Risk Management Proposal

Fresh Table Grapes for Consumption,  
(*Vitis vinifera* L., *Vitis labrusca* L. and *Vitis labruscana* L.)

from the Republic of Korea

FOR PUBLIC CONSULTATION

Date XXXXX
Risk Management Proposal: Fresh Table Grapes for Consumption from the Republic of Korea

FOR PUBLIC CONSULTATION

Date xxxxx
Contents

Purpose .................................................................................................................................................. 4
Background ........................................................................................................................................ 4
  Commodity description ...................................................................................................................... 4
  Source information utilised for the risk management proposal ........................................................... 4
Objective ............................................................................................................................................... 5
Risk assessment ................................................................................................................................ 5
  Identified risk organism groups .......................................................................................................... 5
Risk management ................................................................................................................................. 7
  Summary of proposed risk management measures ........................................................................... 7
  Specific risk management measures proposed ................................................................................ 8
Phytosanitary inspection and certification by QIA .............................................................................. 10
Verification inspection on arrival in New Zealand ............................................................................ 10
Auditing .............................................................................................................................................. 11
Summary of the table grape export pathway from the Republic of Korea ....................................... 12
Proposed import health standard requirements ................................................................................ 13
  Pre-shipment requirements .............................................................................................................. 13
  Phytosanitary measures .................................................................................................................. 13
  Inspection of the consignment .......................................................................................................... 13
  Transit requirements ....................................................................................................................... 13
  Documentation ............................................................................................................................... 13
References .......................................................................................................................................... 15
Appendix 1: The end to end phytosanitary export process with Control Points .............................. 18
Appendix 2: Risk organisms ............................................................................................................ 21
Purpose
The purpose of this document is to:

- Provide a summary of the risks associated with fresh table grapes (Vitis vinifera L., Vitis labrusca L. and Vitis labruscana L) for human consumption from the Republic of Korea.
- Provide a rationale for the preferred phytosanitary measures considered for managing the risks.
- Seek stakeholder feedback on the proposed phytosanitary risk management measures in this risk management proposal for the importing requirements for fresh table grapes (Vitis vinifera L., Vitis labrusca L. and Vitis labruscana L) for human consumption from the Republic of Korea.

Background
New Zealand is responding to a market access request for fresh table grapes (Vitis vinifera L., Vitis labrusca L. and Vitis labruscana L) for human consumption from the Republic of Korea. This pathway has the potential to introduce regulated organisms to New Zealand and therefore a risk assessment was conducted to determine appropriate phytosanitary risk mitigation measures which are proposed in this document.

Commodity description
The commodity description “table grapes” for human consumption is defined as commercially produced grapes (berries) with pedicel and peduncle, but without tendrils, stems, leaves, roots or any other plant part.

Source information utilised for the risk management proposal
The assessment of the risks and appropriate measures draws on the significant body of information that already exists for this commodity and country. The following documents were used to identify risk organism groups on the table grape pathway to New Zealand from the Republic of Korea and appropriate measures to mitigate their risk of entry and establishment in New Zealand:

- Organism, commodity and pathway information provided by the government of the Republic of Korea;
- The recent MAF Import Risk Analysis (IRA) for the importation of table grapes from China (MAFBNZ 2009a);
- The United States Department of Agriculture IRA for table grapes from the Republic of Korea (USDA 2002);
- Organism specific information from the MAF IRA for the importation of pears from China (MAFBNZ 2009c) and the IRA for the importation of stonefruit from the Pacific NorthWest (MAFBNZ 2009d);
- Current MAF Import Health Standards (IHSs) for table grapes from Chile, Australia, Italy, China, USA and Mexico (MAF IHS 152-02) and historic trade information;
- MAF Interception Database records of organisms intercepted at the New Zealand border on imported table grapes (MAFBNZ, 2009b);
**Objective**

The objective of phytosanitary risk management measures is to effectively manage known risks associated with the importation of fresh table grapes (*Vitis vinifera* L., *Vitis labrusca* L. and *Vitis labruscana* L) for human consumption from the Republic of Korea in a way that is consistent with New Zealand’s domestic legislation and international obligations under Article 3.1 of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement) (WTO 1995).

**Risk assessment**

**Identified risk organism groups**

Risk organisms identified as being associated with table grapes from the Republic of Korea were grouped according to life cycle traits (for example internal or external fruit feeders) and physical characteristics of the organism. Within each group, there were organisms which had been the subject of previous risk assessments conducted by MAF. These risk assessments were conducted for different pathways (for example table grapes from China). Detailed information on specific organisms can be found in the documents referred to in the section Source information.

The risk organisms are allocated into one of three groups on the basis of their association with the commodity. These groups are depicted in Table 1.

Criteria for risk organisms to New Zealand (Appendix 2);

1. present in the Republic of Korea and absent from New Zealand, and
2. likely to be present on the pathway if risk was unmitigated, and
3. known to be associated with fruit (references cited in section Source information), and
4. their hosts included species present in New Zealand, and
5. if climatically they were able to establish in New Zealand, and/or
6. they are likely to cause high economic impact to New Zealand (e.g. fruit fly).

All Tephritidae fruit flies are assessed as high risk organisms, even though the Republic of Korea is currently considered to be free of fruit flies of concern on this pathway. Any incursions of fruit fly could disrupt trade and potentially mean large economic losses for New Zealand exporters of fruit fly host material.

