



United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine

Center for Plant Health Science and Technology



Technical Assistance for Specialty Crops (TASC) Grant for Export of Irradiated Commodities

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Plant Protection and Quarantine

Plant Health Programs

What is a TASC Grant?

- “The TASC program is designed to assist U.S. organizations by providing funding for projects that address sanitary, phytosanitary and technical barriers that prohibit or threaten the export of U.S. specialty crops”.
- Program is managed by USDA Foreign Agriculture Service (FAS).
- \$4 million in FY 2008, \$7 million in FY 2009, \$8 million in FY 2010, and \$9 million in 2011-2012.
- <http://www.fas.usda.gov/info/factsheets/tasc.asp>



PPQ CPHST TASC Grant

- “Development of Infrastructure and Capacity for U.S. Export Specialty Crops Irradiation Treatments”
- Two parts to support exports of irradiated commodities:
 - Development of a database to store treatment and traceback information.
 - Testing systems for export of irradiated commodities.
- Total Award: \$250,000
 - Database: \$75,000
 - Commodity evaluation: \$165,000



Testing Systems for Export of Irradiated Commodities

- Our experience in foreign preclearance programs has been that exporters do not adequately prepare.
- Lab studies of fruit quality do not always translate to the real world.
- Lack of understanding of the interactions between the factors affecting quality, including irradiation, can lead to poor quality.



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Development of Irradiation Treatments for High Impact Invasive Species and Evaluation of Commodity Tolerance to Irradiation Treatments.

Background -- Treatments

- 400 Gy is an internationally accepted treatment for all insects except Lepidoptera adults and pupae.
- Developing pest specific doses below 400 Gy can:
 - Reduce impact on commodity quality
 - Reduce treatment cost: shorter treatments, larger product stacks, wider operating range
- Currently, PPQ has 23 pest specific doses.

Background -- Pests

- Over the past three years several high impact invasive insects have been detected in the U.S.
 - Light Brown Apple Moth (LBAM) *Epiphyas postvittana*
 - Spotted wing drosophila (SWD), *Drosophila suzukii*
 - European grape vine moth (EGVM), *Lobesia botrana*
- Many countries require additional phytosanitary mitigations because of these pests.
- Currently, we don't have pest specific doses for any of these pests – 400 Gy would be required.

Commodities Impacted

Light Brown Apple Moth	Spotted Wing Drosophila	European Grape Vine Moth
Apple Apricot Cherry Lettuce (leafy greens) Nectarine Peach Plum Pluots	Apricot Boysenberries Blueberries Blackberries Cherry Grape Nectarine Peach Plum Pluot Raspberries Strawberries	Apricot Cherry Grape Nectarine Peach Plum Pluot Persimmon Pomegranate



LBAM, SWD, and EGVM Are a Significant Threat to Exports!

- As part of PPQ's response, we developed a new TASC proposal to address these pests.
- "Development of Irradiation Treatments for High Impact Invasive Species and Evaluation of Commodity Tolerance to Irradiation Treatments"

Project Goals

1. Treatment Development: Provide irradiation treatments as alternatives to other relatively complex and expensive mitigation options.
2. Quality Evaluations: Provide industry groups with critical knowledge about the effects of irradiation on the quality of specialty crops.
3. Outreach and Networking: Bring fruit producers, the irradiation industry, and government together to better understand each other's procedures and requirements.

Treatment Development

- Pest specific doses will be developed for LBAM, SWD, and EGVM.
- Cooperators:
 - Dr. Peter Follett, USDA ARS
 - Dr. Donald Price, University of Hawaii, Hilo
- LBAM and SWD colonies have been established in Hawaii.



Treatment Development Process

- Step 1: Determination of the life stage that is most tolerant to irradiation.
- Step 2: Large scale confirmatory study that shows irradiation effectively neutralizes the pests on a large scale.
- Step 3: PPQ approval of pest specific treatment based on research results.

Quality Evaluations

- Pest specific doses are not much use if we don't know how the treatment will impact the commodity.
- Quality evaluations will test how commodities will respond to typical commercial harvest, packing, transportation, and treatments.
 - Similar to the current TASC project.
- Most of these commodities are produced in Ca where the pests are.
- Cooperator: Dr. Anuradha Prakash, Chapman University.

Outreach and Networking

- Hold meetings to:
 - Set research priorities and plan projects.
 - Report project results.
 - Facilitate information exchange between fruit producers, the irradiation industry, and government.

Tentative Timeline

- Fall 2010: Begin work on treatment development
- Spring 2011: Planning meeting for quality work
- Early summer 2011: Begin quality work
- Fall 2011: Update and planning meeting
- Fall 2012: Project ends.

Questions for the Group:

- What commodities are not on our list that should be?
- Are there pests that are barriers to exports that we are not considering?
- What can we do better with this project that we did not do with the current TASC project?
- Anything else we are missing?



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Questions??