

analysis of the elemental composition of phytoterapics is of great importance since these products may contain toxic or essential elements above of the safe limits for human consumption. The determinations also may be used to study the correlation the presence of some elements with their therapeutic effects. The phytoterapics samples were acquired in drug stores in São Paulo city and they were in powder form placed in capsules. Their elemental concentrations were determined by Neutron Activation Analysis (NAA) method. Aliquots of the samples and synthetic elemental standards were irradiated at the IEA-R1 nuclear reactor with thermal neutron flux of about $4.24 \times 10^{12} \text{ n cm}^{-2} \text{ s}^{-1}$ during 16h. After adequate decay times, the irradiated samples and standards were measured using a HGe detector coupled to a gamma ray spectrometer. The radionuclides were identified by the gamma rays energies and the half- lives. Concentrations of the elements were calculated by comparative method. For quality control of the results, the certified reference material INCT-MPH-2 Mixed Polish Herbs was analyzed. Elements Br, Ca, Cr, Cs, Co, Fe, K, La, Rb, Sb, Sc, Se and Zn were determined in this study. Results obtained in the certified reference material showed a good agreement with the certified values. The variation (Relative Standard Deviation) of the contents of each capsule was of 6.1% for "Espinheira Santa" sample, and of 5.6% for Eggplant. This result indicates that the sample of "Espinheira Santa" phytoterapic presented more homogeneous in terms of mass of the contents in each capsule than that of Eggplant. In the phytoterapics, the elements Ca and K were found at the percentage levels, the elements Br, Fe, Rb and Zn at the $\mu\text{g/g}$ and the Co, Cr, Cs, La, Sb and Sc at the ng/g level. In the Eggplant phytoterapic, the element As was found but at very low concentration of ng/g .

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P56 TRACE ELEMENTS DETERMINED IN TURTLES *TRACHEMYS SCRIPTA ELEGANS* FROM THE URBAN AREA OF SÃO PAULO

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The red-eared-turtle *Trachemys scripta elegans*, belonging to the suborder Cryptodira and family Emydidae, is farmed in the Mississippi Valley in the USA and sold throughout the world as one of the most traded pets. An increasing number of species are frequently released by owners in natural wetlands and in urban areas. This species is resistant and may spread parasites and threaten native turtle populations. Many countries chose to perform euthanasia to control its population, avoiding the threat to local biodiversity. Animals were studied here using Instrumental Neutron Activation Analysis (INAA) to determine metallic elements Ca, Fe, Na, Zn, aiming to assess the concentrations on different tissues in the body of ten female

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 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

P57

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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,