

Title Combined action of pure oxygen pretreatment and chitosan coating incorporated with rosemary extracts on the quality of fresh-cut pears

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Abstract

The combined effects of pure oxygen pretreatment (PO) and chitosan coating (C) containing 0.03% rosemary extracts (R) on the quality of fresh-cut pears were investigated. Whole pears were exposed to air and pure oxygen at 2 °C for 10 days. The pretreated pears were cored, sliced and stored at 20 °C for 3 days. The physicochemical and sensorial attributes were monitored. The results demonstrated that air + C + R (ACR), PO + C (POC) and PO + C + R (POCR) combinations improved preservation of the fresh-cut pear compared to the control. When compared to ACR, both POC and POCR inhibited polyphenol oxidase activity, softening and weight-loss, and retained higher firmness and soluble solids content. Membrane permeability, *L* value, and pH also presented smaller changes. Furthermore, POCR increased these beneficial effects and favourably reduced browning, maintained higher polyphenols and vitamin C content and sensory attributes in contrast to POC. The present data suggests that POCR have the potential to improve the quality of fresh-cut pears and extend the shelf-life.