

# Procedures for the Effective Quarantine Management of Regulated Spiders Associated with the Importation of Fresh Table Grapes (*Vitis vinifera*) From California to New Zealand

## 1. Introduction

### 1.1 Purpose

The purpose of this procedure is to specify the required operational procedures<sup>1</sup> for the effective quarantine management of regulated spiders<sup>2</sup> associated with the importation of fresh table grapes (*Vitis vinifera*) from California to New Zealand. These procedures form part of the New Zealand import health standard for fresh table grapes (*Vitis vinifera*) from the United States of America (State of California) issued on 18 August 2005.

## 2. Components of the Treatment System

2.1 The treatment system to mitigate the risks posed by regulated spiders associated with the export of fresh table grape consignments from the United States of America (State of California) to acceptable levels comprises;

- at harvest inspection of grape bunches and export packaging materials;
- post harvest fumigation with a mixture of sulphur dioxide and carbon dioxide (SO<sub>2</sub>/CO<sub>2</sub>); **and**
- product security.

### 2.2 At Harvest Inspection

i) Industry staff shall carry out a 100% visual inspection for live life stages of regulated spiders (eggs, juveniles and adults) of:

- grape bunches at time of harvest, **and**
- grape export packaging (e.g. cartons or boxes, any plastic or paper used to line export cartons or boxes and any other associated materials) prior to table grapes being placed into the packaging.

ii) On detection of regulated spiders associated with either harvested grape bunches or export packaging the action taken shall be either:

- removal of the spider life stage from grape bunch or packaging, **or**
- removal of the infested grape bunch or packaging from the export pathway.

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<sup>1</sup> Procedure: (MAFBNZ) any officially prescribed method for performing inspection, test, surveys or treatments in connection with regulated pests.

<sup>2</sup> Those “regulated spiders” (and known non-regulated spiders) known to be associated with this pathway are listed within the pest list appended to the import health standard. Where a spider is detected that can either not be identified to a taxonomic level sufficient to allow a decision to be made or is identified but is not included within the pest list, the spider shall be treated as a regulated spider (equivalent to a *Latrodectus* spp.) until a formal categorisation is made by MAFBNZ.

## 2.3 Export Packaging Material

- i) Export packaging material comprises;
  - any plastic bags within which individual grape bunches are contained within the export carton or box;
  - any plastic or paper used to line export cartons or boxes;
  - any pallets upon which the cartons or boxes are stacked; **and**
  - any strapping or other materials associated with the export pallet.
- ii) All packaging (other than pallets) shall be new and unused.
- iii) All export cartons or boxes shall be of either TKV, Styrofoam, DEFOR (manufactured by International paper), LTS (manufactured by MAXCO) type and GP Greenshields (see Appendix 1). Other materials may be approved for use in the construction of export cartons or boxes where sufficient evidence is provided to MAFBNZ to show the proposed material does not have a negative effect on SO<sub>2</sub>/CO<sub>2</sub> fumigation efficacy.
- iv) Export packaging material shall be either:
  - subjected to SO<sub>2</sub>/CO<sub>2</sub> fumigation under the same conditions prescribed for export table grapes and subjected to such post fumigation security measures necessary to prevent infestation with regulated spiders; **or**
  - be subject to such security measures necessary to prevent infestation with regulated spiders from time of manufacture until the time of export.
- v) All export packaging associated with a sample of table grapes taken for official inspection purposes shall be included in the inspection process.

