OMICS International
conferenceseries.com

Joane Matta et al., J Food Process Technol 2015, 6:8
http://dx.doi.org/10.4172/2157-7110.S1.024

4th International Conference and Exhibition on
Food Processing & Technology
August 10-12, 2015 London, UK

Fatty acids' profile of mostly consumed Lebanese fish from the Mediterranean region

Joane Matta, Pascale Milene, Elly Mattar and **Marc Beyrouthy**
Holy Spirit University of Kaslik, Lebanon

Background: The recommendations of fish intake in Lebanon are based on international data that may not apply to this country. Modest data is available regarding fatty acids especially omega-3 long chain polyunsaturated fatty acids composition of fish in Lebanon.

Objective: Assess the fatty acid profile of the mostly consumed fish in the Lebanese region as well as fish grown in the Lebanese Mediterranean Sea.

Methods: The most consumed fish species in the selected region were identified following a questionnaire done for 13 fisheries and seafood restaurants. The selected species were: *Sparus aurata, Boops boops, Pagrus pagrus, Sphyraena chrysotaenia, Epinephelus aeneus, Merlangius merlangus, Dentexgibbosus* and *Mullus barbatus*. Three samples of each fish type were analyzed as follows: Lyophilization of fish samples, oil extraction in Soxhlet apparatus, esterification of the extracted oil, centrifugation of the obtained solution and lipid analysis through gas chromatography-mass spectrometry (GC-MS).

Results: The lipid content ranged from 3.03% for *Pagrus pagrus* to 15.33% in *Boops boops*. Saturated fatty acid content ranged from 5.8% in *Sphyraena chrysotaenia* to 28.5% in Pagrus pagrus. Monounsaturated fatty acids varied between different species and ranged from 26.6% in *Boops boops* to 73.6% in *Merlangius merlangus*. The most abundant monounsaturated fatty acid was methyl oleate. Polyunsaturated fatty acids percentage varied between 8.2% in *Sparus aurata* to 56.6% in *Dentex gibbosus*. Omega-3 content was higher than that of Omega-6 in all the species. Omega-3 ranged from 9.15% in *Sparus aurata* to 25.7% in *Boops boops* versus 5.9% omega-6 in *Sparus aurata* and 16.9% in *Pagrus pagrus* species. The highest ratio of omega-6 to omega-3 was 0.9 andwas obtained for each of *Sphyraena chrysotaenia* and *Pagrus pagrus* whereas the lowest ratio was 0.5 for *Boops boops*.

Conclusion: These original results are consistent with the literature where mostly consumed fish are found to be rich in monounsaturated and polyunsaturated fatty acids. The primary goal of our study was to contribute data related to the quality of fish available for consumption on the Lebanese market. To our knowledge, no available data on fish analysis has yet been published in Lebanon. Our study will thus be able to deliver facts to several ministries and governmental institutions in this country.

Biography

Joane Matta has completed his PhD at the age of 27 years from McGill University and postdoctoral studies from the French Institute of Health and Medical Research. She is the head of department of nutrition and dietetics at the Holy Spirit University in Lebanon. She has published several abstracts and papers in the field of nutrition and diseases.

joanematta@usek.edu.lb

Notes: