

# Seaweeds Used as Remedies in Bulgaria



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## Abstract

The paper presents data on the medical use of seaweeds in Bulgaria. The country borders the peculiar Black Sea, which does not contain typical marine algal flora. However, according to the ethnobiological literature, three marine macro algae have been used in Bulgarian folk medicine. *Cystoseira barbata* well known as the largest Bulgarian alga and a typical Black Sea representative. Its usage in the traditional medicine is quite logical, whereas for *Chondrus crispus* and *Fucus vesiculosus*, which do not occur in the Black Sea, it can be only speculated that they have been imported in the country for medical usage.

**Keywords:** Black sea; Traditional medicine; Folk medicine; Ethnobiology; *Chondrus crispus*; *Cystoseira barbata*; *Fucus vesiculosus*

## Introduction

Bulgaria occupies a part of the Balkan Peninsula and has the peculiar Black Sea as its main eastern border (Figure 1). In spite of the fact that the country achieved higher ethnobiological attention during the last decade, the seaweeds were much less focused in these studies. Therefore the aim of this paper is to provide information on their traditional use as remedies in Bulgaria. The study is based on the combined analysis of ethnobiological literature available and field trips, conducted by the authors in the years 1986-2016. Materials and methods used are described in detail in [1].



**Figure 1:** Map of Bulgaria and Black Sea combined with the distribution of *Cystoseira barbata* (marked by brown lines and arrow).

The study area covers the Black Sea aquatory in the eastern part of the country along the 378km coastal line (Figure 1). It is a small part (6,358 km<sup>2</sup>) of the total Black Sea area (436,400 km<sup>2</sup>). The Turkish Straits comprise the Bosphorus, the Sea of Marmara and the Dardanelles and connect the Black Sea with the Aegean Sea. However, in spite of being connected with the Mediterranean, the Black Sea is a peculiar water basin characterized by lack of real tides (difference in water level being 8-10cm), low halinity levels (16-18%) and significant anoxic layer well below the surface water. Therefore it hosts peculiar flora and fauna, almost completely lacking typical marine and ocean species [2]. This is especially valid of its macrophyte algal flora, which consists mainly of red, green and brown algae [3].

## Conclusion

The analysis of the literature revealed that some red and brown macro algae have been noticed in traditional Bulgarian medicine. Three macrophytes have been mentioned in the checked ethnobotanical sources and it has to be noticed that two of these three species have no distribution on Bulgarian territory. Therefore it can be only speculated that these algae have been imported in the country for medical usage. The information on them could be briefly summarized as follows:

*Chondrus crispus* Stackhouse (popular with the vernacular names Irish moss or marine kadaif) is a red marine alga which is not distributed in Bulgarian Black Sea aquatory [3]. However,

it is noticed in Bulgarian folk medicine as decoction or tea for internal use in cases of chronic bronchitis, cough, graying hair, pyrosis, and thyrotoxicosis [4-7].

*Fucus vesiculosus* L. is a brown marine alga which is not distributed in the Bulgarian Black Sea aquatory [3]. However, it is noticed in the Bulgarian folk medicine [4-7] for its decoctions prepared together with other herbs for external use (massage and baths) in cases of rheumatism, it is recommended for the distortion foot, arms and legs paralysis, encephalitis lethargica, Hodgkin's lymphoma, late developing children, muscle hypertrophy, Parkinson's disease, poliomyelitis, tendon stiff, and tetany. One of the most prominent Bulgarian healers Dimkov [4-7] marked that lots of algae thrown out from the sea and lying on the beach are a *boon* for people suffering from rheumatism and different paralysis. In his descriptions and recommendations such boon includes body wrappings with seaweeds, with a covert of hot sand on the top and subsequent solar bath. Afterwards each body has to be cleaned well with dry sand for faster drying, and only then a sea bath should be taken, preferably by entering into the sea or river.

The third species, *Cystoseira barbata* (Stackhouse) C. Agardhis a brown alga, known as the biggest seaweed in the Black Sea [2,3]. In Bulgarian folk medicine it is used as a herb for internal use: its decoction is mentioned as applied mainly in cases of atherosclerosis, hemorrhage, initial hypertension, obesity and onset diabetes [8].

The recognition of the importance of algae in modern medicine and pharmacy in Bulgaria could be traced back to the end of 70s of the last century, when the first review papers dedicated to the topic appeared [e.g. 9]. However, these papers, published in prestige Bulgarian pharmaceutic journal described the general experience in application of algae and their products, without outdrawing the situation in the country. They certainly played role in the increase of the awareness of Bulgarian college of medics, pharmaceuts and biologists. Due to the globalization

impact and urbanization in the country, the interest to the topic raised [1] and in 2009 a special book, dedicated to the usage of algae as food and medicines appeared in Bulgarian language [10]. However, this book presents a review on their global usage, without outlining the situation and traditional applications in the country. Therefore the data in [4-8] remain the only documentation on the traditional use of seaweeds as remedies in the untypical "sea country" Bulgaria.

### Conflict of Interest

The authors declare lack of conflict of interests in regard of this paper.

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