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Seaweeds as a rich source of nutrients and bioactive compounds in human diet

Teresa Mouga

Marine and Environmental Sciences Centre, Portugal

Seaweeds have long been used as food in Asian countries. Migrations and globalization have brought the attention of European countries to these healthy foods, greatly increasing the consumption of seaweeds around the world, including in countries where its consumption it was not traditional. Seaweed production is also increasing dramatically, being currently of around 30 thousand tons a year. Despite the growing interest, there are but a few commercial species produced, such as *Saccharina japonica* (kombu), *Porphyra* (nori), *Undaria pinnatifida* (wakame), *Ulva/Monostroma* (Aonori), mainly for food, and *Kapaphycus alvarezii* (elkhorn sea moss), *Euclima cottonii* (guso), *Gracilaria* (ogonori, or sea moss) and *Chondrus crispus* (irish moss) for phycocolloid extraction. In general, seaweeds exhibit high nutritional value due to high concentrations of proteins, vitamins and minerals. They also provide low energy content due to the low levels of lipids, of which many are ω -3 and ω -6 fatty acids, together with high concentration of polysaccharides of low digestibility. Besides the nutritional values for some of these compounds has shown to exhibit antioxidant, antimicrobial, antiviral, antitumor and many other interesting qualities. The genus *Gracilaria*, is no exception. As such, a comprehensive study of the nutritional profile and antimicrobial capacity of different populations of the red seaweed *Gracilaria gracilis* (Rhodophyta, Gracilariales) will be presented. Moisture, ash, protein and amino acids content, crude fibre, vitamin C, phycocolloids, fat content and the corresponding fatty acid profile were analyzed, and the results will be discussed. The results obtained are consistent to those usually reported for this genus and red seaweeds in general, indicating low levels of fatty acids, and high content in fiber, protein and essential amino acids. Interesting antimicrobial activities were also registered. Therefore, besides its common commercial uses, we can state that *G. gracilis* stands as a natural source of compounds with true nutritional and health value.

Biography

Teresa Mouga is a Coordinating Professor (Senior Lecturer) at School of Tourism and Maritime Technology, Polytechnic Institute of Leiria Portugal. She developed research in MARE – Marine and Environmental Sciences Centre dealing with seaweed growth in laboratory condition and seaweed biotechnology: Bioactive compounds extraction, and relevant bioactivities, such as antioxidant and antimicrobial activities. She is involved in several research projects, namely the EU project AMALIA - Algae-to-Market Lab Ideas - Adding value to marine invasive seaweeds of the Iberian northwest, Financing program: Implementation of the European Maritime and Fisheries Fund. Work Programme 2016, Action 1.2.1.4 - Blue Labs: Innovative solutions for maritime challenges, 2017-2019 and the national project Seaweed Feeds: fish feed supplementation, financed by March 2020.

mougat@ipleiria.pt

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