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Comparative Study on Sugar Content of Under-Utilized *Sargassum* spp.

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Abstract

Seaweeds contain high amount of carbohydrates approximating to 10% of the total nutritional composition. Detailed analysis of brown algae has exposed complex combinations of monosaccharides. Such found sugars are components of galactose, glucose, mannose, fructose, fucose and xylose. Glucose content found in the analyzed varieties were from 65% to 20%. However, in Sri Lankan context, *Sargassum* spp. is considered as under exploited and therefore this study is focused on to analyze the total sugar content of four *Sargassum* species available in Sri Lanka. Live specimens were collected from Hikkaduwa, Sri Lanka (Latitude: 6.1313, Longitude: 80.1007) and the cleaned samples were oven dried and grounded into powder. Samples were hydrolyzed, and the sugar concentration was obtained by measuring the absorbance at 490 nm. Results were calculated against the standard curve drawn for D-Glucose. It was observed that the *Sargassum* spp. 01 has the highest sugar content (11.9%±3.5), while *Sargassum* Spp. 03 followed closely (11.6%±0.74). Slightly less concentration was found in Spp. 02 (10.2% ±0.09), while spp. 04 was observed to have the lowest sugar content (7.2%±2) from the analysed varieties. To establish the received sugar content, a sensory analysis was performed by using seaweed inclusive cookies with 10% from all 4 varieties. From the results obtained, it was seen that there is no significant difference at $p<0.05$ significance level for high sugar varieties of species 01 ($p=1$) and low sugar varieties ($p=0.5$). However, the score obtained for species 01 and 03 were higher than 02 and 04 therefore confirms that the analytical variation of sugar content is justified by the sensory profiling context as well.

Keywords: *Sargassum* spp, Sugar, Dubois, Sensory, Seaweeds