

**Title** Effect of relative humidity on the incidence of pericarp hardening in mangosteen (*Garcinia mangostana* L.) Fruit

**Author** Emma Ruth Bayogan and Danica Riza V. Delgado

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#### **Abstract**

The study determined the effect of various relative humidity (RH) levels (91±5, 86±5, 81±5, and 69±5%) on the incidence of pericarp hardening in reddish purple mangosteen fruit. Total soluble solids did not vary with RH. The change in sepal and visual quality was slower in fruit stored at higher RH (91±5, 86±5%) while fruit weight loss was significantly highest in fruit held in the lowest RH. Electrolyte leakage was 18.44% lower in fruit held in 91±5% RH compared with that in 69±5% RH. Firmness during storage increased in fruit in the lowest RH. At 15 days after treatment, fruit stored at 69±5% RH had significantly firmer and harder pericarps at 44.10 N relative to a firmness of 16.66 N in the lot held in 91±5% RH. Hardening was delayed up to seven days in fruit stored at 91±5% RH resulting in a shelf life that was seven days better. Lignin content was significantly lower in fruit stored at higher RH compared with fruit at lower RH. Thus, it is recommended to store reddish purple mangosteen fruit in high RH levels such as 91±5 and 86±5%.