

Abstract

Longkong (*Aglaia dookkoo* Griff) is a famous tropical fruit of Southeast Asia. The fruits, a non-climacteric type, are usually harvested ripe and consequently, postharvest life is very short due to rapid peel browning. Controlled atmospheres (CA) of 2-6% O₂ and 3-6% CO₂ or their combination remarkably inhibited peel browning during 12 day storage at 13°C, 90-95%RH. The fruits showed browning symptoms only after 6 days of storage whereas fruits stored in air, as early as after 3 days of storage. At the end of the 12 days storage period, all CA-stored fruits had browning scores of about 4 (40% browning) while those stored in air, 10 (100% browning). Weight loss, phenylalanine ammonia lyase (PAL) activity and ethylene production rate correlated well with browning development while no direct correlation was obtained for total phenolics content, respiration rate and polyphenol oxidase (PPO) activity. Weight loss of all CA-stored fruits appreciably decreased and was maintained at about lower than 4% throughout the storage period while fruits stored in air lost more lower than 2% of its after only 3 days of storage increasing to about 16% after 12 days. CA-stored fruits had also consistently lower PAL activity during the first 9 days of storage, CA likewise suppressed the dramatic rise in ethylene production after 6 days of storage observed in fruits stored in air. However 2% O₂ in combination with 3-6% CO₂ caused much higher ethylene production than the other CA treatments. PPO activity was generally higher in CA-stored fruits than that of fruits stored in air. Among CA treatments, 6% CO₂ in combination with 2-6% O₂ appeared most effective in inhibiting browning but among these two treatments, the use of 2% O₂ resulted to off-flavor development.