

Studies on Extraction Oil from Viscera of Anchovy by supercritical Carbon Dioxide and Effect of extraction Enzyme Activities

정고운, 전병수^{1,*}

부경대학교; ¹부경대학교 식품공학과

(bschun@pknu.ac.kr*)

Supercritical carbon dioxide (SCO₂) and an organic solvent, hexane were used to extract oil from anchovy viscera. The SCO₂ extraction was carried out at temperatures ranging from 35 to 40°C and pressures ranging from 20 to 40 MPa. The flow rate of CO₂ was 22 g/min and it was constant entire the extraction period. The extraction time was 1.5 hrs for each extraction conditions. At higher temperature and pressure, the oil yield was the maximum. The extracted oil was analysed by Gas Chromatography (GC) for fatty acids compositions. A high percentage of polyunsaturated fatty acids especially eicosapentaenoic acid (EPA, C₂₀:5) and docosahexaenoic acid (DHA, C₂₂:6) were found in the anchovy viscera oil obtained by SCO₂ extraction. n-3 Polyunsaturated fatty acids (n-3 PUFAs), especially EPA and DHA have been shown to be important for the prevention of a range of human diseases and disorders. The fish food industry produces a high amount of waste constituted notably by fish viscera. Nevertheless, this cheap raw material could be valorized by extracting and fractioning the valuable PUFAs. The digestive enzymes from anchovy viscera were characterized after supercritical carbon dioxide (SCO₂) and organic solvents, n-hexane extraction.