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Mineral Elements Determination in Medicinal Plants

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The demand for herbal medicines is growing worldwide. According to data from the World Health Organization, approximately 80% of world population has resorted to the benefits of certain herbs with therapeutic action popularly recognized. The determination of major, minor and trace elements and the research of metabolic processes and their impacts on human health is of great importance due to the growth of environmental pollution that directly affects the plants and therefore the phytoterapics. Therefore, the objective of this paper was to determine the content of inorganic constituents in herbal medicine: moisture, inorganic ash, total ash, and the elements As, Ba, Br, Ca, Cs, Co, Cr, Fe, Hf, K, Na, Rb, Sb, Sc, Se, Ta, Th, U, Zn and Zr by neutron activation analysis in medicinal plants in order to verify the quality of products as well as their correlation with reference standards.

This study presents the results obtained for 59 medicinal plants commonly used in Brazil. Impurities were found in levels up 50% of the sample. The moisture levels varied from 0,1 to 12%. The concentrations obtained varied in a wide range for almost all the determined elements and the variation coefficient ranged from 50 to 245%. Good agreement was found between the results obtained in this work and the levels of trace elements reported in literature although high values for elements such as Ca, Ba, Cr, Fe and Zn were found in some samples.

Primary author: SILVA, Paulo (Instituto de Pesquisas Energéticas e Nucleares, Brasil)

Co-authors: Mrs FRANCISCONI, Lucilaine Silva (IPEN); Mr GONÇALVES, Rodolfo Daniel Moreno Reis (IPEN)

Presenter: SILVA, Paulo (Instituto de Pesquisas Energéticas e Nucleares, Brasil)

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