<table>
<thead>
<tr>
<th>Risk organism group</th>
<th>Examples of risk organisms (which require specific measures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Arthropods</td>
<td>Adoxophyes orana</td>
</tr>
<tr>
<td></td>
<td>Tetranychus kanzawai, Thrips palmi</td>
</tr>
<tr>
<td></td>
<td>Chrysomphalus dictyospermi</td>
</tr>
<tr>
<td>Internal arthropods</td>
<td>Tephritidae fruit flies</td>
</tr>
<tr>
<td></td>
<td>Conogethes punctiferalis</td>
</tr>
<tr>
<td></td>
<td>Drosophila suzukii</td>
</tr>
<tr>
<td></td>
<td>Stathmopoda auriferella</td>
</tr>
<tr>
<td>Pathogens</td>
<td>Monilinia fructigena</td>
</tr>
</tbody>
</table>
External Arthropods

1. Large, mobile organisms

The life stages associated with the commodity are large and/or colourful and therefore easily detectable. The life stages can be large egg masses, big and/or colourful larvae/pupae or large adults. The risk organisms are generally highly mobile and easily move between fruit or off the fruit during harvest. The distance travelled by these risk organisms can be relatively large. A full assessment of the risk posed by the example *Adoxophyes orana* on pears has been conducted previously (MAFBNZ 2009c). The likelihood of entry and establishment of *A. orana* were considered to be moderate, while the potential economic consequences of establishment in New Zealand were considered high.

2. Cryptic, small mobile organisms

The organisms in this group are small and less conspicuous. The detection of organisms from this group is more difficult and could need optical enhancement. The main life stage that is associated as a risk organism with table grape bunches is mobile. This life stage is capable of moving between fruit and moving off fruit by its own means if it would reach New Zealand. The distance travelled by these organisms is often relatively small. A full assessment of the risk of example organisms in this group has been performed previously. The risks were assessed on table grapes for *T. kanzawai* (MAFBNZ 2009a) and on citrus for *T. palmi* (MAFBNZ 2008). The likelihoods of entry of *T. kanzawai* and *T. palmi* were considered moderate to high and the likelihood of establishment low and high, respectively. The economic consequences of establishment of these two risk organisms in New Zealand were considered moderate to high.

3. Cryptic, non-mobile organisms

The organisms in this group are small and not very conspicuous. The detection of organisms from this group is more difficult and may require optical enhancement. The main life stage that is associated as a risk organism with table grape bunches is non-mobile. Once the organisms have found an acceptable feeding site they remain there. The risk organism is not capable of moving from the fruit if it is disposed of, unless it develops into the mobile life stage, which means the fruit needs to remain in a condition that allows further development. The distance travelled by the mobile life stages is relatively small. A full assessment of the risk of the example organism *C. dictyospermi* has been conducted previously on pears (MAFBNZ 2009c). The likelihood of entry was considered to be low and the likelihood of establishment was considered moderate. The potential economic consequences of establishment of *C. dictyospermi* in New Zealand were considered moderate.

Internal arthropods

The life stages of this group associated with the fruit feed within the fruit, and these stages can only move limited distances. Detection of organisms in this group is limited, but often frass, external damages or secondary infections are more obvious signs of infestation. The larvae inside the fruit need to develop into adults for dispersal. After the fruit has been discarded it needs to stay in a condition that allows the further development of larvae into adults. Some larvae are capable of very limited dispersal if the fruit becomes unsuitable. A full assessment of the risk of example organisms *D. suzukii* and *C. punctiferalis* on table grapes has been conducted previously (MAFBNZ 2009a). The likelihood of entry was considered low for *D. suzukii* and moderate for *C. punctiferalis*, while the likelihood of establishment was considered high and moderate, respectively. The potential economic consequences of establishment in New Zealand were considered moderate.
Pathogens

Pathogens can be systemic to the plant or solely infect the fruits. Often the fruits need to be damaged for an infection to take place. The pathogens mainly spread by air, rain, wind or mechanical damage. Sometimes asymptomatic but infected fruits are present. Often pathogens can only infect berries of a certain maturity. Strong infections of fruit are easily detectable. Infection of fruit can continue after the fruit has been discarded, but spread to other plants is limited. A full assessment of the risk of the example organism *M. fructigena* on table grapes has been conducted previously (MAFBNZ 2009a). The likelihoods of entry were considered to be low for this pathogen and the likelihood of establishment was considered to be high. The potential economic consequences of establishment in New Zealand were considered moderate.

Risk management

Summary of proposed risk management measures

This risk management proposal proposes a combination of phytosanitary risk management measures including mandatory measures such as phytosanitary inspection for specific regulated organisms to New Zealand. The phytosanitary risk management measures proposed below are aligned with current standards and the pre and post harvest practises in the exporting country, where this alignment is possible without compromising New Zealand’s biosecurity.

- **pest free area** for fruit fly

  AND

- **pest free area or a systems approach (including fruit bagging) or methyl bromide** for *Drosophila suzukii*

  AND

- **a systems approach** for *Monilinia fructigena*

  AND

- **a systems approach (including fruit bagging) or methyl bromide fumigation** for *Adoxophyes orana, Conogethes punctiferalis, Stathmopoda auriferella, Tetranychus kanzawai* and *Thrips palmi*.

  AND

- **a systems approach (including fruit bagging)** for *Chrysomphalus dictyospermi*

  AND

- **phytosanitary inspection and certification pre-export**. The Republic of Korea to have in place a supporting operational system to maintain and verify the phytosanitary status of consignments

Note: Only table grapes produced in accordance with the OAP and IHS and certified on a phytosanitary certificate may be imported into New Zealand from the Republic of Korea and MAF will verify this with inspection on arrival.

A systems approach requires two or more measures that are independent of each other. In principle, systems approaches should be composed of a combination of phytosanitary measures that are possible to implement within the exporting country. The combination of these phytosanitary measures reduces the risk to an acceptable level. The systems approach should be in accordance with ISPM 14 (IPPC 2002).

The essential critical control points (CCPs) of the proposed phytosanitary risk management measures across the pathway are described in the “proposed pathway description” (Figure 1) and in the accompanying monitoring and verification procedures (Appendix 1). These CCPs
will form the basis of the Official Assurance Programme (OAP) agreed between the Republic of Korea and New Zealand.

