DATE SYRUP PRODUCTION FROM DRIED DATES

ABSTRACT

Date syrup is a concentrated and liquid date sugar which is natural sweetener extracted from date fruit. The standard specification of date syrup is minimum of 70 °Brix, range of pH value is 4.2-6. The dates contain high in sugars, mainly fructose and glucose and high amount of antioxidants, but low in fat and protein. Also, date is a good source of many minerals such as potassium, phosphorous, magnesium, sodium, iron, and calcium. The characteristics of date syrup are thick liquid and brownish color. It can be used to replace sucrose, malt syrup, molasses, glucose syrup, invert sugar, high fructose syrup and all forms of crystalline sugars as sweetening agent with unique flavor of mature date fruit. To optimize the date syrup process, direct heating, indirect heating and freeze-drying processes was studied and compared. To study physiochemical and sensorial properties of developed date syrup, total soluble solid (TSS), pH, % total solid, color, and % yield were measured. Direct heating process used shorter time since the fresh date juice was directly heated while indirect heating process used a double jacket which was attach to boiling water, requiring double time for heating process. Indirect heating process produced syrup that had highest percentage of most like (43%). The effect of date varieties (Deglet Nour, Khalas, and Mazafati on date syrup production was studied. As results, Khalas produced highest % overall yield but darker brown in color while Deglet Nour showed lighter in color but formed a gel-like viscous paste. Among all, Khalas obtained highest percentage of most like. The effect of final total soluble solid (°Brix) of date syrup was then further studied on its preference. Higher final TSS gave higher viscosity, percentage of total solid, time used, and dark color. However, at 80°Brix, date syrup showed highest viscosity and most preferred (57%). In order to improve its color and %yield, different ratio of water to extract date juice before heating process was studied. As results, high water use caused darker color due to longer heating time. At a ratio of 1:2 (date:water), the date syrup was light brown color, with highest percentage of most like. The developed date syrup showed liking score of 7.21 out of 9 with 52.68% overall yield.