Phytosanitary Irradiation Treatments: An Important Mitigation Tool in the Agriculture Quarantine Inspection (AQI) Toolbox

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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 November, 2016

Osama El-Lissy
Deputy Administrator
Phytosanitary Issues Management
(Andrea Simao – Assistant Deputy Administrator)
International Plant Health Standards
(John Greffer – Assistant Deputy Administrator)
Analysis and Information Management
(Ginger Murphy – Assistant Deputy Administrator)
Outreach and Communications
Labor and Employee Relations
Chief of Staff

Science and Technology
Ron Sequeira, Associate Deputy Administrator
Phil Berger, Executive Director
- Center for Plant Health Science and Technology
- National Clean Plant Network
- PPQ Representative on Climate Change; Plant Health Quadrilaterals Science Collaboration Working Group; Coordinating Office for Science and Technology Assessment; European PhytoSanitary Research Coordination
- Administrative Support

Field Operations
Matthew Royer,
Associate Deputy Administrator
Carlos Martinez, Executive Director
- Associate Executive Director – Aircraft and Equipment Operations; Outreach Coordinator – States: AR, AZ, LA, NM, OK
- Associate Executive Director – Predeparture, Permitting, Biotech, Export, Accreditation & Trade – States: FL, GA, HI, MS/AL, NC/SC, PR, TN/KY, VA & WV
- Associate Executive Director – Safety & Health – States: AK/WA, ID, ME, MI, MN, MT, ND, NH/VT, NY, OR, SD and WI
- Associate Executive Director – Pest Management; Pest Detection/Cotton – States: CO, IA, IL, IN, KS, MO, NE, UT/NV & WY
- Associate Executive Director – Exclusion & Import; SITC/Canine; VMO; Beltsville Germplasm Lab – States: DE, MA/CT/RI, MD/DC, NJ, OH & PA
- Associate Executive Director – Data Analysis Risk & Targeting; GIS Information Technology Systems Management; Information Technology Customer Service
- Administrative Support

Policy Management
Alan Dowdy
Associate Deputy Administrator
Matt Rhoads, Executive Director
- Resource Management Services
- Professional Development Center
- Cooperative Training Unit
- Field Operations Training Support
- National Detector Dog Training Center
- Plant Health Programs
- Preclearance & Offshore Programs
- Quarantine, Policy, Analysis, and Support
- National Identification Services
- Imports, Regulations, and Manuals
- Permitting and Compliance Coordination
- Pest Detection and Emergency Programs
- Pest Management
- Export Services
- Administrative Support
Phytosanitary Irradiation

• APHIS treatments require an absorbed doses between 60-400 Gy

• FDA limits fresh fruit and vegetable treatments to 1000 Gy

• Irradiated food products must bear the Radura
Phytosanitary Irradiation

Treatment response options:

• Mortality
• Sterilization
• Inactivity or Devitalization
• Inability to Emerge/Fly

Mortality is usually not the target response for APHIS treatments and live insects may remain after treatment.
Pest Proof Packaging

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

Preclearance and Offshore
Irradiation of U.S. Imports in Country of Origin

Upon Arrival (Port of Entry)
Irradiation of U.S. Imports in United States

Domestic Quarantine
Irradiation for Domestic Movement out of Federal Quarantines

Exports
Irradiation of U.S. Exports
The Genesis of Port of Entry

Sadex Corporation
- Certified 2009
- Sioux City IA
- Pakistan Mangos
- E-beam
Southern Tier Rule

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
Upon Arrival Facilities

National Center for Electron Beam Research (NCEBR)
- Certified 2012
- College Station TX
- E-beam
Upon Arrival Facilities

Gateway America
• Certified 2013
• Gulfport MS
• $^{60}\text{Co}$
Future of Upon Arrival Irradiation

Condition of Entry Treatment

Emergency Action

US Imports: MB Usage

- Condition of Entry: 90%
- Quarantine Pest Found: 10%
- Other: < 1%
What commodities are eligible for upon arrival irradiation?
Framework Equivalency Workplan

- Mutual agreement between two countries stating that each country will legally accept the other’s system of irradiated products
- As of 3/01/2017, 13 FEWPs are signed with U.S. trading partners
  - Australia
  - Dominican Republic
  - Ecuador
  - Granada
  - India
  - Laos
  - Malaysia
  - Mexico
  - Pakistan
  - Peru
  - Philippines
  - South Africa
  - Thailand
  - Vietnam
FF&V Import Manual


- List of all Enterable Fruits and Vegetables into US
- Condition of Entry Treatments
- Regions of Entry
- Additional Requirements
What’s available today?

**Dominican Republic:** mango

**Mexico:** guava, mango, manzano pepper, fig, grapefruit, sweet lime, sweet orange, tangerine

**Pakistan:** mango

**Peru:** fig, pomegranate, fig

**South Africa:** persimmon, litchi
PPQ Irradiation Treatment Site

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

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

**Subscription Type**
[Email]

*Email Address

[Submit]  [Cancel]

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

[Privacy Policy] - [Help]
Final Thoughts & Questions

The four basic personality types:

- I love irradiation!!!
- I hate irradiation!!!
- I can't make up my mind about irradiation.
- What the #@$$%& is irradiation?!!