

Mangosteen

Recommendations for Maintaining Postharvest Quality



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MATURITY INDICES

Skin color change to reddish-purple is the primary maturity index for mangosteen. The fruit has a persistent calyx at the stem end and is picked with the peduncle attached. The aril (pulp) separates from the rind in ripe fruit.

QUALITY INDICES

- Fruit size
- Shape
- Color
- Freedom from defects (skin cracks and blemishes, latex staining, insect damage)

The inedible pericarp is hard and the edible pulp is white, soft, juicy, and consists of 5 to 8 segments (similar to citrus fruits).

Soluble solids content ranges from 17 to 20% and titratable acidity ranges from 0.7 to 0.8% (pH = 4.5 to 5.0).

OPTIMUM TEMPERATURE

$13 \pm 1^\circ\text{C}$ ($56 \pm 2^\circ\text{F}$), storage potential = 2-4 weeks, depending on cultivar and ripeness stage.

OPTIMUM RELATIVE HUMIDITY

90-95%

RATES OF RESPIRATION

6-10 ml $\text{CO}_2/\text{kg}\cdot\text{hr}$ at 20°C (68°F); climacteric respiratory pattern.

To calculate heat production multiply ml $\text{CO}_2/\text{kg}\cdot\text{hr}$ by 440 to get BTU/ton/day or by 122 to get kcal/metric ton/day.

RATES OF ETHYLENE PRODUCTION

3-30 $\mu\text{l C}_2\text{H}_4/\text{kg}\cdot\text{hr}$ at 20°C (68°F)

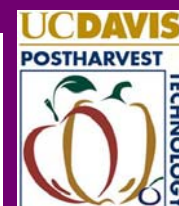
RESPONSES TO ETHYLENE

Exposure to 100 ppm ethylene for 24 hours at 20°C (68°F) accelerates ripening (color change to dark purple and softening of the pulp).

RESPONSES TO CONTROLLED ATMOSPHERES (CA)

Limited published information indicates a useful CA of 5% O_2 + 5 to 10% CO_2 for up to 4 weeks.

Produce Facts



PHYSIOLOGICAL DISORDERS

Chilling Injury. Symptoms include darkening and hardening of the skin and increased susceptibility to decay when the fruit is moved to higher temperatures following storage at less than 10°C (50°F) for longer than 15 days or at 5°C (41°F) for more than 5 days.

Translucent Flesh. Symptoms are internal and include flesh changes from white to translucent and textural changes from soft to firm and crisp. This disorder may result from mechanical injuries, nutrient imbalance, and/or excessive water uptake into the flesh.

Rind Hardening. Mechanical damage (compression or impact bruising) to the fruit during harvesting and handling often results in hardening of the rind, which may be combined with hardening and translucency of the pulp (one or more segments).

PATHOLOGICAL DISORDERS

Decay may be caused by *Botryodiplodia theobromae*, *Diplodia* spp., *Pestalotia flagisetula*, *Phomopsis* spp., or *Rhizopus* spp.

POSTHARVEST PHOTO GUIDE

MATURITY AND QUALITY



MATURITY



RIPE HIGH QUALITY FRUIT

RESPONSES TO CONTROLLED ATMOSPHERES (CA)



CORKING AND SCARRING

DISORDERS



INTERNAL SYMPTOMS OF PHYSICAL DAMAGE



INTERNAL BREAKDOWN

Mangosteen



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