

Title:	Bioremediation Of PAHs-Contaminated Soil Under Anaerobic Methanogenic – Conditions
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Tahseen Sayara

Authors:

Technical and Applied Research Center (TARC)
Palestine Technical University-Kadoorie (PTUK)
P.O. BOX 7, Tulkarm, Palestine
tsayara@yahoo.com

Abstract:

In this research, the degradation of polycyclic aromatic hydrocarbons (PAHs) including Flourene, Phenanthrene, Anthracene, Flouranthene and Pyrene with concentrations simulating a real creosote sample was investigated under anaerobic methanogenic conditions, where thermophilic (55°C) temperature regime was applied. The impact of PAHs concentration and soil to inocula mixing ratio on the process performance of the PAHs removal and the biogas production were systematically studied through central composite design (CCD) technique for 30 days. During this incubation period, PAHs concentration decreased in all treatments indicating that the applied inocula were able to degrade the contaminants, where about 80% degradation rate was achieved. Nevertheless, an inhibition effect was initially observed regarding the biogas production as a result of the PAHs toxicity. However, this inhibition was gradually decreased with the incubation period as the inocula got more adapted with the available environment.