Title Physiological response of loquat fruit to different storage conditions and its storability

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Abstract

Loquat (*Eriobotrya japonica* Lindl.) fruit were stored in air at 25 °C, modified atmosphere packaging (MAP, polyethylene bag of 0.01 mm thickness) at 1 and 6 °C, controlled atmospheres (CA) of 10% O_2 + 1% CO_2 and, CA with 70% O_2 treatment for 24 h at first, then stored in CA with 10% O_2 + 1% CO_2 at 1 °C, to determine the effects of atmospheres and temperatures on quality attributes, physiological properties and storability during storage periods. The results indicated CA with 10% O_2 + 1% CO_2 was more effective in reducing fruit decay, SSC/TA, pH, activities of endo-PG and exo-PG, inhibiting ethyl acetate accumulation in fruit, inducing ethanol accumulation in fruit at later storage period in comparison with MAP treatment. Loquat fruit could be stored in this CA condition at 1 °C for more than 50 d with normal flavour and low decay index of about 7%. Short term high-O_2 treatment at the beginning of storage had little effect on fruit flavor, but stimulated ethanol accumulation in loquat fruit, and reduced activities of endo-PG and exo-PG. MAP treatment showed more effectiveness in reducing fruit decay, off-flavor and weight loss at 1 °C than at 6 °C. CA conditions were more effective for reducing the activities of PPO and oxidative stress compared to other treatments, which may be the reason why loquat fruit stored in CA conditions had lower decay index than that kept in other conditions.