

SEASONAL VARIABILITY OF THE PHENOLIC PROFILES OF ALGAE *Cymopolia barbata* AND *Lobophora variegata*

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Abstract: Phenolic profiles of *Cymopolia barbata* (*C. barbata*) and *Lobophora variegata* (*L. variegata*) strains collected from Las Canteras beach (Gran Canaria) in different seasons (January, April, August and November 2021) were studied. Algae were washed, cleaned and freeze-dried. Chromatographic analysis was performed with a Jasco LC-4000 HPLC and a Varian C18 column according to a previously reported method (Rico et al., 2013; Santiago-Díaz et al., 2021). Simultaneous monitoring for quantification was set at 270 nm (gallic acid (GA), protocatechuic acid, catechin, vanillic acid, rutin, epicatechin, and syringic acid).

GA was the only compound detected in *C. barbata* methanolic extracts, ranging from 10.1 $\mu\text{g g}^{-1}$ of dry biomass in samples collected in April to 4.39 $\mu\text{g g}^{-1}$ of dry biomass in samples collected in November. GA was also identified in all samples of *L. variegata* (18.7, 7.95, 5.66 and 4.50 $\mu\text{g g}^{-1}$ of dry biomass collected in August, April, January and November, respectively) (López et al., 2011). Relevant amounts of epicatechin and syringic acid were also quantified in *L. variegata* strains collected in January (29.6 and 5.66 $\mu\text{g g}^{-1}$ of dry biomass, respectively). Antioxidant activities of *C. barbata* extracts were determined using 1,1-diphenyl-2-picrylhydrazyl free radical (Bondet et al., 1997). Samples collected in August and January exhibited the highest radical scavenging activities (79.6 and 75.5% respectively). All the extracts gave higher activity than that shown by the food preservative butylhydroxyanisole (62.5%). The extracts were also subjected to the ferric reducing ability of plasma assay and showed similar results: samples of *C. barbata* collected in August and January exhibited the highest activities (0.169 and 0.146 $\mu\text{mol of Fe}^{3+}$ reduced to Fe^{2+} equivalents g^{-1} of dry biomass respectively).

The amounts of phenolic compounds found in both strains and the antioxidant activities of samples collected in different seasons might be linked to climatic, other ecologic, and/or genetic factors.

Key words: *Cymopolia barbata*, *Lobophora variegata*, phenolic profile, Reversed-phase high performance liquid chromatography

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