

MARKET ACCESS UPDATES

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Sharwil Trees a Top Seller!

What's New: No one has stepped up to ship Sharwil avocados using the new export protocol but sales of new trees have reportedly been brisk. Pa'ina Hawaii irradiation facility opened on Oahu in 2013 giving island farmers another avenue for exporting fruit. Research is underway for a Hawaii citrus cold treatment.

We now have export approvals to the mainland for 26 tropical fruits and vegetables (see table below). New vegetable export requests include *Allium* spp. (leafy green tops, e.g. French chives) and sea asparagus tips.

Commodity quarantine treatments or systems for export of Hawaii's fruits and vegetables

Abiu	I	Jackfruit	I
Atemoya	I	Longan	I, H
Avocado	F, N (Sharwil)	Lychee	I, H
Banana	I, N	Mango	I
Breadfruit	I	Mangosteen	I
<i>Capsicum</i> spp.	I	Moringa	I
Carambola	I	Papaya	I, H
Citrus	I, H	Pineapple	I, N, H
<i>Cucurbita</i> spp.	I	Rambutan	I, H
Dragon fruit	I	Sapodilla	I
Durian	N	Sweet potato	I, F, H
Eggplant	I	Tomato	I
Guava	I	Cowpea	I

I = irradiation, C = cold, N = non-host status, H = heat (hot water immersion or vapor heat), F = fumigation. Compiled by Dr. Peter Follett, Research Entomologist, Tropical Crop and Commodities Protection Research Unit, Tel. (808) 959-4303, e-mail: peter.follett@ars.usda.gov

More details are given below on the available treatments for our tropical fruits. Treatments are categorized as proposed or approved. Approved treatments are underlined, and only approved treatments are available for exporting fruit at this time. This is general information only; consult APHIS-PPQ for complete quarantine treatment or protocol regulations, or contact Dorothy Alontaga, dorothy.s.alontaga@aphis.usda.gov.

Abiu

- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies.

Atemoya

- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies.

Avocado

- Fumigation treatment -- methyl bromide (see APHIS treatment manual), marginal as to host tolerance.
- Systems approach for 'Sharwil' variety – new treatment based on poor host status for fruit flies

Bananas

- Nonhost status -- green bananas, cv. 'Williams', 'Valery' and 'dwarf Brazilian'. Regulation includes specific conditions.
- Irradiation – all cultivars, 400 Gy if free of banana moth, 150 Gy if free of green scale and banana moth.

Breadfruit

- Irradiation -- 150 Gy and post-harvest dip or orchard treatment for control of surface pests -- or 400 Gy to control surface insects in addition to fruit flies. Fungicide dip required for *Phytophthora tropicalis*.

Carambola

- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies.

Citrus

- High temperature forced air -- fruit core temperature heated to > 47.2°C (117°F) in not less than 4 hours.
- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies.
- Cold treatment -- under development at USDA ARS (Hilo)

Dragon fruit

- Irradiation -- 150 Gy and post-harvest dip or orchard treatment for control of surface pests -- or 400 Gy to control surface insects in addition to fruit flies.

Durian

- Nonhost status -- must be inspected and free of surface pests.

Guava

- Irradiation -- 400 Gy to control surface insects and fruit flies. Fruit must be free of oriental red mite and a certain spider mite.

Jackfruit

- Irradiation -- 150 Gy and post-harvest dip or orchard treatment for control of surface pests - - or 400 Gy to control surface insects in addition to fruit flies. Fungicide dip required for *Phytophthora tropicalis*.

Longan

- Hot water immersion -- 49°C (120°F) or above for 20 minutes.
- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies.

Lychee

- Hot water immersion -- 49°C (120°F) or above for 20 minutes.

- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies.
- Vapor heat -- internal fruit temperature raised by saturated water vapor ($\geq 90\%$ RH) to 47.2°C (117°F) (or above) in at least 60 min. Hold at 47.2°C for 20 min. Hydrocool with a cool water spray.

Mango

- Irradiation -- To U.S. -- 300 Gy -- treatment carried out only in an approved facility in Hawaii or in non-fruit fly supporting areas of the mainland U.S.
- Vapor heat -- To Japan -- cv. 'Haden' and 'Keitt.' Fruit core temperature heated to $> 47.2^{\circ}\text{C}$ (117°F) in not less than 4 hours. Other conditions apply.

Melons (cantaloupe, honeydew, watermelon)

- Irradiation -- 150 Gy and post-harvest dip or orchard treatment for control of surface pests -
- or 400 Gy to control surface insects in addition to fruit flies. Sepals must be removed.

Mangosteen

- Irradiation -- 150 Gy and post-harvest dip or orchard treatment for control of surface pests -
- or 400 Gy to control surface insects in addition to fruit flies. Sepals must be removed.

Papaya

- High temperature forced air -- fruit core temperature heated to $> 47.2^{\circ}\text{C}$ (117°F) in not less than 4 hours.
- Vapor heat -- fruit core temperature heated by saturated water vapor to 44.4°C (112°F). Hold fruit temperature at 44.4°C for 8.75 hours, then cool immediately, OR, fruit core temperature heated to $> 47.2^{\circ}\text{C}$ (117°F) in not less than 4 hours.
- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies.

Pineapple

- Nonhost status -- for cultivars with 50% or more 'smooth Cayenne' parentage; includes 'Sugarloaf'.
- Irradiation -- 150 Gy -- for cultivars other than 50% 'smooth Cayenne'.
- Vapor heat -- for cultivars other than 50% 'smooth Cayenne'. Fruit core temperature heated by saturated water vapor to 44.4°C (112°F). Hold fruit temperature at 44.4°C for 8.75 hours, then cool immediately.

Rambutan

- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies
- Vapor heat -- internal fruit temperature raised by saturated water vapor ($\geq 90\%$ RH) to 47.2°C (117°F) (or above) in at least 60 min. Hold at 47.2°C for 20 min. Hydrocooling is optional.

Sapodilla

- Irradiation -- 150 Gy -- or 400 Gy to control surface insects in addition to fruit flies.