OMICS International
conferenceseries.com SciTechnol

3rd International Conference on
Earth Science & Climate Change
July 28-30, 2014 DoubleTree by Hilton Hotel San Francisco Airport, USA

Comparison of techniques to remediate soils contaminated with polycyclic aromatic hydrocarbons

Laura Delgado-Balbuena, Ángel R Aguilar-Chávez, Marco L Luna-Guido and **Luc Dendooven**
CINVESTAV, México

Contamination of soils with polycyclic aromatic hydrocarbons (PAHs) is a serious problem in petroleum producing countries, such as México, and environment-friendly easy to apply techniques are required to accelerate the removal of the contaminants. Removal of anthracene was monitored in an arable and a pasture soil regularly mixed or amended with organic material, anon-ionic surfactant (Surfynol 485) or earthworms (*Eisenia fetida* (Savigny, 1826)). In both soils, the same results were obtained although the removal of anthracene was faster from the pasture tan from the arable soil. The fastest removal of anthracene was obtained when the soil was mixed every 7 days and no contaminant was detected in both soils after 56 days. The second fastest removal of anthracene was obtained when earthworms were added to soil and no contaminant was detected in both soils after 112 days. Application of organic material that served as feed for the earthworms also accelerated the removal of the contaminant compared to the unamended soil, but application of the surfactant inhibited the dissipation of the contaminant. Only 37% of the spiked anthracene was removed from soil when surfactant was applied, while 62% was dissipated in the unamended soil after 112 days. It was found that simply mixing as oil removed anthracene faster than when earthworms were applied, while the application of the surfactant inhibited the removal of anthracene by the autochthonous soil microorganisms.

Biography

Laura Delgado-Balbuena did his masters in the CIBA-IPN, with the thesis entitled: Tissue culture for in vitro propagation of Agave pulquero. He has published 4 papers.

balbuenal@hotmail.com