The application of biosurfactants into removal of selected micropollutants from soils and sediments

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ABSTRACT

The environment comprises soils and sediments in which micropollutants may accumulate and establish as a result of the secondary source of contamination. Micropollutants may migrate from soils into surface and grounds waters as well as cause an increase in bioavailability for organisms. Micropollutants contamination of sediments may result in the water pollution. As a result of chemical reactions taking place among the compounds present in the environment the derivatives, whose identification is fragmentary known at present, are formed. Remediation methods relying on the immobilization of contamination or its removal may be carried out in the place of its formation (in situ) or out of the place of its original location (ex situ). Bacteria being able to form biosurfactants are of an increasing interest as they have low toxicity as well as they can easily biodegrade. Therefore, in situ application of natural biosurfactants may be considered to be a good remediation alternative as they are not hazardous for water and soil organisms. On the one hand, high costs related to their production and application logy should be taken into account, however, their usage may be economically attractive. The aim of this study was to present the possibility of using biosurfactants as additives in removal processes of selected micropollutants from soil–water environment.

Keywords: Biosurfactants; Removal; Micropollutants; Heavy metals; PAH; TPH; PCB

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