



QUARTERLY RESEARCH PROGRESS REPORT

QUARTER: 3rd
(July-September 2022)

**Research Title: CHARACTERIZATION AND QUALITY ASSESSMENT OF LOCALLY
MADE BIOFERTILIZERS: Microbial and Molecular Analysis of Biofertilizers
Developed at VSU**

I. Program/Project/Study Objectives

Project Objectives:

General Objective:

To evaluate the quality, characteristics, and effectiveness of different
biofertilizer products developed at VSU

Specific objectives:

1. To determine the temporal variation in microbial population density in biofertilizers developed at VSU.
2. To characterize the microbial isolates obtained from the biofertilizer products of VSU.
3. To profile the microbial species richness of the biofertilizer products of VSU using molecular approach.

II. Relevance to VSU & College's Thrust and Priorities: Relevant

III. Highlights of accomplishments within the quarter

Study 1: Microbial and Molecular Analysis of Biofertilizers Developed at VSU

A. Targets for the quarter

- Order reagents for DNA extraction and PCR-Assays.
- Extraction of DNA from bacterial cultures/isolates from LABS, EM, IMO2, and VSU Vermicast for molecular identification.
- Perform PCR-Based DNA Analysis from extracted bacterial isolates.
- Analyze PCR results thru Gel Electrophoresis.
- Maintaining of pure cultures and sub-cultures of beneficial microorganisms.

A. Highlights of accomplishments

- Ordered reagents for DNA extraction and PCR-Assays.
- Bacterial DNA was extracted from 1-day old culture of LABS, EM, IMO2, and VSU Vermicast isolates (24 isolates).
- Conducted and performed PCR-Based DNA Analysis from the extracted isolates (24 isolates).
- Analyzed the PCR products by Gel Electrophoresis (24 isolates).
- Maintained pure cultures and sub-cultures of beneficial microorganisms.

IV. Physical Report of Operation

A. Research Program

	Particulars/Name and Brief Description of Utilized/ Commercialized Technologies	Number
Outcome Indicator		
1. Number of research outputs utilized by the industry or by other beneficiaries	N/A	
Output Indicator		
1. Number of research outputs completed within the year	N/A	
2. Percentage of research outputs published in internationally-referred or CHED recognized journal within the year	N/A	

B. Technologies/Information patented and commercialized

Technology Invention(s) New Information	Invention Patent Number	Date of Issue	Utilization of Invention		Name of Commercial Product
			Development	Service	
A. Technology Invention(s)	NONE				
B. New Information					

C. Research papers published (Identify if articles were for Research, Extension, Innovation or MSc/ PhD Studies)

	Title	Author (s)	Date/Year/Publication/ Publisher	Remarks (if Research, Extension, Innovation, Thesis, MSc/PhD)
a. Refereed Journal				
Institutional	NONE			
National	NONE			
International	NONE			
b. Semi-popular publ'n (newsletter, etc.)	NONE			
c. Popularized pub'ln (technoguides, etc.)	NONE			
d. Book Chapter/s	NONE			
e. Books	NONE			

D. Citation

Research Output as Cited by Other Researcher(s) in Journal Activities									
Title of Research Output/ Published Journal Articles/ Book	Title of Journal & Vol. Issue/ Year	Keywords	Researcher (s)	Citation Details					
				Author(s) Who Cited the Research Output	Title of Article Where the Research Output Was Cited	Title of Journal	Vol. / Issue / Page No.	City/ Year Published	Publi sher
NONE									

V. Issues, Problems, and Recommendations

- Part of the bacterial DNA extraction procedure is the need for the extracted DNA samples to be boiled. The unavailability of a stove or a burner in the laboratory makes the mentioned procedure difficult and inconvenient to perform, hence the purchase of a stove and an LPG tank will hasten the DNA extraction activities in the laboratory.

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