VISAYAS STATE UNIVERSITY

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QUARTERLY AND ANNUAL RESEARCH PROGRESS REPORT

Project/Study Title: CHARACTERIZATION AND QUALITY ASSISMENT OF LOCALLY MADE BIOFERTILIZERS

Project/Study Leader: Robelyn T. Piamonte

Members: Roda G. Capacao
Blanche Franchette D. Llera

Funding Source: VSU

Project Code: ISR.EFS.619.621	
Implementation Period: Aug.2019-Dec.2025	
Date Received	
1st Qtr.	
2nd Qtr.	
3rd Qtr.	
Annual	

Note: Dates to be filled out by RPO

I. **Objectives:**

General:

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

Specific:

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

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.

Study 2: Temporal Variation in Physico-Chemical and Bio-Chemical Composition of Locally made Biofertilizers

1. To determine the temporal variation in physico-chemical and biochemical composition of biofertilizer products of VSU.

Study 3: Field Evaluation of Locally Made Biofertilizers to Selected Vegetable Crops

To evaluate the efficacy of biofertilizer products of VSU in the field

II. **Short SDG Statement:**

This project aims to assess the effectiveness and quality of locally produced biofertilizers to determine their potential as sustainable alternatives to chemical fertilizers. By providing scientific evidence on their nutrient value, ability to promote plant growth, and positive effects on soil health, the study seeks to encourage greater use of biofertilizers among farmers and organic practitioners. In doing so, it supports the global goals of promoting sustainable food production, encouraging the use of environmentally friendly farming inputs and help restore soil fertility and protect biodiversity. In the long run, the project hopes to strengthen the foundation for more resilient, eco-friendly and productive farming systems in the Philippines.

III. **Relevant Outputs**

- *In vitro* bioassay of beneficial microbes isolated from biofertilizers against bacterial plant pathogens

Beneficial microbes isolated from vermicompost and LABS biofertilizers were bio-assayed against *Ralstonia solanacearum*, (causal agent of tomato bacterial wilt) and *Xanthomonas campestris* (causal agent of cabbage black rot).

To prepare the bacterial suspension, 10 mL of sterile distilled water was added to nutrient agar slants containing *Xanthomonas*, and the tubes were shaken to resuspend the bacterial growth. From this suspension, 100 µL was transferred onto sterile nutrient agar plates and evenly spread using a sterile L-shaped glass rod. Sterile paper disks were then dipped separately into suspensions of Vermi and LABS, and blot dried on sterile Petri dishes to remove excess liquid. Once dried, the treated disks were placed onto the agar plates previously inoculated with the *Xanthomonas* suspension for further observation.

