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## Composition and thermal analysis of ternary mixtures of avocado fat:palm stearin:cocoa butter (Avo:PS:CB) (Article)

Noorzyanna, Y.[a] (https://www.scopus.com/authid/detail.uri?authorId=57193531457&eid=2-s2.0-84987904219) (mailto:nazrim@iium.edu.my),
Marikkar, N.[b] (https://www.scopus.com/authid/detail.uri?authorId=57192404779&eid=2-s2.0-84987904219),
Mustafa, S.[a] (https://www.scopus.com/authid/detail.uri?authorId=14034546400&eid=2-s2.0-84987904219),
Mat Sahri, M.[c] (https://www.scopus.com/authid/detail.uri?authorId=57191195885&eid=2-s2.0-84987904219)

[a]Halal Products Research Institute, Universiti Putra Malaysia, Selangor, Malaysia
[b]International Institute for Halal Research and Training, International Islamic University Malaysia, Kuala Lumpur, Malaysia
[c]Malaysian Palm Oil Board, Kuala Lumpur, Malaysia

View additional affiliations

## Abstract

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Avocado fat is a semi-solid substance with potential functional lipid characteristics. A study was carried out to evaluate the effect of addition of palm stearin and cocoa butter on the solidification behavior of avocado fat to formulate a mixture to become similar to lard. A total of three mixtures were prepared: avocado fat:palm stearin:cocoa butter (88:7:5), avocado fat:palm stearin:cocoa butter (86:7:7), avocado fat:palm stearin:cocoa butter (84:7:9; w/w), and identified by the mass ratio of avocado fat to palm stearin and cocoa butter. The fat mixtures were compared with lard in terms of the fatty acid and triacylglycerol compositions using gas chromatography and high-performance liquid chromatography, thermal properties using differential scanning calorimetry and solid fat content using p-nuclear magnetic resonance. Although there were considerable differences between lard and the fat mixtures with regard to fatty acid and triacylglycerol compositions, some similarities were seen with regard to thermal properties and solid fat content profile. Of all the fat mixtures, avocado fat:palm stearin:cocoa butter (84:7:9) displayed closer similarity to lard with respect to thermal transitions at –3.59°C and its solid fat content profile showed the least difference to that of lard throughout the temperature range measured. © 2017 Taylor & Francis Group, LLC.

## Author keywords

Avocado fat Cocoa butter DSC Lard substitute Palm stearin Thermal analysis

## Indexed keywords

Engineering controlled terms: Cocoa Differential scanning calorimetry Fatty acids Fruits Gas chromatography Glycerol High performance liquid chromatography Liquid chromatography Mixtures Thermoanalysis Thermodynamic properties