

Effects of relative humidity on pericarp hardening in mangosteen (*Garcinia mangostana* L.) Fruit

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Abstract

The study determined the effect of various relative humidity (RH) levels (91, 86, 81, and 69%) on the incidence of pericarp hardening in reddish purple mangosteen fruit. Total soluble solids did not vary with RH. The changes in sepal and visual quality were slower in fruit stored at high RH (91, 86%). On the other hand, weight loss and respiration were significantly highest in the lot held in 69%. Electrolyte leakage was 18.4% lower in fruit held in 91% compared to those held in 69%. During storage, firmness was increased the greatest in fruit in 69% with significantly firmer fruit and harder pericarps at 44.1 N relative to a firmness of 16.7 N in fruit held at an RH of 91% at 15 d after treatment (DAT). Pericarp hardening was delayed up to seven days in fruit stored at 91% RH which resulted in a shelf life that was seven days better. Lignin content at 12 to 18 DAT was significantly lower in fruit stored at high RH coinciding with harder pericarp compared with fruit at low RH. Thus at $20\pm 2^{\circ}\text{C}$, it is recommended to store reddish purple mangosteen fruit in RH such as 91 and 86%.