【Attachment】 THE DRAFT RISK MANAGEMENT MEASURES FOR FRESH ORANGE FRUITS FROM ITALY

1. Items and production areas

Fresh orange fruits (*Citrus sinensis*) that are commercially produced in areas in Italy designated by the National Plant Protection organization (NPPO) of Italy as export areas to Korea and where thorough pest control is conducted.

2. Means of conveyance

Ship-cargo or air-cargo (except for hand-carry or express cargo)

3. Registration of export orchards and packinghouses (including cold treatment facilities)

3.1. Orchards producing fresh orange fruits for export to Korea and packinghouses (including cold treatment facilities) sorting and packing the fresh orange fruits for export to Korea shall be registered to the NPPO of Italy. The back tracking of export cargo should be secured.

3.2. The NPPO of Italy shall inform Animal and Plant Quarantine Agency (hereinafter referred to as “APQA”) of the list of registered orchards (including production unit) and packinghouses (including cold treatment facilities) before the commencement of fresh orange fruits exportation each year.

4. Maintaining low pest prevalence of Korea’s quarantine pests in export orchards

4.1. The NPPO of Italy shall ensure that the low pest prevalence or freedom of pest subject to special risk management measures (*Septoria citri*, *Phoma tracheiphila*, *Phytophthora hibernalis*, *Ceratitis capitata* and C*ryptoblabes gnidiella*) is maintained in export

orchards by supervising the monitoring activities conducted by officially authorized technicians from June to the harvest completion every year and the implementation of appropriated control measures upon pest occurrence if any. Detailed process of monitoring and fruit inspection for maintaining low pest prevalence shall follow "Detailed guidelines for maintaining low pest prevalence of concerned pest from Italy" in Annex 2.

4.2. The NPPO of Italy shall supervise the monitoring activities conducted by officially authorized technicians, at least once a month on concerned pest of Korea described in Annex 1, except 5 pests mentioned in 4.1., from June to harvest completion every year.

4.3. The NPPO of Italy shall keep all of the records of monitoring and provide them to APQA at request of it.

5. Management of Packinghouses and storage facilities

5.1. The NPPO of Italy shall check sanitary conditions of registered packinghouses before commencement of export every year, and oversee and supervise to ensure the following measures are in place

5.1.1. Maintaining sanitary and hygiene conditions through regular disinfecting of packinghouses and storage facilities

5.1.2. Taking appropriate measures (such as automatic doors, rubber curtains or air curtains at the entrance of packinghouses; installation of insect-proof facilities (such as insect-proof net with a diameter 1.6mm or less) in all openings such as windows) to prevent recontamination or reinfection of pests in packinghouses and storage facilities (including when loading consignments into containers);

5.1.3. Ensuring that fresh orange fruits for export to Korea are not sorted, mixed or loaded together with fresh orange fruits for domestic markets or for export to other markets, or any other fruits;

5.1.4. Ensuring that contaminants (such as leaves, twigs or soils) are removed from the export consignments;

6. Packing methods, sealing and labeling

6.1. The NPPO of Italy shall ensure that packing for orange fruits for export to Korea will be done in a way to prevent pest re-infection during the storage or conveyance. In principle, packaging shall be hermetically sealed. If the packaging has ventilation opening, the packaging shall be covered with insect-proof net (with a diameter 1.6mm or less), or multi-packaging pallet shall be wrapped with film or covered with insect- proof net (with a diameter 1.6mm or less).

6.2. On the outside of packing cartons or pallets, the registration numbers or names of export orchards and packinghouses, and “For Korea” shall be marked.

6.3. Consignments that passed export inspection shall be sealed using methods approved by the NPPO of Italy (i.e., sticky tape, sticker or label, etc.) by each packing carton or pallet, to distinguish them from other consignments that did not undergo inspection.

6.4. In case of ship cargo, once the containers are loaded with the commodity, containers shall be sealed with the presence of an Italian plant quarantine officer.

