Concentration of Gamma-Linolenic and Stearidonic Acids as Free Fatty Acids and Ethyl Esters from Viper's Bugloss Seed Oil by Urea Complexation

Rincón-Cervera, Miguel Ángel

Galleguillos-Fernández, Raúl

González-Barriga, Valeria

Valenzuela, Rodrigo

Valenzuela, Alfonso

 In this work, gamma-linolenic acid (GLA) and stearidonic acid (SDA) are successfully concentrated as free fatty acids (FFA) and ethyl esters (EE) using the urea complexation method at room temperature and two sources of these fatty acids: commercial Echium plantagineum seed oil as well as extracted oil from this species which is grown in Chile. Concentration factors (% fatty acid in the concentrate/% fatty acid in the original oil) for both fatty acids are found to be between 2.35 and 2.65, although they are more efficiently concentrated as FFA than as EE using both commercial and extracted oils. This is the first work which reports the use of Echium plantagineum seed oil from Chilean origin to produce GLA and SDA concentrates as FFA and EE, with similar results that those obtained with commercial Echium oil. Practical Applications: The interest for GLA and SDA as functional ingredients is increasing in the last few years because of the