

specimens. All of them donated already euthanized by DEPAVE (Parks and Green Areas Department) ũ City of São Paulo. The bodies were open with electric saw, with size between 18 and 23 cm of Carapace Length (CL), being all of them adults. The samples analyzed were: superficial and bone carapaces liver, heart, lung, muscle and kidneys. Approximately 200mg of the samples and reference materials, Soil 1 from IAEA and Montana II soil from NIST, were used. Those were irradiated at the IEA-R1 nuclear research reactor at IPEN under a thermal neutron flux of  $10^{12}$  n per  $\text{cm}^2$  per s for 6h. Gamma spectrometry was used with a HPGe with relative efficiency of 23% with an associated electronics, to perform the measurements. Methodology validation regarding precision and accuracy were done using reference materials SL-1 (Lake Sediment – IAEA) and Montana II soils (NIST). The Na, Ca, Zn and Fe concentrations in shell bone and scute were in the same magnitude founded in the literature. The majority of their growth occurs in early years of life then it would be possible to infer that the concentrations found in the central part of their carapace were related to previous years, and the concentrations that were found in the edges can be related to the last months of animals life. Studies regarding cadmium intake focuses in contamination based on animals diet, but as in this study there is few information about the food source the animal received before living in city parks, and before being euthanized they were put in a diet restricted to ration. The Zn concentrations found in the carapace showed higher values in the scute when compared with shell bone. Ca and Na presented the opposite behavior. Future studies related to the metal concentrations in other parts of the animals could indicate the possibility of using this specie as an environmental bioindicator.

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## INORGANIC CHEMICAL CHARACTERIZATION OF THE SOIL AND SEDIMENT FROM TAIACUPEBA RESERVOIR, SÃO PAULO

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Taiacupeba reservoir, located in the state of São Paulo, Brazil, belongs to Producer System of Alto Tietê (Sistema Produtor Alto Tietê –SPAT) and it is responsible for water supply for about 3.1 million of people. The water quality of a reservoir became very important in the last decades due to the increase of environmental degradation of the soil and its several uses. Trace and major elements can accumulate in high levels in soil and sediment, and the study of its concentration can indicate if the ecosystem is polluted. Therefore, the study of soil profiles and sediment cores are an important tool for the understanding of geophysical and geochemical aspects of aquatic ecosystems. The objective of this work was to present the elements As,

Ba, Br, Ca, Ce, Co, Cr, Cs, Eu, Fe, Hf, K, La, Lu, Na, Nd, Rb, Sb, Sc, Ta, Tb, Th, U, Yb and Zn concentrations using Instrumental Neutron Activation Analysis (INAA) in four soil profiles and four sediment cores collected in the influence area of Taiaçupeba reservoir. To verify if these elements could be enriched and the ecosystem polluted the Enrichment Factor and the Geoaccumulation Index were also used. Soil profiles were collected in trenches up to 2m deep and sampled every 5 cm; in the laboratory the samples were dried at room temperature. The sediment samples were collected with a manual PVC sampler sliced every 2 cm or according to their textural characteristics, and dried in an oven at 50°C; the length of the sediment cores ranged from 42 cm to 61 cm. After drying, soil and sediment samples were sieved in a 2 mm mesh and packed in polyethylene bottles for INAA. The elements Na, As and Sb presented the highest values for both soil and sediment samples, implying in continuous, regular and spatial monitoring of the reservoir. One sediment core presented a very high concentration of the element Zn when compared to the values of the Upper Continental Crust, indicating a possible anthropic contribution from the region's industries and classifying the reservoir as extremely polluted in relation to this element. In the evaluation of the enrichment factor it was concluded that the soil presented very high enrichment for the elements Na, As and Sb and the sediment presented very severe enrichment for the elements Na, As and Zn.

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**ELEMENTAL CHARACTERIZATION OF THE EXTRACT OF PROPOLIS PRODUCED BY SCAPTOTRIGONA POSTIÇA BEE FROM BRAZIL USING NAA**

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The *Scaptotrigona postica* bee is a stingless insect belonging to Apidae family and subfamily Meliponinae. This genus occurs throughout in Neotropics. In Brazil, it is found in the northeastern mainly in the Barra do Corda County (Maranhão). Specifically, the propolis produced by this bee have several medical applications: it is used in the healing of wounds with an inflammatory process and in treatment of prostate tumors. Considering its importance in medicinal use and the great variability in relation to botanical origin, its standardization in relation to the dosage of inorganic elements is important to meet the different medical applications. The objective of this investigation was to perform a multielemental characterization using Neutron Activation Analysis technique. The measurements were performed using the IEA-R1