



# **APHIS PPQ Phytosanitary Irradiation Program**

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United States Department of Agriculture

# Outline

- APHIS PPQ Overview
- General Information
- Regulatory Overview
- Program Types





# PPQ Mission

Regulate the movement of any commodity capable of harboring invasive, threatening plant pests, including noxious weeds, in order to protect the “agriculture, environment, and economy of the United States”

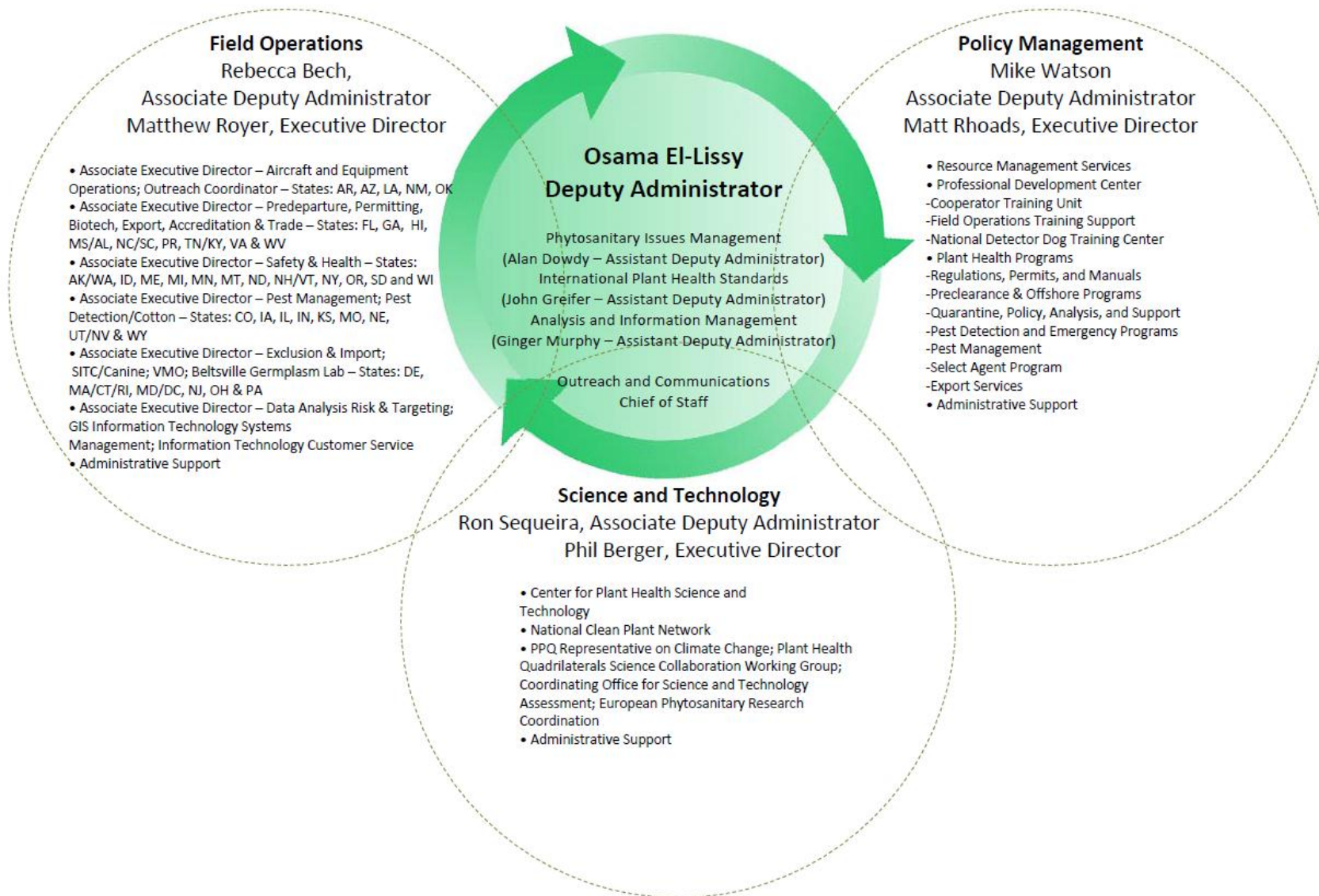
Facilitate import, export, and interstate commerce of agricultural products and other commodities that pose a risk of harboring certain plant pests

