

WORK PLAN FOR THE EXPORTATION OF AVOCADO (*Persea americana* P. Mill.)
FRUITS VARIETY 'Hass' FROM SOUTH AFRICA TO JAPAN

1. OBJECTIVE

This work plan aims at ensuring the proper implementation of the export of 'Hass' avocado fruits from South Africa to Japan through clarifying the related operations and procedures.

2. PESTS

- *Ceratitis capitata*
- *Bactrocera dorsalis*
- Other quarantine pests regulated by MAFF

3. PARTICIPATING ORGANISATIONS/PERSONNEL

- Department of Agriculture, Land Reform and Rural Development (DALRRD) of the Republic of South Africa
- Perishable Products Export Control Board (PPECB), an agency authorized by DALRRD to perform certain activities
- Place of production and packing houses which are approved and registered by DALRRD, and exporters engaged in export to Japan
- Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF)

4. RESPONSIBILITIES

4.1. DALRRD

- 4.1.1. To coordinate, perform and supervise all the activities specified in this work plan. To report to MAFF without delay and discuss the matter, in the case of detecting a serious problem related to the activities in registered places of production and packing houses, and designated disinfestation facilities (hereinafter referred to as "the relevant farms/facilities"), and the activity conducted by DALRRD/PPECB officers.
- 4.1.2. To ensure that DALRRD/PPECB officers who work in the export program are properly trained and supervised.
- 4.1.3. To approve and register all places of production and packing houses, and designate all facilities that comply with this work plan.
- 4.1.4. To provide MAFF with the information on the relevant farms/facilities,

including their registration codes, before the start of the export season, or if there is any change on the information.

- 4.1.5. To inspect whether the relevant farms/facilities comply with this work plan.
- 4.1.6. To suspend or cancel the registration of any relevant farms/facilities which do not comply with this work plan, until DALRRD investigates and MAFF accepts measures for improvement proposed by DALRRD.
- 4.1.7. To check the calibration of the temperature sensors and ensure that the cold treatment is appropriately performed.
- 4.1.8. To conduct export inspections and verify the labeling and packing condition.
- 4.1.9. To keep records of information related to the export program conducted in the relevant farms/facilities, and information related to the export inspection and cold treatment, and report to MAFF as requested at least until the end of the next export season.
- 4.1.10. To request MAFF to dispatch its officer who verifies relevant activities of the participating organization/personnel in South Africa. Its cost should be borne by South African side.

4.2. PPECB

- 4.2.1. To comply with this work plan and the guidance and directions of DALRRD.
- 4.2.2. To select a sample of 2% or more of each consignment from a grower for quality inspection.
- 4.2.3. To conduct quality inspections (before fruits are handed over for phytosanitary inspection).
- 4.2.4. To ensure that the cold chain is initiated.
- 4.2.5. To ensure that safeguarding activities are conducted in the registered packing houses.
- 4.2.6. To calibrate temperature monitoring devices and temperature recording equipment.

4.3. PERSONNEL OF REGISTERED PLACES OF PRODUCTION AND PACKING HOUSES, AND EXPORTERS ENGAGED

- 4.3.1. To comply with this work plan and the guidance and directions of DALRRD and properly perform the relevant activities.
- 4.3.2. To keep the persons engaged in the relevant operations informed of the contents of this work plan.

4.4. MAFF

- 4.4.1. To dispatch its officer to South Africa in response to the DALRRD's request.
- 4.4.2. To verify whether the relevant activities in South Africa comply with this work plan.

5. PHYTOSANITARY MEASURES FOR *CERATITIS CAPITATA*

In order to ensure the avocados are free from the infestation of *Ceratitis capitata*, the avocados need be harvested at registered places of production, transferred under conditions described below, and selected and packed at registered packing houses. The main purpose of registering places of production is to ensure only unripe (hard green) Hass variety is harvested, whereas that of registering packing houses is to surely exclude avocados other than unripe fruit of the Hass variety.

