ABSTRACT

ISOLATION AND SCREENING OF SODIUM DODECYL SULFATE (SDS) DEGRADING- MICROORGANISM FOR BIOREMEDIATION OF HOUSEHOLD WASTEWATER

By

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Daily disposal of municipal wastewater containing of Sodium Dodecyl Sulfate (SDS) in detergent is becoming a pollutant as environment problem that should be overcome. Biodegradation is intended as a solution to overcome the problem. This research was aimed to isolate SDS degrading-microorganism. The isolation had been conducted by enrichment culture methode using ¼ LB medium containing 20 ppm of SDS. The SDS residu in the culture was analyzed by methylen blue active substance (MBAS) methode. Among 4 samples, isolates from Starbio sample showed ability as the potential degrader. Four isolates i.e.: isolate SB-2-1 (white colour, tube shape), SB-3-1 (pink colour, round shape), SB-3-2 (yellowwish white colour, round shape), and SB-3-3 (milky white colour, tube shape), were degrading SDS around 88,3% in average. The degradation ability of those isolate were: 89,0%, 87,2%, 88,1%, and 89,2% respectively for 72 hours incubation. Isolate SB-2-1 and SB 3-3 were the best among four isolate which degrading 89% of SDS.

Key words: Sodium dodecyl sulfate, detergent, isolate SDS degrading microorganism, methylen blue active subtance.

ABSTRAK

ISOLASI DAN SKRINING MIKROBA PENDEGRADASI *Sodium dodecyl sulfate* (SDS) UNTUK BIOREMEDIASI LIMBAH CAIR RUMAH TANGGA

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Kandungan *Sodium Dodecyl Sulfate* **(**SDS) pada detergen yang dibuang sebagai limbah cair rumah tangga menjadi polutan lingkungan yang perlu diatasi. Biodegradasi detergen diharapkan sebagai salah satu solusi mengatasi pencemaran tersebut. Penelitian ini bertujuan untuk mendapatkan mikroba pendegradasi SDS. Isolasi dilakukan dengan metode *enrichment culture* menggunakan medium ¼ LB yang mengandung 20 ppm SDS. Analisis residu SDS diukur menggunakan medote *Methylen Blue Active Subtance* (MBAS). Hasil isolasi dari 4 jenis sampel, isolat dari sampel Starbio mampu mendegradasi paling baik. Empat isolat terbaik yaitu: isolat SB-2-1 (bewarna putih, bentuk batang), SB-3-1 (bewarna merah jambu, bentuk bulat), SB-3-2 (bewarna putih kekuningan, bentuk bulat), dan SB-3-3 (bewarna putih susu, bentuk batang), mendegradasi SDS rerata sebesar 88,3%. Kemampuan mendegradasi SDS keempat isolat tersebut secara berturut-turut yaitu 89,0%, 87,2%, 88,1%, dan 89,2%, dalam waktu inkubasi 72 jam. Isolat SB-2-1 dan SB-3-3 mendegradasi SDS paling baik 89%, dibandingkan kemampuan rata-rata keempat isolat tersebut.

Kata Kunci : *Sodium dodecyl sulfate, detergent*, isolasi mikroba pendegradasi SDS, *methylen blue active subtance*.