



कृषि और प्रसंस्कृत खाद्य उत्पाद

निर्यात विकास प्राधिकरण

(वाणिज्य एवं उद्योग मंत्रालय, भारत सरकार)

**Agricultural and Processed Food Products  
Export Development Authority**

(Ministry of Commerce & Industry, Govt. of India)

**Circular**

**Market Access for Export of Pomegranates to Australia with Irradiation as Mitigation  
treatment**

FFV-2020-21-000145

Date: 11.03.2024

Australia has granted Market Access for export of Pomegranate from India in 2020. India has signed Irradiation Work plan and SOP for export of pomegranate fruits to Australia during India – Australia Bilateral Plant Technical Meeting held on 14th February 2024.

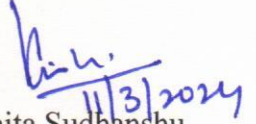
In this regard, the final Signed Irradiation Work plan and SOP for export of pomegranate fruits to from India to Australia is attached for reference and necessary compliance by the exporters of Pomegranates.

The protocol containing import requirements for pomegranates from India is also published Australia's Department of Agriculture, Fisheries and Forestry's Biosecurity Import Conditions (BICON) portal. The copy of the link is enclosed below for information of all:

<https://bicon.agriculture.gov.au>

<https://bicon.agriculture.gov.au/ImportConditions/Conditions?EvaluatableElementId=751779&Path=UNDEFINED&UserContext=External&EvaluationStateId=5bbce315-a2cd-49ef-ae0f-19ef9d14458e&CaseElementPk=2186249&EvaluationPhase=ImportDefinition&HasAlerts=False&HasChangeNotices=True&IsAEP=False>

Interested Exporters are requested to avail the opportunity and to also comply with the stipulated requirements for export of pomegranates to Australia.

  
11/3/2024  
Vinita Sudhanshu  
General Manager

Encl : Work Plan for export of Pomegranate

# IRRADIATION OPERATIONAL WORK PLAN

Joint document for trade in irradiated fresh produce exported  
from India to Australia



Government of India  
Ministry of Agriculture & Farmer's Welfare  
Department of Agriculture & Farmer's Welfare  
**Directorate of Plant Protection, Quarantine & Storage**  
N.H-IV Faridabad-121001, India

February, 2024

## OPERATIONAL WORK PLAN FOR THE EXPORT OF IRRADIATED ARTICLES TO AUSTRALIA

This Irradiation Operational Work Plan (OWP), hereafter referred to as the Work Plan, was developed by the National Plant Protection Organization (NPPO) of India and has been subsequently updated jointly by Australia. The Work Plan will be used as a guide for the registration, packing, treatment, certification, storage and exportation of articles to Australia. The Work Plan describes the program requirements for treatment of all articles approved for irradiation. Deviation from these guidelines is not authorized unless both NPPO of India and NPPO of Australia provide prior written approval.

This Work plan must be used in conjunction with other specific article operational work plans which have developed bilaterally between Australia and India

Each party retains the right to withdraw from this agreement upon notice to the cooperating party's National Plant Protection Organization (NPPO).

The Work Plan will be in force until a new plan is approved and signed by all parties.

The Work Plan does not authorize entry of irradiated article(s) that have not been authorized by regulation and not identified in the relevant specific article Appendix.

### ARTICLES INCLUDED IN THE PROGRAM

Articles to be included in this Work Plan will be identified in specific article appendices.

Pests of quarantine significance for each article included in the Program are listed in a separate appendix. The pests include both target and non- target quarantine pests as defined below.

- Target quarantine pest is a pest of quarantine significance which will be neutralized by the approved dose.
- Non-target quarantine pest is a pest of quarantine significance that is not known to be neutralized by the irradiation.

### ORGANIZATIONS PARTICIPATING IN THE PROGRAM

The Department of Agriculture, Fisheries and Forestry, is hereafter referred to as the department. The irradiation Treatment and Certification Program, from now on shall be

referred to as the Program. The department may audit the irradiation export operational system at any time to ensure compliance with Australia's import requirements.

The National Plant Protection Organization (NPPO) of India also referred to as the Department of Agriculture and Farmers Welfare, is a major partner in overseeing program Operation. The NPPO or its designee provides technical coordination with policy guidance from the department. The NPPO will serve as the focal point for cooperation on the Operational Work Plan (OWP) between India and Australia.

Cooperators Organization hereafter referred to as the-Cooperator: Under this Work Plan, the Cooperator is the officially recognized organization that will represent the exporters, packers, and treatment facilities and will sign the cooperative Agreement, the compliance Agreement and will abide by this Operational Work Plan and other applicable regulations, as and when notified, from time to time. The copy of the same shall be provided to NPPO.

Exporters, packers, treatment and facility proprietors: Exporters and proprietors of treatment facilities packing houses will be individually approved for participation in the Program by the NPPO, India and will comply with the requirements of the Work Plan

Growers: When required by the department, the producers and production areas will be approved for participation in the Program by the NPPO, The NPPO will ensure that producers are in compliance with the contents of the Work Plan and import policy requirements.

## RESPONSIBILITIES OF THE PARTICIPATING ORGANIZATIONS

### **The Department of Agriculture, Fisheries and Forestry**

The department may conduct formal site visits to audit the program, as required so as to review activities and verify compliance with the OWP. The department may conduct or request the NPPO to conduct additional audits as necessary to verify program integrity or address program issues if they occur.

To carry out consignment inspection and verification activities at the point of entry in Australia.

To provide recommendations and operational guidelines.

To verify the responsibilities of all the participants regarding technical commitments. However, if the department detects noncompliance at any time during the program, they may audit the

approved facilities through their technical experts. The cost of such expenses, however, will be negotiated between Australia and India on a case-by-case basis.

### **The Department of Agriculture and Farmers Welfare**

NPPO will conduct facility audit/approval, treatment supervision/monitoring, phytosanitary inspection and certification.

To verify that production areas which grow articles for export and, packinghouses and treatment facilities which handle such articles are registered with the NPPO, where required.

To ensure that the areas designated for the production of export articles will utilize pest management control measures to maintain low population levels of target pests.

To notify the department of outbreaks of target and non-target quarantine pests.

To provide pest identification services for plant pests detected on the articles as necessary.

To coordinate inspection of articles and monitoring of production areas.

To designate the necessary staff for sampling and inspection of all lots of fruit intended for export to Australia.

To sample and inspect each lot before the articles are approved for treatment at a rate to be determined based upon the type of article and the pests involved as identified in the addendum/appendix.

To verify lots as they arrive at the treatment facility. Each lot must include documentation with respect to quantity and production area. Finding of a target or non-target quarantine pest in a lot may be a cause for the rejection of that lot only if irradiation dosage is not sufficient to address the non-target pest, as assessed by the department. Refer to addendum/addenda for required action on interceptions in pre-treatment inspections. Suspect articles fruit will be cut and further examined for internal pests.

To verify that articles transported from the packinghouse to the treatment facility are properly safeguarded to prevent co-mingling and mistaken identity, and to ensure that packages containing articles for treatment are marked "Treated by Irradiation" or "Treated with Radiation" and are properly treated.

To inspect entire sample if a non-target quarantine pest is found, to determine if there are additional non-target quarantine pest within the sample.

To record results for each inspection and include the corresponding signature of the NPPO official showing the packinghouse registration number (PHC).

The inspection records must show the following data for each lot that has been sampled.

- a. Name of the authorized inspector or accredited individual performing the sampling.
- b. Place of origin of the article.
- c. Registration number assigned by the NPPO to the production area/producer (Production Unit Code-PUC) from which the article originated.
- d. The registration number for the packinghouse (PHC) will also be included.
- e. Quantity inspected (in boxes and weight)
- f. Phytosanitary Certificate number corresponding to the production area (PUC), when available.
- g. Name and identification code of the authorized officer or accredited individual signing the Phytosanitary Certificate.
- h. Genus, species, and variety of the article sampled.
- i. Inspection results:
  - Any pests or diseases detected.
  - In the case of non-target quarantine pest presence, the number of infested articles detected.
  - This information must be made known to the department upon request.

To reject any lots found to be infested with non-target quarantine pest and refuse treatment and certification, and to notify. All rejections will be annotated in the daily log.

After inspection of the commodity, the treatment will be undertaken under the supervision of NPPO.

The treatment records will be verified to ensure all fruits (units) received required irradiation dosage. In case of treatment failure, the consignment will be rejected and investigation will be

done by the NPPO. Until corrective measures are taken treatment facility will not be allowed to undertake any treatment.

To investigate multiple interceptions of non-target pests from a packinghouse and/or producer and implement means to reduce their presence. The actions taken should be provided to the department.

