

ANTIOXIDANT ACTIVITY AND BIOCHEMICAL COMPONENT OF EDIBLE SEAWEED (*Cystoseira barbata* STACKHOUSE C. Agardh) IN ÇANAKKALE COAST LINE

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Objective: The purpose of the present study was to examine what level of antioxidant activity is shown by extracts of common turkey seaweed, *cystoseira barbata*. The chemical composition of their essential oils and the total phenolic content of extract were also determined.

Method: Algae is collected in appropriate circumstance in May 2012 from Çanakkale coastline, (Turkey). Washed to remove epifits, sediment and another organic matter several times with sea water. This algae moved to the laboratory in bags. Next step, washed again with distilled water. The biological activities of *Cystoseira barbata* (Phaeophyta) were screened by using in vitro methods. The essential oils of *C. barbata* was obtained by acid-catalyzed esterification and their chemical compositions were analyzed by GC. Vitamin phenolic profile and sterol content were analyzed by HPLC. Concentrations of the total phenolic compound in the extracts were determined by using Folin-Ciocalteu reagent

Result and Discussion: Seaweeds are known for their richness in polysaccharides, minerals and certain vitamins but they also contain bioactive substances like polysaccharides, proteins, lipids and polyphenols, with antibacterial, antiviral and antifungal properties, as well as many others. In conclusion, macroalgae can be considered as a potential source for large-scale production of essential PUFA with wide applications in the nutraceutical and pharmacological industries. DPPH, ABTS + total phenolic content assay, *Cystoseira barbata* showed stronger antioxidant activity. *C. barbata* contained in the sum of saturated fatty acids (SFA) was determined to be in the ratio of the amount of 47.43± 0.34%. Total mono-unsaturated fatty acid (MUFA) while the overall rate of 25.86±0.39 % of the amount of polyunsaturated fatty acids (PUFA) if the amount ratio was found to be 26.71±0.52 %. EPA; (20:5n3) 3.37± 0.41 %. The obtained data showed that *Cystoseira barbata* have higher concentrations of PUFA, particularly from the n-3 series. the FA distribution of seaweed products showed high levels of PUFA and demonstrated a nutritionally ideal PUFA/SFA: 0,56 ratio.

Keywords: Edible Seaweed, *Cystoseira barbata*, biochemical component, antioxidant activity