Phytosanitary treatment for

*Bactrocera dorsalis* complex in Thailand

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PQ Treatment for exporting fruits from Thailand (under bilateral agreement)

• VHT: mango, mangosteen to Japan, Korea, New Zealand, Pummelo
• CT: longan, lychee to Australia, New Zealand
• Non-host status: mangosteen to Australia, NZ, China
• Irradiation 7 fruits to USA
1. *Heated Air Treatment*

**Vapor Heat Treatment (VHT)**
- uses saturated or nearly saturated air and transfers heat to the fruit surface through the condensation of water vapor and convection from hot air

**Heat Air Treatment (HAT)**
- heat transfers is by convection only

**Modify Vapor Heat Treatment (MVHT)**
- combine HAT and VHT
Modify Vapor Heat Treatment (MVHT)
Mango Target temperature: 47 °C for 20 min
Mangosteen target temperature: 46 °C for 58 min
2. Cold Storage (Cold treatment)

The use of cold temperatures against insects pests

- Against mostly fruit flies
- Advantage: is most practical for use in commercial storage and shipping practice
- Problems: chilling injury can damage the fruit peel texture, delay ripening
- The cost of refrigeration to keep fruit cold for an extend duration
CT for fruit flies and fruit borer

Longan/Lychee

- 0.99 °C or below for 17 days
- 1.38 °C or below for 20 days

Follow protocol Australia and New Zealand
Phytosanitary Treatments for Bactrocera dorsalis complex in Thailand

shipping container

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3. Commodity Resistance to Infestation by Quarantine Pests

Non host or infestation-resistant:

The quarantine host is defined as any commodity which can be naturally infested in the field at one or more of the growth stages:

- Non host cultivars; different cultivars or hybrids of a single species can differ in host status ex. Pineapple
- Non host stage of maturity; banana, papaya, tomato
- Partial resistance to infestation; early harvesting season citrus and grapefruit from Florida to California
Non host status
4. Irradiation

- Irradiation is the process treating commodities with ionizing energy
  - X-rays, gamma rays
  - Radio waves
  - Radar
  - Microwave
  - Infrared

Irradiation

Dmin 400 Gy for 7 fruits
(litchi, longan, mangosteen, mango, rambutan, pine apple and dragon fruit)
5. **Hot Water Immersion**

- Heat water has been applied as an immersion treatment to fruits and vegetables
  - Heated water reduces the presence of pathogenic, and population of snails, mite and insect pests
  - Papaya grow in Hawaii export to mainland USA
  - Mango grow in Mexico Haiti, Puerto Rico, South Africa export to USA
For mango: 46°C 1 hr.
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Agenda item 5.6

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Thank you for your attention
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Arigato gozaimasu

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