7. Cold treatment facilities and methods

Fresh orange fruits for export to Korea shall undergo cold treatment before transit or in-transit under the joint supervision of plant quarantine inspectors from Korea and Italy (hereinafter referred to as “inspectors of both countries”) in accordance with the conditions in the below. The detailed process shall comply with "the detailed guidelines on cold treatment for fresh orange fruits from Italy" in Annex 3.

Temperature	Minimum exposure period
1.1℃ or lower	Continuous 14 days
2.0℃ or lower	Continuous 18 days
3.0℃ or lower	Continuous 20 days

8. Export inspection and certification for fresh orange fruits applied with or to be applied with cold treatment

8.1. Export inspection and certification of fresh orange fruits cold treated before transit

8.1.1. After cold treatment has been completed, inspectors of both countries shall check the result of cold treatment and inspect collected sample. The sample shall be randomly collected and shall be 2% of the total consignments or at least 600 fruits in each cold treatment facility.

8.1.2. In case of consignments consisting of fresh orange fruits from more than two export orchards, samples shall be collected evenly from each export orchard for inspection.

8.1.3. The inspection of cold treatment and disposal unit (lot) shall be carried out on all volume that has been treated at once in one cold treatment facility. If a live fruit fly is found during the inspection, the whole volume treated together with the volume in question in the same cold treatment facility concerned shall be rejected and the export of the fresh orange fruits from Italy to Korea shall be provisionally suspended until the NPPO of Italy identifies the reasons and takes the remedial measures.

8.1.4. Visual target inspection shall be conducted against *Septoria citri*, *Phoma tracheiphila*, *Phytophthora hibernalis* and *Cryptoblabes gnidiella*. In case of those pests are found, the export from the corresponding orchard shall be suspended for the export season of the year.

8.1.5. If Korea's other concerned pest (except for abovementioned 6 pests) is found, the consignment shall be rejected by each corresponding export orchard (if they are identifiable), or the consignment can be re-inspected after destroying the pest found.

8.1.6. Italian plant quarantine inspectors shall issue phytosanitary certificates with description as below, for the consignments which meet requirements agreed by both countries.

8.1.6.1. The phrase “This consignment is not infected by *Septoria citri*, *Phoma tracheiphila*, *Phytophthora hibernalis* and *Cryptoblabes gnidiella*” shall be stated in the additional declaration section.

8.1.6.2. The temperature and duration of cold treatment shall be stated in the treatment section of a phytosanitary certificate, or “The consignment was continuously treated at ___℃ or below for duration of ___ days.” (Cold treatment certificate shall be separately issued and attached on a phytosanitary certificate.) shall be stated in the additional declaration section.

8.1.7. In case of ship cargo, the Italian plant quarantine inspector shall seal the container after loading the consignment into a container and provide the serial number of container and seal on a phytosanitary certificate.

8.2. Export inspection and certification of fresh orange fruits to be cold treated in-transit

8.2.1. Inspectors of both countries inspect collected sample. The sample shall be randomly collected and shall constitute 2% of the total consignments or at least 600 fruits in each consignment.

8.2.2. In case of consignments being consisted of fresh orange fruits from more than two export orchards, samples shall be collected evenly from each export orchard for inspection.

8.2.3. Visual target inspection against shall be conducted against *Septoria citri*, *Phoma tracheiphila*, *Phytophthora hibernalis* and *Cryptoblabes gnidiella*. In case that any of those pests are found, the export from corresponding orchard shall be suspended for the export season of the year.

8.2.4. If Korea's other quarantine pest (other than *Ceratitis captiata*, and 4 abovementioned pests) is found, the consignment shall be rejected by each corresponding export orchard (if they are identifiable), or the consignment can be re-inspected after destroying the pest found.

8.2.5. Italian plant quarantine inspectors shall issue phytosanitary certificates with description as below, for the consignments which meet requirements agreed by both countries.

8.2.5.1. The phrase "This consignment is not infected by *Septoria citri*, *Phoma tracheiphila*, *Phytophthora hibernalis* and *Cryptoblabes gnidiella*" shall be stated in the additional declaration section.

