Abstract:

Short shelf life of mango fruit limits its export to distant markets. The effects of pre and postharvest applications of putrescine on fruit ripening, quality and shelf life of 'Kensington Pride' mango were investigated. An aqueous solution of different concentrations of putrescine (0, 0.5, 1.0, or 2.0 mmol·L-1) containing the surfactant 'Tween-20' (0.01%) were applied as preharvest spray onto trees 7 days prior to harvest and postharvest fruit dip treatments for 6 minutes. One lot of the treated and control fruit was allowed to ripen at room temperature (21±1 ºC) while the second batch was stored at 13 ºC (85% RH) for 20 days. Fruit ripening at ambient temperature revealed that putrescine treatments significantly reduced ethylene production and response was more pronounced in the postharvest dip application than the preharvest spray. Ethylene production decreased as the concentration of applied putrescine increased. Pre and postharvest application of putrescine increased fruit firmness and decreased sugars, compared with control. Both pre and postharvest application also retarded fruit colour development. After 20 days storage, preharvest-treated fruit exhibited higher firmness, TSS and lower fruit rot whilst acidity, total and non-reducing sugars were reduced in fruit treated with both methods, compared with control. In conclusion, preharvest putrescine spray was more effective than postharvest dip. Putrescine treatment (1 mmol·L^{-1}) was effective in delaying fruit ripening at ambient temperatures, whilst 2 mmol·L^{-1} extended the shelf life and improved fruit quality of 'Kensington Pride' mango.