Plant Protection Act of 2000



# Plant Protection and Quarantine Organizational Structure

Current as of September 2015



# Approved Source Types

**Gamma:**  $^{60}\text{Cobalt}$  or  $^{137}\text{Cesium}$  emits photons during decay

**E-beam:** High energy electrons propelled from an electron gun

**X-ray:** High energy electrons are converted to X-rays (photons)



# Phytosanitary Irradiation

APHIS treatments require minimum absorbed doses between 60-400 Gy

FDA limits fresh fruit and vegetable treatments to 1000 Gy

Radura must be visible at the point of sale for fresh fruits and vegetables



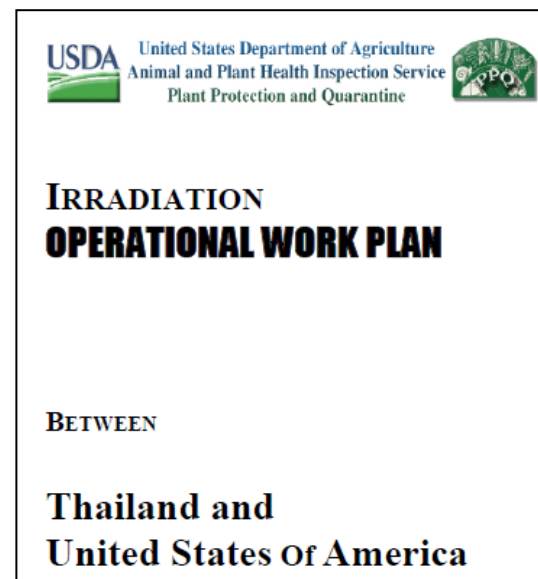
# Pest Proof Packaging

As mortality is not the target response for APHIS treatments, live insects may remain after treatment



# Regulatory Summary

- Market access granted
- Framework equivalency work plan signed
- Trust fund established
- Operational work plan signed
- Commodity-specific addendum signed





# Regulatory Summary



- Facility plan approved
- Facility certified
- Importer compliance agreement signed
- Importer permit granted
- Packaging approved
- Process configuration approved

# Irradiation Program Types

## **Preclearance and Offshore Programs**

Offshore irradiation of US imports 

## **Port of Entry Program**

Domestic irradiation of US imports 

## **Domestic Quarantine Program**

Irradiation for domestic movement 

## **Export Program**

Irradiation of US exports

# Preclearance: India



## Krushak

- First certified overseas facility
- Certified 2007
- $^{60}\text{Co}$

# Preclearance: Thailand

## Synergy Health Ltd

- Certified 2008
- $^{60}\text{Co}$

## Thai Irradiation Center

- Certified 2007
- $^{60}\text{Co}$



# Preclearance: Vietnam



## An Phu Irradiation

- Certified 2009
- $^{60}\text{Co}$

## Son Son Corporation

- Certified 2008
- E-beam

# Preclearance: Mexico

## Sterigenics

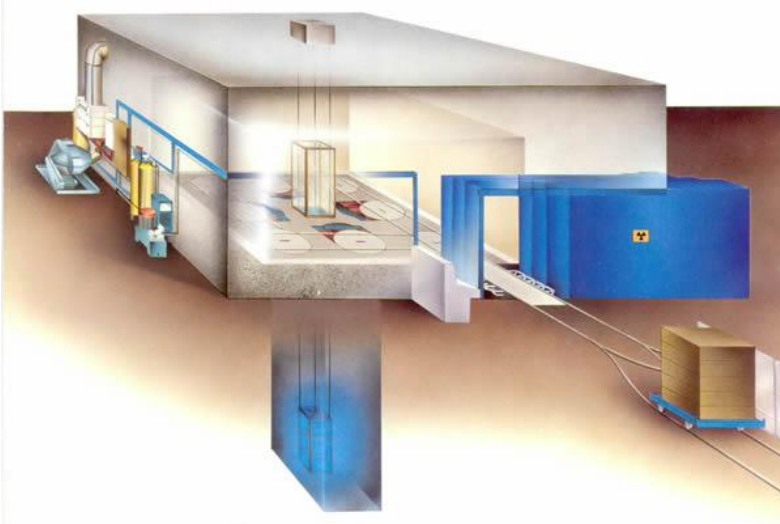
- Certified 2008
- $^{60}\text{Co}$

## Benebi3n

- Certified 2011
- $^{60}\text{Co}$



# Preclearance: South Africa



## High Energy Processing (HEPRO)

- Certified 2012
- $^{60}\text{Co}$



# Preclearance Totals

(in kg)

