

Physicochemical properties of cocoa butter replacers from supercritical carbon dioxide extracted mango seed fat and palm oil mid-fraction blends

Abstract

Supercritical carbon dioxide (scCO₂) extracted mango seed fat (MSF) was blended with palm oil mid-fraction (POMF) to obtain cocoa butter replacers (CBRs). The fatty acid constituents and physicochemical properties of the formulated blends were analysed by gas chromatography (GC). In this study, the fatty acid constituents and other physicochemical properties such as iodine value (43.2 to 43.4 g I₂ /100 g fat), saponification value (195.7 to 195.9 mg KOH/g fat), acid value (2.1 to 2.7%), and slip melting point (33.8 to 34.9°C) of blends MSF/POMF at ratios 85/15, 80/20, 75/25, and 70/30 were found similar to the physicochemical properties of commercial cocoa butter. Thus, it could be concluded that the MSF/POMF blends that are blends 85/15, 80/20, 75/25, and 70/30 (3 to 6) could be suggested as CBRs in terms of the physicochemical properties like fatty acid constituents, iodine, saponification and acid values and slip melting point