

# Operational Work Plan Addendum for Irradiation Treatment of Articles from Vietnam into the Continental United States

October 2022

(Previous addenda superseded)

## 1. ARTICLES INCLUDED IN THE PROGRAM

The articles (grown and packed in Vietnam) to be exported to the United States:

- Dragon Fruit [*Selenicereus (Hylocereus) costaricensis*, *Selenicereus (Hylocereus) guatemalensis*, *Selenicereus (Hylocereus) megalanthus*, *Selenicereus (Hylocereus) monacanthus*, *Selenicereus (Hylocereus) ocamponis*, *Selenicereus (Hylocereus) undatus*, and crosses between approved species]
- Litchi (*Litchi chinensis*)
- Longan (*Dimocarpus longan*)
- Mango (*Mangifera indica*)
- Pummelo (*Citrus maxima*)
- Rambutan (*Nephelium lappaceum*)
- Star Apple (*Chrysophyllum cainito*)

## 2. GENERAL MITIGATION MEASURES

Program articles from Vietnam may be exported into the continental United States under the conditions listed below. For a complete list of entry requirements, please visit the [United States Department of Agriculture \(USDA\) Agricultural Commodity Import Requirements database](#).

**2.1. Commercial consignments:** The fruit must be commercially produced and be part of a commercial consignment as defined in 7 CFR Section 319.56-2.

**2.2. Irradiation treatment:** The fruit must be treated with irradiation in accordance with the [USDA Animal and Plant Health Inspection Service \(APHIS\) Treatment Manual](#) by receiving a minimum absorbed dose, as listed below, at an APHIS certified treatment facility in Vietnam and meet all other relevant requirements in 7 CFR 305.9.

Commodity	Minimum Absorbed Dose	Treatment Schedule per APHIS Treatment Manual
Dragon Fruit Litchi Longan Mango Rambutan Star Apple	400 Gy	T105-a-2
Pummelo	150 Gy	T-105-a-1

2.3. Freedom from quarantine pests not targeted by irradiation: Risks from quarantine pests (e.g., *Aceria litchi*, *Phytophthora litchi*, *Macrophoma mangiferae*, *Xanthomonas campestris* pv. *mangiferaeindicae*, *Cylindrocarpon lichenicola*, *Phyllosticta citriasiana*, and adults and pupae of Lepidoptera) may not be mitigated by irradiation. Upon preclearance inspection, all commodities must be free from quarantine pests which are not targeted by irradiation.

2.4. Phytosanitary Certificate: Each consignment must be inspected and accompanied by a Phytosanitary Certificate issued by the Ministry of Agriculture and Rural Development, Plant Protection Department (PPD).

2.5. Subject to inspection on arrival: Each consignment may be subject to port of entry document verification, monitoring, and/or inspection.

2.6. Packaging or labeling requirements

Boxes or cartons must be marked with:

- Production Unit Code (PUC)
- Treatment Facility Code (TFC)
- Packinghouse Code (PHC)
- Packing date
- Lot number
- A stamp with the words "Treated by irradiation" or "Treated with radiation"
- The international radura symbol

If the boxes or cartons are not palletized, they must *also* include:

- Treatment Identification Number (TIN)
- Treatment date

If the boxes or cartons are palletized, the pallets need to display only:

- Treatment Facility Code (TFC)
- Treatment Identification Number (TIN)
- Treatment date

The palletized boxes or cartons must be wrapped with polyethylene shrink wrap, net wrapping, or strapping (excluding air shipments). If air shipments are not palletized, cartons must be pest proof, and the shipment can be broken down into smaller shipping units, such as LD-3 air cargo containers. All openings in pest proof packages must be covered by material with holes no greater than 0.8 mm at the widest point (i.e. the hypotenuse or diameter of a round hole). This is equivalent to a mesh size of no greater than 0.6 mm x 0.6 mm (minimum of 30 mesh per linear inch).

