

**NATURAL-RESTORATION OF RADIOPOLLUTED TERRITORIES AND  
“DOSE EQUIVALENT RATE” REDUCTION**

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**ABSTRACT**

In this work, the migration velocity of radionuclides and the ability of soil components to immobilize them were studied as the most important parameters of natural-restoration. In most of the studied soils the migration rate of  $^{90}\text{Sr}$  seems to be higher than this of  $^{137}\text{Cs}$  and ranges from 0.71 to 1.54 cm/year and 0.1 to 1.16 cm/year respectively. About 57% of  $^{137}\text{Cs}$  is converted in fixed form. It was also evaluated how the Dose Equivalent Rate (DER) of  $\gamma$ -radiation changes with the migration of radionuclides in the soil. Ten years after the Chernobyl accident, a significant reduction of DER occurs and it ranges from 17.5% in the less contaminated soils (185 kBq m<sup>-2</sup>) with low  $^{137}\text{Cs}$  migration velocity (<0.25 cm y<sup>-1</sup>), to 45% in the most contaminated soils (7400 kBq m<sup>-2</sup>) with high migration velocity (>1.2 cm y<sup>-1</sup>).