**Specific risk management measures proposed**

**Pest Free Area**

MAF currently recognizes the Republic of Korea as free of Tephritidae fruit flies of concern with respect to pears (MAF 152-02) and can extend this to table grapes if appropriate documentation is provided. Methods and procedures to verify the established country freedom for fruit flies must be in accordance with ISPM 26 (IPPC 2006) and will be agreed upon between the Republic of Korea and New Zealand. The procedures should include, among others, monitoring for fruit flies, outbreak criteria, emergency pest control measures and re-instatement criteria.

For all risk organisms, pest free area will need to be based on research data to establish that table grape growing areas are free of the risk organism. The programme should include trapping, monitoring and methods for specimen identification. The establishment of pest free areas should be in alignment with the international standards ISPM 4 (IPPC 1996) and/or ISPM 10 (IPPC 1999). MAF currently accepts pest free area for *D. suzukii* if full documentation is provided on the pest free area system, for instance trap types, trap placement, frequency of checking traps and outbreak criteria, which will be agreed upon in the OAP.

**Fumigation with methyl bromide**

MAF currently accepts offshore fumigation with methyl bromide against the high risk external arthropods on table grapes as shown in Appendix 2. Methyl bromide fumigation treatment needs to align with treatment schedules used for table grapes from other countries, where appropriate, and targeted at comparable risk organisms. It is noted however, that treatment with methyl bromide significantly reduces the shelf-life of table grapes.

Methyl bromide fumigation at one of the following rates is considered efficacious against the high risk arthropods associated with table grapes from the Republic of Korea:

- 32 g/m³ for 2 hrs at 22°C and above;
- 40 g/m³ for 2 hrs at 17-22°C;
- 48 g/m³ for 2 hrs at 12-17°C.

Fumigation with methyl bromide will be assessed as an equivalent measure effective against other organisms, when supporting evidence is provided in accordance with ISPM 24 (IPPC 2005).

**A systems approach**

The systems approach should be composed of a combination of phytosanitary measures that are possible to implement within the exporting country. The combination of these phytosanitary measures reduces the risk to an acceptable level.

The essential critical control points (CCPs) of the proposed systems approach are described below and identified in the “proposed pathway description” (Figure 1) and accompanying monitoring and verification procedures (Appendix 1).

- **Orchard Registration**

The designated National Plant Protection Organisation (NPPO) for the Republic of Korea will register all commercial vineyards producing table grapes for export to New Zealand prior to the commencement of the growing season. Only commercially produced table grapes may be
imported into New Zealand. The Republic of Korea’s NPPO will verify orchards are complying with the export programme/workplan agreed between the Republic of Korea and New Zealand.

Registration is required to ensure approved harvesting techniques are followed and provide product traceability along the export pathway.

- **Packhouse/Cold Storage/Treatment Facility Registration**

  The Republic of Korea’s NPPO will register all packing, cold storage and treatment facilities processing table grapes for export to New Zealand prior to the commencement of the growing season. The Republic of Korea’s NPPO will verify packing and cold storage facilities are compliant with packhouse operations, and sanitation procedures are compliant with the export programme/workplan agreed upon between the Republic of Korea and New Zealand. Packhouse, cold storage and treatment facility registration is expected to limit the presence of attracted and packhouse associated hitchhikers and allow trace-back information in the event of non-compliance.

- **Integrated pest management**

  All registered vineyards implement pest control activities and an integrated pest management (IPM) and monitoring programme. Chemical, biological and cultural control measures are applied when required and may be dependent on the results of the pest and disease monitoring. Records of control measures are retained.

  All diseased and infected plants/plant parts are removed and destroyed. Vineyards have programmes in place for weed control and pruning. The use of pesticide treatments is limited to prevent the development of pesticide resistance.

  This general approach is expected to limit the presence of all risk organism groups.

- **Bagging of fruit**

  Fruit for export is bagged as part of the IPM programme. Bagging must occur from the time of fruit set and fruit will remain bagged until harvest. The bags are light and made of rain proof paper.

  While specific efficacy data on the effectiveness of bagging for excluding risk organisms is currently not available, it is considered that bagging will prevent access to the table grapes for all but the very small organisms. It will also prevent organisms from laying eggs on or near the fruit. Moreover, in combination with vineyard pest surveillance and control, bagging reduces the potential for small sized risk organisms to be found on fruit bunches and spread between bunches. Bagging reduces damage caused, amongst others, by rain, birds and sun, thereby reducing secondary infections and the likelihood of infections by pathogens that can only infect damaged table grapes. The spread of spores between fruit bunches is also limited by bagging.

  Bagging further limits access to the table grapes for hitchhikers, since berries will not be in direct contact with leaves or other parts of the plants. To be an effective mitigation measure, the bags must not be removed until after harvest. If bags are removed prematurely then further measures are needed to ensure that table grapes do not become infected/infested.

- **Monitoring activities**

  Specific monitoring activities are required for the fungus *M. fructigena*. Where this risk organism is detected, appropriate management actions must be conducted to mitigate the risk for example, fungicide spray. Prior to the removal of the bags from fruit, vineyards must be
inspected by an export NPPO-accredited person for the presence of this fungus. Fruit from vineyards where disease symptoms are found are not eligible for export to New Zealand that season.

Vineyards must be monitored by a NPPO-accredited person from the start of fruit formation for the presence of *T. kanzawai*, *T. palmi*, *A. orana*, *C. dictyospermi*, *D. suzukii*, *S. auriferella* and *C. punctiferalis*. The inspection frequency must be increased when populations are expected to increase because of climatic conditions or a decrease in natural predator populations. When needed, chemical controls must be applied according to an export NPPO-approved integrated pest control programme, but their use should be limited to ensure pesticide resistance does not occur.

