

ECONOMICAL AQUATIC POLLUTION INDICATOR

TECHNOLOGY DESCRIPTION

This technology method to monitor pollution level in the aquatic environment especially pollution from polycyclic aromatic hydrocarbons (PAHs).

TECHNOLOGY FEATURES

An increase in the level of PAHs can be measured with the population growth of bacteria, *Pseudomonas aeruginosa*. This bacterium is found in the fish intestines and its growth correlates with the level of PAHs in the aquatic environment. Currently, chemicals such as ethoxyresorufin-O-deethylase (EROD), glutathione S-transferase (GST) and acetylcholinesterase (AChE) were used for PAHs detection methods. These chemicals are costly compared to detection method using the naturally growing bacteria detection method. A simple detection method is necessary to proper management decision to halt or reduce the impacts of this pollution.

ADVANTAGES

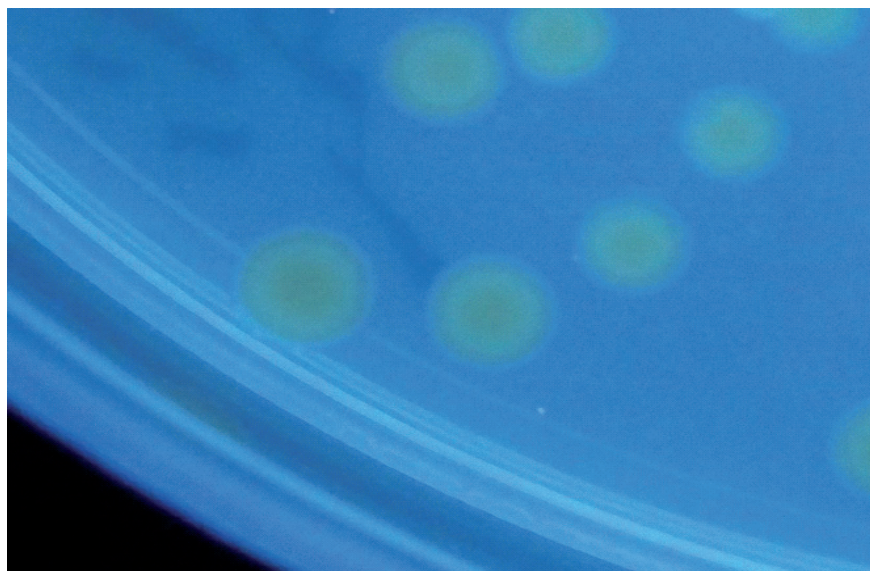
- Cost-effective
- Uses naturally occurring bacteria
- Environmentally friendly

INDUSTRY OVERVIEW

Prospect: Oil and Gas Industry

Pseudomonas aeruginosa (a bacteria) found the intestine of fish is used to estimate the level of PAHs pollution in the water. The population growth of this bacteria in the intestine correlates with the level of PAHs in the aquatic environment. This Aquatic Pollution Indicator is an economical version to replace the existing costly methods such as i) ethoxyresorufin-O-deethylase (EROD); ii) glutathione-S-transferase (GST); and iii) acetylcholinesterase (AChE). The said indicator is assured to be cost effective featuring MYR100/100 samples compared to MYR600-10000/100 samples with other existing products. Interested parties would be environmental impact assessment institutions, oil and gas companies, research institutions, and universities. Currently in Malaysia,

there are around 49 companies under Oil & Gas Exploration Services, including Geological, Geophysical and Prospecting Services listed under Matrade, 20 public and 39 private higher learning institutions registered under Department of Higher Education in Malaysia.



Dr. Annie Christianus
Faculty of Agriculture
annie@upm.edu.my