

## Nutritional Value Evaluation of Two Seaweed of the Gulf of Oman: *Sargassum illicifolium* and *Gracillaria cortica*

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### Abstract

Studies were conducted to evaluate nutritional qualities of two seaweed, *Sargassum illicifolium* and *Gracillaria cortica*, with a view to their utilization in Shrimp nutrition. The proximate composition, minerals and vitamin contents, free fatty acid, and amino acid profiles were investigated. Protein and ash content were the two abundant components in these seaweeds. *S. illicifolium* and *G. cortica* contained 9.18±1.15% and 18.29±2.1% Protein and 29.15±3.43%, and 23.11±1.43% ash based on dry weight, respectively. Both seaweeds contained high amounts of minerals, although both kinds of seaweeds were notably rich in iodine. *S. illicifolium* was also rich in potassium, calcium and magnesium, while *G. cortica* was rich in other minerals, especially ferrous and copper. Total essential and unessential amino acids (g/ 100 g sample) of *S. illicifolium* and *G. cortica* were 4.7 and 7.47: 7.67 and 13.8, respectively without any statistical differences (P>0.05). Results showed both seaweeds had all essential AA which were needed for shrimp feeding. All saturated FA, Mono unsaturated FA, Di- and more double band unsaturated FA ( mg /g sample) and DHA/ EPA ratio were 10.87 and 2.76: 1.11 and 0.513: 1.06 and 0.4: 3.66 and 1.33 respectively with differences statistically (P<0.05). Vitamin E, C and Tiamin with amounts of 32.2 and 37.5: 890 and 1200: 45 and 71 (mg/ 100 feed) in *S. illicifolium* and *G. cortica* respectively showed differences between these two seaweeds statistically (P<0.05). While, other vitamins were not significantly different between these two seaweeds (P>0.05). Both seaweeds showed their potential of being healthy food for shrimp diets or as a source of ingredients with high nutritional values.

Keywords: *S. illicifolium*, *G. cortica*, Nutritional value, Gulf of Oman.

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