

**Title** Effect of hydration conditions on the quality characteristics of dried date fruits

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#### **Abstract**

If date fruits have been left longer than usual on the palm tree or have been exposed to excessive dry hot weather, quality declines and they are considered too dry. Dried dates have a hard texture and can not be consumed easily. A large amount of the annual date production is dry dates with low quality and price. Traditional hydration treatments to re-store dried dates to a pliable, soft fruits are expensive, risky and take several weeks. This study was carried out during 2005 growing season to determine the best condition of hydration for dried 'Barhee' date fruits that were left on the tree longer than usual because of marketing and storage problems. Physico-chemical changes of fruit properties were studied under two temperature regimes (40°C and 50°C) and three time periods (24, 48 and 72 hours) in a chamber with 90% relative humidity (RH). Hydrated fruits were analyzed for firmness, flesh darkening, water content, °Brix, water activity, acidity and sugars (sucrose, glucose and fructose). There was a high interaction between fruit quality factors and hydration treatment. Firmness of fruit texture decreased throughout the hydration period, however after 72 hours under the 50°C temperature regime; fruit texture was very loose and perishable. Hydrated fruits for 24 hours at 50°C had optimal texture and moisture content and were not susceptible to microbes. Also hydration had no significant effect on flesh color.