This step is considered to verify very low to negligible pest prevalence.

- **Fruit not eligible for export**

Fallen fruit, fruit showing signs of damage or broken skin, pest infestations or where the bagging is absent, incomplete or where fruit has come into contact with the ground are not eligible for export to New Zealand.

- **Visual inspection during grading**

All export consignments must be inspected during grading and packing by technical staff using appropriate optical enhancement (for example 10x magnification with illumination for mites). Technical staff must be trained to recognize the high risk organisms and diseases of concern to New Zealand as depicted in Appendix 2. Fruit must be visually examined for signs of damage to the skin or pest infestations and to remove any contamination during grading at the packhouse. Any fruit showing indications of pests or diseases, for example deformity, damaged or broken skin, or infestation or infection is not eligible for export to New Zealand.

- **Packaging**

Table grapes from the Republic of Korea are packed in boxes with each box labelled identifying field, lot, date and size. The packaging used should prevent infestation of the table grape bunches. This step is considered to prevent infestation and provide traceability if needed for non compliance.

**Phytosanitary inspection and certification by QIA**

All consignments must be sampled and visually inspected for regulated organisms prior to phytosanitary certification by the exporting country’s NPPO. Where a regulated organism is detected, appropriate mitigation action will be conducted or the fruit will not be exported to New Zealand. When no pests or diseases are found and all requirements of the IHS and OAP have been met a phytosanitary certificate will be issued, which should be in accordance with the IHS and ISPM 7 (IPPC 2011).

**Verification inspection on arrival in New Zealand**

MAF may inspect a sample taken from each lot on arrival in New Zealand to verify pest management actions undertaken were effective. The sampling procedure will be in accordance with section 4.4 of the MAF IHS 152-02. If a treatment has failed, or regulated organisms, extraneous plant material or trash are intercepted, one or more of the following actions will be undertaken: re-sorting of the consignment, treatment where an efficacious treatment is available, re-shipment or destruction of the consignment and/or the temporary suspension of the pathway on the detection of regulated organisms for which pre-export
phytosanitary measures are required. The suspension will continue until the cause of the non-compliance has been identified and corrective actions have been implemented and approved by MAF.

Note: Independent of the measures, phytosanitary sample inspection by the Republic of Korea’s NPPO and verification inspection upon arrival in New Zealand by MAF will take place.

**Auditing**

MAF will monitor interceptions of hitchhikers and the appropriateness/effectiveness of phytosanitary measures on the commencement of trade. Currently, these pests have their regulatory status classified on the MAF Biosecurity Organisms Register for Imported Commodities (BORIC) (http://www.maf.govt.nz/biosecurity/pests-diseases/registers-lists/boric/).

**Figure 1: Proposed export pathway**

1. Table grapes grown under IPM in export QIA registered vineyards in Korea
2. Table grapes harvested and transported to QIA registered packhouses
3. Table grapes are graded and inspected – damaged and infested grapes are removed
4. Table grapes are inspected by Korea NPPO and phytosanitary certificate issued
5. Table grapes transported to New Zealand
6. Table grapes are inspected on arrival at the New Zealand border
7. Table grapes not meeting IHS requirements are treated, reshipped or destroyed
8. Table grapes given biosecurity clearance and distributed in New Zealand
Summary of the table grape export pathway from the Republic of Korea

Pathway description

The Animal, Plant and Fisheries Quarantine and Inspection Service (QIA) of the Republic of Korea has provided MAF with information regarding the commodity, production system, and pests and diseases. This information, together with standard practices, was used to compile the proposed pathway description (see Figure 1). The proposed phytosanitary export process with the critical control points in the proposed pathway is described in Appendix 1.

1. Table grape vineyards are required to be registered and meet QIA standards before the season starts to be approved for export. Table grapes are generally grown under rain shelters. The grapes are bagged from fruit set to minimize damage, disease and pest infestation, contamination by chemicals and to improve fruit quality. For in field pest and disease control, only agricultural chemicals registered with the Korean government are used, provided that they meet the standards of the importing country. Monitoring for pest free area is performed to provide supporting evidence where pest free area is the mitigating measure.

2. Table grapes are harvested from August to October. The table grapes are collected in plastic containers and moved to the storage facilities. Fruits are pre-cooled at 0°C for between 2 and 48 hours. Packhouses receive table grapes from registered growers and lots are identified by vineyard/production unit code/variety/date of harvest for traceability.

3. The table grapes are packed in QIA-registered pack houses, during which damaged fruits and fruits infested/infected by regulated organisms are removed and destroyed. The table grapes are packed into plastic clamshells or directly into carton boxes. Cartons are handled to prevent infestation by contaminating organisms. Cartons exhibit traceability labels identifying vineyard/production unit code/variety/date of harvest. The table grapes are stored at 0°C and 85% humidity. Table grapes are treated if measures other then the systems approach are needed or preferred.

4. QIA receives the inspection application for export and performs the phytosanitary inspection of the table grapes. If no pests/diseases are found, QIA issues the phytosanitary certificate, the consignment is sealed and the table grapes are cleared for export to New Zealand.

5. Export documents including the phytosanitary certificate specifying any treatments, accompany each consignment that is either air or sea freighted.

6. Fruit and relevant export documents are examined in New Zealand by MAF quarantine inspectors to ensure compliance with New Zealand’s phytosanitary requirements.

7. Any consignment not complying with New Zealand’s phytosanitary requirements is treated, resorted, re-shipped or destroyed. The exporting country is notified of the non-compliance.

8. Fruit receiving biosecurity clearance is able to be distributed by the importer.
Proposed import health standard requirements

Phytosanitary measures to mitigate the risk of the regulated organism groups on the import pathway include, pest free area, the use of a systems approach with critical control points or methyl bromide, as described above.