To verify that loaded pallets for exportation are strapped, wrapped, or compress-netted and that each box is properly marked as described in section 9.3.6 of this document.

To inspect transport vehicles (e. g trucks to ports) and containers prior to loading to ensure freedom from pests, soil, animal, plant debris and any other contaminants.

To inform the personnel and provide notice to other agencies that sealed containers transporting certified articles should not be opened at road stations or other inspection points to avoid a possible re-infestation by a pest.

To recommend approval of proposed/modified treatment facilities prior to their submission to the department.

To document the training of NPPO employees through BARC in the irradiation process and safety protocol. A list of the names of trained employees and the dates when training was provided shall be maintained and made available upon request.

To issue a phytosanitary certificate as per Addendum 1 for each consignment meeting Australia's import requirements after pre-export inspection and treatment.

**The Growers/Producers:**

Refer to specific article appendices for further information.

**The Packinghouse Operators**

Refer to specific article appendices for further information

**The Treatment Facility**

To abide by the Work Plan and its appendices.



To enter into formal Compliance Agreements with the NPPO ensuring that the requirements of the department regulations and this Work Plan will be followed.

To submit for approval of the facility layout, changes in structural design of the building, changes in source material, and changes in the management of the facility, to NPPO.

To only accept fruit from approved packinghouses in pest proof boxes and treat articles coming from approved production areas.

To obtain a written agreement with each participating packinghouse to ensure that the facility receives fruits from approved packinghouses in compliance with this Work Plan.

To ensure that articles not suitable for export or that have been rejected are removed daily.

To request the NPPO to issue a Phytosanitary Certificate and apply official seals upon the successful completion of irradiation processing.

To ensure that the lot-wise treatment (D.Min and D.Max) shall be endorsed on Phytosanitary Certificate for each shipment

To ensure that the following documents and records are kept at the treatment facility.

General records:

- Certificate of Approval
- Operational Work Plan
- Written agreements with participating packinghouses.
- Record of training and credentials of facility employees
- Standard Operating Procedure(s) documents(s)
- Ionizing energy source
- Dosimetry system calibration records
- Dose mapping records

**Records specific to each treatment:**

- Name of the product and quantity
- Exporter's lot (batch) identification (visible on each carton)



- TIN, PUC, and PHC
- Prescribed treatment
- Evidence of compliance with the prescribed treatment
- Dosimetry data (minimum and maximum)
- Date of irradiation
- Irradiation Processor's Certificate of Treatment

Records for each treated lot must be maintained for one year. Records will be made available for inspection by designated regulatory officials.

Containers/enclosures with irradiated shipments for Australia shall have seals applied by the NPPO.

## DEPARTMENT OF AGRICULTURE, FISHERIES AND FORESTRY REQUIREMENTS FOR ENTRY OF ARTICLES INTO AUSTRALIA

The department will issue an import permit with the phytosanitary conditions for entry into Australia (where required). NPPO India will undertake pre-shipment inspection as per requirement of standard inspection procedures as may be provided by the department. Importers must have and present to the department inspector at the port of entry a valid Australian import permit and a phytosanitary certificate from NPPO India (where required).

### SUMMARY OF OPERATIONAL PROCEDURES

#### **Personal Limitations**

If sufficient qualified personnel are not available, the NPPO, in cooperation with the Cooperator, will determine which facilities will be serviced.

#### **Assignment of Personnel**

An NPPO officer will monitor work sites which will include treatment facilities, packing houses and production centers in order to check the safeguarding of articles and assure that all the processes are carried out according to the OWP.

### **Interpreter for Personnel**

The department may request an English-speaking representative to support Program needs as necessary from the Cooperator.

## TREATMENT FACILITY CERTIFICATION REQUIREMENTS

### **Introduction**

Approved facilities must be able to demonstrate that their equipment and personnel are able to deliver the minimum dose safely, accurately, and consistently to all components of the commodity over the ranged conditions expected for commodities treated. In addition the department may consider characteristics of each facility in assessing the degree which unique physical and production process specification are necessary ensure safe guarding. All approved facilities must agree, as part of the certification process to immediately inform the NPPO of any problem, concern, irregularities in commodity treatments. NPPO will conduct seasonal qualify assurance of the treatment facility.

### **Certification Requirements**

To be authorized to apply approved phytosanitary irradiation treatments, a facility shall first obtain Certificate of Approval from NPPO as identified in Section 6.3.

A company may devise a facility design or procedure that complies with irradiation regulatory requirements but may not precisely match the options described in this guide. Such innovation may be acceptable if approved by NPPO. However, the certification of such facilities may require additional time. When the procedures do not follow those described in this guide, NPPO will have to independently verify that they comply with regulatory requirements before certifying the facility.

To receive a Certificate of Approval to treat commodities to mitigate target quarantine pests in commodities, the facility shall satisfactorily comply with the following five key elements described in this Section: Current License, Minimum. Dosage, Biological Safeguards, Documented Training and Documented Procedures.

## **Current License**

The facility must be currently licensed by all relevant appropriate National regulatory authorities.

## **Minimum Dosage**

The facility must be capable of administering at least the required minimum absorbed dose (MAD), as prescribed by NPPO for the particular pest to be treated and specified in the appendix. The maximum absorbed dose must not exceed 1 kGy as per the Australia New Zealand Food Standards Code (FSC) requirements. The FSC is administered by Food Standards Australia New Zealand (FSANZ) and a copy of the code can be located on the FSANZ website

## **Dose Mapping**

The irradiation facility shall perform sufficient validation studies (dose mapping) to fully characterize the distribution of dose in the irradiation container to determine the zones of minimum and maximum dose. Dose mapping activities shall be conducted with consideration of the density ranges of product categories to be processed. Product loading patterns and pathways used for irradiation processing shall also be addressed. The information from the dose mapping validation is used in the selection of dose monitoring locations for routine processing. Additional dose mapping is required when significant changes are made to the irradiator, to the load, article size, or packaging that could affect the distribution and quantity of dose. Dose mapping shall comply with ISO/A STM Standard 51204-2002(E) or current ISO/ASTM standards, Practice for the Application of Dosimetry in characterization of a Gamma Irradiation Facility for Food Processing or ISO/ASTM Standard 51431-2002(E) of current ISO/ASTM standards, Practice for Dosimetry in Electron and Bremsstrahlung Irradiation Facilities for Food Processing.

## **Turner or Cycle Validation**

Irradiation exposure times to assure delivery of the specified dose shall also be evaluated. In the case of radioisotope processing, this may involve validating timer setting upon which product container movements are based, or in the case of electron or x-ray processing, validating conveyor speeds.

## **Documented Training**

Document the training of key employees on the operation of an irradiation processing facility, applicable to irradiation treatment of agricultural products. All personnel with treatment-related responsibilities shall have proper credentials, training according to applicable international standards, and authority for application of irradiation treatment. Approved and appropriate records shall be made available for inspection by department officials, and/ or by officials of the NPPO, on request.

## **Documented Procedures**

The irradiation facility shall be required to have well documented SOP, as identified in Section *Safeguarding and Post-Treatment Requirements*. SOP must define the processing, handling, and safeguarding of regulated agricultural commodities. The NPPO official shall review the SOP during inspection, to ensure conformance to the Compliance Agreement, applicable treatment schedule(s), and other applicable regulations.

## **Request for Approval**

To obtain certification of the treatment facility, the plant or facility manager must first submit a written request to NPPO, including a statement from the Cooperator stating that complete Plan Approval Application for Irradiation Facilities is submitted. Applicants will request a Plan Approval Application for Irradiation Facilities from NPPO to meet this requirement.

It may take sixty calendar days for plan approval

## **Site Approval Visit**

The certifying official(s) from 'NPPO shall review all documents for completeness, and correspond with the applicant, as needed. When the Plan Approval Application for Irradiation Facilities is complete and has been approved, and official site approval visit will be scheduled. During this visit, the certifying official shall compare the floor plan schematic and product flow pattern with the actual installation, review the safeguards that are in place, review the treatment data formatting and submission system i.e documentation of record and data, and conduct an audit of treatment records (if any). The site approval visit may include a representative from the cooperator, if applicable, and may also include officials from other responsible regulatory agencies.

## **Certificate of Approval**

Upon approval of the facility, NPPO shall issue a Certificate of Approval, outlining the terms, conditions, and restrictions of the approval. This certificate shall remain valid unless revoked or withdrawn.

## **Re-certification**

Re-certification shall be required if one of the following situations arises:

- Change in management of facility, which in the opinion of the NPPO, substantially affects any aspect of the treatment process.
- Operational or structural changes to facility.
- Change or recharge in radiation-producing source.

Additionally, NPPO/the department reserve the right to require a recertification upon detection of a problem with the treatment process. Audits may be performed at the discretion of the NPPO and the department.

