... PLASMID PROFILING AND

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FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
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CHARACTERIZATION, ANTIBIOGRAM, PLASMID PROFILING AND RAPD FINGERPRINTING OF *Vibrio harveyi* FROM OYSTER (*Crassostrea iredalei*) AT MERCHANG, TERENGGANU

Tan Han Ying

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ABSTRACT

A total of fourteen isolates were successfully isolated from oysters (*Crassostrea iredalei*) at Merchang, Terengganu. They were identified as *Vibrio harveyi* by using morphological, biochemical and physiological tests. An antimicrobial susceptibility profile revealed that chloramphenicol and sulphamethoxazole could be useful in inhibiting the growth of *Vibrio harveyi* in oyster farm. Thus, result of plasmid profiling indicated that only one isolate harbored a single plasmid with the size of 35.3 MDa. The plasmid which carried by the isolate may potentially serves as a reservoir for resistance to other antimicrobials. The genomic diversity of *Vibrio harveyi* isolates were assessed by using random amplified polymorphic DNA (RAPD-PCR) and showed the lowest genetic similarity was 6% and the highest genetic similarity was 100%. Based on these findings indicated a significant presence of potentially pathogenic *Vibrio harveyi* along the Merchang River and it appears that oyster may act as a carrier of *Vibrio harveyi.*

ABSTRAK

Sejumlah empat belas isolat telah berjaya dipencilkan daripada tiram di Merchang, Terengganu. Isolat-isolat ini diidentifikasikan sebagai *Vibrio harveyi* dengan menggunakan kajian morfologikal, biokimia dan fisiologikal. Kajian menunjukkan bahawa *chloramphenicol* dan *sulphamethoxazole* berfungsi menyekat pertumbuhan *Vibrio harveyi* di kawasan ternakan tiram. Keputusan plasmid profil menunjukkan bahawa hanya satu isolat sahaja yang didapati mempunyai satu plasmid yang bersaiz 35.3 MDa. Plasmid yang dijumpai ini berkemungkinan dapat mempertahankan ubat antimikrob yang lain pada masa akan datang. Kepelbagaian genetik *Vibrio harveyi* telah ditaksirkan dengan menggunakan RAPD-PCR dan menunjukkan genetik bakteria yang terendah ialah 6% manakala yang tertinggi ialah 100%. Berdasarkan keputusan-keputusan ini, kemunculan patogen *Vibrio harveyi* di sekitar kawasan Sungai Merchang telah dibuktikan dan tiram mungkin bertindak sebagai pembawa kepada *Vibrio harveyi*.