

USDA-APHIS-PPQ Phytosanitary Irradiation

Laura A Jeffers

National Operations Manager Phytosanitary Treatments Field Operations USDA APHIS PPQ



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 July 2020

Field Operations Matthew Royer,

Associate Deputy Administrator Carlos Martinez, Executive Director

- Associate Executive Director Specialty Crops, Safety & Health, Export & Trade – States: AK, WA, OR, CA, NV, UT
 Associate Executive Director – VMO, Regulated Garbage, States: ID, MT, WY, CO, ND, SD, NE, KS, HI
 Associate Executive Director – Forest Pest, Biocontrol,
- Permitting-States: MN, WI, MI, IA, IL, IN, OH, MO, KY, TN • Associate Executive Director-AQI, PIS, Treatments,
- Beltsville Germplasm Lab-States: ME, VT, NH, MA, RI, CT, NY, NJ, PA, DE, MD, WV
- Associate Executive Director-Pest Management, Pest Detection, Emergency Response, Farm Bill-States: VA, NC, SC, GA, FL, AL, MS, PR
- Associate Executive Director-Cotton & Field Crops, SITC, Compliance, AEO-States: AZ, MN, OK, TX, AR, LA
- Associate Executive Director-Data Analysis Risk & Targeting, IT End User Tools, Information Technology Customer Service
 Administrative Customer End
- Administrative Support

Osama El-Lissy Deputy Administrator

Phytosanitary Issues Management (Andrea Simao – Assistant Deputy Administrator) International Plant Health Standards (John Greifer – Assistant Deputy Administrator) Intergovernmental Relations (Paula Henstridge – Assistant Deputy Administrator) Communications (Heather Curlett) Labor and Employee Relations – (Angela French-Bell) Chief of Staff (Abbey Powell)

Policy Management Alan Dowdy Associate Deputy Administrator Matt Rhoads, Executive Director

Resource Management Services
 Professional Development Center
 Cooperator 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

Science and Technology

Ron Sequeira, Associate Deputy Administrator Wendy Jin, 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



Phytosanitary Treatments

Strategies to mitigate pest risk may include field measures, inspection, and **phytosanitary treatments**.

Regulatory measure to prevent the introduction or spread of quarantine pests by killing or sterilizing with high efficacy.

Treatment Examples:

- Heat (44-48 °C)
- Cold (0-2 °C)
- Fumigation
- Irradiation



Approved Source Types

Gamma: ⁶⁰Co or ¹³⁷Cs 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 absorbed doses between 150-400 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



Import Regulatory Summary

- Market Access Granted
- Framework Equivalency Work Plan Signed
- Operational Work Plan Signed
- Commodity-Specific Addendum Signed

USDA Animal and Plant Health Inspection Service Plant Protection and Quarantine
IRRADIATION OPERATIONAL WORK PLAN
Between
Thailand and United States Of America



Import Regulatory Summary



- Facility Plan Approved
- Facility Certified
- Importer Compliance Agreement Signed
- Importer Permit Granted
- Packaging Approved
- Process Configuration Approved



Framework Equivalency Work Plans

<u>Country</u>	Date FEWP Signed
Thailand	January 1, 2006
India	February 1, 2006
Mexico	May 1, 2006
Philippines	July 1, 2007
Vietnam	July 1, 2007
Laos	July 1, 2007
Malaysia	July 1, 2007
South Africa	October 1, 2008
Pakistan	May 1, 2010
Peru	September 1, 2012



Framework Equivalency Work Plans

Country

Australia

Dominican Republic

Grenada

Ecuador

Colombia

St. Vincent and the Grenadines

Jamaica

Chile

Ghana

Egypt

Date FEWP Signed

November 1, 2014

June 1, 2015

May 1, 2016

January 1, 2017

March 1, 2017

November 1, 2017

July 1, 2018

January 1, 2019

June 1, 2020

June 1, 2020



2019 Import Program Totals

<u>Country</u>	<u>Kgs</u>
Mexico	21136034
Vietnam	8286273
India	1344755
Thailand	482490
South Africa	195663
Peru	195255
Pakistan	106410
Australia	57928
Grenada	19379
Jamaica	9010
Total	31,833,197



2019 Domestic Program Totals**

<u>Commodity</u>	Kgs
sweet potato	5,374,131
longan	104,790
curry leaf	96,030
moringa leaves	21,985
basil	21,874
litchi	16,171
rambutan	14,073
moringa pods	11,876
dragon fruit	6,408
рарауа	3,382
betel	452
Total**	5,671,172

** Totals only account for one of two predeparture facilities



Generic and Pest-specific Doses

Scientific Name	Common Name	Minimum Absorbed Dose (Gy)	
Cryptophlebia illepida	Koa seedworm	250	
Cylas formicarius elegantulus	Sweet potato weevil	150	~
Cydia pomonella	Codling moth	200	
Euscepes postfasciatus	West Indian sweet potato weevil	150	
Grapholita molesta	Oriental fruit moth	200	•
Omphisa anastomosalis	Sweet potato vine borer	150	Pest-Specific
Pseudaulacaspis pentagona	White peach scale	150	Absorbed
Rhagoletis pomonella	Apple maggot	60	Dose
Sternochetus mangiferae	Mango seed weevil	300	
	All other fruit flies of the family Tephritidae which are not listed above	150	
\rightarrow	Plant pests of the class Insecta not listed above, except pupae and adults of the order Lepidoptera	400	