8.2.5.2. The temperature and expected duration of cold treatment shall be stated in the treatment section of a phytosanitary certificate, "The consignment will be continuously treated at ___℃ or below for duration of ___ days.". (Calibration certificate for in-transit cold treatment (hereinafter calibration certificate) shall be separately issued and attached on the phytosanitary certificate.) shall be stated in the additional declaration section.

8.2.6. In case of refrigerated container, the Italian plant quarantine inspector shall seal the container after loading the consignment into a container, and provide the serial number of container and seal on a phytosanitary certificate.

9. Import inspection

9.1. Upon arrival of consignments at the port of arrival, plant quarantine inspectors of APQA shall check the following matters and in case that any problems are identified, all or parts of the consignment shall be destroyed or returned.

9.1.1. Phytosanitary certificate shall be accompanied and pre-transit cold treatment certificate (or calibration certificate for in-transit cold treatment) shall be

attached. And appropriate information shall be in the additional declaration of phytosanitary certificate;

9.1.2. The name (or registration number) of export orchard and packing houses, and the labeling of "For Korea" shall be marked on the outside of each export packing carton or pallet;

9.1.3. Each packing carton or pallet, and container shall be sealed appropriately;

9.1.4. The consignment should have been treated properly according to the cold treatment guideline;

9.2. The plant quarantine inspectors of APQA shall conduct import inspection in accordance with provisions of Korea's Plant Protection Acts and take the following measures:

9.2.1. If a live pest of *Ceratitis capitata* is found, the consignments shall be destroyed or returned, and export of fresh orange fruits from Italy to Korea shall be provisionally suspended until the NPPO of Italy identifies the reasons and takes the remedial measures.

9.2.2. If live pests of *Septoria citri*, *Phoma tracheiphila*, *Phytophthora hibernalis* and *Cryptoblabes gnidiella* are found during import inspection, the consignment shall be destroyed or returned. And the export from corresponding orchard shall be suspended for the export season of the year.

9.2.3. If other live quarantine pests of Annex 1 (except for aforementioned pests) are detected during import inspection, the consignment shall be treated according to Korean Plant Protection Act.

9.3. Discussion on import quarantine result between the two countries

9.3.1. If any live pests of *Septoria citri*, *Phoma tracheiphila*, *Phytophthora hibernalis* and *Cryptoblabes gnidiella* is detected repeatedly, the import of fresh orange fruits from Italy will be suspended until underlying cause for the detection is identified and corrective measures are conducted, and phytosanitary requirements may be reviewed.

9.3.2. In case that a new pest that has not been evaluated is found or that Korea's concerned pests in Annex 1 is detected continuously, judged that the risk of pest introduction increased, necessary quarantine measures shall be determined through pest risk analysis and bilateral consultations.

10. Pre-clearance

10.1. APQA shall dispatch a plant quarantine inspector to Italy and conduct pre-clearance inspection of fresh orange fruits for export to Korea.

10.2. The NPPO of Italy shall request APQA for pre-clearance in writing at least 30 days before commencement of exportation to Korea. The request letter shall include the following information:

10.2.1. The number of APQA inspectors and the period of their visit;

10.2.2. The estimated volume of export for that season;

10.2.3. The list and address of export orchards and packing houses (including cold treatment facilities), and export shipping ports;

10.2.4. The detailed information on pre-transit cold treatment (treatment period, estimated volume for treatment, name and address of facilities, etc.)

10.3. APQA, upon receiving request for pre-clearance inspection, may determine the number of APQA's plant quarantine inspectors to visit Italy and the visiting period in consideration of the inspection volume, period and condition of inspection personnel in Korea.

10.4. Inspectors of both countries shall jointly conduct the export inspection and witness to the cold treatment process.

10.5. APQA inspector can check overall export inspection procedures, sanitary conditions of export orchards and packing houses, and monitoring during pre-clearance.

10.6. The NPPO of Italy shall provide utmost convenience to a QIA plant quarantine inspector visiting Italy to conduct pre-clearance inspection or on-site survey, in order to ensure that inspection can be carried out in success.

