Ekstraksi minyak ikan dari tulang ikan sidat (anguilla bicolor bicolor, McClelland 1844) dengan metode wet rendering = Fish oil extraction from eel bone (anguilla bicolor bicolor, McClelland 1844) with wet rendering method

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Abstrak

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Minyak ikan dikenal sebagai sumber polyunsaturated fatty acids (PUFA) yang baik dan digunakan untuk tujuan farmasetika dan suplemen pangan secara luas. Dalam penelitian ini, bahan baku ikan sidat (Anguilla bicolor bicolor) dikarakterisasi dan minyak ikan diekstraksi dari tulang ikan sidat dengan metode Bligh & Dyer dan wet rendering. Komposisi asam lemak dari minyaknya dianalisa dan dikuantifikasi menggunakan kromatografi gas. Hasil yang diperoleh menunjukkan, total by-product pengolahan ikan sidat (Anguilla bicolor bicolor) mencapai 26,38%, kandungan lemak tulang ikan sidat 17,33 ± 0,58 g/100 g. Rendemen minyak ikan sidat yang diekstraksi dengan metode Bligh dan Dyer adalah 17,12%. Berdasarkan hasil analisis asam lemak minyak ikan sidat, diperoleh kandungan SFA 19,87%, MUFA 25,84%, PUFA 13,84%. Komposisi asam lemak utama minyak ikan sidat adalah asam palmitat 13,58%, asam oleat 20,94%, asam linoleat 4,01%, EPA 1,57% dan DHA 4,84%. Rendemen tertinggi ekstraksi minyak ikan dari tulang ikan sidat menggunakan metode wet rendering adalah sebesar 6,95% yang didapat pada pada suhu 80ºC, waktu perebusan 60 menit. Penambahan waktu perebusan menjadi 90 menit pada suhu yang sama, tidak berpengaruh nyata terhadap persentase rendemen. Kondisi ekstraksi metode wet rendering terbaik berdasarkan persentase rendemen dan nilai hasil uji mutu dari minyak ikan adalah suhu perebusan 60°C, waktu perebusan 60 menit dengan persentase rendemen sebesar 5,53%, asam lemak bebas 0,47% , bilangan asam 9.277,55 mg KOH/kg, bilangan peroksida 38,35 meq/kg, bilangan anisidin 25,84 meq/kg dan total oksidasi 102,55 meq/kg. Hanya kandungan asam lemak bebas saja yang mempunyai nilai sesuai standar yang diperbolehkan.
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ABSTRACT
Fish oils have been recognized as good sources of polyunsaturated fatty acids (PUFA) which are widely used for pharmaceutical purposes and as food supplements. In this study, eels (Angguilla bicolor bicolor) as a raw material was characterized and fish oil from eels bone were extracted using Bligh & Dyer and wet rendering method. The fatty acid composition of the oil was analyzed and quantified using gas chromatography. Results showed that the total yield of by-product of eel reached 26,38 %, the lipid content of eels bone was 17.33 ± 0.58 g/100 g. Yield of eel bone oil extracted by Bligh and Dyer method was 17.12%. In the fatty acid analysis of eel bone oil, it was discovered that SFA was 19.87%, MUFA was 25.84%, and PUFA was 13.84%. The Composition of major fatty acids in the oil from the bone were palmitic acid (13.58%), oleic acid (20.94%), linoleic acid (4.01%), EPA (1.57%), and DHA (4.84%). The highest yield of fish oil from eel bone with wet rendeering exctraction method was 6.95% on temperatur 80ºC and boiling time 60 minutes. At the same temperatur, an additional time to 90 minutes was not significantly different to percentage of yield. The best condition for wet rendering exctraction method is

boiling temperature 60°C, boiling time 60 minute with value of yield, free fatty acid, acid value, peroxide value, anisidin value and total oxidation is 5,53%, 0,47%, 9.277,55 mg KOH/kg, 38,35 meq/kg, 25,84 meq/kg and 102,55 meq/kg respectively. Result showed that only free fatty acid value which meet the standar requirement.

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