

**PROTOCOL OF PHYTOSANITARY REQUIREMENTS FOR EXPORT  
OF CHILEAN FRESH NECTARINES TO CHINA  
BETWEEN THE MINISTRY OF AGRICULTURE OF THE REPUBLIC  
OF CHILE AND THE GENERAL ADMINISTRATION OF QUALITY  
SUPERVISION, INSPECTION AND QUARANTINE OF THE PEOPLE'S  
REPUBLIC OF CHINA**

For the safe export of Chilean nectarines (*Prunus persica* var. *nectarina*) to China, the Ministry of Agriculture of the Republic of Chile, represented by its Livestock and Agriculture Service, hereinafter called the "SAG", and the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China, hereinafter called the "AQSIQ", after exchanging views on the basis of a pest risk analysis, have agreed as follows:

**Article 1 GENERAL INFORMATION**

Chilean nectarines (*Prunus persica* var. *nectarina*) for export to China, hereinafter called the nectarines, must be grown in the area covering from the Fourth Region of Coquimbo to the Seventh Region of the Maule, including the Metropolitan Region (MR); must meet all applicable phytosanitary rules, food safety regulations and health standards defined by the People's Republic of China, as well as the requirements provided herein, and must be free from all the quarantine pest of concern to China (See Appendix 1).

**Article 2 ORCHARD AND PACKINGHOUSE REGISTRATION**

Nectarine orchards, packinghouses and cold-storage chambers wishing to export their fruit to China must be registered with the SAG. Registration records must contain the code, region and address of each participant for an accurate traceability all the way to origin when any export non-compliances be detected.

The SAG shall supervise orchards, packinghouses and cold-storage chambers, and send an updated list of registrations to the AQSIQ every year before the season begins.

### **Article 3 ORCHARD MANAGEMENT**

All orchards registered for export to China must have programs of Good Agricultural Practices (GAP) and Integrated Pest Management (IPM) in place, the latter including chemical or biological treatments when phytosanitary conditions in orchards so require.

The Chilean party must monitor the quarantine pests of concern to the Chinese party in orchards (See Appendix 1). During the first year of exports, the monitoring program and integral preventive control measures must be supervised by the SAG. Details of these measures may be forwarded to the AQSIQ before the visit of its experts at the beginning of exports or delivered directly to the latter during such visit.

Whenever any quarantine pests of concern to China are detected, immediate preventive and corrective measures must be taken.

All registered orchards must keep a record of pest monitoring and preventive controls, which must be sent to the AQSIQ upon its request. This record must contain specific information of any pesticides applied during fruit development, including names, active ingredients, application dates and dosages.

Pest monitoring and control in export orchards must be done under the technical guidance of specialized professionals, who shall be supervised by the SAG.

The SAG is bound to advise the AQSIQ of any occurrence of pests of concern to China and to supervise the application of integral preventive treatments, which include chemical and biological pesticides.

Pesticide residue measurements and analyses must be conducted in the farm exporting to China, so that the maximum limits required by the latter nation are respected. Analysis results must be available at the respective packinghouses.

### **Article 4 QUARANTINE-PEST CONTROL MEASURES**

4.1 *Ceratitidis capitata*: Measures for controlling *Ceratitidis capitata* must be implemented pursuant to the Memorandum of Understanding (MOU) between China and Chile. Monitoring shall be

according to the requirements defined in the SAG National Detection System. The SAG shall report annually on the results of this surveillance. It is hereby bound to immediately advise the AQSIQ of any outbreak of *Ceratitis capitata*, and cancel the free status of the affected area. All nectarines coming from quarantine areas must undergo a cold treatment, supervised by SAG officials or personnel authorized by the latter. This treatment may be completed before export following the procedures provided in Appendix 2, or while in transit to China as provided in Appendix 3.

The temperature determined for cold treatment is  $\leq 0.5^{\circ}\text{C}$  and must be maintained for 15 consecutive days.

