COLOR AND TEXTURE OF FRESH-CUT APPLE TREATED WITH CHITOSAN NANOPARTICLES-BASED EDIBLE COATINGS

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Fresh-cut apples has been gaining market share due to its convenience; however, it is expected by consumers find a product with quality assurance. The aim of this work was to study the effect of chitosan nanoparticles-based edible coatings on the internal color and texture in fresh-cut apples slices. ‘Royal Gala’ apples were washed and sanitized in 200 mg L⁻¹ sodium dichloroisocyanurate dehydrate for 3 min. Then, were manually cut into slices and rinsed in a 20 mg L⁻¹ sodium dichloroisocyanurate dehydrate solution and immersed in 1% ascorbic acid for 3 min. Chitosan nanoparticles were prepared using ionic gelation of chitosan with sodium tripolyphosphate. The treatments were: (1) chitosan nanoparticles 140 nm and (2) chitosan nanoparticle 300 nm both added by spraying on the slices; (3) 2 g L⁻¹ chitosan dissolved in 2% citric acid and (4) control 1% ascorbic acid both added by immersion. The slices were placed into polyethylene terephthalate trays and stored at 5°C. Analyses were made every two days for 10 days. Luminosity (L), chroma (C) and hue angle (h°) were statistically different for the treatments. The treatment (3) showed the highest browning during storage with 83.87 (L), 33.67 (C); 76.29 (h°) values. The browning index for each treatment was 12.6, 12.9, 64.9 and 9.2, respectively. The texture varied -14%; -12% and 7% for treatment (1), (2) and (3) compared to control. The results showed that treatments (1) and (2) were responsible for a light browning in slices and low reduce in texture values.