## **TREATMENT FACILITY GENERAL REQUIREMENTS (NON-TREATMENT):**

The following requirements must be met to ensure effective and safe treatment operations. Compliance with these prerequisites is mandatory before treatments may begin. All participants in the program must take all reasonably practical steps to uphold a healthy and safe work environment.

### **Control Room**

Each facility shall have a technician responsible for all treatment. The technician will work within the air-conditioned room that houses the computer and microprocessors that control and register each step of the irradiation process. The room shall be capable of being locked. Although the control room is the worksite of the plant's treatment specialist, NPPO and whenever required department inspectors do have free access to verify treatment data.

### **Safety and Health Requirements**

Facilities must have work health and safety processes in place to ensure safety of staff and visiting officers.

## IRRADIATION TREATMENT FOR COMMERCIAL SHIPMENTS

### **Approved Sources of irradiation:**

The sources for energy commonly used in irradiation come from gamma-emitting isotopes (radionuclides) of cobalt-60 or cesium 137; or from machine-generated sources that include x-rays (bremsstrahlung) operated at or below an energy level of 7.5 MeV, or electron beams operated at or below an energy level of 10 MeV). The source and equipment used for pest mitigation treatments must be capable of safety and effectively irradiating the commodities to the specifications that are required for the targeted pests. Audits will be undertaken by the NPPO officer to ensure the proper dose is delivered consistently over time and other operations comply with work plan standards.

### **Treatment verification - Verification will follow ISPM 18 guidelines:**

Dosimetry system Use ISO/ASTM Standard 51261-2002 (E) or clement standard Guide for Selection and Calibration of Dosimetry Systems for Radiation Processing (or an equivalent international standard) as a guide for selection and calibration of an appropriate routine dosimetry system that matches the dosimeter requirements for the specific application criteria. Other individual ISO/ASTM Standard 51204-2002 (E) or current standards. Provide detailed procedures for using specific dosimetry systems. (ASTM standards on dosimetry for radiation processing are published in the Annual Book of ASTM standards).

Dose mapping will be carried as per the ISPM 18. Extensive dose mapping shall be carried during the initial commissioning of irradiation plant; when the source is replenished or other changes that may effect dosimetry results (including, but not limited to, changes to packaging and/or density of packages etc); and whenever source is loaded using actual or simulated product under the supervision of regulatory body i.e Department of Atomic energy to ensure compliance to atomic energy Act rules 1996. The dose mapping will be strictly done as per the SOPs of the facility and records kept thereof.

Prior to use, the dosimetry system shall be calibrated in accordance with the user's documented procedure that specifies details of the calibration process and quality assurance requirements. This calibration shall be repeated when appropriate to ensure that the minimum dose is absorbed by the targeted pest(s). Calibration of dosimeters shall be traceable to a national standard.

### **Routine Dosimetry**

Routine dosimetry is part of a verification process for establishing that the irradiation process is in compliance. Dosimetry is only one component of a total quality assurance program for

adherence to good manufacturing practices. An appropriate dosimetry system shall be selected, and dosimetry procedures shall be followed for irradiator characterization, process qualification, and routine processing, to ensure that the products has been treated with the minimum absorbed dose as mentioned in addendum prescribed by NPPO/the department for mitigation of the particular target pest (s) presumed to infest/ infect/ contaminate a given commodity from a particular origin. The dosimetry system shall be periodically calibrated in accordance with ASTM Standard 51261-2002 (E), or current standard, and is traceable to national or international standards. Proper dosimetry measurement procedures shall be employed, with appropriate statistical controls and documentation in accordance with ASTM Standard 51204-2002 (E) (for gamma facilities) or 51431-2002 (E) (for electron beam and x-ray {bremsstrahlung} facilities), or current standards. Once the capability to process the items within prescribed absorbed- dose limits is established; it is necessary only to monitor and record the minimum and maximum absorbed dose during each production nm, to verify compliance with the process specifications within a predetermined level of confidence. The facility SOP shall specify how frequently dosimeters will be used. NPPO and the department will audit facilities to ensure compliance with these SOPs.

### **Loss or Damage**

The NPPO/the department and its inspectors do not assume liability for any loss or damage resulting from any treatment prescribed or supervised, Treatments are approved to assure biological security against designated pests. From the literature available, agricultural commodities authorized for treatment are believed to be tolerant to the prescribed dose, However, the facility operator and shipper are responsible for determination of tolerance.

## **SAFEGUARDING AND POST TREATMENT REQUIREMENTS**

### **General**

The purpose of all mitigation and safeguarding activities is to prevent pests from moving from infested ecosystem to non-infested ecosystems. The following sections provide further details about the safeguarding procedures and the minimum safeguards required.

### **Standard Operating Procedures**

Standard Operating Procedures (SOP) shall be developed and documented by each facility that address irradiation of commodities for mitigation of pests of plants, this document must be in place before the facility is offered for certification. It must include the "how to" for all facts of handling, safeguarding and treating the commodities. Critical control points are dose, dosimetry, dose mapping and safe guards. The SOP will be revived along with the facility specifications and personnel qualifications in determining the acceptability for certification.



Before operating as an approved irradiation plant pest treatment facility, a formal written agreement shall be developed between the irradiation facility and NPPO. The NPPO will audit the facility against these SOPs to ensure ongoing compliance with Australian requirements.

## **Receiving**

A record of origin (growing and shipping points) must accompany all arrivals at the facility. Articles will arrive at the treatment facility in an enclosed conveyance. The treatment facility shall receive Program articles only if they are packaged in pest-proof cartons. Program articles shall not be transported with non-program articles.

In order to enable trace-back of shipments, cartons (or smallest containment units) must arrive at the treatment facility marked or labeled with Production Unit Code (PUC), Packinghouse Code (PHC), date of packing

Irradiation processing of agricultural commodities should be expedited, to retard the development and possible emergence of pests from the commodity.

It is recommended that the consignment be kept in temporary cool storage if it is not possible to irradiate it within 24 hours of arrival. Product destined for Australia will be segregated from products for other markets.

## **Separation of Treated from Untreated Commodities**

All Program articles shall be separated from non-program articles. For Program articles the facility shall also have a reliable system for separating treated from untreated products to safeguard against commingling, mistaken identity, and release without treatment. Treated articles will be safeguarded in secured holding rooms/areas until loaded for shipment mixing of treated articles with untreated or improperly treated articles is prohibited. The holding rooms/areas must be secured at all times to prevent fruit fly infestation and contamination of treated articles with untreated articles. A lock/seal on the secured holding area is required to prevent unauthorized entry during all periods when NPPO or treatment facility officer is not present.

## **Packaging**

Articles for irradiation must be received at the treatment facility and exported to Australia in the same cartons in which they are irradiated. Irradiated articles must not be comingled with non-irradiated articles.

All packing materials used for fresh produce exported to Australia must conform to the department's Import Conditions (BICON) database.

All articles irradiated under this agreement will be packaged in insect-proof cartons. The insect-proof cartons should have no openings that will allow the entry of target or non-target quarantine pests. If openings are necessary for ventilation, they will be covered with screening of a minimum of 30 mesh per linear inch. The cartons must be sealed with seals. The cartons may be constructed of any material that prevents the entry of pests. Specific secure consignment options are also available in the departments Biosecurity Import Conditions database (BICON).

### **Wrapping**

To preserve the identity of treated lots and prevent cartons from being added or removed each pallet-load of cartons containing the articles must be wrapped before leaving the irradiation facility in one of the following ways:

- With polyethylene shrink wrap;
- With net wrapping; or
- With strapping, so that each carton on an outside row of the pallet load is constrained by a metal or plastic strap.

The requirement for post-treatment wrapping may be waived, if the cartons are pest-proof, and the pallet load is to be broken down into smaller shipping units, such as LD-3 air cargo containers.

Note: All shipments destined for Australia using solid wood packing material shall also comply with ISPM 15 standards.

### **Marketing/Labeling**

The irradiated article that is boxed require the international irradiation logo (RADURA) to appear on each carton, along with the statement "Treated by irradiation" or "Treated with radiation." This may be preprinted on the box or carton.

In addition, before leaving the treatment facility, cartons (or smallest containment units) must also be marked with Treatment Facility Code (TFC) and location, unique Treatment Identification Number (TIN), and date of treatment.

## **General Sanitation**

A high level of sanitation shall be maintained around the facility, as well as within the pre and post treatment storage areas, and in the equipment used for transporting the product through the irradiation, if windows are going to be opened, they must be equipped with screens. Critical concerns of NPPO/the department include pest monitoring and minimizing the attractiveness of treatment facilities for pests.

- Premises must be kept clean at all times and waste material disposed of daily.
- A pest control program must be in place to reduce pest loads (e.g. screened windows, sticky traps).
- Hygiene records also required for auditing purposes.