10.7. All costs (including transportation for pre-clearance and Korean-Italian interpreter) pertaining to the pre-clearance inspection by APQA inspector shall be paid by Italian side in accordance with 'Korea's Standards for Overseas Travel Expenses of Public Officers'.

10.8. Pre-clearance inspection shall be carried out for the first two years from the first import year. After then, based on the assessment of the result of pre-clearance inspection, whether to continue pre-clearance inspection will be determined.

11. Others

11. 1. If Italy's phytosanitary condition is changed, the APQA can review the import requirement of fresh orange fruits from Italy.

11. 2. The NPPO of Italy should inform the APQA upon the confirmation of detection, spread, establishment or elimination of foreign pests (such as Tephritidae) that have the potential to attack orange plants or fruits, within Italy, including export orchards.

[Annex 1]

KOREA'S CONCERNED PESTS ASSOCIATED WITH FRESH ORANGE FRUITS FROM ITALY

1. Pathogens (3 species)

Septoria citri *
Phoma tracheiphila *
Phytophthora hibernalis *

2. Insect pests (14 species)

Ceratitis capitata *
Cryptoblabes gnidiella *
Aleurothrixus floccosus
Aonidiella aurantii
Brevipalpus phoenicis
Ceroplastes floridensis
Ceroplastes rusci
Ectomyelois ceratoniae
Empoasca decedens
Lepidosaphes beckii
Pantomorus cervinus
Parlatoria ziziphin
Pseudococcus longispinus
Pseudococcus similans (calceolariae)

*** Korea's prohibited pest that requires special risk management**
- *Ceratitis capitata* needs cold treatment

※ If pests that were not mentioned in the list are found during inspection, they shall be dealt with in accordance with regulations under Korea's Plant Protection Act.

[Annex 2]

DETAILED GUIDELINES FOR MAINTAINING LOW PEST PREVALENCE OF CONCERNED PEST OF FRESH ORANGE FRUITS FROM ITALY

1. *Septoria citri*, *Phoma tracheiphila*, *Phytophthora hibernalis*

① Monitoring on growing areas

- Period : at an interval of 2 weeks between June and harvest completion
- Method : visual inspection on symptoms of 20 leaves and 20 fruits respectively collected from 20 trees per 1ha. If any suspicious symptom is found, laboratory test shall be conducted.
- Measures : In case that high humidity level lasts, copper fungicide treatment shall be conducted. In case that a pest is detected once, copper fungicide treatment shall be conducted. And if a pest is detected twice, the corresponding orchards shall be excluded from the export for the export season of the year.

② Survey on *P. hibernalis* in the soil

- Period : One time between June and harvest completion
- Method : survey on soil collected from peripheries of three to four trees per 1ha within 10% of growing area.
- Measures : If *P. hibernalis* is detected in the soil, fungicide treatment should be applied to soil (and canopy if necessary) as a control measure in case that the pathogen is detected in soil

2. *Ceratitis capitata*

① Fresh fruit survey

- Period : at interval of 2 weeks between June and harvest completion
- Method : selecting 20 trees per 1ha and inspecting 20 fruits out of the trees
- Measure : If 3 infected fruits are detected per 1ha, the survey interval should be adjusted to 1 week.

② Monitoring trap survey

- Period: at interval of two weeks between June and harvest completion
- Method : Replacement of trimedlure(attractant) every 4 weeks, more than one trap required per a homogeneous areas (at least one trap (up to 4 traps) required per 1ha) for trap survey
- Measure : In case that fruit fly is detected, the survey interval should be adjusted to 1 week. In case

that more than 20 pests per trap are detected, chemical control shall be taken.

3. *Cryptoblabes gnidiella*

① Fresh fruit survey

- Period : at interval of 2 weeks between June and harvest completion
- Method : selecting 20 trees per 1ha and inspecting 20 fruits out of the trees
- Measure : If more than 5% of infected fruits are detected per 1ha, the export from the corresponding orchard should be suspended for the export season of the year.

