ABSTRACT

This study aimed to examine physicochemical and sensorial properties of juice and syrup produced from different types of date fruits which were premature fruit drop, fresh and dried dates. Barhee cultivar of fresh date fruit at Khalal ripening stage stored at -20°C in vacuum pack has been used to study their properties changing during storage for 24 weeks. Results revealed that there was slightly changed in their properties, as a development in color from yellowish at zero day (L* = 45.93, a* = 6.91, b* = 55.68) to be slightly more reddish darker color at twenty fourth week (L* = 37.57, a* = 7.41, b* = 42.79) by accumulating sugar (30 to 36°Brix). Although the physicochemical and sensory intensity of date at different storage time were different, the acceptance of date was comparable to fresh date fruit (6.50-7.33 out of 9). It was further used to produce date palm juice and syrup. An increasing storage time of date fruit increased the intensity of aroma and flavor of juices. The preference test was not different in all attributes as like moderately (7.2-7.4 out of 9) (p>0.05). For date palm syrup, Although the physicochemical properties was changed but the consumer preference test of overall liking was not different as like moderately (7.30-7.56 out of 9) by storage time at -20°C. This study was also investigated the effect of date varieties (fresh date, premature fruit drop, and dried date) in date juice and syrup. The flavor intensity of premature fruit drop juice was higher than fresh and dried date while the color and flavor intensity of fresh date and premature fruit syrup were not different. Even though the physicochemical and sensorial characteristics of juices were different, the consumer preference was comparable with different date fruits. The effect of heating temperature and time on premature fruit drop juice was further investigated. The pasteurized and sterilization has an effect on color, TSS, and pH (p≤0.05) of prepared juices. There was significant difference in flavor, sweetness, amount of date pulp, and overall liking (p≤0.05). Lower temperature and time were highest preference which has high raw fruit aroma, fruity aroma, coconut aroma, fruity flavor, and coconut flavor rated by 50 consumers using RATA. From this study, it can be concluded that the freezing of Barhee fresh date fruit can be stored for at least 6 months in vacuum pack and able to produce date juice and syrup with comparable liking to those of fresh date products. In addition, the premature fruit drop juice and syrup can produce a favorable product quality to those of fresh and dried dates. However, an increasing in heating temperature and time has a strong effect to the quality of the date juice products.