

Title Fruit quality and shelf life of five chili (*Capsicum* sp.) cultivars at different harvest maturities
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Citation ISHS Acta Horticulturae 837:251-256. 2009.
Keyword *Capsicum annuum*; *C. frutescens*; genotype; pedicel removal; storage

Abstract

Four *Capsicum annuum* cultivars (CCA321, CCA323 and PBC142 from AVRDC, and Demon-F1 from East-West Seed Co.) and a local *C. frutescens* cultivar at three stages of harvest maturity (red, turning and green stage) produced under Laos conditions were evaluated for fruit quality and shelf life attributes. All cultivars had less than 1 cm fruit width but differed in length, with CCA321 fruit the longest while that of local cultivar the shortest. The other three cultivars had comparable size index (length to width ratio). Red color measured as a* values was lowest in the local cultivar which had also the highest lightness (L*) values indicating lower color intensity. However, the local cultivar was most favored for spicy flavor at all stages of harvest ripeness. Soluble solids content (SSC) was highest in CCA 323 at red stage. PBC142 had the lowest SSC and highest pH at all maturity stages. Demon-F1 fruits gave the lowest pH among cultivars. During storage at ambient, weight loss increased most in the local cultivar. CCA321 had the lowest weight loss regardless of harvest maturity. CCA323 appeared to be more prone to decay which developed more in fruit at advanced stage of ripening. Capability of turning and green fruit to turn red in storage also differed with cultivar. In general, turning fruit readily turned full red in storage than green fruit. Among green fruit, Demon-F1 had the highest capability to turn full red which was comparable to that of turning fruit. In another experiment using red fruit of CCA 323, Demon-F1 and local cultivars, the effects of fruit stalk removal or retention were determined. Stalk removal decreased shriveling but increased decay in CCA 323 fruit. It had no effect in the two other cultivars. Color deterioration based on a* and L* values was not affected in all cultivars.