

presented high concentration of Zn and this element is present in healing remedies. Molibdenum was detected in *Moringa oleifera* sample and this element is considered essential in many enzymatic processes of the organism. Toxic elements such as Cu and Cd were not detected and As and Sb were found but at very low concentrations. Results obtained in this work indicate the possibility of applying NAA in the correlation studies between the elements present in the plants and their therapeutic effects.

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**P12 ELEMENTAL CHARACTERIZATION USING INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS IN MINERAL WATERS FROM CAXAMBU, MG**

A.A. Meneghini<sup>a</sup> and S.R. Damatto

<sup>a</sup> [arthur.athaydee@gmail.com](mailto:arthur.athaydee@gmail.com)

Nuclear and Energy Research Institute, São Paulo, Brazil

Chemical composition of mineral water is the result of soil and water interaction and depends on the soil geology, because the chemical elements become part of these waters through the leaching and dissolution processes of soil. Mineral waters are defined as those that come from natural springs or that are artificially collected with chemical composition or physical chemical properties which imbues them with medicinal action that distinguishes them from ordinary water.

According to the mineral summary of Departamento Nacional de Produção Mineral - DNPM, the consumption of mineral water has been increasing year by year, being in 2014 the global consumption 6.2% greater than in 2013 (which already had consumption 7.0% greater than in 2012), a fact that reinforces the importance of the characterization and regulation of the mineral waters. In thermal parks as Caxambu's park, the waters are used as health therapy, diuretic waters, cathartic waters and anti-inflammatory waters. Parque das Águas of Caxambu, the largest mineral water park in the world, has 12 springs: Leopoldina, Beleza, Duque de Saxe, Princesa Isabel and Conde D'Eu, Dom Pedro, Viotti 1 and 2, Venâncio, Mayrink I, II and III and Ernestina Guedes and also a 60 m deep geyser. Thus, the main goal of this study was to perform a chemical characterization of these waters in which the elements Ba, Ca, Co, Cr, Cs, Eu, Fe, K, La, Na, Rb and Sb were found using Instrumental Neutron Activation Analysis – INAA technique. Mineral water samples were dried in a cellulose substrate and irradiated at the IEA-R1 reactor in which they were exposed for 6h to a thermal neutron flux of  $10^{12}$  neutrons per  $cm^2$  per second.

The results showed a similar behavior among the samples and it was possible to identify a higher concentration of Na, K and Fe and predominance of alkaline and alkaine earth metals in all samples. Further, Venâncio, Beleza, Ernestina springs and geyser showed the highest concentrations of these elements.

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