

Specialty Tropical Fruits



Adel Kader , UC Davis, June, 2009





Carambola = Star fruit



Packaged carambola fruits



Cashew apple = *Anacardium occidentale*



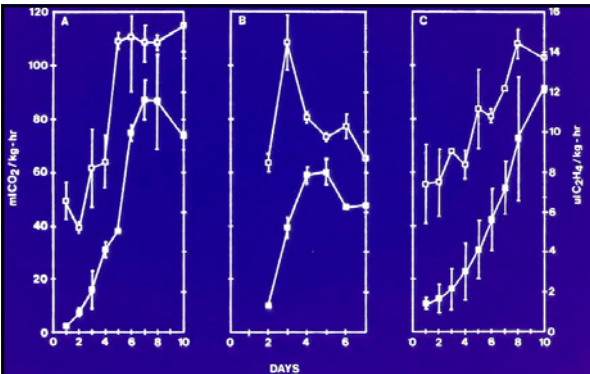
Developmental stages of cashew apple



Durian = *Durio zibethinus*



Ripe durian fruit



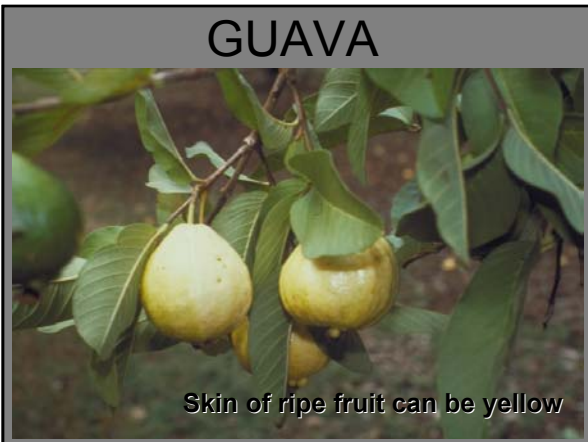
Respiration and ethylene production rates of 3 durian cultivars



Special plastic carrier for durian exported from Thailand to Japan and other countries

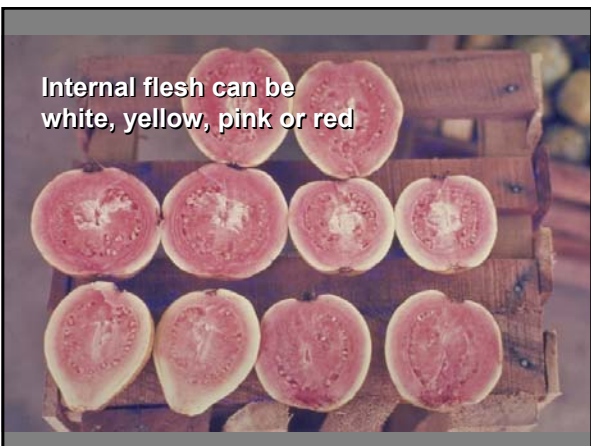


Preparing fresh-cut durian products



Skin of ripe fruit can be yellow





Guava Characteristics

- One of richest sources of Vitamin C
- Good source of Vitamin A, and minerals K, Ca, Fe
- Mesocarp tissue contains stone cells
 - Give a gritty texture
- Climacteric
- Chilling sensitive
 - Mature green $\geq 10^{\circ}\text{C}$
 - Turning 7°C for up to 3 weeks
 - Fully ripe guavas - 5 to 8°C for up to 1 week