5.1. REGISTRATION OF PLACES OF PRODUCTION AND PACKING HOUSES

- 5.1.1. Places of production and packing houses should be approved and registered by DALRRD in accordance with MAFF and DALRRD regulations before the export season of Hass variety.
- 5.1.2. DALRRD should keep the registered places of production and packing houses informed with the contents of this work plan.
- 5.1.3. DALRRD should make preliminary requests to the registered packing houses to submit drawings of the facility and photographs, examine whether the conditions in accordance with ANNEX 1 are met, and inspect the current conditions of the facilities.
- 5.1.4. The loading dock of the registered packing houses that loads Hass variety fruits to be exported to Japan (hereinafter referred to as "the avocados") should have an "airlock" system that prevents the entry of pests into the container or refrigerated truck during the loading.
- 5.1.5. In case of carrying out an export inspection at a registered packing house, it should be equipped with lights and inspection tables to maximize performance of the export inspections by DALRRD officers.
- 5.1.6. Places of production and packing houses should be kept in condition that meets the requirements of this work plan before their registration and during the export season to Japan.
- 5.1.7. DALRRD should suspend the registration of the places of production and packing houses if they do not comply with this work plan.
- 5.1.8. DALRRD should report information on the registered places of production

and packing houses to MAFF at least a month before the start of export season. DALRRD should submit ANNEX 1, ANNEX 2, ANNEX 3, the drawings and other information submitted by the packing houses for their registration.

- 5.1.9. When DALRRD registers a new place of production or packing house after the start of export season, it should report relevant information to MAFF before they start to be used for the export.
- 5.1.10. MAFF verifies the contents of the reports and informs the result to DALRRD. MAFF could request improvement of the facilities/procedures of registered packing houses on this occasion. In such cases, DALRRD should instruct the registered packing houses to respond to the request, and report to MAFF after verifying the result. DALRRD should not approve the use of the registered packing house until MAFF responds to DALRRD.

5.2. MEASURES RELATED TO REGISTERED PLACES OF PRODUCTION

- 5.2.1. Only unripe (hard green) Hass variety should be harvested directly from the tree.
- 5.2.2. Fruits fallen from the tree should be removed by the producer at least once a week from at least a week before the harvest for the export. The fallen fruits should not be exported to Japan.
- 5.2.3. The avocados should be harvested and managed so as not to be mixed with other varieties.
- 5.2.4. The avocados from one registered place of production should be managed so as not to be mixed with the avocados from the other registered places of production.
- 5.2.5. Avocados from non-registered places of production should not be mixed with the avocados from a registered place of production. DALRRD/PPECB should reject the mixed fruits and suspend the registered place of production that mixed the avocados for the rest of the season.
- 5.2.6. The avocados should be placed in containers marked with the registration code of the registered place of production, which ensure the traceability of the avocados throughout the whole process from the harvest to export.
- 5.2.7. The avocados should be transported to the registered packing houses within three hours after the start of harvest. If this is not possible, the fruits should be protected with an insect-proof screen or tarpaulin until they arrive at the registered packing houses. The avocados should be kept in the containers

described above during the transportation, and accompanied by a producer waybill. The date and time of the start of harvest and arrival should be specified.

- 5.2.8. Records of the harvest (the date and time of its initiation, removal of fallen fruits, and harvested amount) and the transportation should be kept.
- 5.2.9. DALRRD should examine the registered places of production at least once during the harvest period to verify abovementioned requirements. They should record and maintain the result of the examination based on ANNEX 6. If any of the requirements are not satisfied, the harvested avocados should not be exported to Japan.

5.3. MEASURES RELATED TO REGISTERED PACKING HOUSES

5.3.1. Verification Before Packing

- 5.3.1.1. The operations in the registered packing houses, including the receipt of the avocados, should be verified by PPECB officer.
- 5.3.1.2. PPECB officer should verify in accordance with ANNEX 7 whether the conditions of transportation described above, and the conditions of facilities and packing material described below are met. If there is no problem, they can approve the start of operation.
- 5.3.1.3. If operations related to fruits other than Hass variety are conducted before the operations related to the avocados, the packing houses should be cleaned and sterilized as required. The avocados must be kept separated from any other fruits being packed using insect proof material.
- 5.3.1.4. Registered packing houses should have wire meshes over any vents to prevent the entry of fruit flies.
- 5.3.1.5. Any fruits that do not meet the requirements of this work plan should not be received or processed.
- 5.3.1.6. The avocados should be packed in new boxes. The packing materials should be verified by DALRRD/PPECB officer before the start of packaging operations.