## **Loading and Transportation of Containers**

Treated articles will be moved from treatment facilities to Australian ports of entry in clean containers. All article handling and loading activities will be supervised by NPPO Officers. Empty pallets should be carefully inspected for the presence of wood boring or hitchhiking insect pests. Empty containers or vans shall be carefully inspected and be free of pests and debris prior to loading with treated product. If pests are at large in the empty container, the container shall be treated immediately with a suitable insecticide, followed by visual inspection. Containers should also have a sealed connection with the facility during loading to prevent entry of pests.

In the case of air shipments, treated articles must be loaded immediately into containers and secured (doors closed/covered completely) until loaded on the aircraft. If an air shipment is delayed or the flight canceled, the articles must be safeguarded until export.

Immediately after loading the container, it will be sealed with the seal number recorded on the Phytosanitary certificate. If the seal is broken while the container is in transit to the Australia the post treatment sampling at the port of entry will be carried out as per the department port of entry procedures, and the number of boxes in the container will be verified with the Phytosanitary certificate.

Treated articles will be certified for export when the NPPO Officer verifies that all treatment requirement and post treatment security and Australia's requirements have been met and maintained. The Phytosanitary certificate will be completed and signed by the NPPO Officer. The original will accompany the shipment to Australia. Treatment records (treatment data sheets, electronic recording printouts etc.) will be filed with a copy of the signed Phytosanitary certificate. Shipment may not be opened while in transit to Australia without approval of the NPPO.

## MONITORING

### **Pre-Export Inspections**

Inspection for target and non-target quarantine pests will be carried out by NPPO inspectors. An inspection area, which will include adequate lighting and inspection table, and assistance in handling boxes shall be provided for the officer at the facility and approved by the NPPO. The sampling and inspection will be carried out as per the Standard Operating Procedure for Export Inspection and Phytosanitary Certification. Pre-export inspection of product will be performed prior to irradiation.

Sampling rates and actions relating to the interception of live target and non-target quarantine pests are detailed in the Sampling Rates appendix. Inspection outcomes will be recorded and maintained for audit purposes by the department if requested.

### **On-arrival requirements**

Articles are subject to:

- Document verification on arrival into Australia.
- Sampling and inspection of the commodity and associated packaging, for non-target quarantine pests.
- Compliance monitoring

## TREATMENT FACILITY AND PACKINGHOUSE CORRECTIVE ACTIONS AND PENALTIES

NPPO personnel will cooperate in identifying and documenting any apparent deficiencies and bring them to the attention of the facility. The treatment facility or packing house will be given the opportunity to correct any minor deficiencies and take remedial actions.

1. Failure to meet standards for treatment facility certification:
  - Do not certify.
  - If presently certified, suspend certification until deficiencies are corrected.
2. Failure to Notify NPPO when Minimum Dosage is not delivered or other treatment requirements are not met.

First incident:

- Lot will be rejected and a letter of warning issued to the facility manger with a copy distributed to the cooperator.
- An investigation will be conducted by the NPPO and corrective action must be taken. to the satisfaction of the NPPO and the department to prevent recurrence.

Subsequent incidents within one calendar year (January 1<sup>st</sup> through December 31<sup>st</sup>):

- Lot will be rejected, and irradiation services suspended for a period of no less than 30 days pending an investigation by the NPPO.
  - A report of the investigation shall be provided to NPPO Headquarters prior to consideration of reinstatement.
  - Certification will be revoked if the problem persists.
  - All incidents shall be promptly reported to NPPO. The department must be notified of the incident and of any outcomes of investigation.
3. Treated articles that have been compromised (substitution of articles, placement of untreated articles in secured areas, shipment of untreated articles).

First incident:

- Articles will be rejected and treatment facility services will be suspended for no less than 60 days.
- An investigation will be conducted by the NPPO and corrective action must be taken to the satisfaction to prevent reoccurrence.

Second incident within one calendar year:

- Reject lot and suspend services for the remainder of the season or sixty days, whichever is greater.
  - An investigation will be conducted by the NPPO and a report of the investigation shall be provided to NPPO headquarters prior to consideration of reinstatement.
  - Certification will be revoked after third incident.
  - All incidents shall be promptly reported to NPPO. The department must be notified of the incident and of any outcomes of investigations.
4. Failure to maintain seals intact on secured areas for treated articles during periods when NPPO officer or authorized treatment facility officer is not present:
- Reject all articles within secured areas.
5. Detection of Live non-target quarantine pest in a shipment of certified articles by Australian port of entry inspectors.

First incident:

- Rejection of treated shipment if treatments are not available and notify NPPO.

Subsequent incident of same pest within one calendar year:

- All pre-export activities for that packinghouse and / or production area will be suspended for a minimum of 14 days.
- An investigation will be conducted by the NPPO, and remedial actions must be taken to the satisfaction of the department to prevent reoccurrence.

6. Any registered packinghouse that receives articles for the program from non-approved production areas.

First Incident:

- Suspended packinghouse participation in the Program for a period of no less than 14 days.
- An investigation will be conducted by the NPPO and remedial action must be taken to the satisfaction to prevent reoccurrence.

Subsequent incident within one calendar year:

- The packinghouse will be excluded from the Program until remedial action has been taken to the satisfaction and approval of NPPO.

## PROGRAM REVIEW AND EVALUATION


Irradiation treatment activities and operations will be reviewed and evaluated at the end of first season and thereafter as and when as needed by NPPO/the department. A review will ensure that all aspects of operations and related activities are conducted effectively in accordance with applicable procedures and standards. The review will be scheduled and coordinated by the NPPO.

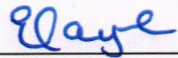
### **Supervisory and Management Visits**

NPPO will supervise each treatment during export. NPPO will also consult and coordinate with the cooperator and industries about any problems and/or issues of mutual concern.

## APPROVAL

Procedures herein established are subject to revision as situations warrant; however, they will remain in effect indefinitely until revised.

  
Date: 14.02.2024  
Mr. A.K. Srivastava, Joint Secretary (PP)  
Ministry of Agriculture & Farmer's Welfare  
Department of Agriculture & Farmer's  
Welfare

  
Date: 14 February 2024  
Ms. Erin Payne  
Assistant Secretary  
Department of Agriculture, Fisheries and  
Forestry



## APPENDIX-A

### IRRADIATION TREATMENT FOR FRESH MANGOES TO AUSTRALIA

Irradiation at the following doses will manage specified fruit flies, seed weevil, and other pests, carried out in accordance with the Irradiation Operational Work Plan.

**Table: Approved minimum irradiation doses for target quarantine plant pests for export of fresh mango fruits to Australia**

Pest	Common Name	Measure
<b>Fruit flies</b>		
<i>Bactrocera carambolae</i>	Carambola fruit fly	Irradiation at minimum 150 Gy
<i>Bactrocera caryeae</i>		
<i>Bactrocera correcta</i>	Guava fruit fly	
<i>Bactrocera dorsalis</i>	Oriental fruit fly	
<i>Bactrocera zonata</i>	Peach fruit fly	
<b>Beetles</b>		
<i>Sternochetus frigidus</i> (syn. <i>S. gravis</i> )	Mango pulp weevil	Irradiation at a minimum of 165 Gy
<i>Sternochetus mangiferae</i> (WA)	Mango seed weevil	Irradiation at minimum 300 Gy
<b>Moths</b>		
<i>Deanolis sublimbalis</i>	Red-banded mango caterpillar	Irradiation at minimum 400 Gy

<b>Mealybugs</b>		
<i>Dysmicoccus neobrevipes</i>	Grey pineapple mealybug	Irradiation at minimum 400 Gy
<i>Ferrisia malvastra</i> (WA)	Malyastrum mealybug	
<i>Formicococcus robustus</i>	Mealybug	
<i>Paracoccus intercepted</i>	Intercepted mealybug	
<i>Paracoccus marginatus</i>	Papaya mealybug	
<i>Planococcus lilacinus</i>	Coffee mealybug	
<i>Planococcus minor</i> (WA)	Pacific mealybug	
<i>Pseudococcus cryptus</i>	Citriculus mealybug	
<i>Pseudococcus jackbeardsleyi</i>	Jack Beardsley mealybug	
<i>Rastrococcus iceryoides</i>	Downey snowline mealybug	
<i>Rastrococcus invadens</i>	Mango mealybug	
<i>Rastrococcus spinosus</i>	Philippine mango mealybug	

## APPENDIX-B

### IRRADIATION TREATMENT FOR FRESH POMEGRANATES TO AUSTRALIA

Irradiation at the following doses will manage specified fruit flies, mealybugs, thrips and scales.