Field Packing of Guava in Venezuela



Package of Guava in Egypt





Jackfruit



Arocarpus heterophyllus



Jackfruit size relative to banana fruit



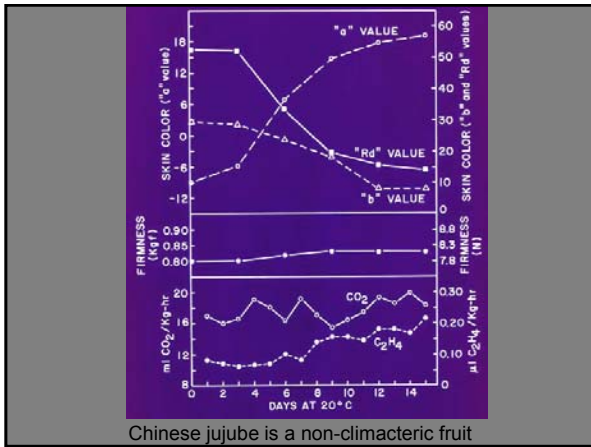
Fruitlets of jackfruit



Effect of temperature on deterioration rate of jackfruit fruitlets

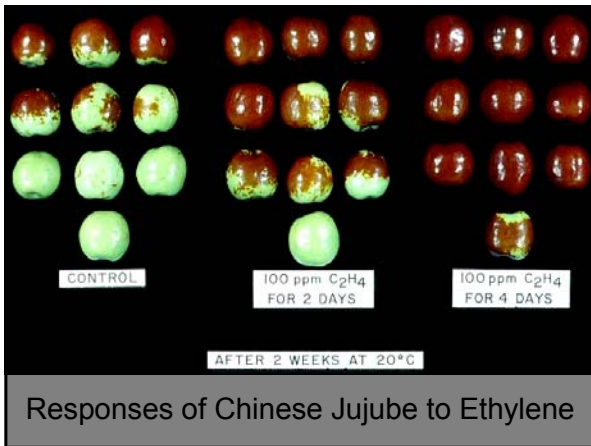
Ripeness Stages of Chinese jujube = Chinese date = *Zizyphus jujuba*

