

ABSTRACT

In the present study, indigenous microflora responsible for crude oil biodegradation in Missa Kaswal oil fields of Pakistan was isolated, characterized and its biodegradation potential in mixed bacterial assemblage (consortium) was explored for a period of fifteen days. Biochemical identification of twenty-four microbial isolates from crude oil contaminated oil field soil revealed a diverse microbial community belonging to twelve different genera namely, *Acenitobacter*, *Amphibacillus*, *Arthrobacter*, *Bacillus*, *Corynebacterium*, *Flavobacterium*, *Klebsilla*, *Lactobacillus*, *Listeria*, *Moraxella* and *Pseudomonas*. Indigenous microflora of crude oil contaminated soil showed 24 isolates. Two consortia were designed as Consortium A of five microbes belonging to five different genera and Consortium B of eight microbial strains belonging to seven different genera. These microbial strains were applied on sterilized 400.0 grams garden soil sample contaminated with 150 ml of crude oil in triplicate along with positive and negative controls under same incubation conditions. Along this experiment, a set of four separate 400 grams of crude oil contaminated soil samples of oil field of Missa kaswal were devised and these samples were treated with consortium A, B, Negative and Positive control separately. Microbial enumeration by viable count as well as reduction in crude oil contents by n-hexane extraction was noted after every 72 ± 02 hours till day 15. Reduction in weight of coil samples was noted on daily basis. Consortium A (05 bacterial strains) degraded 12.59% and 5.44% of crude oil and Consortium B (08 bacterial strains) degraded 10.86 % and 3.80% in crude oil contaminated garden and oil field soil samples respectively.