ISOLATION AND MOLECULAR IDENTIFICATION OF FRESHWATER MICROALGAE IN PAITAN LAKE, CUYAPO, NUEVA ECIJA

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ABSTRACT

COLANGAN, MARIA ANGELIKA D., Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **JUNE 2019, ISOLATION AND MOLECULAR IDENTIFICATION OF FRESHWATER MICROALGAE IN PAITAN LAKE, CUYAPO, NUEVA ECIJA**

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Microalgae is a diverse group of unicellular prokaryotic and eukaryotic microorganisms that commonly thrives in marine and freshwater environment. It is a potential source of food supplement and bio materials used in pharmaceutical industry. This study focused on the isolation and molecular identification of microalgae present in Paitan Lake, Cuyapo, Nueva Ecija.

Isolation of microalgae was carried out through dilution method. Regular microscopic observation was undergone to monitor the occurrence of unialgal cell per container. The isolated microalgae was then morphologically characterized to determine its preliminary identity based from phenotypic features. To increase the sensitivity of the identification and to confirm the identity of the isolates, genomic DNA extraction was followed up. The template DNA extracted was amplified using 16s rDNA primer. The PCR product was sent to first base laboratory in Malaysia for sequencing. Phylogenetic tree was also constructed to uphold and verify the similarity of the sequenced isolates with the related species in the GenBank data base.

A total of four (4) species of microalgae were successfully isolated and morphologically characterized. These are: *Leptolyngbya* sp. (AS1), *Scenedesmus* sp. (AO), *Monoraphidium* sp. (AS2) *and Chlorella* sp. (AB). Three out of four isolates were

successfully amplified using 16s gene marker. AS1 was successfully sequenced while the remaining samples showed negative result in the sequencing procedure. It was confirmed in the BLAST analysis that the sample had 83.54% similarity to *Leptolyngbya* sp. which coincides with its initial morphological identification.

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