5.3.2. Implementation of Packing

Considering the following items (items mentioned in ANNEX 7), PPECB office should verify that operations of the registered packing house are appropriately conducted and ensure there is no avocado fruit other than unripe Hass variety.

- Fruits before being packed should be stored in the place where certain measures are taken to prevent contamination by fruit flies.

- All plant residuals should be excluded from the avocados before being packed.
- Fruits that are suspected to be ripe, which start to turn black or soften should be deliberately excluded by skilled workers who were properly trained by DALRRD to be able to distinguish ripe avocados from others.
- Hass variety from different registered places of production should not be mixed and processed together.
- The fruits excluded during the packing process should be removed daily at the end of the process. The excluded fruits should be isolated using items such as insect-proof screens while they remain in the packing house.
- The operations related to the avocados should be completed within 24 hours after the start of harvest.
- The avocados packed at the packing houses but not yet inspected should not be stored in the same chamber with the avocados which have been inspected and confirmed to be free from any quarantine pests by DALRRD officer.
- Any fruits that do not meet the requirements of this work plan should not be forwarded to the next step for the export.

5.3.3. Labeling of Boxes

- 5.3.3.1. The boxes, bundled boxes or containers containing the boxes should bear a label stating their destination, Japan. In the label, the following texts should be written. The label should be made in a recognizable size and placed where it can be easily seen.

Destination : 日本

- 5.3.3.2. The boxes or bundled boxes should bear a label stating the information including the Province/ production district of place of origin and the registration codes of the registered place of production and packing house, with the aim of ensuring traceability.

5.3.4. Transportation After Packing

In cases where the packed avocados are transported to the export port without being loaded to cold treatment containers at the registered packing house, they should be transported in closed, encapsulated, and leak-proof vehicles with measures to prevent contamination of *Ceratitis capitata*.

6. PHYTOSANITARY MEASURE FOR *BACTROCERA DORSALIS*

To ensure the avocados are free from *Bactrocera dorsalis*, the avocados need to be subjected to cold treatment at the temperature of 2 °C or below for 19 consecutive days

using disinfestation facilities (cold treatment ships or cold treatment containers). Specifications of the facilities and procedures for the cold treatment are as follows.

6.1. DISINFESTATION FACILITIES

6.1.1. Cold Treatment Ship

The cold treatment ship should meet the following requirements.

- Its cooling compartment maintains the temperature of the fruit flesh (mesocarp) adjacent to the seed of fresh fruit (hereinafter referred to as “pulp temperature”) at the designated temperature of 2°C or below even during defrost cycles.
- The compartment is provided with an automatic temperature recording device which enables the checking of the pulp temperature recordings at any time from outside of the compartment.
- The device mentioned above has four or more probes to measure the pulp temperature. (See Appendix 1 for the locations of temperature sensors) If the ship is composed of two or more compartments, the number of probes required for each component is three or more.
- The device mentioned above should be programmed to record in a unit of 0.1 °C at least every 4 hours and to keep error within the range of ± 0.1 °C for a month or more after calibration.
- It is designated by DALRRD as a ship suitably constructed and equipped to carry out cold treatment disinfestation of fruit.
- A list of the designated cold treatment ships (Annex 4) is submitted to MAFF every year, before on-site verification by MAFF officer or the commencement of export. The list should be attached with drawings and specification of the ships.

6.1.2. Cold Treatment Container

The cold treatment container should meet the following requirements.

- It is a sealed type container.
- It is free from cracks and damage and does not provide any possibility of escape of quarantine pests.
- It maintains the pulp temperature at the designated temperature of 2 °C or below.
- It is equipped with an automatic temperature recorder that can monitor the pulp temperature (3 positions including the center of consignment in the container) from outside occasionally (See Appendix 2 for the locations of temperature sensors).

- The recorder mentioned above enables the checking of the temperature in a unit of 0.1 °C every (four) hours and should be capable of maintaining the temperature accuracy of $\pm 0.1^{\circ}\text{C}$ for one month or more after calibration.
- It is designated by DALRRD as a facility suitably constructed and equipped to carry out cold treatment disinfestation of fruit.
- A list of the designated cold treatment containers (Annex 5) is submitted to MAFF every year, before the on-site verification by MAFF officer or the commencement of export.

6.2. COLD TREATMENT

6.2.1. Commencement

Check points at the start of cold treatment are as follows.

