

**PROTOCOL OF PHYTOSANITARY REQUIREMENTS FOR THE
EXPORT OF FRESH PEARS FROM SOUTH AFRICA TO CHINA
BETWEEN GENERAL ADMINISTRATION OF CUSTOMS OF THE
PEOPLE’S REPUBLIC OF CHINA AND THE DEPARTMENT OF
AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT OF
THE REPUBLIC OF SOUTH AFRICA**

In order to safely export fresh pears from South Africa to China, on the basis of pest risk analysis, General Administration of Customs of the People’s Republic of China (hereinafter called the “GACC”) and the Department of Agriculture, Land Reform and Rural Development of the Republic of South Africa (hereinafter called the “DALRRD”), have exchanged views and agreed as follows:

Paragraph 1 General information

All fresh pears exported from South Africa to China (hereinafter called as the “pears”) must meet all applicable phytosanitary laws and regulations, as well as all food safety rules and health standards defined by the People’s Republic of China, and the requirements hereunder, besides being free of the quarantine pests of concern to China listed in Appendix 1.

This protocol pertains only to phytosanitary requirements. Other regulations may apply to South African pears, such as those regarding human health, for instance, China’s national food safety standards.

Paragraph 2 Registration

Pear orchards wishing to export their fruits to China, as well as the packinghouses and cold storage facilities taking part in the respective export process, must be registered with the DALRRD, and approved by both the GACC and the DALRRD. Registration records must contain the code, region and address of each participant, for an accurate traceability of the exported fruit all the way back to its origin, should any non-compliances be detected. The DALRRD shall send an updated list of registrations every year for the GACC’s approval prior to the beginning of exports.

Paragraph 3 Orchard management

All the orchards registered for export shall adopt the good agricultural practices (GAP), including keeping good sanitary conditions in orchards, eliminating the dropped fruits timely and pruning at the end of harvest. The integrated pest management (IPM) programs shall also be implemented, including pest monitoring, chemical or biological control and farm operations.

Pest monitoring and precaution of export orchards shall be completed under the guidance of technicians trained by the DALRRD or by training institutions authorized by the DALRRD.

All registered orchards must keep monitoring records of the quarantine pests concerned by China, as well as of any chemical or biological control programs implemented. The records should include the name of chemical agents used during the growing season, active ingredients, dosage, application time, etc., and shall be provided to the GACC upon request.

Paragraph 4 Control measures for quarantine pests

4.1 Mediterranean fruit fly (*Ceratitidis capitata*) and Natal fruit fly (*Ceratitidis rosa*).

The integrated management measures of the two *Ceratitidis* species will be conducted in the pear producing regions, including the use of fly traps, chemical control, biological control, mating disruption or other control measures. All the management records of the two *Ceratitidis* species should be kept by the producers, and submitted to the GACC upon request.

All fresh pears exported to China must undergo a cold treatment to eliminate the two fruit flies. Application of cold treatment must be initiated by DALRRD officials or personnel authorized by the latter. The parameters of the cold treatment are as follows: the pulp temperature should be kept at 1°C or below for no less than 16 consecutive days, or at 2.1°C or below for no less than 21 consecutive days. Treatments may be completed before shipment using the procedures provided in Appendix 2, or in transit to China as provided in Appendix 3.

4.2 Codling moth (*Cydia pomonella*)

The monitoring of codling moth must be implemented in the pear producing regions and the relevant places (registered orchards, packinghouses and

surrounding producing places). The monitoring period shall begin at the full bloom stage and end upon the finishing of pear packaging. Traps for codling moth shall be set at a density of one trap per hectare, with a minimum of 3 traps for each orchard. The traps must be inspected at least every two weeks during the monitoring period. If 3 or more individuals of codling moth are found in one monitoring trap, the control measures should be conducted immediately. The orchard executing no effective control shall be suspended for the remainder of the export season to China. Upon the request of the GACC, the survey report or management records should be submitted by the DALRRD.

If the host plants of codling moth are grown within 500 meters away from the orchards for pear export, the monitoring traps should be installed according to the requirements above.