- 4.2 ***Cydia pomonella***: A detection system must be established for *Cydia pomonella* by placing pheromone traps in orchards, with weekly checks from flowering to harvest, to determine whether there is any presence of the pest in each orchard and take phytosanitary measures as required. Leaves and fruits must also be examined to discard any presence of this pest or detect any symptoms thereof. If any live moth larvae were found in nectarine fruit, either in an orchard or packinghouse, immediate measures must be taken, the SAG must promptly advise the AQSIQ, and nectarine exports from the affected orchards must be suspended for the remaining of the season.

4.3 ***Lobesia botrana***:

- 4.3.1 The plague *Lobesia botrana*, is under a National Official Control Program by the Agriculture and Livestock Service. Which includes a general surveillance on various fruit species.
- 4.3.2 Each packing registered for exports to China, shall maintain safeguard measures and install at least one sticky trap inside the packing house for the monitoring of the pest. The density of sticky traps to be installed corresponds to one trap each 2500 m<sup>2</sup> of packing surface.
- 4.3.3 Each orchard registered for exports to China, must carry out a phytosanitary management program, that must include applications for the control of moths, and shall be available for SAG supervision.
- 4.3.4 In each orchard registered for exports to China, must be conducted a monitoring of this pest under the technical leadership of professionals, who supervise that leaves and fruits are

examined in order to discard the existence of this pest or detect any symptoms of damage. This monitoring must be carried out before the start the harvest of nectarines, and only those orchards without detection of immature states of the pest in the fruits, may begin the harvest and packaging process.

In the case that eggs or live moth larva are detected in the fruits of nectarine, either in an orchard or packinghouse, nectarine exports from the affected orchards must be suspended for the remaining of the season, which shall be informed by SAG to AQSIQ.

4.4 **Virus:** The three quarantine viruses of nectarines that are of concern to China, namely plum pox virus, prunus necrotic ringspot virus and tomato ringspot virus, must be included in the SAG National Surveillance Program, with sampling for laboratory analysis whenever there are suspect symptoms thereof. If any quarantine viruses of concern to China were detected, integrated pest management measures must be taken to ensure that no shipments there to carry such viruses.

#### **Article 5 FRUIT PACKING AND TRANSPORTATION**

Nectarine packing, storage and haulage to port must be supervised by SAG officials.

Nectarines for export to China must be packed in SAG registered and authorized packinghouses. The latter and all cold-storage chambers must have good hygiene conditions. Packing lines must enable nectarines to be washed, sorted, packed and stored at cold temperatures.

During the packing process, nectarines must be mandatorily washed, selected and sorted, so as to ensure that all shipments are free of any insects, mites, rotten fruit, twigs, leaves, roots or soil.

The results of pesticide residue analyses conducted in nectarine orchards exporting to China must be available at the corresponding packinghouses.

All packing materials must be clean, hygienic and new. Boxes with ventilation holes must be lined inside with nets or perforated bags (with a maximum mesh of 1.6 mm)to cover such holes, or filled with fruit packed in bags without perforations or with perforations having a maximum diameter of 1.6mm, other pallets containing such boxes must be completely wrapped to prevent any pest contamination.

Immediately once packed, nectarines must be stored in refrigerated chambers, on their own to prevent any cross-contamination.

Every packed box must bear a label in English with the name of the fruit species “Nectarines”, the area where they were grown (region and borough) and the country, as well as the orchard and packinghouse codes.

Every pallet must bear the following legend in Chinese: 输往中华人民共和国, meaning “Exported to the People’s Republic of China”.

The same mark must be stamped on every non-palletized box.

#### **Article 6 PHYTOSANITARY INSPECTION AT ORIGIN**

During the first two years of the effective term hereof, SAG officials shall sample 2% of each export batch, with a minimum sample of 600nectarines. If no quarantine problems occur during this time, the sampling percentage shall be reduced to 1%.