### 3. QUARANTINE PESTS AND ARTICLE-SPECIFIC MITIGATION MEASURES

This section provides article-specific pests of concern and mitigation measures. Pests are categorized into “target” and “non-target” quarantine pests, based on the pest’s response to irradiation treatment. To mitigate the risk associated with “target” quarantine pests, the product must be irradiated with a minimum absorbed dose as described in section 2.2. The irradiation dose is meant to be sufficient to retard insect growth and development, or cause sterilization of the insect. It is possible that live insects may be found after treatment, however, risk of target quarantine pests will be mitigated. The risk from “non-target” quarantine pests is not known to be mitigated by the irradiation treatment. They may include, but are not limited to mites, mollusks, pathogens (viruses, fungi, bacteria), nematodes, and adults and pupae of Lepidoptera. Upon preclearance inspection, consignments must be free from all non-target quarantine pests.

#### 3.1. Dragon Fruit

(*Selenicereus costaricensis*, *S. guatemalensis*, *S. megalanthus*, *S. monacanthus*, *S. ocamponis*, and *S. undatus*)

Arthropods	Target/Non-Target Pest
Diptera: Tephritidae <i>Bactrocera correcta</i> <i>Bactrocera dorsalis</i> <i>Zeugodacus curcubitae</i>	Target
Hemiptera: Pseudococcidae <i>Planococcus lilacinus</i>	

#### 3.2. Rambutan (*Nephelium lappaceum*)

Arthropods	Target/Non-Target Pest
Diptera: Tephritidae <i>Bactrocera dorsalis</i>	Target
Hemiptera: Pseudococcidae <i>Pseudococcus aurantiacus</i> <i>Pseudococcus cryptus</i> <i>Exallomochlus hispidus</i> <i>Maconellicoccus hirsutus</i> <i>Nipaecoccus viridis</i> <i>Paracoccus interceptus</i> <i>Planococcus lilacinus</i> <i>Planococcus litchi</i> <i>Rastrococcus tropicasiaticus</i>	
Hemiptera: Coccidae <i>Ceroplastes rubens</i>	
Lepidoptera: Pyralidae <i>Conogethes punctiferalis</i>	
Lepidoptera: Gracillariidae <i>Conopomorpha cramerella</i>	Target: eggs and larvae of Lepidoptera
Lepidoptera: Tortricidae <i>Cryptophlebia ombrodelta</i>	Non-Target: adults and pupae of Lepidoptera

### 3.3. Star Apple (*Chrysophyllum cainito*)

Arthropods		Target/Non-Target Pest
Diptera: Tephritidae	<i>Bactrocera carambolae</i> <i>Bactrocera dorsalis</i>	Target
Hemiptera: Flatidae	<i>Lawana conspersa</i>	
Hemiptera: Pseudococcidae	<i>Maconellicoccus hirsutus</i> <i>Planococcus lilacinus</i> <i>Pseudococcus cryptus</i>	

### 3.4. Litchi (*Litchi chinensis*)

Arthropods		Target/Non-Target Pest
Acari: Eriophyidae	<i>Aceria litchii</i>	Non-Target
Diptera: Tephritidae	<i>Bactrocera dorsalis</i> <i>Zeugodacus cucurbitae</i> (also known as <i>Bactrocera cucurbitae</i> )	Target
Hemiptera: Coccidae	<i>Ceroplastes rubens</i>	
Hemiptera: Pseudococcidae	<i>Nipaecoccus viridis</i> <i>Paracoccus interceptus</i> <i>Planococcus lilacinus</i> <i>Planococcus litchi</i>	Target: eggs and larvae of Lepidoptera  Non-Target: adults and pupae of Lepidoptera
Lepidoptera: Gracillariidae	<i>Conopomorpha sinensis</i>	
Lepidoptera: Pyralidae	<i>Conogethes punctiferalis</i>	
Lepidoptera: Tortricidae	<i>Cryptophlebia ombrodelta</i>	
Fungi		
Oomycetes: Pythiales	<i>Phytophthora litchii</i>	Non-Target

**3.4.1. Growing conditions:** Litchi fruit must be grown in orchards registered with and monitored by the PPD to ensure that the fruit and trees are free of target and non-target pests, including *Aceria litchii* and *Phytophthora litchii*.

