Abstract

Effects of hexanal dip on the post-harvest shelf life and quality of papaya (Carica papaya L.) fruit

The objective of this study was to evaluate the effects of hexanal on the post-harvest shelf life and quality of papaya (Carica papaya L.) in two agro-ecological zones (AEZs II and IV) among small-holder farmers in Kenya. Hexanal was tested at two concentrations, 1% and 2%, and applied as a dip for 2.5 minutes or 5 minutes on mature green Solo Sunrise and Mountain papaya cultivars. Water was used as control. The experiment was done in a randomized complete block design with three replications; means were compared by Analysis of Variance using GenStat Version 15. Untreated papaya fruits lasted for 9 days whereas papaya fruits dipped in 2% hexanal for 5 minutes lasted for 15 days with ethylene and respiratory peaks delayed by three days (p < 0.05). These hexanal-dipped fruits lost up to 19% of their cumulative physiological weight (p < 0.05) after the entire storage period of 15 days, whereas controls lost up to 35% of their physiological weight over the same period, and were firmer in texture by 37.4% (p < 0.05). Titratable acidity in papaya fruits gradually decreased with time during the ripening period with no significant difference between the treated and the untreated fruits (p < 0.05). The results of this study indicate that the use of hexanal could be a novel and viable option for reducing post-harvest losses of papaya (Carica papaya L.) in Africa, benefitting small-scale farmers as well as large-scale farmers and traders through improved post-harvest maintenance of quality and longer shelf life.