciatus* is a species of quarantine importance.

Issue 48:

The Californian citrus thrips, Scirtothrips citri*, is a minor pest in areas of the Coachella Valley where citrus groves are adjacent to grape vineyards therefore no treatment is required for this species. It is only found on young leaves and not on grape clusters.*

AQIS position

S. citri is recorded as a pest of grapes by Flaherty *et al.* (1992) in the Coachella Valley, a region of table grape production. The species does not occur in Australia. Flaherty *et al.* (1992) state that the species can damage young grape berries. However, APHIS has confirmed the minor pest status of this species. AQIS has revised its status to low, and considers visual inspection will reduce the potential for this pest entering Australia. The revised status is included in Tables 1 and 3.

Issue 49:

Visual inspection is adequate for Drepanothrips reuteri*, the grapevine thrips or Eastern flower thrips, as it is not present on mature grape clusters.*

AQIS position

D. reuteri is recorded as a pest of grapes by Flaherty *et al.* (1992), who note that it can damage young grape berries. It does not occur in Australia. The pest data sheet for this species was refereed by Dr Lawrence Mound who confirmed that individuals could survive in grape clusters. However, APHIS has confirmed the minor pest status of this species. AQIS has revised its status to low, and considers visual inspection will reduce the potential for this pest entering Australia. The revised status is included in Tables 1 and 3.

Issue 50:

Apart from the thrips listed, what other thrips species have been considered which may lead to re-export ?

AQIS position

All thrips species known to be associated with grapes in California have been assessed in the IRA. Consequently there are no other thrips species that could lead to re-export. If, during on-arrival inspection, high-risk species not known to occur in Australia and not recorded previously as a pest of grapes in California, were detected live, and were subsequently determined to be of quarantine concern, this would lead to re-export, re-treatment or destruction.

10.2.4.5 Acari

Issue 51:

Clarification is required on the blister mite (Colomerus vitis), *especially* C. vitis *grape bud mite strain c.*

AQIS position

"Blister Mite" is the common name given to a number of different pest eriophyid mite species. The common name, grape leaf blister mite, refers to *C. vitis* which was previously called *Eriophyes vitis*. The chances of detecting this species on table grapes are low because of its biology and feeding habits.

There are three strains of this mite recognised world wide, the erineum, the bud and the leaf curl strain (Lindquist *et al*., 1996). The common name "grape leaf blister mite" does not differentiate between strains. The leaf curl strain has not been recorded for Australia and recent research in Victoria (DeAnn Glenn, pers. comm.) has confirmed that only the erineum and bud strains of this species have been found. Since the leaf curl strain does not feed on fruits directly but is present on leaves and stems, there is only a moderate risk of it entering Australia on table grapes. Because of its extremely small size and difficulty of detection by inspection AQIS considers that methyl bromide fumigation is required to reduce the risk of the leaf curl strain of *C. vitis* entering Australia on table grapes from California.

Issue 52:

Hornbeam mite (Eotetranychus carpini)*:*

- *the synonymy for this species is not given in full;*
- *this species is not present in California, nor is it found on fruit.*

AQIS position

The hornbeam mite is the name of only one of the three known subspecies of *carpini,* named *borealis, carpini* and *vitis*. A full synonym, distribution and host plant list for the nominate species is given in Bolland *et al.* (1998) and was abbreviated for the draft IRA document. Bolland *et al.,* (1998) do not list subspecies. The published literature states that one subspecies, *E. carpini borealis,* is present in California. *E. carpini borealis* is known to be a pest of fruits and a number of other plants (Jeppson *et al.,* 1975).

A record of *Tetranychus flavus* Ewing, 1913 as a pest of grapes in California is given in Bournier (1976). This record is taken from Smith and Stafford (1955). In this article *T. flavus* is referred to as the "Willamette mite" and is a different species. Details of economic damage to vines and the life history of *T. flavus* as the "Willamette" mite are recorded in this article. Bolland *et al.,* (1998) list *T. flavus* as a synonym of *Eotetranychus carpini* with no subspecies quoted. The distribution of the species includes USA and hosts include *Vitis vinifera*. Jeppson *et al.* list the three subspecies of *E. carpini* and state that only *vitis* is a pest of grapes and found in Italy and France. Only *E. carpini borealis* is found in north west USA, from central California to British Columbia, on alder, apple, blueberry, cherry, pear, raspberry, spiraea and willow. Jeppson *et al.,* (1975) do not mention *T. flavus*. However, these authors state that *E. carpini borealis* is easily confused with *E. willamettei* which is a recognised pest of grapes in California.

After an exhaustive inquiry which included contact with relevant acarologists nationally and internationally, it was found that no further information exists on the possible status of *E. carpini borealis* on grapes although it was confirmed that it occurs in California. It is likely that the only record of *T. flavus* as a pest of grapes (Smith and Stafford, 1955) is due to an incorrect identification of *E. willamettei* in Smith and Stafford (1955). However without independent confirmation, AQIS cannot assume that this assumption is correct for, although this record is old, there has been no more recent detailed survey or description of the mites found on grapes in the Californian region.

In view of the inconclusive nature of the evidence, AQIS considers that a precautionary approach should be taken and that *E. carpini borealis* should be considered a low quarantine risk on table

grapes from California. The response received from the Cooperative Extension, Division of Agriculture and Natural Resources, University of California attests to the fact that *E. carpini* is not of economic importance in California and is unlikely to be on the fruit. The revised status is included in Tables 1 and 3.

Issue 53:

Pacific spider mite (Tetranychus pacificus)*:*

- *this species is only found on foliage so could only be introduced as a "hitchhiker"; fruit carrying* T. pacificus *would be detected in export inspections and would be rejected;*
- *no synonyms listed for this species.*

AQIS position

T. pacificus is common in vineyards in California and has a wide host range. It is described as a major vineyard pest in the San Joaquin Valley (Flaherty *et al.* 1992). Although the species does not feed on fruits directly but on leaves and shoots, there is a medium to high risk of it entering Australia as a hitchhiker on table grapes. Additionally APHIS has detected this mite during phytosanitary export inspections of table grapes. AQIS considers that because of its small size, *T. pacificus* might not necessarily be detected in fruit on visual inspection and that mandatory methyl bromide fumigation is required to provide security against its introduction.

Dactylopius maritimus Erhorn was wrongly listed as a synonym of *T. pacificus*. There are no synonyms for this species. Its nomenclature has remained unchanged since its original description in 1919.

Issue 54:

Willamette spider mite (Eotetranychus willamettei)*:*

- *this species is not present in California and it is rarely found on fruit clusters;*
- *synonyms are lacking for this species.*

AQIS position

Flaherty *et al.* (1972) and Loeb *et al.* (1998) record *E. willamettei* in Californian vineyards and note that it is common. Although Flaherty *et al.* (1992) note that even quite high populations may not cause a reduction in the quality of fruit, there is a risk of the species hitchhiking to Australia on imported grapes. AQIS has revised the quarantine risk status of this mite to low based on

information received from the Cooperative Extension, Division of Agriculture and Natural Resources, University of California that the species is rarely found in grape clusters.

Changes in nomenclature for this mite are *Tetranychus willamettei* McGregor (1917) and *Eotetranychus willamettei* (Pritchard and Baker 1952).

