Table grapes from Chile

Draft Import Risk Analysis Report

Part A

June 2003

AGRICULTURE, FISHERIES AND FORESTRY - AUSTRALIA

Foreword

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GLOSSARY OF TERMS AND ABBREVIATIONS.

AFFA	Commonwealth Department of Agriculture, Fisheries and Forestry
ALOP	appropriate level of protection
AQIS	Australian Quarantine and Inspection Service
Area	an officially defined country, part of a country or all or parts of several countries
Biosecurity Australia	an operating group within the Commonwealth Department of Agriculture, Fisheries and Forestry
Control (of a pest)	suppression, containment or eradication of a pest population
Endangered area	an area where ecological factors favour the establishment of a pest whose presence in the area will result in economically important loss
Entry (of a pest)	movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled
Entry potential	likelihood of the entry of a pest
Establishment	the perpetuation, for the foreseeable future, of a pest within an area after entry
Establishment potential	likelihood of the establishment of a pest
FAO	Food and Agriculture Organization of the United Nations
Fresh	not dried, deep-frozen or otherwise conserved
ICON	AQIS Import Conditions database
Introduction	entry of a pest resulting in its establishment
Introduction potential	likelihood of the introduction of a pest
IPPC	International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended
IRA	import risk analysis
ISPM	International Standard for Phytosanitary Measures
National Plant Protection Organisation (NPPO)	official service established by a government to discharge the functions specified by the IPPC
Non-quarantine pest	pest that is not a quarantine pest for an area
Official	established, authorised or performed by a National Plant Protection Organisation
Official control (of a regulated pest)	the active enforcement of mandatory phytosanitary regulations and the application of mandatory

	phytosanitary procedures with the objective of eradication or containment of quarantine pests or for the management of regulated non-quarantine pests
Pathway	any means that allows the entry or spread of a pest
PBPM	Plant Biosecurity Policy Memorandum
Pest	any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products
Pest categorisation	the process for determining whether a pest has or has not the characteristics of a quarantine pest or those of a regulated non-quarantine pest
Pest free area	an area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained
Pest risk analysis	the process of evaluating biological or other scientific evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it
Phytosanitary measure	any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests
PRA	pest risk analysis
PRA area	area in relation to which a pest risk analysis is conducted
Quarantine pest	a pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled
Regulated non-quarantine pest	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 with the territory of the importing contracting party.
SAG	Servicio Agricola y Ganadero, the NPPO for Chile
SO_2/CO_2	Sulfur dioxide/carbon dioxide
Spread	expansion of the geographical distribution of a pest within an area
Spread potential	likelihood of the spread of a pest
SPS	Sanitary and Phytosanitary
SPS Agreement	WTO Agreement on the Application of Sanitary and Phytosanitary Measures
Stakeholders	Government agencies, individuals, community or industry groups or organisations, whether in Australia or overseas, including the proponent/applicant for a specific proposal
WTO	World Trade Organization

EXECUTIVE SUMMARY

This *Draft Import Risk Analysis (IRA) Report* contains the following:

- information on the background to this IRA, Australia's framework for quarantine policy and import risk analysis, the international framework for trade in plants and plant products, and Australia's current policy for importation of table grapes;
- an outline of the methodology and results of pest categorisation, risk assessment and risk management;
- draft quarantine import conditions for table grapes from Chile;
- further steps in the IRA process; and
- a summary of stakeholder comments received on the Technical Issues Paper and Biosecurity Australia's response.

The risk assessment identified 28 arthropods as requiring risk management measures to reduce the risk to an acceptable level. Fifty-three pest plants that required risk management measures were identified. No diseases were identified as requiring management measures for this import pathway.

This draft IRA report concludes that the risks associated with the importation of table grapes from Chile can be managed by applying a combination of risk management measures, in particular:

- registration of vineyards and fumigation facilities;
- "Pest Free Area" status for one quarantine pest;
- packing, labelling and storage compliance;
- pre-shipment fumigation with SO_2/CO_2;
- fumigation with methyl bromide;
- phytosanitary inspection and phytosanitary certification by SAG; and
- phytosanitary inspection by the Australian Quarantine and Inspection Service (AQIS).

Details on these proposed risk management measures, including their objectives, are provided within this draft IRA report. Details are also provided on how these measures may be implemented through the draft import conditions. Biosecurity Australia invites comments on the technical and economic feasibility of the proposed risk management measures and import conditions, in particular, comments on their appropriateness and any alternatives that stakeholders consider would achieve the identified objectives.

To assist the reader in considering this draft IRA report, Biosecurity Australia decided to present it in two separate parts, Part A and Part B. Part A includes key components of the risk assessment, the proposed risk management measures, the draft import conditions and a summary of the stakeholder comments on the Technical Issues Paper and Biosecurity Australia's response. Part B contains detailed technical components of the risk assessment.

BIOSECURITY FRAMEWORK

INTRODUCTION

This section outlines:

- The legislative basis for Australia's biosecurity regime
- Australia's international rights and obligations
- Australia's Appropriate Level of Protection and risk management
- Import Risk Analysis
- Outcome of the IRA process.

AUSTRALIAN LEGISLATION

The *Quarantine Act 1908* and its subordinate legislation, including the *Quarantine Proclamation 1998*, are the legislative basis of human, animal and plant biosecurity in Australia.

Some key provisions are set out below.

Quarantine Act: Scope

Section 4 of the *Quarantine Act 1908* defines the scope of quarantine as follows.

> *In this Act, quarantine includes, but is not limited to, measures:*
>
> *(a) for, or in relation to:*
>
> *(i) the examination, exclusion, detention, observation, segregation, isolation, protection, treatment and regulation of vessels, installations, human beings, animals, plants or other goods or things; or*
>
> *(ii) the seizure and destruction of animals, plants, or other goods or things; or*
>
> *(iii) the destruction of premises comprising buildings or other structures when treatment of these premises is not practicable; and*
>
> *(b) having as their object the prevention or control of the introduction, establishment or spread of diseases or pests that will or could cause significant damage to human beings, animals, plants, other aspects of the environment or economic activities.*

Section 5D of the *Quarantine Act 1908* covers the level of quarantine risk.

> *A reference in this Act to a level of quarantine risk is a reference to:*
>
> *(a) the probability of:*
>
> *(i) a disease or pest being introduced, established or spread in Australia or the Cocos Islands; and*
>
> *(ii) the disease or pest causing harm to human beings, animals, plants, other aspects of the environment, or economic activities; and*
>
> *(b) the probable extent of the harm.*

Section 5D of the *Quarantine Act 1908* includes harm to the environment as a component of the level of quarantine risk.

Environment is defined in Section 5 of the *Quarantine Act 1908,* in that it:

> *includes all aspects of the surroundings of human beings, whether natural surroundings or surroundings created by human beings themselves, and whether affecting them as individuals or in social groupings.*

Quarantine Proclamation

The *Quarantine Proclamation 1998* is made under the *Quarantine Act 1908*. It is the principal legal instrument used to control the importation into Australia of goods of quarantine (or biosecurity) interest. The Proclamation empowers a Director of Quarantine to grant a permit for import.

Section 70 of the *Quarantine Proclamation 1998* sets out the matters to be considered when deciding whether to issue a permit:

> *Things a Director of Quarantine must take into account when deciding whether to grant a permit for importation into Australia*
>
> *(1) In deciding whether to grant a permit to import a thing into Australia or the Cocos Islands, or for the removal of a thing from the Protected Zone or the Torres Strait Special Quarantine Zone to the rest of Australia, a Director of Quarantine:*
>
> *(a) must consider the level of quarantine risk if the permit were granted; and*
>
> *(b) must consider whether, if the permit were granted, the imposition of conditions on it would be necessary to limit the level of quarantine risk to one that is acceptably low; and*
>
> *(c) may take into account anything else that he or she knows that is relevant.*

Development of Biosecurity Policy

As can be seen from the above extracts, the legislation establishes the concept of the level of biosecurity (quarantine) risk as the basis of quarantine decision-making.

Import Risk Analyses are a significant contribution to the information available to the decision maker.

The purpose of the Import Risk Analysis (IRA) process is to deliver a policy recommendation to the Director of Animal and Plant Quarantine that is characterised by sound science and by transparency, fairness, consistency, and efficiency. The key elements of the IRA process are covered in "Import Risk Analysis" below.

AUSTRALIA'S INTERNATIONAL RIGHTS AND OBLIGATIONS

It is important that Import Risk Analysis complies with Australia's rights and obligations as a WTO Member country. These rights and obligations derive principally from the World Trade Organization's *Agreement on the Application of Sanitary and Phytosanitary Measures* (SPS Agreement), although other WTO agreements may also be relevant. Specific international guidelines on risk analysis developed under International Plant Protection Convention (IPPC) and by Office International des Epizooties (OIE) are also relevant.

The SPS Agreement applies to measures that are designed to protect human, animal and plant life and health from pests and diseases and which may directly or indirectly affect international trade. It also recognises the right of WTO Member countries to determine the level of protection they deem appropriate, and to take the necessary measures to achieve that protection. Sanitary (human and animal health) and phytosanitary (plant health) measures apply to trade in or movement of animal and plant based goods within or between countries.

In the SPS Agreement (Annex A), SPS measures are those applied:

- *to protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;*
- *to protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs;*
- *to protect human life or health within the territory of the Member from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests; or*
- *to prevent or limit other damage within the territory of the Member from the entry, establishment or spread of pests.*

The SPS Agreement provides for the following:

- An importing country has the sovereign right to adopt measures to achieve the level of protection it deems appropriate (its appropriate level of protection, or ALOP) to protect human or animal life or health within its territory, but such a level of protection must be consistently applied in different situations.
- An SPS measure must be based on scientific principles and not be maintained without sufficient evidence.
- In applying SPS measures, an importing country must avoid arbitrary or unjustifiable distinctions in levels of protection, if such distinctions result in discrimination or a disguised restriction on international trade.
- An SPS measure must not be more trade restrictive than necessary to achieve an importing country's ALOP, taking into account technical and economic feasibility.
- An SPS measure should be based on an international standard, guideline or recommendation, where these exist, except to the extent that there is scientific justification for a more stringent measure which is necessary to achieve an importing country's ALOP.
- An SPS measure conforming to an international standard, guideline or recommendation is presumed to be necessary to protect human, animal or plant life or health, and to be consistent with the SPS Agreement.
- Where an international standard, guideline or recommendation does not exist or where, in order to meet an importing country's ALOP, a measure needs to provide a higher level of protection than accorded by the relevant international standard, such a measure must be based on a risk assessment; the risk assessment must take into account available scientific evidence and relevant economic factors.
- When there is insufficient scientific evidence to complete a risk assessment, an importing country may adopt a provisional measure(s) by taking into account available pertinent information; additional information must be sought to allow a more objective assessment and the measure(s) reviewed within a reasonable period.
- An importing country must recognise the measures of other countries as equivalent, if it is objectively demonstrated that the measures meet the importing country's ALOP.

AUSTRALIA'S APPROPRIATE LEVEL OF PROTECTION (ALOP)

The SPS Agreement defines the concept of an 'appropriate level of sanitary or phytosanitary protection (ALOP)' as the level of protection deemed appropriate by a WTO Member in establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory. In setting its ALOP, a WTO Member must take into account relevant economic factors.

Like many other countries, Australia expresses its ALOP in qualitative terms. Australia's ALOP, which reflects community expectations through government policy, is currently expressed as providing a high level of sanitary or phytosanitary protection aimed at reducing risk to a very low level, but not to zero.

ALOP can be illustrated using a 'risk estimation matrix' Table 1. The cells of this matrix describe the product of likelihood and consequences — termed 'risk'. When interpreting the risk estimation matrix, it should be remembered that, although the descriptors for each axis are similar ('low', 'moderate', 'high' etc), the vertical axis refers to *likelihood* and the horizontal axis refers to *consequences*.

Table 1 Risk estimation matrix

Likelihood of entry, establishment or spread	*Negligible impact*	*Very low*	*Low*	*Moderate*	*High*	*Extreme impact*
High likelihood	Negligible risk	Very low risk	Low risk	Moderate risk	High risk	Extreme risk
Moderate	Negligible risk	Very low risk	Low risk	Moderate risk	High risk	Extreme risk
Low	Negligible risk	Negligible risk	Very low risk	Low risk	Moderate risk	High risk
Very low	Negligible risk	Negligible risk	Negligible risk	Very low risk	Low risk	Moderate risk
Extremely low	Negligible risk	Negligible risk	Negligible risk	Negligible risk	Very low risk	Low risk
Negligible likelihood	Negligible risk	Negligible risk	Negligible risk	Negligible risk	Negligible risk	Very low risk

Consequences of entry, establishment or spread

The band of cells in Table 1 marked 'very low risk' represents Australia's ALOP, or tolerance of loss.

Risk Management and SPS Measures

Australia's plant and animal health status is maintained through the implementation of measures to facilitate the importation of products while protecting the health of people, animals and plants.

Australia bases its national measures on international standards where they exist and where they deliver the appropriate level of protection from pests and diseases. However, where such standards are not appropriate to Australia's level of biosecurity protection, or relevant standards do not exist, Australia exercises its right under the SPS Agreement to impose appropriate measures, justified on scientific grounds and supported by risk analysis.

Australia's approach to addressing requests for imports of animals, plants and their products, where there are biosecurity risks, is, where appropriate, to draw on existing sanitary and phytosanitary measures for similar products with comparable risks. However, where measures for comparable biosecurity risks have not previously been established, a thorough assessment will be necessary to identify the risks to Australia and determine what sanitary and phytosanitary measures are needed to reduce those risks to a level consistent with Australia's ALOP.

IMPORT RISK ANALYSIS

Description

In animal and plant biosecurity, Import Risk Analysis identifies the pests and diseases relevant to an import proposal, assesses the risks posed by them and, if those risks are unacceptable, specifies what measures should be taken to reduce those risks to an acceptable level. These analyses are conducted via an administrative process (described in the *IRA Handbook*) that involves, among other things, notification to the WTO, consultation and appeal.

Undertaking IRAs

Biosecurity Australia may undertake an IRA if:

- there is no relevant existing biosecurity measure for the good and pest/disease combination; or
- a variation in established policy is desirable because pests or diseases, or the likelihood and/or consequences of entry, establishment or spread of the pests or diseases could differ significantly from those previously assessed.

Environment and human health

When undertaking an import risk analysis, Biosecurity Australia takes into account harm to the environment as part of its assessment of biosecurity risks associated with the potential import.

Under the *Environment Protection and Biodiversity Conservation Act 1999*, Environment Australia may assess proposals for the importation of live specimens and their reproductive material. Such an assessment may be used or referred to by Biosecurity Australia in its analyses.

Biosecurity Australia also consults with other Commonwealth agencies where they have responsibilities relevant to the IRA, e.g. Food Standards Australia New Zealand (FSANZ) and the Department of Health and Ageing.

The IRA process in summary

The process consists of the following major steps:

***Initiation*:** This is the stage where the identified need for an IRA originates.

***Scheduling and Scoping*:** At this stage, Biosecurity Australia considers all the factors that affect scheduling. Consultation with States, Territories and other Commonwealth agencies is involved. There is opportunity for appeal by stakeholders at this stage.

***Risk Assessment and Risk Management*:** Here, the major scientific and technical work

relating to risk assessment is performed. There is detailed consultation with stakeholders.

***Reporting*:** Here, the results of the IRA are communicated formally. There is consultation with States and Territories. The Executive Manager of Biosecurity Australia then delivers the biosecurity policy recommendation arising from the IRA to the Director of Animal and Plant Quarantine. There is opportunity for appeal by stakeholders at this stage.

OUTCOME OF THE IRA PROCESS

The Director of Animal and Plant Quarantine makes the policy determination, which is notified publicly.

METHOD FOR PEST RISK ANALYSIS

The technical component of an IRA for plants or plant products is termed a 'pest risk analysis', or PRA. Biosecurity Australia conducts PRA in accordance with the International Standard for Phytosanitary Measure (ISPM) 11 *Pest Risk Analysis for Quarantine Pests.* A summary of the requirements of ISPM 11 is given in this section plus descriptions of the methodology used to meet these requirements in this IRA. This summary is given to provide a description of the methodology used for this IRA and to provide a context for the technical information that is provided later in this document.

A PRA comprises three discrete stages:

- Stage 1: initiation of the PRA
- Stage 2: risk assessment
- Stage 3: risk management.

