Title Relationship between sensory and physico-chemical quality parameters of cold-stored "Clemenules" mandarins coated with two commercial waxes

Author Río M.A. del, Marcilla, A., Palou L.,Martínez M. and Carot J.M.

Citation Spanish Journal of Agricultural Research, 7(1) p. 181-189, 2009.

Keywords Mandarins; Postharvest technology; Cold storage; Chemicophysical properties; Organoleptic properties; Acetaldehyde; Ethanol; Keeping quality

Abstract

The relationship between physico-chemical parameters (weight loss, rind gloss, juice yield, soluble solids content, titratable acidity, maturity index, and ethanol and acetaldehyde content) and sensory attributes (acidity, sensory maturity index, off-flavor and mandarin like-flavor) of "Clemenules" mandarins was studied in relation to coating treatments and cold storage duration. Fruit were uncoated (control) or treated with two commercial water-based waxes, both with the same wax composition (polyethylene wax and shellac) but two different total solids concentrations (70 and 100 g/kg). Fruit were stored at 5 deg C and 90% relative humidity for 12, 22, 32, 42, 52 or 62 days, plus 7 days at 20 deg C to simulate shelf life marketing conditions. Physico-chemical quality was well preserved throughout storage, especially in fruit coated with 70 g/kg total solids water wax. Fruit from this treatment had the lowest weight loss and the greatest rind gloss. Mandarin-like flavor decreased throughout the storage period, which was highly related with ethanol build-up. Partial least square regression analysis showed that in general the correlation between sensory attributes and instrumental measurements was high.