DEVELOPMENT OF EDIBLE COATING FOR PALMYRAH JAGGERY AND ITS PERFORMANCE

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ABSTRACT

Palmyrah jaggery is a traditional sweetener and indigenous medicine which is produced by concentrating the unfermented inflorescence sap of Palmyrah palm to a thick consistency. Composition and storage conditions of jaggery (both physical and chemical) are important factors that determine the keeping quality of product. During storage, solid jaggery undergoes liquefaction and changed to dark color, which was due to absorption of moisture and microbial attack. The present study was carried out to develop four different types of edible coatings to improve the self life and quality of Palmyrah jaggery. basic materials of coatings were selected in three concentration levels such as , carboxymethylcellulose (0.5%, 1%, and 2%), pectin (0.5%, 1%, and 2%), carrageenan (0.5%, 1%, and 2%) and whey protein (2%, 4%, and 6%).4% glycerol was selected as plastizer and ginger, cinnamon and cardamom were used as 0.2% additive materials in . Sensory analysis of organoleptic properties was carried out for selecting best additive material for each coating. Sensory panel was comprised of 30 trained panelist and data were analyzed by the Friedman non-parametric test. Cinnamon was selected as best additive. Moisture content, pH and water activity were analyzed at 7-day interval for 28 days to select the best concentration level for each coating. Results were analyzed statistically using one-way ANOVA in Minitab 19 at 95 % confidence level. Results of moisture content, pH and water activity showed that decreasing trend with storage period. According to above analysis results revealed that there is significant different between the concentration levels of coatings for each week was observed, so their highest level concentration was selected, such as Carboxymethylcellulose (2%), Pectin (2%), carrageenan (2%) and Whey protein (6%). It can be concluded that coating jaggery sample could help in retaining the desirable moisture up to some extent. Also that problem related to keeping quality of jaggery could be overcome by applying edible coating.

Key words: Biodegradable; Indigenous; liquefaction; Organoleptic; Plastizer