The *initiation* of a risk analysis involves the identification of the pest(s) and pathways of concern that should be considered for analysis. *Risk assessment* comprises pest categorisation, assessment of the probability of introduction and spread, and assessment of the potential economic consequences (including environmental impacts). *Risk management* describes the evaluation and selection of options to reduce the risk of introduction and spread of a pest.

STAGE 1: INITIATION

The aim of the initiation stage is to identify the pest(s) and pathways (e.g. commodity imports) which are of quarantine concern and should be considered for risk analysis in relation to the identified PRA area. This PRA was initiated by the market access request from Chilean Agriculture Service (Servicio Agricola y Ganadero, SAG) to export commercially produced table grapes from Chile into Australia for human consumption.

STAGE 2: PEST RISK ASSESSMENT

The process for pest risk assessment can be broadly divided into three interrelated steps:

- Pest categorisation
- Assessment of the probability of introduction and spread
- Assessment of potential economic consequences (including environmental impacts).

Pest risk assessment needs to be only as complex as is technically justified by the circumstances. ISPM 11 allows a specific PRA to be judged against the principles of necessity, minimal impact, transparency, equivalence, risk analysis, managed risk and non-discrimination.

Pest categorisation

Pest categorisation is a process to examine for each pest whether the criteria in the definition of a quarantine pest are satisfied. That is, whether the pests identified in Stage 1 (Initiation of the PRA) are 'quarantine pests' or not.

The categorisation of a pest as a quarantine pest includes the following primary elements:

- *Identity of the pest*. The identity of the pest should be clearly defined to ensure that the assessment is being performed on a distinct organism, and that biological and other information used in the assessment is relevant to the organism in question. If this is not possible because the causal agent of particular symptoms has not yet been fully identified, then it should have been shown to produce consistent symptoms and to be transmissible.

  The taxonomic unit for the pest is generally species. The use of a higher or lower taxonomic level should be supported by scientifically sound rationale. For levels below the species, this should include evidence demonstrating that factors such as differences in virulence, host range or vector relationships are significant enough to affect phytosanitary status.

  Where a vector is involved, the vector may also be considered a pest to the extent that it is associated with the causal organism and is required for transmission of the pest.
- *Presence or absence in the endangered area*. The pest should be absent from all or part of the endangered area.
- *Regulatory status*. If the pest is present but not widely distributed in the PRA area, it should be under official control or be expected to be under official control in the near future.
- *Potential for establishment and spread in the PRA area*. Evidence should be available to support the conclusion that the pest could become established or spread in the PRA area. The PRA area should have ecological/climatic conditions including those in protected conditions suitable for the establishment and spread of the pest where relevant, host species (or near relatives), alternate hosts and vectors should be present in the PRA area.
- *Potential for economic consequences in the endangered area*. There should be clear indication that the pest is likely to have an unacceptable economic impact (including environmental impact) in the PRA area.

Pest categorisation was carried out in two stages for this IRA.

In the Technical Issues Paper released in September 2002 for this IRA a list of pests of table grapes was categorised according to the presence or absence of each pest in Australia, and the association of each pest with table grape clusters.

The second stage of pest categorisation is documented in this document. This stage was based on the categorisation of each pest absent from Australia and associated with table grape clusters according to (a) its potential to become established in Australia, and, (b) the potential for economic consequences. Categorisation of establishment potential and potential for economic consequences was dichotomous, and expressed using the terms 'feasible' / 'not feasible', and 'significant' / 'not significant', respectively. A summary of the results of pest categorisation for this IRA is given in the 'Pest Categorisation' section of this document.

Assessment of the probability of introduction and spread

Details on assessing the 'probability of entry', 'probability of establishment' and 'probability of spread after establishment' of a pest is given in ISPM 11. A synopsis of these details is given below, followed by a description of the qualitative methodology used in this IRA.

Pest introduction is comprised of both entry and establishment. Assessing the probability of introduction requires an analysis of each of the pathways with which a pest may be associated from its origin to its establishment in the PRA area. In a PRA initiated by a specific pathway, the probability of pest entry is evaluated for the pathway in question. The probabilities for pest entry with other pathways, if any, needs to be investigated as well.

The assessment of probability of spread is based primarily on biological considerations similar to those for entry and establishment.

Probability of entry

The probability of entry of a pest depends on the pathways from the exporting country to the destination, and the frequency and quantity of the pests associated with them. The higher the number of pathways, the greater the probability of the pest entering the PRA area.

Steps identified in ISPM 11 relevant to PRA initiated by a pathway are:

- *Probability of the pest being associated with the pathway at origin* – e.g. prevalence in the source area, occurrence of life stages that would be associated with the commodity, volume and frequency of movement along the pathway, seasonal timing, pest management, cultural and commercial procedures applies at the place of origin
- *Probability of survival during transport or storage* – e.g. speed and conditions of transport and duration of the lifecycle, vulnerability of the life-stages during transport or storage, prevalence of the pest, commercial procedures applied
- *Probability of pest surviving existing pest management procedures*
- *Probability of transfer to a suitable host* – e.g. dispersal mechanisms, whether the imported commodity is sent to few or many destination points in the PRA area, time of year at which import takes place, intended use of the commodity, risks from by-products and waste.

Probability of establishment

In order to estimate the probability of establishment of a pest, reliable biological information (life cycle, host range, epidemiology, survival etc) should be obtained from the areas where the pest currently occurs. The situation in the PRA area can then be compared with that in the areas where it currently occurs and expert judgement used to assess the probability of establishment. Examples provided in ISPM 11 of factors to consider are:

- Availability, quantity and distribution of hosts in the PRA area
- Environmental suitability in the PRA area
- Potential for adaptation of the pest
- Reproductive strategy of the pest
- Method of pest survival
- Cultural practices and control measures.

Probability of spread after establishment

In order to estimate the probability of spread of the pest, reliable biological information should be obtained from areas where the pest currently occurs. The situation in the PRA area can then be carefully compared with that in the areas where the pest currently occurs and expert judgement used to assess the probability of spread. Examples provided in ISPM 11 of factors to consider are:

- Suitability of the natural and/or managed environment for natural spread of the pest
- Presence of natural barriers
- The potential for movement with commodities or conveyances
- Intended use of the commodity
- Potential vectors of the pest in the PRA area
- Potential natural enemies of the pest in the PRA area.

Method for evaluating the probability of entry, establishment and spread in this IRA

Evaluation and reporting of likelihoods can be done qualitatively, semi-quantitatively or quantitatively. For qualitative evaluation, likelihoods assigned to steps in the scenarios are categorised according to a descriptive scale – eg 'low', 'moderate', 'high' etc –where no attempt has been made to equate descriptors with numeric values or scores. For semi-quantitative evaluation, likelihoods are given numeric 'scores' (eg. 1, 2, 3), or probabilities and/or probability intervals (eg. 0–0.0001, 0.0001–0.001, 0.001-0.01, 0.01-1). For quantitative evaluation, likelihoods are described in purely numeric terms.

Each of these three approaches to likelihood evaluation has its advantages and constraints and the choice of approach depends on both technical and practical considerations. For this IRA, likelihood was evaluated and reported qualitatively using the terms described in Table 2.

Table 2 Nomenclature for qualitative likelihoods

Likelihood	Descriptive definition
High	The event would be very likely to occur
Moderate	The event would occur with an even probability
Low	The event would be unlikely to occur
Very low	The event would be very unlikely to occur
Extremely low	The event would be extremely unlikely to occur
Negligible	The event would almost certainly not occur

Qualitative likelihoods can be assigned to individual steps or to the probability that all the steps will occur. If the likelihoods have been assigned to individual steps then some form of 'combination rule' is needed for calculating the probability that all steps will occur. For this IRA the likelihoods were combined using a tabular matrix, as shown in Table 3.

Table 3 A matrix of 'rules' for combining descriptive likelihoods

	High	Moderate	Low	V. low	E. low	Negligible
High	High	Moderate	Low	V. Low	E. Low	Negligible
Moderate		Low	Low	V. Low	E. Low	Negligible
Low			V. Low	V. Low	E. Low	Negligible
V. low				E. Low	E. Low	Negligible
E. low					Negligible	Negligible
Negligible						Negligible

In this IRA, qualitative likelihoods were assigned to the probability of entry (comprising an importation step and a distribution step), the probability of establishment and the probability of spread. In other IRAs it may be considered relevant to assign qualitative likelihoods to additional steps. This would depend on the complexity of the issue and the information that was available. For example, within the importation step, separate qualitative likelihoods could be assigned to the probabilities that source fruit is infested, that the pest survives packinghouse procedures and that it survives storage and transport.

The procedure for combining likelihoods is illustrated in Table 4. A likelihood is assigned to the probability of importation (low) and the probability of distribution (moderate) then they are combined to give the probability of entry (low). The likelihoods are combined using the 'rules' provided in Table 3. The probability of entry is then combined with the likelihoods assigned to the probability of establishment (high) and probability of spread (very low) to give the overall probability of entry, establishment and spread (very low).

Table 4 Qualitative evaluation of the imported fruit scenario

Step	Qualitative descriptor	Product of likelihoods
Probability of importation	Low	
Probability of distribution	Moderate	
..... ➔ Probability of entry	…..... ➔	Low
Probability of establishment	High ..... ➔	Low
Probability of spread	V. Low	
..... ➔ Probability of entry, establishment and spread	..…….. ➔	V. Low

Assessment of potential economic consequences

Details on assessing the 'potential economic consequences' is given in ISPM 11, including its supplement *Analysis of Environmental Risks*. A synopsis of these details is given below, followed by a description of the methodology used in this IRA.

Requirements described in this step indicate what information relative to the pest and its potential host plants should be assembled, and suggest levels of economic analysis that may be carried out using that information in order to assess all the effects of the pest i.e. the potential economic consequences.

Direct pest effects

For identification and characterization of the direct effects of the pest on each potential host in the PRA area, or those effects which are host-specific, the following are examples that could be considered:

- Known or potential host plants
- Types, amount and frequency of damage
- Crop losses, in yield and quality
- Biotic factors (e.g. adaptability and virulence of the pest) affecting damage and losses
- Abiotic factors (e.g. climate) affecting damage and losses
- Rate of spread
- Rate of reproduction
- Control measures (including existing measures), their efficacy and cost
- Effect of existing production practices
- Environmental effects.

Indirect pest effects

For identification and characterization of the indirect effects of the pest in the PRA area, or those effects which are host-specific, the following are examples that could be considered:

- Effects on domestic and export markets, including particular effects on export market access
- Changes to producer costs or input demands, including control costs
- Changes to domestic or foreign consumer demand for a product resulting from quality changes
- Environmental and other undesired effects of control measures
- Feasibility and cost of eradication or containment
- Capacity to act as a vector for other pests
- Resources needed for additional research and advice
- Social and other effects (e.g. tourism).

Analysis of economic consequences

Estimations made in the previous section (direct and indirect pest effects) related to a hypothetical situation where the pest is supposed to have been introduced and to be fully expressing it potential economic consequences (per year) in the PRA area. In practice, however economic consequences

are expressed with time, and may concern one year, several years or an indeterminate period. Various scenarios should be considered.

Other scenarios could concern whether the pest occurs at one, few or many points in the PRA area and the expression of potential economic consequences will depend on the rate and manner of spread in the PRA area.

Method for assessing consequences in this IRA

The direct and indirect consequences were combined into broad groups (shown in table form in the Risk Assessments for Quarantine Pests section of this document) and estimated based on four geographic levels. The terms 'local', 'district', 'regional' and 'national' were defined as:

Local: an aggregate of households or enterprises — e.g. a rural community, a town or a local government area

District: a geographically or geopolitically associated collection of aggregates — generally a recognised section of a state, such as the 'North West Slopes and Plains' or 'Far North Queensland'

Region: a geographically or geopolitically associated collection of districts — generally a state, although there may be exceptions with larger states such as Western Australia

National: Australia-wide

The impact was described as 'unlikely to be discernible', of 'minor significance', significant' or 'highly significant':

- an '*unlikely to be discernible*' impact is not usually distinguishable from normal day-to-day variation in the criterion
- an impact of '*minor significance*' is not expected to threaten economic viability, but would lead to a minor increase in mortality/morbidity or a minor decrease in production. For non-commercial factors, the impact is not expected to threaten the intrinsic 'value' of the criterion — though the value of the criterion would be considered as 'disturbed'. Effects would generally be reversible
- a '*significant*' impact would threaten economic viability through a moderate increase in mortality/morbidity, or a moderate decrease in production. For non-commercial factors, the intrinsic 'value' of the criterion would be considered as significantly diminished or threatened. Effects may not be reversible
- a '*highly significant*' impact would threaten economic viability through a large increase in mortality/morbidity, or a large decrease in production. For non-commercial factors, the intrinsic 'value' of the criterion would be considered as severely or irreversibly damaged.

The values were translated into a qualitative score (A–F) using the schema outlined in Table 5.

Table 5 The assessment of local, district, regional and national consequences

Impact score	Local	District	Regional	National
F	-	-	-	Highly significant
E	-	-	Highly significant	Significant
D	-	Highly significant	Significant	Minor
C	Highly significant	Significant	Minor	Unlikely to be discernible
B	Significant	Minor	Unlikely to be discernible	Unlikely to be discernible
A	Minor	Unlikely to be discernible	Unlikely to be discernible	Unlikely to be discernible

Level

The overall consequence for each pest was achieved by combining the qualitative scores (A–F) for each direct and indirect consequence using a series of decision rules. These rules are mutually exclusive, and were addressed in the order that they appeared in the list — for example, if the first rule did not apply, the second rule was considered. If the second rule did not apply, the third rule was considered and so on until one of the rules applied:

1. Where the consequences of a pest with respect to any direct or indirect criterion is 'F', the overall consequences are considered to be 'extreme'.
2. Where the consequences of a pest with respect to more than one criterion is 'E', the overall consequences are considered to be 'extreme'.
3. Where the consequences of a pest with respect to a single criterion is 'E' and the consequences of a pest with respect to each remaining criterion is 'D', the overall consequences are considered to be 'extreme'.
4. Where the consequences of a pest with respect to a single criterion is 'E' and the consequences of a pest with respect to remaining criteria is not unanimously 'D', the overall consequences are considered to be 'high'.
5. Where the consequences of a pest with respect to all criteria is 'D', the overall consequences are considered to be 'high'.
6. Where the consequences of a pest with respect to one or more criteria is 'D', the overall consequences are considered to be 'moderate'.
7. Where the consequences of a pest with respect to all criteria is 'C', the overall consequences are considered to be 'moderate'.
8. Where the consequences of a pest with respect to one or more criteria is considered 'C', the overall consequences are considered to be 'low'.
9. Where the consequences of a pest with respect to all criteria is 'B', the overall consequences are considered to be 'low'.
10. Where the consequences of a pest with respect to one or more criteria is considered 'B', the overall consequences are considered to be 'very low'.
11. Where the consequences of a pest with respect to all criteria is 'A', the overall consequences are considered to be 'negligible'.

Method for pest risk assessment for pest plants in this IRA

The methodology used for risk assessment to meet the requirements of ISPM 11 differ for pest plants and other pests (i.e. arthropods, diseases) in this IRA. Specific consideration of pest plants within IRAs is required only for certain commodities where it is considered feasible that pest plants would commonly be associated with the pathway. A description of the methodology used in this IRA for pest plants is presented below.

Consideration of the distribution and status in Australia of each plant species in this IRA was based on established policy and any existing requirements for the importation of each plant species. The risk assessment took into account for each plant species its status as a pest plant and whether it has been considered before and if it was a possible pathway for introducing diseases of quarantine concern. The methodology also considers State and Territory legislation. Plant species that are under official control in an Australian State or Territory are recognised by the Commonwealth.

Consideration of the pathway association of the pest plants was based on the technical factors listed below. This assessment focussed on the dispersal mechanisms of the seeds and the likelihood of seed physically attaching to a grape cluster.

(i) The preferred/likely habitat of each species and whether that corresponds with the likely habitat of Chilean vineyards.

(ii) The time of year when seeds are produced and the length of time that seeds remain in the area of production and whether seed will be present during the Chilean grape production period.

(iii) The morphology of seed (i.e. do they possess an awn, bristled fruit, etc) and whether seeds are likely to physically attach to grape bunches.

(iv) The dispersal mechanisms of each species.

(v) The crops/areas that the species is reportedly associated with throughout the world, and whether this species is known to be associated with vineyards.

