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Toronto, Canada**Isolation and characterization of oil degrading bacteria from contaminated soil at oil ARZEW refinery**Khadidja Senouci-Rezkallah¹, Fatiha Dilmi^{1,2} and Abdelwaheb Chibani²¹Université Mustapha Stambouli de Mascara, Algeria²University of Mostaganem, Algeria

Biodegradation by indigenous bacteria represents one of the primary mechanisms by which oil pollutants can be removed from the environment. The aim of our study is the isolation and identification of petroleum hydrocarbon degrading bacteria from oil contaminated soil samples. The samples were collected from differences sites at Arzew refinery Northern Algeria. Bacteriological diagnosis of soils studied corresponding to a biomass 14, 02. 107 CFU/g of soil in the lower polluted soil sample. This biodiversity is inversely proportional to the increase in oil content. Indeed, in the highly contaminated sample, with a biomass of 9.3 .104 CFU/g of soil. The hydrocarbon degrading bacteria isolated and identified belonged to the following genera, *Pseudomonaceae*, *Bacilliaceae* and *Staphylococcaceae*. Biochemical tests revealed the presence of *Pseudomona aeruginosa*, *Pseudomona fluorescens*, *pseudomona putida*, *pseudomona citronéllolis*, *Pseudomona luteola*, *pseudomona fluorescens biovare 1*, *pseudomona fluorescens biovare 3*, *pseudomona fluorescens biovare 5*, *Bacillus sp*, *Staphylococcus hémolytique*, *Staphylococcus hominis*. The ability of isolates to degrade the crude oil was performed by gravimetric analysis. The biodegradation rate

of crude oil by *Pseudomonas aeruginosa* is the best with 82.7%, whereas the lower potential of degradation showed in *Staphylococcus hominis* with 46.63 %. Among the existing strains, *Pseudomonas aeruginosa* have the best production of biosurfactants that reducing the surface tension of culture medium until 19 mN/m, with an emulsion index of 22.72%, and the area of oil displacement (0.9 cm). The strains isolated are capable to produce a biosurfactants that has a great power in the remobilization of hydrocarbons and the acceleration of their biodegradation.

Speaker Biography

Fatiha Dilmi received the license (DES) degree from Mustapha Stambouli University, Biology department, Mascara, Algeria in 2005, Master's Degree in Biology from Department of Biology, Faculty of Sciences, AL al- Bayt University in 2009, Jordan. From 2009 till now, she was worked as assistant professor-researcher at Mustapha Stambouli University, Mascara, Algeria. She worked on the isolation, characterization and biodegradation ability of hydrocarbon degrading bacteria from contaminated soil in petrol station for preparation of PhD thesis. She is a member in Laboratory of Microbiology and Plant Science, Department of Biology, Faculty of Natural and Life Sciences, University of Abdelhamid Ibn Badis, Mostaganem, Algeria and Laboratory for Research on Biological Systems and Geomatics (L.R.S.B.G), Department of Biology, Faculty of Natural and Life Sciences, Mustapha Stambouli University, Mascara, Algeria.

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