Bacterial remediation of hydrocarbons, antibiotics and cyanotoxins; Green solution for sustainable pollution management

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Abstract

Aromatic and Poly Aromatic Hydrocarbons (PAH), antibiotics and cyanotoxins are emergin contaminants of water. The present study assess the efficiency of *B.cereus* and *E.ludwigii* which wer initially isolated as potential crude oil degraders. Their effect on the removal of antibiotics; Amoxicill (AMX) and Sulfanomide (SUF), PAH; Naphthalene and Phenanthrene, and cyanobacterial cyanotoxi Microsystin -LR (MC-LR) were evaluated in vitro.

Crude oil (1% v/v) and PAH (1% v/v) degradation were assessed by using standar spectrophotometric methods where degradation of antibiotics (60ppm) and (MC-LR) (10ppm) wer analyzed by using High performance liquid chromatography (HPLC) methods.

B.cereus 88 % degradation of crude oil whereas *E. ludwigii* showed 77% of degradation respectivel *B.cereus* strain completely removed AMX and 80% of SUF from the medium after 14 days of incubatio whilst *E. ludwigii* showed degradation percentage of 75% for AMX and 60% for SUF respectively. Th results showed that the highest degradation was achieved by the bacterium *B. cereus* (100 %) for MC-L and the bacterium *E. ludwigii* showed 88% degradation respectively. Moreover, more than 78% o Naphthalene (*B.cereus*; 78%, *E.ludwigii*; 87%) and 61% of Phenanthrene (*B.cereus*;73%, *E.ludwigii*;61%, were detected following 14 days of incubation. The results revealed that the bacterium *B.cereus* an *E.ludwigii* harbor genes which are responsible to degrade crude oil, PAH, antibiotics and MC-LR. Thu the bacteria could be utilized as a bioremediation agent for many environmental contaminants an biotechnological approach is being undertaken to use the microbes to remove such contaminates as green solution.

Keywords: *B.cereus, E.ludwigii*, Crude oil, PAH, Antibiotics, MC-LR

Biodiversity conservation of etheno-veternary medicinal plants used by Yadava tribes of Bangalore.

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Abstract

Ethnoveterinary medicine, the scientific term for traditional animal health care, encompasses th knowledge, skills, methods, practices, and beliefs about animal health care found among the members o a community. This study presents first-hand information about 73 prescriptions that were recorded durin a field study of local traditional herbal practitioners and healers from villages around the Bangalor district of Karnataka State in Southern India. The prescriptions discussed in this paper include variou medicines prepared out of herbal plants in alleviating diseases that are suffered by livestock and by th