

Composition and thermal analysis of binary mixtures of mee fat and palm stearin

ABSTRACT

Seed fat of *Madhuca longifolia* known as mee fat (MF) has been considered as a potential plant fat for producing fat mixture to simulate the properties of lard. A study was carried out to evaluate the effect of addition of palm stearin (PS) on the solidification behavior of MF to formulate a mixture to become similar in solidification characteristics of lard. Three fat mixtures were prepared by blending MF with palm stearin PS in different ratios: MF:PS (99.5:0.5), MF:PS (99:1), MF:PS (98:2) (w/w), and identified by the mass ratio of MF to PS. The fat mixtures were compared with lard in terms of their fatty acid and triacylglycerol compositions, differential scanning calorimetric (DSC) thermal profiles and solid fat content (SFC) characteristics. Results showed that there were considerable differences between lard and MF:PS fat mixtures with regard to fatty acid and triacylglycerol compositions. The increasing proportion of PS in MF:PS fat mixtures caused a general increase in SFC at different temperatures with respect to the SFC profile of native MF. Of the three binary mixtures, MF:PS (99:1) was found to show the least difference to lard in terms of SFC values throughout the temperature range.

Keyword: DSC; Lard; Lard substitute; Mee fat; Palm stearin; Thermal analysis