

**BIODEGRADATION OF NAPHTHALENE BY USING**

*Pseudomonas sp. AND Bacillus sp.*

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This Final Year Project Report entitled “**Biodegradation of Naphthalene by using *Pseudomonas* sp. and *Bacillus* sp.**” was submitted by Siti Khairunnisa binti Mohd Razali, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

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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.