

Import Risk Analysis:
Table grapes (*Vitis vinifera*)
from China
REVIEW OF SUBMISSIONS



30 October 2009

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Policy and Risk
MAFBNZ



Import risk analysis: Table grapes (*Vitis vinifera*) from China
REVIEW OF SUBMISSIONS

30/10/2009

Approved for general release

A handwritten signature in black ink that reads 'Christine Reed'. The signature is written in a cursive, flowing style.

Christine Reed
Manager, risk analysis
MAFBNZ

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Executive Summary

The People's Republic of China has requested access for the export of fresh table grapes to New Zealand. This has the potential to introduce exotic pests and diseases into New Zealand. An analysis of the biosecurity risks has therefore been completed. The analysis considers the biosecurity risks of importing into New Zealand, for consumption, table grape bunches (*Vitis vinifera*) that have been produced in China. The commodity definition "table grape" or "table grape bunches" includes berries, pedicel and peduncle, but without tendrils, stems, leaves, roots or any other plant parts. Table grapes for export are produced and packed in China in accordance with commercial processes managed by the Chinese inspection and quarantine authority. These processes are taken into account in the risk assessments for potential hazards. As a result of the individual risk assessments, it was concluded that the risk in the commodity was non-negligible for the following organisms:

Alternaria viticola

Apolygus lucorum

Bactrocera dorsalis

Brevipalpus lewisi

Coccinella transversalis

Conogethes punctiferalis

Eupoecilia ambiguella

Guignardia bidwellii

Harmonia axyridis

Latrodectus mactans

Maconellicoccus hirsutus

Monilinia fructigena

Nippoptilia vitis

Pilidiella diplodiella

Pseudococcus maritimus

Rhipiphorothrips cruentatus

Scirtothrips dorsalis

Tetranychus kanzawai

These organisms were classified as hazards in the commodity and options for the effective management of these risks were presented. These options will form the basis of the measures required in a new Import Health Standard for importing table grapes (*V. vinifera*) for consumption, from China into New Zealand.

MAF Biosecurity New Zealand (MAFBNZ) released the document "Import Risk Analysis: Table grapes (*Vitis vinifera*) from China" for public consultation on 07 August 2009. The closing date for public submissions on the risk analysis was 07 September 2009.

Following considerations of the submissions received *Greeneria uvicola* has been removed from the hazard list and various sections have been redrafted to clarify the assessments, or to include additional information. In the light of new information a risk assessment for *Drosophila suzukii* has been added. This organism is assessed as a hazard on the pathway and risk management options are considered.

1. Introduction

Risk analyses are carried out by MAFBNZ under section 22 of the Biosecurity Act 1993, which lays out the requirements in regard to issuing Import Health Standards (IHSs) to effectively manage the risks associated with the importation of risk goods.

Draft risk analyses are written by the Risk Analysis Group and submitted to internal and external technical review before the draft risk analysis document is released for public consultation. The Risk Analysis Group of MAFBNZ then reviews the submissions made by interested parties and produces a review of submissions document. The review of submissions identifies any matters in the draft risk analysis that need amending in the final risk analysis, although the decision to implement these changes lies with an internal committee of MAFBNZ. These documents inform the development of any resulting IHS by the Border Standards Group of MAFBNZ for issuing under section 22 of the Biosecurity Act by the Director General of MAFBNZ on the recommendation of the relevant Chief Technical Officer (CTO).

Section 22(5) of the Biosecurity Act 1993 requires CTOs to regard the likelihood that organisms might be in the goods and the effects that these organisms are likely to have in New Zealand. Another requirement under section 22 is New Zealand's international obligations and of particular significance in this regard is the *Agreement on Sanitary & Phytosanitary Measures* (the "SPS Agreement") of the World Trade Organisation.

A key obligation under the SPS Agreement is that sanitary and phytosanitary measures must be based on scientific principles and maintained only while there is sufficient scientific evidence for their application. In practice, this means that unless MAFBNZ is using internationally agreed standards, all sanitary measures must be justified by a scientific analysis of the risks posed by the imported commodity. Therefore, risk analyses are by nature scientific documents, and they conform to an internationally recognised process that has been developed to ensure scientific objectivity and consistency.

MAFBNZ released the document "Import Risk Analysis: Table grapes (*Vitis vinifera*) from China" for public consultation on 07 August 2009. Every step was taken to ensure that the risk analysis provided a reasoned and logical discussion, supported by references to scientific literature. The draft risk analysis was peer reviewed internally and externally. Relevant comments were incorporated at each stage of this review process. The closing date for public submissions on the risk analysis was 07 September 2009.

Two submissions were received. Table 1 lists the submitters and the organisations they represent.

This document is MAFBNZ's review of the submissions that were made by interested parties following the release of the draft risk analysis for public consultation. Public consultation on the draft risk analyses is primarily on matters of scientific fact that affect the assessment of risk or the likely efficacy of any risk management options presented. For this reason, the review of submissions will answer issues of science surrounding likelihood¹, not possibility², of events occurring. Speculative comments and economic factors other than the effects directly related to a potential hazard are beyond the scope of the risk analysis and these will not be addressed in this review of submissions.

¹ Likelihood: The quality or fact of being likely or probable; probability; an instance of this.

² Possible: Logically conceivable; that which, whether or not it actually exists, is not excluded from existence by being logically contradictory or against reason.

Following considerations of the submissions received various sections have been redrafted to clarify the assessments, or to include additional information.

Table 1: Submitters and Organisations Represented

Submitter	Organisation Represented/Location
Wang Yiyu	General Administration of quality supervision, inspection and quarantine of the People's Republic of China (AQSIQ) People's Republic of China
Philip Manson	New Zealand Winegrowers

2. Review of submissions

2.1. WANG YIYU, AQSIQ, PEOPLE'S REPUBLIC OF CHINA.

2.1.1. About the oriental fruit fly (*Bactrocera dorsalis*)

As the temperature in northern China in winter is very low, the fruit production areas in northern China are non-viable areas for *Bactrocera dorsalis*. Beginning from 2000, China has established the nation-wide fruit fly monitoring system, and up to now no *Bactrocera dorsalis* has ever been detected in the fruit production areas in northern China. Currently many countries, including the US, Australia, Chile, South Africa and others, have all recognised that the fruit production areas in northern China are fruit-fly free areas. Therefore, we hope that you can take into account the above-mentioned facts, and recognise that the fruit production areas in northern China are fruit-fly free areas.

MAFBNZ response: The draft risk analysis reports the results of China's monitoring for *B. dorsalis* and identifies pest free area status as a possible risk management measure for this organism. Area freedom will only be implemented if information is provided that verifies the organism's absence in accordance with ISPM 26. Further analysis of this option will occur in the next steps of the process of considering this market access request.

2.1.2. About the quarantine pest lists

Chinese experts believe that some pests mentioned in the draft risk analysis reports released by New Zealand for importation of pears and grapes from China do not occur in the production areas of pears and grapes in China. Some other pests are beneficial insects, such as predaceous mites, ladybugs and spiders, etc. These pests should not be listed as quarantine pests (see Annex 1 and 2).

MAFBNZ response: MAFBNZ will respond to each organism individually below.

2.1.3. About the risk management measures

Currently in China, all the orchards and packhouses for export fruit are registered with AQSIQ, and a sound quality management system has been established. For grapes, the Chinese side believes that *Eupoecilia ambiguella*, *Maconellicoccus hirsutus*, *Pseudococcus maritimus* and *Conogethes punctiferalis* do not occur in the grape production areas in China. The possibility of grapes carrying these pests is very low. Therefore, it is not necessary to take such quarantine measures as methyl bromide and sulfur dioxide fumigation and cold treatment on grapes to be exported to New Zealand. In

addition, bagging management is applied on export grapes in China during the fruit growing period, which greatly reduces the risks of pests causing damages and being carried with fruit.

MAFBNZ response: MAFBNZ is committed to setting phytosanitary standards that protect the people, environment and economy of New Zealand, but do not unnecessarily restrict trade-as provided for in the World Trade Organisation Agreement on the Application of Sanitary and Phytosanitary Measures. The draft risk analysis identifies options for managing the risk from each identified hazard and discusses the likely efficacy of the measures in relation to each hazard These will be considered further in the next steps of processing this market access request.

2.1.4. Organisms stated as not present in grape producing areas within China, while presence in China is established

MAFBNZ response: The People's Republic of China has requested access for the export of fresh table grapes to New Zealand. For the purpose of the draft risk analysis, table grapes are assumed to be from anywhere in China (see draft risk analysis section 2.1). Organisms known to be a pest of grapevine are assumed to be on or able to move onto grapevine in China, unless clear scientific evidence is present stating otherwise. Evidence of presence in China is provided for each organism below. For some organisms in certain grape growing areas Pest Free Area status maybe a viable risk management option if the status can be verified in accordance with the requirements of ISPM 4 or 10.

2.1.5. *Coccinellidae* spp.

No report has been found on it causing damages to table grapes in China. Besides, thanks to the bagging of fruit, ladybugs can hardly come into direct contact with fruit. At the time of harvest and packaging, they can be easily removed from the fruit. The possibility of it spreading with grape fruit is negligible.

