

P21

**SEAWEEDS AS SOURCE OF THE ESSENTIAL ELEMENTS**C.R. Albuquerque<sup>a</sup>, V.A. Maihara, C.B.L. Alves and P.S.C. Silva<sup>a</sup> [calbuuquerque@gmail.com](mailto:calbuuquerque@gmail.com)

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Overtime, seaweeds have been used as a food mainly due to their high nutritional value. This type of food is considered as functional food and contributes to the nutritional human requirements, being beneficial to human health. In this study, 13 edible seaweed samples acquired in the market of São Paulo city were analyzed and the concentrations of elements K, Mg, Mn and Na were determined by Instrumental Neutron Activation Analysis (INAA). The following edible seaweeds were analyzed: Nori (*Porphyra umbilicates*); Hijiki (*Hijikia fusiforme*); Kombu (*Laminaria* sp.) and Wakame (*Undaria pinnatifida*) species from China, USA, Japan and South Korea. For the Cl, K, Mg, Mn and Na determination by INAA, about 0.100 g of the seaweed samples were irradiated for 20 seconds in a thermal neutron flux of  $1.0 \times 10^{12} \text{ n cm}^{-2} \text{ s}^{-1}$  in a pneumatic station of the nuclear research reactor IEA-R1 at IPEN – CNEN/SP. Primary Cl, K, Mg, Mn and Na standards and Mixed Polish Herb (MPH) from the Institute of Nuclear Chemistry and Technology – INCT (Poland) certified reference material were simultaneously irradiated with the samples for standardization and quality control purposes. In this study, a large variability can be observed among the seaweed species in relation to their Cl, K, Mg, Mn and Na content. For the same species, the larger variability was found for Mn in the *Porphyra umbilicates* samples. However, *Hijikia fusiforme*, *Undaria Pinnatifida* and *Laminaria* sp. samples collected from different countries showed similar levels of the Mg, Mn, Na and K elements. According to the literature the consumption of food with a high Na/K ratio quotient may cause high blood pressure as shown in experiment with rats. In this study the Na/K ratios are low, about 0.30 to *Porphyra umbilicates*, *Hijikia fusiforme* and *Laminaria* sp. On the other hand, the Na/K ratio was high to *Undaria pinnatifida*, circa of the 20-fold than the other analyzed seaweeds.

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