4.3 Mites, coccids and other pests

Mites, coccids and other pests shall be monitored every two weeks from the blooming period to the harvesting period. If the pests or symptoms are found, the appropriate biological or chemical control measures should be applied immediately.

Paragraph 5 Processing and packaging

The DALRRD or DALRRD authorized personnel will verify that pears will meet processing, packaging, storage and transportation requirements as outlined. Fresh pears only from registered orchards can be brought to the packinghouses for sorting. The packinghouse shall have good sanitary conditions and measures to prevent re-infestation by pests (such as insect-proof nets).

The packing line shall be cleaned before processing. During the processing and packaging, the fruit must be washed, brushed, separated and classified, and any pears with signs of insect damage or other defects affecting their quality must be discarded, together with any leaves, twigs and soil, to ensure that all shipments are free of any pests.

Packaging material for pears should be new, clean and sanitary, and comply with Chinese related phytosanitary requirements and sanitary safety

standards. If packaging boxes have air holes, insect-resistant gauze (the mesh size is less than 1.6mm) should be used to cover them to prevent pests from entering.

Pears exported to China must be packed and stored separately from fruit that are not for export to China, to avoid being infested by pests again.

Every packed box must bear a label in English with the name of the fruit species, the area where they were grown (region), country of origin, and the name or code of orchard and packinghouse. Each box and pallet must bear the following legend in Chinese or English: "Exported to the People's Republic of China" (输往中华人民共和国). The same legend must be stamped on every non-palletized box.

Wood packaging material must comply with international standards for phytosanitary measures 15 (ISPM 15).

Paragraph 6 Pre-Export Inspection and Quarantine

The sample size for phytosanitary inspection by DALRRD officials shall be 2% of each export batch, and with at least 1,200 fruits sampled. If there is no phytosanitary problem within two years, the sampling proportion will be reduced to 1%. At the same time, at least 40 fruits or suspected fruits of each batch during inspection should be cut for inspection.

During a DALRRD phytosanitary inspection, if any living stage of quarantine pests of concern to China is detected, the entire batch shall be rejected for the exportation to China (if no effective treatment method can be applied). If three batches from the same orchard were intercepted with the quarantine pests of concerned to China in one export season, the relevant orchard shall be excluded from exporting to China for the remainder of the season. The DALRRD shall keep records of all detections, to be forwarded to the GACC upon request.

Upon completing an inspection, the DALRRD shall issue a Phytosanitary Certificate that must bear the following additional statement in English: "This consignment is in compliance with the requirements specified in the Protocol of Phytosanitary Requirements for the Export of Fresh Pears from

South Africa to China, and is free from quarantine pests of concern to China.”

For shipments undergoing a cold treatment at origin, the temperature and duration thereof, as well as the name or code of the facility in which it was completed, must be specified on the Phytosanitary Certificate. For cold treatments in transit, the statement “Cold treatment in transit” must be included in the respective certificates, together with the treatment temperature and duration, and the container and seal numbers.

The DALRRD will provide GACC with a sample Phytosanitary Certificates, for confirmation and record keeping.

Paragraph 7 Entry Inspection and Quarantine

Entry ports for South African pears are all Chinese ports authorized for fruit entry by the GACC.

When the shipment of pears arrives at the port of entry in China, the GACC shall examine Phytosanitary Certificate, Animal and Plants Entry Permit and related documents and signs, and shall complete the inspection and quarantine process.

The entry of pear shipments from unauthorized orchards and packing houses shall not be allowed.

If a cold treatment were qualified as invalid, the shipment may be treated at the entry port, provided that this can be done in the same container. Otherwise, it may be returned to origin or destroyed.

If any living organism of *Ceratitis capitata*, *C. rosa* or *Cydia pomonella* is detected, the consignment will be returned, destroyed or treated. Additionally, the GACC shall immediately inform the DALRRD and suspend pear import from the relevant orchard, packinghouse or both. The DALRRD shall assess the situation and investigate to clarify the origin, and take corrective and improvement measures.

If any other quarantine pests or other pests not reported in China were


intercepted, the relevant shipment shall be returned, destroyed or treated. The DALRRD shall investigate the cause and apply corrective measures.