MAFBNZ response: The species mentioned in the draft risk analysis are present in China (see draft risk analysis for references and see MAFBNZ response 2.1.4). They are often considered as a biological control agent, but besides being predatory, these coccinellidae are also capable of causing harm to fruit. Adults feed on ripening peaches, apples, grapes, and other fruit (see host section or Koch, 2003³; Ratcliffe, 2002⁴). For the entry assessment normal packaging procedures have been taken into account (see draft risk analysis section 5.1.2.1).The likelihood of entry is considered to be moderate and therefore non-negligible (see draft risk analysis section 5.1.2.1). Bagging may be critical in risk mitigation and is therefore not taken into account in assessing

³ Koch, R L (2003) The multicolored Asian lady beetle, *Harmonia axyridis*: A review of its biology, uses in biological control, and non-target impacts. 16pp. *Journal of insect science* 3(32). Available online: insectscience.org/3.32.

⁴ Ratcliffe S. (2002) National pest alert: Multicolored Asian lady beetle. USDA CSREES Regional Integrated Pest Management Program and the Pest Mangement Centers.

likelihood of entry but is considered as a separate risk mitigation measure (see MAFBNZ response 2.1.3).

2.1.6. *Apolygus lucorum*

The symptoms of its damages are obvious and can be easily identified because of its damage, oviposition and feeding behaviours (generally with taxis response in oviposition, it usually oviposits in places like sprouts, tender leaves, buds and young fruit; hibernating eggs are mostly laid on dead branches, hay, and the like). Its damages to table grapes are apparently very mild. Field investigation and research show that its occurrence in vineyards is very mild. Therefore, the possibility of it spreading with grape fruit is negligible.

MAFBNZ response: The draft risk analysis recognises that this organism is primarily found on young shoots and leaves and that high infestations are likely to produce fruit that would be rejected for export. It also states that the organisms might be concealed within the bunch and therefore at low infestation levels be overlooked during harvest and packing process (see draft risk analysis section 7.1.2.1). The likelihood of entry is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

2.1.7. *Maconellicoccus hirsutus*

It does not occur in grape production areas in China.

MAFBNZ response: *M. hirsutus* is present in China (See MAFBNZ Response 2.1.4 and draft risk analysis 7.2.1.6). The distribution within China is reported to be Shanxi, Zhejiang and Guangdong, with *Vitis* being mentioned as one of the hosts (Hua, 2000⁵). This distribution will be included in the draft risk analysis. The entry assessment takes account of the uncertainty over the prevalence of *M. hirsutus* throughout grape growing regions (see draft risk analysis section 7.2.2.1). The likelihood of entry is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

2.1.8. *Pseudococcus spp.*

There is only one report. It does not occur in grape production areas in China.

MAFBNZ response: *P. maritimus* is included on the pest list for table grapes supplied by AQSIQ to Biosecurity New Zealand as part of the technical information for exportation of table grapes from China.

P. maritimus is reported from Shandong, Fujian, Guangdong, Guanxi and Jiangsu and it is reported from *Vitis vinifera* (Hua, 2000). *P. longispinus* is reported from Fujian, Hongkong, Guangxi and Yunnan, with *Vitis vinifera* as one of the hosts (Hua, 2000). *P. calceolaria* is reported from north, east, south and central China,

⁵ Hua, L.Z. (2000) List of Chinese insects. volume 1, Guangzhou-Guangwei Printers, Guangzhou, China

Hubei, Guangdong and Hunan (Hua, 2000). The draft risk analysis will be amended to include these distributions within China.

2.1.9. *Eupoecilia ambiguella*

There is no report on it causing damages to grapes in China. Besides, New Zealand states in its report that grapes is its secondary host. It does not occur in vineyards. Therefore, the possibility of it spreading with grape fruit is very low.

MAFBNZ response: *Eupoecilia ambiguella* is present in China (see draft risk analysis section 8.3.1.5 or Zhang and Li, 2008⁶ and MAFBNZ response 2.1.4). The draft risk analysis states specifically that grapevine is a major host (See section 8.3.1.3). Standard commercial packing processes and the damage caused by *E. ambiguella* to berries have been taken into account in assessing the likelihood of entry (see draft risk analysis section 8.3.2.1). The likelihood of entry is considered to be very low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

2.1.10. *Rhipiphorothrips cruentatus*

This kind of thrips is a harmful insect for grape and many other fruit trees abroad, causing damages to leaves and fruit and making them fall off. In Taiwan of China, it causes severe damages to roses and wax apples, but this insect is not present in any other grape production areas in China. There has been no relevant report over the past twenty years.

MAFBNZ response: *Rhipiphorothrips cruentatus* is present in China (see draft risk analysis section 9.1.1.5 and Han, 1996⁷ and MAFBNZ response 2.1.4). Grapevine is a major host (see draft risk analysis section 9.1.1.3). *R. cruentatus* has been reported from Guangdong, Hainan and Guangxi (Hua, 2000). The draft risk analysis will be amended to include this distribution in China. The unknown prevalence in grape-growing areas in China has been taken into account together with other factors in assessing the likelihood of entry (see draft risk analysis section 9.2.1.2). The likelihood of entry is considered to be moderate and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

2.1.11. *Scirtothrips dorsalis*

There has been no report on this insect causing damages to grapes in China. It is not present in grape production areas in China, and it does not cause damages to mature fruit. This insect primarily damages tea leaves, ginkgos and lotus flowers.

MAFBNZ response: *Scirtothrips dorsalis* is present in China (see draft risk analysis section 9.2.1.6 or Han, 1996 and MAFBNZ response 2.1.4). Grapevine is one of its major hosts (see draft risk analysis section 9.2.1.4 and

⁶ Zhang, X.; Li, H. (2008) Zootaxa 1692: 55-68 Review of the Chinese species of *Eupoecilia* Stephens (Lepidoptera: Tortricidae: Cochylini).

⁷ Han, Y. (1996) Economic Insect Fauna of China. Fasc 55, Thysanoptera. Beijing, China: Science Press, in press.

Nietschke et al., 2008⁸). It has been reported as being on *Vitis vinifera* in China. It has been reported from Henan, Hubei, Anhui, Jiangxi, Jiangsu, Zhejiang, Fujian, Guangdong, Hainan, Hunan, Guangxi, Guizhou, Sichuan and Yunnan (Hua, 2000). The draft risk analysis will be amended to specifically include the distribution in China. *S. dorsalis* was recently intercepted on Momordica coming into the UK. These interceptions demonstrate an association with mature fruit. (Pest risk assessment: CSL, 2006⁹). The unknown prevalence in grape-growing areas in China has been taken into account together with other factors in assessing the likelihood of entry (see draft risk analysis section 9.2.2.1). The likelihood of entry is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

2.1.12. *Nippopectilia vitis*

This insect primarily damages grape vines. After its larva eats into the vines, it damages the xylem pith, leaving long white holes inside the stems and a large amount of frass near the end of the burrowing holes. The infected vines expand with their tips usually withering, the infected sections between the joints turn purple, and the upper leaves turn yellow and wither. Therefore, it can be easily identified. The possibility of it spreading with grape fruit is negligible.

MAFBNZ response: *Nippopectilia vitis* is described as a new pest of grapevine in China (see draft risk analysis section 8.6.1.6, Zheng et al., 1993¹⁰ and MAFBNZ response 2.1.4). The larvae damage fruits (see draft risk analysis section 8.6.1.5). For the entry assessment the standard packing process, among other factors, has been taken into account (see draft risk analysis section 8.6.2.1). The likelihood of entry is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

2.1.13. *Greeneria uvicola*

It is one of the entry quarantine pests of China. It does not occur in grape production areas in China.

MAFBNZ response: MAFBNZ has checked the sources for presence of *G. uvicola* in China and the evidence is insufficient. *G. uvicola* cannot therefore be considered a potential hazard and the risk assessment for this species will be removed from the risk analysis.

2.1.14. *Monilinia fructigena*

Grapes is its secondary host. There has been no report on its occurrence in grape production areas in China.

⁸ Nietschke, B S; Borchert, D M; Magarey, R D; Ciomperlik, M A (2008) Climatological potential for *Scirtothrips dorsalis* (Thysanoptera: Thripidae) establishment in the United States. *Florida Entomologist* 91(1): 79–86.

⁹ CSL, 2006: CSL Pest risk analysis for *Scirtothrips dorsalis* (2006)

<http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/documents/scirto.pdf>.

¹⁰ Zheng, D; Li, W; Song, S; Kang, Z (1993) A preliminary study on the grape plume moth *Nippopectilia vitis*. *Plant Protection* 19(5): 15–16.

MAFBNZ response: *Monilinia fructigena* is present on the technical information for the export of fresh Chinese pears provided by AQSIQ (Administration of Quality Supervision, Inspection and Quarantine of PRC, 2007).

It is present in China (Fan *et al.*, 2007¹¹ and MAFBNZ response 2.1.4). For the entry assessment, grapevine not being its major host has been taken into account, among others (see draft risk analysis section 11.5.2.1). The likelihood of entry is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

2.1.15. *Araneae spiders*

The risk of them spreading with grapes is very low. They are beneficial insects

MAFBNZ response: Under Biosecurity New Zealand's risk analysis framework, the potential impacts of an organism are assessed against the range of values covered by the Biosecurity Act 1993, including environmental and human health consequences. The draft risk analysis has identified possible adverse impacts on native fauna as well as on human health. It is therefore considered a hazard.

¹¹ Fan, J; Zhu, X; Guo, L; Luo, Y (2007) Comparison of three molecular identification methods for *Monilinia* species on stone and pome fruits. *Acta Phytopylacica Sinica* (34)3: 289–295.

2.2. PHILIP MANSON, NEW ZEALAND WINEGROWERS

2.2.1. General Comments

2.2.2. Area freedom

Area freedom is a significant control suggested for most hazards that were identified. It appears that there is a fairly low level of confidence in the data supporting area freedom for most hazards. We would expect that if this were to be allowed as a control on its own that a very high standard of proof would be required.

