

ABSTRACT

PHYSIOLOGY CHARACTERISTICS OF MANGOSTEEN (*Garcinia Mangostana* L.) AT MODIFIED ATMOSPHERE CONDITION

By

Andre Fransiska

Mangosteen is a klimateric fruit so it has a short shelf life. Therefore, it is needed to handle carefully after harvesting. Temperature setting combined with modified atmosphere is a type of storage which can decrease the respiration rate of fruit. This research aims at determining the effect of modified gas composition on total dissolved solids, total acid, hardness, respiration rate, and shelf life of mangosteen in the cold temperature and the room temperature storage.

The research was carried out at room temperature (29 °C) and cold temperature (10 °C) combined with a gas composition of pure CO₂ gas and air from a compressor containing O₂ and N₂ supplied to the storage bottle with composition of A (5% O₂, 5% CO₂), B (10% O₂, 5% CO₂), C (5% O₂, 10% CO₂), D (10% O₂, 10% CO₂).

Total dissolved solid of mangosteen during storage was decreased, with the lowest total dissolved solids was 16,6 °brix in the cold storage and 16,7 °brix at room temperature storage. Total acid and respiration rate of mangosteen was stable decreased during storage. The hardness of mangosteen during storage increased with the highest value of 3,20 kg.s/mm. Mangosteen optimal shelf life at room temperature (29 °C) was 16 days and at cold temperatures (10 °C) was 20 days with gas composition of 5% O₂ and 10% CO₂. Modified atmosphere combined with temperature could extend the shelf life of mangosteen and influenced the value of total dissolved solids, total acid, respiration rate and hardness.

Key words : Mangosteen, respiration, total dissolved solids, total acid, hardness, klimateric, shelf life.