**3.4.2. Additional declarations:** The phytosanitary certificate issued by PPD must also include additional declarations stating the consignment was produced and prepared for export in accordance with the requirements in the bilateral operational workplan; and the consignment was inspected and found free of *Phytophthora litchii*.

**3.4.3. Packaging or labeling requirement:** Boxes must be stamped, "Not for importation into or distribution within FL."

**3.5. Longan (*Dimocarpus longan*)**

Arthropods		Target/Non-Target Pest
Acari: Eriophyidae	<i>Aceria litchii</i>	Non-Target
Diptera: Tephritidae	<i>Bactrocera dorsalis</i>	Target
Hemiptera: Coccidae	<i>Ceroplastes rubens</i>	
	<i>Drepanococcus chiton</i>	
Hemiptera: Pseudococcidae	<i>Exallomochlus hispidus</i>	
	<i>Maconellicoccus hirsutus</i>	
	<i>Nipaecoccus viridis</i>	
	<i>Paracoccus interceptus</i>	
	<i>Planococcus lilacinus</i>	
Lepidoptera: Gracillariidae	<i>Conopomorpha sinensis</i>	Target: eggs and larvae of Lepidoptera
Lepidoptera: Pyralidae	<i>Conogethes punctiferalis</i>	Non-Target: adults and pupae of Lepidoptera
Lepidoptera: Tortricidae	<i>Cryptophlebia ombrodelta</i>	

**3.5.1. Growing conditions:** Fruit must be grown in orchards registered with and monitored by PPD to ensure that the fruit and trees are free of target and non-target pests, including *Aceria litchii*.

**3.5.2. Packaging or labeling requirement:** Boxes must be stamped, "Not for importation into or distribution within FL."

**3.6. Mango (*Mangifera indica*)**

<b>Arthropods</b>		<b>Target/Non-Target Pest</b>
Diptera: Tephritidae	<i>Bactrocera carambolae</i> <i>Bactrocera correcta</i> <i>Bactrocera dorsalis</i> <i>Bactrocera zonata</i> <i>Zeugodacus curcurbitae</i> <i>Zeugodacus tau</i>	Target
Hemiptera: Pseudococcidae	<i>Maconellicoccus hirsutus</i> <i>Nipaecoccus viridus</i> <i>Planococcus lilacinus</i> <i>Pseudococcus cryptus</i> <i>Rastrococcus invadens</i>	
Coleoptera: Curculionidae	<i>Sternochetus gravis</i>	
Lepidoptera: Crambidae	<i>Conogethes punctiferalis</i> <i>Deanolis sublimbalis</i>	Target: eggs and larvae of Lepidoptera
Lepidoptera: Noctuidae	<i>Helicoverpa armigera</i>	Non-Target: adults and pupae of Lepidoptera
<b>Fungi</b>		
	<i>Macrophoma mangiferae</i>	Non-Target
<b>Bacteria</b>		
	<i>Xanthomonas citri</i> pv. <i>mangiferaeindicae</i>	Non-Target

**3.6.1. Risk management of *Macrophoma mangiferae*:** Either the fruit must be 1) treated with a broad-spectrum, post-harvest fungicidal dip; or 2) the orchard of origin is inspected prior to the beginning of harvest and found free of *Macrophoma mangiferae*; or 3) fruit must originate from an orchard that was treated with a broad-spectrum fungicide during the growing season.

**3.6.2. Additional declaration:** The phytosanitary certificate issued by PPD must also include an additional declaration stating the consignment was inspected and found free of *Macrophoma mangiferae* and *Xanthomonas citri* pv. *mangiferaeindicae* and has been produced in accordance with the requirements of the systems approach approved under 7 CFR 319-56.4.