The systems approach directed against the high risk regulated organisms is considered to also mitigate the risk posed by other potential risks on the pathway. If (part of) the critical control points of the systems approach are not performed or if the equivalent measure is preferred, specific risks can be mitigated by equivalent measures. Other risk mitigating treatments will be assessed as equivalent measures, when supporting evidence is provided in accordance with ISPM 24 (IPPC 2005).

Based on the evaluation of phytosanitary risk mitigation measures for the management of regulated organisms and regulated organism groups, the following specific import conditions for table grapes (Commodity Sub-Class: Fresh Fruit/ Vegetables) from the Republic of Korea are recommended including additional declarations to be included on the phytosanitary certificate:

Pre-shipment requirements
Only table grapes produced in accordance with the OAP and IHS and certified on a phytosanitary certificate may be imported into New Zealand from the Republic of Korea.

Phytosanitary measures
MAF requires the Republic of Korea NPPO to undertake pest control activities that are effective against high risk regulated organisms prior to the commodity arriving in New Zealand, and phytosanitary certification will need to attest to this accordingly. The high risk regulated organisms are: Adoxophyes orana, Chrysomphalus dictyospermi, Conogethes punctiferalis, Drosophila suzukii, Monilinia fructigena, Stathmopoda auriferella, Tetranychus kanzawai and Thrips palmi.

Inspection of the consignment
MAF requires the Republic of Korea NPPO to sample and visually inspect the consignment according to official procedures for all the regulated organisms specified by MAF. A phytosanitary certificate should not be issued if live regulated organism(s) or “unlisted” organism(s) are detected, unless the consignment is effectively treated.

Transit requirements
The Republic of Korea NPPO must ensure that the consignment (prior to export) is held and transported in a manner to ensure that infestation or reinfestation does not occur following phytosanitary certification.

Documentation

Official Assurance Programme: Table grapes may only be imported into New Zealand from the Republic of Korea under the terms of the OAP agreed between New Zealand and the Republic of Korea.

Phytosanitary certificate: Required and issued by the Republic of Korea NPPO when satisfied that the phytosanitary activities required by MAF have been met.
Additional declarations to the phytosanitary certificate

(i) “The table grapes in this consignment have undergone pest control activities effective against *Adoxophyes orana; Chrysomphalus dictyospermi; Conogethes punctiferalis; Drosophila suzukii; Monilinia fructigena; Stathmopoda auriferella, Thrips palmi and Tetranychus kanzawai* in accordance with the Official Assurance Programme”

AND

(ii) “The Republic of Korea is free of fruit fly species of economic significance associated with fresh table grapes verified in accordance with the Official Assurance Programme”

Note: Full details of the methyl bromide must be included in the “disinfestation and/or disinfection treatment” area of the phytosanitary certificate or as an endorsed attachment to the phytosanitary certificate. Details of the treatment duration, fumigant concentration and/or temperature must be recorded.
References


Appendix 1: The end to end phytosanitary export process with Control Points

This summary identifies points, steps or procedures where control can be applied to prevent or minimise risk to an acceptable level. Critical control points that are required by MAF as part of the export compliance programme/work plan agreed with the Republic of Korea are mentioned in the last column.

