Title Physiological and biochemical profiles of imported litchi fruit under modified atmosphere packaging

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Abstract

Although sophisticated packaging materials can be used to minimise postharvest changes of litchi fruit, no work has documented the effect of different modified atmosphere packaging on biochemical composition of litchi aril and pericarp tissue. Therefore, the aim of this study was to detail not only the changes in weight and colour, but also individual sugars, organic acids and anthocyanin concentrations using various packaging materials. Non-acid- and SO_2-free fruit cv. Mauritius, imported from Israel, were packed using four different packaging films *viz*. micro-perforated polypropylene (PP), PropaFresh™ PFAM (PF), NatureFlex™ NVS (NVS), Cellophane™ WS (WS) and unwrapped, and stored at 13 °C for 9 days. Concentrations of CO_2 and ethylene were greater in WS packs during storage followed by NVS, PF and PP films, respectively. Weight loss of fruit stored in PF film was lower than for other treatments. The PF treatment better maintained sugars, organic acids in aril and pericarp tissue and individual anthocyanins in pericarp. These results indicate that PropaFresh™ PFAM was the best packaging film to maintain physiological and biochemical properties in litchi fruit.