**Table: Approved minimum irradiation doses for target quarantine plant pests for export of fresh pomegranate fruits to Australia**

Scientific name	Common name	Measures
<b>Fruit flies</b>		
<i>Bactrocera carambolae</i>	Carambola fruit fly	Irradiation at 150 Gy
<i>Bactrocera dorsalis</i>	Oriental fruit fly	
<i>Bactrocera zonata</i>	Peach fruit fly	
Other fruit flies of economic significance		
<b>Thrips</b>		
<i>Frankliniella occidentalis</i> (RA, NT)	Western flower thrips	Irradiation at 400 Gy
<i>Scirtothrips dorsalis</i> (RA)	Chilli thrips	
<i>Scirtothrips oligochaetus</i>	Mangosteen thrips	
<b>Mealybugs and Scale insects</b>		
<i>Dysmicoccus neobrevipes</i>	Grey pineapple mealybug	Irradiation at 400 Gy
<i>Paracoccus marginatus</i>	Papaya mealybug	
<i>Planococcus ficus</i>	Vine mealybug	
<i>Drosicha dalbergiae</i>	Almond mealybug	

## SAMPLING RATES:

### Articles to be included in this Work Plan:

- **Mango:** (*Mangifera indica*)
- **Pomegranate – whole fruit:** (*Punica granatum*)

Sampling rates and actions relating to the interception of live target and non-target quarantine pests shall be done as follows:

The NPPO of India will carry out inspection of the commodity received at the treatment facility just prior to treatment to confirm that the lot is free from non-target quarantine pests and meet the requirements for the target pests listed in each of the commodities respective Appendices (A, B, etc).

For this purpose, a systemic sampling of lots, will be carried out using a random number table.

The sample size shall include:

- Lot size of 1 to 4 cartons-inspect all cartons; minimum fruit to cut – 10 fruits;
- Lot size of 5 to 99 cartons-inspect 5 cartons; minimum fruit to cut– 20 fruits;
- Lot size of 100 to 240 cartons-inspect 7 cartons; minimum fruit to cut – 30 fruits;
- Lot size of 241 or more cartons-inspect 14 cartons; minimum fruit to cut – 30 fruits;

The exterior of selected cartons and fruits will be thoroughly inspected for target and non-target quarantine pests. Thereafter a minimum number of fruits as specified will be cut and examined for internal feeders. In the event of interception of live pests during inspection the following actions will be undertaken:

If any Non-targeted pests (pests not mentioned in commodity specific Appendix A, B etc) one or more are detected, the entire lot will be rejected for export.

If any target pests (pests mentioned in commodity specific Appendix A, B etc) one or more are detected, the lots will be cleared for treatment and certified under notification to the Department.

Phytosanitary certificate requirements will be detailed in the departments Biosecurity Import Condition database (BICON)

## CERTIFICATE OF APPROVAL

**Purpose:** This form is used to designate those irradiation treatment facilities that have been approved for treatments under NPPO regulations.

**Preparation:** Certificate of Approval will be issued by the Area Office.

**Type of Facility:**

**Name of Facility:**

**Operator:** List name and address of operator or owner.

**Location of Facility:** street address (and city if different than that of "Operator")

**Conditions of Approval:**

**Date Approved:** List inspection date, not issuance date.

**Certifying Official:** Indicate name and title of individual responsible.

**Distribution:** Original to operator of facility for posting at the treatment facility.

## VERSION CONTROL

First iteration of Irradiation operational Work Plan	25 <sup>th</sup> November 2013
Updated Irradiation Operational Work Plan	10 <sup>th</sup> August 2016
August 2023 updates	<ul style="list-style-type: none"><li>• Added text to first page: “Joint document for trade in irradiated fresh produce exported from India to Australia”.</li><li>• Re formatted throughout.</li><li>• Department names updated.</li><li>• Re-formatted ‘treatment facility and packing house corrective actions and penalties’ section with numbering.</li><li>• Appendices / Addenda renamed.</li><li>• Added Appendices for future potential commodities (table grapes and okra).</li><li>• Sampling Rates information moved to its own section.</li><li>• Version Control added.</li></ul>

# Work plan for the export of fresh pomegranates from India to Australia



Government of India  
Ministry of Agriculture & Farmer's Welfare  
Department of Agriculture & Farmer's Welfare  
**Directorate of Plant Protection, Quarantine & Storage**  
N.H-IV Faridabad-121001, India

February, 2024



**Version control:**

<b>Date</b>	<b>Version</b>	<b>Description</b>
September 2020	V1.4	Work plan agreed
January 2024	V2.0	Updates include: <ul style="list-style-type: none"><li>• Department of Agriculture, Fisheries and Forestry (the department) name updated throughout.</li><li>• Section 5.1 – text to reference the agreed Irradiation Operational Work Plan (proposed updated version 2023).</li><li>• Section 5.1 (c) – Added 400Gy. Dose mapping studies provided by India referenced a minimum dose of 400Gy.</li><li>• Section 5.2 – updated text to include management of pests using irradiation.</li><li>• Section 8.1 – text requesting shared cost of audit.</li><li>• Annex 2 - text to reference the agreed Irradiation Operational Work Plan and remove redundant text</li><li>• Annex 3 – mealybugs management title updated, and text clarified to include effects of irradiation.</li><li>• Annex 4 – bacterial blight management part IV amended.</li><li>• Annex 6 - approved facilities listed.</li></ul>

# Work plan for fresh pomegranates from India to Australia

This document includes the joint understanding between India and Australia of the requirements for the export of fresh pomegranates from India to Australia. The document is based on the *Final report for the review of biosecurity import requirements for fresh pomegranate whole fruit and processed 'ready-to-eat' arils from India* (final report) issued by the Australian Government Department of Agriculture, Fisheries and Forestry (the department) in June 2020.

## 1. Applicable goods

Fresh pomegranates (*Punica granatum*) commercially produced in India for export to Australia.

## 2. Definitions

### Quarantine pest

A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled [FAO, 2019a].

### Regulated article

Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harbouring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved (FAO 2019a).

### Whole fruit

The entire pomegranate fruit with the skin rind including calyx, mesocarp, arils (seeds) and a small portion of the stem.

### Arils

Pomegranate arils are the fleshy and usually brightly coloured and edible covering, that surrounds the seed, found inside the whole pomegranate.

### Orchard

A plot of land with defined boundaries that grows pomegranates only and is managed by a single entity. Plants are contiguous (not separated by structures such as a building, public road or natural landforms such as a body of water). Orchards must be registered for the purpose of exporting pomegranates to Australia.

## Consignment

Goods imported by one importer, on one conveyance at one time, and covered by one phytosanitary certificate.

### 3. Participating entities and key roles and responsibilities

- I. The Indian National Plant Protection Organization (NPPO), the Department of Agriculture and Farmers Welfare (DA&FW).
  - a) Has overall responsibility for the implementation and compliance with this work plan. Activities to verify compliance with this work plan include (but are not limited to) audit of grower, packing house, processing facilities and treatment facilities against this work plan and monitoring outcomes of phytosanitary inspection.
  - b) Inspecting goods for export and issuing phytosanitary certificates.
  - c) To maintain and provide to the Australian NPPO, upon request, records of activities (including but not limited to) registration, inspection, training, audits, approved operating procedures, etc.
  - d) To investigate non-compliance and implement corrective actions as required.
- II. The Australian NPPO, the Department of Agriculture, Fisheries and Forestry (the department):
  - a) To undertake inspection of commodity shipments when they arrive in Australia to verify phytosanitary compliance and to provide guidance and/or instructions to regional staff at port of entry for clearance of consignments.
  - b) To notify the Indian NPPO of any non-compliance detected on-arrival and to request for the Indian NPPO to investigate and implement corrective actions.
  - c) To verify that the responsibilities of all participants regarding the technical commitments in these work plans are properly executed. The department may request the Indian NPPO to conduct additional verification activities as necessary to verify program integrity or address program issues if they occur.
- III. The Agricultural and Processed Food Products Export Development Authority (APEDA)
  - a) To register exporters, packing houses and treatment facilities to ensure they meet requirements of this work plan.
- IV. State Government
  - a) To register orchards for the production of commodities for export and ensure growers meet requirements of this work plan.
  - b) To undertaking licensing of food business operators (i.e. aril processing facility).