<table>
<thead>
<tr>
<th>Pathway Step</th>
<th>Description of Measures</th>
<th>Risk organisms targeted</th>
<th>Risk Management Outcomes</th>
<th>Monitoring procedures (who, what, when, how)</th>
<th>Verification procedures i.e. objective evidence (who, what, other)</th>
<th>Related Documentation Standards/Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (1)</td>
<td>In-field pest control</td>
<td>IPM strategies used for the control of pests (briefly described above)</td>
<td>Big, mobile organisms</td>
<td>Low infestation/ infection of fruit Technical specialists visit and advise growers of pest control measures during growing season.</td>
<td>QIA verification procedures e.g. checks of grower records, spray diaries, grower training records etc.</td>
<td>QIA standard for pest management QIA grower export approval Valid orchard registration number</td>
</tr>
<tr>
<td></td>
<td>Specific control programmes for fruit fly, weevils, scales, mealybugs, Lepidoptera</td>
<td>Cryptic, small mobile organisms Internal organisms Surface pathogens Hitchhikers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and fungal pathogens</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production (1)</td>
<td>Bagging</td>
<td>Fruit is bagged from time of fruit set onwards as part of IPM</td>
<td>Big, mobile organisms</td>
<td>Prevent infestation/ infection of fruit Low infestation/ infection by very small organisms Prevent egg laying on or near fruit</td>
<td>QIA verification procedures e.g. in-season and pre-harvest checks that fruit is bagged</td>
<td>Export compliance programme/work plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cryptic, small mobile organisms Internal organisms Surface pathogens Hitchhikers</td>
<td></td>
<td>Table grapes are bagged from fruit set until harvest by orchard staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production (1)</td>
<td>Specific monitoring activities</td>
<td>Specific monitoring activities for the high risk organisms of concern</td>
<td>A. orana</td>
<td>Validation of pest freedom areas and/or low infestation rates</td>
<td>QIA verification procedures e.g. grower records, in-season grower audits</td>
<td>Export compliance programme/work plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C. punctiferalis</td>
<td>Vineyards are monitored on a regular basis by technical staff for the presence of the high profile risk organisms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C. dictyospermi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D. suzuki</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M. fructigena</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S. auriferella</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>T. palmi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>T. karzawai</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tephritidae fruit flies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harvest &amp; transport (2)</td>
<td>to pack house</td>
<td>Registered and approved growers transport fruit to approved pack houses</td>
<td>Fruit from registered growers accepted by approved pack houses.</td>
<td>Pack house staff check grower export registration on arrival of fruit at pack house</td>
<td>QIA verification procedures e.g. QIA vineyard and pack house approvals</td>
<td>Register of growers/orchards eligible to export to NZ QIA registered pack house export approval Export compliance programme/work plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pathway Step</td>
<td>Description of Measures</td>
<td>Risk organisms targeted</td>
<td>Risk Management Outcomes</td>
<td>Monitoring procedures (who, what, when, how)</td>
<td>Verification procedures (who, what, other)</td>
<td>Related Documentation Standards/Agreements</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Pack House Processing (3)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sorting/Grading</td>
<td>Infected/infested fruit removed</td>
<td>Big, mobile organisms Surface pathogens Hitchhikers</td>
<td>Removal of all visually detectable/symptomatic infected/infested fruit</td>
<td>Pack house staff remove infected/infested fruit by hand, segregate it and clearly label for disposal</td>
<td>QIA verification procedures e.g. checks of segregation of non-compliant fruit</td>
<td>Documented pack house procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MAF conducts pre-export and periodic verification</td>
<td>Export compliance programme/workplan</td>
</tr>
<tr>
<td><strong>Pack House Processing (3)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual inspection</td>
<td>Visual inspection by technical packhouse staff using optical enhancement</td>
<td>Cryptic, small mobile organisms Cryptic sessile organisms Internal organisms Hitchhikers</td>
<td>Removal of all infected fruit or fruit showing signs of deformity or infestations</td>
<td>Pack house staff remove any fruit showing signs of infestation, infection or damage.</td>
<td>QIA verification procedures e.g. checks of segregation of non-compliant fruit, records of pests and pathogens found. Facility cleaned and secured against pest introduction</td>
<td>Export compliance programme/work plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Documented pack house procedures</td>
</tr>
<tr>
<td><strong>Pack House Processing (3)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging &amp; Labelling</td>
<td>Only graded and visually inspected fruit is packed into clean cartons in a way that prevents infestation by contaminating organisms. Cartons show relevant, accurate traceability information.</td>
<td>[Reinfesting] internal and external arthropods and fruit pathogens</td>
<td>No reinfestation of packaged fruit can occur</td>
<td>Pack house staff only pack graded and visually inspected fruit into clean cartons.</td>
<td>CIA check that cartons have been insect-proofed and correctly labelled.</td>
<td>Export compliance programme/work plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Export compliance programme/work plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Phytosanitary inspection (4)</strong></td>
<td>A visual phytosanitary inspection at the appropriate sample size verifies that the measures at the above critical control points have been applied resulting in the absence of fruit pests and pathogens on export fruit.</td>
<td>Fruit pathogens Big mobile organisms Cryptic small mobile organisms Cryptic sessile organisms Surface pathogens Internal organisms Hitchhikers</td>
<td>Fruit is free of detectable fruit pests and pathogens, traceability information is correct and cartons are pest proof.</td>
<td>QIA staff visually inspect fruit for pests &amp; pathogens and check traceability information prior to transport to NZ.</td>
<td>CIA verify that all fruit has undergone above critical control point measures and that traceability information is correct.</td>
<td>Export compliance programme/work plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Export compliance programme/work plan</td>
</tr>
<tr>
<td>Pathway Step</td>
<td>Description of Measures</td>
<td>Risk organisms targeted</td>
<td>Risk Management Outcomes</td>
<td>Monitoring procedures (who, what, when, how)</td>
<td>Verification procedures i.e. objective evidence (who, what, other)</td>
<td>Related Documentation Standards/Agreements</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Post-certification product security (4) | Fruit is secured against reinfestation                                                   | [Reinfesting] internal and external arthropods, hitchhikers and fruit pathogens | No reinfestation or substitution of product                      | Storage facility staff ensure that product is segregated and secured against reinfestation/re-infection/substitution prior to export | Phytosanitary certificate issued when all IHS and OAP requirements have been verified as being met                       | • Export compliance programme/work plan  
• MAF IHS  
• Export compliance programme/workplan                                                                 |
| Transport to NZ (5)              | Export fruit [+ accompanying documentation] is freighted to New Zealand in sealed containers | [Reinfesting] internal and external arthropods and fruit pathogens | No reinfestation, re-infection or substitution of product        | QIA seals containers and records seal number on phytosanitary certificate                                                      | Seal number on container matches phytosanitary certificate                                                                   | • Export compliance programme/work plan  
• QIA phytosanitary procedures  
• ISPMs  
• Export compliance programme/workplan                                                                                     |
| Verification Inspection (6)      | Documentation, seal(s) and fruit is inspected before being cleared, treated, re-shipped or destroyed. Note: this is not a measure but a verification inspection | No substitution has occurred and phytosanitary certificate matches consignment | Documentation checked to ensure IHS and OAP requirements have been met.                                               | A MAF biosecurity inspector checks accompanying export documentation (e.g. seal number, treatment information and additional declarations) and inspects sample of fruit for presence of risk organisms |                                                                 | • MAF Border Clearance Procedures  
• Phytosanitary certificate  
• IHS                                                                                                   |
| Distribution (8)                 | Cleared product available for distribution throughout NZ                                  |                                                                     | No substitution has occurred and phytosanitary certificate matches consignment                                         | A MAF biosecurity inspector checks accompanying export documentation (e.g. seal number, treatment information and additional declarations) and inspects sample of fruit for presence of risk organisms |                                                                 | • MAF Border Clearance Procedures  
• Phytosanitary certificate  
• IHS                                                                                                   |
### Appendix 2: Risk organisms

The list below has been generated from the different information sources described in the paragraph Source information.