Paragraph 8 Retrospective review

During the process of trade, the GACC will conduct further risk analysis based on the situation of pest occurrence in South Africa and interceptions of such pests. In consultation with the DALRRD, the list of quarantine pests and the relevant quarantine measures may be adjusted.

To ensure the effective implementation of relevant risk management measures and operational requirements, the GACC shall conduct a retrospective review when implementing protocol every five years after the commencement of trade. If necessary, the GACC may send experts to South Africa for an audit. In light of the investigation, this protocol shall be amended by mutual consent.

This protocol is signed in *Beijing and Pretoria* on 2021.11.30, in two counterparts in Chinese and English language versions, and shall enter into force as of the date of its signature. Both texts are equally authentic, and any dispute between the parties arising from disagreement shall be settled through friendly consultation or negotiation. This protocol is valid for two years from the date of signature, then both participants will review the implementation of the protocol and negotiate whether to amend the relevant provisions. If no modification or termination request is made by either participant before two months until to the expiry date, the validity period will be automatically extended for two years.



**Representative of
The Department of Agriculture, Land
Reform and Rural Development of the
Republic of South Africa**



**Representative of
General Administration of
Customs of the People's
Republic of China**

Appendix 1

Quarantine pests of concern to China

1. *Ceratitis capitata* (Wiedemann)
2. *Ceratitis rosa* Karsch
3. *Cydia pomonella* (Linnaeus)
4. *Ceroplastes rusci* (Linnaeus)
5. *Diaspidiotus africanus* (Marlatt)
6. *Epichoristodes acerbella* (Walker)
7. *Eriosoma lanigerum* (Hausmann)
8. *Pseudococcus longispinus* (Targioni Tozzetti)

Operational procedures for cold treatment at origin

1. TREATMENT CHAMBERS

- 1.1 Cold treatments before shipment must be completed in facilities authorized by both the DALRRD and the GACC.
- 1.2 DALRRD officials or authorized personnel shall make sure that the cold facilities meet all applicable standards and keep the fruit at the required temperatures.
- 1.3 DALRRD officials or authorized personnel shall keep the registration information of facilities and their respective authorizations to apply cold treatments to fresh pears for export to China. These records must contain the following items:
 - (a) The layout and location of facilities, and all contact information of owners in charge of their administration;
 - (b) The area and storage capacity of facilities;
 - (c) The type of wall, ceiling and floor insulation;
 - (d) The brand, model, type and capacity of refrigerating compressors and evaporator or air circulation systems, and
 - (e) Equipment specifications and detailed data, such as temperature range, continuous defrost operation and built-in temperature recorder.
- 1.4 Before the pears export season begins, the DALRRD shall deliver the updated list of names and addresses of registered cold-treatment facilities.

2. TYPE OF TEMPERATURE RECORDER

DALRRD officials or authorized personnel must ensure that temperature sensors are compatible with the respective temperature recorder.

- a. They must meet the requirements and be accurate within a -3.0 to +3.0°C range, with a precision or error margin of $\pm 0.15^\circ\text{C}$;
- b. The number of connected sensors must be sufficient;
- c. Treatment data recorded during the process must be stored until they are checked by the DALRRD or authorized personnel;
- d. The precise recording interval of all sensor readings must be one hour, and
- e. Exported data must be printable, specifying sensors, time and temperature of readings, the temperature logger code and the corresponding container number.

3. TEMPERATURE SENSOR GAUGING

Temperature sensors must be checked in a mix of sterile water and crushed ice, using a standard thermometer approved by the DALRRD 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, DALRRD officials or authorized personnel must check the precision of the fruit-pulp sensors using the method described in Item 3.

4. SENSOR PLACEMENT SUPERVISED BY THE DALRRD

4.1 The transfer of pre-cooled fruit in pallets must be supervised by the DALRRD or authorized personnel. Exporters 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 intake, and 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 upper edge of the batch located in the centre of the treatment room;
- (c) One in the middle of the batch located near the air return intake; and
- (d) One in the upper edge of the batch located next to the air return intake.

4.3 Sensor placement and connection to temperature loggers must be supervised by the DALRRD or personnel authorized by the latter.