## 2.4 SO<sub>2</sub>/CO<sub>2</sub> Fumigation

### 2.4.1 Registration of Fumigation Facilities

- i) All fumigation facilities undertaking post harvest SO<sub>2</sub>/CO<sub>2</sub> fumigation of fresh table grapes for export to New Zealand shall be registered with USDA-APHIS.
- ii) Before registering a fumigation facility USDA-APHIS shall be satisfied that:
  - the fumigation enclosure is fit for purpose (e.g. is well constructed and sealed so as to be capable of introducing and maintaining the minimum fumigant concentrations for the duration of the treatment);
  - an accurate calculation has been made of both the volume of the fumigation enclosure (including all vents and other air spaces into which fumigant will be released) and the quantity of fumigants which must be used for each treatment;

- competent fumigation operators are available to carry out or supervise each fumigation,
  - any equipment (e.g. thermometers) required to carry out the fumigation is functioning correctly and available for use, and
  - fumigation procedures are documented, available to and understood by relevant staff (i.e. the fumigation operator and any other staff assisting with or carrying out fumigation).
- iii) USDA-APHIS will retain copies of information relating to the registration of fumigation facilities and make it available to MAFBNZ officials upon request for audit purposes.
- iv) USDA-APHIS shall provide MAFBNZ with information as to which facilities are registered prior to treatment of table grapes for export to New Zealand commencing.
- v) USDA-APHIS shall update MAFBNZ as to any changes in facility registration status as these occurs and provide a brief explanation as to the reason for any such change in status.

#### **2.4.2 Fumigation Operator**

- i) Fumigation operators<sup>3</sup> shall satisfy USDA-APHIS that they have sufficient knowledge of the SO<sub>2</sub>/CO<sub>2</sub> fumigation specifications and process and are competent to carry out or supervise this process before being registered.
- ii) USDA-APHIS will maintain a register of those fumigation operators whom they are satisfied are competent as per 2.4.2 i) above. This register will be made available to MAFBNZ officials upon request for audit purposes.
- iii) A registered fumigation operator shall either carry out or supervise each SO<sub>2</sub>/CO<sub>2</sub> fumigation of table grapes for export to New Zealand.

#### **2.4.3 Documented Procedures**

- i) Procedures shall be documented for each fumigation facility detailing:
- the fumigation process used at that facility;
  - the product identification process used at that facility;
  - the post treatment security process used at that facility and associated storage facility(ies); and
  - the staff responsible for carrying out or supervising treatments (e.g. fumigation operators), product identification and post treatment security.

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<sup>3</sup> *Fumigation operator*: refers to those persons familiar with the fumigation methods and procedures, the objectives of the fumigation and the assessment of the fumigation results.

#### 2.4.4 Fumigation Specifications

- i) All table grapes (and associated packaging if required – see 2.3 iv) shall undergo SO<sub>2</sub>/CO<sub>2</sub> fumigation at the following (minimum) specifications;
- immediately prior to fumigation fruit surface temperatures shall be taken from at least four pallets within each treatment batch<sup>4</sup> to be fumigated. All four temperature readings must be a minimum of 16°C before fumigation may commence;
  - For those treatment batches containing any boxes of grapes taken from cool storage, the sample pallets chosen shall be those considered most likely, for whatever reason, to return the lowest temperature reading. Each temperature measurement shall be taken from the centre of a grape bunch situated in the box or carton at the centre, at mid height in the sample pallet.
  - For those treatment batches comprised solely of grapes received directly from harvest (i.e. at field heat) the sample pallets shall be chosen at random. Each temperature measurement may be taken from the centre of a bunch in any accessible export box/carton.
  - immediately prior to fumigation the air temperature within the fumigation chamber shall be taken. This must be a minimum of 16°C before fumigation may commence;
  - each treatment shall take place under full (100%) fumigation enclosure loading. Where insufficient export product is available to ensure full enclosure loading nonexport product may be included however this product must be clearly identified and removed from the export treatment pathway following the completion of the treatment;
  - fumigant concentration within the fumigation enclosure during fumigation shall be a minimum of 1% SO<sub>2</sub> and 6% CO<sub>2</sub>; and
  - each fumigation shall be maintained for a minimum of 30 minutes from the time the minimum fumigant concentration is first reached.
- ii) All fumigations are to be carried out by or directly supervised by a fumigation operator registered by USDA-APHIS.

