NATURAL RADIOACTIVITY IN BRAZILIAN MINERAL WATERS AND ITS CORRELATION WITH THE WATER COMPOSITION

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Last year, the Brazilian mineral water production was over 1 billion liters and for this year the expectative is 1.3 billion liters. Actually, there are 170 producers spread all over the 8.10^6 km^2 of the country. Circa 50% of the sources are classified as radioactive, that means their ^{222}Rn content at the source is higher than 67 Bq/L.

The brazilian mineral code includes also the classification based on the long-lived natural radionuclides, but their determination are not currently done. Related with the long-lived natural radionuclides content in brazilian mineral waters, there are few works carried out at the past. Mainly, dealing with specific areas and radionuclides. The most complete work was done by Haimberger et al in 1970 analyzing ^{226}Ra and ^{228}Ra in more than 100 sources and springs from different areas. Also the published works included few tentative or none to correlate the radionuclide content with the water composition.

The present contribution describes the actual effort to determine the long-lived natural radionuclides concentration in brazilian mineral waters. The work includes also the analysis of ^{222}Rn and the water chemical composition. In order to allow the sampling of sources more than 4000 km far from the laboratory, a postal kit was also developed. Until the present moment, circa 150 samples have been analyzed and their results presented in this work.