

## Regulation of Transfer of $^{137}\text{Cs}$ by Polymeric Sorbents for Grow Ecologically Sound Biomass

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**Abstract :** Soil contamination with radiocesium has a long-term radiological impact due to its long physical half-life (30.1 years for  $^{137}\text{Cs}$  and 2 years for  $^{134}\text{Cs}$ ) and its high biological availability.  $^{137}\text{Cs}$  causes the largest concerns because of its deleterious effect on agriculture and stock farming, and, thus, human life for decades. One of the important aspects of the problem of contaminated soils remediation is understand of protective actions aimed at the reduction of biological migration of radionuclides in soil-plant system. The most effective way to bind radionuclides is the use of selective sorbents. The proposed research mainly aims to achieve control on transfer of  $^{137}\text{Cs}$  in a system growing media-plant due to counter ions variation in the polymeric sorbents. As the research object, Japanese basil-*Perilla frutescens* was chosen. Productivity of plants depending on the presence (control-without presence of polymer) and type of polymer material, as well as content of  $^{137}\text{Cs}$  in plant material has been determined. The character of different polymers influences on the  $^{137}\text{Cs}$  migration in growing media-plant system as well as accumulation in the plants has been cleared up.

**Keywords :** radioceaseum, Japanese basil, polymer, soil-plant system

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