

Effects of Various Factors on Biodegradation of Diesel in Sea Water by *Rhodococcus* sp.

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Abstract

Diesel is one of the most widely used fuel for marine vehicles. As in soil and water system, a contamination of diesel around sea sides has a bad influence on a marine ecosystem. While physical and chemical treatments have problems of cost and secondary contamination, the biological treatment has become a useful method for the restoration of oil-polluted environments. *Rhodococcus* sp. that was isolated from petroleum-contaminated site was used for the degradation of diesel in sea water. Cells were cultured in sea water containing diesel as the only carbon source at various initial pH, temperature, inoculum size and diesel concentration. The degradability of diesel was observed for 15 days and estimated by TPH analysis by using gas chromatography. The cell viability was evaluated by counting colony forming units after spreading. The optimal conditions for the degradation of diesel in sea water were pH 8 and 27°C. 2% inoculation was effective for the degradation of 2% diesel in sea water. *Rhodococcus* sp. was able to degrade up to 4% diesel. After 15 days the residual fraction of diesel was decreased to approximately 5%.

References

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