Where available, information on these technical factors was collated for each species. Specific information on the occurrence and phenology of the species in Chile was not always available so approximations were made from the available information. This methodology has been enhanced from that used in the Technical Issues Paper as it not only considers whether a seed is physically able to become attached to a grape cluster in general, but also whether the seed would be likely to attach to a Chilean grape cluster (e.g. presence in close proximity to a Chilean vineyard, grape vine or grape bunch).

The assessment of the potential for each species to establish and spread was based on the following technical questions ("yes" or "no"):

1. Is the pest plant likely to enter Australia via a Chilean grape bunch?

2. Once the pest plant has entered Australia, is it likely to establish?

3. Once the pest plant has established in Australia, is it likely to spread to other areas?

Each question must be assessed as a "yes" for the assessment to proceed to the next question and all three questions must be assessed as a "yes" for a pest plant to be considered as of potential quarantine concern.

Biosecurity Australia views the potential economic consequence for all pest plants as significant (as opposed to non-significant). Pest plants are recorded to cause economic losses in agricultural systems, especially when diseases or herbicide resistant strains of the pest plants are introduced. For example, pest plants in crops and pastures are estimated to cost the Australian industry $4 billion annually (Hussey *et al*., 1997). Furthermore, pest plants are known to reduce the health of Australia's natural ecosystems, which not only has implications for the natural diversity of fauna and flora, but may also have indirect consequences such as reducing the economic value of tourism in the area where the pest plant infestations occur. Comprehensive discussion on the impact of pest plants on agriculture and the environment in general is provided in Holm *et al.,* (1996).

Hence, when combined with 'significant' potential economic consequences, species that progressed through the assessment of establishment and spread are the quarantine pest plants for this IRA.

STAGE 3: PEST RISK MANAGEMENT

The conclusions from pest risk assessment are used to decide whether risk management is required and if so, the strength of measures to be used. Since zero-risk is not a reasonable option, the guiding principle for risk management is to manage risk to achieve the required degree of safety that can be justified and is feasible within the limits of available options and resources. Pest risk management (in the analytical sense) is the process of identifying ways to react to a perceived risk, evaluating the efficacy of these actions, and identifying the most appropriate options.

Overall risk is determined by the examination of the outputs of the assessments of the probability of introduction and the economic impact. If the risk is found to be unacceptable, then the first step in risk management is to identify possible phytosanitary measures that will reduce the risk to, or below, an acceptable level.

ISPM 11 provides details on the identification and selection of appropriate risk management options and notes that the choice of measures should be based on their effectiveness in reducing the probability of introduction of the pest.

Examples given of measures commonly applied to traded commodities include:

- *Options for consignments* – e.g. inspection or testing for freedom, prohibition of parts of the host, a pre-entry or post-entry quarantine system, specified conditions on preparation of the consignment, specified treatment of the consignment, restrictions on end use, distribution and periods of entry of the commodity.
- *Options preventing or reducing infestation in the crop* – e.g. treatment of the crop, restriction on the composition of a consignment so it is composed of plants belonging to resistant or less susceptible species, harvesting of plants at a certain age or specified time of the year, production in a certification scheme.
- *Options ensuring that the area, place or site of production or crop is free from the pest* – e.g. pest-free area, pest-free place of production or pest-free production site.
- *Options for other types of pathways* – e.g. consider natural spread, measures for human travellers and their baggage, cleaning or disinfestation of contaminated machinery.
- *Options within the importing country* – e.g. surveillance and eradication programs.
- *Prohibition of commodities* – e.g. if no satisfactory measure can be found.

The result of the pest risk management procedure will be either that no measures are identified which are considered appropriate or the selection of one or more management options that have been found to lower the risk associated with the pest(s) to an acceptable level. These management options form the basis of phytosanitary regulations or requirements.

Method for pest risk management in this IRA

The unrestricted risk estimate for each pest was determined by combining the overall estimate for 'entry, establishment and spread potential' with the overall expected consequence using a risk estimate matrix (Table 1). The requirement for risk management was then determined by comparing the unrestricted risk estimate with Australia's ALOP. Australia's ALOP is represented in this matrix by the row of cells marked 'very low risk'.

Where the estimate of unrestricted risk did not exceed Australia's ALOP, risk management was not required. Where the unrestricted risk estimate exceeded Australia's ALOP, risk management measures were required to reduce the risk to an acceptable level. Using this risk estimation matrix, risk management measures are required when the unrestricted risk estimate is low, moderate, high or extreme. Risk management measures are not required when the unrestricted risk estimate is very low or negligible.

Risk management measures were identified for each pest as required and are presented in the Risk Management section of this document. The proposed phytosanitary regulations based on these measures are presented in the Draft Quarantine Conditions section of this document.

PROPOSAL TO IMPORT TABLE GRAPES FROM CHILE

BACKGROUND

Stakeholders were advised that an IRA for the importation of table grapes from Chile was being conducted by Biosecurity Australia in Plant Biosecurity Policy Memorandum (PBPM) 2001/05 of March 2001.

Biosecurity Australia notified stakeholders of the availability of a Technical Issues Paper for this IRA in PBPM 2002/40 of 6 September 2002, and invited stakeholder comments. The technical issues paper included background to the IRA and preliminary results of pest categorisation.

This draft IRA report summarises the information provided in the Technical Issues Paper and also includes the full pest risk assessment, the proposed risk management measures and the draft import conditions. Stakeholder comments were received to the Technical Issues Paper and these were considered in the preparation of this draft IRA report.

ADMINISTRATION

Timetable

The "Further steps in the Import Risk Analysis process" section later in this document lists the steps for completion of this IRA.

Scope

This IRA considers quarantine risks that may be associated with the importation of clusters (bunches) of table grapes (*Vitis vinifera* L.) into Australia from Chile for human consumption. In this IRA, table grapes are defined as 'table grape clusters', which include peduncles, laterals, rachis, pedicels and berries but no other plant parts. The produce will have been cultivated, harvested, packed and transported to Australia under commercial conditions.

AUSTRALIA'S CURRENT QUARANTINE POLICY FOR IMPORTS OF TABLE GRAPES

International quarantine policy

Currently, Australia allows importation of table grapes from New Zealand and the USA (California only). Further details of the import requirements for table grapes are available at the ICON website http://www.aqis.gov.au/icon

Domestic arrangements

The Commonwealth Government is responsible for regulating the movement of plants and their products into and out of Australia, but the State and Territory Governments are responsible for plant health controls within Australia. Legislation relating to resource management or plant health may be used by State and Territory Government agencies to control interstate movement of plants and their products.

New South Wales

Under the *Plant Diseases Act 1924* (P28, Gazette No. 154, 18 November 1994), NSW Agriculture prohibits the introduction into NSW (and specified portions) of any part of the plant genus *Vitis*, including its fruit, and any used vineyard-related machinery on account of phylloxera (*Daktulospharia vitifolii*) unless written consent is given by an authorised person, it is accompanied by a plant health certificate, is appropriately inspected and transported as directed. The movement of any part of the plant genus *Vitis*, or anything likely to spread phylloxera, from phylloxera-infected areas of NSW is also prohibited. These requirements do not prohibit the introduction or movement of packaged fresh fruit, packaged dried fruit, or fruit processed into juice or wine being free from all shoots, leaves, canes or other plant residue or soil. NSW consequently has no specific restrictions on the movement of packaged fresh table grapes from within NSW or interstate.

Northern Territory

Table grapes are permitted entry into the Northern Territory subject to appropriate measures for fruit fly (*Bactrocera musae* [banana fruit fly], *Bactrocera cucumis* [cucumber fruit fly], *Ceratitis capitata* [Mediterranean fruit fly]). Unless an outbreak involving production areas is current in the relevant State, commercial consignments with packaging identifying them as grown in Victoria, South Australia or Tasmania are exempt from certification requirements. NSW is also exempt except for cucumber fly certification. Certification for the relevant measure is required (area freedom, cold storage, post harvest insecticide treatment or methyl bromide fumigation).

Queensland

Part 8 of the *Plant Protection Regulation 2002* details Queensland's restrictions in relation to grape phylloxera. The whole of the State of Queensland is declared to be a pest quarantine area for grape phylloxera and restrictions apply on the introduction of this pest, grape plants and plant products, and appliances or other items that have been in contact with the plant or soil on which the plant has been growing. These restrictions do not apply to fruit that is packed in a fresh state for human consumption (i.e. table grapes).

South Australia

For table grapes to enter South Australia, the Plant Quarantine Standard of South Australia requires freedom from phylloxera, and either area freedom from fruit flies or disinfestation by cold storage. Citrus red mite (*Panonychus citri*), European red mite (*Panonychus ulmi*), phylloxera, and western flower thrips (*Frankliniella occidentalis*) are all declared pests under the *Fruit and Plant Protection Act 1992.*

Tasmania

Table grapes are permitted entry into Tasmania subject to appropriate measures for fruit fly (area freedom, fumigation or cold disinfestation) and certification that they were sourced from outside a 40km radius of any land on which grape phylloxera is known to occur.

Victoria

Under the *Plant Health and Plant Products Regulations 1996*, grapes for table use (i.e. table grapes) are permitted entry into Victoria provided they are packed for sale as table grapes in accordance with these Regulations.

Western Australia

The importation of table grapes, seed, plants and used machinery into Western Australia from any source is prohibited under the *Plant Diseases Regulations 1989*, due essentially to the historical absence of downy mildew (*Plasmopara viticola*) and phylloxera. Downy mildew is now known to be present in Western Australia.

THE TABLE GRAPE INDUSTRY IN AUSTRALIA

Table grapes are produced commercially in every State and Territory except Tasmania and the Australian Capital Territory. Approximately 80% of production occurs in Victoria (60%) and New South Wales (20%). Table grape production was approximately 66,000 tonnes in 2000 and total production of grapes (wine, drying, table and other) was approximately 1.3m tonnes.

[Source: ABS (2000) Australian wine and grape industry statistics 1329.0; ABS (2001) 1329.00 Addendum]

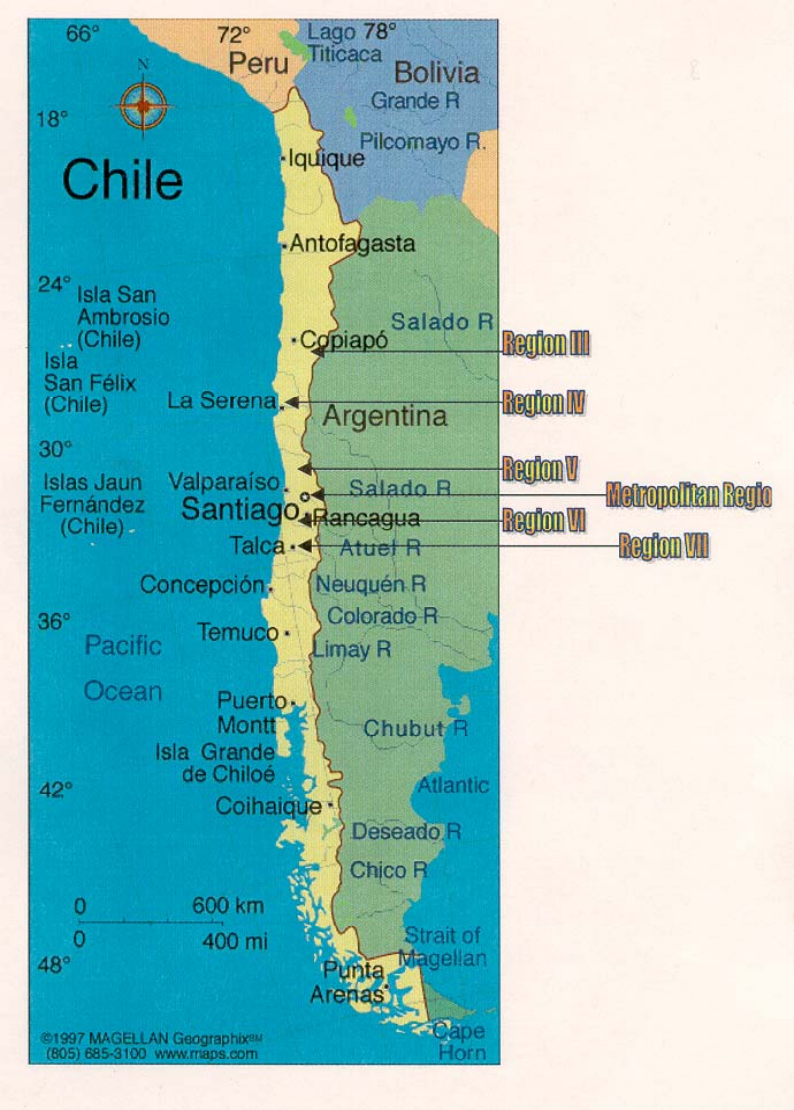
The production season is from October-March with the heaviest production in January-March. Common varieties are Thompson seedless (mid to late January-mid March), Flame seedless (January), Menindee seedless and Red Globe.

[Source http://www.dpi.qld.gov.au/hortport/2788.html ; http://www.qfvg.org.au/industry/fruit_vege/grapes.html]

THE TABLE GRAPE INDUSTRY IN CHILE

Chile is the largest producer and exporter of table grapes in the southern hemisphere, and in the world is second largest to Italy. Grape production in Chile stretches from Region III to Region VII, with table grape growing principally concentrated in the central regions–Regions V, Region VI, and the Metropolitan Region (Figure 1). These three regions cover about 28,845 hectares, 65% of the total table grape production area.

Figure 1 Chilean table grape growing regions



Approximately 50% of production is consumed domestically and 50% exported. During the 2000/01 season 557 570 tonnes of table grapes were exported from Chile with 59% to the USA and Canada, 16% to Europe, 16% to the Middle East, 9% to Latin America and 1% to the Far East.

Chile produces more than 35 varieties of table grapes for export. Most are seedless varieties such as Thompson seedless and Flame seedless with exports of these two varieties and Ribier accounting for 90% of total table grape exports from Chile.

Chilean table grapes are generally available from the third week of November to the last week of April. The grape producing regions in Chile all have a winter rainfall but varying climates ranging from a desert climate in Region III (1-100 mm average rainfall per year) to a warm humid temperate climate in Region VII (1000-1100 mm average rainfall per year).

Production of the early season varieties such as Perlette, Sugarone, and Flame Seedless in November starts in the centre-north valleys of Copiapo (Region III) and ends in April in the centre-south valleys of Curico and Talca (Region VII), with varieties such as Red Globe, Ribier, Crimson Seedless, Red Seedless, and Emperor. [Source: Chilean Fresh Fruit Association, www.cffa.org]

A general description of the process used for the export of grapes from Chile based on information provided by SAG is given below.

The grapes are manually harvested and cleaned (e.g. removing defective berries) in the field and placed in plastic boxes. The boxes are then transferred to central packing plants where they are treated with SO_2 to prevent rot diseases. The grapes are then classified according to quality and a second check for defects conducted. The packing and labelling process is then conducted according to the requirements of the export destination. All packaging is to be new, "sanitarily fit" and of homogenous presentation. Each package is identified by the exporter, species, variety, packing data, producer and net weight. Prior to palletising a further quality control check is conducted to verify compliance with the quality standards of the product and the packing standards of the individual company. Each pallet has a label or tab where the number of boxes, variety and classification by size and colour are identified. Palletised fruit is then quickly cooled to 2-4ºC (depending on market requirements) then maintained at 0ºC until delivered to the port.

PEST CATEGORISATION

Details of the pest categorisation for table grapes from Chile is presented in Appendices 1 and 2 (contained in Part B of this document). Appendix 1 contains the potential pests (arthropods and diseases) associated with table grapes from Chile based on their presence or absence in Australia (Appendix 1a) and whether the potential pest occurs on the pathway under consideration in this IRA (i.e. in association with table grape clusters) (Appendix 1b). Appendix 2 contains this information for the pest plants.

It was considered that all species identified in Appendix 1b (i.e. associated with the pathway) had 'feasible' potential for introduction and spread in the PRA area and 'significant' potential for economic consequences. All species identified in Appendix 1b as requiring further consideration were therefore considered to be quarantine pests (as per IPPC definition) and were considered for detailed risk assessment. Information on the pests is provided in Appendix 3 (data sheets) and the risk assessment section.

A summary of the total number of pests known to be potentially associated with grapes in Chile, the number present in Australia and the number associated with the import pathway is given in Tables 6 and 7. Many of the pests occur in Australia or are not present on the import pathway and were therefore not considered further in the IRA. A number of pests are considered to be present in Australia but absent in Western Australia (based on evidence provided to Biosecurity Australia by the Western Australia Department of Agriculture).

