

FORMULATION OF INSTANT JELLY MIX USING NATURAL COLOURANT AND ITS PRODUCT QUALITY EVALUATION

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The study was conducted to analyze the proximate composition of fresh and dehydrated hibiscus powder petals and its use as natural colourant for product preparation. Different drying methods were employed such as sun drying, solar drying, freezing for one hour followed by drying using lab scale air oven at 55°C, vacuum drying at 50°C and drying using lab scale air oven at 55°C. Three different formulas of jelly powder mix were prepared. Physicochemical properties and retention of antioxidants in dehydrated hibiscus powder and prepared formulas were evaluated. Data obtained were in triplicate ($n=3$) and the results were assessed by completely randomized design using ANOVA. The nonparametric data were analyzed using Friedman test with Minitab statistical package.

The proximate analysis of fresh hibiscus flower petals showed the moisture 89.34%, fat 2.76%, protein 4.12%, total ash 7.23%, fiber 10.75% and anthocyanin content 877.04 mg/100g. Dehydrated hibiscus powder recorded the maximum retention of ash and fiber when drying with air oven. Higher concentration of protein (4.05) and anthocyanin (107.5 mg/100g) were recorded in vacuum dried sample and it was significantly different ($\alpha=0.05$) from other drying methods employed. Four different formulas of instant jelly powder mix containing sugar, citric acid, hibiscus powder and thickening agent (varying proportions of pectin in mix 1 (4.61%) and mix 2 (2.53); gelatin in mix 3 (4.61) and mix 4 (2.53) were evaluated for its physico-chemical characteristics upon storage of 60 days. All formulas resulted lower microbial load (1.8×10^3 CFU/g) also the fat and the total ash content decreased throughout the storage. A significant loss of anthocyanin content was observed and the highest anthocyanin content was given by mix 2 at the end of storage (10.47 mg/100g). The colour intensity (L^* value) indicated that the prepared jelly was brighter in appearance and the maximum was recorded by mix 3 followed by mix 4 at the end of storage. Higher a^* value was recorded by mix 4 followed by mix 3.

Among different drying methods, vacuum drying can be recommended as a most effective drying method showed better retention of physico-chemical characteristics of dehydrated hibiscus flower petal powder. Among the sensory quality attributes evaluated, appearance, aroma, flavor, texture were significantly different ($p<0.05$) among treatments and Mix 4 (which contained 2.53% gelatin as a thickening agent) was scored higher estimated median (4 like moderately to 5-Like extremely) for all its characteristics considered.

Keywords: dehydration, proximate compositions, hibiscus powder, storage, jelly