

### Abstract

The effect of six edible coatings, based on hydroxypropyl methylcellulose (HPMC) and lipids, on post harvest 'Clemenules' mandarin quality was studied. Their effects were compared to a conventional polyethylene based coating. Mandarins coated with HPMC-lipid composites showed lower weight and firmness losses than uncoated fruit, especially when stored at 70°C and 75-80% relative humidity. However, no differences were observed between the six formulations studied, in spite of the differences in their water vapor permeability among films. Coated fruits showed an increase in internal CO<sub>2</sub>, ethanol and acetaldehyde production, and a decrease in internal O<sub>2</sub>, especially formulations containing shellac, which also gave better shine. Coating affected negatively mandarin flavor, however off-flavors were only detected when polyethylene coating was applied. Coatings containing shellac increased isobutanol, trans-2-hexenol, ethyl acetate, ethyl butyrate, α-pinene and limonene concentrations, but did not affect linalool, α-terpineol, 1-hexanol, cis-3-hexen-1-ol, hexanal, octanal, decanal, methyl butyrate, γ-terpinene and valencene. Finally, coated mandarin showed less chilling injury.