Physicochemical properties of mango kernel fats extracted from different mango varieties cultivated in Sabah, Malaysia

ABSTRACT

This study was set out to determine the total fat content, physicochemical properties, and crystal morphology of mango kernel fat (MKF) obtained from three popular mango varieties cultivated in Sabah, Malaysia. The total fat contents of the MKFs were 7.02, 9.50, and 8.41% for Air, Manila, and Harumanis. Gas chromatography with flame ionization detector analyses revealed three major fatty acids namely, palmitic (6.67 to 7.51%), stearic (42.32 to 48.95%), and oleic (32.91 to 38.14%) acids in studied MKFs as novel mango kernel constituents. The iodide, saponification, acid, peroxide, and slip melting point values of the MKFs were found to be 47.79–52.27 g I2/100 g, 181.4–194.5 mg KOH/g, 5.15–6.26 mg KOH/g, 1.05–1.32 meq O2/kg, and 31.0–35.2°C, respectively. The crystals of the three MKFs were spherulites and densely packed. With respect to the characteristics, MKFs potentially can be applied as cocoa butter equivalents and ideal for use in confectionery industry.