ISOLATION AND CHARACTERIZATION AEROBIC CELLULOSE DEGRADING BACTERIA FROM Avicennia LITTER

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Abstract

Bacteria was involved in decompose mangrove litter such as cellulolytic bacteria. Cellulolytic bacteria in the aerobic condition degrading cellulose and change into water and CO₂. Enzymes was cellulolytic bacteria gave good hope in the processing field of the waste as the whitening material alternate to the paper mill that usually used chlor. The enzyme produced is an important role in degradation process of paper mill waste has high cellulose content.

The aim of this research was isolated and characterization degrading aerobic cellulose bacteria at Jabon embankment, Tanjungsari, Sidoarjo. Enrichment carried out in the liquid PCS medium. Isolation carried out by taking culture in liquid CCRA medium with temperature 37°C. Cellulolytic bacteria responded the formation of the clear zone around them. From results of the isolation was found 12 pure isolates and after it was characterization had the trend enter in the genus Kurthia, Bacillus, Planococcus, Moraxella, Nocardia, Lactobacillus, Streptomyces, Cytophaga, and Halomonas. HC (Hydrolysis Capacity) test and heavy dry get for the bacterial capacity in degrading cellulose. HC test carried out in the CCRA medium was counted by the ratio between diameter of the colony and the diameter of the clear zone that was produced. Heavy dry test was carried out in CCRBNaCl 20 % medium without increase congo red, gelatin and CMC and incubated during 7 days. Isolates that
had the similarity of the genus and five isolates that with the HC capacity highest tested with the growth curve. Isolate $P_6A_6$ (Bacillus) had the ratio HC with the smallest (1:20,7). Isolate that had the ratio HC he biggest is $P_6A_6$1 (Moraxella) (1:0,3). Isolate that had the degradation capacity of highest cellulose there is in isolate $P_5A_6$4 A (Planococcus) as big as 61,29% and isolate with the lowered degradation capacity there is in isolate $P_4A_6$1 B (Bacillus) as big as 34,48%.

**Key words: Avicennia, cellulose degrading bacteria, cellulose, isolation, characterisation**