

Comparison the fatty acid composition of the Golden trevally (*Gnathanodon speciosus*) fish meat from Oman Sea in the summer and winter

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Abstract

Fatty acids profile of fish meat is affected by the season changes. Fatty acids of fish is important based on the nutritional value and cardiovascular system health and must be assayed on different seasons. In this study, the impact of summer and winter on the fatty acid profile of striped trevally (*Gnathanodon speciosus*) fish has been investigated. 36 individual fish in summer and winter 2016 caught from the Oman Sea, Chabahar, and transferred to the laboratory on the ice. Then washed and filleted. Lipids were extracted using the standard cold method and the measurement of fatty acids profile was conducted using gas chromatography after methyl esterifying of the fatty acids. Thrombogenicity and atherogenicity index was measured. Based on the results, palmitic acid showed significantly higher amounts in summer and winter than other fatty acids, 26.71 ± 0.81 and $24.94 \pm 1.06\%$, respectively ($P < 0.05$). The least amount of fatty acid belonged to C20:1 and C20:0 that was 0.095 ± 0.007 and $0.033 \pm 0.057\%$ in the summer and winter, respectively. In summer, the amount of total saturated fatty acids, total monounsaturated fatty acids, EPA+DHA, $\omega 3$, $\omega 6$, $\omega 3/\omega 6$, $\omega 6/\omega 3$ and PUFA/SFA was higher significantly than winter ($P < 0.05$). The atherogenicity index was lower than 0.75 and thrombogenicity index was lower than 1.3 at the both seasons. In conclusion, the fillet of Golden trevally fish had high value of highly unsaturated fatty acids. Also, summer and winter showed a significant effect on fatty acid profile, humidity, ash and protein content, but the healthful value was preserved in the both seasons.

Keywords: Golden trevally, Fatty acid Profile, Omega 3, Oman Sea, Summer and winter.