

Abstract

Introduction: Environmental natural radiation measurement is of great importance and interest especially for human health. The induction of genetic disorder and cancer appears to be the most important in an exposed population.

Materials and Methods: Measurements of background gamma rays were performed using a mini-rad environmental survey meter at 25 different locations around the city of Kermanshah (a city in the west of Iran). The measurements were also performed at two different time of day one in the morning and the other in the afternoon. At each location and time measurement were repeated for five times and the mean was considered as the background dose at that location.

Results and Discussions: Comparison between the measured results in the morning and afternoon have not shown any significant difference ($P>0.95$). The maximum and minimum obtained results were 2.63 mSv/y and 1.49 mSv/y respectively. From the total measurement at 25 sites mean and SD background radiation dose to the population is 2.24 ± 0.25 mSv.

It is about 2.5 times of the world average total external exposure cosmic rays and terrestrial gamma rays dose reported by UNSCEAR.

Keywords: Background radiation, Ionizing radiation, low level radiation, Environment radiation