#### 4. Quarantine pests

- I. The following organisms have been determined by the department to be quarantine pests for Australia on the pathway:
    - a) Fruit flies
      - *Bactrocera carambolae* (Carambola fruit fly)
      - *Bactrocera dorsalis* (Oriental fruit fly)
      - *Bactrocera zonata* (Peach fruit fly)
    - b) Scales insects
      - *Drosicha dalbergiae* (Almond mealybug)
    - c) Mites
      - *Tenuipalpus granati* (Pomegranate mite)
      - *Tenuipalpus punicae* (False spider mite)
    - d) Thrips
      - *Scirtothrips dorsalis* (Chilli thrips)
      - *Scirtothrips oligochaetus* (Mangosteen thrips)
      - *Frankliniella occidentalis* (Western flower thrips)(NT, RA)
    - e) Mealybugs
      - *Dysmicoccus neobrevipes* (Grey pineapple mealybug)
      - *Paracoccus marginatus* (Papaya mealybug)
      - *Planococcus ficus* (Vine mealybug)
    - f) Pathogens
      - *Xanthomonas axonopodis* pv. *punicae* (Bacterial blight of pomegranate)
- (NT: pest of quarantine concern for Northern Territory; RA: Regulated article)

#### 5. Risk management measures for quarantine pests - Whole fruit

##### 5.1 Risk management measures for fruit flies

- I. Fruit for export to Australia must be free from *Bactrocera carambolae*, *Bactrocera dorsalis* and *Bactrocera zonata*. Management options are listed below.

- a) Area freedom

If India wish to use area freedom as a phytosanitary measure, the Indian NPPO will need to provide a submission to the department demonstrating area freedom from *Bactrocera carambolae*, *Bactrocera dorsalis* and *Bactrocera zonata* in accordance with relevant International Standards for Phytosanitary Measures ISPM 4 and/or ISPM 10.

b) Cold treatment

Goods must undergo cold treatment at the following schedule (in-transit or pre-shipment):

- fruit held at 1.67°C or below for 18 days or greater.

Should India wish to use pre-shipment cold treatment as a phytosanitary measure, the Indian NPPO will need to provide a submission to the department.

Requirements for application of cold treatment are provided at [Annex 1](#).

c) Irradiation

Goods must undergo irradiation at a minimum dose of 400 Gy.

Requirements outlined in the agreed [Irradiation Operational Work Plan \(2024\)](#), must be met.

## 5.2 Risk management measure for scales, mites, mealybugs and thrips

- I. Fruit for export to Australia must be free from *Drosicha dalbergiae* (Almond mealybug), *Tenuipalpus granati* (Pomegranate mite), *Tenuipalpus punicae* (False spider mite), *Dysmicoccus neobrevipes* (Grey pineapple mealybug), *Paracoccus marginatus* (Papaya mealybug), *Planococcus ficus* (Vine mealybug), *Scirtothrips dorsalis* (Chilli thrips), *Scirtothrips oligochaetus* (Mangosteen thrips), *Frankliniella occidentalis* (Western flower thrips).
- II. Where cold treatment is used to manage risks associated with fruit flies:
  - a) Quarantine scales, mites, mealybugs, and thrips are to be managed through packing house practices and pre-export phytosanitary inspection and remedial actions ([Annex 3](#)).
- III. Where irradiation is used:
  - a) Quarantine scales, mealybugs and thrips can be managed with irradiation at 400Gy.
  - b) Where 150Gy is applied, quarantine scales, mealybugs and thrips are managed using mandatory packing house practices and pre-export remedial action ([Annex 3](#)).
  - c) Mites must be managed using mandatory packing house practices and pre-export remedial action ([Annex 3](#)).

## 5.3 Risk management measures for bacterial blight

- I. *Xanthomonas axonopodis* pv. *punicae* (Bacterial blight of pomegranate) is to be managed by a systems approach approved by Australia (see [Annex 4](#)).

## 6. Risk management measures for quarantine pests - Arils

- I. Arils must be free from *Bactrocera carambolae*, *Bactrocera dorsalis* and *Bactrocera zonata*. Fruit flies are to be managed by a systems approach approved by the department. (Annex 5).

## **7. General requirements (whole fruit and arils)**

### **7.1 Registration of places of production**

- I. The registration of orchards is mandatory.
- II. Each orchard is to be assigned a unique identification code to enable trace-back.
- III. Registration must occur prior to export.
- IV. The exporting NPPO is responsible for ensuring that registered growers are aware of pests of quarantine concern to Australia and requirements for these quarantine pests. The registration list must be maintained as current by the exporting NPPO and be made available to the department if requested.

### **7.2 Registration of packing houses and treatment facilities**

- I. Packing houses and treatment facilities (if applicable) involved in export of fresh pomegranates to Australia must be registered with NPPO of India before the commencement of harvest each season. The registration list must be maintained as current and be made available to the department if requested.
- II. The hygiene of registered packing houses and treatment facilities must be maintained. The packing houses and treatment facilities must be designed to prevent the entry of pests into areas where inspected and/or treated (if applicable) pomegranates are held. Appropriate quarantine security of the fruit should be maintained, including during transport between production sites and packing houses/treatment facilities and when pomegranates are on the premises.
- III. Packing houses and treatment facilities must have a system of record keeping enabling trace-back of the packed fresh pomegranates back to production sites, including the movement of fresh pomegranates from the time of arrival at the premises through to the time of export.
- IV. NPPO of India and APEDA are responsible for ensuring that registered packing houses (if applicable) personnel are aware of pests of quarantine concern to Australia and requirements for these quarantine pests.

### **7.3 Packing and labelling**

- I. To prevent any potential contamination of fresh pomegranates destined for Australia by any plant produce destined for domestic or other export markets, processing equipment in packing houses must be suitably cleaned prior to the commencement of processing fresh pomegranates for export to Australia.

- II. All packages of fresh pomegranates for export to Australia must be free from contaminating pests and regulated articles. Regulated articles are any items other than fresh pomegranates. Fresh pomegranates is defined, in the final report, as fresh pomegranates, which include a small amount of peduncle, the calyx, fruit and achenes (seeds). Regulated articles include, for example, plant, plant product such as leaves, soil, any organism and object or material capable of harbouring or spreading pests.
- III. Secure packaging must be used during storage and transport of fresh pomegranates for export to Australia and must meet Australia's general import conditions for fresh fruits and vegetables. Packaging must be fully sealed or if not sealed the opening must be covered by mesh/screen that is no more than 1.6 mm pore size and not less than 0.16 mm strand thickness.
- IV. Packaging material must be synthetic or highly processed if of plant origin. No unprocessed packaging material of plant origin, such as straw, will be allowed.
- V. All wood material used in packaging of fresh pomegranates must comply with the department conditions.
- VI. All cartons must be labelled with production site reference code and packing house and treatment facility reference code or name for the purpose of trace-back.
- VIII. The phytosanitary status of fresh pomegranates must be maintained throughout the packing, treatment (if applicable), storage and transport.
- IX. The following information should be printed on each carton of whole pomegranates:
  - a) Product of India for Australia
  - b) Pomegranates
  - c) Place of production/orchard code
  - d) Packing house registration number
  - e) Treatment facility name and/or code (if a treatment is used as risk management measure)
- X. The following information should be printed on each carton of arils:
  - a) Product of India for Australia
  - b) Pomegranate arils
  - c) Place of production/orchard code
  - d) Packing house/processing facility name and/or registration number
  - e) Packing date

#### **7.4 Storage**

- I. Packed fresh pomegranates and packaging is to be protected from pest contamination during and after packing, during storage and during movement between locations, such as packing house to cold storage/depot, to treatment facility, to inspection point, to export point.
- II. Fresh pomegranates for export to Australia that has been inspected and certified by the Indian NPPO or treated (if applicable) must be maintained in secure conditions that will prevent mixing with any plant produce for export to other destinations or the domestic market. This can be achieved through segregation of fresh pomegranates for export to Australia in separate storage facilities, through the use of tarpaulin and physical segregation (at least 1 metre in ambient temperature or 10 centimetres in cold storage) from any other plant produce, netting or shrink-wrapping pallets in plastic, or by placing sealed cartons in cold storage before loading into a shipping container.
- III. Alternatively, packed fresh pomegranates can be directly transferred at the packing house into a shipping container, which is to be sealed and not opened until the container reaches Australia.
- IV. Security of the consignment is to be maintained until release from quarantine in Australia.

#### **7.5 Auditing procedures by the Indian NPPO**

- I. The Indian NPPO must have a system in place for monitoring/auditing of registered orchards, packing houses and treatment providers (if applicable) to ensure that all requirements are met.
- II. Records of the Indian NPPO audits must be kept and made available to the department, if requested.

#### **7.6 Pre-export phytosanitary inspection by Indian NPPO**

- I. The Indian NPPO, or delegate of the Indian NPPO, will inspect all consignments for any pests of quarantine concern to Australia and any other regulated article. Individual fruit are to be inspected carefully.
- II. Pre-export visual inspection must be undertaken by the Indian NPPO or delegate of the Indian NPPO in accordance with ISPM 23: Guidelines for inspection [FAO 2019b] and consistent with the principles of ISPM 31: Methodologies for sampling of consignments [FAO 2016a].
- III. Goods must be sampled and inspected to provide 95% confidence that there is not more than 0.5% infestation in a consignment as per ISPM 31. For consignments equal to or greater than 1000 units (a unit being a piece of fruit), this is equivalent to a 600 unit sample randomly selected across the consignment, using an inspection technique that will detect all life stages of the quarantine pest.