If any live specimens of quarantine pests were found during a phytosanitary inspection, the concerned batch shall be rejected for the Chinese market. The orchard and/or packinghouse causing the rejection shall be suspended until the SAG conducts an evaluation and determine a final decision on whether to suspend the orchard, the packinghouse or both. The SAG must keep detection records and forward them to the AQSIQ or the CIQ (China Inspection and Quarantine Services) upon their request.

Once an inspection is passed, the SAG shall issue a Phytosanitary Certificate including the following additional statement: “This consignment is in compliance with the requirements specified in the Protocol of Phytosanitary Requirements for Chilean Fresh Nectarine Exports to China and is free from quarantine pests of concern to China”.

For consignments having undergone a cold treatment at origin, the temperature, duration and SAG code of the facility of such treatment must be specified in the Phytosanitary Certificate. When cold treated in transit, the statement “cold treatment in transit” must be included in the Certificate, together with the treatment temperature and duration, and the container and seal numbers.

Before the beginning of exports, the SAG must furnish the AQSIQ with copies of all Phytosanitary Certificates for approval and filing by the Chinese party.

#### **Article 7 PHYTOSANITARY INSPECTION AT DESTINATION**

At the Chinese port of entry, Chilean nectarines shall be inspected by the pertaining office of the CIQ. The Chinese inspectors shall verify the forms and seals before proceeding with the inspection. In the case of consignments having been cold treated at origin or in transit, a report on the treatment results must be submitted, with a table of all fruit-temperature sensor measurements.

No shipments containing nectarines from unauthorized orchards or packinghouses shall be allowed entry to China.

If a cold treatment were qualified as invalid, the relevant consignment may undergo one at the entry port, provided that it can be done in the same container, or it may be returned to origin or destroyed.

Any detections of *Ceratitidis capitata*, *Cydia pomonella* or *Lobesia botrana* shall entail the return, destruction or quarantine treatment at destination of the concerned shipment. Additionally, the AQSIQ shall immediately advise the SAG and require that nectarines from the concerned orchard, packinghouse or both be provisionally suspended from exporting to China. The SAG shall assess the situation and make the final decision together with the AQSIQ on whether to suspend the orchard, the packinghouse or both. The AQSIQ shall analyse the situation, and may suspend the protocol, if the situation so requires. It shall fall upon the SAG the responsibility of investigating to clarify the origin and of taking both corrective and improvement measures.

In the event of detecting any other quarantine pests or others not reported in Chile, the concerned shipments shall be returned, destroyed or quarantine treated. The SAG shall investigate the cause and apply corrective measures.

#### **Article 8 INSPECTIONS AND PRIOR INSPECTION**

Before the beginning of exports, the AQSIQ shall send inspectors to visit Chilean nectarine orchards that will be exporting to China and verify *in situ*, in conjunction with SAG officials, the

pest monitoring and control system, as well as the packing and refrigerated storage procedures, upon which the AQSIQ inspectors may approve the beginning of exports in Chile.

The AQSIQ and SAG inspectors shall conduct joint inspections of nectarines that are to be exported to China during the season, checking and verifying any cold treatments that might be necessary against *Ceratitis capitata*. If any quarantine pest were detected during these inspections, the corresponding treatment shall be considered invalid, and the shipment may not be exported, unless corrective measures are taken.

Depending on the results of inspections during the first year, the AQSIQ shall determine whether a prior inspection is necessary for subsequent seasons.

All costs in connection with visits to Chile and the prior inspections, including international airplane tickets, food and accommodations, shall be borne by the Chilean party.

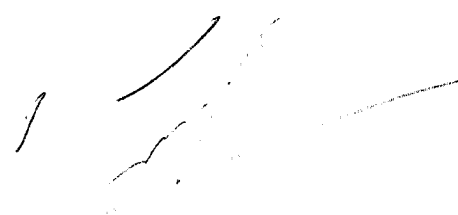
#### **Article 9 REVIEW OF THE AGREEMENT**

While this Protocol is effective and as needed, the AQSIQ shall conduct a supplementary risk analysis on the basis of detections during inspections at destination. The list of quarantine pests and relevant safety measures shall be adjusted after reaching an agreement with the SAG.