Issue 55:

European red mite (Panonychus ulmi)*:*

- *this species is not a pest of table grapes in California;*
- *it is widespread in Australia but an important quarantine pest in Western Australia;*
- *are there other stable biotypes of* P. ulmi*?*
- *can this species be detected during quarantine?*

AQIS position

APHIS confirmed that the mite has not been recorded nor could any published reports of it on table grapes in California be found.

Bolland *et al.* (1998) listed all the recorded hosts of this species and included *Vitis vinifera* and two other *Vitis* species. Jeppson *et al.* (1975) and Baker and Tuttle (1994) note that *P. ulmi* is common in orchards in USA and it may cause damage to vines and grapes as well as other fruit trees and it is known to be a serious pest of deciduous fruit trees. Meyer (1981) recorded that it is a serious pest of grapevines in all northern viticultural regions of Europe. Meyer (1974) considers that the European red mite undoubtedly spread to the deciduous fruit producing areas of different countries by transport of diapause eggs on fruit, nursery material and budwood. Helle and Sabelis (1985) note it is a serious pest of grape vines in northern viticultural areas of Europe and that it is the most important spider mite pest on grapevines in Canada and the eastern USA. Information on the existence of different European biotypes of this species is slim, and does not appear to have been published (Helle and Sabelis, 1985).

This mite is widespread in southern Australia and there are published records and/or reliably identified specimens in collections for Queensland, South Australia, Victoria, New South Wales and Tasmania (Halliday, 1998 and included references; M. Malipatil pers. comm.; D. Knihinicki, pers. comm.). There is no evidence to support its presence in Western Australia nor in the Northern Territory. It is under official control in Western Australia. Western Australia has regulated that any

produce from interstate that may contain *P. ulmi* must be treated with methyl bromide before it can enter the State.

No biotypes of this species of any kind have been documented.

Issue 56:

Further information on mite species listed in Bolland et al. *(1998) as pests of grapes is needed.*

AQIS position

Of 17 additional mite species recorded by Bolland *et al.* (1998) as having *Vitis vinifera* as a host , nine are present in Australia (*Bryobia praetiosa, Eotetranychus sexmaculatus, Oligonychus coffeae, Oligonychus milleri, Panonychus citri, Petrobia latens, Tetranychus desertorum, Tetranychus ludeni* and *Tetranychus neocaledonicus*) and are therefore not of quarantine concern. Another three species (*Eotetranychus pruni, Eotetranychus smithi, and Oligonychus biharensis*) are not present in USA. Four species (*Eotetranychus yumensis* (*Citrus*), *Oligonychus punicae* (avocado), *Petrobia harti* (*Oxalis* spp.) and *Tetranychus turkestani* (cotton)) are not pests of *Vitis vinifera* and so are not found in vineyards. The last species, *Tetranychus mcdanieli,* occurs in California on pome fruit (Croft and Nelson, 1972) and has been recorded as a pest of *Vitis vinifera* in Europe (Rambier, 1982). Similarly, of the seven additional species of mite recorded on *Vitis* spp and not *V. vinifera* as hosts, two are present in Australia (*Bryobia rubrioculus, Tetranychus kanzawai*) and there is no evidence that the other five (*Eotetranychus lewisi, Eotetranychus uncatus, Oligonychus peruvianus, Oligonychus yothersi* and *Schizotetranychus parasemus*) are pests of *V. vinifera*.

Issue 57:

Apart from the mites listed, what other mites are considered which may lead to re-export?

AQIS position

There are no other mite pests of grapes in the US which are on the fruit other than those identified in the draft and final IRA. AQIS therefore has determined that no other species of mites will lead to re-export. However, if high-risk species which are previously not known from California are detected during on-arrival inspection, this would lead to re-export or destruction.

10.3 PEST RISK MANAGEMENT

10.3.1 General pest risk management issues

Issue 58:

Requiring the same SPS (Sanitary and Phytosanitary) measure regardless of whether a pest is considered to be a 'low' or 'high' risk lacks justification. Will AQIS accept alternative measures such as inspections for medium and low risk pests?

AQIS position

AQIS has streamlined the phytosanitary import conditions to reflect that visual inspection is the only risk management measure required for low quarantine risk pests. See Table 1 and Section 9, Phytosanitary Import Requirements.

10.3.2 Area freedom

Issue 59:

Will pre-harvest inspection of foliage and stems be undertaken in the field to ensure that asymptomatic expressions of diseases are not missed by on-arrival inspection?

AQIS position

APHIS has an obligation to monitor the table grape production areas and maintain area freedom for a number of pests of table grapes. This, in addition to normal crop monitoring practices, will ensure that the incidence of all pests of quarantine concern in the field is reduced.

10.3.3 Option A versus Option B

Issue 60:

Explain the inconsistency that if a consignment fails under Option A, the costs to re-export or destroy the consignment are borne by the exporter, but under Option B the costs are borne by the importer.

AQIS position:

Under Options A and B, the costs associated with treatment, re-export or destruction of grape shipments will be borne by the table grape importers in Australia.

Issue 61:

Option B is less secure and possibly not a viable option.

AQIS position:

AQIS considers both options A and B to provide an equivalent level of protection against the introduction of quarantine pests. Option B (on-arrival fumigation) is fully adequate for risk mitigation of imports arriving during the months of July through end of September, but not otherwise.

Issue 62:

At what time of the year would grapes normally be imported from California? Will California table grapes be permitted entry without calendar restrictions with on-arrival treatment.

AQIS position:

Under Option A, incorporating pre-shipment fumigation, grapes from California would be allowed into Australia throughout the year. However, most imports of fresh table grapes will take place between June to November. There will only be a short period of overlap with local production, which starts at the beginning of October and tails off in late April. Option B incorporating on-arrival fumigation of grapes would only be allowed from July through to end of September.

10.4 POST-HARVEST MANAGEMENT

10.4.1 Packing/storage centre

Issue 63:

Would it compromise the security of Australian grapes destined for New Zealand if they were stored in the same room as grapes imported from California?

AQIS position:

No, security would not be compromised. However, it is not normal practice for fruit destined for export to be stored in the same room as fruit imported from overseas.

Issue 64:

Grapes should be shed-packed, and not field-packed.

AQIS position

Table grape growers in California field-pack their grapes after inspection and trimming of leaf trash to avoid double handling of the bunches which can result in a higher magnitude of bruising with consequential decline in fruit quality and shelf life. AQIS is of the opinion that compliance with the

phytosanitary import requirements by growers/exporters in California as specified in the final IRA would provide an acceptable level of protection against the introduction of quarantine pests even though the grapes are field-packed. Absence of pests will be certified by APHIS officers during phytosanitary inspection.

Issue 65:

Blemished fruit should not be a trigger for regulatory action as this is a quality issue and not necessarily a quarantine issue.

AQIS position:

AQIS will not use blemished fruit as a trigger for regulatory action as blemished fruit is generally a quality issue. Blemished fruit only becomes of phytosanitary concern when this has been shown to promote the proliferation of any quarantine microorganism or arthropod pest on grapes.

Issue 66:

Packing should be done into new cartons with mesh holes instead of ventilation holes. Polystyrene packaging or wooden Toyon Kraft Veneer (TKV) packaging is preferred. The method of packaging outlined in the draft IRA appears to be incongruent with field packing and fumigation operational procedures in California.

