

**ISOLATION AND CHARACTERIZATION OF MUNGBEAN RHIZOBIA  
GROWN FROM SELECTED SOILS IN EASTERN  
PANGASINAN**

**BETHEL CHARIS CABANELA ELEVAZO**

An undergraduate thesis manuscript submitted to the faculty of the Department of  
Soil Science, College of Agriculture, Central Luzon State University  
in partial fulfillment of the requirements  
for the degree

**BACHELOR OF SCIENCE IN AGRICULTURE  
(Soil Science)**

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**APPROVED:**

  
**FLORIDA C. GARCIA**  
Adviser

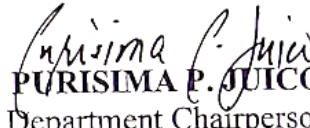
\_\_\_\_\_  
Date Signed

  
**FEDERICO O. PEREZ**  
Department Research Coordinator

\_\_\_\_\_  
Date Signed


  
**PURISIMA P. JUICO**  
Critic

\_\_\_\_\_  
Date Signed

  
**PURISIMA P. JUICO**  
Department Chairperson

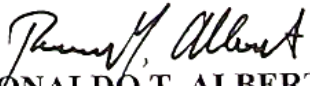
\_\_\_\_\_  
Date Signed

**ACCEPTED:**

  
**ERNESTO A. MARTIN**  
Dean

\_\_\_\_\_  
Date Signed

**RECORDED:**

  
**RONALDO T. ALBERTO**  
College Research Coordinator

6/16/17  
\_\_\_\_\_  
Date Signed

## BIOGRAPHICAL SKETCH

Bethel Charis C. Elevazo was born on August 31, 1997 at Urdaneta City. She is the Eldest child of Mr. Ray R. Elevazo and Mrs. Daisy C. Elevazo. Her family lives at Amamperez, Villasis, Pangasinan.

She attended grade school at Amamperez Elementary School and at the age of 13, she enrolled at Juan G. Macaraeg National Highschool, Binalonan, Pangasinan as Special Science Class student.

She took up Bachelor of Science in Agriculture major in Soil Science. At First year and third year in college, she played Taekwondo and Karatedo during college and university intramurals.

The author was elected as Business Manager of the Soil Science Society.

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ABSTRACT

This study was conducted using 30 soil samples collected from 10 municipalities in Eastern Pangasinan. An experiment was conducted to evaluate the relatedness of nodule population with particle size distribution and organic matter. Also, to identify probable rhizobium species using DNA analyses.

Correlation result showed that nodule weight and plant weight; number of nodule and soil organic matter; % Clay and weight of nodule; % Silt and number of nodule; % Sand and number of nodule has a significant effect

Morphological characteristics of rhizobia has a circular shape, faintly pink to white in color, 0.5 mm to 3mm in size and has a translucent opacity. There are 15 acid producing rhizobia, 9 alkaline producing rhizobia and 6 contaminated isolates out of 30 isolates. The acid producing bacteria are the fast-growing rhizobia called *Rhizobium* which was observed 2-3 days after inoculation while the alkaline producing bacteria are the slow-growing rhizobia called *Bradyrhizobium* which was observed 6-8 days after inoculation.

There were 24 out of 30 isolates that were subjected to Molecular DNA analyses. Out of 24 samples, there were only 3 amplicons, MAN2 (2A), MANG2 (5C) and SIS2 (17C).

Based on the findings of the study, it can be concluded that mungbean plants can be infected both by *Bradyrhizobium* and *Rhizobium*. *Rhizobium* and *Bradyrhizobium* bacteria are present in any textural class. Moreover, acid-producing *Rhizobium* is more dominant than *Bradyrhizobium* in acid soils.

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