

**Laura Jeffers Ph.D.**

**USDA APHIS PPQ Phytosanitary  
Irradiation Programs:**

***Where are we going?***

# USDA APHIS PPQ Phytosanitary Irradiation Programs: *Where are we going?*



- OBSTACLES
- SOLUTIONS
- RESOURCES



# USDA APHIS PPQ Phytosanitary Irradiation

## Unique Features

- Mortality is not intended treatment outcome
- Pest Proof Packaging (PPP)
- Treatment schedules are commodity independent
- Trade facilitating technology
- Commodity tracking available via IRADS
- Maintain cold chain during treatment
- Upon arrival program



# USDA APHIS PPQ Phytosanitary Irradiation Upon Arrival Program

## Sadex Corporation

- Certified 2009
- Sioux City IA
- E-beam

## Gateway America

- Certified 2013
- Gulfport MS
- $^{60}\text{Co}$

## National Center for Electron Beam Research

- Certified 2012
- College Station TX
- E-beam

## RGV Electronic Cold- Pasteurization Center™

- Certified 2022
- McAllen TX
- E-beam



REVEAM

# USDA APHIS PPQ Phytosanitary Irradiation Upon Arrival Program

Dominican Republic: mango,

Chile: plum, **grapes**

Colombia: mango, **blueberries**

Ecuador: Avocado Cape gooseberry

Grenada: ambarella, purple & yellow mombin, mango

Jamaica: mango

Mexico: Guava, carambola, clementine, dragon fruit, fig,  
grapefruit, mango, manzano pepper, pomegranate, sweet  
lime, sweet orange, tangelo

