

BIOCHEMICAL CHARACTERIZATION AND EXPLOITATION POSSIBILITIES OF *Gongolaria Barbata* (Stackhouse) Kuntze 1891 FROM THE ROMANIAN BLACK SEA COAST

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Abstract. *Black Sea macroalgae are a marine resource with many benefits. Gongolaria barbata* (Stackhouse) Kuntze 1891 (formerly known as *Cystoseira barbata* (Stackhouse) C. Agardh, 1820) is a brown macroalga with an essential role in biodiversity and in the marine ecosystem functioning, considered an ecologically valuable species at the Romanian Black Sea coast. Samples were collected during 2002 and 2023 years (August-September) from 6 stations of the Romanian Black Sea coast in order to characterize biochemically and highlight the presence of some biologically active compounds with therapeutic, pharmaceutical and cosmetic interest. Biochemical composition (dry matter, moisture, ash, organic matter, crude proteins, crude lipids, carbohydrates, chlorophyll a, chlorophyll b, carotenoids) and dietary fiber (CF, ADF, NDF, NDF, NDS, ADL) were evaluated in this study. The obtained results indicate some differences between the two years and these are influenced by the environmental conditions and physiological state of macroalgae. Although present on the Romanian coast, *Gongolaria barbata* has not been intensively studied in terms of its valorization potential, but it has recently attracted attention due to its biochemical properties that lead to some possibilities of use for economic purposes. The existence of valuable biochemical compounds in the composition of this brown macroalga qualifies it in the marine resources category of interest with biotechnological applications.

Keywords: *Gongolaria barbata*, biochemical characterization, valorization, Romanian Black Sea coast

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INTRODUCTION

Brown algae are a diverse class of algae renowned for their color, ranging from olive green to light golden brown. This is because their chromatophores contain the golden brown xanthophyll pigment fucoxanthin; because of the large amounts of fucoxanthin and carotenoid covering the residual pigments chlorophyll *c* and *a* and other xanthophylls, it looks brownish.