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COMPARATIVE ANALYSIS OF SYRUPS PRODUCED FROM DATE FRUIT AND INVERT SUGAR

JIBRIL, MARYAM.
Department of Food Science and Technology, Federal Polytechnic, P.M.B. 0231, Bauchi, Bauchi State, Nigeria.

ABSTRACT

This study the comparative analysis of syrups produced from Date Fruit and invert sugar. The raw materials obtained from market, reduced to exact nectar by wet milled and sieved in a muslin cloth. Results showed that Date syrup contain more mineral content than Inverted sugar syrup at a value of 85.62, 130.00 and 75.43 as compared to 20.45, 25.88 and 13.40 of Calcium, Potassium, and Magnesium respectively. Considering the high mineral content of Date palm syrup to Inverted sugar syrup, the consumption and utilization of Date syrup will provide more benefit to the human body thereby reducing risk of diseases and sickness such as diabetes that are associated with the consumption of Sugar.

Introduction:

Dates contain several Vitamins and Minerals, in addition to fiber and antioxidants. However, they are also high in calories since they are a dried fruit. But fortunately, despite their sweetness, dates have a low GI, this means that, when eaten in moderation, they're safe for people with diseases such as diabetes, and so can be replaced fully or partially as a sweetener in many food products. Inverted sugar syrup, also called invert syrup and invert sugar, is an edible mixture of two simple sugars, glucose and fructose that is made by heating sucrose (table sugar) with water [1]. It is thought to be sweeter than table sugar, and foods that contain invert retain moisture better and

Crystallize less easily than do those that use table sugar instead. Food processors, who call it *invert syrup*,

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may use it more than other sweeteners. Overconsumption of any type of added sugar such as sucrose, is associated with an increased risk of chronic conditions like heart disease, diabetes, liver disease, and obesity. It is therefore important to limit intake of foods that contain such sugars and replace them with ones having a low GI. Hence, this work investigated and compared between some selected Minerals of Date syrup and Invert sugar syrup.

The raw materials, Date palm fruit and Sugar, were purchased at Central market, Bauchi State. Date fruits were sorted, cleaned and washed to remove dirt particles. It was cut transversely to remove the hard corny seeds (De-Pitting). The pericarp was washed, drained and cut into smaller pieces to increase the surface area and to ease milling. The reduced sizes were wet milled and sieved in a muslin cloth to extract the nectar, which is then cooked to evaporate the added water, what is left is the syrup. Invert syrup was made according to method described by [2]. The mineral content of the syrup samples that were determined include Potassiun, Calcium and Magnesium, by using standard method [3].

Results and Discussion

Results showed that Date syrup contain more mineral content than Inverted sugar syrup at a value of 85.62, 130.00 and 75.43 as compared to 20.45, 25.88 and 13.40 of Calcium, Potassium, and Magnesium respectively (Table 1). According to a report, the level of calcium in varieties of date palm analyzed for calcium was at 60 – 85% which is similar to the value obtained in this research [4]. Calcium is a micronutrient essential to health & wellbeing, which performs diverse biological function in the human body [5]. The potassium content shows that sample DFS had a value of 130.00 which was significantly higher than sample of ISS having 25.88. Potassium is the predominant macro-element in date flesh, its main role in the body is to help maintain normal levels of fluid inside our cells, also helps muscles to contract and supports normal blood pressure. The magnesium content shows that sample DSF (Date Fruit Syrup) had a value of 75.43 which was significantly higher than sample ISS 13.40. To other nutrients analyzed in date palm fruit, Magnesium content is found to be in a lesser amount, even though it is needed for more than 300 biochemical reactions in the body as

it supports a healthy immune system, keeps the heartbeat steady, helps adjust blood glucose levels, etc. Understandably, the higher mineral contents of Date syrup in this study agrees to other finding which report that date fruit is known to be a reasonably good source of minerals [5].

Conclusion

Considering the high mineral content of Date palm syrup to Inverted sugar syrup, the consumption and utilization of Date syrup will provide more benefit to the human body thereby reducing risk of diseases and sickness such as diabetes that are associated with the consumption of Sugar.

Table 1. Comparative result of some selected mineral composition of Syrups made from date fruit and inverted sugar syrup

Minerals	DFS	ISS
Ca	85.62	20.45
K	130.00	25.88
Mg	75.43	13.40

Key;

DFS; Date fruit Syrup

ISS; Inverted Sugar Syrup

K; Potassium, Ca; Calcium and Mg; Magnesium

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