

Using sea weeds for remediation of oil contamination

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Oil contaminations which mostly occurs in the ports and harbours can cause severe damage to the biological diversity in the environment. Seaweeds have shown high tolerance for a range of contaminants including oil. Therefore, the objective of the current experiment was to study the oil absorption ability of different seaweed species under laboratory conditions. Three seaweed species; *Ulva* sp., *Sargassum* sp. and *Gracilaria* sp. representing green, brown, and red algae respectively were collected from areas apparently unpolluted by oil. The samples were cleaned thoroughly with seawater. Each cleaned seaweed sample (10 g) was placed in three separate containers. 99 mL of seawater and 1 mL of engine oil were mixed and added to each seaweed sample container and was left for two hours. Each seaweed sample was removed from the containers and each of the remaining solutions were collected. Each sample was poured into 100 mL separatory funnels separately. 20 mL of 4% Chloroform was added to each funnel. The content was mixed well while loosening the lid of the separatory funnel from time to time in order to release the gas generated. The liquid mixtures in the funnels were kept overnight until the organic and inorganic layers separated. The lower layer of chloroform with dissolved oil was collected and measured. The absorbed amount of oil in each species was measured. Results revealed that *Ulva* sp., *Sargassum* sp. and *Gracilaria* sp. absorbed 75%, 50%, and 60% of oil from contaminated water, respectively. This proves that seaweeds have oil absorption capability while *Ulva* sp. showed highest absorption among the species. Therefore, to use these seaweeds in oil spills remediation projects in the country, it is recommended to use the findings of the study as baseline data to conduct more research in ex-situ and in-situ as well.

Keywords: oil, marine algae, pollution, *Ulva* sp., separatory funnel

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