EVALUATION OF CHITOSAN EDIBLE COATING ADDED WITH TRANS-CINNAMALDEHYDE ON QUALITY AND SAFETY OF FRESH-CUT PAPAYA

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Papaya (Carica papaya L. cv "Maradol") is a rich source of bioactive compounds with high antioxidant activity. However due to texture of this fruit is detrimental for maintain for long time the integrity of this fruit. The minimal processing alters the integrity of this fruit and induces surface damage which increases tissue respiration rate and detrimental biochemical changes such as development of off-flavors and texture breakdown. Furthermore, microbial contamination of the flesh can occur from the surface, increasing fruit spoilage. Edible coatings can be a cost-effective alternative to modified atmosphere packaging because they help to prevent physical damage, enhance appearance, and reduce microbial growths. Generally, edible coatings consist of a film-forming biopolymer that carries a functional ingredient. The objective of this study was to determine the viability of a chitosan edible coating added with trans-cinnamaldehyde to enhance the shelf life and quality of fresh-cut papaya. A parallel study evaluated the effect of packaging on the efficacy against deteriorate and pathogen microorganisms. Fruits were washed, peeled and cut, coated, and stored at 4 C in trays covered with commercial film for 15 days. Uncoated fruits served as controls. Coated fruits were firmer, maintained color, β-carotene content, and showed lower juice leakage. According to RDC Brazilian Resolution the product showed absent of pathogen. Coated samples were more accepted by the panelists than the controls. The use of essential oil such as trans-cinnamaldehyde was successful since it had no negative impact on the fruit’s flavor and was effective in extending shelf life and quality of fresh-cut papaya.