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An evaluation on suitability of fish waste to produce fish oil

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Objective of this study was to extract fish oil from fish waste of the marine fish white tip shark (*Triaenodon obesus)* and fresh water catla (*Catla catla*) by solvent free microwave assisted extraction and to investigate the fatty acid profiles and free fatty acid content in the oils, in order to explore the potential of using those fish waste to produce fish oil. The yield of fish oils from viscera of white tip shark and catla were 44.3 % and 35.5 % (w/wet w) respectively. Free fatty acid levels of both oils agree with the recommended level. Fish oil of viscera of white tip shark had 29.7 % saturated fatty acids (SFA), 35.6 % monounsaturated fatty acids (MUFA), 11.6 % n-3 fatty acids, 4.2 % n-6 fatty acids, 7.5 % Docosahexaenoic acid (DHA) and 4.1 % eicosapentaenoic acid (EPA). The SFA content is lower and MUFA, DHA and EPA levels are higher in fish oil from viscera of white tip shark than the reported levels for Cuban shark liver oil. Based on the observations on fatty acid profile of fish oil from viscera of white tip shark, it can be considered as a good source for fish oil. Total n-3 fatty acid level and DHA level in fish oil from viscera of catla was 6.6 % and 4.4 % respectively which indicates that it gives fish oil of low quality when compared with the oil extracted from viscera of white tip shark.

Keywords: *fish waste, fish oil, fatty acid profile, Triaenodon obesus, Catla catla*

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