ISOLATION AND SCREENING OF CELLULOLYTIC BACTERIA FROM COW DUNG IN KUALA PILAH

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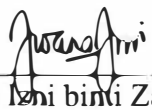

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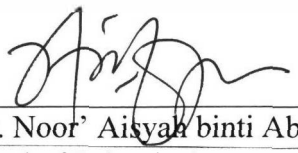

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ABSTRACT

ISOLATION AND SCREENING OF CELLULOLYTIC BACTERIA FROM COW DUNG IN KUALA PILAH

Cellulases are produced by microorganisms such as bacteria, fungi or actinomycetes during their growth on cellulosic materials. Various group of microbes live within digestive systems of ruminants, whereby these ruminants such as cow, goat, sheep and deer degrade plant material in their rumen. These microorganisms help animals to breakdown complex plant materials such as cellulose into simpler products by their own metabolism. The main objective of this research was to isolate cellulase producing bacteria from cow dung. Potential isolates were obtained from the village area in Kuala Pilah. A total of fifteen isolates were obtained by the primary screening technique on Nutrient Agar (NA), which only eight isolates were found to be cellulase producer since they grew well on Carboxymethylcellulose (CMC) agar. The isolates were further characterized on the basis of staining and biochemical activities. Macroscopic and microscopic observation was made including characterization based on colonies morphology and Gram staining method. Six of them, sample CD 1, CD 2, CD 3, CD 4, CD 5 and CD 7 were found to be Gram positive bacteria, while sample CD 6 and CD 8 were characterized as Gram negative bacteria.The potential isolates were then further tested for secondary screening by using Congo red dye. Only three isolates show positive inhibition zone, which is sample CD 1, CD 2 and CD 3. Sample CD 3 was found to be the most efficient cellulase producing bacteria since it shows the largest inhibition zone among the three isolates.