The quarantine pests considered for detailed risk assessment are listed in Table 8. The detailed risk assessment for these pests is given in the next section of this document. The quarantine pest plants are listed in Table 9. Details of the assessment for pest plants and a summary of the revisions made from the Technical Issues Paper are given in Appendix 2 (contained in Part B of this document).

Table 6 Summary of potential pests of table grapes in Chile and their occurrence in Australia

Pest type	Present in Chile	Present in Australia*	Not present in Australia	Consider further
Arthropods	82	37 (8)	45	53
Gastropods	1	1	0	0
Bacteria	3	3	0	0
Fungi	30	29	1	1
Nematodes	14	14 (1)	0	1
Phytoplasma	1	0	1	1
Viruses	7	6 (3)	1	4
Pest plants	163	158 (67)	5	72
Total	**301**	**248 (79)**	**53**	**132**

*The number in brackets refers to species that are retained for further consideration due to being under official control, having a restricted distribution in Australia, not permitted or restricted entry into Australia by Commonwealth legislation, or uncertainty over the presence of different strains in Australia.

Table 7 Numbers of pests of grapes in Chile on the import pathway

Pest type	Number of species (from Table 6)	On pathway
Arthropods	53	28
Gastropods	0	0
Bacteria	0	0
Fungi	1	0
Nematodes	1	0
Phytoplasma	1	0
Viruses	4	0
Pest plants	72	52
Total	**132**	**80**

Table 8 Quarantine pests (arthropods) for table grapes from Chile

Scientific name	Common name
Acari (mites)	
Brevipalpus chilensis Baker [Acari: Tenuipalpidae]	False red mite
Eotetranychus lewisi (McGregor) [Acari: Tetranychidae]	Lewis spider mite
Oligonychus vitis Zaher & Shehata [Acari: Tetranychidae]	Table grape red mite
Oligonychus yothersi McGreg. [Acari: Tetranychidae]	Avocado red mite
Panonychus ulmi (Koch) [Acari: Tetranychidae] (WA only)	European red mite
Tetranychus desertorum Banks [Acari: Tetranychidae]	Tetranychid mite
Araneae (spiders)	
Latrodectus mactans (Fabricius) [Araneae: Theridiidae]	Black widow spider
Coleoptera (weevils)	
Geniocremnus chiliensis (Boheman) [Coleoptera: Curculionidae]	Tuberous pine weevil
Naupactus xanthographus (Germar) [Coleoptera: Bostrichidae]	Fruit tree weevil
Otiorhynchus sulcatus (Fabricius) [Coleoptera: Curculionidae] (WA only)	Vine weevil; black vine weevil
Diptera (flies)	
Ceratitis capitata (Wiedemann) [Diptera: Tephritidae]	Mediterranean fruit fly
Hemiptera (aphids, mealybugs, scales)	
Aphis fabae Scopoli [Hemiptera: Aphididae]	Black bean aphid
Aphis illinoisensis Shimer [Hemiptera: Aphididae]	Grapevine aphid
Icerya palmeri Riley-How [Hemiptera: Margarodidae]	Margarodes scale
Parthenolecanium corni (Bouché) [Hemiptera: Coccidae] (WA only)	European fruit lecanium scale
Pseudococcus calceolariae (Maskell) [Hemiptera: Pseudococcidae] (WA only)	Citrophilus mealybug
Pseudococcus maritimus (Ehrhorn) [Hemiptera: Pseudococcidae]	Grape mealybug
Lepidoptera (moths, butterflies)	
Accuminulia buscki Brown [Lepidoptera: Tortricidae]	Tortricid leafroller
Accuminulia longiphallus Brown [Lepidoptera: Tortricidae]	Tortricid leafroller
Chileulia stalactitis (Meyrick) [Lepidoptera: Tortricidae]	Grape berry moth
Peridroma saucia (Hübner) [Lepidoptera: Noctuidae]	Variegated cutworm
Proeulia apospata Obraztsov [Lepidoptera: Tortricidae]	Fruit tree leaf roller
Proeulia auraria (Clarke) [Lepidoptera: Tortricidae]	Chilean fruit tree leaf folder
Proeulia chrysopteris (Butler) [Lepidoptera: Tortricidae]	Fruit leaf folder

Scientific name	Common name
Proeulia triquetra Obraztsov [Lepidoptera: Tortricidae]	Grape leaf roller, fruit tree leaf roller
Thysanoptera (thrips)	
Drepanothrips reuteri Uzel [Thysanoptera: Thripidae]	Grape thrips
Frankliniella australis Morgan [junior synonym – *F. cestrum*] [Thysanoptera: Thripidae]	Chilean flower thrips
Frankliniella occidentalis (Pergande) [Thysanoptera: Thripidae]	Western flower thrips

(*WA only) – these species are quarantine pests only with respect to the State of Western Australia due to their absence from this State.

The list of pests in the above table differs somewhat from that presented in Appendix 3 of the Technical Issues Paper. This was due to the receipt of additional scientific/technical information since the Technical Issues Paper, including through a further review of the available scientific literature and provision of further information on the status of various species in Chile by SAG. In particular, *Guignardia bidwellii* (black rot) has been removed from the pest list following confirmation by SAG that this fungus is not present in Chile. Further discussion on the major revisions is provided in the 'Stakeholder Comments to the Technical Issues Paper and Response from Biosecurity Australia' section of this document.

Table 9 Quarantine pest plants for table grapes from Chile

Pest plant	Common name
Aira caryophyllea L.	Silvery hairgrass
Ambrosia artemisiifolia L.	Annual ragweed
Amsinckia calycina (Moris) Chater	Yellow burrweed
Avena barbata Pott. Ex Link	Bearded oat
Avena fatua L.	Wild oat
Avena sterilis L.	Sterile oat
Avena strigosa Schreb.	Sand oat
Bidens aurea (Ait.) Sherff	Arizona beggarticks
Cardamine hirsuta L.	Common bittercress
Carduus nutans L.	Nodding thistle
Cenchrus echinatus L.	Mossman river grass
Cenchrus incertus Curt.	Spiny burrgrass
Chloris gayana Kunth.	Rhode grass
Chloris virgata Sw.	Feathertop Rhode grass
Digitaria ischaemum (Schreb.) Schreb.	Smooth summer grass
Digitaria sanguinalis (L.) Scop.	Crabgrass
Echium plantagineum L.	Paterson's curse
Echium vulgare L.	Viper's bugloss
Eragrostis virescens Presl.	Mexican lovegrass
Erodium moschatum (L.) L'Herit. ex W. Ait.	Musky storksbill
Euphorbia falcata L.	Sickleleaf spurge
Euphorbia lathyrus L.	Caper spurge
Euphorbia maculata L.	Eyebane
Euphorbia peplus L.	Petty spurge
Euphorbia platyphyllos L.	Broad-leaved spurge
Galium aparine L.	Cleavers
Hordeum jubatum L.	Foxtail barley, squirrel tail
Hordeum marinum Huds.	Sea barley grass
Hordeum murinum L.	Wild barley
Hordeum secalinum Schreb.	Meadow barley
Hypericum perforatum L.	St John's wort

Hypochaeris glabra L.	Smooth cat's ear
Kickxia elatine (L.) Dum.	Twining toadflax
Lactuca serriola L.	Prickly lettuce
Oxalis corniculata L.	Yellow wood sorrel
Panicum miliaceum L.	Millet panic
Ranunculus arvensis L.	Corn buttercup
Ranunculus muricatus L.	Sharp fruited buttercup
Ranunculus parviflorus L.	Small-flowered buttercup
Rapistrum rugosum (L.) All.	Turnip weed
Rumex conglomeratus Murr.	Clustered dock
Rumex crispus L.	Curled dock
Rumex longifolius DC.	Long leaved dock
Senecio sylvaticus L.	Wood groundsell, mountain groundsell
Setaria pumila (Poir.) Roem. & Schult.	Queensland pigeon grass
Setaria verticillata (L.) Beauv.	Whorled pigeon grass
Setaria viridis (L.) Beauv.	Green pigeon grass
Sonchus arvensis L.	Corn sowthistle
Sorghum halepense (L.) Pers.	Johnson grass
Spergula arvensis L.	Corn spurry
Taeniatherum caput-medusae Boiss	Medusa-head
Xanthium spinosum L.	Bathurst burr

Eleven (11) pest plants were retained for further consideration based on their entry to Australia being permitted subject to post-entry quarantine (PEQ) conditions i.e. these pest plants were retained based their status as vectors of diseases of quarantine concern rather than their innate characteristics as a weed.

Nine of the pest plants were within the Poaceae family, one (*Vicia sativa*) is within the Fabaceae family and one (*Lactuca serriola*) is within the Asteraceae family. The importance of diseases potentially associated with species within these three families is discussed below. This text is provided to explain why the 11 identified species are considered to present an unacceptable risk if they are introduced unregulated via table grapes from Chile (and thus, why the import of these seeds is only permitted subject to regulation (i.e. PEQ)). Assessment of the potential for the pest plants to enter, establish or spread in Australia is provided in Appendix 2.

Poaceae (grasses) is one of the largest families of flowering plants with approximately 700 genera and 10 000 species and can be found in virtually all habitats where other flowering plants can grow. It is one of the most important families economically as it contains many food and forage plants (such as cereals, maize, rice, sugarcane, meadow and pasture grasses) (CABI, 2002).

The seed of many species within Poaceae, including the 9 identified in this draft IRA report, are permitted entry into Australia subject to growth in PEQ due to their status as vectors of diseases.

Examples of these diseases are: *Clavibacter michiganensis* ssp. *nebraskensis* (bacterial wilt), *Hymenula cerealis*, *Tilletia controversa* (dwarf bunt) and maize dwarf mosaic virus (Phillips *et al*., 1994).

Fabaceae (legumes/leguminous plants) is a very large family found virtually worldwide with approximately 600 genera and 13 000 species. This family shows a great variety of growth habits with herbs, climbing and twining plants, shrubs and large trees (CABI, 2002). Economic plants within Fabaceae include grain legumes (e.g. *Cicer*, *Phaseolus*, *Pisum*, *Vicia* and *Vigna*), temperate pasture legumes (e.g. *Lupinus*, *Medicago* and *Trifolium*) and tropical pasture legumes (e.g. *Leucana*, *Melilotus* and *Stylosanthes*).

The seed of many species within Fabaceae, including the species identified in this draft IRA report, are permitted entry into Australia subject to growth in PEQ due to their status as vectors of diseases. Examples of these diseases are: broad bean mottle bromovirus, broad bean stain comovirus, pea early-browning tobravirus and vascular wilts (e.g. *Fusarium avenaceum* fsp. *fabae* and *F. oxysporum* fsp. *ciceris*) (Parry and Freeman, 2001).

Asteraceae (the daisy family), also known by the alternative name Compositae, is among the largest and most widely distributed plant families in the world (Corrick and Furher, 2000). It includes a variety of growth forms from minute annual herbs to biennials and perennials of all sizes, as well as shrubs, trees and a few climbers. The major economic importance of the family is in horticulture. Several species such as *Lactuca sativa* (lettuce), *Cichorum endiva* (endive), *Cynara scolymos* (globe artichoke) and *Helianthus tuberosus* (Jerusalem artichoke) are cultivated as vegetables and some species are used as culinary or medicinal herbs. *Helianthus annua* (sunflower) and *Carthamus tinctorius* (safflower) are important sources of edible oil.

The seed of many species within Asteraceae, including the species identified in this draft IRA report, are permitted entry into Australia subject to growth in PEQ due to their status as vectors of diseases. A relevant example of these diseases is lettuce mosaic potyvirus (CABI, 2002).

RISK ASSESSMENTS FOR QUARANTINE PESTS

The detailed risk assessments conducted for the identified quarantine pests (other than pest plants) are presented below. Because of similarities in pest biology, the risk assessments described below are based on groups of the pests. The proposed risk management measures were also developed based on these groups. Some groups only contain one species but the "group" terminology was used for consistency and to allow the proposed risk management measures and draft import conditions to be described with reference to the groups.

The groups are: mites (6 species), aphids (2 species), mealy bugs & scales (3 species), lepidopterans (moths & butterflies) (8 species), thrips (3 species), weevils (3 species), fruit fly (*Ceratitis capitata*) and spider (*Lactrodectus mactans*). The risk assessment methodology for pest plants (group 8) described earlier in this document was used to determine the requirement for risk management measures. For more details on the technical information used in the detailed risk assessments presented below, refer to the data sheets in Appendix 3 (in Part B of this document).

In the context of the scope of this IRA, the risk assessments were conducted on the basis of the standard cultivation, harvesting and packing activities involved in the commercial production of table grapes occurring. e.g. in-field hygiene and management of pests, cleaning and hygiene during packing, commercial quality control activities.

GROUP 1 - MITES

Brevipalpus chilensis Baker [Acari: Tenuipalpidae] (False red mite), *Eotetranychus lewisi* (McGregor) [Acari: Tetranychidae] (Lewis spider mite), *Oligonychus vitis* Zaher & Shehata [Acari: Tetranychidae] (Table grape red mite), *Oligonychus yothersi* McGreg. [Acari: Tetranychidae] (Avocado red mite), *Panonychus ulmi* (Koch) [Acari: Tetranychidae] (European red mite) and *Tetranychus desertorum* Banks [Acari: Tetranychidae] (Tetranychid mite).

Introduction and spread potential

Probability of importation

The likelihood that group 1 will arrive in Australia with the importation of table grapes from Chile**: High**.

- Populations of 900-1400 adult *Brevipalpus chilensis* per *Vitis* leaf are reported in Chile.
- Mites are known to be associated with the table grape pathway. For example, *Brevipalpus chilensis* was been detected 119 times in the USA on *Vitis* spp. from Chile during 1994-2002. Mites are also frequently intercepted on fresh produce imported into Australia from a range of countries.

Probability of distribution

The likelihood that group 1 will be distributed as a result of the processing, sale or disposal of table grapes from Chile, to the endangered area: **High**.

- Adults or immature stages may remain within bunches and be distributed via wholesale or retail trade.
- The commodity may be distributed throughout Australia for retail sale. The intended use of the commodity is human consumption but waste material would be generated (e.g. vegetative parts of the cluster and discarded berries).

Probability of entry

The likelihood that group 1 will enter Australia as a result of trade in table grapes from Chile and be distributed in a viable state to the endangered area: **High**.

- The overall probability of entry is determined by combining the probabilities of importation and distribution using the matrix of ‘rules’ for combining descriptive likelihoods (Table 3).

Probability of establishment

Comparative assessment of factors in the source and destination areas considered pertinent to the ability of the pest to survive and propagate: **High**.

- A range of plants commonly found in Australia can act as hosts for these pests e.g. *Acacia*, *Citrus*, *Malus*, *Prunus*, *Pyrus*, *Quercus* and *Vitis*. Species are widespread in Chile and similar environments are available in Australia.
- Females produce up to 140 eggs each and populations of 900-1400 adult *Brevipalpus chilensis* per *Vitis* leaf are reported in Chile.
- Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. *Citrus* where specific integrated pest management programs are used).

Probability of spread

Comparative assessment of those factors in the area of origin and in Australia considered pertinent to the expansion of the geographical distribution of the pest: **High**.

- Natural physical barriers (e.g. deserts/arid areas) may prevent these pests spreading unaided but adults and immature forms may spread undetected via the movement of fruit or infested vegetative host material.
- The relevance of natural enemies in Australia is not known.
- Similar environmental conditions (e.g. temperature, rainfall) are available in Chile and Australia.

Probability of entry, establishment and spread

The overall likelihood that group 1 will enter Australia as a result of trade in table grapes from Chile, be distributed in a viable state to suitable hosts, establish in that area and subsequently spread within Australia: **High**.

- The probability of entry, establishment and spread is determined by combining the probabilities of entry, establishment and spread using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Consequences

Consideration of the direct and indirect consequences of group 1: **Moderate**.