Pakistan: mango

Peru: fig, pomegranate, blueberry, **asparagus**

South Africa: persimmon, litchi



Guava from Mexico



Persimmon from South Africa



Mango from Pakistan



Pomegranates from Peru



Mango from Dominican Republic



Figs from Peru

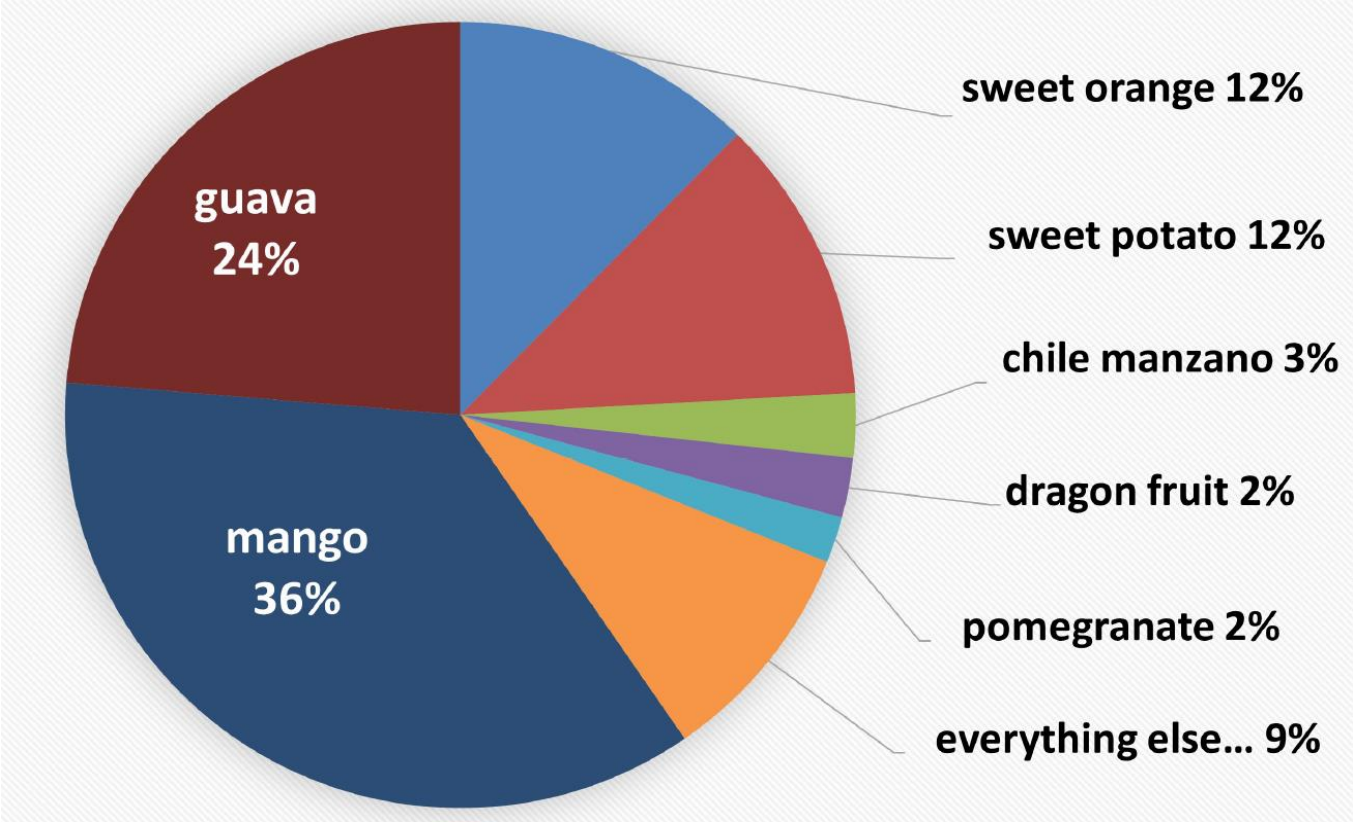


Litchi from South Africa

# USDA APHIS PPQ Phytosanitary Irradiation 2022 Program Totals

<u>COMMODITY TOTALS</u>	<u>KGS</u>	<u>COMMODITY TOTALS</u>	<u>KGS</u>
mango	19,874,499	star apple	185165
guava	13,107,055	carambola	179458
sweet orange	6,843,130	papaya	155136
sweet potato	6,497,902	curry leaf	149642
chile manzano	1460345	moringa pods	21550
dragon fruit	1361919	pummelo	41448
pomegranate	1048477	basil	35379
fig	976154	moringa leaves	42383
grapefruit	788218	ambarella	19159
pitaya	741261	rambutan	14802
litchi	655199	betel	5043
longan	621177	mangosteen	735
plum	303269	lime	36
mandarin	206507	<b>TOTAL</b>	<b>55 Million KGS</b>

