

RADIOACTIVE AND STABLE ELEMENTS' CONCENTRATIONS IN MEDICINAL PLANTS FROM BRAZIL

F.V. Sussa, P.S.C. Silva*, S.R. Damatto, D.I.T. Fávoro, B.P. Mazzilli

Instituto de Pesquisas Energéticas e Nucleares, IPEN/CNEN-SP; Avenida Professor Lineu Prestes, 2242, Cidade Universitária, CEP 05508-000 São Paulo - SP, Brazil; pscsilva@ipen.br

Since the early days of human kind, plants has been used as food and medicinal source. Observing animals feeding themselves, men started to taste plants and realized that some of them were able to relieve headaches, stomachaches and a variety of other diseases as muscular aches that were relieved by external use of the plants. Generally the main goal in fitoterapic researches is to characterize the active ingredient of the plant for scientific evidence of its therapeutical properties. Therefore, few information exist in literature about the activity concentration of radionuclides that belong to natural radioactive series of U-238 and Th-232 as well as few papers are found about the stable elements concentration in plants used with this objective in Brazil. The knowledge of the elemental concentrations of these elements can be useful to verify possible interferences in therapeutic activity or if its amount represents some threat for human being. Instrumental neutron activation analysis is one of the most used methods for elemental characterization and was applied in this work to determine As, Ba, Br, Cs, Co, Cr, Cu, Eu, Fe, Hf, La, Lu, Rb, Sb, Sc, Sm, Ta, Tb, Yb, Zn and Zr concentration. The major amount of Ra and Pb that enter the human body occurs via ingestion. Approximately 20% of Ra and 10 to 15% of the Pb ingested reaches the blood stream and is distributed for the whole body and follows the same metabolism of Ca. The objective of this work it to determine the activity concentration of Ra-226, Ra-228 and Pb-210 as well as chemically characterize samples of common medicinal plants in its elemental concentration in *Allium sativum L.*, *Aloe vera*, *Portulaca oleracea L.*, *Peumus boldus*, *Matricaria chamomilla L.*, *Rhamnus purshiana D.C.*, *Camellia sinensis L.*, *Ginko biloba L.*, *Panax ginseng C. A. Meyer*, *Bixa orellana L.* samples.