Determination of metals concentrations for use of <i>Gracilaria domingensis<i> as a biomonitor

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INTRODUCTION: Industrial and urban activities cast large amounts of pollutants on the ocean causing significant and permanent disturbances in marine systems. This situation is especially significant in coastal zones. Marine organisms have been used as biomonitors of heavy metal contamination in marine coastal areas because them are able to accumulate trace metals. **OBJECTIVES**: The main objective of this work was to gather more information on the use of <i>Gracilaria domingensis<i> as a biomonitor. **MATERIAL AND METHODS:** Seaweed was collected from the Rio do Fogo bay in northern Rio Grande do Norte on spring, autumn and winter. The metal concentrations of Cu, Mn, Fe and Zn were determined as recommended by Tedesco et al. (1995). Algal samples for each season were digested in a microwave oven (MDS81D CEM) and then carried to determined heavy metal concentrations by graphite furnace atomic absorption spectrometry. Statistical analyses were performed using Analysis of Variance (ANOVA) and linear regression analysis. The Tukey test (a = 0.05) was used to determine any significance of differences between specific means. **RESULTS AND DISCUSSION:** The Cu concentration was significantly lower during study period (0,003 mg/L - winter; 0,000 mg/L – autumn and 0,000 mg/L – spring). The Mn and Fe concentrations were higher during the winter (2,692 mg/L – Mn and 2,053 mg/L – Fe). Zn level was lower on this period (0,7418 mg/L - winter; 0,5994 mg/L – autumn and 0,6526 mg/L – spring). The higher level of Mn and Fe must turn on th alert signal about the beaches contamination, as is well known, only a few marine organisms are able to regulate metal concentration levels in tissues. This ability, however, exists for only a limited range of environmental concentrations for some essential elements such as Cu and Zn. **CONCLUSION:** The results indicated that <i>Gracilaria domingensis<i> can be used as metal biomonitoring tool. **REFERENCES:** TEDESCO, M. J.; GIANELLO, C.; BISSANI, C. A.; BOHNEN, H.; VOLKWEISS, S.J. Análise de solo, plantas e outros materiais. 2.edição. Porto Alegre, Universidade Federal do Rio Grande do Sul, 1995. 147p. (Boletim Técnico, 5).

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