Microbial community during bioremediation experimental on oil spill in coastal of Pari Island

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Abstrak

There is an information how to identify hydrocarbon degrading bacteria for bioremediation of marine oil spill. We have Bioremediation treatment for degradation of oil spill on Pari island and need two kind of experiment there are tanks experiment (sampling 0 to 90 days) and semi enclosed system (sampling 0 to 150 days). Biostimulation with nutrients (N and P) was done to analyze biodegradation of hydrocarbon compounds. Experiment design using fertilizer Super IB and Linstar will stimulate bacteria can degrade oil, n-alkane, and alkane as poly aromatic hydrocarbon. The bacteria communities were monitored and analyzed by Denaturing Gradient Gel Electrophoresis (DGGE) and Clone Library; oil chemistry was analyzed by Gas Chromatography Mass Spectrometry (GCMS). DNA (deoxyribonucleic acid) was extracted from colonies of bacteria and sequence determination of the 16S rDNA was amplified by primers U515f and U1492r. Strains had been sequence and had similarity about 90-99% to their closest taxa by homology Blast search and few of them suspected as new species. The results showed that fertilizers gave a significant effect on alkane, PAH and oil degradation in tanks experiment but not in the field test. Dominant of the specific bacteria on this experiment were Alcanivorax, Marinobacter and Prosthecochloris.