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The environmental monitoring at the «Andreevskaya valley» MSW landfill, in the Chechen Republic, Russia

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The article presents the results of the environmental monitoring from 2016 to 2018 at the «Andreevskaya Valley» MSW landfill in the Chechen Republic, Russia. The monitoring includes assessment of the spread of pollutants in the atmosphere and temperature distribution in the topsoil, biomonitoring of trees on different (experimental and control) sites, especially by the asymmetry indexes of leaves. First, the computer models particularly by the geographical coordinates and the height of the «Andreevskaya Valley» MSW landfill have been constructed. Second, two experimental and one control areas have been identified. Third, seven asymmetry indexes (As1, As2, As3… As7) and the total asymmetry index (Astotal) in these areas have been calculated. Fourth, statistic distribution of the Astotal index especially by the mean (mode (Mo) and median (Me)) has been described. Fifth, the computer models of the spread of pollutants (CO, NO2, SO2 and HsS) in the atmosphere and the temperature distribution in the topsoil of the landfill have been constructed. In addition, the areas of mass concentration of pollutants with a high temperature in the landfill have been identified. As a result, the effect of spread of pollution on the 18 morphological parameters of leaves of the trees growing in the experimental and control areas has been assessed.

Biography

Mamadzhanov Roman Khasanovich has his expertise in evaluation and passion in improving the environmental monitoring and landfill reclamation, particularly MSW landfill. He graduated from the Peoples' Friendship University of Russia (RUDN), Moscow in 2013 as an Ecologist. After that he finished his PhD program in 2016. Now a days he works as a Senior Lecturer at the Ecological department of RUDN. He improved the list of the plant species which are resistant to exposure to MSW landfill especially in the Chechen Republic. From 2012-2013 he was also working at the Department of Housing and Public Utilities. He designed a computer model of the MSW landfill in the Moscow Region and the Chechen Republic by geographical coordinates, pollutants, temperature. He also created a new method of the plant life assessment by the 18 morphological parameters and seven asymmetry indexes of leaves. In addition, at the Ecological Department he started the program of the environmental monitoring of the campus of

RUDN including assessment of the soil and the atmosphere conditions. Our new research is focused on identifying sampling sites, measuring the pollutants, temperature and the morphological parameters of leaves, creating the computer model of pollutants spreading, revealing the life conditions of plants growing near the landfill by seven asymmetry indexes and the total asymmetry index. The author's research topics are particularly relevant and practically significant both for the particular region and for the country as a whole.

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