So as to ensure compliance with the requirements herein provided, the AQSIQ shall perform, after the beginning of exports and every two years, retrospective export reviews of nectarine inspections and quarantine requirements, including inspector visits to Chile. This Protocol may be amended as needed by mutual agreement of the parties, on the basis of the outcome of such inspection. The SAG must keep the Phytosanitary Certificates for at least one year for the AQSIQ to review them retrospectively. All expenses of such visits to Chile shall be borne by the Chilean party.

Signed in \_\_\_\_\_ on \_\_\_\_\_, in two counter copies in Spanish, Chinese and English, all texts having equal standing and the translation into English prevailing in the event of any interpretation discrepancies. Each party has kept a set of the texts in the aforesaid languages, the three versions being equally valid. Should there be any difference regarding the contents of the Protocol, the text in English shall prevail. This Protocol shall be valid for two years and

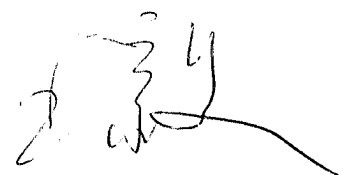
automatically renewed for an equal term if neither party submits amendment or completion proposals at least two months before its expiry.



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**On behalf of**

**The Ministry of Agriculture of the  
Republic of Chile**



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**On behalf of**

**The General Administration for Quality  
Supervision, Inspection and Quarantine  
of the People's Republic of China**



## APPENDIX 1

### QUARANTINE PESTS OF CONCERN TO CHINA

1. *Ceratitiscapitata*
2. *Cydia pomonella*
3. *Lobesia botrana*
4. *Pantomorus cervinus*
5. *Brachycauduspersicae*
6. *Brachycaudus tragopogonis*
7. Plum pox virus
8. Prunus necrotic ringspot virus
9. Tomato ringspot virus

## APPENDIX 2

### OPERATIONAL PROCEDURES FOR COLD TREATMENT AT ORIGIN

#### 1. TREATMENT CHAMBERS

- 1.1 Cold treatment before shipment must be completed in SAG-authorized facilities.
- 1.2 SAG officials or authorized personnel make sure that the cold facilities in use meet all relevant standards and keep the fruit at the required temperature.
- 1.3 SAG officials or authorized personnel keep the registration information of facilities and their respective authorizations for applying cold treatments to fresh nectarines for export to China. These records must contain the following items:
  - a) The construction program and location of facilities, and contact information of owners in charge of administration;
  - b) The area of facilities and their storage capacity;
  - c) The type of wall, ceiling and floor insulation;
  - d) The brand, model, type and capacity of the refrigerating compressor and of the evaporator or air circulation system, and
  - e) Equipment details and specifications, such as: temperature range, continuous defrost operation and built-in temperature recorder.
- 1.4 Before the nectarine season begins, the SAG shall deliver the updated of list registered cold-treatment facilities, specifying names and addresses.

#### 2. TYPE OF TEMPERATURE RECORDER

- 2.1 SAG officials or authorized personnel must ensure that temperature sensors are compatible with the temperature recorder.
  - a) With a  $\pm 0.15^{\circ}\text{C}$  precision, they must meet requirements, and be accurate in the  $-3.0$  to  $+3.0^{\circ}\text{C}$  range with an error margin of  $\pm 0.15^{\circ}\text{C}$ .
  - b) The number of connected sensors must be sufficient.
  - c) Treatment data must be recorded and stored during the process until they are checked by the SAG or authorized personnel.
  - d) The interval for the precise recording of all sensor readings must be one hour.
  - e) Exported data may be printed and sensors identified, indicating time and temperature, thermocode and corresponding container number.

