

### Abstract:

Edible coating of fruits can result in the creation of a modified internal atmosphere within the fruit, reducing respiration rate and improving postharvest quality. However, care should be taken to avoid anaerobic conditions. The objective of this work was to study the effect of three edible coatings on mandarins c.v. Clemenules during cold storage. Composite coatings consisted on polysaccharide and shellac-beeswax at the following concentrations and ratios: (1) 78% shellac:beeswax (14:1); (2) 73% shellac:beeswax (4.6:1); (3) 50% shellac:beeswax (1:1). Fruits were stored for one week at 20°C, which simulated retail storage conditions, and for four weeks at 4°C plus one additional week at 20°C. All coated fruits delayed dehydration and presented higher internal CO<sub>2</sub> and ethanol concentration than uncoated ones. However, sensory analysis for coated and uncoated fruits scored similar and off-flavors were not detected. Shellac:beeswax (14:1) coatings were brittle than the rest of the formulations. Nevertheless, this coating acted as an important moisture barrier, probably due to an effective blockage of the pores. These fruits were also characterized by a lower ethanol production, in spite of the higher shellac content. Which indicated that this coating was effective improving the quality of the mandarins.