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**BIOMASS, OIL AND FATTY ACIDS PROFILING OF MANGROVE-  
ISOLATED MICROALGAE UNDER SELECTED CULTIVATION  
CONDITIONS**

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Microalgae have been recognized for their substantial amount of oil content along with high long-chain marketable polyunsaturated fatty acids (PUFAs) such as omega-3 and -6 fatty acids. However, indigenous microalgae in Malaysia are mostly untapped resources for lipid assessment due to lack of research conducted, in particular the species from mangrove environment. Therefore, eight new mangrove-isolated microalgae species were successfully described through morphological characterization and molecular identification with 18S rDNA. The identified strains include the species from the genus of *Chlorella*, *Desmodesmus*, *Chlamydomonas* and *Scenedesmus*. In order to screen these species for potential oil and fatty acid productions, a small-scale cultivation system and an optimized oil extraction protocol were established. This enable cost-saving in term of reduce chemicals usage by 50% and increase efficiency from time-saving. The eight newly characterized species together with two model species (*Chlorella vulgaris* UMT-M1 and *Messastrum*