MAFBNZ response: Area freedom will only be implemented if information is provided that verifies the organism's absence in accordance with ISPM 4 or 10 (see draft risk analysis sections 4.2.1 and 4.2.2). The draft risk analysis merely identifies options for managing the risk from each identified hazard and discusses the likely efficacy of the measures in relation to each hazard. Which options are developed into an Import Health Standard and consideration of how they are implemented, are the next steps in the process of considering this market access request.

2.2.3. Wider horticultural production

There is a wide range of potential new hazards associated with this pathway. In many cases the threat to other horticultural crops is likely to be higher than the direct threat to grapes. Fresh fruit and vegetables are often host species, they also tend to lose the ability to export when a new pest is present. The focus of IRA is mostly on the impact on grapes presumably as grapes are the produce being imported. Failure to consider wider horticultural production implications appears to be a shortcoming of this IRA.

MAFBNZ response: The ability of an organism to affect a range of crops is an important consideration in the consequence assessment for each potential hazard. Economic impacts are assessed in the context of New Zealand's economy, not just the impacts on grape growers (see for example draft risk analysis section 7.2.2.4). Biosecurity New Zealand's draft risk analysis process is summarised in section 1.3 of the draft risk analysis. The full procedures, explaining the consequence assessment, are available on line at <http://www.biosecurity.govt.nz/files/pests/surv-mgmt/surv/review/risk-analysis-procedures.pdf>.

2.2.4. Expert consultation and peer review

We are concerned with the lack of broad scientific and expert consultation. Given the significant potential increase in risk to New Zealand horticulture associated with this, and other current, IRA it is our view that a wider expert peer review is justified. It also remains a concern that the time allowed for consultation is insufficient. We assume that the IRA has taken a very significant amount of time to compile, but we believe there needs to be more time in the future to consult on IRA documents, and once comments are collated sufficient time to discuss findings and the implementation.

MAFBNZ response: The draft risk analysis was externally peer reviewed by Dr. Shaun Pennycook (Landcare Research) as well as Dr. Rowan Emberson (Independent consultant, Entomology). MAFBNZ acknowledges that the response time for general submissions was tight and have allowed additional time for submitters to supply supporting evidence.

2.2.5. Allocation of risk severity

There does not appear to be a consistent standard for allocating a low, moderate or high risk to a particular finding. In many cases these appear to be somewhat at odds to a precautionary approach.

MAFBNZ response: The assessment of risk follows MAFBNZ's Risk Analysis procedures which are available on line at <http://www.biosecurity.govt.nz/files/pests/surv-mgmt/surv/review/risk-analysis-procedures.pdf>. Risk is a product of likelihood (of entry, exposure and establishment) and the consequences of establishment. Separate assessment of each component of risk provides transparency of the contribution of each component. The conclusion of each assessment is either negligible or non-negligible. If the risk is assessed as non-negligible, risk mitigation measures can be justified. Where there is significant uncertainty in the estimated risk, a precautionary approach to managing risk may be adopted. However, the measures selected must nevertheless be based on a risk assessment that takes account of the available scientific information. In these circumstances the measures should be reviewed as soon as additional information becomes available[#] and be consistent with other measures where equivalent uncertainties exist. It is not acceptable to simply conclude that, because there is significant uncertainty, measures will be selected on the basis of a precautionary approach. The rationale for selecting measures must be made apparent.

[#]Article 5.7 of the SPS Agreement states that "a Member may provisionally adopt sanitary measures" and that "Members shall seek to obtain additional information within a reasonable period of time." Since the plural noun "Members" is used in reference to seeking additional information a co-operative arrangement is implied between the importing and exporting country. That is the onus is not just on the importing country to seek additional information.

2.2.6. Transport by air

Many of the controls become much more critical if the produce is to be transported by air, a long period in cool storage during transport may assist risk mitigation. We do not believe transport by air should be considered for table grapes from any country.

MAFBNZ response: When fresh produce is exported to New Zealand it must meet the phytosanitary measures as stated in an IHS, regardless of the mode of transportation. The draft risk analysis will be amended at the appropriate places to clarify this.

2.2.7. Visual inspection and bagging

Visual assessment and covering with bags in our view is not adequate for most hazards. Visual assessment is weak where the hazard may establish internally in bunches (pre-Bunch closure) and will not be visible on the external berries late season. Bags are not in place for the whole season, and many of the identified hazards are more than capable of establishing once bags have been removed.

MAFBNZ response: Official phytosanitary visual inspection undertaken by AQSIQ officers is considered as a formal risk management measure and it has been separated from the visual inspection which is part of standard packing process. The draft risk analysis will be amended at the appropriate places to clarify that the management option 'visual inspection' refers to formal

phytosanitary inspection. The draft risk analysis clearly states that bagging will only be a viable risk mitigation option through preventing pests accessing the grapes, if the bags are in place during the whole growing season, right up until harvest of the grapes (see draft risk analysis section 4.3.2).

2.2.8. Management options

The use of Methyl Bromide (+/- cold treatment) appears to be the only reliable option for many of the hazards identified in the IRA. The exporting country should however research verification of the SO₂ and cold treatment option for many of the hazards.

MAFBNZ response: As explained in the guideline accompanying the draft risk analysis, the analysis is the first stage in the development of import health standard(s) that set out the requirements to be met before “Table grapes (*Vitis vinifera*) from China” may be imported and given biosecurity clearance. No decisions have yet been made - MAFBNZ will make decisions only after work has been done to assess all the relevant information. The draft risk analysis merely identifies options for managing the risk from each identified hazard and discusses the likely efficacy of the measures in relation to each hazard. Which options are developed into an Import Health Standard and consideration of how they are implemented, are the next steps in the process of considering this market access request.

2.2.9. Implementation of measures

We are very concerned by comments in Appendix 5 that indicate a lack of confidence by officials in the ability of systems in China to honestly implement and report on appropriate control protocols, these concerns must be addressed with appropriate auditing (or similar) before trade begins.

MAFBNZ response: The draft risk analysis identifies options for managing the risk from each identified hazard and discusses the likely efficacy of the measures in relation to each hazard.

Please note that the purpose of the report was not to assess whether Biosecurity New Zealand's requirements can be met. This is because the risk associated with the commodity had not been assessed at the time of the visit and appropriate risk management measures had not been identified. Specific details of risk mitigation options that protect the people, environment and economy of New Zealand will be considered in the next stages of processing this market access request.

MAFBNZ has no reason to doubt the ability of the Chinese National Plant Protection Organisation officers to undertake phytosanitary inspections and issue phytosanitary certificates. This process is governed by the International Plant Protection Convention (1997), Article V.2a of which states that: "*Inspection and other related activities leading to issuance of phytosanitary certificates shall be carried out only by or under the authority of the official national plant protection organization. The issuance of phytosanitary certificates shall be carried out by public officers who are technically qualified and duly authorized by the official national plant protection organization to act on its behalf and under its control with such knowledge and information available to those officers that the authorities of importing contracting parties may accept the phytosanitary certificates with confidence as dependable documents.*" Standards under the convention provide supporting guidance. In particular, ISPM No. 12 describes

principles and guidelines for the preparation and issue of phytosanitary certificates. ISPM No. 23 describes procedures for the inspection of consignments of plant products at import and export. It is focused on the determination of compliance with phytosanitary requirements, based on visual examination, documentary checks, and identity and integrity checks. The summary table of risk management options will be amended to clarify that ‘visual inspection’ refers to formal phytosanitary inspection by AQSIQ officers prior to export.

2.2.10. Issuing an IHS

There is a high degree of uncertainty in many elements of the IRA, in both pest freedom and controls. We remain concerned at how the IRA will then be interpreted with respect to issuing and managing a final IHS.

We reiterate the importance of not rushing this IRA (and issue of an IHS): there are many “unknowns” referred to in this document in terms of potential hazards and appropriate mitigation, but also in terms of application of procedures and systems in the country of origin.

MAFBNZ response: MAFBNZ notes your concerns.

2.2.11. Costs of control

It should be noted that when a new pest is introduced control (if possible) is not the only cost and in some cases not the major cost. Control often requires use of agrichemicals that undermine IPM systems and that may be unacceptable for use for fruit destined to specific export markets. In some cases control cannot be achieved without emergence of unacceptable agrichemical residues once again affecting market access.

MAFBNZ response: Biosecurity New Zealand’s draft risk analysis process is summarised in section 1.3 of the draft risk analysis. The full procedures are available on line at <http://www.biosecurity.govt.nz/files/pests-diseases/surveillance-review/risk-analysis-procedures.pdf>. Market access and the costs of control are part of the factors assessed during the economic consequences assessment. MAFBNZ will specifically include the impact on export market access of a switch from a low input regime in the relevant consequence assessments.

2.2.12. Specific comments (not already addressed)

2.2.13. Assessment of uncertainty (Draft risk analysis section 1.3.2)

Significant uncertainty exists in many areas of the IRA, this would suggest that in most cases a precautionary approach should be applied particularly with respect to risk management options.

MAFBNZ response: See MAFBNZ response 2.2.5 about the use of a precautionary approach in regard to risk management options.

2.2.14. Review and Consultation (Draft risk analysis section 1.3.4)

Given the lack of experience of imports of fresh fruit from China, there appears to have been a relatively low level of external scientific review of this (and possibly other) IRA, we recommend that a wider group of reviewers be consulted. This should include

entomologists and pathologists actively engaged in biosecurity and plant protection research.

