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Rheological properties of few unifloral Indian honey

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Honey is a natural food well known for nutritive value and is used as natural sweetener. India is one of the major honey exporting countries in the world. The present research refers to an investigation of the physico-chemical and rheological behaviors of four freshly harvested unprocessed unifloral honey samples collected from different plant sources Vis Sunflower (S), Eucalyptus (E), Mustard (M) and Prosopis (P). Floral sources of honey were confirmed by following melissopalynological method of pollen analysis. Rheological properties of the honey samples were done at varying levels of temperatures (10 to 50°C). Rheological data were fitted to the three different models (Arrhenius, Ostwald-de Waele Power law and Newtonian-I) and analyzed. A continuous fall in apparent viscosity ($p < 0.05$) with the increase in temperature was observed for all the honey samples. Moreover, no significant changes ($p > 0.05$) in apparent viscosity of honey was observed with the variation in shear rate, indicating their Newtonian behaviors. The moisture contents of the honey samples (S, E, M and P) were 13.6%, 17.2%, 15.5% and 16.1%, respectively and shown a significant effect ($p < 0.05$) on the apparent viscosity with the change in temperature (10-50°C). The honey samples having higher moisture content exhibited greater decrease in their apparent viscosity. Power law was found to be the most suitable model ($R^2 > 99\%$) in explaining the rheological behaviors of honey following the variations in temperature when compared with Arrhenius and Newton-I, respectively. Physicochemical analysis of all honey samples showed great variations in composition because of difference in botanical environment and agro climatic diversity. This study showed that, rheology and colorimetric parameters may be used effectively to differentiate honey from different floral sources.

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Enhancement of alcohol and vinegar production efficiency by date seed

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Production of vinegar includes two steps, alcohol fermentation and acetic oxidation. Nutrient substrate in order to more activation of microorganisms is one of the main factors which affect steps of vinegar production. This paper is about effect of addition two varieties of date seed powder (kabkab and mordasang) in whole form and free fat seed powder in quantity of 1%, 2%, 3% and ash powder in quantity of 0.1%, 0.2%, 0.3% to apple extract for 18° Bx. The results indicated that addition of three powders in variant quantity will lead to accelerate of yeast growing and accession of alcohol production efficiency in compare with control. Enhancement of alcohol production in this step leads to enhancement of required substrate of acetic acid bacteria and finally enhancement of vinegar production efficiency. It is also indicated that there is no significant difference between two varieties of dates in point of view of vinegar production which would be because of same chemical composition in these two varieties.

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