

**III-P-11. ROUTINE TOXICITY SCREENING TESTS OF
ENVIRONMENTAL SAMPLES USING PLANT SENSIVITY**

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Abstract

The aim of this study was to estimate the ecotoxicity of environmental pollutants by plants sensitivity assay. The ecotoxicological work was carried out using Phytotoxkit microbiotests, which measures seeds germination and roots growth inhibition of the three species of plants (dicotyl *Lepidium sativum*, *Sinapis alba*, monocotyl *Sorgum saccharatum*). The tested samples (soil, dehydrated sludge and wastewater effluents) were collected from different oil fields (Giurgiu and Dolj) and WWTPs (Calarasi, Pascani and Timisoara). The results from the Phytotoxkit microbiotest were modulated by the environmental samples based on different parameters, such as type and concentration of pollutants, microbial contamination, as well as the depth of sampling. The soil samples contaminated with petroleum products showed a low phytotoxicity effect (<30%) and the most sensitive plant was *Lepidium sativum*. No other effects connected to the pollutant concentration or sampling depth were observed. On the other hand, in case of sludge, wastewater and industrial waste samples, the effects depend on type and level of contaminants. The phytotoxicity tests of sludge and wastewaters effluents showed that *Sorgum saccharatum* was the most sensitive tested plant. Experimental tests showed that the toxic effects from the sludge samples could be reduced by mixing them with unpolluted soils that would allow their reuse in agriculture as fertilizers. The phytotoxicity microbiotests, as routine toxicity screening tests, provide relevant information about pollution as a necessary step in environmental hazard assessment.

Keywords: *phytotoxicity, environmental samples*

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