#### 2.4.5 Fumigation record

The fumigation operator shall record details of each fumigation. The fumigation operator shall at a minimum record:

- date and time of fumigation (start and finish),
- amount of SO<sub>2</sub>/CO<sub>2</sub> used for that fumigation,
- ambient air temperature (taken immediately prior to fumigation),
- minimum of four sample fruit surface temperatures for the table grapes undergoing fumigation (taken immediately prior to fumigation),

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<sup>4</sup> A “treatment batch” is a discrete volume of a commodity that has been subjected to a single treatment regime at the same time.

- the name of the fumigation operator carrying out or supervising the fumigation, and
- volume and identification details of product fumigated.

This fumigation record shall be made available to MAFBNZ officials upon request for audit purposes.

#### **2.4.6 Monitoring of Fumigation Facilities**

- i) All fumigations are to be directly supervised by USDA-APHIS (or their “official delegate”<sup>5</sup>) who will ensure that these procedures are being carried out and that the fumigation facility continues to meet the requirements for registration.
- ii) USDA-APHIS will maintain a register of “official delegates” carrying out duties on their behalf. This shall be made available to MAFBNZ officials upon request for audit purposes.

#### **2.5 Product identification**

All pallets of table grapes will be identifiable to an individual treatment facility and a treatment batch. All treated pallets of table grapes for export shall be readily identifiable as having been treated and differentiated from non-treated product.

#### **2.6 Post treatment security**

All product destined for export to New Zealand shall be subject to such post fumigation security measures as are required to ensure the product is not subject to;

- re-infestation with regulated organisms; or
- product substitution.

#### **2.7 Official Export Inspection – USDA-APHIS**

- i) Each consignment of grapes for export to New Zealand shall undergo official sampling and visual inspection by USDA-APHIS (or their official delegate) for phytosanitary purposes. The sample taken for this inspection comprises 600 units (bunches of grapes).
- ii) The sample of grape bunches shall be taken at random from the consignment and visually inspected by a USDA-APHIS inspector (or their official delegate).

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<sup>5</sup> An “official delegate” is a person accredited or authorised by USDA-APHIS to carry out duties on their behalf. The person should be of equivalent competence to a USDA-APHIS officer carrying out similar duties and shall not have financial interest in the export of table grapes. Any actions (or inaction) taken by an official delegate will be viewed as being taken by USDA-APHIS and non-conformances by these people may affect the credibility of other USDA-APHIS involvement in this system.

- iii) Any packaging associated with the sample grapes (export cartons or boxes, carton or box liners, plastic bags and pallets) shall also be visually inspected by a USDA-APHIS inspector (or their official delegate) for the presence of regulated spiders and to ensure only approved packaging materials have been used.
- iv) There is a zero acceptance level for regulated spiders in the 600 unit sample.
- v) For spiders which are not included in the pest list appended to the New Zealand import health standard for fresh table grapes from the USA (State of California) – until such a time as a categorisation is made by New Zealand MAF for the spider species there is a zero acceptance for these spiders in the 600 unit sample.
- vi) For spiders categorised as non-regulated in the pest list appended to the New Zealand import health standard for fresh table grapes from the USA (State of California) – no action shall be taken upon detection of these spiders.

## **2.8 Certification Requirements**

Once satisfied that all activities required by New Zealand for the mitigation of the risks posed by regulated spiders (and any other associated as may also be required) have been correctly undertaken, USDA-APHIS may issue an official assurance (i.e. phytosanitary certificate) for that consignment. Details of the additional declarations required are specified in the Import Health Standard for Fresh Table Grapes, *Vitis vinifera*, from the United States of America (State of California) issued 18 August 2005.

