

Changes in Physical and Chemical Characteristics of the Fruits of Four Date Palm Cultivars*

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Physical and chemical characteristics of the fruits of Seleg, Sakhi, Khudari and Nebut Seif date palm cultivars were studied during three stages of fruit development (Kimri, Khalal and Tamar). Results showed that such characteristics varied greatly from one stage to another with some variations between cultivars and seasons. Fruit weight, size, length and diameter and seed weight increased from Kimri to Khalal stages followed by a slow decline in the tamar stage. Moisture, ash, protein and tannins contents decreased sharply especially in the tamar stage. Total soluble solids (T.S.S.) and total sugars increased progressively from Kimri, Khalal and tamar stages. Pigments content (chlorophyll a + b and carotene) being high in the Kimri stage, were greatly reduced in the other two stages.

Several investigations have been published on the physical and chemical characteristics of date palm fruits together with the changes that occurs in such characteristics during different stages of fruit development (Rygg 1946, Ashmawi *et al.* 1955, Dowson and Aten 1961, Minessy *et al.* 1975 and Mougheith *et al.* 1976). They reported that different growth parameters changed gradually during their fruit development. Such parameters reached their maximum at tamar stage. Sugars accumulated during fruit development, reaching their maximum at tamar stages, with reducing sugars being dominant. Such studies on Saudi date palm cultivars are few (Hussein *et al.* 1976, Abdel Hafiz *et al.* 1980, Sawaya *et al.* 1982 a,b,c and Saad *et al.* 1986).

Therefore, the present investigation is carried out to evaluate physical and chemical changes in three stages of fruit development, namely: Kimri, Khalal and tamar of some date palm cultivars. Such studies are considered important in determining the proper harvest time.

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