

**NANOSTRUCTURE SOIL CONDITIONER ENRICHED WITH *Lactobacillus plantarum*
UTILIZING SQUASH (*Cucurbita maxima*) SEEDS AS SOURCE OF PHOSPHORUS
AND SWEET POTATO (*Ipomoea batatas*) AS SOURCE OF POTASSIUM**

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An Undergraduate Thesis Submitted to the Faculty of the Department of Biological
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in Partial Fulfillment of the Requirements
for the Degree of

**BACHELOR OF SCIENCE IN BIOLOGY
(Major in Microbiology)**

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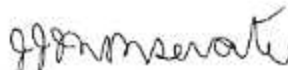
ACCEPTANCE SHEET

This undergraduate thesis entitled "NANOSTRUCTURE SOIL CONDITIONER ENRICHED WITH *Lactobacillus plantarum* UTILIZING SQUASH (*Cucurbita maxima*) SEEDS AS SOURCE OF PHOSPHORUS AND SWEET POTATO (*Ipomoea batatas*) AS SOURCE OF POTASSIUM" prepared and submitted by ANNE KRISTEL L. NICOLAS, in partial fulfillment of the requirements for the degree of BACHELOR OF SCIENCE IN BIOLOGY (MICROBIOLOGY), is hereby accepted.



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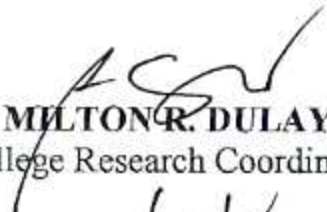
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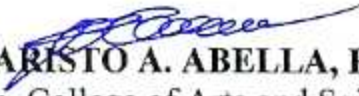
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BIOGRAPHICAL SKETCH

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ABSTRACT

NICOLAS, ANNE KRISTEL L., Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, **JUNE 2018, NANOSTRUCTURE SOIL CONDITIONER ENRICHED WITH *Lactobacillus plantarum* UTILIZING SQUASH (*Cucurbita maxima*) SEEDS AS SOURCE OF PHOSPHORUS AND SWEET POTATO (*Ipomoea batatas*) AS SOURCE OF POTASSIUM**

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Soil conditioner from organic material could be a good idea to work on and also it could be used as an alternative for chemical fertilizers and remedies in order to limit the side effects that cause destruction to the environment. Considering the effects of external organic and inorganic components on soil fertility and quality is really important for the improvement of low-yielding soils. And with the use of Nanotechnology from this study, it focused on the enrichment of the soil conditioner with 6 different treatment by incorporating the *Lactobacillus plantarum* using squash (*Cucurbita maxima*) seeds as source of phosphorus and sweet potato (*Ipomea batatas*) as source of potassium. Where the NPK content was analyzed and evaluated the bacterial cell count in comparison in the initial and final fermentation process. The plant extracts is not that powerful in enhancing the FAA, since FAA alone is significantly better in term of the NPK value from the other treatments. However in terms of bacterial succession, the T4 (FAA+PK+silica) and T6 (FAA+PK+silica+ *L. plantarum*) proves to be higher than the other treatments which only suggest that there is a good fermentation process.

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