② Monitoring trap survey

- Period: at interval of 2 weeks between June and harvest completion
- Method : Replacement of mixture of aldehydes (attractant) every 3 weeks, more than one trap required per an even size of growing areas (at least one trap (up to 4 traps) required per 1ha) for trap survey
- Measure : In case that 20 *C. gnidiella* are detected for one week per trap, the export from the corresponding orchard should be suspended for the export season of the year.

※ If homogenous area is less than 1ha, then the area is considered as 1ha. If the area is between 1 to 2 ha, then the area is considered as 2ha.

[Annex 3]

DETAILED GUIDELINES FOR COLD TREATMENT OF FRESH ORANGE FRUITS FROM ITALY

I. Cold Treatment Conditions

Fruit Core Temperature	Minimum Treatment Duration
1.1℃ or less	14 days
2℃ or less	18 days
3℃ or less	20 days

* Pest subject to cold treatment : *Ceratitis capitata*

Ⅱ. Facility Requirements and Inspection Criteria

1. Cold Treatment Facilities

○ By type of facility, there are cold treatment warehouse or self-refrigerated containers for pre-transit treatment, and refrigerated container of ship for in-transit treatment.

○ The facility is required to be equipped with refrigeration equipment that can keep the temperature required for cold treatment consistently for a certain period.

2. Temperature Sensor and Recording Equipment

○ In case of cold treatment in pre-transit cold treatment warehouse, in accordance with the temperature sensor installation standard in [Table 1], pulp temperature sensor and air temperature sensor shall be installed.

○ In case that self-refrigerated container is used, at least 3 pulp temperature sensors, and at least 2 air temperature sensors are required.

○ The recording equipment shall be an automatic temperature recorder with which can frequently check the temperature from outside. It shall be able to continuously record, save and print measurements of all temperature sensors when actually applying cold treatment, and to mark identification numbers of the recording equipment and cold treatment facility

○ The recording equipment shall be able to measure and record the temperature of each temperature at one-hour interval and it shall be made impossible to change the measured value arbitrarily.

[Table 1] Standard on temperature sensor installation according to volume of cold treatment facility

Volume (㎥)	Number of Temperature Sensor (EA)		Total (EA)
	Air Temperature	Pulp Temperature	
0-300	2	2	4
301-600	2	3	5
601-900	2	4	6
901-1,200	2	5	7
1,201-1,500	2	6	8
1,501-1,800	2	7	9
1,801-2,100	2	8	10
2,101-2,400	2	9	11
2,401-2,700	2	10	12
2,701-3,000	2	11	13
3,000 or more	2	12 or more	14 or more

3. Calibration of Temperature Sensor (including automatic temperature recorder)

○ All temperature sensor shall be calibrated with a reference thermometer before cold treatment by each cold treatment facility.

- The reference thermometer shall have a scale unit of 0.1℃, and shall be the one certified by a national testing institution.

○ After stirring clean ice water (80 to 85% of the container shall be filled with crushed ice), once the measurement value of the reference thermometer and temperature sensor are stabilized, the calibration shall be carried out based on the value measured three times consecutively at the interval of 1 to 5 minutes.

- The temperature sensor shall be prevented from touching on the bottom or the wall of the container filled with ice water.

○ The error of the measurement values of all the temperature sensors shall be within the range of ±0.3℃. The temperature sensors with the readings off the range shall be replaced.

○ The temperature sensor of a cold treatment facility shall be calibrated before the export season of a year starts, and the calibration certificate shall be kept.

- The calibration date in the certificate shall not exceed one year.

Ⅲ. Detail Procedures for Cold Treatment

1. Check on Loading and Pre-cooling Condition

○ The packed fresh fruits shall be immediately transported to a cold treatment facility under the supervision of plant quarantine inspectors and shall be loaded in a way to ensure consistent air flow.

○ All the fresh fruits before cold treatment shall go through pre-cooling in a pre-cooling facilities (including registered cold treatment facilities) so fruit core temperature can reach to temperature required for cold treatment or below.

