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“Development on the margin”

Proximate Composition and Fatty Acid Profiles of Caspian Sea White Fish *Rutilus Frisi Kutum* Fillets

JALILI SAHAR

Abadan Branch, Islamic Azad University, Abadan, Iran, Fisheries, Iran

Abstract

The main aim of this research was to identify fatty acids composition of Caspian sea of White fish *Rutilus frisi kutum* tissue. The results showed that unsaturated fatty acids (UFA) and saturated fatty acids (SFA) were 74/09 and 21/63 %, respectively, in fresh tissue. So that DHA (C22:6) oleic acid (C18:1c) had high amounts (15/07 ,20/57) among the UFA and palmitic acid (C16:0) was the most (13/09 %) among the SFA. Also ω^{-3} and ω^{-6} series of fatty acids was 24/22 and 15/56 % in fresh tissue. Results showed that moisture, ash, protein, and fat contents were 75.9 ± 0.03 , 1.28 ± 0.012 , 21.8 ± 0.2 , and 4.1 ± 0.01 % respectively, in fresh tissue.

Location & season are the major factors affecting the fatty acid composition. The protective cardiovascular effect of long-chain n^{-3} fatty acids has been firmly established in populations with high fish consumption and its relationship with plasma concentrations of eicosapentaenoic (EPA) and docosahexaenoic (DHA) and some classical cardiovascular disease risk factors was evaluated. The objectives of this study were to evaluate the UFAs profile & proximate analysis and visual appearance in Caspian Sea White Fish in Iran. Kutum fish (*Rutilus frisi kutum*) average weight (1000±100g) used in study were caught Caspian sea. The proximate composition of the Kutum fish that was stored in ice storage is presented (table1).

Table1: Proximate composition (dry weight basis) of kutum fish (*Rutilus frisi kutum*)

Ash: 1.29 ± 0.013

Protein: 3.21 ± 0.01

Fat: 21.8 ± 0.02

Moisture: 75.9 ± 0.04

The fatty acid compositions ranged from 21.63 % to 22.17 % saturated (SFA), 37.83%—77.81 % monounsaturated (MUFAs) , 36.11%—11.38 % polyunsaturated acids (PUFAs) and 74.09%— 58.79 % unsaturated acids(UFA). Among them, those occurring in the highest proportions in fresh samples were oleic acid (C18:1c, 20.57 %), palmitic acid (C16:0, 13.91 %) and cis-4, 7, 10, 13, 16, 19-docosahexaenoic acid (DHA, C22:6n3, 15.07 %). These results are in agreement with previous studies on FA of other species. The results of this study showed that total n^{-3} fatty acid was higher than n^{-6} PUFA. When fatty acids compared to other species, it was observed that the percent composition of PUFA in kutum fish fillets (36.11 %) was higher than the reported value.

Keywords: ω^{-6} , caspian sea, ω^{-3} , *rutilus frisi kutum*

Contact Address: Jalili Sahar, Abadan Branch, Islamic Azad University, Abadan, Iran, Fisheries, Sabalan, Tehran, Iran, e-mail: sahar_jalili2005@yahoo.com