Book of Abstracts

INTERNATIONAL CONFERENCE ON BENEFICIAL MICROBES 2018

Microbes for the Benefits of Mankind

THE WATERFRONT HOTEL
KUCHING, SERAWAK
JULY 30TH - AUGUST 1ST

International Conference on Beneficial Microbes

Microbes for the Benefit of Mankind

The Waterfront Hotel, Kuching, Sarawak

July 30th – August 1st, 2018

Oral Presentation | Young Scientist Award

Isolation of beneficial bacteria for heterocyclic hydrocarbon compounds removal from mariculture environment

Maliki IM[1], Linting E[2], Manas NHA[1] Nolasco-Hipolito C[1], Zulkharnain A[2]

[1]Faculty of Engineering, Universiti Malaysia Sarawak;
[2]Faculty of Resource Science & Technology, Universiti Malaysia Sarawak

Email: imarianamaliki@gmail.com

Abstract

Despite the obvious merits of mariculture or cultivation of marine organisms for food, this activity is highly susceptible to environmental chemical pollutants. Components such as polycyclic aromatic hydrocarbons (PAHs) and heterocyclic hydrocarbons (HH) compounds are known to accumulate in marine organisms through bioconcentration, which leads to food safety risks for humans. The objective of this is study is to isolate bacteria which can be utilized for heterocyclic hydrocarbon compounds removal from aquaculture environment. Seawater samples were collected from fisherman village Kampung Buntal, Sarawak and confirmation of the presence HH-degrading bacteria are conducted via enrichment cultures using artificial seawater ONR7a media supplemented with carbazole (CAR) as the sole carbon source. Bacterial isolation was conducted on double layered artificial seawater ONR7a agar, supplemented with HH compounds such as CAR, dibenzothiophene (DBT) and dibenzofuran (DBF). A total of four isolates have showed growth on CAR, DBT and DBF. Two most promising bacteria have been identified as *Capnocytophaga* sp. strain EC1 and *Idiomarina* sp. EC2. Gas chromatography–mass spectrometry (GC-MS) analyses were conducted to measure the degradation ability of these bacteria. After a period of 12 days, strain EC1 and EC2 were able to degrade 24.33% and 25.16% of CAR respectively.

Acknowledgements: The authors thanked FRGS Grant FRGS/1/2017/STG05/UNIMAS/03/1 for funding this research.

Maliki IM, Linting E, Manas NHA Nolasco-Hipolito C, Zulkharnain A (2018). Isolation of beneficial bacteria for heterocyclic hydrocarbon compounds removal from mariculture environment. *International Conference on Beneficial Microbes 2018*. Kuching Sarawak, Malaysia.