	India	Mexico	South Africa	Thailand	Vietnam	Total
2007	0	0	0	195,000	0	195,000
2008	276,000	262,000	0	2,440,000	121,000	3,099,000
2009	132,000	3,559,000	0	2,247,000	117,000	6,055,000
2010	94,000	5,672,000	0	1,540,000	754,000	8,060,000
2011	80,000	5,539,000	0	743,000	1,445,000	7,807,000
2012	217,500	8,349,500	16,500	937,500	1,764,500	11,286,500
2013	283,000	9,526,000	16,500	1,060,500	1,967,500	12,853,500
2014	265,500	10,119,500	0	843,000	2,293,000	13,617,500



# Offshore Program

## Australia Mango and Lychee Irradiation Pilot Program- 3 years

### Steritech

- Certified 2015
- $^{60}\text{Co}$
- Fruit exports to New Zealand



# Port of Entry



## Sadex Corporation

- Certified 2009
- Sioux City IA
- E-beam

# Southern Tier Rule



<http://www.gpo.gov/fdsys/pkg/FR-2012-07-20/pdf/2012-17725.pdf>

# Southern Tier Rule

As of July 2012, establishment of port of entry phytosanitary irradiation facilities are allowed in the Southern U.S. states.

## Additional Requirements:

- Approval by State Representative to the National Plant Board (State Plant Regulatory Official)
- Refrigerated Conveyance of Commodity
- Maps of Surrounding Agricultural Production Areas
- Pest Trapping or Monitoring
- Additional Facility Safeguarding

# Southern States: Port of Entry

## NCEBR

- Certified 2012
- College Station TX
- E-beam



## Gateway America

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



# Southern States: Port of Entry

## Issues

- Additional safeguarding at the facility
- Pre-approve packaging
- **Process configuration approval upon arrival**

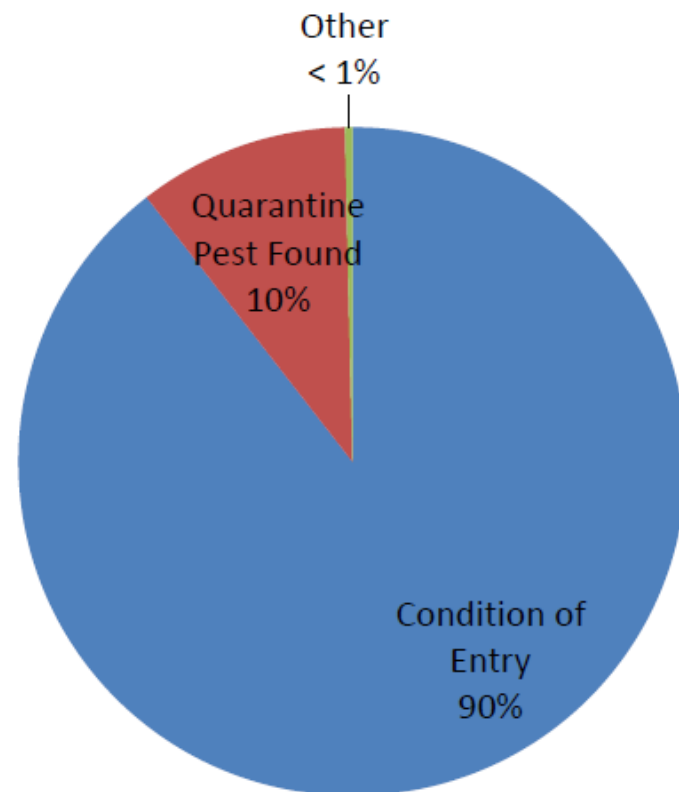


# Process Configuration Testing

Condition of Entry  
Treatment



Emergency  
Action



US Imports: 2014 MB Usage

# Domestic Movement



## Hawaii Pride

- 1<sup>st</sup> PPQ-certified facility
- X-ray

## Pa'ina Hawaii

- Certified 2012
- $^{60}\text{Co}$





# PPQ Irradiation Treatment Site

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

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

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

**Plant Health**

- Program Overview
- Pests and Diseases
- Import into the U.S.
- Export from the U.S.
- International
- Manuals

