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Supercritical carbon dioxide extraction and studies of mango seed kernel for cocoa butter analogy fats (Article)Jahurul, M.H.A.², Zaidul, I.S.M.³ , Norulaini, N.N.A.⁵, Sahena, F.², Jaffri, J.M.², Omar, A.K.M.²  ²School of Industrial Technology, Universiti Sains Malaysia, Minden-11800-Penang, Malaysia³Kulliyah of Pharmacy, International Islamic University, Kuantan Campus, 25200 Kuantan, Pahang, Malaysia⁵School of Distance Education, Universiti Sains Malaysia, Minden-Penang-11800, Malaysia

Abstract


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Supercritical carbon dioxide (SC-CO₂) was introduced for obtaining premium grade cocoa butter quality fat from the waste of mango seed kernel (MSK), where the Soxhlet method was also used for the comparison. Six different varieties of MSK were selected to be extracted using SC-CO₂ at pressures of 35 and 42.2 MPa, temperatures of 60°C and 72°C, and constant CO₂ flow rate at 3.4 ml/min. The total fat contents of MSK varieties ranged from 64 to 135 g/kg at SC-CO₂ extraction and from 76 to 137 g/kg at Soxhlet extraction methods. The fatty acid constituents of fat yield of all varieties extracted using SC-CO₂ ranged from 6.9% to 10.9% palmitic acid, 32.8% to 47.6% stearic acid, 37% to 47.3% oleic acid, and 3.7% to 6.9% linoleic acid. However, the physicochemical properties and fatty acid constituents of SC-CO₂ extracted MSK fats were found to be comparable to that of commercial cocoa butter. © 2013 © Taylor & Francis.



Author keywords

[cocoa butter quality fat](#) [fatty acid constituents](#) [mango seed kernel fat](#) [physicochemical properties](#) [supercritical carbon dioxide extraction](#)

Indexed keywords

[Engineering controlled](#) [Cocoa](#) [Fruits](#) [Linoleic acid](#) [Supercritical fluid extraction](#)
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