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**EVALUATION OF DOSE FOR THE POPULATION DUE TO  
NATURAL RADIOACTIVITY OF UNCULTIVATED SOIL FROM  
THE SURROUNDING OF THE SKOPJE CITY, MACEDONIA**

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**ABSTRACT:** The recent investigations of the environment radioactivity are particularly important in order to achieve better understanding for the environmental fate of the radionuclide pollutants. Hence, the understanding of natural radionuclides behavior in the environment is also very important, since such information is valuable as relevant parameter for radiological risks estimations. The objective of this research was focused on determination of the activity concentrations of <sup>226</sup>Ra, <sup>232</sup>Th, and <sup>40</sup>K in samples of uncultivated soil, taken from 13 locations in the surrounding of the Skopje city. Within the research performed, the obtained data indicated that the value of <sup>232</sup>Th and <sup>226</sup>Ra activity was within the range from 27.06 Bq kg<sup>-1</sup> to 43.66 Bq kg<sup>-1</sup>, and from 20.38 Bq kg<sup>-1</sup> to 39.44 Bq kg<sup>-1</sup>, respectively. As expected, the <sup>40</sup>K concentration in soil was significantly higher, ranged between 392.48 Bq kg<sup>-1</sup> and 625.80 Bq kg<sup>-1</sup>. The concentrations obtained were the basis for calculation of other parameters that are fundamental for determination of the environmental radiation safety for the population. The obtained results from this study suggest that in the surrounding of Skopje there is no significant radiation risk for the population, i.e. the safe limits were not exceeded, pointing out the insignificant risk that arises from naturally occurring radionuclides in the environmental soil.

**Key words:** soil radioactivity, natural radionuclides, gamma spectrometry, radiation risk index, radium equivalent.