Effects of seasonal variations on fatty acid content of muscle in *Pampus argenteus* caught from Persian Gulf

Mona Moradi[1]
Ehsan Ramezanifard[2*]
Ali Mashinchian moradi[3]

1, 2, 3. Department of Marine Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran

***Corresponding author:**
ehsanramezanifard1359@gmail.com

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Abstract

Since fish have large amounts of long chain polyunsaturated fatty acids, they are considered a good source of food. In this study, fatty acid content and proximate composition of Silver Pomfret fish (*Pampus* argenteus) were investigated during winter and summer. For this purpose, the samples were collected from Bandar Lenge of Persian Gulf in 2016 and brought to the laboratory. The moisture, fat, protein and ash content were measured in two seasons by freeze-drying, soxhlet extraction, Kjeldal and Combustion method, respectively. Gas chromatography was used to analyze fatty acids. No significant differences were observed in seasonal variation of proximate composition ($P>0.05$). The most abundant fatty acids were palmitic acid (C16:0), oleic acid (C18:1n-9), eicosapentaenoic acid (C20:5n-3-EPA), and docosahexaenoic acid (C22:6n-3-DHA). There was no significant difference in the amounts of saturated fatty acids (SFA)between winter and summer ($P>0.05$). However, monounsaturated fatty acids (MUFA) level was higher in summer compared to winter ($P<0.05$). The amount of poly unsaturated fatty acids (PUFA)in the winter was significantly higher than the summer. Our work has led us to conclude that Silver Pomfret fish could be a good source of omega-3 long-chain polyunsaturated fatty acids in human diet in winter and summer, especially during winter.

Keywords: Seasonal variation, *Pampus argentus*, Muscle, Fatty acid content.