



Development of Ecological Regional Maximum Permissible Concentrations of Fuel Oil in Arid Soils of South of Russia

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Abstract: Soil contamination with oil and petroleum products, including fuel oil is often found in the South of Russia. The growth of oil production and transportation leads to increased soil pollution in the region. It is established that contamination of the studied soils with fuel oil leads to deterioration of their biological properties: the total number of bacteria, activity of catalase and dehydrogenase, cellulolytic ability, abundance of bacteria of the genus *Azotobacter* decreases, indicators of germination and initial growth of plants deteriorate. A series of soil resistance of arid ecosystems of the South of Russia to fuel oil pollution has been obtained. (number-averaged doses, the soil located at least reduce their resistance): ordinary black \geq dark brown soil > chestnut soil > light chestnut soil > brown desert-steppe soil > sandy soil. The study allowed us to propose regional standards for the maximum permissible content of fuel oil in the arid ecosystem of the South of Russia on the basis of violations of environmental and agricultural soil functions.

Keywords: Arid soils, Brown semi-desert soils, Chestnut soil, Fuel oil, Maximum permissible concentrations, Pollution, Resilience, Sandy soil