## **2.9 Official Import Inspection – MAFBNZ**

- i) Each consignment of grapes for export to New Zealand shall undergo official sampling and visual inspection by a MAFBNZ inspector. The sample taken for this inspection comprises 600 units (bunches of grapes).
- ii) The sample of grape bunches shall be taken at random from the consignment and visually inspected by a MAFBNZ inspector.
- iii) Any packaging associated with the sample grapes (export cartons or boxes, carton or box liners, plastic bags and pallets) shall also be visually inspected by a MAFBNZ inspector for the presence of regulated spiders and to ensure only approved packaging materials have been used.
- iv) There is a zero acceptance level for regulated spiders in the 600 unit sample.
- v) For spiders which are not included in the pest list appended to the New Zealand import health standard for fresh table grapes from the USA (State of California). – until such a time as a categorisation is made by New Zealand MAF for the spider species there is a zero acceptance level for these spiders in the 600 unit sample.

- vi) For spiders categorised as non-regulated in the pest list appended to the New Zealand import health standard for fresh table grapes from the USA (State of California) – no action shall be taken upon detection of these spiders.

### **3. MAFBNZ Audit of the Pathway**

- i) MAFBNZ officials shall audit treatment facilities prior to export fumigations taking place and may also audit each facility at least once during the remainder of the season.
- ii) MAFBNZ retains the right to audit any component of the officially required measures during the export season.
- iii) The need for or frequency of MAFBNZ audits may be reviewed if confidence in the system changes. This may be reviewed on an annual basis.

### **4. Programme review**

MAF, Ministry of Health and Department of Conservation will review the level of spider interceptions and post border detections at the end of the import season and consultation on any changes to the programme may be initiated at this time.

#### **4.1 Contingency Actions**

##### **4.1.1 Contingencies for interceptions of live spiders during MAFBNZ import inspection**

- i) Where regulated spiders are detected during inspection the consignment will be rejected.

USDA-APHIS will be requested to carry out a trace back of the consignment to treatment operator, treatment facility and treatment batch(s) and provide an audit report to MAFBNZ confirming either;

- any non-conformances that are identified. This report shall contain a summary of other export consignments which may have been affected by the nonconformance, confirmation of de-registration of the facility and suggested corrective actions and time frames for their implementation and re-registration of the facility if appropriate). Affected in-transit consignments (i.e. “product on the water”) may be subjected to further inspection and/or treatment (including reshipment or destruction) on arrival in New Zealand; **or**
  - that no non-conformances were identified.
- ii) If the spider is categorised as being “Non-Regulated” the consignment will be accepted for entry into New Zealand and no further action taken.