○ Inspectors shall verify that the fresh fruit is pre-cooled by measuring the core temperature of a fruit randomly selected in pre-cooling facilities. If the fruit temperature exceeds temperature needed for cold treatment, then pre-cooling shall be continued.

2. Installation of Temperature Sensor

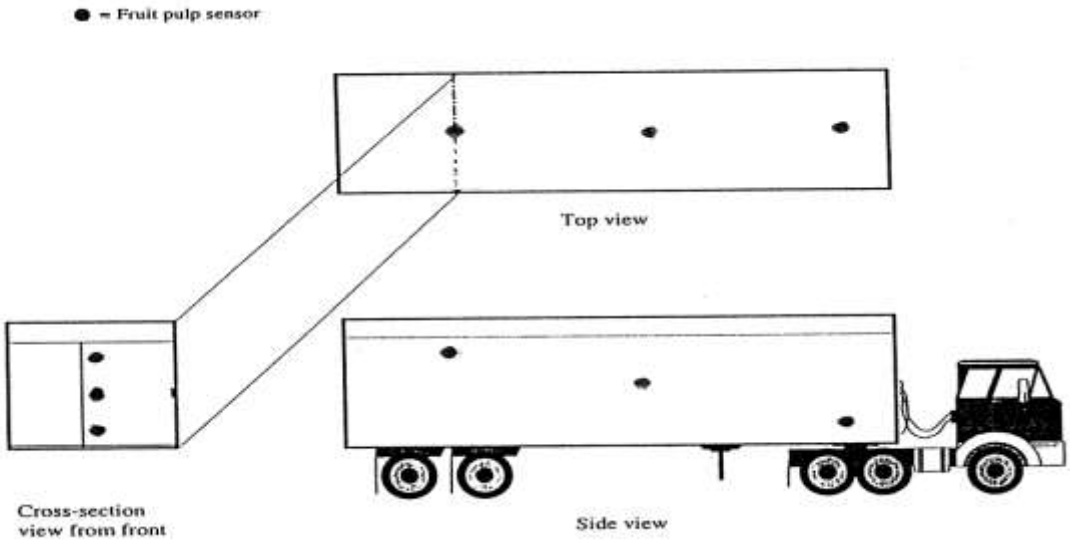
○ Temperature sensor shall be installed under the supervision of plant quarantine inspectors.

○ In case that cold treatment warehouse is used, the required number of temperature sensors shall be installed in accordance with the installation standard in [Table 1].

- Pulp temperature sensors shall be located evenly across the facility.
  - ・At least one sensor is required for the following locations respectively: the middle or top part of consignments loaded in the center of the facility, and the middle or top part of consignments loaded near the outlet of cooling fan.
  - ・At least one of temperature sensors for measuring pulp temperature shall be installed on the point where the highest temperature is measured in the highest temperature point test.
- Air temperature sensors are required on the inlet and outlet of cooling fan respectively.

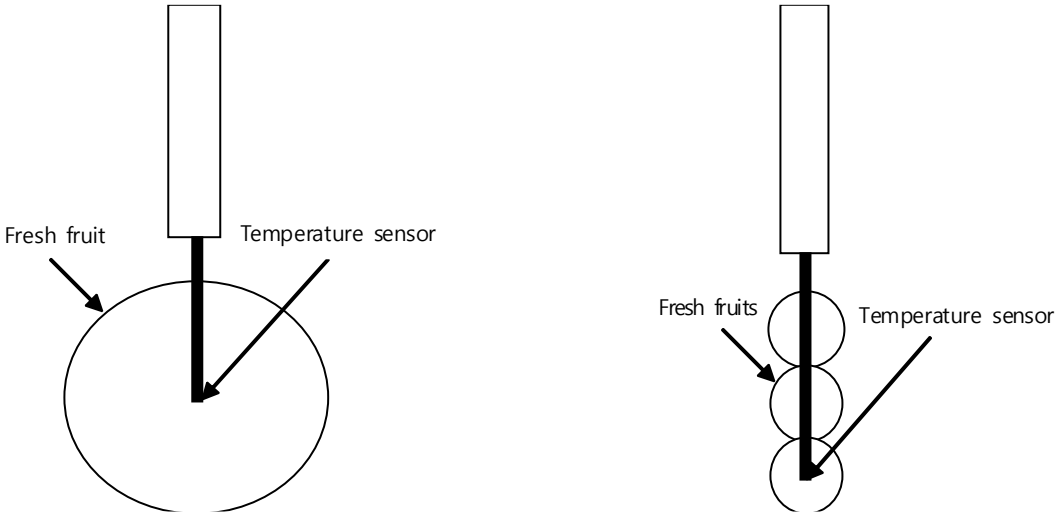
○ In case of using self-refrigerated container, each container shall have at least three points of pulp temperature sensors and at least two points of air temperature sensors installed.