4.4 Temperature loggers may be activated at any time, but treatment counts only begin when all sensors readings show the required temperature.

4.5 When only the minimum required number of sensors is placed, and one of them shows abnormal readings during more than four consecutive hours, the treatment shall be considered invalid and must be administered again.

5. TREATMENT RESULT CHECKS

5.1 If the recorded parameters meet the requirements, the DALRRD shall authorize the treatment conclusion. After approving sensor gauge checks using the method described in Item 3, the treatment shall be deemed successfully completed.

5.2 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 gauged again using the method described in Item 3, and gauging records must be

filed, to be available for the GACC, upon request.

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

7. CONTAINER LOADING

- 7.1 Before loading, containers must be checked by DALRRD officials or authorized personnel to ensure that they are free of parasites and have guarded entrances to prevent insect infestation.
- 7.2 The 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 DALRRD officials or authorized personnel, recording the corresponding seal numbers in the respective phytosanitary certificates.
- 8.2 Seals may only be broken by China Customs officials on arrival at the Chinese port.

9. FRUIT STORAGE AWAITING SHIPMENT

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

- a. If kept in the treatment room, the door must be sealed;
- b. If transferred to another warehouse, the transfer mode must be

- authorized by the DALRRD 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 DALRRD 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 China Customs, with the temperature logs with statistics signed by the DALRRD and the sensor gauging record.

Appendix 3

Operational procedures for cold treatment in transit

1. TYPE OF CONTAINERS

Containers must be of the self-cooling (overall cooling) transit type and must be fitted with refrigerating equipment capable of attaining and maintaining the required temperature.

2. TYPE OF TEMPERATURE RECORDERS

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

- a. Temperature range must be from -3°C to $+3.0^{\circ}\text{C}$, with a $\pm 0.15^{\circ}\text{C}$ accuracy;
- b. The number of sensors must be sufficient;
- c. The system must be capable of recording and storing treatment data;
- d. Temperature readings of all sensors must be recorded at least every hour and meet the sensor precision requirements; and
- e. Printed temperature logs must show matching time and temperature measurements for all sensors, and specify the recorder and container codes.

3. SENSOR GAUGING

- 3.1 Gauging must be done using a standard thermometer approved by DALRRD 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 DALRRD officials, must be issued for each container, attaching the original thereof to the respective phytosanitary certificate.
- 3.4 On arrival at the Chinese port, China Customs shall check the temperature sensors.

4. SENSOR PLACEMENT

- 4.1 The packed fruit shall be loaded into containers under the supervision of DALRRD officials or authorized personnel, distributing the boxes 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, located 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, separately at the point of air delivery and return intake.

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

4.4 Before loading, fruit shall be stored in a precooling chamber to lower the fruit-pulp temperature to 4°C.

5. CONTAINER SEALING

5.1 Loaded containers must be closed by DALRRD officials or authorized personnel, using numbered seals.

5.2 Seals may only be broken by China Customs officials at the port of entry.

6. TREATMENT RESULT VERIFICATION

6.1 If the fruit sensor logs show parameters compliant with the requirements, GACC officials may authorize the end of the treatment, which shall be considered successful once and if sensor gauging has been approved pursuant to Item 3.

6.2 Sensors must be gauged before the fruit is transferred out of the treatment chamber.

7. TEMPERATURE RECORDS AND CONFIRMATION

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

7.2 Treatment logs may be started at any time, but treatment times shall only be counted once all the sensors have reached the required temperature.

7.3 The shipping company must unload the computerized cold-treatment records and deliver them to China Customs at the port of arrival.

7.4 Cold treatments may be completed during the sea journey before arriving in China, and their records unloaded and forwarded for verification by China Customs. However, the latter may not validate any treatments before gauging the sensors. Hence, it is solely a commercial decision to suspend a cold treatment before arriving at port, by gradually raising the

temperature during transportation.

7.5 China Customs shall verify treatment records, and authorize or reject the respective treatments depending on the outcome of sensor gauging.

8. PHYTOSANITARY CERTIFICATE

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

8.2 On fruit entry, the phytosanitary certificate, cold-treatment report and records of fruit-pulp temperature sensor gauging must be delivered to China Customs.