#### 4.1.2 Multiple non-conformances

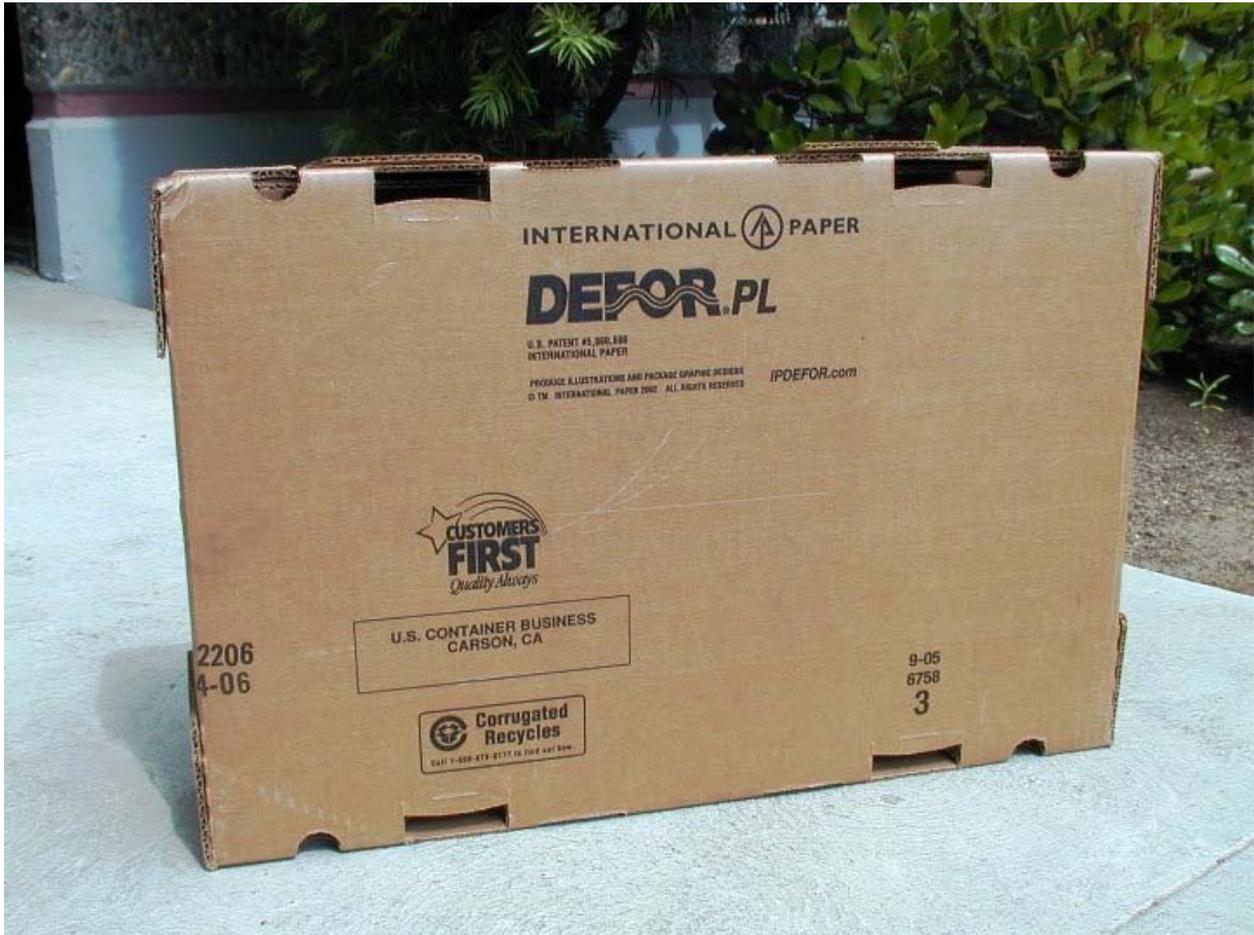
- i) Following the detection at any one fumigation facility or for any one fumigation operator of two non-conformances adversely impacting on the provision of the measures specified in this document, that facility or operator (as appropriate) shall be de-registered by USDA-APHIS. The facility or operator (as appropriate) shall not be re-registered for the remainder of the export season for the purpose of exporting fresh table grapes to New Zealand without MAFBNZ approval. This approval may be given only where USDA-APHIS provides evidence that satisfies MAFBNZ that there can be ongoing confidence in the facility or operator.
- ii) Where non-conformances are identified in the processes and measures specified in this document which are the responsibility of, or carried out by USDA-APHIS, MAFBNZ retains the right to suspend the IHS until such time as the non-conformances are addressed.

#### 4.1.3 Treatment options

Where, due to confirmed non-conformances during the export/import process, a consignment of table grapes is determined to pose an unacceptable level of risk to New Zealand due to the presence or suspected presence of regulated spiders treatment of the consignment may be required. Treatment shall be;

- fumigation with SO<sub>2</sub>/CO<sub>2</sub> using the specifications as indicated in section 2.4.4 of this document; **or**
- fumigation with methyl bromide at a rate of 48 grams per cubic metre at a minimum temperature of 21°C for 24 hours; **or**
- an equivalent treatment approved by MAFBNZ.

