

Physicochemical Properties and Thermal Behavior of Mango (*Mangifera indica L*) Seed Kernel Fats from Various Ivorian Varieties.

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Abstract

Mango is the most popular fruits in Côte d'Ivoire and its cultivation has developed considerably in recent years with about 180,000 tons per year. After consumption or industrial processing of mango pulp, high amounts of mango seed are generated and unexploited. The seed kernels contain approximately 3.7 to 15% fat based on dry matter. Mango seed fat has been the subject of several studies because some of its characteristics resemble those of cocoa butter. Considering that, Ivorian mango might be an interesting source of edible fat. The aim of this work was to characterize different (7) Ivorian mango seeds kernel fat (MSKF) in order to improve knowledge regarding their physicochemical characteristics and to evaluate their potentiality. Fat content ranged from 4.9 to 9.5 % on dry basis. The fatty acid (FA) composition revealed that oleic (35-47%) and stearic acids (30-48%) are the main FA for all cultivars. The melting profile obtained by DSC and p-NMR showed that all fat samples melted completely as the temperature approached 37°C. However, the melting profile from DSC and p-NMR of all MSK fats studied varied considerably depending on the mango varieties. Oxidative stability index revealed that all MSKF presents a good oxidative stability. As a conclusion, MSKFs obtained from Ivorian mangoes could be viewed as alternative sources of edible oil and could be used as a potential source for functional food ingredients.

Keywords: Mango seed kernel fat; Ivorian varieties; Fatty acid; Triacylglycerol; Crystallization and Melting profile; Oxidative stability.