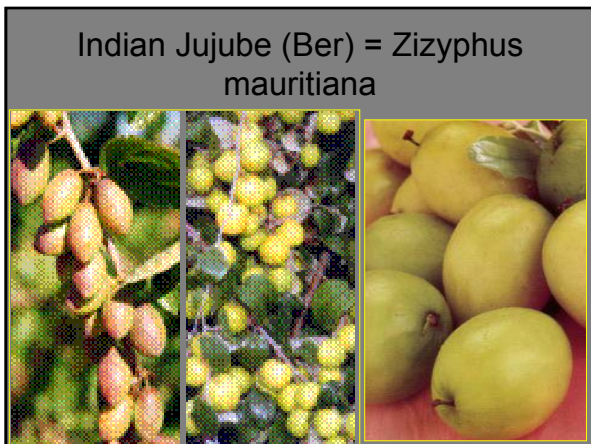














Longan = *Euphoria longana*



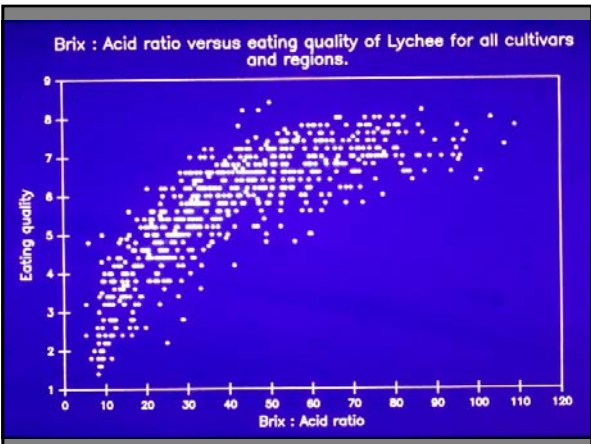
Longan



Longan packed for export from Thailand





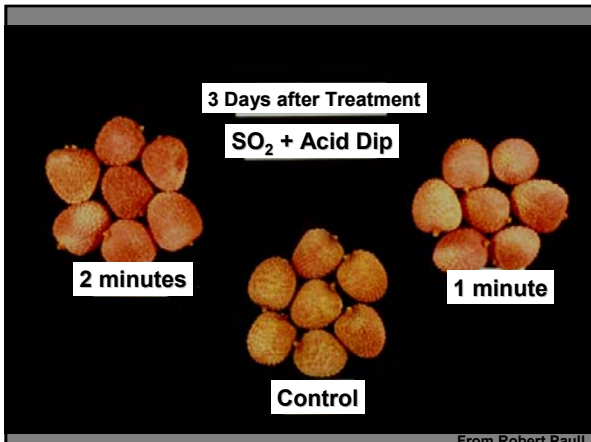


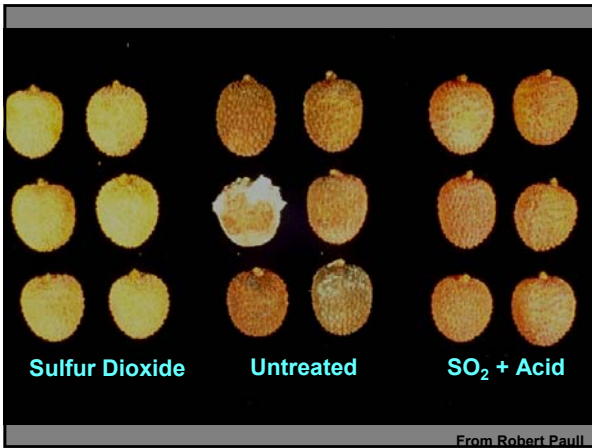
Pericarp Browning

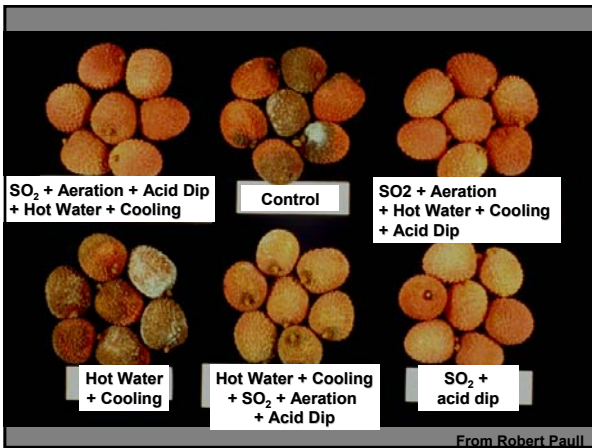
- Breakdown of anthocyanins
 - Breakdown product similar to catechol
 - Substrate for PPO enzyme leading to brown products
 - PPO and peroxidase activity
- Anthocyanase found in pericarp tissue
- Desiccation of pericarp
 - Storage in polybags reduces water loss but increases decay
- Decay

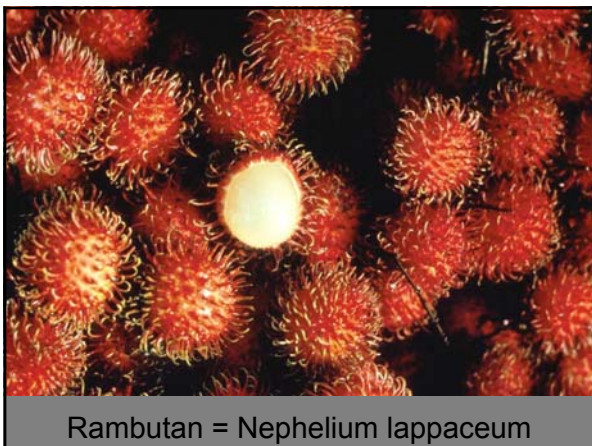
Pericarp Browning

- SO₂ fumigation
 - Complexes with anthocyanins to stabilize
 - Inhibits PPO activity
 - Acting as a fungicide
 - Undesirable aftertaste
 - Health issue for sensitive individuals
 - Ineffective against some fungi
 - Requires dip in low pH solution to convert anthocyanins to red color (flavylium ion)
 - pH of solution critical to red color developed









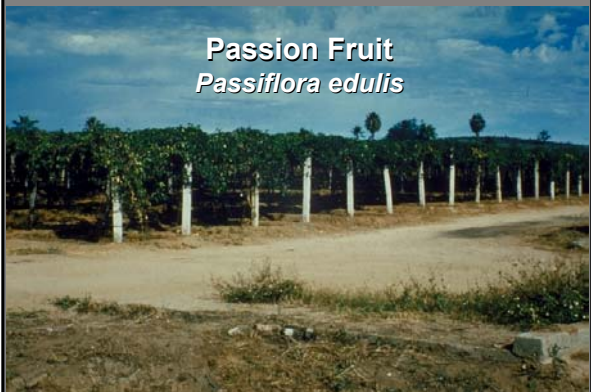


Rambutan market in Bangkok, Thailand



Rambutan cultivars

Passion Fruit Vineyard in Mexico-1



Passion Fruit
Passiflora edulis

Passion Fruit Vineyard in Mexico-2



Jorge Chavez



Passion Fruit



Passifloraceae
Passiflora edulis f. flavicarpa
"Yellow passion fruit"





Postharvest

- Climacteric fruit with very high ethylene production, but quality optimum at harvest
- Store in cool, well-ventilated area
 - Recommend 5 to 9C (4 to 5 weeks)
 - < 6.5C chilling injury
 - > 6.5C decay
- Lose weight very quickly after harvest
 - Polyethylene bags at low temperatures (42 d at 6C)
- Processing quality
 - Characteristic flavor
 - High juice content (25 to 40%)
 - High acidity preferred – add sugar

Passion Fruits Processing in Mexico