

Development and Quality Analysis of Coconut Milk (*Cocos nucifera* L.) Based Palmyrah (*Borassus flabellifer* L.) Fruit Pulp Drink

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Plant-based or non-dairy milk alternatives are a growing trend in new products development. The palmyrah (*Borassus flabellifer* L.) fruits have excellent nutritional and functional properties with unique organoleptic characteristics. Fruits are highly wasted during their peak season due to low industrial utilization. The present study was carried out to give value addition and promote utilization of palmyrah fruit, targeting the ready-to-serve beverage market. Coconut milk (*Cocos nucifera* L.) based palmyrah fruit pulp drink was developed with four product formulations by changing the pulp percentage ($T_1=0\%$, $T_2=20\%$, $T_3=40\%$, and $T_4=60\%$). The pulp was treated with acid and heat treatment to reduce and mask its bitterness. The proximate composition, physicochemical, functional, and microbial properties were determined for all product formulations. Tukey method was used to compare the mean values of different treatments. The T_2 treatment was selected as the best formula for further development. The product pH (5.2), TSS (12° brix), titratable acidity (0.04 mg/L), specific gravity (1.04), viscosity (124 mm²/s) did not vary significantly during the storage at room temperature. Moisture, fat, protein, carbohydrate, crude fiber and ash contents of the product were 83.29%, 3.4%, 1.63%, 9.92%, 0.21% and 1.55% respectively. The mineral contents recorded in the product were Na (1.52 mg/100g), K (17.17 mg/100g), Ca (5.01 mg/100g) and Mg (11.81 mg/100g) respectively. The colour values recorded are L*(60.28), a*(7.16) and Tb* (34.62). The functional properties were determined by DPPH assay (IC₅₀ 112 mg/ml) and total phenolic content recorded was (35.31 GAEmg/100g). The drink had low calorie (73.94 kcal/100mL), medium sugar (8.26 g/100ml), and low salt (0.15 g/100ml) contents. The product could be kept for more than 4 weeks without affecting its microbial and physicochemical quality parameters. Overall results conclude that the newly developed palmyrah pulp-based coconut milk drink is a product with significant nutritional and functional properties.

Keywords: Coconut Milk, Palmyrah Pulp, Physicochemical Properties, Proximate Analysis, Sensory Properties