

# **MAXIMIZING THE UTILIZATION OF DATES AND THEIR BY-PRODUCTS**

By

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## ABSTRACT

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This study was conducted to determine the morphological and chemical characteristics of date palm varieties; samany and siwi fruits produced powder from Samany date (soft dates), and syrup date from Siwi(semi-dry dates).Also, chemical, physical and organoleptic characteristics of cookies where powder date was used as a sugar substitute at different ratios (5, 10, 20 and 40 %) where investigated. Results cleared that the morphological characteristics of date varieties (Samany and Siwi) such as fruits dimensions (Length and Width) as well as weight for fruit, pulp and seed percentages were significantly ( $P<0.05$ ) differed. The chemical characteristics of date palm varieties, was significantly ( $P<0.05$ ) differed. The Samany date powder was prepared by oven dried at  $75\pm 1^{\circ}\text{C}$  for 24 hours and it used as a sugar substitution, in biscuit dough formula, however, its effect on the chemical, physical properties and sensory attributes of cookies were studied. The physical properties of cookies (Thickness, Diameter, Spread ratio) percentages, has no significant effect ( $P\leq 0.05$ ) among all the studied samples. The sensory evaluation of cookies were influenced by different substitute ratios of date powder .Also, significant ( $P\leq 0.05$ ) existed in Color, Taste, Crispiness, Texture, Flavor and Overall acceptability of the cookies. Depending on Overall acceptability, results cleared that best values appeared in brands with substitute ratio of 5% compared to control that recorded height acceptability. The Siwi

date have been subjected to prepare the juice and syrup (dibs) by two extraction methods (water bath and ultrasonic water bath) the obtained Data cleared that the difference between the chemical properties of the extracted Siwi date juice was significantly ( $P \leq 0.05$ ) observed. The highest percentage of total sugars and decrement trend in acidity was noted for the ultrasonic method, while least of energy consumption and time to concentrate the date syrup are the effective factors for preparing the juice. Results showed that the organoleptic properties of syrup (dibs) such as color, viscosity ,taste, flavor and Overall acceptability were acceptable for date syrup extracted using water bath ultrasonic.

**Key words:**

Palm dates Samany, Siwi, morphological properties, chemical composition, application and uses, cookies, dips, juice extraction, organoleptic characteristics

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