

Title Relative humidity influences pericarp browning of litchi cv. 'Hong Huay'
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Abstract

Pericarp browning of litchi fruit cv. 'Hong Huay' at different relative humidities (RH) was investigated. The fruit were stored 20°C with 50%, 70%, 80% or 90% RH. Browning of fruit pericarp occurred most rapidly at 50% RH and least at 90% RH. Severe browning developed after 3 days at 50% RH and 10 days at 90% RH. Fruits held at 70% or 80% RH had intermediate rates of browning development which became severe after 7 and 9 days storage, respectively. Increases in hue and decreases in a^* values corresponded to the browning response to RH. Similarly, increases in water and weight losses were most rapid at 50% RH and least at 90% RH. Anthocyanin and phenolics contents decreased with storage at a faster rate at lower RH than at higher RH. Polyphenol oxidase (PPO) showed a dramatic rise at 50% RH while at 90% RH, no distinct increase was noted. At 70-80% RH, PPO activity manifested a slowly increasing trend. On the other hand, phenylalanine ammonia lyase (PAL) activity decreased with storage. However, fruits held at 50% RH showed higher PAL activity than that of fruits held at higher RH. The results suggest that both physical and biochemical processes regulated pericarp browning.