



Title: The Surplus Value of Azorean Macroalgae as Health-promoting Food, Protein, Fiber, Carbohydrates, Lipids and Vitamins Determination

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Abstract

Seaweeds are traditionally used in animal nutrition supplement and have also been an important human dietary component. In addition to their value as a human food supplement, seaweeds may also contribute as a functional or health-promoting food to prevent some of the most degenerative diseases of the industrial countries. Over the past few decades, the consumption of seaweed products has increased in European countries. Currently, approximately 15–20 edible algae strains are being commonly marketed for consumption in Europe. In the archipelago of the Azores (Portugal), the consumption of seaweeds is widespread and accepted as a common practice in some of the islands. Being isolated in the middle of the Atlantic Ocean and taking into account the low pollution levels of seawater in the region, the Azores Islands have become a very promising location as a natural resource for marine macroalgae with potential for providing new ingredients of so-called functional or health-promoting foods. In the present investigation we evaluate the crude protein and crude fiber content of five selected macroalgae (*Chaetomorpha linum* and *Codium adhaerens*, Chlorophyta; *Cystoseira humilis*, *Padina pavonica* and *Sargassum cymosum*, Phaeophyta) collected in the littoral zone of Sao Miguel Island (Azores). Protein content, determined by Kjeldahl method, varies greatly, from 2.86% to 18.48 % of dry weight, in *Padina pavonica* and *Codium adhaerens*, respectively. Fiber content, determined by a modified Weende procedure, ranged between 31.02% and 69.10% of dry weight, in *Codium adhaerens* and *Cystoseira humilis*, respectively. Characterization and quantification of carbohydrates, lipids and vitamins were also performed in the referred species. The major chemical constituents of all the studied macroalgae revealed a dependence of the seasonal and environmental growth conditions (climate and habitats). Indeed algae can be considered as a magnificent bioreactor that is able to provide different types of compounds at different quantities depending mostly of the environmental conditions.

Biography

Dr. Elisabete Lima, Doctor in Chemistry (specialization in Natural Products Chemistry) since 2001, is Professor at the University of the Azores and member of IBBA (Institute of Biotechnology and Biomedicine of the Azores) and of CITA-A (Research Center for Agricultural Technology), a center of the FCT (Foundation for Science and Technology), the main Portuguese Funding Agency of Research. From 2001-2009, she was the Director of Department of Technological Sciences and Development, University of Azores, and the Chairman of the Research Group "Natural Products" of CIRN (Investigation Center on Natural Resources – an FCT research center). Their current research interests are "Isolation and identification of bioactive compounds from marine and terrestrial organisms" and "Food biotechnology". She has more than 120 published works and has participated in more than 25 research projects and Industry contract research.