AQIS position

AQIS was recently informed by APHIS that virtually all grapes in California are packed in the field. AQIS will require table grapes to be packed into perforated transparent, polyvinyl bags placed into new, extruded polystyrene (EPS) boxes (styrofoam) or Toyon Kraft Veneer (TKV) boxes. The wooden slats for the TKV boxes must be of processed wood, veneer or chipboard and must not be more than 3 months old when sourced from USA or not more than 21 days old when sourced from Mexico. APHIS has performed tests on various packagings in relation to gas penetration and evacuation and found them acceptable. Styrofoam was more sorptive than others were but not to the extent that would prevent its use.

AQIS believes that there is no necessity for boxes with mesh holes as the boxes are required to be held under secured conditions after methyl bromide fumigation and sulfur dioxide treatment.

Issue 67:

Few facilities are available at major ports for the unpacking, cleaning and repacking of table grapes to ensure a saleable product after inspection.

AQIS position:

AQIS believes that there are adequate facilities in all major ports and airports in Australia to handle, sample and inspect all imported consignments.

10.4.2 Inspection and sampling

Issue 68:

Can pre-clearance of shipments be considered under Option A and B to reduce the risk of re-export of shipments?

AQIS position:

The protracted length of the export season would make placement of an AQIS officer in California expensive. However, if relevant importers are willing to defray the cost, AQIS will consider pre-clearance of shipments.

Issue 69:

Grape consignments should not be rejected upon arrival even if quarantine pests including Panonychus ulmi *and* Scirtothrips persea *are detected. Treatment in Australia should be allowed.*

AQIS position:

Panonychus ulmi and *Scirtothrips persea* although present in California, have not been reported to occur on table grapes.

Should any live quarantine pests (Table 1) be intercepted in a consignment arriving under Option A (pre-shipment fumigation) the consignment will be re-fumigated, re-exported or destroyed. AQIS will inform APHIS of the suspension of importation of table grape imports pending investigation of the causes of infestation at relevant vineyards or fumigation facilities and implementation of appropriate remedial measures.

AQIS also identified 11 potential pests of grapes that are of quarantine concern that have not been reported on grapes in California as they come under official control programs for “Pest Free Area”

or "Non-Host Status" (Table 2). Should any such pests be intercepted dead or live on arrival in a consignment for which the official control program is "Pest Free Area" or "Non-Host Status", imports will be suspended until AQIS is satisfied that either remedial action has been undertaken or an alternative treatment has been developed and approved. The consignment in which such pests are intercepted live will be re-exported, treated or destroyed.

Issue 70:

Management options should be made less stringent. AQIS should accept a system of visual inspection only and fumigation should only be undertaken if pests were found.

AQIS position:

Visual inspection alone is not sufficient to guarantee an acceptable level of protection against the introduction of the quarantine pests identified. Several pests are difficult to detect by visual inspection.

Issue 71:

The level of inspection in the importation pathway should be significantly upgraded from that originally proposed in the draft IRA.

AQIS position:

AQIS is of the opinion that the mandatory phytosanitary inspection of grape shipments conducted in California prior to the issuance of an international phytosanitary certificate, and on-arrival inspection carried out in Australia together with other mandatory disinfestation treatments for quarantine pests are adequate to provide an appropriate level of protection. The level of inspection required is consistent with the AQIS National Sampling Plan.

Issue 72:

APHIS should provide clarification of their sampling protocol, similar to that provided by AQIS.

AQIS position:

The sampling plan to be used by APHIS is similar to that used by AQIS and is detailed under Item 6 of the Phytosanitary Import Requirements.

Issue 73:

There are no guidelines for operational and sampling procedures for on-arrival inspection after offshore fumigation.

AQIS position:

AQIS has detailed work instructions and guidelines for handling, sampling and inspection of imported commodities by inspection staff. Details are outlined under Items 9 and 10 of the Phytosanitary Import Requirements.

Issue 74:

It is believed that the post-fumigation inspection regime carried out under Option B is excessive. If this inspection rate is to be retained by AQIS, APHIS requests that the results of the inspections be provided periodically and that the data be reviewed to ascertain the need for post-fumigation inspection after the first season of imports.

AQIS position:

AQIS is of the opinion that the post-fumigation inspection regime for Option B is not excessive and is a necessary safeguard to ensure that the fumigation has been properly carried out. The level of post-fumigation inspection will be reviewed by AQIS when the import protocol is reviewed after the first year of trade. AQIS will undertake to provide periodic reports on post-fumigation inspection findings to APHIS during this period.

Issue 75:

The inspection protocol would need a condition for freedom from trash and damaged berries.

AQIS position:

The phytosanitary import conditions specify a requirement for freedom from trash. However, damaged berries are a quality issue and not a phytosanitary issue.

Issue 76:

Suitable culture or molecular testing would be required when the samples are inspected to establish that table grapes are free of fungal spores.

AQIS position

AQIS is of the opinion that there is no necessity for testing table grape fruit for fungal spores because the IRA has identified that no diseases of quarantine concern occur on the fruit.

Issue 77:

Are AQIS inspection staff capable of identifying pests of quarantine concern, and distinguishing those that require fumigation? Do AQIS inspection staff have sufficient training to identify all pests of quarantine concern, including pests that either do not occur on the pathway, or are supposed to be managed by area freedom? What training is proposed to identify asymptomatic occurrences of diseases?

AQIS position:

AQIS inspection staff have considerable experience in sampling and inspecting a wide range of commodities. However, they will receive training on detection and identification of the pests of table grapes that have been determined to be of quarantine concern to Australia. In the event that a quarantine pest is detected, AQIS will take appropriate steps to ensure that the identification of the pest is confirmed by relevant experts. Asymptomatic occurrence of disease is not an issue as no diseases of quarantine concern have been identified to be associated with the fruit pathway.

Issue 78:

Any lot or consignment not complying with specifications eg. trash, live insects etc. present should be destroyed and future exports disallowed.

AQIS position:

The importer of any lot in a consignment not complying with specifications would be offered the option of re-treatment, re-export or destruction. If trash is found, importers would be offered the options of cleaning the grapes under AQIS supervision, re-export or destruction. APHIS would be informed of the non-compliance and depending on the circumstances, the status of future exports would be reviewed.

Issue 79:

On-arrival inspection after pre-shipment fumigation:

- *there are no guidelines regarding the sampling procedures;.*
- *a 95% confidence level of not more than 0.5% infestation equates to a big volume;*
- *how does this sampling procedure equate to confidence using Probit 9?*

AQIS position:

Details of the on-arrival sampling and inspection procedures are found under Items 9 and 10 of the Phytosanitary Import Requirements. The sampling procedures require that inspection for quarantine pests in samples must be achieved with a confidence level of 95% that not more than 0.5% of the units (grape bunches) in the consignment are infested. This equates to an acceptance level of zero units infested by quarantine pests in a 600-unit sample in a consignment. This does not equate to a large sample volume and is consistent with the AQIS National Sampling Plan.

Inspection to the 95% confidence level aims to verify pest absence based on random sampling and is statistically valid. The efficacy of Probit 9 measures (eg. methyl bromide treatment) is based on pest mortality with relatively higher confidence level. The sampling level of 95% confidence of a 0.5% infestation is adequate to achieve Australia's appropriate level of protection for pests of low quarantine risk.

Issue 80:

The inspection unit should be a complete carton not a bunch as insects may dislodge from a bunch. If the unit is a bunch, the bottoms of some cartons should be inspected. Under no circumstances can a unit be reduced to single berries as is being rumoured. The number of units (600) to be inspected should not be compromised.

AQIS position:

AQIS standard inspection procedures include scanning the container for arthropod pests, searching inside cartons (top and bottom), checking that no arthropods are moving away from the cartons as well as more specific sampling techniques for different commodities. The 600 units (bunches) will be randomly selected from every lot in a consignment. A unit is a bunch of grapes and not a carton.