- IV. Pre-export phytosanitary inspection must occur prior to treatment with irradiation (where irradiation is used as a management measure).
- V. If pests are found in the inspection sample, the Indian NPPO must identify the organism and take appropriate action:
  - a) Detections of pests will require their regulatory status to be determined, or application of an appropriate pest management measure. If required, the Indian NPPO can contact the department and request a determination of regulatory status.
  - b) If determined to be quarantine pest for Australia, an appropriate and effective pest management measure must be conducted prior to certification.
- VI. Records of the interceptions made during the inspection (live or dead pests or regulated articles) are to be maintained by the Indian NPPO and made available if requested.
- VII. Consignments that do not comply with the requirements outlined above must be rejected by the Indian NPPO for export to Australia.

## **7.7 Phytosanitary certification by the Indian NPPO**

- I. All consignments must be inspected in accordance with official procedures for all visually detectable quarantine pests at a standard sampling rate per the international phytosanitary certificate (PC).
- II. The Indian NPPO is required to issue a PC for each consignment after the pre-export phytosanitary inspection.
- III. Each PC is to include additional declarations as described in Australia's Biosecurity import conditions database, BICON.
- IV. The place of production/orchard and packing house registration number or reference code, number of cartons per consignment and container and seal number (for sea freight) must be recorded on the PC.
- V. A consignment must be air freighted/shipped directly from one port or city in India to a designated port or city in Australia, or tran-shipped, in sealed containers.

## **8. Audit and verification by the department**

### **8.1 Audit**

- I. The department may request to audit the implementation of the agreed import requirements, which could include, for example, registration, pest management, a system of monitoring/auditing and trace-back system. Audit may be via desk audit and/or site visit as required.
- II. Where a site audit is deemed necessary, costs associated with travel will be funded by the exporting NPPO and/or India's industry (relevant to the specific fresh produce).

Travel costs include:

- a. International and domestic flights
- b. Accommodation
- c. Meals
- d. Travel insurance

III. The department will fund costs associated with salaries of departmental officers.

## **8.2 Phytosanitary inspection and quarantine clearance**

- I. Each consignment will be inspected by the department on-arrival in Australia and the original PC and documentation examined for consignment verification purposes at the first port of entry in Australia prior to release from quarantine.
- II. Officers of the department will conduct an inspection for any quarantine pests and regulated articles.
- III. Where consignments are found to be non-compliant with Australia's requirements, the importer will be given the option to treat (if suitable treatments for the pests or regulated articles detected are available and can be applied), re-export or destroy the consignment.
- IV. If consignments continually fail inspection, the department reserves the right to suspend the imports of fresh pomegranates from India, pending an investigation by Indian NPPO and a review by the department. The imports will recommence when the department is satisfied with the outcomes of the investigation and that appropriate corrective action have been undertaken.
- V. If an organism is detected on fresh pomegranates from India that has not been assessed in the final report, it will require an assessment to determine its quarantine status and if phytosanitary action is required.
- VI. The detection of any pests of quarantine concern not already identified in the final report may result in a review of import requirements to ensure that trade for fresh pomegranates from India will meet Australia's appropriate level of phytosanitary protection.

## **9. Review of policy**

- I. The department reserves the right to review the import policy at any time after trade commences or when there is reason to believe that the phytosanitary status of the exporting country has changed.

- II. Other phytosanitary measures which have been reviewed and deemed by the department to offer an equivalent level of biosecurity protection may be adopted as additional measure options during the period of trade.

## **References**

DAWR (2018). *Australian phytosanitary treatment application standard for irradiation treatment*. Department of Agriculture and Water Resources, Canberra.

DAWR (2018). Australian phytosanitary treatment application standard for cold treatment. Department of Agriculture and Water Resources, Canberra.

FAO (2016a), International Standards for Phytosanitary Measures (ISPM) no. 31: Methodologies for sampling of consignments. Food and Agriculture Organization of the United Nations, Rome.

FAO (2016b) International Standards for Phytosanitary Measures (ISPM) no. 10: Requirements for the establishment of pest free places of production and pest free production sites. Food and Agriculture Organization of the United Nations, Rome.

FAO (2017) International Standards for Phytosanitary Measures (ISPM) no. 4: Requirements for the establishment of pest free areas. Food and Agriculture Organization of the United Nations, Rome.

FAO (2019a) International Standards for Phytosanitary Measures (ISPM) no. 5: Glossary of phytosanitary terms, Food and Agriculture Organization of the United Nations, Rome.

FAO (2019b), International Standards for Phytosanitary Measures (ISPM) no. 23: Guidelines for inspection. Food and Agriculture Organization of the United Nations, Rome.

FAO (2019c), International Standards for Phytosanitary Measures (ISPM) no. 18: Guidelines for the use of irradiation as a phytosanitary measure. Food and Agriculture Organization of the United Nations, Rome.

International atomic energy agency (2015) Manual of Good Practice in Food Irradiation, Technical Reports Series No. 481, IAEA, Vienna.

NAPPO (1997), Regional Phytosanitary Standard (RSPM) no. 9: Guidelines for the Use of Irradiation as a Phytosanitary Treatment.

## Annex 1

### Requirements for the application of cold treatment

- I. Treatment must be applied in accordance with Australia's standard for application of cold treatment (the *Australian phytosanitary treatment application standard for cold disinfestation treatment* (2018)).
- II. Treatment can be applied in-transit or pre-shipment.
- III. The following is required when using in-transit cold treatment:
  - a) In-transit cold treatment is only permitted in self refrigerated (integral) shipping containers capable of the treatment for the entire duration of the trip.
  - b) The details of each of the fruit sensor calibrations must be recorded in the treatment section of the phytosanitary certificate which accompanies the consignment. Alternatively, the calibration details can be included as an attachment to the phytosanitary certificate.
  - c) The probes must be calibrated and placed under the supervision of an officer authorised by the exporting NPPO.
  - d) Shipping containers must be sealed once loading of the fruit is completed and seals must remain intact until the cold treatment is assessed and approved by the department.
  - e) The shipping/transport company must download the electronic temperature logs from the container and forward to the department for treatment assessment and approval prior to container clearance.
  - f) Containers must be maintained at the required appropriate temperature until the treatment assessment is completed, as turning off power prematurely may lead to discontinuation of treatment.
- IV. Pre-shipment treatment facilities must be registered with NPPO of India. NPPO of India is required to ensure that the registered treatment providers are suitably equipped and have systems in place to carry out the treatment in accordance with the *Australian phytosanitary treatment application standard for cold disinfestation treatment* (2018).
- V. Approved pre-shipment treatment facilities are listed at [Annex 6](#) [if and when approved] and will be identified on BICON.

## Annex 2

### Requirements for the application of irradiation

- I. Irradiation facilities must be registered with NPPO, Indian and national nuclear regulatory bodies. APEDA is required to ensure that the registered treatment providers are suitably equipped and have systems in place to carry out the treatment in accordance with:
  - a) ISPM 18: *Guidelines for the use of irradiation as a phytosanitary measure* [FAO 2019c]
  - b) Regional Phytosanitary Standard (RSPM): *Guidelines for the Use of Irradiation as a Phytosanitary Treatment* [NAPPO, 1997]
  - c) *Manual of Good Practice in Food Irradiation* [IAEA, 2015]
  - d) *Australian phytosanitary treatment application standard for irradiation treatment* (Commonwealth of Australia, 2018)
  - e) Irradiation Operational Work Plan 2023 (Joint document for trade in irradiated fresh produce exported from India to Australia)
- II. Existing regulatory approval for use on other fruit for export to Australia will be taken into account by the department when approving a facility for use in the export of pomegranates to Australia.
- III. Treatment facilities approved for the export of pomegranates to Australia are listed at [Annex 6](#) and listed on BICON.

## Annex 3

### **Mandatory packing house practices for whole pomegranates.**

The following packing house practices are required:

- I. Cleaning individual fruit by application of compressed air on fruit calyces and washing with brush and disinfectant; and
- II. Pre-export phytosanitary inspection and, if found, remedial action. Remedial action (by the Indian NPPO) may include applying approved treatment to the consignment to ensure that the pest is no longer viable or withdrawing the consignment from export to Australia. Further details regarding the pre-export phytosanitary inspection are in Section 7.6.

