Title Active label-based packaging to extend the shelf-life of "Calanda" peach fruit: Changes in fruit quality and enzymatic activity

Author Pablo Montero-Prado, Angel Rodriguez-Lafuente and Cristina Nerin

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Abstract

A new active packaging, consisting of a label with cinnamon essential oil incorporated and attached to plastic packaging, was used to extend the shelf-life of late-maturing peach fruit. After 12 days of storage at room temperature, the percentage of infected fruit in the active label packaging was 13% vs. 86% in the non-active packaging. Significant differences were obtained for weight loss (3.4% less at 12 days of storage) and firmness (more than 15.9 N at 12 days) during storage. The influence of the active packaging on the *in vivo* activity of lipoxygenase (LOX), polyphenol oxidase (PPO), peroxidase (POD), superoxide dismutase (SOD), catalase (CAT), and of malondialdehyde (MDA) content as an indicator of lipid oxidation, was studied. The active agent, cinnamon essential oil, also reduced *in vitro* activity of LOX. Sensory analysis of the peaches was performed over the storage time. Most of positive descriptors were not significantly different from the optimum quality level (day 0) for peaches stored in the active package after 12 days at room temperature.