## Appendix 1



**Figure 1:** Example of a **DEFOR** carton



Figure 2 : Example of a **MAXCO (LTS)** carton

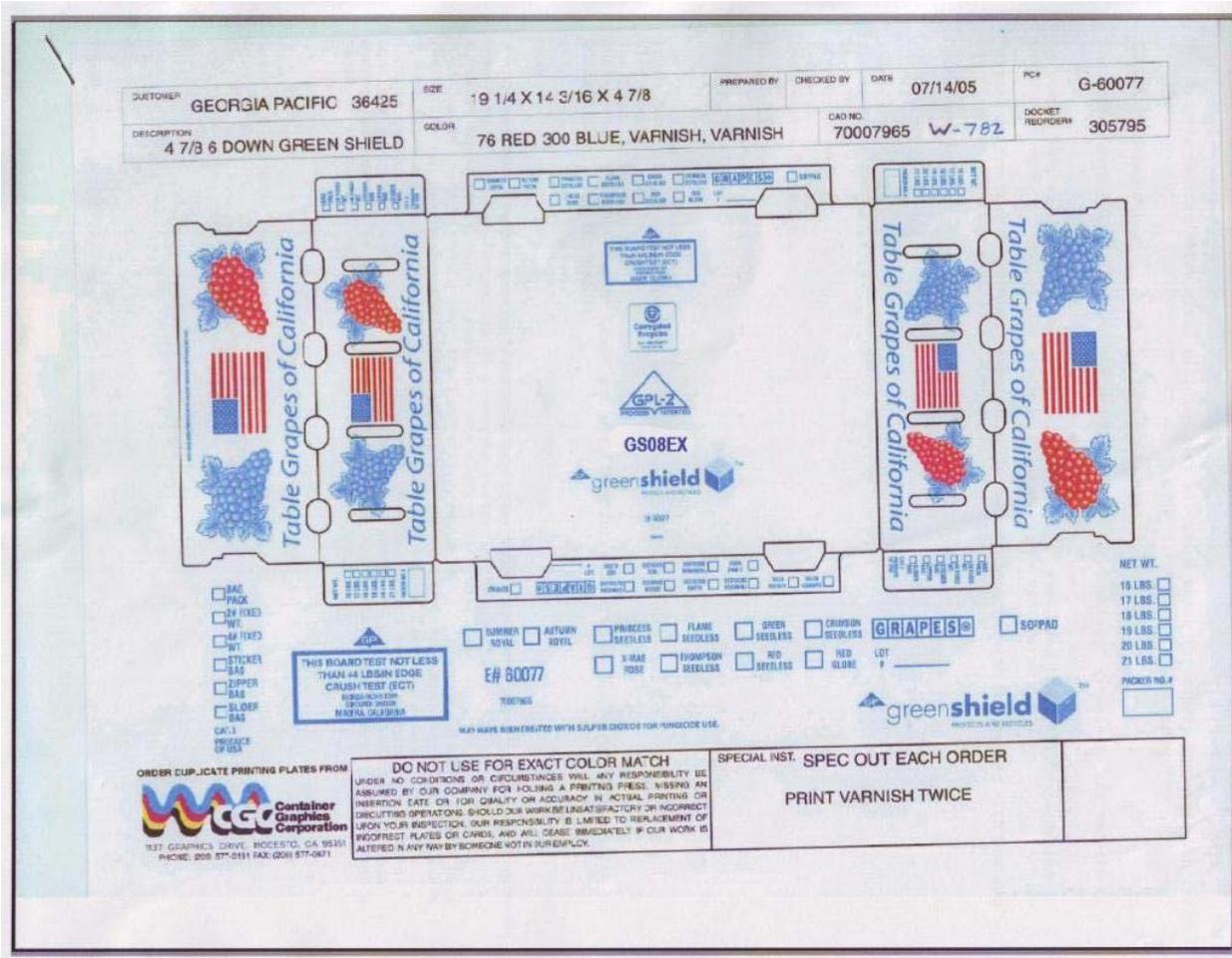


Figure 3: Example of a Greenshield carton