

**DEVELOPMENT OF A BEVERAGE USING DATE (*Phoenix dactylifera* L.) SEED POWDER AS A CAFFEINE-FREE ALTERNATIVE FOR COFFEE**

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This research explores the development and quality assessment of a beverage using date seed powder as a caffeine-free alternative to traditional coffee. The production process involves the extraction of date seed powder and its incorporation into beverage formulation. Various physicochemical and sensory analysis were conducted to evaluate the quality attributes of the beverage. There were four treatments, such as T1 (Control) - 10 g coffee powder/100 ml milk, T2 – 5 g date seed powder/100 ml milk, T3 – 10 g date seed powder/100 ml milk, and T4 – 15 g date seed powder/100 ml milk. The beverage was prepared using date seed powder, coffee powder (control), milk, sugar, cardamom, cloves, gelatine and vanilla. The sensory properties (aroma, taste, colour, texture and overall acceptability) were evaluated using 20 semi-trained panellists under 7-point hedonic scale. The data were analysed using Kruskal Wallis test. Based on the result found, T3 was the most acceptable treatment. (Average value of response for taste: 7, colour: 5, texture: 6, aroma: 7, overall acceptability: 7). Proximate analysis was performed as ash, protein, fat, titratable acidity, pH, total soluble solids and mineral content (Na, K, Ca). It revealed that mean value for titratable acidity (1.52 -1.31) decreased while ash (1.4% -1.9%), fat (4.42%- 7.05%), protein (10.42% -12.52%), pH (5.42 -5.85) total soluble solids (10.22 -13.95) and mineral contents were increased with the concentration of date seed powder. All tests were analysed by ANOVA ( $\alpha=0.05$ ) and mean separation was done with Tukey's studentized test. The study aims to address the increasing demand for non-caffeinated beverages by utilizing date seeds, an underutilized by-product, rich in nutritional components. It showed that date seed powder has more nutrients than coffee and it can be used as a coffee alternative for those who are seeking a caffeine-free option with added health benefits.

**Keywords:** Alternative, Beverage, By-product, Caffeine, Date seed*\*Corresponding Author: chathuyasara97@gmail.com*