PPQ PHYTOSANITARY IRRADIATION PROGRAM

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Irradiation is the exposure of a substance to ionizing energy (radiation) to achieve a desired effect. In the case of phytosanitary irradiation treatments, the desired endpoint is the mortality, sterility, reduced fitness, or the inability to emerge or fly of a plant pest. There are three sources of ionizing radiation approved for phytosanitary treatments: E-beam, gamma-emitting radioisotopes, and X-rays. The dose, measured in Gray (Gy), is the amount of ionizing radiation absorbed. PPQ treatments are in the range of 150-400 Gy.

In 2002, the USDA Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine (PPQ) approved Irradiation as a Phytosanitary Tool (IPT) for all fresh fruits and vegetables imported into the US. Over the past few years, there has been a dramatic increase in the amount of fruit irradiated as part of the IPT program. As an example, more than 15 million kg of fresh fruit were irradiated as part of the Preclearance Program in 2015, an approximate 7,400% increase since 2007.

Most PPQ irradiation treatments occur in the exporting country as part of a Preclearance or Offshore Program. Presently, PPQ monitors irradiation treatments in Australia, Dominican Republic, India, Mexico, South Africa, Thailand, and Vietnam. Many commodities (such as sweet potato and curry leaves) are irradiated for domestic movement within the US (Domestic Program). In 2011, PPQ allowed the irradiation of Pakistani mangoes at a treatment facility in the US (Port of Entry Program). The 2012 Southern States CFR change allows the establishment of Port of Entry irradiation facilities in the Southern US. Since the rule change, two additional facilities were certified in the US to conduct Port of Entry irradiation treatments.