MAFBNZ response: See MAFBNZ response 2.2.4

2.2.15. Grape architecture (Draft risk analysis sections 2.1.3 to 2.1.5)

The nature of grape bunches and their architecture means it is often difficult to determine if they are harbouring pests in internal parts of the bunch, making visual inspections less than effective for many pests. Section 2.1.5 notes that insects are generally aggregated in their distribution, it should be noted that this would make them harder to pick up in any random sampling programme.

MAFBNZ response: See MAFBNZ response 2.2.7 regarding visual inspection. Grape architecture and the possibility for harbouring pests internally in the bunches has been taken into account in the entry assessment for each organism. MAFBNZ has taken note of the issues regarding aggregated distribution in assessing the likelihood of establishment.

2.2.16. Import pathway (draft risk analysis section 2.2.2)

There does not appear to be an audit step by MAFBNZ in this pathway, we recommend that this should be in place at least for the first few seasons of trade. Of particular concern are the comments in Appendix 5 by Dr Ormsby (points 4 and 5) that clearly suggest that there is likely to be genuine problems in getting reliable application and reporting of hazard control systems.

MAFBNZ response: MAFBNZ periodically audits and reviews existing pathways and changes to processing systems in the future will be considered where appropriate during these reviews and audits. A review may be triggered due to a variety of reasons including an outbreak of a new pest/disease in the exporting country, interceptions of pests and diseases on imported consignments, new scientific research that shows an expansion to the pest profile of an existing pest. MAFBNZ has noted your recommendation. Please note that the purpose of the report was not to assess whether Biosecurity New Zealand's requirements can be met. This is because the risk associated with the commodity had not been assessed at the time of the visit and appropriate risk management measures had not been identified.

2.2.17. Pre-harvest operations (draft risk analysis section 2.2.2)

These control measures are aimed at a limited set of fungal diseases and mites. They appear to be inappropriate control measures for most of the potential hazards assessed in the IRA and should not be considered as control measures.

MAFBNZ response: For the purposes of assessing likelihood of entry of organisms, it is assumed that the table grape production and export process will be undertaken as described in draft risk analysis sections 2.2.2.2 and 2.2.2.3. However, elements such as bagging and chilling, that may be critical in risk mitigation are not assumed to occur and have been considered separately as risk management options.

2.2.18. Air transport (Draft risk analysis section 2.2.2.4)

There appears to be a very significant risk associated with transport by air for range of hazards. In many cases an extended period of cold storage may reduce risk, this is not the case with Air Transport. We recommend that air transport should not be permitted.

MAFBNZ response: See MAFBNZ response 2.2.6

2.2.19. Interception records (draft risk analysis section 3.2)

It is clear from this section and the related appendices that despite mandated mitigation practices many organisms do make their way into shipments destined for New Zealand. This highlights the need for a precautionary approach with respects to identified hazards. It would be unacceptable to monitor shipments “once trade in table grapes from China starts” and find that a significant tightening of requirements was needed, this would equate to closing the stable door once the horse has bolted.

MAFBNZ response: The draft risk analysis uses available information to assess risk from organisms associated with table grapes. Significant uncertainties and associated assumptions are identified in the risk assessment for each potential hazard. Review of interception records collected once trade has commenced is a good way to test these assumptions as well as the efficacy of risk management measures. This is intended to be used as a review tool not as a primary risk mitigation measure. MAFBNZ will clarify this section of the analysis. See MAFBNZ response 2.2.5 regarding a precautionary approach.

2.2.20. Pest free areas (draft risk analysis sections 4.2.1 and 4.2.2)

The concept of area or place freedom of pests is theoretically sound. However for many of the hazards identified in this IRA it appears that the data is very weak to establish such status at the current point in time, and it is unclear what ongoing monitoring is required to ensure the ongoing status. This is particularly important in large continental situations where pest disbursement is highly likely. In our view there are very few hazards for which this would be an acceptable control measure.

MAFBNZ response: See MAFBNZ response 2.2.2

2.2.21. Bagging (draft risk analysis section 4.2.3)

Bagging: this control measure is questionable particularly as it is not applied right through to harvest, many pests and diseases exploit ripe fruit immediately prior to harvest.

MAFBNZ response: See MAFBNZ response 2.2.7

2.2.22. Airbrushing (draft risk analysis section 4.2.4)

Airbrushing, taking into account bunch architecture this is most likely to be primarily a cosmetic treatment, or at best removing large hitchhikers, it will not address hazards which may be in internal bunch parts. Airbrushing should be treated with caution if considered as a control measure.

MAFBNZ response: Air brushing in the packhouse as part of standard commercial practice is expected to have some effect in removing organisms from grapes and this is reflected in the entry assessments. It is not considered a viable

risk management option on its own for any of the hazards identified. The draft risk analysis will be amended at the appropriate place to clarify this.

2.2.23. Cold treatment (draft risk analysis section 4.2.5)

Cold treatment has some merits for certain hazards, however the time factor in cold treatment precludes its use with respect to air transport.

MAFBNZ response: In regard to air transport, see MAFBNZ response 2.2.6.

2.2.24. Visual inspection (draft risk analysis section 4.2.8)

Visual inspection, it is unclear what percentage of the produce is visually inspected at each stage of the process. As noted previously visual inspection has limited application due to bunch architecture, and should not be relied on as an adequate control measure on its own.

MAFBNZ response: For the difference between visual inspection as part of the standard commercial packing process and formal phytosanitary inspection see MAFBNZ response 2.2.7. MAFBNZ requires that the NPPO of the exporting country samples and visually inspects the consignment for all regulated pests. This pre-export phytosanitary inspection and certification should comply with the conditions outlined in MAFBNZ Standard 152-02: Importation and Clearance of Fresh Fruit and Vegetables into New Zealand. The draft risk analysis will be amended at the appropriate place to clarify which type of visual inspection is being referred to. The draft risk analysis clearly states visual inspection is considered a viable option when combined with bagging.

2.2.25. Assumptions and uncertainties (draft risk analysis section 4.3)

Interception data is a good way of monitoring efficacy of systems that have been implemented. However they should never be used as a way of testing if a proposed control is effective, any proposed control should be proven prior to implementation.

MAFBNZ response: The draft risk analysis uses available information to assess risk and clearly sets out the major remaining uncertainties and assumptions in the risk assessment for each potential hazard. Review of interception records is a good way testing these assumptions. They are intended to be used as a review tool not as a primary risk mitigation measure or a tool to prove efficacy of a suggested measure. Measures are only suggested to be viable if there is clear evidence for their efficacy, and this is not dependent on interception data. The draft risk analysis will be amended to clarify the use of interception data.

2.2.26. *Coleoptera* (draft risk analysis section 5)

Coleoptera, these are not of high concern to our industry as they generally act as a bio control agent. Potential for fruit damage and taints is a concern, but should be relatively low risk, in general we agree with the economic risk evaluation. Assumption of risk to be similar to *H. axyridis* may be flawed.

MAFBNZ response: The uncertainty around the assumption that *C. transversalis* has a similar risk to *H. axyridis* is noted in draft risk analysis (section 5.1.2.6). The risk is estimated as non-negligible and risk management options can be justified.

2.2.27. *Bactrocera dorsalis* (Draft risk analysis section 6.1)

This should be considered a major potential pest for all fruit production. This organism appears to be likely to be a strong flier and is likely to be quick to spread. Wide host range is a concern for fresh fruit and vegetable production and export. Entry assessment, this organism quite clearly can be on the pathway i.e. eggs and larvae can be undetected on fruit. The likelihood of entry should be considered high. Pest freedom, approach is mostly reliant on modelling and not actual surveys; we have a major concern with lack of data on actual distribution and should not be considered acceptable on its own without better verification. Cold treatment should be considered the minimum control measure, but Methyl Bromide followed by cold is preferred.

MAFBNZ response: The concerns stated here about *B. dorsalis* have been assessed in the draft risk analysis. The entry assessment has considered that eggs and larvae can be undetected at harvest. It has also considered that *B. dorsalis* has not been recorded from all provinces and that pupae are not associated with the fruit, while adults are unlikely to remain with the fruit during harvest. After considering this and other information mentioned in the entry assessment (see draft risk analysis section 6.2.1.2), the likelihood of entry was considered to be moderate and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

The information given for pest freedom was only used to assess if pest freedom is a possible risk management option. See MAFBNZ response 2.2.2 for further information on pest freedom. MAFBNZ notes your preferred management measure.

2.2.28. *Apolygus lucorum* (draft risk analysis section 7.1)

This should be considered a pest of significant potential to grapes, and most likely to other crops. Exposure assessment, we recommend alteration from low to medium. Economic consequences, this organism can cause direct damage to grapes and may require pesticide control; this would be costly and have adverse impact on IPM and ultra low-residue production, Suggest change of assessment to moderate to high. Environmental consequences should be changed to moderate. Risk management, pest freedom is high risk on its own due to clear association with vineyards and lack of data. Methyl Bromide should be considered minimum treatment.

MAFBNZ response: The concerns stated here about *A. lucorum* have been assessed in the draft risk analysis. The exposure assessment considered several different factors and the likelihood of exposure is considered to be low and therefore non-negligible (see draft risk analysis section 7.1.2.2.). No new evidence is provided that would justify a change of this assessment.

The assessment of economic consequences has taken into account increased treatment costs, disruption of IPM as well as reduced market access overseas (see draft risk analysis section 7.1.2.5.). The potential economic consequences are considered to be low to moderate and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

See MAFBNZ response 2.2.2 for further information on pest freedom and MAFBNZ response 2.2.8 for information on management options. MAFBNZ notes your preferred management measure.