10.4.3 Disinfestation treatments

10.4.3.1 Methyl bromide

Issue 81:

How are ratings of methyl bromide to be evaluated? The loading ratio in methyl bromide fumigation of Australian exports does not exceed 50%.

AQIS position:

The rates of methyl bromide for table grapes have been explicitly specified. The loading ratio depends on the nature of the commodity and diffusivity of the fumigant into the cartons during fumigation. A loading ratio not exceeding 80% is prescribed by APHIS for table grape imports from Chile, and is considered adequate by AQIS.

Issue 82:

A full review of this IRA must be conducted if the status of methyl bromide was to change.

AQIS position:

Under the guidelines of the general requirements for IRA as contained in *AQIS Import Risk Analysis Process Handbook* (AQIS, 1998) and the *ISPM Pub. No 2, Guidelines for Pest Risk Analysis*, (FAO, 1996) there is provision for a review of the IRA if a new treatment system, process, or new information impacts on an earlier decision.

Issue 83:

Separation of grapes is not required prior to pre-fumigation inspection in California.

AQIS position:

AQIS agrees. Segregation of export grape consignments after phytosanitary inspection and issuance of the phytosanitary certification is critical to ensure phytosanitary security and not before. Changes have been made in the final IRA document to reflect this.

Issue 84:

Methyl bromide has been used against the requirements stipulated under the Montreal Protocol. This is a breach of the Montreal Protocol in that its use is being encouraged rather than reduced. The agreement specifies a complete phase out by 2005 and the use in USA is being reduced and banned as from 1/1/2001. Why is AQIS recommending the use of methyl bromide while most responsible nations are rapidly phasing out Methyl bromide?

AQIS position:

Australia is a signatory to the agreement reached at the Montreal Protocol in September 1997 that there be a gradual reduction and phase out of methyl bromide early in this millennium. At present there is no viable alternative to using methyl bromide for quarantine purposes and the use of this

fumigant for quarantine purposes is exempt under the Montreal Protocol. Methyl bromide is presently used by AQIS for treatment of external feeding pests.

AQIS is looking at various alternative treatments to replace methyl bromide for phytosanitary purposes and will discontinue use of this fumigant as soon as a viable alternative is identified. AQIS considers that methyl bromide is an interim treatment pending the provision of efficacy data for controlled atmosphere (CA) phytosanitary treatment of Californian table grapes.

Issue 85:

On-arrival fumigation is preferable to pre-shipment fumigation as it will minimise loss of product quality associated with fumigation by more effective elimination of field heat because there is more time for the product to cool immediately after harvest. Also, on-arrival fumigation should be allowed throughout the year as low risks are involved and adequate AQIS approved fumigation facilities are located in industrial areas.

AQIS position:

Refer to Issue 61.

Issue 86:

Can AQIS ensure the efficacy of methyl bromide for the quarantine pests appearing in the IRA and other quarantine pests? Is AQIS satisfied that all stages (eggs, immatures, adults) of these arthropods will be amenable to control using methyl bromide?

AQIS position:

Efficacy data for methyl bromide against the specific pests identified in the IRA is not available. However, AQIS and quarantine agencies from other countries have been using this fumigant on similar pests and similar commodities for a long enough period to build up a significant amount of historical data which supports its efficacy. Hence, AQIS is of the opinion that methyl bromide fumigation in conjunction with other phytosanitary requirements including a sulfur dioxide treatment for black widow spider, would provide an appropriate level of protection against the quarantine pests identified. Post fumigation inspection also provides opportunity to audit the efficacy of the treatment. If not effective, imports would be suspended pending further evaluation.

Issue 87:

Methyl bromide fumigation will not affect pathogens such as Monilinia fructicola *(bunch rot) and* Uncinula necator *(powdery mildew), which are located on stems and stalks. These organisms could be introduced via wind borne spores.*

AQIS position:

M. fructicola has not been reported on grapes in California. *U. necator* is present both in Australia and in California. Both pathogens are not of quarantine concern and do not require any phytosanitary treatment.

10.4.3.2 Sulfur dioxide

Issue 88:

New Zealand requires that imports from table grapes from both USA and Australia undergo an approved fumigation protocol consisting of 1% sulfur dioxide and 6% carbon dioxide for black widow spiders and red-backed spiders. AQIS should consider the equivalence of NZ MAF requirement of using sulfur dioxide and carbon dioxide to manage the threat of these pests.

AQIS position:

AQIS has recommended that sulfur dioxide treatment regime be required to reduce the risk of introduction of the black widow spider.

Issue 89:

Sulfur dioxide is used as a preservative in the form of slow release pads or by cylinder applications in the shipping containers during the storage and transport of table grapes. Data is required on its effectiveness in controlling breakdown of fruit.

AQIS position:

AQIS has not suggested the use of sulfur dioxide as a preservative to prevent fruit breakdown and rot, as these are quality and not phytosanitary issues. AQIS has proposed the use of sulfur dioxide treatment ie. forced air fumigation with a mixture of sulfur dioxide (1%) and carbon dioxide (6%) for 30 minutes, to reduce the risk of introduction of the black widow spider.

Issue 90:

Is there a reaction between methyl bromide residues and sulfur dioxide during transit of table grapes?

AQIS position:

There is sufficient lag time between methyl bromide fumigation and sulfur dioxide treatment to allow dissipation of methyl bromide ie. during aeration, to preclude any chance of a chemical interaction between methyl bromide and sulfur dioxide.

10.4.3.3 Chemical usage and residue issues

Issue 91:

What are the maximum residues limits (MRLs) for methyl bromide and sulfur dioxide?

AQIS position:

According to the National Registration Authority, the MRL for methyl bromide for fruit is set at 0.5 mg/kg (0.5 ppm). There is no current MRL for sulfur dioxide for grapes although for sulfur, a MRL is not necessary. The US Federal Government's MRL for sulfur dioxide on grapes is 10 ppm.

Issue 92:

Will consignments of Californian table grapes be tested for maximum residue limits (MRLs) on arrival, and who will pay for the testing?

AQIS position:

In common with all other imported foods, table grapes will be subject to the Imported Food Inspection Program operated by AQIS. Subject to risk categorisation by the Australia New Zealand Food Authority (ANZFA), random samples of imported fruit may be taken for residue analysis. Appropriate action will be taken if relevant maximum residue limits are exceeded.

Issue 93:

Fumigated fruit placed in cold storage would have residual methyl bromide on the fruit surface that would pose an occupational health and safety (OH&S) threat to AQIS staff and other workers and for consumers of table grapes. The IRA should specify that after offshore fumigation cartons should be ventilated before cold storage to ensure methyl bromide residues dissipate. Will cartons be stamped "fumigated fruit" with the date of the methyl bromide treatment?

AQIS position:

Following fumigation of foodstuffs, the greater part of the methyl bromide is desorbed and diffuses away quickly soon after treatment during aeration. It is an established practice that all products that have been fumigated are properly aerated or placed in a well-ventilated area to allow residues of the fumigant to dissipate. AQIS has adequate OH &S guidelines and measures in place for inspection staff to handle and carry out inspection of fumigated commodities.

There is no necessity to stamp "fumigated fruit" on every carton as the phytosanitary certificate will state that the whole consignment has been fumigated.

Issue 94:

AQIS should seek evidence that carton liners used are permeable to methyl bromide gas.