## 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?](#)

Before a fresh fruit or vegetable becomes eligible for irradiation treatment into the U.S. it must first be approved for importation into the U.S. and listed in the Fruits and Vegetables Import Requirements Database (FAVIR). If a commodity is not listed in FAVIR then it is not currently eligible for entry and must be approved for importation via the Animal and Plant Health Inspection Service (APHIS) commodity import approval process. This process begins with a request from the Plant Protection Organization of the originating country. For more concerning the commodity import approval process, view the Commodity Import Request Process APHIS web page.

[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?](#)



# PPQ Stakeholder Registry

<https://public.govdelivery.com/accounts/USDAAPHIS/subscriber/new>



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# PPQ Stakeholder Registry



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- Legislative and Public Affairs
- Plant Health Information
  - Importation into the US
  - Exportation from the US
  - Plant Health in the US (Domestic)
- Manuals Updates
  - Import Inspection Manuals
    - Agricultural Quarantine Inspection Monitoring (AQIM) Handbook [Y](#) [?](#)
    - Animal Product Manual [Y](#) [?](#)
    - Canadian Border Agricultural Clearance Manual [Y](#) [?](#)
    - CITES I-II-III Timber Species Manual [Y](#) [?](#)
    - Cut Flowers and Greenery Import Manual [Y](#) [?](#)
    - Export Program Manual (XPM) [Y](#) [?](#)
    - Federally Recognized State Managed Phytosanitary (FRSMP) Program Manual [Y](#) [?](#)
    - Fruits and Vegetables Import Requirements (FAMR) database [Y](#) [?](#)
    - Fresh Fruits and Vegetable Manual [Y](#) [?](#)
    - Hawaii Manual [Y](#) [?](#)
    - Japanese Beetle Program Manual for Airports [Y](#) [?](#)
    - Manual for Agricultural Clearance [Y](#) [?](#)
    - Mexican Border Job Aid [Y](#) [?](#)



- Miscellaneous and Processed Product Manual [?](#)
- National Detector Dog Manual [?](#)
- Plants for Planting Manual [?](#)
- Postentry Quarantine Manual for State Inspectors (PEQ) [?](#)
- Puerto Rico Manual [?](#)
- Reviewer's Manual for the Technical Advisory Group for Biological Control Agents of Weeds/Settings [?](#)
- Seeds Not for Planting Manual [?](#)
- Treatment Manual [?](#)

Program Manuals [?](#)

- Aerial Application Manual [?](#)
- Emerald Ash Borer Program Manual (EAB) [?](#)
- Emergency Response Manual [?](#)
- Golden Nematode Program Manual [?](#)
- Grasshopper Guidebook [?](#)
- Gypsy Moth Manual [?](#)
- Imported Fire Ant Program Manual [?](#)
- New Pest Response Guidelines [?](#)
- Panicle Rice Mite Program Manual [?](#)
- Treatment Manual [?](#)
- Federally Recognized State Managed Phytosanitary (FRSMP) Program Manual [?](#)

News and Information

- News and Information (Plant Health) [?](#)
- Federal Register Notices (Plant Health) [?](#)
- Meetings (Plant Health) [?](#)
- Electronic Databases - System Status [?](#)
  - e-permits [?](#)
  - Integrated Plant Health Information System (IPHIS) [?](#)
  - Phytosanitary Certificate Issuance and Tracking (PCIT) [?](#)
  - Fruits and Vegetables Import Requirements (FAMR) [?](#)

Veterinary Services

Wildlife Services

# PPQ Stakeholder Registry

# Final Thoughts and Questions



“Any policy is a success by sufficiently low standards and a failure by sufficiently high standards.” -Thomas Sowell