Title Effect of modified atmosphere packaging on quality and shelf life of 'Robusta' banana (*Musa* sp.) stored at low temperature

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Abstract

Banana *(Musa* sp var. 'Robusta') stored under active and passive modified atmosphere packaging (MAP) at 12 ± 1°C and 85–90% RH for 2 seasons were evaluated for fruit quality and shelf-life. A steady state of about 8.6 and 8.2% of CO_2 and 2.8 and 2.6% of O_2 in passive MAP and MAP+GK (Green Keeper) packages, respectively, were established after 3 weeks of storage. Passive MAP and MAP+GK treatments of banana resulted in reduction in physiological loss in weight (PLW) of 0.7 and 0.8% after 5 and 7 weeks of storage, respectively as against 5% PLW in openly kept green banana after 3 weeks. Both MAP and MAP+GK treatments delayed colour, texture, pulp to peel ratio and total soluble solids (TSS) content as compared to openly kept control banana. Results indicated that the shelf life of fruits packed under MAP and MAP+GK could be extended up to 5 and 7 weeks, respectively as compared to 3 weeks for openly kept control fruits. Sensory quality of fully ripe fruits of both passive MAP and MAP+GK treatments, 5 days after ethrel dip was very good. Thus, MAP+GK at 12 ± 1°C and 85–90% RH could be commercially used for long term storage and long distance transportation of banana with maximum shelf-life of 7 weeks.