AQIS position:

The packaging materials and carton liners used by table grape growers in California have been confirmed by APHIS to be permeable to the fumigant. See also Issue 66 and Item 3 of the Import Phytosanitary Requirements.

Issue 95:

How much confidence will Australian consumers have in a product that is compulsorily treated with a chemical known to be ozone depleting as well as a potential health issue?

AQIS position:

Over the years, many agricultural and horticultural food commodities imported from overseas countries have been compulsorily fumigated with methyl bromide. The potential health issue posed by methyl bromide has not been raised by Australian consumers and under normal circumstances gaseous methyl bromide does not pose a residual problem. Residues on imported products are monitored under a separate program (see Issue 92).

10.4.4 Documentation

Issue 96:

The proposed treatment protocols, packaging details and evidence of efficacy of methyl bromide fumigation should be sent to stakeholders prior to finalising the IRA.

AQIS position:

AQIS policy is not to release information in advance of the final IRA. All stakeholders are treated equally and have 30 days to appeal on procedural grounds after the final IRA has been released.

Issue 97:

Any action arising from documentation needs to be discussed with the APHIS Attaché in Canberra.

AQIS position:

It is normal practice that AQIS will notify APHIS in USA and/or the APHIS Attaché in Canberra of any documentation errors before any action are taken.

10.4.5 Product security

Issue 98:

There are no guidelines on security of the product from time of detection to identification to decision outcome.

AQIS position:

As is currently practised, AQIS has adequate provisions to ensure security of product from the time of pest detection to the time of a decision outcome.

Issue 99:

What protection does Australia have to prevent Chilean grapes from being re-consigned to Australia through California?

AQIS position:

AQIS requires APHIS to issue an international phytosanitary certificate (IPC) for each consignment of grapes. Each IPC must contain a declaration stating that the grapes in the consignment have been produced in a specified area in California in accordance with the conditions governing the entry of fresh table grapes from California to Australia. AQIS believes that the requirement for methyl bromide fumigation of Chilean table grapes prior to export to California and requirement for methyl bromide fumigation of grapes in California to Australia would deter any re-consignments since over-treatment with methyl bromide and additional handling would adversely affect the quality and shelf life of the grapes.

Issue 100:

Will AQIS nominate a single port of entry for Californian table grapes?

AQIS position:

No, AQIS has no justification to restrict the importation of Californian table grapes through a single port.

10.4.6 Quality assurance

Issue 101:

There is no mention of how bunch rot will be prevented during transit. There is no mention of quality standards (HACCP) required for fruit prior to export and treatment with methyl bromide.

AQIS position:

Bunch rot is a post harvest fruit quality issue and not a phytosanitary issue. AQIS believes that the adoption of quality assurance and Hazard Analysis and Critical Control Point (HACCP) systems may be a means of ensuring phytosanitary objectives are met but such systems are not obligatory to effect the import conditions determined by AQIS.

Issue 102:

Microclimate in cluster of berries is ideal for fungal and insect development.

AQIS position:

If fungal or insect development occurs within the grape cluster in the field, the grape bunches would be rejected during packing or during inspection. Post-harvest fumigation treatments and cold temperature storage during transit will prevent the proliferation of fungi and insects in grape clusters in cartons.

10.4.7 Non-compliance action

Issue 103:

What penalties are in place against breaches of the Specific Commodity Understanding (SCU)?

AQIS position:

A detailed protocol will be developed for the importation of table grapes from California instead of an SCU. Penalties are specified in the Quarantine Act and actions are detailed in Section 9 Phytosanitary Import Requirements.

Issue 104:

Can AQIS guarantee that consignments of grapes from California will not be rejected on arrival under the proposed protocol?

AQIS position:

AQIS cannot guarantee or provide any assurance that consignments from California will not be rejected on arrival under the proposed protocol. The detection of any live quarantine pest (Table 1) and/or dead or live "Area Freedom Pest" or "Non-Host Status" pests (Table 2) would result in the consignment being rejected. Appropriate management options have been developed for such non-compliant breaches.

Issue 105:

Will AQIS be notified by APHIS of detection of pests of quarantine concern to Australia during pre-export inspection and changes in area freedom status? Will the Australian industry be notified of this?

AQIS position:

AQIS will be notified of such breaches by APHIS. AQIS will subsequently inform relevant local stakeholders.

11 LIST OF RESPONDENTS

1. Agriculture Victoria, Institute for Horticulture Development, Knoxfield.
2. Agriculture Western Australia.
3. Antico International Pty Ltd.
4. Australian Avocado Growers Federation Inc.
5. Australian Dried Fruits Association Inc.
6. Australian Wine Research Institute.
7. BGP International Pty Ltd.
8. California Table Grape Commission, USA.
9. Chiquita Brands South Pacific Ltd.
10. Coles Australia.
11. Cottrell Farms Pty Ltd.
12. Department of Primary Industries, Water and Environment, Tasmania.
13. Far North Queensland Grape Industry Consultative Committee.
14. Grape Growers Association of Western Australia.
15. Growfresh Growers Pty. Ltd.
16. Mareeba District Fruit & Vegetable Growers Association.
17. Mundubbera Fruit Growers Association.
18. Natural Resources and Environment, Victoria.
19. New South Wales Agriculture.
20. Paramount Export Company, USA.
21. Phylloxera and Grape Industry Board of South Australia.
22. Primary Industry and Resources, South Australia.
23. Produce Marketing Australia.
24. Queensland Department of Primary Industries.
25. Queensland Fruit and Vegetable Growers, A. Meyer, Citrus Sectional Group Committee, Brisbane.
26. Queensland Fruit and Vegetable Growers, B. McDonagh, Granite Belt Delegate, Grape Sub-Committee.
27. Queensland Fruit and Vegetable Growers, G. Bruigom, Chairman, Grape Sub-Committee Brisbane.
28. Queensland Fruit and Vegetable Growers, G. Bruigom, Delegate from Rockhampton.

29. Queensland Fruit and Vegetable Growers, P. Zeibarth, Chairman, Brisbane.
30. South Pacific Trade Commission.
31. South West Table Grape Growers Association.
32. Strawberries Australia, Birkdale, Queensland.
33. University of California, Cooperative Extension, Division of Agriculture and Natural Resources.
34. United States Department of Agriculture, Animal and Plant Health Inspection Service.
35. Victorian and Murray Valley Wine Grape Growers Council Inc.
36. Wine Industry Association of Western Australia.
37. Wine Grape Growers Council of Australia Inc., South Australia.
38. Woolworths Supermarkets National Produce Office.

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APPENDIX 1

Grapes are produced commercially in all States and Territories of Australia. The Northern Territory has a small but expanding table grape industry, and a very small commercial winery (Chateau Hornsby) in Alice Springs with 3 ha of wine grapes. Other states have more extended grape industries. Production statistics for the three sections of Australian grape industry are presented below.

Total area of wine, dried and table grapes: 98,000 ha

Production volume :

Table grapes	66,000 tonnes (1998)
Dried grape	175,000 tonnes (1998)
Wine grape	975, 000 tonnes (1999)

People employed in grape-growing areas :

Total employment	+ 7,400

* Figures provided by the Australian National Vine Health Steering Committee (NVHSC)

APPENDIX 2

Weeds associated with vineyards in California. Weeds, which are of quarantine concern to Australia, are in bold.