3.7. Pummelo (*Citrus maxima*)

Arthropods		Target/Non-Target Quarantine Pest
Diptera: Tephritidae	<i>Bactrocera dorsalis</i>	Target
	<i>Zeugodacus cucurbitae</i>	
Lepidoptera: Yponomeutidae	<i>Prays endocarpa</i>	Non-Target: adults and pupae of Lepidoptera  Target: eggs and larvae of Lepidoptera
Fungi		
Hypocreales: Nectriaceae	<i>Cylindrocarpon lichenicola</i>	Non-target
Botryosphaerales: Phyllostictaceae	<i>Phyllosticta citriasiana</i>	

3.7.1. Risk management of *Cylindrocarpon lichenicola* and *Phyllosticta citriasiana*:

- a) Fallen fruit must not be included in field containers of fruit brought to the packinghouse to be packed for export.
- b) The fruit must be washed, brushed, surface disinfected, treated with fungicide (e.g. Imazalil and /or thiabendazole) at labeled rates, and waxed after application and drying of fungicides.
- c) Consignments must be practically free of leaves, twigs, and other plant parts, except for stems that are less than one inch long and attached to fruit.

3.7.2. Additional declaration: The phytosanitary certificate issued by PPD must include an additional declaration stating the fruit in the consignment are free of all quarantine pests and have been produced in accordance with the requirements of the systems approach.

**4. EXPORT INSPECTION REQUIREMENTS FOR ALL ARTICLES**

APHIS and PPD will jointly perform a pre-treatment inspection of the fruit utilizing the sampling and inspection protocol described below, or document and describe an equivalent process to ensure specified levels of detection.

**4.1. Pest Identification:** If requested, PPD will provide pest identification services for plant pests detected during pre-treatment inspection so that immediate regulatory decisions can be made regarding any lot in question.

**4.2. Inspection Records:** PPD will document and record all sampling and inspection activities and provide records to APHIS at the end of the shipping season or upon APHIS request.

**4.3. Inspection Protocol:** Prior to treatment, a random systematic sample must be drawn and inspected by APHIS and PPD to ensure that the articles are free from pests not targeted by irradiation and have low infestation levels of target pests of concern. The sampling and inspection protocol described in this section should provide the following levels of detection and confidence:

- 95% confidence of detecting a 2% or greater pest population for external pests
- 95% confidence of detecting a 10% or greater pest population for internal feeders (excluding pummelo)

Commodity	Inspection Type	Minimum Fruit	Minimum Boxes
All	External/Visual Inspection	149	5
Dragon Fruit Litchi Longan Mango Rambutan Star Apple	Internal Inspection (cut fruit and seeds)	29	
Pummelo	Internal Inspection	All damaged and/or symptomatic fruit*	

\*Pummelo that is not damaged presents lower risk of internal pests due to thick rinds.



4.3.1. *Box selection:* Randomly select a minimum of 5 boxes from across each lot.

- To determine the number of boxes to select for inspection (sample cartons), divide 149 by the average number of fruit per carton and round up to the next whole number. A minimum of 5 cartons must be selected for inspection. If 149 divided by the average number of fruit per carton (box) is less than 5, the number of cartons to be selected for inspection is 5.

Example: elephant mango with 6 fruit per box  
 $149/6 = 24.8 = 25$  boxes to inspect

- The first sample carton should be chosen from a randomly selected point in the lot. Subsequent sample cartons should be selected in such a way as to be both stratified throughout the lot and randomly located on each pallet.

4.3.2. *Box weight:* Weigh each selected box to ensure that the box weight falls within the accepted weight range for the selected process configuration as specified in the Irradiation Reporting and Accountability Database (IRADS).

4.3.3. *Visual inspection:* Visually inspect a **minimum of 149** fruit from each lot for external pests and set aside all suspect fruit for internal inspection. If there are less than 149 total fruit in the lot, inspect all fruit.

