Recent advances in postharvest management of papaya

R.E. Paull , N.J. Chen

Acta Horticulturae 1024: 321-327. (2014)

Abstract

Papaya fruit postharvest losses of up to 75% have been reported to Hawaii shippers by mainland USA wholesalers and retailers. These losses are associated with mechanical injury, fruit ripening, chilling injury and postharvest diseases. Papaya needs to be considered as having unique requirements due to the fact that we are harvesting a fruit that has started to ripen, that is very susceptible to abrasion injury and postharvest diseases, and whose ripening changes differ from other fruit that have wider genetic resources available and greater postharvest handling experience. Recent advances in handling of fresh fruits highlight the difficulty of transferring experience from other fruit to papaya. Papaya fruit treated with various concentrations of 1-MCP are delayed in ripening. However, papaya treated with 1-MCP at the color break stage are firmer and showed a 'rubbery' texture at the full ripe stage while fruit treated with 1-MCP when more than 25% skin yellow, ripen normally. For shippers and wholesaler, the question is also whether fruit more 25% ripe treated with 1-MCP can be effectively integrated into the marketing chain. In addition, is the extra cost of the treatment recouped in a better quality product for consumers. Another area is postharvest disease control where mechanical injury due to poor handling is not as easily researchable and implemented area. Bio-control using epiphytic microorganisms naturally found on papaya fruit has potential, in particular yeast that compete for nutrients with other organisms that cause stem end and body rots. All technologies need to be investigated and evaluated as to how they will be integrated into the postharvest chain that varies widely depending upon the resources available at the different steps.