## Annex 4

### Risk management measures for pathogens - bacterial blight

- I. India's NPPO has primary responsibility for ensuring that orchards implement the systems approach effectively.
- II. The systems approach is supported by:
  - a) Registration of pomegranate orchards and packing houses for export to Australia.
  - b) India's NPPO, or personnel approved by India's NPPO, will conduct training at the beginning of each growing season for growers, sorting supervisors and packing house officials (for registered orchards and registered packing houses) to ensure that they are aware of bacterial blight and the requirements for this pathogen. Records of training will be maintained for reference/audit.
  - c) Monitoring of plants in the orchards to detect symptoms of bacterial blight. Monitoring occurs every two weeks from flowering until the end of harvest.
  - d) Monitoring is conducted by suitably trained people approved by India using the following.
    - Sampling size of five pomegranate plants each at 20 sites per hectare (total of 100 plants/Ha) are monitored for *Xanthomonas axonopodis* pv. *punicae* (Bacterial blight of pomegranate) in every export orchard. A zigzag route across the orchard is followed for site selection to represent entire orchard area.
    - All parts of the pomegranate plant such as leaves, stems and fruits are observed for any *Xanthomonas axonopodis* pv. *punicae* (Bacterial blight of pomegranate) symptom.
    - Monitoring and management is recorded using the Monitoring template for *Xanthomonas axonopodis* pv. *punicae* (Bacterial blight of pomegranate), provided in Attachment-I
    - Records of orchard monitoring must be kept by India's NPPO and provided to the department for audit on request
  - e) If bacterial blight is detected management must be undertaken. Management options include application of effective pesticides and removal of affected plant material. Preventative measures are also acceptable. For example, if weather conditions are predicted to be suitable for bacterial blight infection, preventative sprays can be applied. Records of the chemical spraying will be maintained for reference/audit.
  - f) If disease incidence is greater than 10% from two weeks prior to harvest, the orchard is suspended from export for season.
  - g) Fruit must not be harvested from the ground.
  - h) At the packing house, pomegranate fruit are washed with a sanitizer at an approved concentration (e.g. Tsunami or hypochlorite at 200 ppm). Washing water is monitored or changed frequently to ensure appropriate concentration is maintained.

- i) Fruit must be inspected at the packing house and symptomatic or damaged fruit must be removed for export.
  - j) Farm and packing house hygiene will be maintained. Fallen leaves and fruit in the orchards are removed regularly to minimize sources of bacterial blight inoculum. Damaged and discarded pomegranate fruit will be removed from the packing house daily.
- III. Pre-export phytosanitary inspection and, if found, remedial action. Remedial action (by the Indian NPPO) will involve withdrawing the consignment from export to Australia and investigating the cause of the detection. The Indian NPPO may exclude the registered orchard and packing house from export to Australia for the rest of the season.
- IV. If bacterial blight is detected during the on-arrival inspection in Australia, the consignment will be re-exported or destroyed. India will be required to investigate the cause of any such detection and report their findings to the department. Australia may request suspension of packinghouse and grower. If bacterial blight is detected for a second time at on arrival inspection in Australia, the registered orchard and packing house will be excluded from export to Australia for the rest of the season. Reinstatement would only occur where corrective actions have been applied, the Indian NPPO have audited the entity and the department have approved the reinstatement.



## Annex 5

### Risk management measures for quarantine pests of arils

- I. Fruit must be grown in orchards registered for export to Australia.
- II. The following orchard management practices are required:
  - a) monitoring (trapping) using effective lures for fruit flies.
  - b) Traps are inspected fortnightly from flowering until eight weeks prior to harvest. Traps are monitored weekly from eight weeks before harvest.
  - c) A minimum of 2 traps per orchard with a minimum of an additional trap for every 2 hectares. See table for example trapping requirements.

Area (ha)	≤4	≤6	≤8	≤10	≤12
Traps	2	3	4	5	6

- d) If quarantine fruit flies are detected control measures must be applied such as insecticide cover sprays or baits sprays/traps. Preventative measures are also acceptable.
  - e) From eight weeks prior to harvest, if flies are detected at a rate of 0.1 flies per trap per day (FTD) over 2 consecutive weeks, the affected orchard is excluded from exports until the rate of detection is below the FTD threshold.
  - f) Fruit must not be harvested from the ground.
- III. Fruit must be processed at facilities registered with the Indian NPPO & APEDA for export to Australia.
- IV. The following processing facility practices are required (in addition to food safety requirements as identified in Annex 7):
  - a) Fruit are inspected and symptomatic or damaged fruit are removed.
  - b) Pomegranate fruit are washed with a sanitizer at an approved concentration (e.g. Tsunami, hypochlorite at 200 ppm). Washing water is monitored or changed frequently to ensure appropriate concentration is maintained.
  - c) Washing and brushing using disinfectant
  - d) Extraction of arils
  - e) Visual screening of extracted arils for contaminants and quarantine pests using a white background. A white conveyor belt is appropriate.
  - f) Waste generated from aril extraction is managed and is removed from the processing facility daily.
  - g) Packing in sealed containers
- V. Pre-export phytosanitary inspection. Further details regarding the pre-export phytosanitary inspection are in Section 7.6.

## Annex 6

### Registered entities

#### Packing houses processing fruits for export to Australia

Name of facility	Address	NPPO Registration number	Commodity	Treatment
M/s. Kay Bee Exports	At/ Post-Sastewadi, Phaltan, Dist. Satara - 414501, Maharashtra	001/2021 08.02.2021 (Expired)	Fruits	Pack house processing
M/s. Sam Agri Fresh PVT. LTD.	Gate no. 85, Korhate Village, Tal. Dindori, Dist. Nashik PIN - 422202, Maharashtra Email: info@samagri.com, Contact No. 09848025196.	003/2021 22.07.2021 Valid Upto 21.07.2025	Fruits	Pack house processing
M/s. ULink AgriTech Private Limited	Survey No.67/68, Baramati Kurkumbh Road, At Post Vasunde, Tehsil Daund, District Pune-412219, Maharashtra. Email: atul.wable@inifarms.com Contact No.8879783547	04/2023 07.12.2023 Valid Upto 06.12.2025	Fruits	Pack house processing

#### Treatment facilities undertaking irradiation for pomegranates

Name of facility	Address	Registration number	Commodity	Treatment
M/s MSAMB Irradiation Treatment Plant	Sector-19F, Plot No. 03, Opp. Grain Market, R Galli Turbhe, Navi Mumbai	002/IR 19.06.2015 Valid upto 17.06.2024	Fresh whole pomegranates	400Gy

**Food business operator – hygienic practices (responsibility of FSSAI / EIC)**

Export registered aril processing establishments must be a government registered food business operation. Aril processing establishments are encouraged to have HACCP based certification from internationally recognized accredited certification bodies; this will become a mandatory requirement in 2022.

- I. Food handling practices and food handlers must meet standards developed by FSSAI for food hygiene, additives, contaminants, toxins and residues including but not limited to:
  - a) Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011.
  - b) Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011.
- II. All food imported into Australia must comply with the Australia New Zealand Food Standards code. Establishments must demonstrate they have knowledge of relevant Australian food standards such as MRL standards.

Monitoring methodology of *Xanthomonas axonopodis* pv. *punicae* (Bacterial blight of pomegranate)

## Attachment-I

- 1) Farm Registration No. \_\_\_\_\_ 2) Date of registration/Renewal of farm \_\_\_\_\_  
 3) Name and address of the Farmer \_\_\_\_\_  
 4) Total area of the registered farm \_\_\_\_\_

Monitoring methodology of <i>Xanthomonas axonopodis</i> pv. <i>Punicae</i> (Bacterial blight of pomegranate)									
Flowering stages	Date of observation (fortnightly)	Name of pest observed <i>Xanthomonas axonopodis</i> pv. <i>punicae</i>	Crop stage	Present (Y)	Absent (N)	If present, Confirmation Y/N	Intensity of the pest	Plant protection measures adopted	Any other information/Remarks by State Deptt. of Agri./Hort
<b>Ambia bahar</b>	Nov-Dec		Pruning stage						
	December		New flush emergence						
	Dec-Jan		Flower bud emergence						
	Feb-Mar		Flowering and fruit setting						
	April-May		Fruit enlargement						
<b>Mrug bahar</b>	June-July		Fruit maturation						
	April-May		Pruning stage						
	May-June		New flush emergence						
	June-July		Flower bud emergence						
	July-Aug		Flowering and fruit setting						
	Aug-Oct		Fruit enlargement						
<b>Hast bahar</b>	Nov-Dec		Fruit maturation						
	Aug-Sep		Pruning stage						
	Oct-Nov		New flush emergence						
	November		Flower bud emergence						
	Dec-Jan		Flowering and fruit setting						
	Feb-Mar		Fruit enlargement						
	March-April		Fruit maturation						