Criterion	Estimate
Direct consequences	
Plant life or health	**D** — These pests are capable of causing direct harm to a wide range of hosts. In particular, *Brevipalpus chilensis* is recognised as a serious pest of grape production.
Any other aspects of the environment	**A** — There are no known direct consequences of these pests on the natural or built environment, such as the physical environment or micro-organisms but their introduction into a new environment may lead to competition for resources with native species.
Indirect consequences	
Eradication, control etc.	**B** — Additional programs to minimise the impact of these pests on host plants may be necessary. Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. where specific integrated pest management programs are used).
Domestic trade	**B** — The presence of these pests in commercial production areas may have a significant effect at the local level due to any resulting interstate trade

	restrictions on a wide range of commodities. These restrictions may lead to a loss of markets. Interstate measures are currently in place in Australia for one species (*Panonychus ulmi*).
International trade	**C** — The presence of these pests in commercial production areas of a wide range of commodities (e.g. *Vitis*, citrus) may have a significant effect at the district level due to any limitations to access to overseas markets where these pests are absent. Phytosanitary measures for *Brevipalpus chilensis* are currently required by a number of countries.
Environment	**A** — Additional pesticide applications or other control activities may be required to control these pests on susceptible crops but any impact on the environment is unlikely to be discernible.

Note: Refer to Table 5 and text in the 'Method for assessing consequences in this IRA' section for details on the method used for consequence assessment.

Unrestricted risk estimate

Moderate. The unrestricted risk estimate is determined by combining the overall 'probability of entry, establishment and spread' with the 'consequences' using the risk estimation matrix (Table 1).

GROUP 2A – APHIDS

Aphis fabae Scopoli [Hemiptera: Aphididae] (Black bean aphid) and *Aphis illinoisensis* Shimer [Hemiptera: Aphididae] (Grapevine aphid).

Introduction and spread potential

Probability of importation

The likelihood that group 2a will arrive in Australia with the importation of table grapes from Chile**: Low**.

- Aphids are considered secondary or accidental pests of *Vitis* in Chile.
- Aphids may be associated with the table grape pathway but have not been intercepted on Chilean table grapes exported to New Zealand or Californian table grapes destined for Australia.

Probability of distribution

The likelihood that group 2a will be distributed as a result of the processing, sale or disposal of table grapes from Chile, to the endangered area: **High**.

- Adults or immature forms may hide within bunches remain with the commodity during distribution via wholesale or retail sale.
- The commodity may be distributed throughout Australia for retail sale. The intended use of the commodity is human consumption but waste material would be generated (e.g. vegetative parts of the cluster and discarded berries).

Probability of entry

The likelihood that group 2a will enter Australia as a result of trade in table grapes from Chile and be distributed in a viable state to the endangered area: **Low**.

- The overall probability of entry is determined by combining the probabilities of importation and distribution using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Probability of establishment

Comparative assessment of factors in the source and destination areas considered pertinent to the ability of the pest to survive and propagate: **High**.

- A range of plants commonly found in Australia can act as hosts for these pests e.g. *Brassica*, *Citrus* and *Solanum*. Species are widespread in Chile and similar environments are available in Australia.
- Rapid rates of population growth can occur (e.g. female *Aphis fabae* may produce up to 100 young at a rate of 10 per day) and species can reproduce parthenogenetically (without males).
- Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. *Citrus* where specific integrated pest management programs are used).

Probability of spread

Comparative assessment of those factors in the area of origin and in Australia considered pertinent to the expansion of the geographical distribution of the pest: **High**.

- Natural physical barriers (e.g. deserts/arid areas) may prevent these pests spreading unaided but some life stages are capable of flight and adults and immature forms may spread undetected via the movement of fruit or infested vegetative host material.
- The relevance of natural enemies in Australia is not known.
- Similar environmental conditions (e.g. temperature, rainfall) are available in Chile and Australia.

Probability of entry, establishment and spread

The overall likelihood that group 2a will enter Australia as a result of trade in table grapes from Chile, be distributed in a viable state to suitable hosts, establish in that area and subsequently spread within Australia: **Low**.

- The probability of entry, establishment and spread is determined by combining the probabilities of entry, establishment and spread using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Consequences

Consideration of the direct and indirect consequences of group 2a: **Moderate**.

Criterion	Estimate
Direct consequences	
Plant life or health	**D** — Aphids can cause direct harm to a wide range of plant hosts and are also capable of vectoring diseases.
Any other aspects of the environment	**A** — There are no known direct consequences of these pests on the natural or built environment, such as the physical environment or micro-organisms but their introduction into a new environment may lead to competition for resources with native species.
Indirect consequences	
Eradication, control etc.	**B** — Additional programs to minimise the impact of these pests on host plants may be necessary. Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. where specific integrated pest management programs are used).
Domestic trade	**C** — The presence of these pests in commercial production areas may have a significant effect at the local level due to any resulting interstate trade restrictions on a wide range of commodities. These restrictions may lead to a loss of markets.
International trade	**B** — The presence of these pests in commercial production areas of a wide range of commodities may have a significant effect at the district level due to any limitations to access to overseas markets where these pests are absent.
Environment	**A** — Although additional pesticide applications or other control activities would be required to control these pests on susceptible crops, this is not considered to impact on the environment.

Note: Refer to Table 5 and text in the 'Method for assessing consequences in this IRA' section for details on the method used for consequence assessment.

Unrestricted risk estimate

Low. The unrestricted risk estimate is determined by combining the overall 'probability of entry, establishment and spread' with the 'consequences' using the risk estimation matrix (Table 1).

GROUP 2B – MEALYBUGS & SCALES

Icerya palmeri Riley-How [Hemiptera: Margarodidae] (Margarodes scale), *Parthenolecanium corni* (Bouché) [Hemiptera: Coccidae] (European fruit lecanium scale), *Pseudococcus calceolariae* (Maskell) [Hemiptera: Pseudococcidae] (Citrophilus mealybug) and *Pseudococcus maritimus* (Ehrhorn) [Hemiptera: Pseudococcidae] (Grape mealybug).

Introduction and spread potential

Probability of importation

The likelihood that group 2b will arrive in Australia with the importation of table grapes from Chile**: High**.

- Mealybugs and scales are known to be associated with the table grape pathway. For example, mealy bugs (Pseudococcidae) have been intercepted on Chilean table grapes imported into New Zealand and *Pseudococcus maritimus* has been intercepted during inspection of Californian table grapes destined for Australia.

Probability of distribution

The likelihood that group 2b will be distributed as a result of the processing, sale or disposal of table grapes from Chile, to the endangered area: **Moderate**.

- These pests may enter the environment in two ways: adults discarded with fruit or juveniles blown by wind or carried by other vectors. Long-range dispersal would require movement of adults and nymphs with vegetative material. Short range dispersal would occur readily though the random movement of crawlers in wind current or biological or mechanical vectors.
- The commodity may be distributed throughout Australia for retail sale. The intended use of the commodity is human consumption but waste material would be generated (e.g. vegetative parts of the cluster and discarded berries).

Probability of entry

The likelihood that group 2b will enter Australia as a result of trade in table grapes from Chile and be distributed in a viable state to the endangered area: **Moderate**.

- The overall probability of entry is determined by combining the probabilities of importation and distribution using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Probability of establishment

Comparative assessment of factors in the source and destination areas considered pertinent to the ability of the pest to survive and propagate: **High**.

- A range of plants commonly found in Australia can act as hosts for these pests e.g. *Citrus, Malus, Pinus* and *Prunus*. Species are widespread in Chile and similar environments are available in Australia.
- These pests reproduce sexually (e.g. *Pseudococcus maritimus* and *Pseudococcus calceolariae*) and/or parthenogentically (e.g. *Parthenolecanium corni*). Adult males are short lived (e.g. few days for *Pseudococcus maritimus*). Females of *Psuedococcus maritimus* produce an average of 110 eggs and female *Parthenolecanium corni* can produce up to several thousand eggs.
- Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. *Malus* and *Pyrus* where specific integrated pest management programs are used).
- Eight species of *Pseudococcus* and two species of *Parthenolecanium* are reported in Australia, demonstrating the suitability of the climatic conditions for their survival.

Probability of spread

Comparative assessment of those factors in the area of origin and in Australia considered pertinent to the expansion of the geographical distribution of the pest: **High**.

- Adults and nymphs may be moved within and between vineyards (or other commercial production sites) with the movement of equipment, personnel and infested plant material, and juveniles may be dispersed by wind. Adult males are winged but are weak flyers.
- The relevance of natural enemies in Australia is not known.
- Similar environmental conditions (e.g. temperature, rainfall) are available in Chile and Australia.

Probability of entry, establishment and spread

The overall likelihood that group 2b will enter Australia as a result of trade in table grapes from Chile, be distributed in a viable state to suitable hosts, establish in that area and subsequently spread within Australia: **Moderate**.

- The probability of entry, establishment and spread is determined by combining the probabilities of entry, establishment and spread using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Consequences

Consideration of the direct and indirect consequences of group 2b: **Low**.

Criterion	Estimate
Direct consequences	
Plant life or health	**C** — These pests can cause direct harm to a wide range of plant hosts and have also been reported as disease vectors. Fruit quality can be reduced by the presence of sooty mould.
Any other aspects of the environment	**A** — There are no known direct consequences of these pests on the natural or built environment, such as the physical environment or micro-organisms but their introduction into a new environment may lead to competition for resources with native species.
Indirect consequences	

Eradication, control etc.	**B** — Additional programs to minimise the impact of these pests on host plants may be necessary. Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. where specific integrated pest management programs are used).
Domestic trade	**B** — The presence of these pests in commercial production areas may have a significant effect at the local level due to any resulting interstate trade restrictions on a wide range of commodities. These restrictions may lead to a loss of markets.
International trade	**C** — The presence of these pests in commercial production areas of a range of commodities (e.g. *Vitis*, citrus) may have a significant effect at the district level due to any limitations to access to overseas markets where these pests are absent.
Environment	**A** — Although additional pesticide applications or other control activities would be required to control these pests on susceptible crops, this is not considered to impact on the environment.

Note: Refer to Table 5 and text in the 'Method for assessing consequences in this IRA' section for details on the method used for consequence assessment.

Unrestricted risk estimate

Low. The unrestricted risk estimate is determined by combining the overall 'probability of entry, establishment and spread' with the 'consequences' using the risk estimation matrix (Table 1).

GROUP 3 - LEPIDOPTERANS

Accuminulia buscki Brown [Lepidoptera: Tortricidae] (Tortricid leafroller), *Accuminulia longiphallus* Brown [Lepidoptera: Tortricidae] (Tortricid leafroller), *Chileulia stalactitis* (Meyrick) [Lepidoptera: Tortricidae] (Grape berry moth), *Peridroma saucia* (Hübner) [Lepidoptera: Noctuidae] (Variegated cutworm), *Proeulia apospata* Obraztsov [Lepidoptera: Tortricidae] (Fruit tree leaf roller), *Proeulia auraria* (Clarke) [Lepidoptera: Tortricidae] (Chilean fruit tree leaf folder), *Proeulia chrysopteris* (Butler) [Lepidoptera: Tortricidae] (Fruit leaf folder) and *Proeulia triquetra* Obraztsov [Lepidoptera: Tortricidae] (Grape leaf roller, fruit tree leaf roller).

Introduction and spread potential

Probability of importation

The likelihood that group 3 will arrive in Australia with the importation of table grapes from Chile**: Moderate**.

- *Proeulia*, *Chileulia* and *Accuminulia* are capable of boring into the fruit of host plants.
- Lepidoptera may be associated with the table grape pathway but have not been intercepted on Chilean table grapes imported into New Zealand. *Accuminulia buscki* has previously been intercepted in the USA on Chilean table grapes. A range of Lepidopterans has been intercepted during inspection of Californian table grapes destined for Australia including members of the Noctuidae and Tortricidae.

Probability of distribution

The likelihood that group 3 will be distributed as a result of the processing, sale or disposal of table grapes from Chile, to the endangered area: **High**.

- Larvae can occur within fruit and/or within bunches and may therefore remain with the commodity during distribution via wholesale or retail sale.
- Adults and immature forms may also hide within bunches and remain with the commodity during distribution via wholesale or retail trade.
- The commodity may be distributed throughout Australia for retail sale. The intended use of the commodity is human consumption but waste material would be generated (e.g. vegetative parts of the cluster and discarded berries).

Probability of entry

The likelihood that group 3 will enter Australia as a result of trade in table grapes from Chile and be distributed in a viable state to the endangered area: **Moderate**.

- The overall probability of entry is determined by combining the probabilities of importation and distribution using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Probability of establishment

Comparative assessment of factors in the source and destination areas considered pertinent to the ability of the pest to survive and propagate: **High**.

- A range of plants commonly found in Australia can act as hosts for these pests e.g. *Brassica*, *Medicago* and *Prunus*. Species are widespread in Chile and similar environments are available in Australia.
- Species can overwinter as first instar larvae protected by webs, in hollow or dried fruit of hosts, or continue to develop on evergreen hosts.
- Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. *Citrus* where specific integrated pest management programs are used).

Probability of spread

Comparative assessment of those factors in the area of origin and in Australia considered pertinent to the expansion of the geographical distribution of the pest: **High**.

- Natural physical barriers (e.g. deserts/arid areas) may prevent long distance spread of these pests unaided but adults are capable of flight and larvae may be spread in infested host material.
- The relevance of natural enemies in Australia is not known.
- Similar environmental conditions (e.g. temperature, rainfall) are available in Chile and Australia.

Probability of entry, establishment and spread

The overall likelihood that group 3 will enter Australia as a result of trade in table grapes from Chile, be distributed in a viable state to suitable hosts, establish in that area and subsequently spread within Australia: **Moderate**.

- The probability of entry, establishment and spread is determined by combining the probabilities of entry, establishment and spread using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Consequences

Consideration of the direct and indirect consequences of group 3: **Low**.

Criterion	Estimate
Direct consequences	
Plant life or health	**C** — These pests are recorded as capable of causing direct damage to host plants such as *Vitis* and *Prunus*.
Any other aspects of the environment	**A** — There are no known direct consequences of these pests on the natural or built environment, such as the physical environment or micro-organisms but their introduction into a new environment may lead to competition for resources with native species.
Indirect consequences	
Eradication, control etc.	**B** — Additional programs to minimise the impact of these pests on host plants may be necessary. Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. where specific integrated pest management programs are used).
Domestic trade	**B** — The presence of these pests in commercial production areas may have a significant effect at the local level due to any resulting interstate trade restrictions on a wide range of commodities. These restrictions may lead to a loss of markets.
International trade	**C** — The presence of these pests in commercial production areas of a range of commodities (e.g. *Vitis*, *Prunus*) may have a significant effect at the district level due to any limitations to access to overseas markets where these pests are absent.
Environment	**A** — Although additional pesticide applications or other control activities would be required to control these pests on susceptible crops, this is not considered to impact on the environment.

Note: Refer to Table 5 and text in the 'Method for assessing consequences in this IRA' section for details on the method used for consequence assessment.

Unrestricted risk estimate

Low. The unrestricted risk estimate is determined by combining the overall 'probability of entry, establishment and spread' with the 'consequences' using the risk estimation matrix (Table 1).

GROUP 4 - THRIPS

Drepanothrips reuteri Uzel [Thysanoptera: Thripidae] (Grape thrips), *Frankliniella australis* Morgan [Thysanoptera: Thripidae] (Chilean flower thrips) and *Frankliniella occidentalis* (Pergande) [Thysanoptera: Thripidae] (Western flower thrips).

Introduction and spread potential

Probability of importation

The likelihood that group 4 will arrive in Australia with the importation of table grapes from Chile**: Moderate**.

- *Drepanothrips reuteri* forms a large part of the thrips populations associated with table grapes in some areas of Chile and along with *Frankliniella australis* is considered a significant pest.
- Thrips may be associated with the table grape pathway but have not been intercepted on Chilean table grapes exported to New Zealand or Californian table grapes destined for Australia. Adults and immature forms may hide within bunches such as in crevices on the fruit stems.

Probability of distribution

The likelihood that group 4 will be distributed as a result of the processing, sale or disposal of table grapes from Chile, to the endangered area: **High**.

- Adults and immature forms may hide within bunches such as in crevices on the fruit stems and therefore remain with the commodity during distribution via wholesale or retail sale.
- The commodity may be distributed throughout Australia for retail sale. The intended use of the commodity is human consumption but waste material would be generated (e.g. vegetative parts of the cluster and discarded berries).

Probability of entry

The likelihood that group 4 will enter Australia as a result of trade in table grapes from Chile and be distributed in a viable state to the endangered area: **Moderate**.

- The overall probability of entry is determined by combining the probabilities of importation and distribution using the matrix of ‘rules’ for combining descriptive likelihoods (Table 3).

