



**BIOSURFAKTAN BAKTERI HIDROKARBONOKLASTIK DALAM PROSES
BIOTRANSFORMASI *POLYAROMATIC HYDROCARBONS* (PAHS) :
POTENSI AKSELERASI BIODEGRADASI PAHS**

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ABSTRACT

Capability of Rhodobacterium bacteraceae in producing biosurfactant were investigated. Biosurfactant has been produced using medium of Mineral Salt Medium with two sources of carbon, which is crude oil (RB-CO) and waste coconut oil (RB-WCO) as carbon sources. Biosurfactant extent was determined by the yield of biosurfactant and the surface tension reduction. Biosurfactant were investigated for their effectiveness on PAHs biodegradation. The results showed that R. bacteraceae can produce biosurfactant, and showed the highest biosurfactant yield (2,791 g/l) when grown on RB-WCO, while we found 2,122 g/l yield on MSM-CO after 72 hours. The best biosurfactant activity was obtained when using waste coconut oil as carbon source, resulted in surface tension reduction up to 29,17 mN/m. Addition of 50 mg of biosurfactant per 200 ml of the mineral salt medium containing 50 ppm PAHs significantly enhanced the PAHs degradation indicating that the organism utilized crude oil as carbon source. Our concluding remarks suggest that biosurfactant from R. bacteraceae when grown on waste coconut oil substrate can be used as an effective agent to be applied on site contaminated with PAHs by enhancing biodegradation rate.

Key words : *Biosurfactant; bioremediation, PAHs, mangrove contamination*