### **3. TEMPERATURE SENSOR GAUGING**

- 3.1 Temperature sensors must be checked in a mix of sterile water and crushed ice using a standard thermometer approved by the SAG or personnel authorized by the latter.
- a) Sensors with readings out of the  $0 \pm 0.3^{\circ}\text{C}$  range must be changed.
  - b) Upon treatment completion, SAG officials or authorized personnel must check the precision of fruit-pulp sensors using the method described in Item 3.1.

### **4. SENSOR PLACEMENT SUPERVISED BY THE SAG**

- 4.1 The transfer of pre-cooled fruit in pallets must be supervised by the SAG or authorized personnel. The exporter may apply precooling.
- 4.2 Two sensors are required to measure air temperature, one at the point of air delivery and the other at the return in take, with at least four fruit-pulp temperature sensors placed as follows:
- a) One in the middle of the batch located in the centre of the treatment room;
  - b) One in the top corner of the batch located in the middle of the treatment room;
  - c) One in the middle of the batch located near the air return intake, and
  - d) One in the top corner of the batch located next to the air return.
- 4.3 Sensor placement and connection to the temperature recorder must be supervised by the SAG or personnel authorized by the latter.
- 4.4 The recorder may be activated at any time, but the treatment count only begins when all sensors readings attain the defined temperature.
- 4.5 When only the minimum required number of sensors is placed and any sensor shows abnormal readings during more than four consecutive hours, the treatment is considered invalid and must be reapplied.

### **5. TREATMENT RESULT CHECK**

If the recorded parameters meet the requirements, the SAG authorizes treatment conclusion. After approving sensor checks using the method described in Item 3.1, the treatment is successfully finalized.

Sensors must be checked before removing the fruit from the treatment room.

### **6. TREATMENT RESULT CONFIRMATION**

- 6.1 Once the defined treatment time has lapsed, the sensors must be checked again using the method described in Item 3.1, and the checkup record must be filed to be available when the AQSIQ requests it.

- 6.2 If a sensor reading were higher during the post-treatment check than the one determined at the beginning, the recorded readings of that sensor and/or more of them must be relatively adjusted, and if the adjusted record did not meet the requirements, the treatment is invalidated. The SAG and the exporter must jointly decide whether the concerned shipment is treated again.
- 6.3 Printed temperature records must be accompanied by statistics matching the treatment parameters, as proof of it having been completed.
- 6.4 SAG officials or authorized personnel must sign the back of temperature records with the aforesaid statistics and forward them for verification by the AQSIQ upon its request.
- 6.5 If a treatment did not meet the requirements, the thermodata may be reconnected and the process continued in the following cases:
- a) The SAG or authorized personnel confirm that the statistics specified in Item 6.3 are not compliant, or
  - b) The restart takes place within 24 hours of the end of the failed treatment.
  - c) The temperature recorder may be reconnected and data continue to be collected in either of the preceding two cases.

## **7. CONTAINER LOADING**

- 7.1 Before loading, containers must be checked by a SAG official or authorized personnel to ensure that they are free of parasites and have guarded entrances to prevent insect infestation.
- 7.2 Fruit must be placed in a protected area or with anti-insect nets separating the cold chamber from the container.

## **8. CONTAINER SEALING**

- 8.1 Loaded containers must be sealed by SAG officials or authorized personnel, and the corresponding seal numbers indicated in the phytosanitary certificate.
- 8.2 Seals may only be opened by CIQ officials on arrival at the Chinese port.

## **9. FRUIT STORAGE AWAITING SHIPMENT**

9.1 All treated fruit on hold for shipment may be stored under safety conditions verified by SAG officials or authorized personnel.

- a) If kept in the treatment room, the room door must be sealed.
- b) If transferred to another warehouse, the transfer mode must be authorized by the SAG and the storeroom must be exclusive.
- c) The subsequent loading of such fruit into a container must be as provided in Item 7 and under the supervision of SAG officials or authorized personnel.

## **10. PHYTOSANITARY CERTIFICATE**

10.1 The treatment temperature and duration must be written in the TREATMENT box of the phytosanitary certificate.

10.2 At the Chinese port, the phytosanitary certificate and cold-treatment report must be delivered to the CIQ, including the temperature record with statistics signed on the back by the SAG and the sensor-check record.