Probability of establishment

Comparative assessment of factors in the source and destination areas considered pertinent to the ability of the pest to survive and propagate: **High**.

- A range of plants commonly found in Australia can act as hosts for these pests e.g. *Citrus*, Cucurbitaceae, *Phaseolus* and *Prunus*. Species are widespread in Chile and similar environments are available in Australia.

- Species can have a high reproductive potential even in the absence of males e.g. under glasshouse conditions *Frankliniella occidentalis* can have 15 generations per year with females producing 20-40 eggs each.
- Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. *Citrus* where specific integrated pest management programs are used).

Probability of spread

Comparative assessment of those factors in the area of origin and in Australia considered pertinent to the expansion of the geographical distribution of the pest: **High**.

- Natural physical barriers (e.g. deserts/arid areas) may prevent these pests spreading unaided but adults are capable of flight and adults and immature forms may spread undetected via the movement of fruit or infested vegetative host material.
- The relevance of natural enemies in Australia is not known.
- Similar environmental conditions (e.g. temperature, rainfall) are available in Chile and Australia.

Probability of entry, establishment and spread

The overall likelihood that group 4 will enter Australia as a result of trade in table grapes from Chile, be distributed in a viable state to suitable hosts, establish in that area and subsequently spread within Australia: **Moderate**.

- The probability of entry, establishment and spread is determined by combining the probabilities of entry, establishment and spread using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Consequences

Consideration of the direct and indirect consequences of group 4: **Low**.

Criterion	Estimate
Direct consequences	
Plant life or health	**C** — These pests are capable of causing direct harm to a wide range of hosts and can vector diseases.
Any other aspects of the environment	**A** — There are no known direct consequences of these pests on the natural or built environment, such as the physical environment or micro-organisms but their introduction into a new environment may lead to competition for resources with native species.
Indirect consequences	
Eradication, control etc.	**B** — Additional programs to minimise the impact of these pests on host plants may be necessary. Existing control programs may be effective for some hosts (e.g. broad spectrum pesticide applications) but not all hosts (e.g. where specific integrated pest management programs are used).
Domestic trade	**B** — The presence of these pests in commercial production areas may have a significant effect at the local level due to any resulting interstate trade restrictions on a wide range of commodities. These restrictions may lead to a loss of markets. Interstate measures are currently in place for one species (*Frankliniella occidentalis*).

International trade	**C** — The presence of these pests in commercial production areas of a range of commodities (e.g. *Vitis, Prunus*) may have a significant effect at the district level due to any limitations to access to overseas markets where these pests are absent.
Environment	**A** — Although additional pesticide applications or other control activities would be required to control these pests on susceptible crops, this is not considered to impact on the environment.

Note: Refer to Table 5 and text in the 'Method for assessing consequences in this IRA' section for details on the method used for consequence assessment.

Unrestricted risk estimate

Low. The unrestricted risk estimate is determined by combining the overall 'probability of entry, establishment and spread' with the 'consequences' using the risk estimation matrix (Table 1).

GROUP 5 - WEEVILS

Geniocremnus chiliensis (Boheman) [Coleoptera: Curculionidae], *Naupactus xanthographus* (Germar) [Coleoptera: Bostrichidae] (Fruit tree weevil) and *Otiorhynchus sulcatus* (Fabricius) [Coleoptera: Curculionidae] (Vine weevil; black vine weevil).

Introduction and spread potential

Probability of importation

The likelihood that group 5 will arrive in Australia with the importation of table grapes from Chile**: High**.

- The life stage of these pests considered likely to be associated with table grapes is the adult. Larvae and eggs are associated with soil and vegetative plant parts.
- *Naupactus xanthographus* has been intercepted on Chilean table grapes during inspections by the quarantine agencies of the USA and Peru.

Probability of distribution

The likelihood that group 5 will be distributed as a result of the processing, sale or disposal of table grapes from Chile, to the endangered area: **High**.

- Adults present within grape bunches may remain concealed and be spread via wholesale or retail trade.
- The commodity may be distributed throughout Australia for retail sale. The intended use of the commodity is human consumption but waste material would be generated (e.g. vegetative parts of the cluster and discarded berries).

Probability of entry

The likelihood that group 5 will enter Australia as a result of trade in table grapes from Chile and be distributed in a viable state to the endangered area: **High**.

- The overall probability of entry is determined by combining the probabilities of importation and distribution using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Probability of establishment

Comparative assessment of factors in the source and destination areas considered pertinent to the ability of the pest to survive and propagate: **High**.

- *Naupactus xanthographus* and *Otiorhynchus sulcatus* have a range of common hosts that are present in Australia e.g. *Citrus*, *Malus*, *Medicago*, *Prunus* and. *Chenopodium*, *Pinus*, *Rosa* and *Trifolium* respectively.
- *Naupactus xanthographus* females are capable of producing offspring in the absence of males for up to 6 months with each female able to produce up to 1000 eggs. *Otiorhynchus sulcatus* is generally parthenogenetic with females able to produce up to 750 eggs under laboratory conditions.
- *Otiorhynchus sulcatus* is demonstrated to survive in some areas of Australia.

Probability of spread

Comparative assessment of those factors in the area of origin and in Australia considered pertinent to the expansion of the geographical distribution of the pest: **High**.

- These pests may be spread as adults via infested host commodities or as larvae in soil or on products/machinery that are carrying soil.
- The relevance of natural enemies in Australia is not known.
- Similar environmental conditions (e.g. temperature, rainfall) are available in Chile and Australia.

Probability of entry, establishment and spread

The overall likelihood that group 5 will enter Australia as a result of trade in table grapes from Chile, be distributed in a viable state to suitable hosts, establish in that area and subsequently spread within Australia: **High**.

- The probability of entry, establishment and spread is determined by combining the probabilities of entry, establishment and spread using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Consequences

Consideration of the direct and indirect consequences of group 5: **Moderate**.

Criterion	Estimate
Direct consequences	
Plant life or health	**D** — *Naupactus xanthographus* is a serious pest of *Vitis* in Chile and requires active management during the growing season. *Otiorhynchus sulcatus* is also considered a serious pest of a range of commercial plant hosts.
Any other aspects of the environment	**A** — There are no known direct consequences of these pests on the natural or built environment, such as the physical environment or micro-organisms but their introduction into a new environment may lead to competition for resources with native species.
Indirect consequences	
Eradication, control etc.	**C**— programs to eradicate/control these pests would be costly as they are commonly present as larvae in the soil and eggs concealed within the bark of host plants.
Domestic trade	**C** — If the pest is not widely distributed the initial development and implementation of phytosanitary measures may have a significant effect on domestic trade from areas where it occurs.
International trade	**C** — Phytosanitary measures for *N. xanthographus* are required for imports of table grapes by other countries. Initial development and implementation of such measures may have a significant effect on exports of host products.
Environment	**A** — Although additional pesticide applications or other control activities would be required to control these pests on susceptible crops, this is not considered to impact on the environment.

Note: Refer to Table 5 and text in the 'Method for assessing consequences in this IRA' section for details on the method used for consequence assessment.

Unrestricted risk estimate

Moderate. The unrestricted risk estimate is determined by combining the overall 'probability of entry, establishment and spread' with the 'consequences' using the risk estimation matrix (Table 1).

GROUP 6 – FRUIT FLY

Ceratitis capitata (Wiedemann) [Diptera: Tephritidae] (Mediterranean fruit fly)

Introduction and spread potential

Probability of importation

The likelihood that group 6 will arrive in Australia with the importation of table grapes from Chile**: Moderate**.

- Should this species become established in Chile, eggs laid by mature females may be present under the skin of host fruit. Larvae of this species are internal feeders and may not be readily detected during visual inspections.

Probability of distribution

The likelihood that group 6 will be distributed as a result of the processing, sale or disposal of table grapes from Chile, to the endangered area: **Moderate**.

- Should this species become established in Chile, imported fruit with internal infestation may be distributed throughout Australia via wholesale or retail trade.
- The commodity may be distributed throughout Australia for retail sale. The intended use of the commodity is human consumption but waste material would be generated (e.g. vegetative parts of the cluster and discarded berries).

Probability of entry

The likelihood that group 6 will enter Australia as a result of trade in table grapes from Chile and be distributed in a viable state to the endangered area: **Low**.

- The overall probability of entry is determined by combining the probabilities of importation and distribution using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Probability of establishment

Comparative assessment of factors in the source and destination areas considered pertinent to the ability of the pest to survive and propagate: **High**.

- A range of plants commonly found in Australia can act as hosts for this pest e.g. *Brassica*, *Capsicum*, *Citrus*, *Cucumis*, *Lycopersicon esculentum* (tomato) and *Mangifera indica* (mango).
- Climatic conditions within the PRA area are known to be suitable for its survival.

Probability of spread

Comparative assessment of those factors in the area of origin and in Australia considered pertinent to the expansion of the geographical distribution of the pest: **Moderate**.

- This species has a wide host range and environmental tolerances and may spread readily within Australia. This species has spread widely throughout the world.
- Migrant adults do not disperse widely. The main distribution method would be through infested fruit but existing interstate quarantine protocols would reduce the likelihood of spread via this pathway.

Probability of entry, establishment and spread

The overall likelihood that group 6 will enter Australia as a result of trade in table grapes from Chile, be distributed in a viable state to suitable hosts, establish in that area and subsequently spread within Australia: **Low**.

- The probability of entry, establishment and spread is determined by combining the probabilities of entry, establishment and spread using the matrix of 'rules' for combining descriptive likelihoods (Table 3).

Consequences

Consideration of the direct and indirect consequences of group 6: **High**.

Criterion	Estimate
Direct consequences	
Plant life or health	**D** — *Ceratitis capitata* is recognised internationally as a serious polyphagous pest and is capable of causing significant reductions in the production of marketable fruit.
Any other aspects of the environment	**A** — There are no known direct consequences of these pests on the natural or built environment, such as the physical environment or micro-organisms but their introduction into a new environment may lead to competition for resources with native species.
Indirect consequences	
Eradication, control etc.	**E** — Programs to control/eradicate this pest from areas in Australia where it is not already present would be costly. For example, eradication from Western Australia estimated at $70m. Increases to the existing monitoring programs also considered to be costly.
Domestic trade	**D** — Restrictions to domestic trade considered to be significant initially until management measures are developed and implemented.
International trade	**B** — International trade not considered to be significantly affected as management measures for international movement of host produce are available.
Environment	**A** — Although additional pesticide applications or other control activities would be required to control these pests on susceptible crops, this is not considered to impact on the environment.

Note: Refer to Table 5 and text in the 'Method for assessing consequences in this IRA' section for details on the method used for consequence assessment.

Unrestricted risk estimate

Moderate. The unrestricted risk estimate is determined by combining the overall 'probability of entry, establishment and spread' with the 'consequences' using the risk estimation matrix (Table 1).

GROUP 7 – SPIDER

Latrodectus mactans (Fabricius) [Araneae: Theridiidae] (Black widow spider)

Lactrodectus mactans is not a plant pest and therefore is not subject to phytosanitary action. However, it is considered to be potentially associated with table grapes imported from Chile (see Pest Categorisation section) and is recognised as having an impact on human health and potential impacts on the environment (see below). Therefore the methodology described for the other pests was not used for this particular risk assessment.

Applications to import this species into Australia (i.e. an importer who actively wanted to bring specimens into Australia) would be assessed outside of the IRA process. Based on similar requests it is likely that, if approved, such an import would require an Import Permit and containment of the specimens in a high security quarantine facility.

A comprehensive assessment of the association of spiders (including black widow spider) with table grapes, risk mitigation measures and impact on human health is provided in a series of documents produced by the New Zealand Ministry of Agriculture and Forestry and Ministry of Health:

- Pest Risk Assessment of Spiders Associated with Table Grapes from United States of America (State of California), Australia, Mexico and Chile. Ministry of Agriculture and Forestry, Wellington, New Zealand.
- Mitigation Measures for the Management of Risks Posed by Exotic Spiders Entering New Zealand in Association with Imported Table Grapes. Ministry of Agriculture and Forestry, Wellington, New Zealand.
- Towards a Health Impact Assessment Relating to Venomous Spiders Entering New Zealand in Association with Imported Table Grapes: A Discussion Document. Ministry of Health, Wellington, New Zealand.
- Review of Submissions (*to the above 3 documents*). September 2002. Ministry of Agriculture and Forestry, Ministry of Health and Department of Conservation.

Based on the potential association of *L. mactans* with table grapes from Chile, the demonstrated ability of other *Lactroderus* species to survive in Australia and the risks identified by the New Zealand Ministry of Agriculture and Forestry and Ministry of Health, it is concluded that the unrestricted risk associated with the species is not acceptable.

CONCLUSIONS: RISK ASSESSMENTS

The results of the risk assessments are summarised in Table 10. The unrestricted risk estimate for some of the pests exceeds ALOP. Risk management measures are required for pests that have an unrestricted risk exceeding ALOP. The proposed risk management measures are described in the following section.

Table 10 Results of the risk assessments

Group		Probability of Entry	Establishment	Spread	Overall Probability of entry establishment and spread	Economic Consequences	Unrestricted Risk
Group 1	Mites	High	High	High	High	Moderate	Moderate
Group 2a	Aphids	Low	High	High	Low	Moderate	Low
Group 2b	Mealy bugs & scales	Moderate	High	High	Moderate	Low	Low
Group 3	Lepidopterans	Moderate	High	High	Moderate	Low	Low
Group 4	Thrips	Moderate	High	High	Moderate	Low	Low
Group 5	Weevils	High	High	High	High	Moderate	Moderate
Group 6	Fruit fly	Low	High	Moderate	Low	High	Moderate
Group 7	Spider						Not acceptable
Group 8	Plant pests						Not acceptable

Note: The assessment for Group 8 (plant pests) is presented in the "Pest Categorisation" section of this document.

RISK MANAGEMENT

Pest risk management evaluates and selects options for measures to reduce the risk of entry, establishment or spread of quarantine pests assessed to pose an unacceptable level of risk to Australia via the importation of commercially produced table grapes from Chile (i.e. those that have come from standard cultivation, harvesting and packing activities).

Biosecurity Australia considers that the risk management measures proposed below are commensurate with the identified risks and invites technical comments on their economic and technical feasibility. In particular, technical comments are welcome on the appropriateness of the measures and any alternative measures that stakeholders consider would achieve the identified objectives.

The measures described below will form the basis of proposed import conditions for table grapes from Chile, which are further detailed in the section entitled Draft Quarantine Conditions.

PROPOSED RISK MANAGEMENT MEASURES

There are five categories of measures proposed to manage the risks identified in the pest risk assessment:

- pest free areas for *Ceratitis capitata* (Mediterranean fruit fly),
- methyl bromide fumigation (either pre-shipment or on-arrival) for mites, lepidopterans and weevils,
- fumigation with SO_2/CO_2 for black widow spiders,
- freedom of consignments from other identified quarantine pests and
- supporting operational maintenance systems and verification of phytosanitary status.

[1] Pest free areas for Mediterranean fruit fly

Group 6 - fruit fly (Mediterranean fruit fly, Medfly) has been assessed to have an unrestricted risk estimate of moderate and measures are therefore required to manage that risk.

Visual inspection alone is not considered to be an appropriate risk management option in view of the level of risk identified and because clear visual external signs of infestation (particularly in recently infested fruit) may not be present. If infested fruit was not detected at inspection, Medfly may enter, establish and spread. Other identified options to manage risks associated with Medfly are either the use of disinfestation treatments or by sourcing fruit from pest free areas.

SAG has proposed that product for prospective export to Australia would be from Medfly pest free areas. Chile is considered a “Pest Free Area” for Medfly. The objective of this risk management measure is to ensure that table grapes exported to Australia are not infested with Medfly. SAG will verify maintenance of this status for this pest by routine crop monitoring/surveillance. Technical information justifying Chile’s freedom from Mediterranean fruit fly has been provided to AFFA by SAG and updates on detections and eradication activities are provided on an on-going basis. SAG

must continue to notify AFFA of the status of Medfly and any associated detections and eradication activities in Chile.

The finding of any live or dead Medfly associated with consignments of table grapes from Chile would indicate non-compliance with the pest free area status. Therefore, if any live or dead Medfly are detected at inspections, the export program to Australia will be suspended until Biosecurity Australia and SAG are satisfied that appropriate corrective action has been taken to re-instate the pest free area status for Medfly or another risk management measure has been developed and approved as an alternative.

