

Nutritional Composition and Antioxidant Activity of Selected Seaweeds from Northern Region of Sri Lanka

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The aim of this study was to investigate the nutritional composition and antioxidant activity of methanolic extracts of brown seaweed, *Turbinaria ornata* and *Sargassum polycystum* and green seaweed *Caulerpa racemosa*. Samples of *T. ornata* and *S. polycystum* were collected from the Naachikuda coastal area while *Caulerpa racemosa* was collected from the Keerimalai coastal area in the Northern region of Sri Lanka. Collected samples were dried under shade condition until reach a constant moisture level and powdered and kept in airtight containers. These samples were used to determine nutritional composition and antioxidant activity. Crude protein, crude fat, crude fiber, carbohydrate, ash and moisture content of the selected species were analyzed in determining the nutritional composition. Among the three selected species, *C. racemosa* contained the highest ($P < 0.05$) amount of crude protein, moisture, crude fat and ash content, while *T. ornata* and *S. polycystum* had the highest ($P < 0.05$) carbohydrate and crude fiber content, respectively. Methanolic extracts of seaweeds were used to determine the antioxidant properties such as total phenolic content, (expressed as Gallic Acid Equivalent (GAE), total flavonoid content (expressed as Catechin Equivalent (CAE), total antioxidant capacity (expressed as Ascorbic Acid Equivalent (AAE) and DPPH radical scavenging activity (expressed as IC_{50}). Among the three selected species, *T. ornata* had the highest ($P < 0.05$) total phenolic content (0.74 mg GAE/g dry seaweed), total flavonoid content (0.50 mg CAE/dry seaweed), total antioxidant capacity (4.49 ± 0.35 mg AAE/g dry seaweed) and DPPH radical scavenging activity ($IC_{50}=0.52 \pm 0.01$) followed by other two seaweeds with potent antioxidant properties. Findings of this study showed that all the studied seaweeds are rich source of antioxidants and nutrients. Thus, these seaweeds could be used as a potential source for developing nutritional and functional foods.

Keywords: Antioxidant, Seaweed, Nutritional components