Title Relationship between browning and related enzymes (PAL, PPO and POD) in rambutan fruit (*Nephelium lappaceum* Linn.) cvs. Rongrien and See-Chompoo

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Citation Postharvest Biology and Technology, Volume 50, Issues 2-3, November 2008, Pages 164-168

Keywords Rambutan; Browning; Peel; Spintern; Water loss; PPO; POD

Abstract

Rambutan (*Nephelium lappaceum* Linn.) fruit cvs. Rongrien and See-Chompoo were stored in low (60–70%) and high (85–95%) relative humidity (RH) environments at 25 °C for 6 d. Changes in weight loss, browning index, phenols content and activities of phenylalanine ammonia-lyase (PAL), polyphenol oxidase (PPO) and peroxidase (POD) were measured. By d 6 of storage, browning was severe in the spinterns but slight in the peel of both cultivars. High RH delayed spintern browning but had only a small effect on peel browning. The phenols content and PAL activity in peel from both cultivars were generally higher than in the spinterns. RH had no effect on the changes in phenols during storage but PAL activity increased in the peel but not spinterns of both cultivars at d 4 of storage in low RH. The initial activities of PPO and POD in spinterns of both cultivars were higher than in peel. PPO activity in the spinterns of both cultivars was similar and was not affected by RH. The initial activity of POD was lower in the peel and the spinterns of Rongrien fruit but there were no clear responses to RH during storage. Higher activities of PPO and POD in the spinterns compared to the peel may also be a factor in the higher rates of browning of the spinterns.