Comparative studies concerning the behaviour of organic pollutants in Iasi area soil

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Widespread contamination of soil and groundwater by synthetic organic chemicals (e.g., dyes) has been recognized as an issue of growing importance in recent years. For this reason, is very important to elucidate the fate and transport pathways of these compounds in environmental components. The behavior and persistence of dyes depend on their sorption, transformation, transport and degradation in environmental compartments. The objectives of the present investigation has been to compare the sorption behaviour of two organic pollutants Acid Orange 7 (C.I. 15510, 350.32 g mol-1) and Erythrosine B (C.I. 45430, M=879.86 g mol-1) onto soil from Iasi area (Romania). The studies were performed by batch mode, at 200 C and natural pH of solution. The adsorption characteristics and dye uptake in soil have been determined by investigating the influence of some parameters (contact time, adsorbent dose and initial dye concentration). It was found that equilibrium sorption amount increases with the increase in initial dye concentration and contact time. Langmuir, Freundlich and Temkin isotherm models were applied to evaluate the adsorption process. Over the entire range of concentration the obtained results show that the adsorption of the studied dyes follows the Freundlich model.