EMERGING CHALLENGES: MACROALGAE ¿WASTE OR HEALTHY FOOD?

A. M. Baracaldo*, A. Cunill, P. Santiago-Díaz, M. Rico, A. Rivero and M. Suárez de Tangil

Departamento de Química, Universidad de Las Palmas de Gran Canaria, Campus de Tafira, 35017 Las Palmas de Gran Canaria, SPAIN.

Instituto de Oceanografía y Cambio Global (IOCAG), Universidad de Las Palmas de Gran Canaria, Unidad Asociada ULPGC-CSIC, Las Palmas de Gran Canaria, SPAIN.

ana.baracaldo101@alu.ulpgc.es, anna.cunill101@alu.ulpgc.es, paula.santiago@ulpgc.es, milagros.ricosantos@ulpgc.es, argimiro.rivero@ulpgc.es, miguel.suarezdetangil@ulpgc.es

Abstract: Macroalgal mass occurrences on the Canary Islands coasts, and the unpleasant odour originated during algal decomposition, affect coastal tourism and fishing. Besides, a great effort in terms of time and money is yearly required for removing thousands of tons of algae to local landfills (Canarias 7, 2022). The nutritional and pharmaceutical value of this renewable marine resource could be used to develop local and sustainable industrial activity. Therefore, extracts derived from macroalgae mix biomass and isolated pure strain of *Lobophora variegate* (*L. variegate*) were subjected to colorimetric determinations of carbohydrates and antioxidant activities (expressed as 1,1-diphenyl-2-picrylhydrazyl radical inhibition percentage). Contents of ash, fibre and fats were also evaluated (James, 1995). Seaweed polysaccharides present several bioactive properties (Islam et al., 2002) and antioxidants prevent oxidative damage and inhibit chronic diseases (Nestel et al., 2019). Ash content refers to minerals, dietary fibre reduces the levels of cholesterol, the risk of hyperglycemia and prevents cardiovascular diseases (Anderson et al., 2009) and, fats help to regulate blood pressure (Bauer et al. 2021).

The results were as follows:

i. Mix biomass: Ash (%): 33.3±0.3; Fibre (%): 14.86±0.67; Fat (%): 2.122±0.001; Carbohydrates (mg of glucose g^{-1} of dry biomass): 21.83±0.02 (aqueous extraction for 1h); 21.99±0.02 (extraction with HCl 3M at 100ºC for 5h); and 21.4±0.05 (extraction with HCl 3M at 121ºC for 1h);
ii. *L. variegate*: Ash (%): 47.9±0.4; Fibre (%): 13.1±0.3; Fat (%): 1.1±0.1; Carbohydrates (mg of glucose g^{-1} of dry biomass): 22.16±0.04 (aqueous extraction), 21.658±0.003 (extraction with HCl 3M at 100ºC for 5h), and 21.00±0.06 (extraction with HCl 3M at 121ºC for 1h). Radical scavenging activities were 60.8±4.0 for mix biomass and 70.9±3.5 for *L. variegate*. All values are means of triplicate determinations ± standard deviation.

These results confirm the potential feasibility of using macroalgae biomass in the healthy food and pharmaceutical industries.

Key words: Macroalgae, Nutritional and Pharmaceutical Value, Sustainable Economy.

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