Influences of Different Storage Conditions on Postharvest Quality of Mango (*Mangifera indica* L. cv. Sein Ta Lone)

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Abstract

Mango (*Mangifera indica* L.) is one of the most exportable fruits in Myanmar. "Sein Ta Lone" (STL) mango is the most popular variety and the highest postharvest losses due to the most perishable fruit. The objectives of this study are to investigate respiration and ethylene production rates of STL mango and to assess the postharvest quality and storage life as affected by different storage conditions. The wrapping materials were foam net sack and paper; non wrapped fruit was treated as control. The fruits were stored at room temperature and the optimum cold storage temperature of mango at 13˚C. Treatments were laid out by factorial arrangement in randomized complete block design with four replications. The data on weight loss, color index, skin firmness, Brix%, total titratable acidity, respiration rate, ethylene production and shelf life were analyzed. The fruits stored at 13˚C significantly showed the longer shelf life than those stored at room temperature. There were no significant differences in color index and shelf life of fruits among the wrapping treatments at room temperature. Thus, STL mango can be stored the shelf life of 7 days at ambient condition (36˚C, 50% RH) and 14 days at 13˚C.The ethylene production and respiration rates of STL mango under 13˚C were considerably lower than that of room temperature storage. The ethylene production and respiration rates were not significantly different among the wrapping treatments at respective temperatures. The minimum rate of respiration and ethylene production of untreated mango were 10.37 mg $kg^{-1}hr^{-1}$ and 0.24 ul $kg^{-1}hr^{-1}$, respectively. The results were revealed that net sack wrapping could be used at room temperature storage due to lower weight loss and ethylene production rate while paper wrapping could be used at cold temperature storage of 13˚C due to lower ethylene production and respiration rate with higher value of color index than other treatments.

Keywords: Ethylene; Mango; Post harvest Quality; Respiration Rate; Shelf Life; Storage Temperatures; Wrapping Materials