EXTRACTION OF MANGABA (*Hancornia speciosa*) SEED OIL USING COMPRESSED ETHENE AND SUPERCRITICAL CARBON DIOXIDE

Lisiane dos Santos Freitas[(1)], Vitória Caroline Oliveira Souza[(1)], Camila da Silva[(2)]*, Vladimir Ferreira Cabral[(3)] and Lucio Cardozo-Filho[(3)]

(1) Departamento de Química, Universidade Federal de Sergipe
Cidade Universitária Prof. José Aloísio de Campos
Av. Marechal Rondon, s/n, Jardim Rosa Elze, CEP: 49100-000, São Cristóvão, BRAZIL
Phone: (+55) 79-2105-6654

(2) Department of Technology, Maringá State University (UEM)
Umuarama, PR, 87506-370, BRAZIL

(3) Department of Chemical Engineering, Maringá State University (UEM)
Av. Colombo 5790, Maringa, PR, 87020-900, BRAZIL

The *mangaba (Hancornia speciosa)* is a native and/or exotic Brazilian fruits have great nutritional and economic potential. The fruit is consumed in-nature and processed in ice-cream, juice pulp, desserts and other processed products. Considering that amounts of mangaba seed by-products are discarded as waste after consumption or industrial processing of the fruits and that the seed is rich in oil. The aim of this work was to analysis of fatty acids of mangaba seed from the northeastern region of Brazil and the effect of the Conventional and supercritical fluid extraction in the compounds. The Soxhlet extraction used hexane and supercritical fluid extraction used CO_2 or ethene. The extractions were performed in a laboratory scale unit in a temperature and pressure range of 40, 50, 60°C and 150, 200 and 250 bar for carbon dioxide and 60°C and 250 bar for ethane extractions, respectively. This study showed that mangaba seeds are rich in fatty acid as oleic, linoleic and palmitic. Additionally, the prevalence of unsaturated over saturated fatty acids is considered to be positive from the nutritional point of view. The yield results showed that ethene is a more suitable solvent for mangaba seed oil extraction than carbon dioxide, as higher extractions yields and a very fast kinetic of extraction were achieved with this solvent.

Keywords: *mangaba, Hancornia speciosa*, supercritical fluid.

*Corresponding author: camiladasilva.eq@gmail.com