ISOLATION AND MOLECULAR IDENTIFICATION OF BACTERIA FROM PARTIALLY COMPOSTED RICE STRAW WITH CELLULOSE DEGRADATION POTENTIAL [1]

JENILYN C. GAJES

ABSTRACT

Background: The purpose of this study was to identify the pre-isolated bacterial species potential for cellulose degradation present in partially composted rice straw samples using molecular techniques. Also, to evaluate and confirmed the cellulose degrading ability of the pre- isolated bacterial species. **Methods:** Bacterial species present in partially composted rice straw was isolated using CMC assay. The bacterial species with cellulose degradation potential was identified using molecular assay approach. **Results:** During the preliminary cellulose assay screening, there are three (3) isolates that showed clear zone around its colony.The sample with code R2 isolate shows a clear zone around it during the confirmation. Colony PCR using 16S universal primer followed by sequencing and BLAST analysis identified the isolate as *Pseudomonas* sp. (KF542910.1). Literature suggest that this species found to have a potential for degrading cellulose and has a many used in biotechnological processes. **Conclusions:** Results indicated that the bacterial species identified as *Pseudomonas* sp. was confirmed to degrade cellulose after CMC assay. The importance and usefulness of these bacteria in the remediation of environment needs to be validated.

Keywords: bacteria, cellulose degradation, molecular technique and polymerase chain reaction

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APPROVAL AND ACCEPTANCE

The undergraduate thesis entitled **ISOLATION AND MOLECULAR IDENTIFICATION OF BACTERIA FROM PARTIALLY COMPOSTED RICE STRAW WITH CELLULOSE DEGRADATION POTENTIAL** prepared and submitted by **JENILYN C. GAJES** in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE** is hereby

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