

Abstract:

Two yellow summer squash cultivars, 'Horn of Plenty' and 'Medallion', were harvested from commercial fields in Homestead, Florida, and held for 14 days at 0, 5, 10, 15 or 20 °C (95 to 100% RH). The objective of this work was to obtain quality curves at chilling and non-chilling temperatures and to identify, for each temperature, which quality parameter(s) limits summer squash marketability. Quality characteristics were assessed throughout the 14-day storage period by quantitative (weight loss, CIE-L*a*b*) and qualitative (firmness, shriveling, chilling injury symptoms, decay, and browning on abraded skin) evaluations. After 2 days at 0 or 5 °C both 'Horn of Plenty' and 'Medallion' showed minor symptoms of chilling injury such as surface pitting. Chilling injury symptoms rendered the squashes unmarketable after 5 days for 'Horn of Plenty' and after 3 days for 'Medallion' while all the other quality parameters evaluated remained acceptable. 'Horn of Plenty' was less sensitive than 'Medallion' to chilling temperatures. At 0 and 5 °C, chilling injury and loss of firmness were the primary limiting factors for 'Horn of Plenty', while for 'Medallion' chilling injury was the primary limiting factor. Loss of firmness was the primary limiting factor for 'Horn of Plenty' stored at 10°C and for 'Medallion' stored at 10, 15 or 20 °C. Although loss of firmness and development of browning on abraded surfaces were the primary postharvest quality limiting factors for 'Horn of Plenty' stored at 15 or 20 °C, preharvest factors related to high temperature in the field contributed to the development of 'warts' on the rind of 'Horn of Plenty' fruit, which reduced their shelf life at 10, 15 and 20 °C and masked other limiting factors.