[2] Methyl bromide fumigation (either pre-shipment or on-arrival) for mites, lepidopterans and weevils

Certain mites and weevils have been assessed to have an unrestricted risk estimate of moderate and lepidopterans an unrestricted risk estimate of low and measures are therefore required to manage those risks.

Visual inspection alone is not considered to be an appropriate risk management option in view of the level of risk identified and/or because clear visual external signs of infestation (particularly in recently infested bunches of grapes) may not be present. If infested fruit was not detected at inspection, mites, lepidopterans and weevils may enter, establish and spread. Other identified options to manage risks associated with these pests are either the use of disinfestation treatments or by sourcing fruit from pest free areas.

SAG has not proposed table grape export areas as pest free areas for the identified quarantine mites, lepidopterans or weevils. Methyl bromide fumigation is considered to be the only feasible measure for these pests to reduce the risk estimate from moderate/low to an acceptable level, as the pests may be present either within the fruit or hidden within the bunches and therefore not be easily detectable during visual inspection. Therefore, mandatory fumigation with methyl bromide is proposed for all export shipments in accordance with the relevant AQIS standards. The objective of this risk management measure is to reduce the unrestricted risk estimate from moderate/ low to an acceptable level.

The fumigation measure may be completed either in Chile under full pre-clearance arrangements or on-arrival in Australia under a partial pre-clearance program. Under a partial pre-clearance program, fumigation on-arrival must occur at the first port of call, with no land bridging of consignments until the goods have cleared quarantine (i.e. the shipments are not released by AQIS until after the successful completion of the treatment). Also see section [5] below.

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 21ºC or greater;

40g/m^3 at a grape pulp temperature of 16ºC or greater but less than 21ºC;

48g/m^3 at a grape pulp temperature of 10ºC or greater but less than 16ºC.

The loading ratio should not exceed 80% of the chamber volume. Fruit is not to be fumigated if the grape pulp temperature is less than 10ºC. An AQIS-supervised fumigation treatment in Australia will typically not require a follow up inspection.

[3] Pre-shipment fumigation with SO_2/CO_2

Black widow spiders (BWS) are not plant pests and therefore phytosanitary measures cannot be applied against them. However, BWS have been assessed to have an unacceptable unrestricted risk estimate and sanitary measures are therefore required to manage that risk. Visual inspection alone is not considered to be an appropriate risk management option in view of the health risks for inspectors and the cryptic habit of individual spiders (which may conceal themselves in the carton rather than the inspected bunch). If infested fruit was not detected at inspection, BWS may enter, establish and spread. Other identified options to manage risks associated with BWS are either the use of disinfestation treatments or by sourcing fruit from pest free areas.

SAG has not proposed table grape export areas as pest free areas for BWS. Treatment by pre-export treatment with SO_2/CO_2 is known to be normal commercial practice in Chile and is considered appropriate to reduce the risk estimate to an acceptable level. The efficacy of the SO_2/CO_2 treatment against BWS is reported as 92% under best conditions (quoted in MAF, 2002a) and 87-99% depending on the packaging used (quoted in MAF *et al*., 2002). Efficacy of the treatment against juveniles and eggs sacs of BWS is unknown (quoted in MAF *et al*., 2002). Methyl bromide fumigation as a stand-alone treatment at the proposed dosages for mites, lepidopterans and weevils is reported as not killing BWS. Higher methyl bromide dosage rates (e.g. $80g/m^3$) would be required to kill BWS (quoted in MAF, 2002b). However, it is considered that the combination of pre-export SO_2/CO_2 treatment and pre-export or on-arrival methyl bromide treatment would provide acceptable fatality rates of black widow spider. This treatment combination currently applies to table grapes imported into Australia from California. There have been no rejections of Californian table grapes in Australia due to live interceptions of BWS.

Therefore, it is proposed that all shipments undergo normal commercial pre-export fumigation with a mixture of sulphur dioxide and carbon dioxide (SO_2/CO_2). The objective of this risk management measure is to reduce the survival of any BWS associated with packed table grapes or packaging. Under the proposed fumigation arrangement, the palletised table grapes would be treated with a mixture of 1% sulphur dioxide and 6% carbon dioxide for a minimum of 30 minutes.

[4] Freedom of consignments from other identified quarantine pests

Other quarantine pests including certain aphids, mealy bugs, scales, and thrips (see table 8) have been identified to have an unrestricted risk of low and quarantine pests plants (see table 9) have been identified to have an 'unacceptable' unrestricted risk estimate. Measures are therefore required to manage those risks.

Visual inspection, supported by the operational procedures described in the next section, is considered to be an appropriate risk management option for these pests in view of the level of risk identified. In addition, and compared to mites, lepidopterans and weevils, these pests are considered to be relatively easily detected at visual inspection, because they are external contaminants and often relatively large.

Methyl bromide fumigation is not considered to be a necessary measure for these pests, although the methyl bromide fumigation treatment for mites, lepidopterans and weevils would be expected to manage risks associated with aphids, mealy bugs, scales, and thrips. Methyl bromide fumigation has no known effect on the identified quarantine pest plants, as a group.

[5] Operational maintenance and verification of phytosanitary status

It is necessary to have a system of operational procedures in place to ensure that the phytosanitary status of the table grapes from Chile is maintained and verified during the process of production and export to Australia.

Biosecurity Australia proposes a system for that purpose which is consistent with and equivalent to the one currently in place for the importation of table grapes from California, United States of America. Details of this system, or of an equivalent one, will be determined by agreement with SAG. This is to ensure that requirements are appropriate to the circumstances of Chilean table grape production and export. Biosecurity Australia is willing to consider any alternative arrangements that SAG may wish to propose.

The system proposed is based on either full pre-clearance arrangements or partial pre-clearance. Precedents to date indicate that advantages of the partial pre-clearance option include: i) fumigation can be undertaken on-arrival in Australia, and ii) following phytosanitary inspection in Chile, any consignments that may be found with quarantine pests risks that are not managed by methyl bromide fumigation, are not exported from Chile.

The proposed system of operational procedures for the production and export of table grapes from Chile to Australia consists of:

- Registration of vineyards and fumigation facilities,
- Packaging and labelling compliance,
- Specific conditions for storage and movement of produce,
- Phytosanitary inspection,
- Phytosanitary certification by SAG, and
- On-arrival quarantine clearance by AQIS.

[5A] Registration of vineyards and fumigation facilities

All table grapes for export must be sourced only from registered export vineyards. Copies of the registration records must be available for audit by AQIS if requested. SAG is required to register all export vineyards and export fumigation facilities prior to commencement of exports. Facilities for SO_2/CO_2 fumigation in Chile are required to comply with SAG standards for export grade facilities. Facilities for methyl bromide fumigation in Australia and Chile are to comply with the relevant AQIS standards.

The objective of this procedure is to ensure that vineyards and fumigation facilities from which table grapes are sourced can be identified. This is to allow trace back to individual vineyards and fumigation facilities in the event of non-compliance and for audit (of fumigation facilities). For example, if live pests are frequently intercepted on fumigated product, the ability to identify a specific fumigation facility allows the investigation and corrective action to be targeted rather than applying to all possible facilities.

[5B] Packaging and labelling

All table grapes for export must be free from trash and pest plant seeds of quarantine concern to Australia. Trash refers to soil, splinters, twigs, leaves and other plant material. Table grapes must be packed in a way that is demonstrated to allow efficacious treatment with SO_2/CO_2 and subsequently methyl bromide. No unprocessed packing material of plant origin will be allowed.

All wood material used in packaging of table grapes must comply with the AQIS conditions (eg those in "Cargo containers: quarantine aspects and procedures" (AQIS, 1996).

All boxes must be labelled with the vineyard registration number and boxes/pallets with the fumigation facility number. Palletised product is to be identified by attaching a uniquely numbered pallet card to each pallet or part pallet to enable trace back to registered vineyards.

The exporter/freight forwarder must complete a Notice of Intention to Export (NOI) prior to any pre-clearance. The NOI will describe the pallets (by pallet card number of other method approved by AQIS) that the exporter wants included in the inspection lot.

The objectives of this procedure are to ensure that:

- The table grapes exported to Australia are not contaminated by quarantine pest plants or trash (which may vector pests identified as not on the pathway and pests not known to be associated with table grapes).
- Unprocessed packing material (which may vector pests identified as not on the pathway and pests not known to be associated with table grapes) is not imported with the table grapes.
- The table grapes are packaged in such a way to allow effective application of the required chemical treatments (SO_2/CO_2 and methyl bromide).
- The packaged table grapes are labelled in such as way to identify the vineyard and fumigation facility (see measure 1) and whether they have been pre-cleared or not. Table grapes not identified as having been pre-cleared would be assumed to not be pre-cleared and therefore still require inspection by AQIS.

[5C] Specific conditions for storage and movement of produce

Packed product and packaging is to be protected from pest contamination during and after packing, during storage and during movement between locations (that is, packing house to cool storage/depot, to inspection point, to export point).

Product for export to Australia that has been inspected and certified by SAG must be maintained in secure conditions that will prevent mixing with fruit for export to other destinations.

Security of the consignment is to be maintained until release from quarantine in Australia.

Arrangements for secure storage and movement of produce to be developed by SAG in consultation with AFFA.

The objective of this procedure is to ensure that the phytosanitary status of the product is maintained during storage and movement.

[5D] Pre-clearance phytosanitary inspection

SAG and AQIS will jointly inspect all consignments in accordance with official procedures for all visually detectable quarantine pests and trash. 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 a level of zero unit infested by quarantine pests in a random sample size of 600 units from the homogenous lots in the consignment. The 600-unit sample must be selected randomly from every lot in the consignment. The detection of live visually detectable quarantine pests and trash (including pest plants and trash) will result in the failure of a consignment.

The objective of this procedure is to ensure that table grapes exported to Australia do not contain quarantine pests or trash, comply with packing and labelling requirements, have undergone SO_2/CO_2 treatment and have undergone (where relevant) methyl bromide fumigation treatment.

Records of the interceptions made during these inspections (live or dead quarantine pests, and trash) are to be maintained by SAG and made available to AFFA as requested. This information will assist in future reviews of this import pathway and consideration of the appropriateness of the phytosanitary measures that have been applied.

Note: A consignment is the number of boxes of table grapes from Chile covered by one phytosanitary certificate shipped via one port in Chile to a designated port in Australia for one consignee on the same vessel on the same day. A lot is defined as a number of units of a single commodity, identifiable by its homogeneity of composition, for example, forming part of a consignment.

[5E] Phytosanitary certification by SAG

SAG is to issue a phytosanitary certificate for each consignment after completion of the pre-export fumigation treatments (as appropriate) and phytosanitary inspection. The objective of this procedure is to provide formal documentation to AQIS verifying that the relevant measures that have been undertaken offshore. SAG is to issue a phytosanitary certificate for each consignment after completion of the pre-export fumigation treatments (where relevant) and phytosanitary inspection. Each phytosanitary certificate is to contain the following information:

Additional declarations:

"The grapes in this consignment have been produced in Chile in accordance with the conditions governing the entry of fresh table grapes from Chile to Australia"

"AQIS pre-clearance inspection undertaken in Chile in accordance with the Work Plan For The Pre-clearance of Chilean Table Grapes to Australia <insert date>*"*

Note: The Work Plan will be developed between AFFA and SAG following the finalisation of this IRA.

Distinguishing marks

The pallet card numbers, container numbers, aircraft flight number (where known) and seal numbers (for sea freight).

Treatments

Details of pre-export fumigation treatments conducted (dosage, duration, grape pulp temperature, date) and the fumigation facility number (for the SO_2/CO_2 treatment facility and the methyl bromide treatment facility where relevant).

[5F] On-arrival quarantine clearance by AQIS

Consignments inspected by SAG and AQIS under pre-clearance arrangements do not require on-arrival inspection in Australia by AQIS. AQIS will undertake a documentation compliance examination for consignment verification purposes prior to release from quarantine. However, for

consignments that undergo on-arrival methyl bromide fumigation, AQIS may in addition perform monitoring inspections as appropriate. Where monitoring inspections are undertaken, sampling procedures will be as per [5D] above. The detection of live visually detectable quarantine pests and trash (including pest plants and trash) will result in the failure of a consignment.

The objective of this procedure is to verify that the required measures (both off-shore and on-shore, as appropriate) have been undertaken.

Where consignments are found to be non-compliant with requirements on-arrival, the importer will be given the option to treat (if suitable treatments for the pests detected can be applied), re-export or destroy the consignment. If product continually fails inspection, AQIS reserves the right to suspend the export program and conduct an audit of the Chilean table grape risk management systems. The program will continue only once AFFA is satisfied that appropriate corrective action has been taken.

Uncategorised pests

If an organism that is detected on table grapes from Chile that has not been categorised, it will require assessment to determine its quarantine status and if phytosanitary action is required. The detection of any pests of quarantine concern not already identified in the analysis may result in the suspension of the trade while a review is conducted to ensure that the existing measures continue to provide the appropriate level of phytosanitary protection for Australia.

DRAFT QUARANTINE CONDITIONS

The draft import conditions described below are based on the conclusions of the pest risk analysis contained in this draft IRA report. Specifically, they are based on the risk management measures proposed in the previous section. Each proposed risk management measure is covered in more detail below including the options of how they could be implemented. For example, risk management measure 5D *Phytosanitary inspection* is covered under import conditions 8 and 11.

The components of the draft quarantine conditions are summarised in dot point format below and Biosecurity Australia invites comments on their technical and economic feasibility. The proposed risk management measure that links with each component is given in brackets ( ).

- Import Condition 1. Registration of vineyards and fumigation facilities (links with risk management measure 5A)
- Import Condition 2. "Pest Free Area" for Mediterranean fruit fly (1)
- Import Condition 3. Notice of Intention to Export (5B)
- Import Condition 4. Packing and labelling (4, 5B)
- Import Condition 5. Storage (4, 5C)
- Import Condition 6. Pre-shipment fumigation with SO_2/CO_2 (3)
- Import Condition 7. Fumigation with methyl bromide (2)
- Import Condition 8. Phytosanitary inspection (4, 5D)
- Import Condition 9. Phytosanitary certification (5E)
- Import Condition 10. On-arrival quarantine clearance by AQIS (5F)
- Import Condition 11. Western Australia
- Import Condition 12. Review of policy

IMPORT CONDITION 1. REGISTRATION OF VINEYARDS AND FUMIGATION FACILITIES

All table grapes for export must be sourced only from registered export vineyards. SAG (Servicio Agricola y Ganadero, Chilean Agriculture Service) is required to register all export vineyards and export fumigation facilities prior to commencement of exports to enable traceback in the event of non-compliance. Facilities for SO_2/CO_2 fumigation in Chile are required to comply with SAG standards for export grade facilities. Facilities for methyl bromide fumigation in Australia and Chile are to comply with the relevant AQIS standards. Copies of the registration records for SO_2/CO_2 and methyl bromide treatment facilities in Chile must be provided to AQIS.

IMPORT CONDITION 2. "PEST FREE AREA" FOR MEDITERRANEAN FRUIT FLY

Chile is considered a "Pest Free Area" for *Ceratitis capitata* (Mediterranean fruit fly). Technical information justifying Chile's freedom from Mediterranean fruit fly has been provided to AFFA by SAG in the past and acceptable updates on detections and eradication activities are provided on an on-going basis. AFFA must continue to be notified of the status of Mediterranean fruit fly and any associated detections and eradication activities in Chile.

If any live or dead Mediterranean fruit fly are detected at inspection, the export program to Australia will be suspended until AFFA and SAG are satisfied that appropriate corrective action has been taken reinstate the pest free area status of another risk management measure has been developed and approved.

IMPORT CONDITION 3. NOTICE OF INTENTION TO EXPORT

A Notice of Intention to Export (NOI) will be the primary document that confirms pre-clearance of Chilean table grape shipments.

The exporter/freight forwarder must complete an NOI prior to any pre-clearance. The NOI will describe the pallets (by pallet card number of other method approved by AQIS) that the exporter wants included in the inspection lot.

- Note: A lot is the quantity of units (bunches) of grapes identifiable by its homogeneity of composition, for example source vineyard or fumigation facility. A lot may form part of a consignment, or comprise the entire consignment.

Participants are to keep appropriate records to enable trace back of product from the NOI issued, through the packing house (including pallet identification) to each supplying grower.