2.2.29. *Maconellicoccus hirsutus* (draft risk analysis section 7.2)

M. hirsutus (pink hibiscus mealybug) should be considered a significant potential pest for both grapes and many fruit crops. Entry assessment, low level infections are likely to be undetected, risk should be lifted to moderate to high. Establishment is likely to be possible in warmer regions; risk should be lifted to moderate. Economic consequences, unclear if this organism can vector plant diseases, treatment and residues issues, consider alteration to moderate. Risk management, pest freedom may be valid here. Bagging not likely to restrict pest. Visual inspections unlikely to be effective due to bunch architecture. Cold treatment could be considered, but requires 6 weeks minimum, excludes air freight. Methyl Bromide should be recommended.

MAFBNZ response: The entry assessment has taken into account that low level infections may be undetected, but it also states that, among other factors, life stages of *M. hirsutus* have a preference for young tender plant parts (see draft risk analysis section 7.2.2.1). The likelihood of entry is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

The establishment assessment has taken into account that short-term establishment might be possible in warmer areas during warmer years. It also notes a negative correlation with relative humidity and that North Island conditions are unlikely to be conducive to significant population development (see draft risk analysis section 7.2.2.3). The likelihood of long-term establishment is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

No evidence has been found or was provided to prove that this organism can vector plant diseases and this is therefore not considered during the assessment of economic consequences. See MAFBNZ response 2.2.7 regarding visual inspection and bagging.

When fresh produce is exported to New Zealand it must meet the phytosanitary measures required by the relevant IHS, regardless of the mode of transportation (See MAFBNZ response 2.2.6). No new evidence is provided that would suggest these risk management options would not be effective, but MAFBNZ notes your preferred management measure.

2.2.30. *Nipaecoccus viridis* (draft risk analysis section 7.3)

Note this organism has been omitted from Table 1, but control measure may be justified. Appears to be insufficient information to come to entry risk assessment, precautionary approach does not appear to have been applied. Suggest re-evaluation of findings, risk management procedures may be justified.

MAFBNZ response: Risk management measures over and above standard commercial practice, can only be applied where there is an identified risk. The entry assessment has taken into account that *N. viridis* is likely to have a very low prevalence, if any, in the vineyards in China and that grape bunches are less likely to be infested than other plant parts. It has also, among other factors, taken into account the tropical and subtropical distribution (see draft risk analysis section 7.3.2.1). The likelihood of entry is considered to be negligible. No new evidence is provided that would justify a change of this assessment. The low level of information on the presence in China and the frequency with which it infests grape bunches has been noted in the assessment of uncertainty. For information on a precautionary approach see MAFBNZ response 2.2.5.

Please note that although *N viridis* is not assessed as a hazard on this pathway and therefore risk management measures over and above standard commercial practice are not justified, it remains a 'regulated pest'. Therefore, if it is intercepted on any imported lots at the border the infested lot will be treated to ensure the pests are effectively controlled prior to release. Alternatively, the consignment shall be reshipped or destroyed at the importers option and expense.

2.2.31. *Pinnaspis strachani* (draft risk analysis section 7.4)

Agree with the assessment, although entry and exposure assessment could be altered to moderate.

MAFBNZ response: No new evidence is provided that would justify a change of this assessment, but MAFBNZ notes of your suggestion.

2.2.32. *Pseudococcus* spp (draft risk analysis section 7.6)

Pseudococcus spp. are significant pests to grapes and range of fruit crops. Agree that *P. calceolariae* and *P. longispinus* are both present in New Zealand, however there is a concern if large numbers were present that they may vector previously unknown viruses or viroids, these diseases are a major economic threat to the industry. The list of viruses vectored by mealy bug is incomplete, e.g. they also vector GVA. Entry assessment, grapes are a primary host and low level infestations are not likely to be detected and related species have been detected at the border, risk level should be change to high. Exposure assessment, assumption that wind dispersed crawlers can't actively find host reduces risk is erroneous; wind dispersal is a primary method of spread for this polyphagous organism. Risk assessment should be raised to high. Risk management, area freedom high risk on pest with high degree of known association with the crop, visual inspection will not show up low level infestations, if pest is internal to bunches. Methyl Bromide is appears to be only viable treatment.

MAFBNZ response: Risk management measures over and above standard commercial practice, can only be applied where there is an identified risk. The draft risk analysis acknowledges that *P. longispinus* and *P. calceolariae* can vector viruses. All the viruses that are known to be vectored are already known to be present in New Zealand. MAFBNZ will modify the virus list and add Grapevine virus A as one of the viruses vectored by *P. longispinus*. Since Grapevine Virus A is already present in New Zealand (See appendix 2 of the draft risk analysis) this will not change the conclusion for *P. longispinus*. It is not a potential hazard on this pathway.

The entry assessment takes into account all the factors mentioned (see draft risk analysis section 7.6.2.1) and no new evidence is provided that would justify a change of this assessment.

The exposure assessment notes that the primary dispersal stage is the mobile crawler. This crawler can move long distances passively. The exposure assessment also takes into account other factors, for instance that mortality can be high for the crawler life stage and evidence that first instars can move as much as 8 meters away via wind dispersal, but there was a rapid drop off after 3 meters (see draft risk analysis section 7.6.2.2). The likelihood of exposure is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

See MAFBNZ response 2.2.2 for further information on pest freedom, MAFBNZ

response 2.2.7 for further information on visual inspection and MAFBNZ response 2.2.8 for information on management options. MAFBNZ notes your preferred management measure.

2.2.33. *Conogethes punctiferalis* (draft risk analysis section 8.1)

C. punctiferalis represents a significant threat to grapes and other crops. Visual inspection is not likely to be effective due to potential for organism to be in internal parts of bunches and remain undetected. Methyl Bromide and cold treatment considered minimum control.

MAFBNZ response: See MAFBNZ response 2.2.7 for further information on visual inspection and bagging and MAFBNZ response 2.2.8 for information on management options. MAFBNZ notes your preferred management measure.

2.2.34. *Eupoecilia ambiguella* (draft risk analysis section 8.3)

E. ambiguella (grapevine moth) represents a significant threat to grapevines. Larvae may remain internally in bunches at harvest, recommend increasing entry risk level to low to moderate. Bagging and visual assessment may be adequate; however visual may miss larvae internal to bunches.

MAFBNZ response: The entry assessment has considered the presence of larvae on the grape bunches. It also considered that larvae feed on unripe fruits, that most larvae will have left the fruit to pupate, that damaged grapes will be discarded and that remaining larvae may be detected by the presence of entry holes and damage to the fruit (see draft risk analysis section 8.3.2.1). The likelihood of entry is considered to be very low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment. See MAFBNZ response 2.2.7 for further information on visual inspection and bagging and MAFBNZ response 2.2.8 for information on management options.

2.2.35. *Hyphantria cunea* (draft risk analysis section 8.4)

H. cunea (fall webworm) we agree with the assessment, however it should be noted that larvae could go undetected in internal parts of bunches.

MAFBNZ response: MAFBNZ notes your remark.

2.2.36. *Nippoptilia vitis* (draft risk analysis section 8.6)

N. vitis (grape plume moth) is considered a significant pest of grapes. Larvae can be concealed in bunches, the entry risk level should be raised to moderate. Exposure assessment should be altered to moderate. Economic consequences control of this pest would require significant interruption to current IPM, and it could result in significant crop loss directly and through resulting fungal rots, risk should be increased to moderate. Methyl Bromide considered the only appropriate control measure.

MAFBNZ response: The entry assessment has taken into account that larvae may escape detection if the infestation is very light and they are well-concealed within the fruit cluster. It has also taken into account, among other factors, that adults are not likely to be associated with the commodity and that signs of infestation such as frass, webbing or damage are obvious (see draft risk analysis section 8.6.2.1). The likelihood of entry is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

The likelihood of exposure is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment. The economic consequences assessment states that, among others, the consequences could include an increase in pest control costs and/or disruption of existing control programmes, particularly those based on IPM. Hosts are found in the family Vitaceae (see draft risk analysis 8.6.2.4). The potential economic costs are considered to be low to moderate and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

See MAFBNZ response 2.2.2 for further information on pest freedom, MAFBNZ response 2.2.7 for further information on visual inspection and MAFBNZ response 2.2.8 for information on management options. MAFBNZ notes your preferred management measure.

2.2.37. *Xestia c-nigrum* (draft risk analysis section 8.10)

X. c-nigrum (spotted cutworm) we agree with the assessment, however there is limited concern that larvae could be associated with bunches.

MAFBNZ response: MAFBNZ has taken note of your concern.

2.2.38. *Rhipiphorothrips cruentatus* (draft risk analysis section 9.1)

R. cruentatus (grapevine thrips) considered to be a pest for grapes Entry assessment, low level infections are likely to go undetected and this organism has a high association with grapes, risk should be lifted to high. Exposure assessment, this organism is likely to be effectively dispersed by wind to hosts; risk level should be raised to moderate.

Establishment, this pest can reproduce asexually, and is likely to be suited to the climate, risk level should be raised to moderate. Risk management, there is a high degree of uncertainty around pest freedom for this organism. Methyl Bromide is considered the only reliable options for control.

