BIODEGRADATION OF NAPHTHALENE BY USING

Pseudomonas sp. AND *Bacillus* sp.

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Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Sciences (Hons.) Biology
in the Faculty of Applied Sciences
Universiti Teknologi Mara

JULY 2016

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ABSTRACT

BIODEGRADATION OF NAPHTHALENE BY USING *Pseudomonas* sp. AND *Bacillus* sp.

Naphthalene is a type of polyaromatic hydrocarbon and is known as the most common pollutant found in our environment. Due to its harmful effects on living things, naphthalene should be removed using the bioremediation method. This method shows us how microorganism can degrade naphthalene by utilizing it as a carbon source. This biodegradation study using *Pseudomonas* sp. and *Bacillus* sp. to degrade naphthalene was conducted to analyze the degradation rate of naphthalene, the biomass cell produced and catechol production as well as to compare the degradation activity by those two bacteria species. Both bacteria were cultured separately in M9 minimal media containing naphthalene for 13 days of incubation time. The biodegradation activity of the bacteria cultures were monitored by UV-Vis spectrophotometer. Based on statistical analysis using Pearson's coefficient of correlation and Mann-Whitney test, *Pseudomonas* sp. can degrade naphthalene (74.26%) better than *Bacillus* sp. (71.05%). The biomass cell produced by *Pseudomonas* sp. was higher (97.32%) than *Bacillus* sp. (96.09%). *Pseudomonas* sp. also produced high catechol production (75.31%) than *Bacillus* sp. (71.06%). This shows that *Pseudomonas sp.* is more efficient to degrade naphthalene as compared to *Bacillus* sp. However, both bacteria are capable to degrade naphthalene and are practically useful for bioremediation purposes.