If the lot passes AQIS phytosanitary inspection the AQIS officer will sign and stamp the NOI. This original is to be retained by the AQIS officer and copies provided to SAG and the participant. Other copies specific to each consignment must be highlighted to identify which pallets from the original inspection lot are included in a consignment. Such copies will be attached to the appropriate phytosanitary certificate accompanying each specific consignment. Participants may use copies of the NOI as inventory worksheets.

- Note: A "participant" is any treatment facility or other entity that is registered by SAG for the purpose of the export of Chilean table grapes to Australia.

IMPORT CONDITION 4. PACKING AND LABELLING

All table grapes for export must be free from trash and pest plant seeds of quarantine concern to Australia. Trash refers to soil, splinters, twigs, leaves and other plant material. Table grapes must be packed in a way that is demonstrated to allow efficacious treatment with SO_2/CO_2 and methyl bromide. No unprocessed packing material of plant origin will be allowed. All wood material used in packaging of table grapes must comply with the conditions stipulated in "Cargo containers: quarantine aspects and procedures" (AQIS, 1996) and as contained in the AQIS ICON database.

Perforated transparent polyvinyl bags within Toyon Kraft Veneer (TKV) boxes (that is, boxes with processed wood ends and sides made of Kraft paper) are currently accepted for the import of table grapes into Australia from California. AFFA is willing to consider other forms of packaging subject to efficacy data for SO_2/CO_2 and methyl bromide treatment being provided.

Packaging material includes export cartons/boxes, plastic bags within which individual grape bunches are contained within the export carton/box, any plastic or paper used to line export cartons/boxes, any pallets upon which the cartons/boxes are stacked, and any strapping or other materials associated with the export pallet. All packaging (except pallets) must be new.

All boxes must be labelled with the vineyard registration number and boxes/pallets with the fumigation facility number. Box stamping requirements will only be necessary for consignments consisting of individual boxes and not complete pallets. Procedures will be developed by AQIS to deal with missing box stamps on a case-by-case basis.

Stacking of boxes on pallets must be done in such as 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 post-harvest treatment.

Palletised product is to be identified by attaching a uniquely numbered pallet card to each pallet or part pallet to enable trace back to registered vineyards.

Pallet cards must be securely fastened to the pallet in order to withstand handling at the ports of export/import. If pallet cards are not affixed or cannot be located on arrival in Australia the pallet will not be considered pre-cleared.

IMPORT CONDITION 5. STORAGE

Packed product and packaging is to be protected from pest contamination during and after packing, and during movement between locations (e.g. packing house to cool storage/depot, to fumigation facility, to inspection point, to export point).

Product for export to Australia that has been inspected and certified by SAG must be maintained in secure conditions that will prevent mixing with fruit for export to other destinations.

Product that has been pre-cleared by AQIS must be maintained in secure conditions segregated from rejected lots, non-inspected table grapes and other fruit.

The product must be segregated in such a way to ensure that product is not mixed with fruit for export to other destinations or reinfested. Segregation of 1 metre in all directions under ambient temperature storage conditions or a minimum of 100mm in all directions in a cool storage environment is currently accepted for the import of table grapes into Australia from California.

Security of the consignment is to be maintained until release from quarantine in Australia.

IMPORT CONDITION 6. PRE-SHIPMENT FUMIGATION WITH SO_2/CO_2

All export shipments must undergo mandatory pre-shipment with a mixture of sulphur dioxide and carbon dioxide (SO_2/CO_2). The palletised table grapes must be treated with a mixture of 1% sulphur dioxide and 6% carbon dioxide for a minimum of 30 minutes.

All packaging material shall be subjected to SO_2/CO_2 fumigation under the same conditions prescribed for export table grapes and subjected to post fumigation security measures necessary to prevent infestation with spiders of concern OR subject to such security measures necessary to prevent infestation with spiders of concern from the time of manufacture until the time of export.

SAG is to supervise the SO_2/CO_2 fumigation treatments. AQIS may direct SAG to suspend a fumigation facility should live spiders of concern be detected during inspections. The suspended facility may be reinstated pending favourable results of an investigation conducted by SAG/AQIS.

IMPORT CONDITION 7. FUMIGATION WITH METHYL BROMIDE

All export shipments must undergo mandatory fumigation with methyl bromide in accordance with the relevant AQIS standards. The fumigation may be conducted either pre-export in Chile or on-arrival in Australia.

Fumigation on-arrival must occur at the first port of call. No land bridging of consignments will be permitted unless the goods have cleared quarantine. For on-arrival treatments, the shipments are not released by AQIS until after the successful completion of the treatment.

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 21ºC or greater;

$40g/m^3$ at a grape pulp temperature of 16ºC or greater but less than 21ºC;

$48g/m^3$ at a grape pulp temperature of 10ºC or greater but less than 16ºC.

The loading ratio should not exceed 80% of the chamber volume. Fruit is not to be fumigated if the grape pulp temperature is less than 10ºC. An AQIS-supervised fumigation treatment in Australia will typically not require a follow up inspection.

An AQIS inspector will monitor all fumigation treatments in Australia and in Chile where pre-export fumigation is conducted. AQIS may direct SAG to suspend a fumigation facility should live quarantine pests be detected during inspection of consignments that have been fumigated with methyl bromide. The suspended facility may be reinstated pending favourable results of an investigation conducted by SAG/AQIS.

Fumigation facilities will ensure that they have systems in place that will assure that treated and untreated product is identified and segregated at all times while at the facility.

IMPORT CONDITION 8. PHYTOSANITARY INSPECTION

SAG and AQIS will jointly inspect all consignments in accordance with official procedures for all visually detectable quarantine pests and trash. 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 a level of zero unit infested by quarantine pests in a random sample size of 600 units from the homogenous lots in the consignment. The 600-unit sample must be selected randomly from every lot in the consignment. The detection of live visually detectable quarantine pests and trash (including pest plants and trash) will result in the failure of a consignment.

Records of the interceptions made during these inspections (live or dead arthropod pests, pest plant seeds and trash) are to be maintained. This information will assist in future reviews of this import pathway and consideration of the appropriateness of the phytosanitary measures.

For consignment that are to undergo pre-export SO_2/CO_2 and methyl bromide fumigation treatments, the inspection is to be conducted after both treatments have been conducted.

For consignment that are to undergo pre-export SO_2/CO_2 fumigation treatment and on-arrival methyl bromide fumigation treatment, the inspection is to be conducted after the SO_2/CO_2 fumigation treatment has been conducted.

Participants are to remove pallets/packages from cool-stores as directed by AQIS. This will be on a random basis so all pallets in the lot must be in the one place and accessible at the time of inspection. AQIS will undertake pre-clearance inspection of lots submitted by participants. Participants are to reassemble pallets immediately after completion of pre-clearance inspection. For the purposes of pre-clearance inspections, fumigation lots conducted within a 36-hour period may be combined into one inspection lot if consistent treatment procedures are followed from the same treatment facility.

Sufficient cartons/boxes will be selected at random from the nominated lot to ensure a 600-bunch inspection can be completed. The number of cartons/boxes inspected to obtain the 600 bunches will be recorded.

Inspection will require that each bunch be individually examined. Limited destructive sampling may be required to break open tight bunches. The full 600 bunches selected for inspection will be completed regardless of whether any detections are found earlier in the inspection.

All fruit will be removed from each selected carton/box and the empty carton/box examined for spiders, pest plant seeds, trash and pests.

Lots that fail inspection must be clearly identified with a label indicating that the lot is rejected for export to Australia. Rejected product must be segregated from other table grapes that are either awaiting inspection or have passed inspection. Product rejected for Australian quarantine purposes is not eligible for export to Australia.

If product continually fails inspection, AQIS reserves the right to suspend the export program and conduct an audit of the table grape systems that are in place. The program will only continue once AFFA is satisfied that appropriate corrective action has been taken.

Note: A consignment is the number of boxes of table grapes covered by one phytosanitary certificate shipped via one port in Chile to a designated port in Australia for one consignee on the same vessel on the same day.

IMPORT CONDITION 9. PHYTOSANITARY CERTIFICATION

SAG is to issue a phytosanitary certificate for each consignment after completion of the pre-export fumigation treatment(s) and phytosanitary inspection. Each phytosanitary certificate is to contain the following information:

Additional declarations:

"*The grapes in this consignment have been produced in Chile in accordance with the conditions governing the entry of fresh table grapes from Chile to Australia*"

"*AQIS pre-clearance inspection undertaken in Chile in accordance with the Work Plan For The Pre-clearance of Chilean Table Grapes to Australia* <insert date>"

Note: The Work Plan will be developed between AFFA and SAG following the finalisation of this IRA.

Distinguishing marks

The pallet card numbers, container numbers, aircraft flight number (where known) and seal numbers (for sea freight).

Treatments

Details of pre-export fumigation treatments conducted (dosage, duration, grape pulp temperature, date).

The fumigation facility number (for the SO_2/CO_2 treatment facility and the methyl bromide treatment facility where relevant).

IMPORT CONDITION 10. ON-ARRIVAL QUARANTINE CLEARANCE BY AQIS

AQIS will undertake a documentation compliance examination for consignment verification purposes prior to release from quarantine. However, for consignments that undergo on-arrival methyl bromide fumigation, AQIS may in addition perform monitoring inspections as appropriate. Where monitoring inspections are undertaken, sampling procedures will be as per Import Condition 8 above. The detection of live visually detectable quarantine pests and trash (including pest plants and trash) will result in the failure of a consignment.

Where consignments are found to be non-compliant with requirements on-arrival, the importer will be given the option to treat (if suitable treatments for the pests detected can be applied), re-export or destroy the consignment. If product continually fails inspection, AQIS reserves the right to suspend the export program and conduct an audit of the Chilean table grape risk management systems. The program will continue only once AFFA is satisfied that appropriate corrective action has been taken.

IMPORT CONDITION 11. WESTERN AUSTRALIA

State legislation in Western Australia currently prohibits the importation of fresh table grapes from areas where downy mildew occurs, including other Australian States and Territories. Biosecurity Australia considers that the risk management measures proposed in this draft IRA report appropriately manage the risks associated with the importation of table grapes from Chile into all States and Territories of Australia. However, the Western Australian State legislation requires

modification before imports into that State can occur. This will be addressed with the Western Australian authorities in conjunction with the preparation of the final IRA report.

IMPORT CONDITION 12. REVIEW OF POLICY

This policy will be reviewed after the first year of trade.

CONCLUSIONS

The findings of this draft IRA report are based on a comprehensive analysis of relevant scientific literature and existing import requirements for table grapes from Chile into Australia.

Biosecurity Australia considers that the risk management measures proposed in this draft IRA report will provide an appropriate level of protection against the pests identified in the risk assessment. Various risk management measures may be suitable to manage the risks associated with table grapes from Chile and Biosecurity Australia will consider any other measures suggested by stakeholders that provide an equivalent level of phytosanitary protection.

In the course of preparing the draft IRA report, Biosecurity Australia received submissions on scientific issues raised in the Technical Issues Paper. A synopsis of submissions received in response to the Technical Issues Paper and Biosecurity Australia's response is included in this draft IRA report. Biosecurity Australia considered all scientific issues raised in the submissions of stakeholders and incorporated the comments as appropriate.

FURTHER STEPS IN THE IMPORT RISK ANALYSIS PROCESS

The IRA process requires that the following steps be followed:

- Release of the draft IRA report for stakeholder comment
  - comments to be received within 60 days;
- Consideration of stakeholder comment on the draft IRA report
  - stakeholders consulted further as necessary;
- Submission of recommendations to the Director of Animal and Plant Quarantine;
- Consideration of recommendations by the Director of Animal and Plant Quarantine, and final determination made;
- Preparation of the final IRA report;
- Release of the final IRA report;
- Consideration of any appeals;
- If no appeals, or if appeals are rejected, adoption of the quarantine policy.

Stakeholders will be advised of any significant variations to this process.

Biosecurity Australia is committed to a thorough risk analysis of the proposed importation of table grapes from Chile. This analysis requires that technical information be gathered from a wide range of sources. The timely contribution of information would be much appreciated.[1]

[1] Contact details for stakeholder contributions are provided in the accompanying Plant Biosecurity Policy Memorandum (PBPM).

STAKEHOLDER COMMENTS TO THE TECHNICAL ISSUES PAPER AND RESPONSE FROM BIOSECURITY AUSTRALIA

A synopsis of the stakeholder comments received to the Technical Issues Paper and the response from Biosecurity Australia is given below. All stakeholder comments received to the Technical Issues Paper and Biosecurity Australia's response to these comments have been placed on the Public File for this IRA.

Consideration of regional differences in pest status within Australia

Stakeholder comment: regional differences in pest status (i.e. presence/absence) should be taken into consideration in the risk assessment.

Biosecurity Australia agrees that technically justified regional freedoms be taken into account during the IRA process. The time involved in preparing and finalising IRA documents has resulted in a staggered implementation of this. Numerous revisions have been made to the status of pests in the pest categorisation stage. Where appropriate, this has resulted in some pests being considered further in the risk assessment and risk management measures being proposed for them.

Domestic quarantine/intra-state controls over the movement of table grapes

Stakeholder comment: queried the accuracy and completeness of this information.

The wording of this section has been revised for all States and NT.

Presence of trash in grape bunches

Stakeholder comment: The potential presence of trash in grape bunches needs to be considered.

The proposed risk management measure is that the consignments are inspected and found free of trash. If required, bunches may be destructively sampled to ensure adequate inspection.

Content of the pest list

Stakeholder comment: queried the content of the pest list used for the IRA, suggested additional species, suggested certain pests be removed and provided additional technical information on certain species.

Biosecurity Australia appreciates the provision of the additional information. This information was combined with the additional revisions undertaken by Biosecurity Australia on the pest list and a number of revisions were made on the presence/absence of species in Australia and Chile and their association with the pathway. Additional species or technical information was not incorporated into the pest list used for the draft IRA report where Biosecurity Australia did not consider it technically justified (e.g. cosmopolitan fungi causing post-harvest storage rots).

In particular, based on information provided by SAG, *Pleospora vitis*, peach rosette mosaic virus and *Guignardia bidwellii* (see below) are considered not to occur in Chile and therefore not retained in the pest list. *Alternaria vitis* was removed from the pest list, as the reference quoted in the Technical Issues Paper did not justify its presence in Chile.

Oligonychus punicae (Hirst) [Acari: Tetranychidae] (avocado brown mite) was removed from the pest list as further research indicated that this species was not present in Chile.

Grapevine fan leaf virus (GFLV) was considered to not be associated with the pathway. Although GFLV can be present in the endosperm of seeds, there is no evidence to suggest it is transmissible through the seeds. No restrictions have been placed on grape fruit being moved from the Rutherglen region into other areas because of the presence of GFLV.

***Guignardia bidwellii* (black rot)**

Stakeholder comment: status of this species in Chile and its association with the pathway for this IRA and the IRA for table grapes from California

Guignardia bidwellii is considered to not be on the pathway for table grapes from California as this fungus is not present in California. Following further consideration of *Guignardia bidwellii* for this IRA, including clarification with SAG, it was concluded that it is not present in Chile.

Phytosanitary requirements for the importation of table grapes into Chile

Stakeholder comment: That Chile require the same phytosanitary standards for table grapes imported from the USA as those required by Australia for table grapes from California.

The scope of this IRA covers the importation of table grapes from Chile into Australia; requirements for the importation of table grapes into Chile are not included. Australia cannot impose import requirements on another country but the country is obliged to inform Australia in a timely manner of any changes to their phytosanitary status.

Status of phylloxera in Chile

Stakeholder comment: Suggest that Chile is not free from phylloxera and they should be required to demonstrate a program of phylloxera detection. Research has demonstrated the phylloxera move up into the vine canopy and into grape bunches.

Biosecurity Australia is not aware of any evidence for the presence of phylloxera in Chile and this pest is on their A1 quarantine pest list. As for the IRA on table grapes from California and the existing Australian State legislation, table grapes are not considered to be a pathway for the movement of phylloxera. Biosecurity Australia welcomes any additional scientific information regarding the association of this pest with the table grape pathway.

Tariffs

Stakeholder comment: object to the importation of table grapes from Chile and suggest adjustments that are beneficial to Australia be made to tariffs between Australia and Chile should the table grapes be permitted.

These comments are not in the scope of the IRA. In keeping with the scope of the Quarantine Act and Australia's international obligations, only factors relevant to the evaluation of quarantine risk (i.e. the risk associated with the entry, establishment or spread of unwanted pests and diseases) are considered in import risk analyses. The potential competitive economic impact of prospective imports is not within the scope of the import risk analysis process.

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