MAFBNZ response: The entry assessment states that the small size of the thrips means that they could be missed during the standard packing process if infestation levels are low or they are concealed inside the grape bunch. It also refers to this pest being an important pest of grapevine in India and suggestions that varieties with thicker leaves that are hairy on the lower surface are resistant. It has also, among other factors, taken into account that damaged fruit will be discarded and that adults and nymphs are primarily found on leaves and occur less frequently on mature fruit (see draft risk analysis section 9.1.2.1.). The likelihood of entry is considered to be moderate and therefore non-negligible. No new evidence is provided that would justify a change of this assessment. The exposure assessment states that adults are capable of dispersing long distances passively by wind currents. It has also, among other factors, taken into account that crawlers are not capable of actively choosing to land upon a suitable host because they are wind dispersed, that crawlers can only actively move short distances on their own and that most of the listed hosts are not widely distributed throughout New Zealand (see draft risk analysis section 9.1.2.2.). The likelihood of exposure is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment. The factors relating to the likelihood of establishment mentioned in this submission have all been already taken into account in the establishment

assessment (see draft risk analysis section 9.1.2.3). No new evidence is provided that would justify a change of this assessment.

See MAFBNZ response 2.2.2 for further information on pest freedom, MAFBNZ response 2.2.7 for further information on visual inspection and MAFBNZ response 2.2.8 for information on management options. MAFBNZ notes your preferred management measure.

2.2.39. *Scirtothrips dorsalis* (draft risk analysis section 9.2)

S. dorsalis (chilli thrips) is considered to be a pest for grapes, and could vector unwanted organisms. Adults could be found in internal parts of bunches, suggest raising risk level to moderate for the entry assessment. Given reproductive strategies and climatic suitability the establishment risk should be lifted to high. Methyl Bromide is considered the only reliable control strategy.

MAFBNZ response: The vector capabilities of *S. dorsalis* have been addressed in the draft risk analysis (see section 9.2.1.3). The entry assessment states that life stages are small and may not be detected at low levels especially if hidden inside the grape bunch. The entry assessment has, among other factors, also considered that adults are likely to disperse during harvest, larvae are rarely found on fruit clusters and that eggs may not be laid on grapevine (see draft risk analysis section 9.2.2.1). The likelihood of entry is considered to be low and therefore non-negligible. No new evidence is provided that would justify a change of this assessment.

MAFBNZ will amend the establishment assessment to take account of and clarify the implications of arrhenotokous parthenogenesis. The conclusion of the assessment remains non-negligible and risk management options have been identified for *S. dorsalis*.

2.2.40. *Brevipalpus lewisi* (draft risk analysis section 10.1)

B. lewisi (citrus flat mite) considered a pest for grapes. Methyl Bromide fumigation considered the minimum reliable control.

MAFBNZ response: See MAFBNZ response 2.2.2 for further information on pest freedom and MAFBNZ response 2.2.8 for information on management options. MAFBNZ notes your preferred management measure.

2.2.41. *Tetranychus kanzawai* (draft risk analysis section 10.2)

T. kanzawai (kanzawai spider mite) is considered a pest for grapes. Given the mode of reproduction, its polyphagous nature and suitability to climate the risk assessment for establishment should be high. Methyl Bromide should be considered as minimum control at present.

MAFBNZ response: The establishment assessment has taken into account the polyphagous nature of *T. kanzawai* and its mode of reproduction. Arrhenotokous parthenogenesis could provide the necessary males, but only if the female does not disperse and stays alive long enough for the male offspring to develop to adulthood and locate the female. The optimal temperature for *T. kanzawai* is between 25°C and 30°C. The temperature in most parts of New Zealand will be less than optimal. The likelihood of survival of one female long enough for its male offspring to survive and locate the female to mate is

considered extremely low. The draft risk analysis will be amended to clarify this low likelihood.

See MAFBNZ response 2.2.2 for further information on pest freedom and MAFBNZ response 2.2.8 for information on management options. MAFBNZ notes your preferred management measure.

2.2.42. *Fungi* (draft risk analysis section 11)

Note all fungi in this section represent a risk to grapes, the risk of potential introduction and establishment has consistently been underestimated, and the recommended controls appear inadequate.

MAFBNZ response: See MAFBNZ response 2.2.5 regarding the use of descriptors to qualify the various components of assessed risk. No new evidence is provided that would justify a change of these assessments.

See MAFBNZ response 2.2.2 regarding Area freedom, MAFBNZ response 2.2.7 regarding visual inspection and bagging, MAFBNZ response 2.2.8 regarding Management options and MAFBNZ response 2.2.9 regarding implementation of measures. No new evidence is provided that would justify a change of the assessment of risk management options.

2.2.43. *Araneae* (draft risk analysis section 12.1)

Spiders these are not considered pests for grapes, they represent a potential public health issue. None of the controls appear to fully address the risk of introduction.

MAFBNZ response: The draft risk analysis has assessed the consequences for the environment and human health as non-negligible. Pest free area status as well as bagging and visual inspection were considered viable options. No new evidence is provided that would justify a change to this assessment of risk management options.

See MAFBNZ response 2.2.2 regarding Area freedom, MAFBNZ response 2.2.7 regarding visual inspection and bagging, MAFBNZ response 2.2.8 regarding Management options and MAFBNZ response 2.2.9 regarding implementation of measures.

2.2.44. *Arboridia apicalis* (draft risk analysis section 12.2)

A. apicalis grape leaf hopper, this is considered a pest for grapes. Role as a vector, recent investigations would suggest that GSV is present in New Zealand. This organism is known to be on the pathway, there has been insufficient attention paid to controls for this pest. The recommendation to wait and see if it is intercepted once trade begins is entirely inappropriate.

MAFBNZ response: Risk management measures over and above standard commercial practice, can only be applied where there is an identified risk. The hazard identification conclusion states: *A. apicalis* is a leaf feeder and although interception records from other table grape pathways indicated that adults of a closely related genus may be associated with exported fruit, this association has not been demonstrated for this species on table grapes in China. *A. apicalis* is therefore not classed as a potential hazard in this analysis. No scientific evidence has been provided that shows GSV is present in New Zealand.

Please note that although *A. apicalis* is not assessed as a hazard on this pathway and therefore risk management measures over and above standard commercial practice are not justified, it remains a 'regulated pest'. Therefore, if it is intercepted on any imported lots of table grapes at the border the infested lot will be treated to ensure the pests are effectively controlled prior to release. Alternatively, the consignment shall be reshipped or destroyed at the importers option and expense.

2.2.45. Weed seeds (draft risk analysis section 12.3)

Weed seeds (not quite sure how these qualify as invertebrate hitchhikers). It is clear that weeds seeds are regularly intercepted in imports and could establish in New Zealand. The complete lack of genuine risk assessment and control strategy here indicates weed seeds have been consigned to the too hard category, this is unacceptable, and a strategy should be developed.

MAFBNZ response: The draft risk analysis clearly states that weed seeds can enter New Zealand on imported grapes and therefore are a hazard with a non-negligible risk. Risk mitigation measures are identified. MAFBNZ will separate the section on weed seeds from that on invertebrate hitchhikers and will clarify the risk management options identified.

3. Copies of submissions

3.1. WANG YIYU, AQSIQ, PEOPLE'S REPUBLIC OF CHINA.

I. About the oriental fruit fly (*Bactrocera dorsalis*)

As the temperature in northern China in winter is very low, the fruit production areas in northern China are non-viable areas for *Bactrocera dorsalis*. Beginning from 2000, China has established the nation-wide fruit fly monitoring system, and up to now no *Bactrocera dorsalis* has ever been detected in the fruit production areas in northern China. Currently many countries, including the US, Australia, Chile, South Africa and others, have all recognised that the fruit production areas in northern China are fruit-fly free areas.

Therefore, we hope that you can take into account the above-mentioned facts, and recognise that the fruit production areas in northern China are fruit-fly free areas.

II. About the quarantine pest lists

Chinese experts believe that some pests mentioned in the draft risk analysis reports released by New Zealand for importation of pears and grapes from China do not occur in the production areas of pears and grapes in China. Some other pests are beneficial insects, such as predaceous mites, ladybugs and spiders, etc. These pests should not be listed as quarantine pests (see Annex 1 and 2).

III. About the risk management measures

Currently in China, all the orchards and packhouses for export fruit are registered with AQSIQ, and a sound quality management system has been established.

For grapes, the Chinese side believes that *eupoecilia ambiguella*, *maconellicoccus hirsutus*, *pseudococcus maritimus* and *conogethes punctiferalis* do not occur in the grape production areas in China. The possibility of grapes carrying these pests is very low.

Therefore, it is not necessary to take such quarantine measures as methyl bromide and sulfur dioxide fumigation and cold treatment on grapes to be exported to New Zealand. In addition, bagging management is applied on export grapes in China during the fruit growing period, which greatly reduces the risks of pests causing damages and being carried with fruit.

List of Quarantine Pests to be Removed on China's Suggestion (Grapes)

No.	Pest	Reason for Removal
1	<i>Coccinellidae</i>	No report has been found on it causing damages to table grapes in China. Besides, thanks to the bagging of fruit, ladybugs can hardly come into direct contact with fruit. At the time of harvest and packaging, they can be easily removed from the fruit. The possibility of it spreading with grape fruit is negligible.
2	<i>Apolygus lucorum</i>	The symptoms of its damages are obvious and can be easily identified because of its damage, oviposition and feeding behaviours (generally with taxis response in oviposition, it usually oviposits in places like sprouts, tender leaves, buds and young fruit; hibernating eggs are mostly laid on dead branches, hay, and the like). Its damages to table grapes are apparently very mild. Field investigation and research show that its occurrence in vineyards is very mild. Therefore, the possibility of it spreading with grape fruit is negligible.
3	<i>Maconellicoccus hirsutus</i>	It does not occur in grape production areas in China.