- At least one pulp temperature sensor is required on the following points from the innermost point of the inside of a container: on the bottom layer of the first pallet, on the middle layer of the pallet at the center, and on the top layer of the last pallet respectively.
- Air temperature sensors are required in the inlet and outlet of cooling fan in the container respectively.



[Figure 1] Location of temperature sensors for measuring pulp temperature during the cold treatment in a container

○ Pulp temperature sensors shall be inserted in a way to be able to measure the temperature of the center of the fruit. In case that multiple fruits of which size varies are mixed together, the sensor shall be inserted in the bigger one.



[Figure 2] Example of temperature sensor inserted in the pulp

3. Cold Treatment

○ Fruits core temperature shall be kept at 1.1℃ or lower for the duration of 14 days or more, 2℃ or lower for the duration of 18 days or more or at 3℃ or lower for the duration of 20 days or more.

4. Prevention Measures against recontamination after cold treatment

○ The fruits that are treated with cold treatment shall be separately loaded, so that they are protected from being contacted with others that have not been treated with cold treatment.

○ For packing, only the cold treated fruits shall be packed, and the packed fruits shall be stored separately to prevent recontamination from pests.

○ The packed fruits shall be loaded and transported after the inside of containers and vehicles are confirmed free from pests.

Ⅳ. Disqualification Standard for Cold Treatment

○ Initiation date for cold treatment shall be calculated from the day when all fruits core temperature sensors reach lower point than a baseline temperature, and it shall be maintained for the duration requested per the corresponding baseline temperature.

○ If the appropriate temperature is not kept during the treatment period, the cold treatment shall restart again from the point when the temperature reaches the required point.

Ⅴ. Cold Treatment Certification and Confirmation

○ For pre-transit cold treatment, plant quarantine inspectors shall confirm the result of the cold treatment once it is completed, and additionally declare "This consignment has been treated at __ ℃ for the duration of __ days." in "Disinfection Treatment" section in a phytosanitary certificate. Then the number of the container where the consignment is loaded, and its sealing number shall be included in the additional declaration. Furthermore, cold treatment certification (Annex 4) shall be created separately and attached to the phytosanitary certificate.

- The items and form of the cold treatment certification is allowed to be modified according to the characteristics of a facility.

○ For in-transit cold treatment, plant quarantine inspectors shall additionally declare "This consignment has been treated at __ ℃ for the duration of __ days." in "Disinfection Treatment" section in a phytosanitary certificate. Then the number of the container and its sealing number shall be included in the additional declaration. Calibration certificate shall be created separately and attached to the phytosanitary certificate.

[Annex 4]

COLD TREATMENT CERTIFICATION

Issue No. : _____

▣ General Information of Treatment

Factory Name	:
Chamber No.	:
Date of Treatment	:
Commodity Name	:
Destination	:
No. of pallets	:
No. of crates	:
Total Volume(kg)	:

▣ Operating Information

Start Time	:
Holding Time Start	:
Holding Time End	:
Treatment Temperature and Duration	:
Remarks	:

Name of Confirmed by : _____

Date : _____ (Signature) : _____