

Abstract:

Minimally processed fruits and vegetables are more perishable than fresh produce as a consequence of tissue damage resulting from processing operations. Wounding, in fact, leads to an increase in respiration activity and ethylene production rate, alters metabolic activity, reduces shelf-life, increases the rate of nutritional and sensory attributes breakdown and leads to browning of the tissues. Mechanical damages, in addition, may enhance susceptibility to decay and contamination by spoilage microorganisms and microbes pathogenic to consumers. The objective of this study was to evaluate the aptitude as ready to eat products in the form of segments of three different cultivars of mandarins ("Okitsu" satsumas; "Nules" and "Oroval" clementines). The fruit of the three studied cultivars were harvested at the optimum eating maturity stage. Before peeling fruit was dipped in a 200 ppm solution of free (active) chlorine for 2 minutes. About 100 g of fruit in the form of segments was sealed in polystyrene trays using a 19 μm thick polyolefinic film (Cryovac). Titrable acidity and pH decreased and increased, respectively, during storage, with few differences between fruit stored at 1 and 5°C. Total soluble solids were fairly constant over storage, independently of the storage temperature, while vitamin C declined slightly in "Okitsu" satsumas and "Nules" clementines, while at a higher rate in "Oroval" clementines. During the first 2 days of storage in package CO_2 and C_2H_4 increased progressively, while O_2 level decreased, then followed a marked reduction of C_2H_4 , while CO_2 and O_2 concentrations decreased and increased slightly, respectively. Microbiological analysis revealed the presence of some bacteria usually present on the surface of horticultural commodities but not dangerous for humans, such as *Bacillus* spp. and *Staphylococcus epidermidis*, while no pathogenic microorganisms were detected.