

Seasonal Variations in the Nutritional Value of Some Common Macroalgae Species from Southern Coasts of the Caspian Sea

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Abstract

As the first organisms in marine food chain, macroalgae provide nutrients for other living organisms. They also provide shelter and habitat for many coastal animals. Two representative of green algae (*Cladophora glomerata*, *Enteromorpha intestinalis*) and one red alga species (*Laurencia caspica*) were collected from eight sampling stations along the southern coasts of the Caspian Sea (Astara, Anzali Port, Chamkhaleh, Ramsar, Sisangan, Babolsar, Amirabad Port and Khajeh nafas) from spring to winter 2014. The investigated species demonstrated high protein contents (6.83 ± 0.36 - 35.09 ± 1.88 %DW), carbohydrate (13.85 ± 0.93 - 28.20 ± 1.88 %DW) and ash content (9.7 ± 0.31 to 40.00 ± 1.30 %DW) and low lipid compositions (0.1 ± 0.01 - 2.7 ± 0.25 %DW). The highest values of carbohydrate, protein and lipid were detected in summer and winter, respectively. Palmitic (C16:0) and miristic acid (C14:0) were recorded as the most abundant saturated fatty acids. Oleic (C18:1n-9) and palmitoleic acids (C16:1n-7) were presented as the major monounsaturated fatty acids. Linoleic acid (C18:2n-6) in *C. glomerata*, α -linoleic acid (C18:3n-3) in *E. intestinalis* and arachidonic acid (C20:4n-6) in *L. caspica* were detected as the predominant polyunsaturated fatty acids.

Keywords

Macroalgae, Biochemical Composition, Caspian Sea.