

Effect of Modified Atmosphere Packaging on the Shelf Life and Postharvest Quality of Purple Passion Fruit (*Passiflora edulis* Sims)

Peninah Yumbya¹, Jane Ambuko¹, Solomon Shibairo¹ and Willis O. Owino^{2*}

¹Department of Plant Science and Crop Protection, University of Nairobi, P.O Box 29053-00625, Nairobi, Kenya

²Department of Food Science and Technology, Jomo Kenyatta University of Agriculture and Technology, P. O. Box 62000 Code 00200, Nairobi, Kenya

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Abstract

Passion fruit (*Passiflora edulis* Sims) being highly perishable is susceptible to rapid water loss after harvest leading to diminished quality. This study evaluated the efficacy of activebag® which is a new modified atmosphere packaging (MAP) product in the Kenyan market. Fruits harvested at 60-65 and 75-80 days after anthesis were either packaged in activebag® or ordinary polyethene bags and allowed to ripen under ambient room conditions. MAP maintained the quality of fruits harvested at both stages of maturity and prolonged their shelf life by at least 14 days compared to the unpackaged controls. Packaging significantly slowed weight loss, which was lower at 7% compared to the unpackaged controls that lost up to 26% of the weight. Both MAP packages reduced ethylene production and respiration rate and slowed other physicochemical changes associated with passion fruit ripening. Although the ordinary polythene bag packaging prolonged the fruits' shelf life compared to unpackaged control, their positive effect was negated by high incidence of rotting evident after 14 days of storage. These results indicate that use of activebag® can prolong the shelf life by maintaining quality attributes and external appearance of purple passion fruits and hence extend their marketing period.