**Note:** For commodities with numerous fruit per box (e.g., longan, litchi, rambutan), inspect all fruit from at least 5 boxes.

4.3.4. *Carton inspection:* Thoroughly inspect the interior and exterior of each carton in the sample for quarantine pests both targeted and those not targeted by the irradiation treatment.

4.3.5. *Internal inspection:* Inspect a **minimum of 29** fruit for internal quarantine pests. All suspect fruit from external visual inspection should be cut and inspected for internal pests. If the total number of suspect fruit is less than 29, randomly select additional fruit until a total of 29 fruit is reached. Cut open and inspect a minimum of 29 fruit, including the seed if applicable, for internal quarantine pests.

**Note:** Pummelo will only be cut for biometric sampling for fruit displaying symptoms or damage.

**5. ACTIONS TO TAKE BASED ON INSPECTION FINDINGS OF QUARANTINE PEST IN VIETNAM**

<b>Target/ Non-Target</b>	<b>Pest</b>	<b>Number Found</b>	<b>Action</b>
<b>Target</b>  (Quarantine Pests Targeted by Irradiation)	Tephritidae (fruit fly)	1 or more	Reject lot
	Internal Lepidoptera (eggs or larvae)	1	Certify lot and notify APHIS Preclearance Area Director
		2 or more	Reject lot
	Other Internal Pests (Not Tephritidae or Lepidoptera)	1 or more	Certify lot and notify APHIS Preclearance Area Director
	Target External Pest	1	Certify lot
		2 or more	Certify lot and notify APHIS Preclearance Area
8 or more fruit with 5 or more target pests (5% moderate to heavy infestation)		Reject lot	
<b>Non-Target</b>  (Quarantine Pests and Pathogens NOT targeted by irradiation)	Snails, pathogens, mites, Lepidopteran pupae, or adults	1 or more	Reject lot

**5.1.** APHIS and PPD officials may reject a lot if there is a significant number of fruit (e.g., 5% or more) with moderate to heavy infestation of quarantine pests. This is an indicator of potential phytosanitary concerns along the safeguarding continuum (e.g., production areas, transport, packinghouse procedures).

**5.2.** Commodities treated with sulfites, including sodium metabisulfite, will result in immediate lot rejection. U.S. regulations do not permit the use of sulfites on fresh fruit intended for U.S. consumers because it contains an unapproved food additive (under section 402(a)(2)(C)(i) of the U.S. Federal Food, Drug, and Cosmetic Act).

**5.3.** PPD shall work with producers and packing houses to inform APHIS of all postharvest measures and chemicals applied to precleared fruit. APHIS and PPD will evaluate the potential health and safety impacts of chemicals to inspectors and staff. Failure to disclose this information may result in rejection of fruit for export.

**SIGNATORIES**

**UNITED STATES**

**REBECCA  
STANKIEWICZ  
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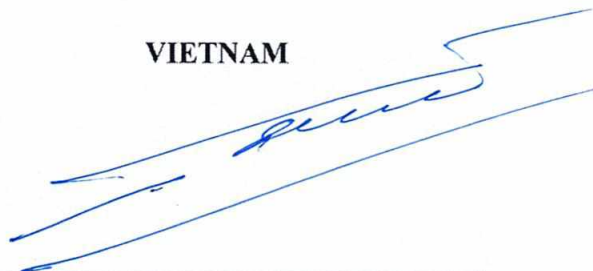
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Dr. Rebecca Stankiewicz Gabel, Director  
Preclearance and Offshore Programs  
Animal and Plant Health Inspection Service  
United States Department of Agriculture

Riverdale, Maryland

Date: October 14, 2022

**VIETNAM**



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Dr. Hoang Trung, Director General  
Plant Protection Department  
Ministry of Agriculture and Rural Development

Hanoi, Vietnam

Date: October 17, 2022