- The temperature recording devices are calibrated by ice point method just before the treatment. Any sensor which shows an error more than plus or minus 0.2 °C from 0 °C or fluctuation of more than 0.1 °C in consecutive readings is replaced.
- The pulp temperature of all measured fruits has reached 2.0 °C.
- The calibration record is attached to the phytosanitary certificate for each consignment.
- Each compartment of the cold treatment ship or each cold treatment container is sealed by PPECB officer and the sealing is confirmed by DALRRD with photos. In addition, the seal mark-number is written on the phytosanitary certificate.

6.2.2. Completion

Check points at the completion of cold treatment are as follows. It should be confirmed jointly by DALRRD and MAFF officers in principle.

- The ship or the container has been recorded on the list submitted to MAFF (Annex 4 and Annex 5).
- The seal on the compartment or the container concerned is not broken.
- The pulp temperature is 2 °C or below for at least 19 consecutive days after it has reached 2.0 °C. If it has exceeded 2.0°C, the treatment is nullified and restarted from day one.

7. EXPORT INSPECTION

7.1. IMPLEMENTATION

- 7.1.1. Export inspection should be conducted at a place where measures to prevent

the entry of fruit flies are taken, and just before the loading of the packed avocados to the cold treatment ships or cold treatment containers. Whether the ships and containers satisfy the requirements of this work plan should be verified by DALRRD and PPECB officer before the loading.

7.1.2. The amount of the avocados loaded should be described in the phytosanitary certificate.

7.1.3. The pallets used in the loading should comply with ISPM 15 and the current national regulations.

7.1.4. DALRRD officer should select approximately 2% or more of the number of boxes in the consignment. All fruits in the selected boxes should be inspected visually by DALRRD and the following items should be confirmed:

- there is no fruit other than 'Hass' variety
- no fruit is suspected to be ripe (hardness should be checked by grasping the fruit as necessary)
- no fruit fly exists
- there is no sign of a fruit fly egg

DALRRD officer should also cut open the fruits as necessary to verify no fruit fly exists in the fruits.

7.1.5. When the inspection is completed, DALRRD officer should label the boxes, bundled boxes or containers containing the boxes to state the completion. DALRRD officer can authorize exporters to label as well under the supervision of DALRRD officer. The label should have the text of completion of plant quarantine for export: "S.A.P.Q", be made in a recognizable size, and be placed where it can be easily seen.

7.1.6. DALRRD officer should fill in ANNEX 8 for each consignment and keep it together with other relevant documents such as ANNEX 6, ANNEX 7 and the records related to cold treatment until at least the end of the next export season.

7.2. MEASURES TO BE TAKEN IN CASES WHERE FRUIT FLIES ARE DETECTED

7.2.1. In cases where a live or dead larva or an egg of fruit flies is detected, DALRRD should report to MAFF that they detected fruit flies, suspend the export inspection and the issue of phytosanitary certificate related to all the avocados, and conduct identification of the species of the detected fruit flies.

- 7.2.2. In cases where the detected fruit fly is *Ceratitis capitata* (except dead eggs), DALRRD should report the case to MAFF, examine the reasons why it was detected, and consult with MAFF for the measures to be taken. DALRRD should suspend export inspections and the issue of phytosanitary certificates related to all the avocados until MAFF reaches an agreement with DALRRD about the measures to be taken.
- 7.2.3. In cases where the detected fruit flies are neither *Ceratitis capitata* nor *Bactrocera dorsalis*, DALRRD should report the case to MAFF, and resume export inspections and the issue of phytosanitary certificates. In cases where the detected fruit flies are live *Bactrocera dorsalis*, DALRRD should not approve the export of the consignment in question to Japan.

7.3. MEASURES TO BE TAKEN IN THE OTHER CASES

- 7.3.1. In cases where any quarantine pests regulated by MAFF other than fruit flies are detected, a viability assay should be conducted in an appropriate way. If the quarantine pest is alive, DALRRD should not approve the export of the consignment in question to Japan.
- 7.3.2. In cases where avocados other than Hass variety or fruits suspected to be ripe are found during the export inspection, DALRRD should report the case to MAFF, examine the reasons why the fruits in question were detected, and discuss the measures to be taken with MAFF. DALRRD should suspend the export to Japan from the responsible registered packing house and place of production until MAFF reach an agreement regarding the measures to be taken.

