

Rhubarb extract incorporated into an alginate-based edible coating for peach preservation

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Abstract

Peaches (*Prunus persica*) are known for their palatable flavor and abundant nutrients. However, peaches tend to rapidly decay during the harvest period in summer. To preserve the postharvest quality and extend the shelf life, an edible coating composed by 1.0% sodium alginate (SA) with and without rhubarb (*Rheum rhaponticum* L.) extract was applied to peach fruits. Variations in weight loss, firmness, soluble solids content (SSC), respiration rate, maleic dialdehyde (MDA) content, polyphenol oxidase (PPO) activity and sensory attributes were evaluated at room temperature (28 ± 1 °C). The effectiveness of rhubarb-SA coating to control postharvest decay of peach fruits was also investigated. The results showed that the weight loss, respiration rate, MDA content, and PPO activity were much lower, whereas the firmness and the SSC were much higher in the rhubarb-SA coated samples than in the 1.0% SA coated samples and control group. At the end of storage, peach fruits treated with rhubarb-SA coating maintained good sensory quality. Furthermore, the rhubarb-SA coating treatment had quite a beneficial effect on the decay inhibition caused by *Penicillium expansum*. Our study proves that the alginate coating entrapped with rhubarb extract has the potential to improve postharvest quality and prolong the shelf life of peach fruits.