

Microwave-assisted extraction of lipid from fish waste

ABSTRACT

Processing fish waste for extraction of value added products such as protein, lipid, gelatin, amino acids, collagen and oil has become one of the most intriguing researches due to its valuable properties. In this study the extraction of lipid from sardine fish waste was carried out using microwave-assisted extraction (MAE) and compared with Soxhlets and Hara and Radin methods. A mixture of two organic solvents isopropanol/hexane and distilled water were used for MAE and Hara and Radin methods. Meanwhile, Soxhlet method utilized only hexane as solvent. The results show that the higher yield of lipid 80.5 mg/g was achieved using distilled water in MAE method at 10 min extraction time. Soxhlet extraction method only produced 46.6 mg/g of lipid after 4 hours of extraction time. Lowest yield of lipid was found at 15.8 mg/g using Hara and Radin method. Based on aforementioned results, it can be concluded MAE method is superior compared to the Soxhlet and Hara and Radin methods which make it an attractive route to extract lipid from fish waste.