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## Major fatty acids and biochemical compositions of *Ulva fasciata* macro algae from Qeshm Island

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The human body is unable to synthesize essential poly-saturated fatty acids (PUFA), which should be taken in through diet. In this study obtaining these essential fatty acids from algae as one of the novel dietary sources of PUFA was investigated. The green alga *Ulva fasciata*, which is spread in intertidal zone of the Hormozgan Province at Persian Gulf, was collected from Qeshm Island (26° 58' 0" N, 56° 17' 0" E), Iran. As there is limited information about this macro alga in this region, hence in addition to major fatty acid (FA) compositions, biochemical composition of *Ulva fasciata* were determined to obtain an oil rich in  $\alpha$ -linolenic (ALA) essential fatty acid with a low  $\omega$ 6: $\omega$ 3 ratio and its nutritional value. The biochemical compositions were consisted of moisture, ash, total lipid, Crude Protein (CP), Crude Fiber (CF), Acid Detergent Fiber (ADF), Neutral Detergent Fiber (NDF), Gross Energy (GE), Phosphorus (P), Calcium (Ca), Magnesium (Mg), Iron (FE), Copper (Cu), Zinc (Zn) and Manganese (Mn). The moisture content in the alga was 76.6 $\pm$ 0.28%. Total lipid contents of lyophilized *Ulva* sp. alga, extracted by Soxhlet using methanol for 6 hours was 3.6 $\pm$ 0.6%, while lipid content using ethyl ether (EE) in two hours (0.35% dry weight) was much lower due to using different solvent and extraction time. Subsequently the extracted lipid was analyzed by Gas Chromatography with Mass detector (GC-MS). Although the total lipid content in this study was lower than that in comparing with other algae reported in literatures but the composition of fat is certainly interesting because of the high levels of PUFAs (53%). The results revealed that there were 38.9% Ash, 8.5% CP, 0.95% CF, 0.25% ADF, 16.9 % NDF, 1520 cal GE, 0.13 % P, 1.6 % Ca, 4.98% Mg, 3218 ppm Fe, 4.9 ppm Cu, 32 ppm Zn, 70.1 ppm Mn in the *Ulva* macro alga. The major fatty acids in total lipid were palmitic acid C16:0>Stearic acid C18:0> $\alpha$ -linolenic acid C18:3>Eicosadienoic acid C20:5>Myristic acid C14:0>Arachidonic acid C18:1>Nervonic acid C24:1>Oleic acid>Heptadecanoic acid>Pentadecanoic acid. According to the results, in addition to the presence of two kinds of omega fatty acids in lipid content of *Ulva*, the ratio of  $\omega$ -6  $\omega$ -3 was lower than one, which indicates that extracted oil from *Ulva fasciata* macro-algae is a good candidate for human consumption.

### Biography

Homira Agah has completed her PhD from VUB University (Brussels, Belgium). She is currently working as an Assistant Professor at Iranian National University, Vice President of Research and Technology of Tabarsi Science and Technology University and Managing Director of the NGO "Association of Women and Children Supporting Environmental and Sustainable Development". She has more than 20 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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