# USDA APHIS PPQ Phytosanitary Irradiation 2022 Program Totals

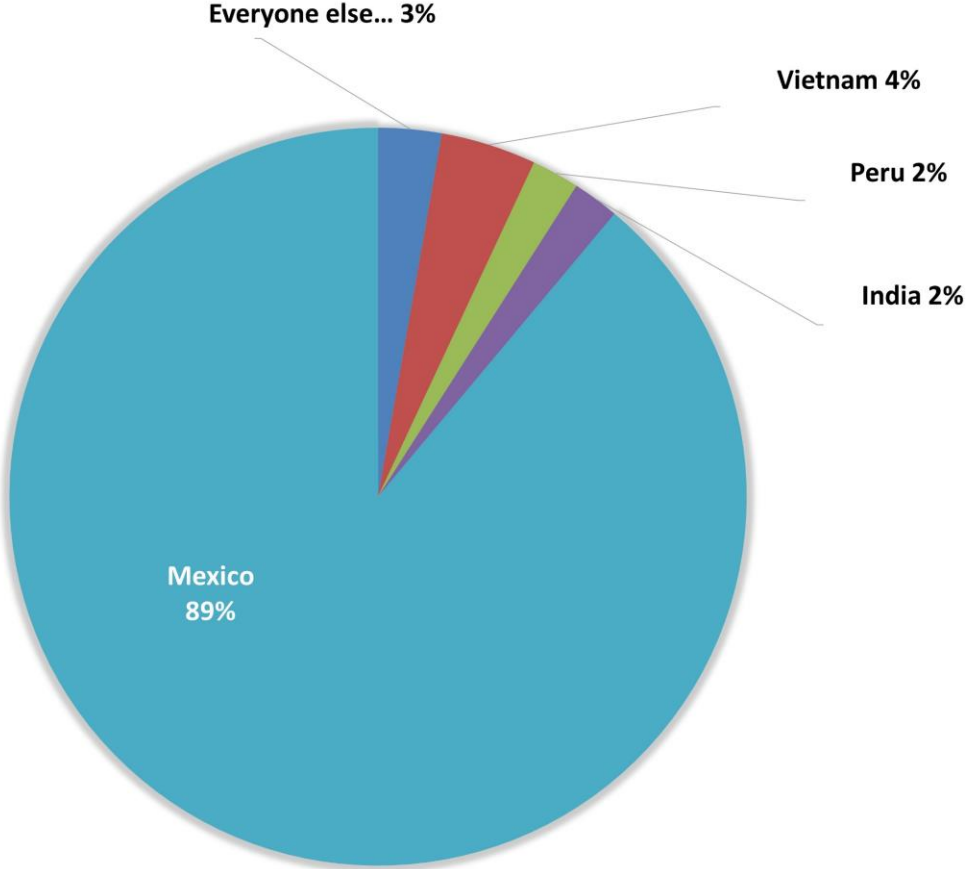


# USDA APHIS PPQ Phytosanitary Irradiation 2022 Import Program Totals

**COUNTRY TOTALS KGS**

Mexico	42,759,025
Vietnam	2,012,085
Peru	1,005,869
India	982,500
South Africa	467,745
Chile	303,269
Australia	292,649
Pakistan	223,535
Jamaica	27,472
Grenada	19,159
Thailand	0
Dominican Republic	0

**TOTAL 48 Million KGS**





# USDA APHIS PPQ Phytosanitary Irradiation 2022 Program Totals

<u>PROGRAM TOTALS</u>	<u>METRIC TONS</u>	<u>IMPORT PROGRAM TOTALS</u>	<u>KGS</u>
Import Programs	48,000	Preclearance	45,500,000
Export Programs	0	Offshore	300,000
Domestic Programs	7,000	Upon Arrival	2,500,000
<b>TOTAL</b>	<b>55,000</b>	<b>TOTAL</b>	<b>48,000,000</b>

# USDA APHIS PPQ Phytosanitary Irradiation Challenges?

- FDA 1000 GY maximum for fruits and vegetables
- FDA Labelling requirements
- Consumer acceptance
- Regulatory acceptance
- No market access

# USDA APHIS PPQ Phytosanitary Irradiation

## Current Challenges

- FDA regulates irradiation as a food additive
  - 1958 Food Additives Amendment to the Federal Food, Drug, and Cosmetic Act
  - Irradiated products cannot be certified organic
- Facilitate acceptance with U.S. State Departments of Agriculture
  - Commodity port of entry/transit through state
  - Establish upon-arrival irradiation facilities in Southern and Western states
  - Benefits for domestic growers
- Maximize capacity building with upon-arrival irradiation program
  - Explore and establish new markets for trading partners
  - Move those treatments back to the country of origin to make room for new markets

# USDA APHIS PPQ Phytosanitary Irradiation

## Current Challenges

- Educate industry about needs
  - Irradiators designed to deliver phytosanitary doses
  - Irradiators strategically placed at high volume, perishable ports of entry and lading
  - In-line and/or mobile irradiators
- Educate industry about unique features of irradiation
  - “Value-added” treatment
  - Maintains commodity cold-chain
- Educate regulators about perishable logistics
  - Transportation logistics
  - Packaging advancements
  - OPERATIONAL FEASIBILITY

# USDA APHIS PPQ Phytosanitary Irradiation Industry Resources

## Freedom of Information Act

**VIA Web Request Form:** [Click here to submit your FOIA Request Online.](#) If you should need assistance using the Web Request Form, you may contact the FOIA Office at 301-851-4102.

## VIA MAIL:

Animal and Plant Health Inspection Service  
Director, Freedom of Information and Privacy Act Staff  
4700 River Road, Unit 50  
Riverdale, MD 20737

**VIA FACSIMILE:** 301-734-5941

[https://www.aphis.usda.gov/aphis/resources/foia/ct\\_how\\_to\\_submit\\_a\\_foia\\_request#:~:text=All%20FOIA%20requests%20must%20be%20submitted%20in%20writing,you%20may%20contact%20the%20FOIA%20office%20at%20301-851-4102.](https://www.aphis.usda.gov/aphis/resources/foia/ct_how_to_submit_a_foia_request#:~:text=All%20FOIA%20requests%20must%20be%20submitted%20in%20writing,you%20may%20contact%20the%20FOIA%20office%20at%20301-851-4102.)

# USDA APHIS PPQ Phytosanitary Irradiation Industry Resources

## APHIS Irradiation Imports

USDA United States Department of Agriculture  
Animal and Plant Health Inspection Service

Home Our Focus Resources Newsroom Blog

Plant Health / Import into the U.S. / Quarantine Treatments

### Irradiation Treatment

Last Modified: Jun 26, 2015

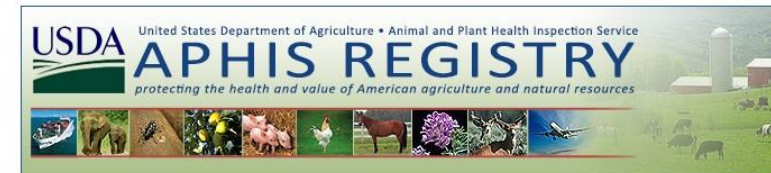
In order to meet U.S. entry requirements, certain fresh fruits and vegetables require the application of a quarantine treatment to mitigate pests that may pose a phytosanitary risk to US agriculture and natural resources. Irradiation is a viable option utilized for this purpose in some instances.

Click the links below for information to determine if an irradiation treatment is an option, and if applicable, the requirements to utilize irradiation treatments.

- [I want to use irradiation as a treatment to import a commodity. Where do I start?](#)
- [I checked FAVIR. The commodity is eligible for entry, but irradiation is not listed as an approved treatment. What do I do?](#)
- [I checked FAVIR. The commodity is eligible for entry, and irradiation is an approved treatment. What are my options?](#)
- [Are there non-phytosanitary import requirements that I should be aware of?](#)
- [I am interested in having an irradiation facility certified by APHIS to apply quarantine treatments for fresh fruits and vegetables. Where can I get more information?](#)

USDA APHIS → Plant Health → Import into the US  
→ Quarantine Treatments → Irradiation

## APHIS Stakeholder Registry



### Email Updates

To sign up for updates or to access your subscriber preferences, please enter your contact information below.

Subscription Type

\*Email Address

Your contact information is used to deliver requested updates or to access your subscriber preferences.

[Privacy Policy](#) - [Help](#)

<https://public.govdelivery.com/accounts/>

[USDAAPHIS/subscriber/new](https://public.govdelivery.com/accounts/USDAAPHIS/subscriber/new)

# USDA APHIS PPQ Phytosanitary Irradiation Industry Resources

## ACIR (replaced FAVIR)



<p>Plants and Plant Propagation</p> <p>Imported material of plants and vegetative parts that are for or capable of propagation, including buds, corms, cuttings, layers, pollen, scions, seeds, tissue, tubers, and like structures</p>	<p>Plants and Plant Products Not for Propagation</p> <p>Fruits, vegetables, seeds, cut flowers, or handicrafts not for propagation, including products that are fresh, cooked, dried, cut, frozen, and other similar processed states</p>	<p>Wood Products and Byproducts</p> <p>Logs, lumber, cross ties, firewood, wood chips, mulch, wood packaging material, cork and other similar articles</p>	<p>Pest Organisms</p> <p>Fungi, Chromista, pest insects, other assorted plant pathogens, butterflies, and more</p>
<p>Other Items</p> <p>Tools, materials, or machinery that can act as carriers for pests, including vehicles, containers, bags, packing materials, and other similar articles</p>	<p>Soil, Soil Amendments, and Rocks</p> <p>Compost, manure, rock, sand, soil, and other similar articles</p>	<p>Treatments</p> <p>Phytosanitary treatments for quarantine-significant pests on imported and domestic commodities</p> <p>All fumigant treatment schedules are now available for Beta testing.</p>	

<https://acir.aphis.usda.gov/s/>

## USDA APHIS PPQ Treatment Manual



[https://www.aphis.usda.gov/import\\_export/plants/manuals/ports/downloads/treatment.pdf](https://www.aphis.usda.gov/import_export/plants/manuals/ports/downloads/treatment.pdf)



# Thanks.

---

 [USDA APHIS | Plant Health \(PPQ\) Home Page](#)

 [Laura.a.Jeffers@usda.gov](mailto:Laura.a.Jeffers@usda.gov)

 [Linked in profile](#)

 (919) 396-9859