Weed Species		Common Name	Present in Australia	Noxious status in Australia[6]	Present in California	Present in Californian vineyards
1	*Abutilon theophrasi*	Velvet leaf	Y[1]	Nr	Y	Nr
2	*Acacia* spp.	Wattles	Y	Y (7 spp.)	Y (14 spp)[3,7]	Nr
3	*Acroptilon repens*	Creeping knapweed	Y	Y	Y[3]	Nr
4	*Aegilops* spp.	Goatgrass	Y	Y	Y (3 spp.)[3,7]	Nr
5	*Allium vineale*	Crow garlic	Y	Y	Y[3]	Nr
6	*Alternanthera philoxeroides*	Alligator weed	Y	Y	Y[3]	Nr
7	*Alternanthera pungens*	Khaki weed	Y	Y	Y[3]	Nr
8	*Amaranthus fimbriatus*	Fringed amaranth	Nr	Nr	Y[2,7]	Nr
9	*Amaranthus palmeri*	Palmer amaranth, careless weed	Nr	Nr	Y[2,7]	Nr
10	*Ambrosia* spp.	Ragweed	Y	Y	Y (13 spp)[3,7]	Nr
11	***Amsinckia intermedia***	Coast fiddleneck	Nr	Y	Y[3]	Y[3]
12	*Amsinckia* spp.	Burrweed	Y	Y	Y (17 spp)[3,7]	Nr
13	*Aristida adscensionis*	Six weeks threeawn	Nr	Nr	Y[2,7]	Nr
14	*Bassia scoparia**	Kochia	Y	Y	Y[2]	Nr
15	*Berberis* spp.	Barberry	Nr	Nr	Y (11 spp)[3,7]	Nr
16	*Bidens odorata**		Nr	Nr	Y[2]	Nr
17	*Boerhavia erecta* var. *intermedia (B. intermedia)*	Erect spiderling	Nr	Nr	Y[2,7]	Nr
18	*Bouteloua aristidoides*	6 weeks needle grama	Nr	Nr	Y[2,7]	Nr
19	*Brassica* spp.	Mustard (winter weed)	Y	Y (4 non-veg. spp.)	Y[5]	Y[5]

Weed Species		Common Name	Present in Australia	Noxious status in Australia[6]	Present in California	Present in Californian vineyards
20	*Bromus commutatus*	Hairy chess	Nr (prohibited entry under federal quarantine Act 1908)	Nr	Y[3]	Nr
21	*Cardaria draba*	Hoary cress, whiteweed	Y	Y	Y[3]	Nr
22	*Carduus nutans*	Nodding or Musk thistle	Y	Y	Y[3]	Nr
23	*Carthamus lanatus*	Saffron thistle	Y	Y	Y[3]	Nr
24	*Carthamus leucocaulos*	Glaucous star thistle	Y	Y	Y[3]	Nr
25	***Cenchrus* spp.**	Sandbur	Y	Y	Y (4 spp) [3,7]	Y[3]
26	*Centaurea solstitialis*	St. Barnaby's thistle	Y	Y	Y[3]	Nr
27	*Chamaesyce micromera*	Sonoran sandmat	Nr	Nr	Y[2, 7]	Nr
28	*Chamomilla suaveolens*	Pineapple weed	Nr	Nr	Y[1,7]	Nr
29	***Chloris virgata***	Feather finger grass (summer weed)	Nr	Nr	Y[5]	Y[5]
30	*Chondrilla juncea*	Skeleton weed	Y	Y	Y[3]	Nr
31	*Cirsium arvense*	Perennial, Californian, creeping thistle	Y	Y	Y[3]	Nr
32	*Claytonia perfoliata*	Miner's lettuce	Y	Y	Y [2,7]	Nr
33	*Conium* spp.	Hemlocks	Y	Y	Y[3]	Nr
34	*Convolvulus arvensis*	Field bindweed	Y	Y	Y[3]	Y[3]
35	*Cornus sanguinea**	Bloodwood dogwood, dogwood cornel	Nr	Nr	Y[2]	Nr
36	*Cortaderia jubata*	Pink pampus grass	Y	Y	Y[3]	Nr
37	*Cuscuta* spp.	Dodder	Y	Y	Y (19 spp) [3,4,7]	Nr
38	*Datura* spp.	Thornapple	Y	Y	Y (4 spp) [3,7]	Nr
39	***Digitaria sanguinalis***	Crabgrass (summer weed)	Nr	Nr	Y[5]	Y[5]
40	*Digitaria ischaemum*	Smooth finger grass, red millet	Y[1]	Nr	Y [2,7]	Nr

Weed Species		Common Name	Present in Australia	Noxious status in Australia[6]	Present in California	Present in Californian vineyards
41	*Echium plantagineum*	Paterson's curse, salvation jane	Y	Y	Y[3]	Nr
42	*Eichhornia crassipes*	Water hyacinth	Y	Y	Y[3]	Nr
43	*Elodea* spp.	Elodea	Y	Y	Y[3]	Nr
44	*Emex australis*	Three-cornered jack, doublegee	Y	Y	Y[3,4]	Nr
45	***Eremocarpus setigerus***	Turkey mullein (summer weed)	Y	Y	Y[5]	Y[5]
46	***Eriochloa gracilis***	Cupgrass, southwestern (summer weed)	Nr	Nr	Y[5]	Y[5]
47	***Erodium cicutarium***	Filatree, redstem (winter weed)	Nr	Nr	Y[5]	Y[5]
48	*Euphorbia albomarginata**	White margin spurge	Nr	Nr	Y[2]	Nr
49	*Euphorbia lathyris*	Caper spurge	Y	Y	Y[3]	Nr
50	***Euphorbia maculata***	Spurge (summer weed)	Nr	Nr	Y[5]	Y[5]
51	*Galium aparine*	Cleavers	Y	Y	Y[2,7]	Nr
52	*Glechoma hederacea*	Ground ivy	Y[1]	Nr	Y[2,7]	Nr
53	***Gnaphalium* spp.**	Cudweed (winter weed)	Nr	Nr	Y (15 spp.)[5,7]	Y[5]
54	*Halogeton glomeratus*	Halogeton	Nr	Nr	Y[3]	Nr
55	*Helenium* spp.	Sneeze weed	Y	Y	Y (7 spp)[3,7]	Nr
56	*Helianthus ciliaris*	Texas blueweed	Y[1]	Y	Y[3]	Nr
57	*Heliotropium amplexicaule*	Blue heliotrope	Y	Y	Y[3]	Nr
58	*Hydrilla verticillata*	Water thyme, hydrilla	Nr	Nr	Y[3,4]	Nr
59	*Hypercium perforatum*	St. John's wort	Y	Y	Y[3]	Nr
60	*Ibicella lutea*	Yellow-flower devil's claw	Y	Y	Y[3]	Nr
61	*Iva axillaris*	Poverty weed	Y	Y	Y[3]	Nr