Table 5-2-12 Pest-Specific Minimum absorbed dose (Gy)

Generic Absorbed Dose



Trade Impacts

Generic Absorbed Doses Facilitate Trade

If a risk analysis of a new commodity demonstrates that no pupae or adult Lepidoptera follow a pathway, then export approval can happen without further research





FAVIR

https://epermits.aphis.usda.gov/manual/index.cfm

Country/Region: O A	oproved Name:		Search by Scientific N
Select		✓ SEARCH	
Options	Fruits and Vegetables Import Requirem	nents (FAVIR)	
 Home Port Information FAQ Glossary Contact Us 	Welcome to the APHIS Fruits and Vegetables Import Requirements (FAVIR) Database. This online reference allows easy access to regulations and information pertaining to the importation of fruits and vegetables into the United States, its territories, and possessions. Collectively, these regulations are commonly referred to as Quarantine 56, or Q56. Information on obtaining a permit for the importation of fresh and frozen fruits and vegetables can be obtained by going to the following website: Fruit and Vegetable Import Permit. <u>All Countries List:</u> The All Countries List is a Country Summary Report of commodities approved for import from any country.		
 Inspection Procedures For Official Use 	A flag (\bigcirc) indicates information that is intended	ed for and available to an APHIS/CBP audience only.	
For Official Use	Important Alerts:		
Date: Sep 4, 2013		Short Description	Issued Date
	No Alerts found		
	Recent Changes:		
	Change Type	Description	Change Date

EAVIR Home | ePermits Home | USDA.gov | Get Adobe Reader EOIA | Accessibility Statement | Privacy Policy | Non-Discrimination Statement | Information Quality | FirstGov | White House



PPQ Treatment Manual

http://www.aphis.usda.gov/import_export/plants/manuals/ports/downloads/treatment.pdf

- Import-driven Manual
- Treatment Schedules
- Irradiation Overview
- Pest Specific/Generic Doses
- Facility Certification
- Facility Audits
- Dosimetry
- Dose Mapping





PPQ Irradiation Treatment Site

USDA APHIS \rightarrow Plant Health \rightarrow Import into the US \rightarrow Quarantine Treatments \rightarrow Irradiation

USDA United States Department Animal and Plant Health Inspect		About APHIS Ask The Expert Careers Contact Us Help
Home Our Focus + Resources + Newsro	oom - Blog	🔊 🔀 🖬 You(Libb) 🔸
Plant Health / Import into the U.S. / Quarantine Treat	ments	
Plant Health	Irradiation Treatment	t
Program Overview	Last Modified: Jun 26, 2015	🚔 Print
Pests and Diseases	In order to meet U.S. entry requirements, certain fresh fruits and vegetables require the application of a quarantine	
Import into the U.S.	treatment to mitigate pests that may pose viable option utilized for this purpose in so	e a phytosanitary risk to US agriculture and natural resources. Irradiation is a ome instances.
Export from the U.S.	Click the links below for information to def	termine if an irradiation treatment is an option, and if applicable, the
International	requirements to utilize irradiation treatments.	
Manuals	I want to use irradiation as a treatment to	import a commodity. Where do I start?
	importation into the U.S. and listed in the commodity is not listed in FAVIR then it is Animal and Plant Health Inspection Service	eligible for irradiation treatment into the U.S. it must first be approved for Fruits and Vegetables import Requirements Database (FAVIR). If a snot currently eligible for entry and must be approved for importation via the ce (APHIS) commodity import approval process. This process begins with a tation of the originating country. For more concerning the commodity import nport Request Process APHIS web page.
	<u>I checked FAVIR. The commodity is eligit</u> do?	ole for entry, but irradiation is not listed as an approved treatment. What do I
	I checked FAVIR. The commodity is eligit	ole for entry, and irradiation is an approved treatment. What are my options?

Are there non-phytosanitary import requirements that I should be aware of?

Lam interested in having an irradiation facility certified by APHIS to apply guarantine treatments for fresh fruits and vegetables. Where can Let more information?



International Standards

International Plant Protection Convention International Standard for Phytosanitary Measures (ISPM):

ISPM 18 Guidelines for the Use of Irradiation as a Phytosanitary Measure

ISPM 28 Phytosanitary Treatments for Regulated Pests

ASTM International:

ASTM F1355 - 06 Standard Guide for Irradiation of Fresh Agricultural Produce as a Phytosanitary Treatment





PPQ Stakeholder Registry

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



Email Updates

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

Subscriptio	n Type	Email V	
*Email Add	Iress		
Submit	Cancel]	
Your	contact informa	ation is used to deliver requested updates or to access your subscriber preferen	ces.





Thank you! Questions?