Exclusions from the list include:

1. All non-regulated organisms/present in New Zealand and not considered a vector or potential vector.
2. Organisms unlikely to follow the pathway, including:
   a. Organisms not associated with fruit (e.g., *Naupactus leucoloma*, adults feed at the bases of leaf margins, leaving characteristic “notching”; larvae attack the tap roots and the basal parts of stems and are therefore unlikely to follow the pathway).
   b. Organisms not expected to remain with the fruit during harvest because of size, mobility or harvesting methods (e.g., *Apis indica* and *Theretra oldenlandiae*).
3. Organisms identified previously not to be a hazard on table grapes (e.g., *Oraesia emarginata*, *Peridroma saucia* and *Calyptra lata*. MAFBNZ 2009a).
4. Organisms identified at genus level only, as a genera may contain species that are not a risk on the commodity.
5. Organisms where insufficient evidence exists that they are present in the Republic of Korea.

Note organisms not added to the risk organism list remain ‘regulated organisms’ that warrant action upon interception.

<table>
<thead>
<tr>
<th>Organism Authority</th>
<th>Taxonomy</th>
<th>Present in NZ</th>
<th>Brief assessment</th>
<th>Phytosanitary measures to prevent entry &amp; establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arthropods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adoxophyes orana</td>
<td>Lepidoptera Tortricidae</td>
<td>N (Dugdale 1988, Hoare 2001, PPIN 2010)</td>
<td>A risk assessment on Pyrus from China identified this organism as a risk on that pathway (MAFBNZ 2009a). This organism is known to be present on table grapes (Watson, 2006) and present in the Republic of Korea (MIFAFF, 2010). The New Zealand climate is considered to be suitable for establishment and economic consequences were considered to be high (MAFBNZ 2009c).</td>
<td>Systems Approach or Methyl Bromide</td>
</tr>
<tr>
<td>Apolygus lucorum</td>
<td>Hemiptera Miridae</td>
<td>N (PPIN, 2009)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (MIFAFF 2010).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Apolygus spirale</td>
<td>Hemiptera Miridae</td>
<td>N (Larivière, M.C. 2010; PPIN 2010)</td>
<td>This organism is present on table grape bunches (Subic, 2007). It is known to be present in the Republic of Korea (Kim et al., 2002). Infestation reduced berry yields by 25% up to 60%, depending on the vineyards (Subic, 2007).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Aspidotus destructor</td>
<td>Hemiptera Diaspididae</td>
<td>N (Charles &amp; Henderson 2002, PPIN 2009)</td>
<td>A risk analysis on citrus from Samoa identified this organism as a risk on that pathway. The New Zealand climate was considered suitable for establishment (MAFBNZ 2008). The organism is present on table grape bunches and present in the Republic of Korea (Watson 2006).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Chrysophalos dictyospermia</td>
<td>Hemiptera Diaspididae</td>
<td>N (Charles &amp; Henderson 2002, PPIN 2009)</td>
<td>A risk assessment on Pyrus from China identified this organism as a risk on that pathway. The New Zealand climate is considered to be suitable for establishment and economic consequences were considered to be moderate (MAFBNZ 2009c). This organism is known to be present on table grape bunches (CPC, 2007) and present in the Republic of Korea (Danzig &amp; Pellizzari, 1998).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Conogethes punctilheralis</td>
<td>Lepidoptera Pyralidae</td>
<td>N (Dugdale 1988, Hoare 2001, PPIN 2010)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (APPPC, 1987).</td>
<td>Systems Approach or Methyl Bromide</td>
</tr>
<tr>
<td>Diaspilidae indica</td>
<td>Lepidoptera Pyralidae</td>
<td>N (Dugdale 1988, Hoare 2001, PPIN 2010)</td>
<td>The organism feeds on fruit with the damage is most serious in the early stages of fruit formation, when the pests feed on and puncture the skin of young fruit (CPC, 2007). This organism is present on table grape bunches and is present in the Republic of Korea (MIFAFF, 2010).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Drosophila suzuki</td>
<td>Diptera Drosophilidae</td>
<td>N (Macfarlane et al., 2000; PPIN 2009)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (Delfinado &amp; Hardy, 1977).</td>
<td>Systems Approach or Pest Free Area or Methyl Bromide</td>
</tr>
<tr>
<td>Eupoecilia ambiguelia</td>
<td>Lepidoptera Tortricidae</td>
<td>N (Dugdale 1988, Hoare 2001, PPIN 2009)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (APPPC, 1987).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Harmonia axyridis</td>
<td>Coleoptera Coccinellidae</td>
<td>N (PPIN, 2009; Scott and Emberson, 1999; Spiller and Wise, 1992)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (Seo et al., 2007).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Nipponophilia vitis</td>
<td>Lepidoptera Pterophoridae</td>
<td>N (Dugdale 1988, Hoare 2001, PPIN 2009)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (MIFAFF, 2010).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Orthotylus flavosparus</td>
<td>Hemiptera Miridae</td>
<td>N (Larivière, M.C. 2010; PPIN 2010)</td>
<td>This organism is present in the Republic of Korea and is present on table grapes (Lee et al. 2002). This organism is present in the United Kingdom, indicating that the New Zealand climate would be suitable for establishment.</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Planococcus kraunhiae</td>
<td>Hemiptera Psuedococcidae</td>
<td>N (Cox, J.M. 1987; PPIN 2010)</td>
<td>A risk assessment on Pyrus from China identified this organism as a risk on that pathway. The New Zealand climate is considered to be suitable for establishment and economic consequences were considered to be low (MAFBNZ 2009c). This organism is known to be present on table grape bunches and present in the Republic of Korea (MIFAFF, 2010).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td>Organism Authority</td>
