FUNCTIONAL EDIBLE COATINGS FOR DRIED GUAVA (Psidium guajava L.) SLICES

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Abstract:
Edible coating is an economical and effective approach towards maintaining the quality of fresh fruits and minimally processed fruits, the concept of edible coating was applied in the storage of dried guava slices. The objective of this study was to investigate the effectiveness of polysaccharide- and gelatin-based coatings in improving the storage quality of the dried guava slices. Sodium alginate (polysaccharide) and gelatin (protein) were used as the base for this model study, additives such as citric acid and fructooligosaccharide were also added. Dried guava slices produced with different edible coatings were stored at 24 and 37.5 °C, the browning intensity, antioxidant stability and total plate count in the formulations were monitored for 8 weeks. Browning intensity in dried guava slices was less pronounced when citric acid and fructooligosaccharide were combined and incorporated into the sodium alginate- and gelatin-based formulations ($p<0.05$). The same combination of ingredients helped in maintaining the antioxidant stability in the dried guava slices with gelatin-based coating. While presence of fructooligosaccharide in both of the sodium alginate- and gelatin-based formulations lowered the microbial load during the storage period ($p<0.05$). These findings suggest a combination of citric acid and fructooligosaccharide could be an ingredient with multi-functional effects in preserving the quality of dried guava slices.

Keywords: Guava; Gelatin; Alginate; Edible Coatings; Functional; Antioxidant; Browning

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