

EFFECT OF THE BIOACTIVE COATING BASED ON CHITOSANO-GUAR GUM-CINNAMON OIL-BEET EXTRACT ON THE POST-HARVEST QUALITY OF RED DELICIOUS APPLE

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Apple fruits have components of a therapeutic nature. These components mostly decrease or decompose during the postharvest, which negatively affects the useful life of the fruit. The coating with beet extract, cinnamon essential oil, chitosan and guar gum on the fruits has proven to be useful to maintain these compounds, in addition to providing bioactive and antimicrobial components accepted by consumers and promoting the shelf life of apples. The objective of this research was to improve the bioactive properties of the chitosan-guar gum coating and cinnamon essential oil by mixing it with beet residue extract. Two coatings were applied to the Red delicious apples: one without beet residue extract, and the other with beet residue extract, and the control treatment without coating. Subsequently, total polyphenols, flavonoids, anthocyanins, antioxidant capacity, color parameters, weight loss, titratable acidity, total soluble solids, firmness, vitamin C, and respiration were analyzed during storage at an ambient temperature of 20°C for a period of 30 days. In addition, a sensory evaluation of the three treatments was conducted with a trained panel using a hedonic test. The incorporation of beet residue extracts to the coating improved the physicochemical and sensory properties when compared with the other two treatments. Thus, the coating added with the bioactive components of the beet residue extract improves the nutritional and sensory quality of the apples.

Keywords: Edible bioactive coating, Beets bioactive compounds, Red delicious

Acknowledgment:

The Sensory Evaluation Panel of the Universidad Autonoma Agraria Antonio Narro and the Research Directorate for the financial support.

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