Weed Species		Common Name	Present in Australia	Noxious status in Australia[6]	Present in California	Present in Californian vineyards
62	*Lactuca pulchella*	Blue lettuce	Nr	Nr	Y[3]	Nr
63	***Lactuca serriola***	Prickly lettuce (winter weed)	Nr	Nr	Y[5]	Y[5]
64	*Lamium amplexicaule*	Henbit (winter weed)	Y[1]	Y	Y[5]	Y[5]
65	*Lantana camara*	Common lantana	Y	Y	Y[3]	Nr
66	*Lepidium virginicum*	Virginia pepperweed	Y[1]	Nr	Y [2,7]	Nr
67	*Linaria dalmatica*	Dalmatian toadflax	Y	Y	Y[3]	Nr
68	*Lycium* spp.	Boxthron	Y	Y	Y (13 spp)[7]	Nr
69	*Mahonia* spp.		Nr	Nr	Y[3]	Nr
70	***Malva parviflora***	Cheeseweed, Malva (winter weed)	Nr	Nr	Y[5]	Y[5]
71	***Montia perfoliata***	Minerslettuce (winter weed)	Nr	Nr	Y[5]	Y[5]
72	*Myriophyllum aquaticum*	Brazilian water milfoil	Y	Y	Y[3]	Nr
73	*Myriophyllum spicatum*	Eurasian water milfoil	Y	Y	Y[3]	Nr
74	*Nicotiana trigonophylla (Nicotiana obtusifolia)*	Desert tobacco	Nr	Nr	Y [2,7]	Nr
75	*Opuntia* spp.		Y	Y	Y (30 spp.) [3,4, 7]	Nr
76	*Orobanche* spp.	Broomrape	Y	Y	Y (22 spp.) [3,4, 7]	Nr
77	*Palafoxia arida*	Desert palafox	Nr	Nr	Y[2,7]	Nr
78	*Parthenium hysterophorus**	Parthenium	Y	Y	Y[2]	Nr
79	*Pectis papposa*	Cinchweed, fetid marigold	Nr	Nr	Y[2,7]	Nr
80	*Phragmites* spp.		Y	Y	Y (1 sp.)[7]	Nr
81	*Physalis acutifolia*	Southern twinpod, sharpleaf groundcherry	Nr	Nr	Y[2,7]	Nr
82	*Physalis* spp.	Groundcherry (summer weed)	Y	Y	Y (13 spp)[5,7]	Y[5]
83	*Pistia stratiotes*	Water lettuce	Y	Y	Y[3]	Nr
84	*Proboscidea louisianica*	Purple flower devil's claw	Y	Y	Y[3]	Nr
85	*Prosopis* spp.	Mesquite	Y	Y	Y (4 spp) [3,4,7]	Nr

Weed Species		Common Name	Present in Australia	Noxious status in Australia[6]	Present in California	Present in Californian vineyards
86	*Rorippa austriaca*	Austrian field cress	Y	Y	Y[3]	Nr
87	*Sagittaria montevidensis*	Arrowhead	Y	Y	Y[3]	Nr
88	***Salsola iberica***	Russian thistle (summer weed)	Nr	Nr	Y[5]	Y[5]
89	*Scolymus hispanicus*	Golden thistle, Spanish salsify	Y	Y	Y[2,7]	Nr
90	*Senecio jacobaea*	Ragwort	Y	Y	Y[3]	Nr
91	*Setaria faberi*	Giant foxtail	Y	Y	Y[3]	Nr
92	*Simsia amplexicaulis**		Nr	Nr	Y[2]	Nr
93	***Sisymbrium irio***	London rocket (winter weed)	Nr	Nr	Y[5]	Y[5]
94	*Solanum carolinense*	Carolina horsenettle	Y	Y	Y[3]	Nr
95	***Solanum elaeagnifolium***	Silverleaf nightshade, white horsenettle	Y	Y	Y[3]	Y[3]
96	*Solanum sarrachoides*	Hairy night shade	Nr	Nr	Y[2,7]	Nr
97	*Sonchus arvensis*	Perennial sowthistle	Nr	Nr	Y[3]	Nr
98	***Sorghum halepense***	Johnson grass	Y	Y	Y[2,3]	Y[3]
99	*Sphaeralcea fulva**		Nr	Nr	Y[2]	Nr
100	*Stipa brachychaeta*	Espartillo	Y	Y	Y[3]	Nr
101	*Taeniatherum caput-medusae*	Medusa head	Nr	Nr	Y[3]	Nr
102	*Toxicodendron diversilobum*	Pacific poison-oak	Nr	Nr	Y[2,7]	Nr
103	*Tribulus terrestris*	Puncture vine, caltrop	Y	Y	Y[3]	Y[3]
104	*Verbena bracteata*	Bigbract verbeana, prostrate vervain	Nr	Nr	Y[2,7]	Nr
105	***Xanthium strumarium* var. *canadense***	Cocklebur	Y	Y	Y [3,7]	Y[3]
106	*Xanthium* spinosum	Spiny burr	Y	Y	Y [3,7]	Nr

Nr = Not recorded

Y = Present

* = These records were provided by Agriculture Western Australia (Ref. no: 2) as present in California, but were not confirmed by Calflora database (Ref. no: 7).

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APPENDIX 3

***Euschistus (Euschistus) conspersus* Uhler, 1897 [Heteroptera: Pentatomidae]**

Synonyms or changes in combination or taxonomy: *Euchistus conspersus* (mispelling)

Common name(s): Consperse stink bug

Hosts: *Lycopersicon esculentum* (tomatoes); *Malus pumila* (apple); *Pyrus* spp**. (**pear); *Purshia tridentata* (bitterbrush); *Ribes* spp. (currants); *Verbascum* spp. (mulleins); *Vitis vinifera* (grapes); *Prunus* spp. – cherry, nectarine, peach, plum*;*vegetables.

Plant part affected: Fruit.

Distribution: Canada (British Columbia), United States of America (California, Washington and the north coast,)

Biology:

Life history: Consperse stink bug occurs in both dryland habitats and riparian areas and is a phytophagous bug. They overwinter in brush piles, under leaves on the orchard floor, in the crown of plants, in clumps of grass, on rock outcroppings and prop stacks surrounding orchards and in native vegetation from which they emerge in the spring. The species feeds on mulleins and bitterbrush throughout the summer. The lower developmental temperature threshold was determined as 12^{o}C and adults migrate to orchards in early June where they deposit eggs on broad-leaved, low-growing hosts or on the foliage of fruit trees. Females lay several clutches consisting of 10 to 12 barrel shaped eggs from May to early July. Adults from this generation also feed on the developing fruit. The first generation of stinkbugs occurs during cool spring conditions and warmer conditions may result in a second generation during late August or early September. These second generation adults can cause severe damage to unharvested fruit and feed until the onset of cool weather when they migrate back to protected sites or overwintering hosts.

The species is univoltine in Washington and eggs are attacked by several natural enemies notably tachinid (Diptera) parasitoids. A survey of parasites in 1996 and 1997 determined that 60% of stink bug eggs in native habitats were parasitised. This coincides with peak periods of oviposition so these flies may have potential in controlling stink bugs in orchards practicing integrated pest management programs. Males of this species produce methyl esters (methyl (2E, 4Z) decadienoate) as the major component of their pheromone which is also attractive to the tachinid parasitoids.

The insects insert their needlelike mouth-parts into fruit and feed on plant juices. Damaged areas fail to grow, appearing dimpled. Mature fruit will have depressed lines and multiple corky areas resulting in a gnarled and mottled appearance.

Entry potential: Low, as the adults and immatures will fall off during harvesting and packing of fruits.

Establishment potential: Low, as a fertilised female or both sexes have to be present.

Spread potential: High, because adults are highly mobile and migrate to hosts.

Economic importance: High, chronic problem in the fruit growing regions of the North Coast of USA because of late entry to orchards by pest to feed directly on fruit early to midseason piercing skin to suck out juice. This causes dimples or irregularly depressed areas to develop on the mature fruit and the flesh beneath becomes corky and white. Significant losses of pome and stone fruit occur where populations of *E. conspersus* are high.