<td>Taxonomy</td>
<td>Present in NZ</td>
<td>Brief assessment</td>
<td>Phytosanitary measures to prevent entry &amp; establishment</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------</td>
<td>---------------</td>
<td>-----------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td><strong>Pseudaulacaspis pentagona</strong>&lt;br&gt;(Targioni Tozzetti)</td>
<td>Hemiptera&lt;br&gt;Diaspididae</td>
<td>N (Charles &amp; Henderson 2002; previously recorded erroneously as present, PPIN 2010)</td>
<td>A risk assessment on stonefruit from the Pacific Northwest identified this organism as a risk on that pathway. The New Zealand climate is considered to be suitable for establishment and economic consequences were considered to be moderate (MAFBNZ 2009d). This organism is known to be present on table grape bunches (Watson, 2006) and present in the Republic of Korea (MIFAFF, 2010).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td><strong>Pseudococcus comstocki</strong>&lt;br&gt;(Kuwana)</td>
<td>Hemiptera&lt;br&gt;Pseudococcidae</td>
<td>N (MAFBNZ 2009c)</td>
<td>A risk assessment on Pyrus from China identified this organism as a risk on that pathway. The New Zealand climate is considered to be suitable for establishment and economic consequences were considered to be moderate (MAFBNZ 2009c). This organism is known to be present on table grape bunches and is present in the Republic of Korea (MIFAFF, 2010).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td><strong>Scirtothrips dorsalis</strong>&lt;br&gt;Hood, 1919</td>
<td>Thysanoptera&lt;br&gt;Thripidae</td>
<td>N (CPC, 2007; PPIN, 2009; Mound and Walker, 1982)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (MIFAFF, 2010).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td><strong>Sparganothis pilleriana</strong>&lt;br&gt;(Denis et Schiffermuller)</td>
<td>Lepidoptera&lt;br&gt;Thripidae</td>
<td>N (Dugdale 1988; Hoare 2001; PPIN 2010)</td>
<td>The organism is present in the Republic of Korea (MIFAFF, 2010) and known to infest table grape bunches (Pykhova, 1968). The organism is present throughout Western Europe, indicating that the New Zealand climate would be suitable for establishment. It is a pest of economic importance on grapes (Agroatlas 2010). This organism was assessed as likely to follow the pathway (Hanken 2000; revised 2002).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td><strong>Stathmopoda auriferella</strong>&lt;br&gt;(Walker)</td>
<td>Lepidoptera&lt;br&gt;Stathmopodidae</td>
<td>N (Dugdale 1988; Hoare 2001; PPIN 2010)</td>
<td>This organism is a pest of economic concern on different commodities, among others on kiwifruit (Park et al., 1994). The organism infects table grape bunches and is present in the Republic of Korea (MIFAFF, 2010). This organism was assessed as likely to follow the pathway (Hanken 2000; revised 2002).</td>
<td>Systems Approach or Methyl Bromide</td>
</tr>
<tr>
<td><strong>Tetranychus kurzawai</strong>&lt;br&gt;Kishida, 1927</td>
<td>Acarina&lt;br&gt;Thripidae</td>
<td>N (PPIN, 2009; Manson, 1987; Migeon and Dorkeld, 2006)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (MIFAFF, 2010).</td>
<td>Systems Approach or Methyl Bromide</td>
</tr>
<tr>
<td><strong>Tetranychus hawaiiensis</strong>&lt;br&gt;(Morgan, 1913)</td>
<td>Thysanoptera&lt;br&gt;Thripidae</td>
<td>N (Spiller &amp; Wise 1982; Scott &amp; Emberson 1999; PPIN 2008)</td>
<td>This organism was assessed as following the pathway (Hanken 2000; revised 2002). The organism is not known to be present in New Zealand. It is widespread and polyphagous (MAFBNZ 2009c). This organism is known to be present on table grape bunches (Ranganath et al., 2008) and present in the Republic of Korea (Hanken 2000; revised 2002).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td><strong>Tetranychus palmi</strong>&lt;br&gt;Karny, 1925</td>
<td>Thysanoptera&lt;br&gt;Thripidae</td>
<td>N (Stephens &amp; Dentener, 2005; PPIN 2010; Dentener et al., 2002)</td>
<td>A risk assessment on Citrus from Samoa identified this organism as a risk on that pathway. The New Zealand climate is considered to be suitable for establishment and economic consequences were considered to be high (MAFBNZ 2008). This organism is known to be present on table grape bunches (Ranganath et al., 2008) and present in the Republic of Korea (Hong et al., 1998).</td>
<td>Systems Approach or Methyl Bromide</td>
</tr>
<tr>
<td><strong>Pathogens</strong></td>
<td></td>
<td></td>
<td></td>
<td>Systems Approach</td>
</tr>
<tr>
<td><strong>Monilinia fructigena</strong>&lt;br&gt;Honey</td>
<td>Helotiales&lt;br&gt;Sclerotiniaceae</td>
<td>N (Landcare research 2009, PPIN 2009)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk (MAFBNZ 2009a). This organism is present in the Republic of Korea (Hanken, 2000; revised 2002).</td>
<td>Systems Approach</td>
</tr>
<tr>
<td><strong>Pestalotiopsis menezesiana</strong></td>
<td>Xylariales&lt;br&gt;Amphisphaeriacea</td>
<td>N (PPIN 2010)</td>
<td>This organism is known to infect table grape bunches and cause post-harvest rot (Xu et al., 1999). It is also known to be present in the Republic of Korea (Part et al., 1997). It is present in Japan (Xu et al., 1999); therefore it is assumed the climate in New Zealand is not a limiting factor in establishment.</td>
<td>Systems Approach</td>
</tr>
<tr>
<td><strong>Pilidiella diplodiella</strong>&lt;br&gt;(Speg.) Petr. &amp; Syd., 1927</td>
<td>Diaportheles&lt;br&gt;Schizoparmaceae</td>
<td>N (Landcare research 2009, PPIN 2009)</td>
<td>A risk assessment on table grapes from China identified this organism as a risk on table grape bunches (MAFBNZ 2009a). This organism is present in the Republic of Korea (MIFAFF, 2010).</td>
<td>Systems Approach</td>
</tr>
</tbody>
</table>