## **APPENDIX 3**

### **OPERATIONAL PROCEDURES FOR COLD TREATMENT IN TRANSIT**

#### **1. TYPE OF CONTAINER**

Refrigerated containers must be equipped to meet the temperature requirements.

#### **2. TYPE OF TEMPERATURE RECORDER**

SAG officials or authorized personnel must make sure that the temperature recorder and sensors are adequate.

- 2.1 Temperature range must be from  $-3^{\circ}\text{C}$  to  $+3.0^{\circ}\text{C}$ , with a  $\pm 0.15^{\circ}\text{C}$  accuracy.
- 2.2 The number of sensors must be sufficient.
- 2.3 The system must be capable of recording and storing treatment data.
- 2.4 Temperature readings of all sensors must be recorded at least every hour, and records must meet the sensor precision requirements.
- 2.5 Printed temperature records must match the time and temperature measurements of each sensor, and specify recorder and container codes.

#### **3. SENSOR GAUGING**

- 3.1 Gauging must be done using a standard thermometer approved by SAG officials to measure the temperature in a mix of crushed ice and sterile water.
- 3.2 All sensors with readings outside the  $0\pm 0.3^{\circ}\text{C}$  must be replaced.
- 3.3 A “registry of fruit-pulp temperature sensor gauging” signed by SAG officials must be issued for each container, attaching the original to the phytosanitary certificate.
- 3.4 On arrival at the Chinese port, the CIQ shall check the temperature sensors.

#### **4. SENSOR PLACEMENT**

- 4.1 Packed fruit are loaded into containers under the supervision of SAG officials or authorized personnel. Boxes are placed so as to leave sufficient space for a uniform air circulation.

4.2 At least three sensors must be placed in each container to measure fruit pulp temperature and two for air temperature. Their specific locations are as follows:

- a) Fruit sensor 1, in the middle of the top layer of boxes in the first row of load;
- b) Fruit sensor 2, in the centre, distant from the door 1.5 meters (for 40' containers) or 1 meter (for 20' containers), in the middle of the load and at mid height;
- c) Fruit sensor 3, on the left wall of load, at mid height, leaving a distance from the container door of 1.5 meters (for 40' containers) or 1 meter (for 20' containers), and
- d) The two air temperature sensors are placed separately at the point of air delivery and return in take.

4.3 All sensors must be placed under the supervision of a SAG official or authorized personnel.

4.4 Before loading, fruit is stored in a precooling chamber and the fruit-pulp temperature lowered to 4°C.

## **5. CONTAINER SEALING**

5.1 Loaded containers must be closed by a SAG official or authorized personnel, using a numbered seal.

5.2 Seals may only be opened by CIQ officials at the Chinese port.

## **6. TEMPERATURE RECORDS AND CONFIRMATION**

6.1 Cold treatment in transit may be started before leaving the Chilean port and concluded during the trip, before arriving at the Chinese port, or last until after arriving in China.

6.2 Treatment records may be started at any time, but treatment time shall only be counted once all the sensors have attained the required temperature.

6.3 The shipping company shall unload the computerized cold-treatment records and deliver them to the CIQ at the port of arrival in China.

6.4 Cold treatments may be completed during navigation before arriving in China, and their records unloaded and forwarded for verification by the CIQ. However, the latter may not validate any treatments before checking the sensors. Hence, whether to suspend a cold treatment before arriving at port, by gradually raising the temperature during transportation, is purely a commercial decision.

6.5 The CIQ shall verify treatment records, and authorize or reject the respective treatments depending on the outcome of sensor checks.

#### **7. PHYTOSANITARY CERTIFICATE**

7.1 The cold-treatment temperature and duration must be written on the phytosanitary certificate, together with the container and seal numbers.

7.2 On fruit entry, the phytosanitary certificate, cold-treatment report and fruit-pulp temperature-sensor check records must be delivered to the CIQ.