Title Edible film based on candelilla wax to improve the shelf life and quality of avocado

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Abstract

In this study the effect of addition of ellagic acid (at three different concentrations) into candelilla wax matrix on shelf life and quality of whole avocados was studied. Control treatments were avocados coated with candelilla wax without ellagic acid and avocados without coating. The fruits were chosen for their maturity, size, free from infection and physical defects. All those samples were inoculated with a concentrated suspension of spores of *Colletotrichum gloeosporioides*, the main phytopathogenic fungus for avocados. Experiments were carried out completely divided into randomized groups. Changes in appearance, solids content, pH, a_w, lightness (L^* value) and weight loss were monitored during 6 weeks every 8 days. A sensory evaluation of avocados coated with the best edible film was also performed. Edibel films were able to reduce significantly the damage caused by *C. gloeosporioides*, reducing also significantly the change in appearance and weight loss in the fruits. Use of ellagic acid as part of the edible film has an important effect to improve the quality and shelf life of avocado. With this work we found that using this new protection system the negative effects of *C. gloeosporioides* can be successfully reduced.