

A preliminary determination of crude proteins from Sri Lankan seaweeds; a novel alternative source of proteins

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Recently, the global demand for proteins is increasing with population growth. Although seaweeds are often promoted for their polysaccharides, they demonstrate higher protein contents even more than some terrestrial plants. Therefore, application of protein extracts will be a value addition. This study was carried out to determine seaweed proteins and the protein profile of selected seaweed species of Sri Lanka. Initially, crude protein contents of seaweeds harvested from the same geographical location were evaluated. Naturally grown *Turbinaria ornata* (Phaeophyta), *Gracilaria salicornia* (Rhodophyta), *Caulerpa lentilifera* (Chlorophyta) and a cultivated variety *Kappaphycus alvarezii* (Rhodophyta) were collected from Jaffna in December 2019 and their crude protein contents were determined. For the analysis, freshly harvested seaweeds were washed, oven dried (at 60 °C), powdered and sieved to obtain similar particle size and were preserved in airtight containers at room temperature. After drying, yield was reduced nearly 10 times of the fresh samples. The crude protein content (%) and moisture content (%) of the above seaweeds on dry weight basis were 8.1586 ± 0.0059 , 9.6193 ± 0.0119 , 14.511 ± 0.009 , 10.528 ± 0.0652 (protein content) and 8.52 ± 0.01 , 9.09 ± 0.08 , 8.74 ± 0.03 , 9.33 ± 0.04 (moisture content), respectively. The results revealed that the crude protein content of seaweed species varied as *Caulerpa lentilifera* > *Kappaphycus alvarezii* > *Gracilaria salicornia* > *Turbinaria ornata*. In addition, the determination of the soluble proteins and the protein profiles of the above seaweeds are in progress.

Keywords: seaweeds, protein, protein profile