Bioremediasi tanah terkominasi minyak bumi dengan bio composting menggunakan bulking agent serbuk kayu serta bakteri pseudomonas aeruginosa dan bacillus subtilis = Bioremediation of oil contaminated soil using bio composting with sawdust as bulking agent also pseudomonas aeruginosa and bacillus subtilis / Khalida Fasya

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Abstrak

ABSTRAK
Kegiatan produksi minyak bumi di Indonesia telah menimbulkan banyak kasus pencemaran dan berdampak buruk bagi kualitas lingkungan disekitarnya. Salah satu tindakan pemulihan pencemaran tersebut adalah bioremediasi yang memanfaatkan kemampuan mikroorganisme untuk mendegradasi hidrokarbon. Penelitian ini menggunakan teknik bio-composting, salah satu jenis bioremediasi yang paling aman digunakan dan ramah lingkungan. Bio-composting menggunakan bahan – bahan alami seperti serbuk kayu, kotoran ayam, serta bakteri pendegradasi hidrokabon dengan variasi Pseudomonas aeruginosa 15% v/w serta konsorsium Pseudomonas aeruginosa dan Bacillus subtilis sebesar 15% v/w. Selama 15 hari penelitian didapatkan penurunan kosentrasi Total Petroleum Hydrocabon (TPH) sebesar 77,24% dan 67,11%. Dari penelitian ini dapat disimpulkan bahwa variasi konsorsium Pseudomonas aeruginosa dan Bacillus subtilis 15% v/w paling efektif mendegradasi hidrokarbon pada tanah yang terkontaminasi minyak bumi.
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ABSTRACT
Oil and gas industry in Indonesia has led to many cases of contamination and adversely affect for the quality of the surrounding environment. One of the recovery actions is bioremediation which utilizes the ability of microorganisms to degrade the content of biologically hazardous waste. This study uses a bio-composting technique which is one of the safest types of bioremediation to use and environmentally friendly. Bio-composting uses natural materials such as sawdust, chicken manure, and indigenous bacteria by variation of Pseudomonas aeruginosa 15% v/w and a consortium of Pseudomonas aeruginosa and Bacillus subtilis amount 15% v/w. During 15 days study, we found a decrease in the concentration of Total Petroleum Hydrocarbon (TPH) amounted to 77,24% and 67,11% From this study it can be concluded that consortium of Pseudomonas aeruginosa and Bacillus subtilis 15% v/w is the most effective variation to degrade hydrocarbons in oil contaminated soil.