4	<i>Pseudococcus spp</i>	There is only one report. It does not occur in grape production areas in China.
5	<i>Eupoecilia ambiguella</i>	There is no report on it causing damages to grapes in China. Besides, New Zealand states in its report that grapes is its secondary host. It does not occur in vineyards. Therefore, the possibility of it spreading with grape fruit is very low.
6	<i>Rhipiphorothrips cruentatus</i>	This kind of thrips is a harmful insect for grape and many other fruit trees abroad, causing damages to leaves and fruit and making them fall off. In Taiwan of China, it causes severe damages to roses and wax apples, but this insect is not present in any other grape production areas in China. There has been no relevant report over the past twenty years.
7	<i>Scirtothrips dorsalis</i>	There has been no report on this insect causing damages to grapes in China. It is not present in grape production areas in China, and it does not cause damages to mature fruit. This insect primarily damages tea leaves, ginkgos and lotus flowers.
8	<i>Nippopectilia vitis</i>	This insect primarily damages grape vines. After its larva eats into the vines, it damages the xylem pith, leaving long white holes inside the stems and a large amount of frass near the end of the burrowing holes. The infected vines expand with their tips usually withering, the infected sections between the joints turn purple, and the upper leaves turn yellow and wither. Therefore, it can be easily identified. The possibility of it spreading with grape fruit is negligible.
9	<i>Greeneria uvicola</i>	It is one of the entry quarantine pests of China. It does not occur in grape production areas in China.
10	<i>Monilinia fructigena</i>	Grapes is its secondary host. There has been no report on its occurrence in grape production areas in China.
11	<i>Araneae</i> spiders	The risk of them spreading with grapes is very low. They are beneficial insects.

3.2. PHILIP MANSON, NEW ZEALAND WINEGROWERS.

Generic issues and concerns

- There is a wide range of potential new hazards associated with this pathway. In many cases the threat to other horticultural crops is likely to be higher than the direct threat to grapes. Fresh fruit and vegetables are often host species, they also tend to lose the ability to export when a new pest is present. The focus of IRA is mostly on the impact on grapes presumably as grapes are the produce being imported. Failure to consider wider horticultural production implications appears to be a shortcoming of this IRA.
- There is a high degree of uncertainty in many elements of the IRA, in both pest freedom and controls. We remain concerned at how the IRA will then be interpreted with respect to issuing and managing a final IHS.
- It should be noted that when a new pest is introduced control (if possible) is not the only cost and in some cases not the major cost. Control often requires use of agrichemicals that undermine IPM systems and that may be unacceptable for use for fruit destined to specific export markets. In some cases control cannot be achieved without emergence of unacceptable agrichemical residues once again affecting market access.
- We are concerned with the lack of broad scientific and expert consultation. Given the significant potential increase in risk to New Zealand horticulture associated with this, and other current, IRA it is our view that a wider expert peer review is justified. It also remains a concern that the time allowed for consultation is insufficient. We assume that the IRA has taken a very significant amount of time to compile, but we believe there needs to be more time in the future to consult on IRA documents, and once comments are collated sufficient time to discuss findings and the implementation.
- We are very concerned by comments in Appendix 5 that indicate a lack of confidence by officials in the ability of systems in China to honestly implement and report on appropriate control protocols, these concerns must be addressed with appropriate auditing (or similar) before trade begins.
- We reiterate the importance of not rushing this IRA (and issue of an IHS): there are many “unknowns” referred to in this document in terms of potential hazards and appropriate mitigation, but also in terms of application of procedures and systems in the country of origin.

Relating to most hazards

- Area freedom is a significant control suggested for most hazards that were identified. It appears that there is a fairly low level of confidence in the data supporting area freedom for most hazards. We would expect that if this were to be allowed as a control on its own that a very high standard of proof would be required.
- There does not appear to be a consistent standard for allocating a low, moderate or high risk to a particular finding. In many cases these appear to be somewhat at odds to a precautionary approach.
- Many of the controls become much more critical if the produce is to be transported by air, a long period in cool storage during transport may assist risk mitigation. We do not believe transport by air should be considered for table grapes from any country.
- Visual assessment and covering with bags in our view is not adequate for most hazards. Visual assessment is weak where the hazard may establish internally in

bunches (pre-Bunch closure) and will not be visible on the external berries late season. Bags are not in place for the whole season, and many of the identified hazards are more than capable of establishing once bags have been removed.

- The use of Methyl Bromide (+/- cold treatment) appears to be the only reliable option for many of the hazards identified in the IRA. The exporting country should however research verification of the SO₂ and cold treatment option for many of the hazards.

Comments on specific sections

Following are comments for each section as numbered. We have embedded comments on the suggested measures table (Table 1. below)

Hazard organism: organism type and scientific name (page number given in brackets)	Measures that could be considered options for the management of biosecurity risks subject to effective implementation. ¹
<p><i>Alternaria viticola</i> (p195)</p> <p><i>Pilidiella diplodiella</i> (p200)</p> <p><i>Guignardia bidwellii</i> (p211)</p>	<p>Pest free place of production, or In-field control and surveillance, or (in-field control inadequate treatment)</p> <p>Bagging and Visual inspection (inadequate)</p> <p>None of the controls appear to address the risk.</p>
<p><i>Monilinia fructigena</i> (p217)</p>	<p>Pest free place of production, or In-field control and surveillance, and Bagging and Visual inspection</p> <p>None of the controls appear to address the risk.</p>
<p><i>Greeneria uvicola</i> (p205)</p>	<p>Pest free place of production, or In-field control and surveillance, or Bagging and Visual inspection (for sea-freighted grapes only)</p> <p>None of the controls appear to address the risk.</p>
<p><i>Bactrocera dorsalis</i> (p46)</p>	<p>Pest free place of production, or (not acceptable, high risk)</p> <p>Methyl bromide fumigation followed by cold treatment, or (recommended)</p> <p>Cold treatment (minimum standard, but excludes airfreight)</p>
<p><i>Scirtothrips dorsalis</i> (p164)</p>	<p>Pest free place of production, or Methyl bromide fumigation, and (recommended option)</p> <p>Visual inspection</p> <p>*Cold treatment and SO₂</p>
<p><i>Brevipalpus lewisi</i> (p177)</p>	<p>Pest free place of production, or (high risk)</p> <p>Methyl bromide fumigation followed by cold treatment, or (most appropriate)</p> <p>Methyl bromide fumigation (minimum requirement)</p>
<p><i>Apolygus lucorum</i> (p59)</p> <p><i>Nippoptilia vitis</i> (p128)</p>	<p>Pest free place of production, or (high risk)</p> <p>Bagging and Visual inspection, or (not appropriate, internal bunch)</p>

	larvae could be missed) Methyl bromide fumigation (recommended option)
Latrodectus mactans (represents other Latrodectus spp.) (p228)	Pest free place of production, or Bagging and Visual inspection, or *SO ₂ fumigation None of the controls appear to address the risk.
Harmonia axyridis (p35) Coccinella transversalis (p35)	Bagging, and Visual inspection, or (acceptable to NZW) Methyl bromide fumigation (minimum level for control)
Conogethes punctiferalis (p103)	Bagging and Visual inspection, or (visual inspection inadequate) Methyl bromide fumigation combined with cold treatment (minimum acceptable)
Eupoecilia ambiguella (p115)	Bagging and Visual inspection or (may be adequate) Methyl bromide fumigation (preferred treatment) *Cold treatment and SO ₂
Maconellicoccus hirsutus (p66) Pseudococcus maritimus (p86)	Pest free place of production, or (high risk but consider for M hirsutus) Bagging and Visual inspection, or (inadequate) Methyl bromide fumigation (preferred option) *Cold treatment and SO ₂ (should be considered with more data)
Rhipiphorothrips cruentatus (p157)	Pest free place of production, or (insufficient data for certainty) Methyl bromide fumigation (appropriate minimum required)
Tetranychus kanzawai (p184)	Pest free place of production, or (high risk and unknown) Methyl bromide fumigation combined with cold treatment, or Methyl bromide fumigation (minimum requirement) *Cold treatment and SO ₂ (should be considered in future)

- 1.3.2 addresses assessment of uncertainty, significant uncertainty exists in many areas of the IRA, this would suggest that in most cases a precautionary approach should be applied particularly with respect to risk management options.
- 1.3.4 Review and Consultation, given the lack of experience of imports of fresh fruit from China, there appears to have been a relatively low level of external scientific review of this (and possibly other) IRA, we recommend that a wider group of reviewers be consulted. This should include entomologists and pathologists actively engaged in biosecurity and plant protection research.