7.4. ISSUANCE OF PHYTOSANITARY CERTIFICATE

- 7.4.1. DALRRD should issue a phytosanitary certificate with the following additional declaration when it has confirmed that relevant risk management measures have properly been implemented and that the consignment was inspected and found free from *Ceratitis capitata* and the other quarantine pests regulated by MAFF.

"DALRRD has verified that the 'Hass' avocados contained in this consignment are produced in a registered place of production (its registration code) and sorted and packed at a registered packing house (its registration code). As the result of export inspection and confirmation of

proper commencement and completion of cold treatment through verification of temperature records sent from the vessel, DALRRD has also verified that they are free from quarantine pests of Japan, especially from *Ceratitis capitata* and *Bactrocera dorsalis*."

- 7.4.2. The phytosanitary certificate should also include the following information.
- Ship/Container number
 - Seal number
 - Date and time of the cold treatment commencement and completion

8. IMPORT INSPECTION

MAFF should inspect all consignments at import ports based on the Plant Protection Act and other relevant regulations.

8.1. MEASURES TO BE TAKEN IN CASES WHERE FRUIT FLIES ARE DETECTED

- 8.1.1. In cases where a live or dead larva or an egg of fruit flies is detected, MAFF should report to DALRRD the case, suspend import inspection, and identify the detected fruit flies. DALRRD should immediately suspend export inspections and the issue of phytosanitary certificates related to all the avocados to be exported to Japan.
- 8.1.2. In cases where the detected fruit flies are *Ceratitis capitata* (except dead eggs) or live *Bactrocera dorsalis*, MAFF should report to DALRRD the case. DALRRD should examine the reasons why the fruit flies were detected and discuss the measures to be taken with MAFF. DALRRD should suspend export inspections and the issue of phytosanitary certificates related to all the avocados to be exported to Japan until MAFF reaches an agreement regarding the measures to be taken.
- 8.1.3. In cases where the detected fruit flies are not *Ceratitis capitata* or live *Bactrocera dorsalis*, MAFF should report to DALRRD the case and resume import inspections.

8.2. MEASURES TO BE TAKEN IN CASES WHERE NON-HASS VARIETY OR RIPE FRUIT IS IDENTIFIED

In cases where there is contamination by any fruits other than Hass variety or any fruits suspected to be ripe are detected, MAFF should report the case to DALRRD and request DALRRD to examine the reasons and propose the

measures to be taken, after suspending the import inspection related to all the consignments. DALRRD, in the meantime, should suspend export inspections and the issuance of phytosanitary certificates related to the responsible registered packing house and place of production for 'Hass' avocado exports to Japan. Suspension should be continued until MAFF reaches an agreement regarding the measures to be taken.

8.3. MEASURES TO BE TAKEN IN CASES OF A NON-COMPLIANT CONSIGNMENT

8.3.1. MAFF should order the person who owns or handles the consignment to dispose of or return the consignment, if:

- the disinfection prescribed in this work plan is not properly implemented.
- the phytosanitary certificate is not attached.
- the consignment is not sealed.
- there is no label that states its destination or the completion of export inspection.
- live or dead *Ceratitidis capitata* (except dead eggs) or live *Bactrocera dorsalis* is detected.
- fruit other than Hass variety or any fruit suspected to be ripe is detected.

8.3.2. In cases where any quarantine pest regulated by MAFF other than *Ceratitidis capitata* or *Bactrocera dorsalis* is detected in a consignment, the consignment should be disinfested, disposed of, or returned based on the Plant Protection Act and other relevant regulations.

9. ON-SITE VERIFICATION

9.1. DISPATCH OF MAFF OFFICER

9.1.1. DALRRD should request MAFF, in writing at least two months before the start of the export season, to dispatch its officer. DALRRD should arrange the tentative schedule of the dispatch, and then decide in consultation with MAFF the term of the dispatch. In principle, MAFF officer should be dispatched when the first fruits to be exported are harvested.

9.1.2. South African side should bear the cost of the dispatch. During the officer's stay, DALRRD should ensure that it takes responsibility for preparing a proper working environment, including the officer's safety and the means

of transportation and communication, and that it cooperates with MAFF officer for the smooth implementation of the verification. In this respect, business operators of the relevant farms/facilities should follow the instructions of DALRRD officers.

