

**BIOMONITORING EVALUATION FOR SOME TOXIC AND TRACE ELEMENTS IN SEA URCHINS SPECIES LYTECHINUS VARIEGATUS (LAMARCK, 1816) IN MARINE ENVIRONMENT: SÃO PAULO NORTHERN COAST (BRAZIL)**

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Sea urchins are marine and benthic invertebrates, many of which sessile or with reduced mobility. The species *Lytechinus variegatus* (Lamarck, 1816) is geographically widely distributed, from North Carolina, in the United States, to the South of Brazil. The present study analysed a mixture of gonads and gut of sea urchins (20 individuals of each site) from the north coast of São Paulo, Ilhabela, in the São Sebastião Channel (contaminated region) (23.8145 S 45.3782 W) and Praia Preta – São Sebastião (control region) (23.7745 S – 45.7132 W) to verify if this species could be used as biomonitor for the studied region. After collection, the samples were dried in a ventilated oven at 40°C until constant weight. After drying, the samples were crushed and sieved in 60 mesh (0.250 mm) granulometry. The micronutrients concentration (Ca, Fe, K, Na, Se e Zn) and trace elements (As, Ba, Br, Co, Cr, Rb, Sb e Sc) were determined by Instrumental Neutron Activation Analysis (INAA). Methodology validation was carried out by means of certified reference materials analyses such as: Oyster Tissue (NIST – 1566b), Mussel Tissue (NIST SRM – 2976), Peach Leaves (NIST SRM – 1547) and were validated by Z-Score,  $|Z| < 3$  in 95% confidence interval (C.I.) For preliminary statistical analysis, a normality test ( $p > 0.05$ ) and Grubbs test were performed for outlier detection ( $p < 0.05$ , C.I. 95%). The preliminary results showed that the elements Cs, Cr, Sc and presented a higher concentration in the contaminated point and the elements As, Br, Co, Fe and Se, in the control point (C.I. 95%, test-t for independent samples). These are the preliminary results and Multivariate Statistical Analysis will be applied to the results.

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