Quarantine status: Quarantine pest as not present in Australia and is of high economic importance.

Estimated risk: Low, as associated with the fruit but adults and immatures would move off fruit bunches rapidly on being disturbed during picking and packing.

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***Homalodisca coagulata* (Say 1832) (Hemiptera: Cicadellidae)**

Synonyms/changes in combination: *Homalodisca triquetra; Phera vitripennis*

Common name(s): chicharrita del henequen (Mexico); glassy-winged sharpshooter; GWSS.

Hosts: *Betula* sp. (birch); *Buxus* sp. (box wood*); Citrus* spp.; *Eucalyptus* sp.; *Euonymus japonicus; Fagus* spp. (oak); *Fraxinus* sp. (ash); *Hibiscus spp.; Kalmia* spp. (laurel)*; Lagerstroemia indica*

(crape myrtle)*; Macdamia integrifolia (*macadamia nut*); Nicotiana* spp. (tree tobacco*); Persea americana* (*avocado); Philodendron* spp.; *Plantanus* spp. (sycamore); *Prunus armeniaca* (apricot); *Prunus persica* (peach); *Prunus* spp.; *Quercus* sp.; *Rhus* spp. (sumac); *Ulmus parvifolia, Ulmus pumila* (Chinese elm).

Plant part affected: Stems, leaves, shoots, fruits.

Distribution: Mexico; USA (southern and central California; southern states).

Biology

Life history: GWSS has an extensive host range, attacking at least 73 species of plants in 35 different families. In Ventura County, California it has been observed breeding on native plants. It also attacks numerous ornamental hosts and is a serious pest of fruit and ornamentals. Two generations a year are produced in southern California. After a peak in adult activity during the winter months, oviposition begins in late winter and early spring. Adults live about two months. They lay their small, sausage-shaped eggs side-by-side in masses averaging 10 to 11 eggs each. Eggs are normally laid just under the lower leaf epidermis of host plants in February/March in USA, peaking in May. Eggs are deposited in fruit if populations are high. Nymphs hatch in about two weeks and proceed to feed into leaf petioles or small stems. A second peak in adult activity occurs in the summer during the months of July and August. Peak oviposition from these first generation adults occurs in August.

H. coagulata is endemic to eastern USA and was first noted in California in 1989. Since that time it has spread rapidly through the grape growing regions of the state. *H. coagulata* is larger, flies further and occurs in much higher numbers in commercial agricultural plantings than other Californian sharpshooters. It is becoming a serious pest in California's table grape growing areas as it is a vector of *Xylella fastidiosa*, the organism for Pierce's disease (PD), phoney peach disease, almond leaf scorch, variegated chlorosis of citrus and oleander leaf scorch.

The pest also causes spoilage of fruit from the residue of its excrement and direct feeding damage. Since *H. coagulata* is a large species, it moves rapidly away when disturbed and would not hide within the fruit clusters. Research on possible biological control agents is in progress in California. A mymarid (Hymenopteran) has been identified as an egg parasite but so far no adequate control agents have been detected.

Entry potential: Medium, as individuals are likely to disperse on disturbance when fruit is picked but may secrete themselves within the fruit bunches.

Establishment potential: Medium, as the pest is not parthenogenetic and requires a fertilised female or both sexes to be present.

Spread potential: High, as it is highly mobile and has demonstrated a rapid spread rate in California.

Economic importance: High, as it is a vector of Pierce's disease.

Quarantine status: Quarantine pest, as it is not present in Australia and is of economic importance as a vector of Pierce's disease.

Estimated risk: Medium, as it may occur as a contaminant in bunches.

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***Planococcus ficus* (Signoret, 1875) (Hemiptera: Pseudococcidae)**

Synonyms/changes in combination: *Coccus vitis* Linnaeus 1869 (misidentified); *Dactylopius ficus* Signoret, 1875; *Dactylopius subterraneus* Hempel, 1901; *Planococcus vitis* (Nedzilski, 1869) auct. (not a synonym and an unavailable name); *Pseudococcus vitis* (Niedielski, 1869);

Common name(s): vine mealybug,

Hosts: *Allotropa mecrida; Anagyrus pseudococci; Chartocerus subaeneus; Chrysopa carnea; Clausena josefifi; Coccidoxenoides peregrinus; Dichrostachys glomerata; Ficus benjamini; Ficus carica* (fig)*; Leptomastidea abnormis; Leptomastix dactylopii; Leptomastix flavus; Leptomatidea abnormis; Leucopis alticeps; Malus pumila (apple); Mangifera indica* (mango)*; Pachyneuron concolor; Pauridia peregrina; Persea americana* (avocado)*; Phoenix dactylifera (*dates)*; Prochiloneurus bolivari; Prochiloneurus pulchellus; Prosopis farcata; Punica granatum* (pomegranate)*; Salix* spp.*; Styrax officinalis; Tephrosia purpurea; Vitis vinifera (*grapes)*; Zizyphus spina-christi.*

Plant part affected: All parts of the plant of grapevines including the fruit.

Distribution: Afghanistan; Argentina; Azerbaijan; Brazil; Canary Islands; Crete; Cyprus; Egypt; France; India; Iran; Iraq; Israel; Italy; Lebanon; Libya; Pakistan; Portugal; Sardinia; Saudi Arabia; Sicily; Spain; South Africa; Tucuman; Tunisia; USA.

Biology

Life history: Adults over-winter in the adult stage under the bark in the lateral canes. Females secrete a profusion of fine wax threads during egg laying. Each female lays up to 500 eggs which take a week to hatch in summer temperatures, longer in winter. The youngest instars (crawlers) are the dispersive stage. It feeds by inserting mouthparts into plant tissues. Crawlers emerge from under the bark during spring and early summer and move to the shoots where they infest young buds. They then move into the leaves from mid-summer to infest the fruit bunch. After the crop is picked they remain on the leaves but move to under the bark as winter approaches. The female emerges after the 3rd instar. The 2nd instar male spins a cocoon and emerges as a winged adult. The life-cycle last 3-4 weeks in summer but is longer in winter.

There are generally three generations a year which, in the Northern Hemisphere, start at the end of May, the second half of July and the end of August/beginning of September respectively. The species is more likely to be found on the leaves during the growing season than the grapevine mealybug (*Pseudococcus maritimus*) and is more sensitive to low temperatures. This species is protected by ants which feed on the honeydew. *P. ficus* causes damage by producing honeydew which drops onto the fruit bunches and serves as a substrate for sooty mould. In addition the mealybug itself infests fruit bunches to feed.

Planococcus ficus is morphologically very similar to *Planococcus citri* and can only be reliably distinguished serologically. Hybrids between the two species have been demonstrated experimentally. Only *P. citri* is recorded in Australia. Both species are implicated as vectors of grapevine leafroll – associated virus 3 and corky bark. *P. ficus* also transmits the souring yeast *Hanseniaspora vinae*.

A serious infestation of this species on grapes in California was first noted in 1994 with infestation in the main vine growing areas in 1998 (Warner, 1999).

Entry potential: High, as it occurs in the fruit bunches.

Establishment potential: High, as hosts are abundant and common in southern Australia.

Spread potential: High, as it can be dispersed by wind and spread in soil on farm machinery.

Economic importance: High, as it causes fruit spoilage.

Quarantine status: Quarantine pest as it is not present in Australia.

Estimated risk: High, as it occurs within the fruit bunches.

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