9.2. METHODS

- 9.2.1. The verification is conducted by checking relevant documents kept by DALRRD, and by interviewing/ questioning the DALRRD officers who verified sorting and packing operations, conducted export inspection, examined registered places of production, and carried out the inspection of disinfestation facilities. DALRRD/PPECB officers who carry out calibration of the temperature recorders and initiation of cold treatment, and the staff of the registered places of production and packing houses are also to be interviewed/ questioned.
- 9.2.2. MAFF officer verifies adherence to the requirements of this workplan relating to cultivation management, harvest, and transportation at registered places of production, packing at registered packhouses, and inspections conducted by DALRRD officers.
- 9.2.3. In cases where there are registered packing houses which have been requested by MAFF to improve their operation or equipment in advance, MAFF officer will visit such packing houses.
- 9.2.4. MAFF officer investigates the cold treatment ships and containers to confirm that requirements have been satisfied. The investigation should be conducted with a DALRRD officer at least once a year in principle to confirm that the inspection by DALRRD officers is appropriately conducted. The investigation should be carried out after the confirmation that the ships and containers were recorded on the list submitted to MAFF in advance, and prior to loading the ships and containers with the avocados.
- 9.2.5. After MAFF officer's arrival, he/she and DALRRD officers should have a meeting to discuss the details of the schedule and, as required, arrange the schedule with business operators, exporters and other participants at the registered places of production and packing houses.
- 9.2.6. When the verification is completed, MAFF officer should explain the result to DALRRD before his/her departure.
- 9.2.7. In cases where MAFF determines that relevant operations or procedures need to be improved, MAFF should report to DALRRD and discuss the

measures to be taken.

9.3. MEASURES TO BE TAKEN IF ANY SERIOUS PROBLEMS ARE IDENTIFIED

If MAFF officer identifies any serious problems, he/she should immediately report to DALRRD and MAFF. In such cases, DALRRD should immediately suspend the export to Japan, and discuss the measures to be taken with the MAFF through the MAFF officer.

10. ADJUSTMENT OF THE OPERATIONS

- 10.1. If DALRRD officers identify any problems in the operations of the relevant farms/facilities, they should order the operation concerned to be improved, record the issue, and report to MAFF.
- 10.2. If DALRRD officers identify any serious problems related to the export, they should immediately suspend the export to Japan and report to MAFF to discuss the measures to be taken.

11. NON-COMPLIANCE WITH THE WORK PLAN

- 11.1 The registration of any places of production, packing houses and disinfection facilities that do not comply with this work plan should be canceled. The export by any exporter that does not comply with this work plan should be suspended immediately.
- 11.2 A place of production, packing house or disinfection facility that has lost its qualification or an exporter whose qualification is suspended can recover their qualification if they are examined by DALRRD and it is confirmed that the requested corrective measures have been taken.

12. REVIEW OF THE WORK PLAN

DALRRD or MAFF may propose an amendment to this work plan to the other party by an official letter if the amendment is considered necessary.

ANNEX 1 CHECK SHEET FOR REGISTRATION OF PACKING HOUSE

ANNEX 2 POINTS TO BE REPORTED TO MAFF CONCERNING THE REGISTRATION OF PLACE OF PRODUCTION

**ANNEX 3 POINTS TO BE REPORTED TO MAFF CONCERNING
REGISTRATION OF PACKING HOUSE**

**ANNEX 4 POINTS TO BE REPORTED TO MAFF CONCERNING
DESIGNATION OF COLD TREATMENT SHIPS**

**ANNEX 5 POINTS TO BE REPORTED TO MAFF CONCERNING
DESIGNATION OF COLD TREATMENT CONTAINERS**

**ANNEX 6 CHECK SHEET FOR EXAMINATION OF A REGISTERED PLACE
OF PRODUCTION**

**ANNEX 7 CHECK SHEET FOR SORTING AND PACKING AT THE
REGISTERED PACKING HOUSES**

ANNEX 8 CHECK SHEET FOR EXPORT INSPECTION

**APPENDIX 1 The locations of fruit core temperature sensors in cold treatment
ship**

**APPENDIX 2 The locations of fruit core temperature sensors in cold treatment
container**