

Optimization and solubilization of interest Compounds from roselle in subcritical ethanol Extraction (see)

ABSTRACT

A scientific investigation on the optimization and solubilization of anthocyanin from roselle by subcritical ethanol (SE) has not yet been conducted. Consequently, the purpose of this work is to evaluate the parameter influences on anthocyanin recovery by SE, followed by the identification of the solubilization behavior by semi-empirical modelling. The best conditions were 8.74 MPa, 383.51 K and 5.21 mL/min with responses of global yield of 0.765 g/g, anthocyanin of 921.43 mg/100 g, TPC of 40.57 mg/100 g and TFC of 559.14 mg/g. High pressure and temperature conditions are conducive to global yield, anthocyanin, flavonoid and phenolic recovery. The Del Valle Aguilera model fits the solubility of global yield and anthocyanin in SE effectively instead of Chrastil model since it has the lower average absolute relative deviation (AARD), which is 11.54 % and 7.15 %, respectively. The most influenced parameters were found to be the temperature, which gave a significant impact in enhancing the solubilization power of global yield and anthocyanin.