- 2.1.3 – 2.1.5: the nature of grape bunches and their architecture means it is often difficult to determine if they are harbouring pests in internal parts of the bunch, making visual inspections less than effective for many pests. Section 2.1.5 notes that insects are generally aggregated in their distribution, it should be noted that this would make them harder to pick up in any random sampling programme.
- Section 2.2.2 Import pathway, there does not appear to be an audit step by MAFBNZ in this pathway, we recommend that this should be in place at least for the first few seasons of trade. Of particular concern are the comments in Appendix 5 by Dr Ormsby (points 4 and 5) that clearly suggest that there is likely to be genuine problems in getting reliable application and reporting of hazard control systems.
- Section 2.2.2.2 pre-harvest operations, these control measures are aimed at a limited set of fungal diseases and mites. They appear to be inappropriate control measures for most of the potential hazards assessed in the IRA and should not be considered as control measures.
- Section 2.2.2.4 There appears to be a very significant risk associated with transport by air for range of hazards. In many cases an extended period of cold storage may reduce risk, this is not the case with Air Transport. We recommend that air transport should not be permitted.
- 3.2 It is clear from this section and the related appendices that despite mandated mitigation practices many organisms do make their way into shipments destined for New Zealand. This highlights the need for a precautionary approach with respects to identified hazards. It would be unacceptable to monitor shipments “once trade in table grapes from China starts” and find that a significant tightening of requirements was needed, this would equate to closing the stable door once the horse has bolted.
- 4.2.1 & 4.2.2 PFA and PFPP, the concept of area or place freedom of pests is theoretically sound. However for many of the hazards identified in this IRA it appears that the data is very weak to establish such status at the current point in time, and it is unclear what ongoing monitoring is required to ensure the ongoing status. This is particularly important in large continental situations where pest disbursement is highly likely. In our view there are very few hazards for which this would be an acceptable control measure.
- 4.2.3 Bagging: this control measure is questionable particularly as it is not applied right through to harvest, many pests and diseases exploit ripe fruit immediately prior to harvest.
- 4.2.4 Airbrushing, taking into account bunch architecture this is most likely to be primarily a cosmetic treatment, or at best removing large hitchhikers, it will not address hazards which may be in internal bunch parts. Airbrushing should be treated with caution if considered as a control measure. Cold treatment has some merits for certain hazards, however the time factor in cold treatment precludes its use with respect to air transport.
- 4.2.8 Visual inspection, it is unclear what percentage of the produce is visually inspected at each stage of the process. As noted previously visual inspection has limited application due to bunch architecture, and should not be relied on as an adequate control measure on its own.
- 4.3 Assumptions and uncertainties, interception data is a good way of monitoring efficacy of systems that have been implemented. However they should never be used as a way of testing if a proposed control is effective, any proposed control should be proven prior to implementation.
- 5 Coleoptera, these are not of high concern to our industry as they generally act as a bio control agent.

- 5.1.2.4 Potential for fruit damage and taints is a concern, but should be relatively low risk, in general we agree with the economic risk evaluation.
- 5.1.2.6 Assumption of risk to be similar to *H. axyridis* may be flawed.
- 6.1 *B. dorsalis*
 - This should be considered a major potential pest for all fruit production.
 - 6.1.1.3 This organism appears to be likely to be a strong flier and is likely to be quick to spread.
 - 6.1.1.4 Wide host range is a concern for fresh fruit and vegetable production and export.
 - 6.1.2.1 Entry assessment, this organism quite clearly can be on the pathway i.e. eggs and larvae can be undetected on fruit. The likelihood of entry should be considered high.
 - 6.1.3.1 Pest freedom, approach is mostly reliant on modelling and not actual surveys; we have a major concern with lack of data on actual distribution and should not be considered acceptable on its own without better verification. Cold treatment should be considered the minimum control measure, but Methyl Bromide followed by cold is preferred.
- 7.1 *A. lucorum* (small green plant bug), this should be considered a pest of significant potential to grapes, and most likely to other crops.
 - 7.1.2.2 Exposure assessment we recommend alteration from low to medium.
 - 7.1.2.4 Economic consequences, this organism can cause direct damage to grapes and may require pesticide control; this would be costly and have adverse impact on IPM and ultra low-residue production, Suggest change of assessment to moderate to high. Environmental consequences should be changed to moderate
 - Risk management, pest freedom is high risk on its own due to clear association with vineyards and lack of data. Methyl Bromide should be considered minimum treatment.
- 7.2 *M. hirsutus* (pink hibiscus mealybug) should be considered a significant potential pest for both grapes and many fruit crops.
 - 7.2.2.1 Entry assessment, low level infections are likely to be undetected, risk should be lifted to moderate to high.
 - 7.2.2.3 Establishment is likely to be possible in warmer regions; risk should be lifted to moderate.
 - Economic consequences, unclear if this organism can vector plant diseases, treatment and residues issues, consider alteration to moderate.
 - 7.2.3.1 Risk management, pest freedom may be valid here. Bagging not likely to restrict pest. Visual inspections unlikely to be effective due to bunch architecture. Cold treatment could be considered, but requires 6 weeks minimum, excludes air freight. Methyl Bromide should be recommended.
- 7.3 *N. viridis*, Note this organism has been omitted from Table 1, but control measure may be justified.
 - 7.3.2.1 Appears to be insufficient information to come to entry risk assessment, precautionary approach does not appear to have been applied. Suggest reevaluation of findings, risk management procedures may be justified.
- 7.4 *P. strachani* (hibiscus snow scale), agree with the assessment, although entry and exposure assessment could be altered to moderate.
- 7.5 *P. stali* (brown-winged green bug) we agree with the assessment
- 7.6 *Pseudococcus* spp. Are significant pests to grapes and range of fruit crops.
 - 7.6.1.2 agree that *P. calceolariae* and *P. longispinus* are both present in New Zealand, however there is a concern it large numbers were present that they may

vector previously unknown viruses or viroids, these diseases are a major economic threat to the industry.

- 7.6.1.3 This list of viruses vectored by mealy bug is incomplete, e.g. they also vector GVA.
- 7.6.2.1 Entry assessment, grapes are a primary host and low level infestations are not likely to be detected and related species have been detected at the border, risk level should be change to high.
- 7.6.2.2 Exposure assessment, assumption that wind dispersed crawlers can't actively find host reduces risk is erroneous; wind dispersal is a primary method of spread for this polyphagous organism. Risk assessment should be raised to high.
- 7.6.3.1 Risk management, area freedom high risk on pest with high degree of known association with the crop, visual inspection will not show up low level infestations, if pest is internal to bunches. Methyl Bromide is appears to be only viable treatment.
- 8.1 *C. puntiferalis* represents a significant threat to grapes and other crops.
- 8.1.3.1 Visual inspection is not likely to be effective due to potential for organism to be in internal parts of bunches and remain undetected. Methyl Bromide and cold treatment considered minimum control.
- 8.2 *E. udocima* spp. We agree with the assessment of this organism.
- 8.3 *E. ambiguella* (grapevine moth) represents a significant threat to grapevines.
- 8.3.2.1 Larvae may remain internally in bunches at harvest, recommend increasing risk level to low to moderate.
- 8.3.2.5 Risk estimation should be altered to low.
- 8.3.3.1 Bagging and visual assessment may be adequate; however visual may miss larvae internal to bunches.
- 8.4 *H. cunea* (fall webworm) we agree with the assessment, however it should be noted that larvae could go undetected in internal parts of bunches.
- 8.5 *M. brassicae* – cabbage moth, we agree with the assessment
- *N. vitis* (grape plume moth) is considered a significant pest of grapes
- 8.6.2.1 larvae can be concealed in bunches, the risk level should be raised to moderate
- 8.6.2.2 exposure assessment should be altered to moderate
- 8.6.2.4 economic consequences control of this pest would require significant interruption to current IPM, and it could result in significant crop loss directly and through resulting fungal rots, risk should be increased to moderate
- 8.6.3.1 Methyl Bromide considered the only appropriate control measure.
- 8.7 *Oraesia* spp. and *C. lata* (fruit piercing moths) we agree with the assessment
- 8.8 *P. saucia* (pearly underwing moth) we agree with the assessment
- 8.9 *S. retorta* (fruit sucking moth) we agree with the assessment
- 8.10 *X. c-nigrum* (spotted cutworm) we agree with the assessment, however there is limited concern that larvae could be associated with bunches.
- 9.1 *R. cruentatus* (grapevine thrips) considered to be a pest for grapes
- 9.1.2.1 Entry assessment, low level infections are likely to go undetected and this organism has a high association with grapes, risk should be lifted to high.
- 9.1.2.2 Exposure assessment, this organism is likely to be effectively dispersed by wind to hosts; risk level should be raised to moderate.
- 9.1.2.3 Establishment, this pest can reproduce asexually, and is likely to be suited to the climate, risk level should be raised to moderate.
- 9.1.3.1 Risk management, there is a high degree of uncertainty around pest freedom for this organism Methyl Bromide is considered the only reliable options for control.
- 9.2 *S. dorsalis* (chillies thrips) is considered to be a pest for grapes, and could

vector unwanted organisms.

- 9.2.2.1 adults could be found in internal parts of bunches, suggest raising risk level to moderate
- 9.2.2.3 Given reproductive strategies and climatic suitability the establishment risk should be lifted to high.
- 9.2.3.1 Methyl Bromide is considered the only reliable control strategy.
- 10.1 B. lewisi (citrus flat mite) considered a pest for grapes
- 10.1.3.1 Methyl Bromide fumigation considered the minimum reliable control.
- 10.2 T. kanzawai (kanzawai spider mite) is considered a pest for grapes
- 10.2.2.3 Given the mode of reproduction, its polyphagous nature and suitability to climate the risk assessment for establishment should be high.
- 10.2.3.1 Methyl Bromide should be considered as minimum control at present.
- 11 Fungi note all fungi in this section represent a risk to grapes, the risk of potential introduction and establishment has consistently been underestimated, and the recommended controls appear inadequate.
- 12.1 Spiders these are not considered pests for grapes, they represent a potential public health issue. None of the controls appear to fully address the risk of introduction.
- 12.2 A. apicalis grape leaf hopper, this is considered a pest for grapes.
- 12.2.1.3 Role as a vector, recent investigations would suggest that GSV is present in New Zealand.
- 12.2.1.7 This organism is known to be on the pathway, there has been insufficient attention paid to controls for this pest. The recommendation to wait and see if it is intercepted once trade begins is entirely inappropriate.
- 12.3 Weed seeds (not quite sure how these qualify as invertebrate hitchhikers). It is clear that weed seeds are regularly intercepted in imports and could establish in New Zealand. The complete lack of genuine risk assessment and control strategy here indicates weed seeds have been consigned to the too hard category, this is unacceptable, and a strategy should be developed.