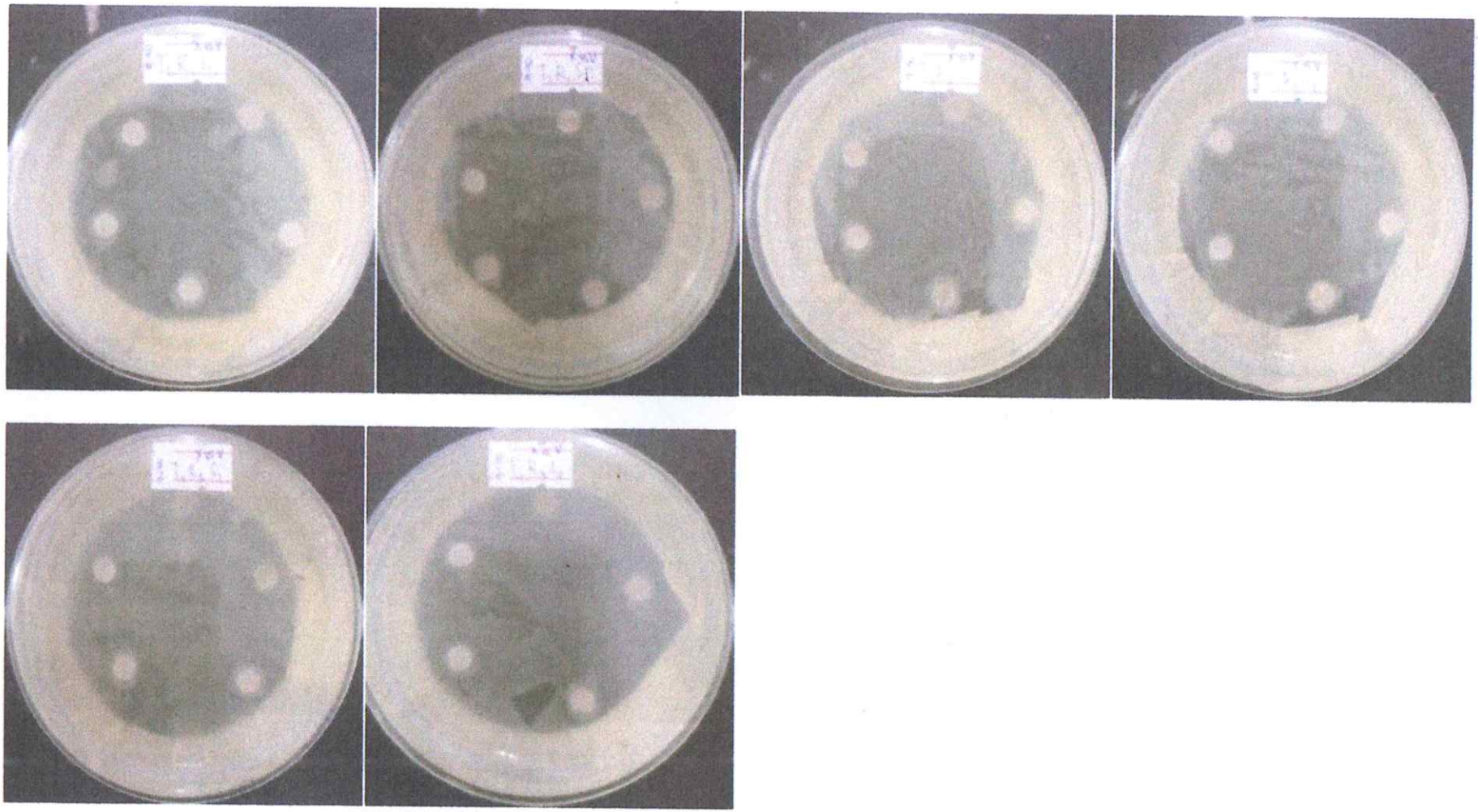

Figure 1. Above are photos of the disk diffusion assay of Vermi isolates against *Xanthomonas* sp. These are taken 24 hours after isolation.

Figure 2. Above are photos of disk diffusion assay of LABS isolates against *Xanthomonas* sp. These are taken 24 hours after isolation.

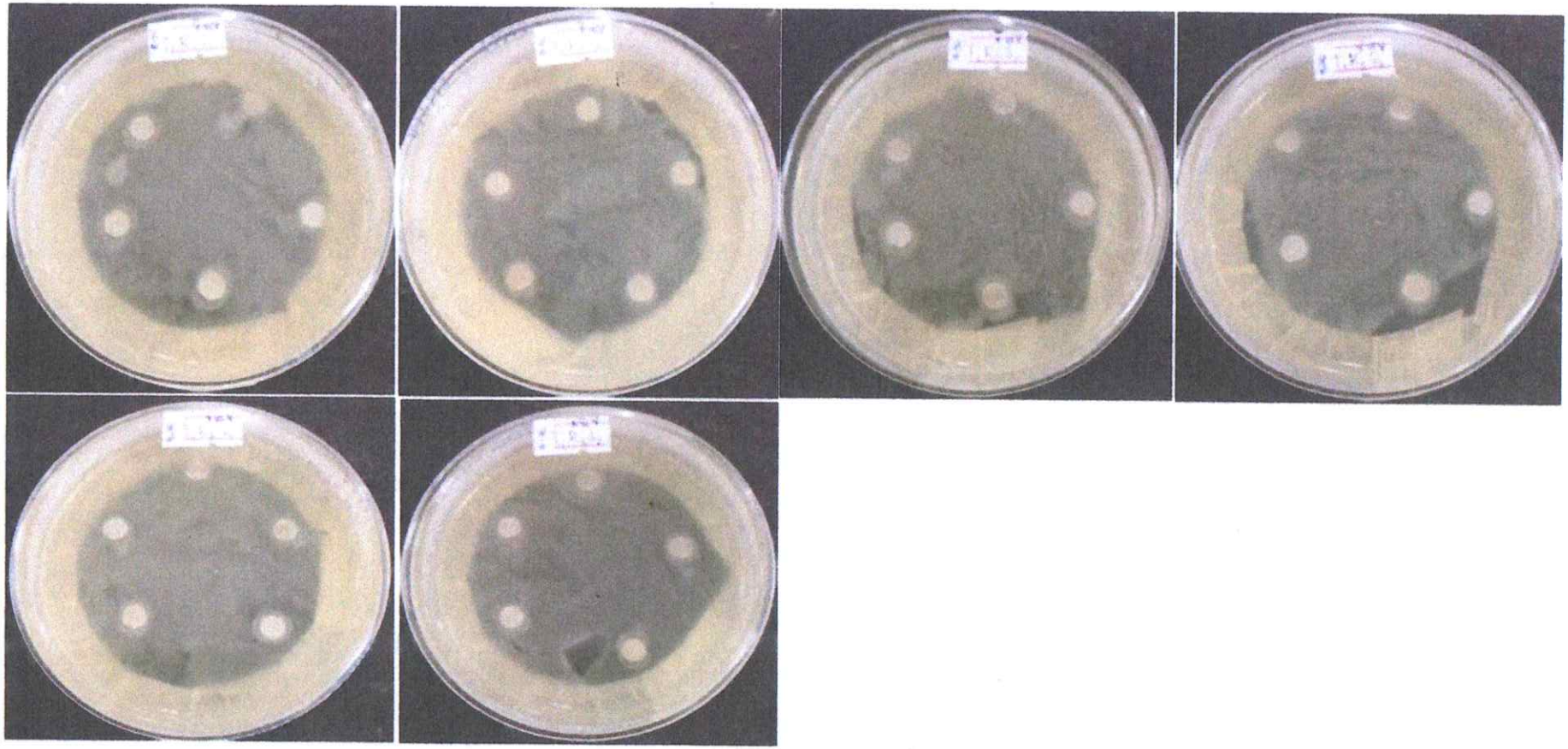

Figure 3. Above are photos taken 48 hours after the disk diffusion assay of Vermi isolates against *Xanthomonas* sp.

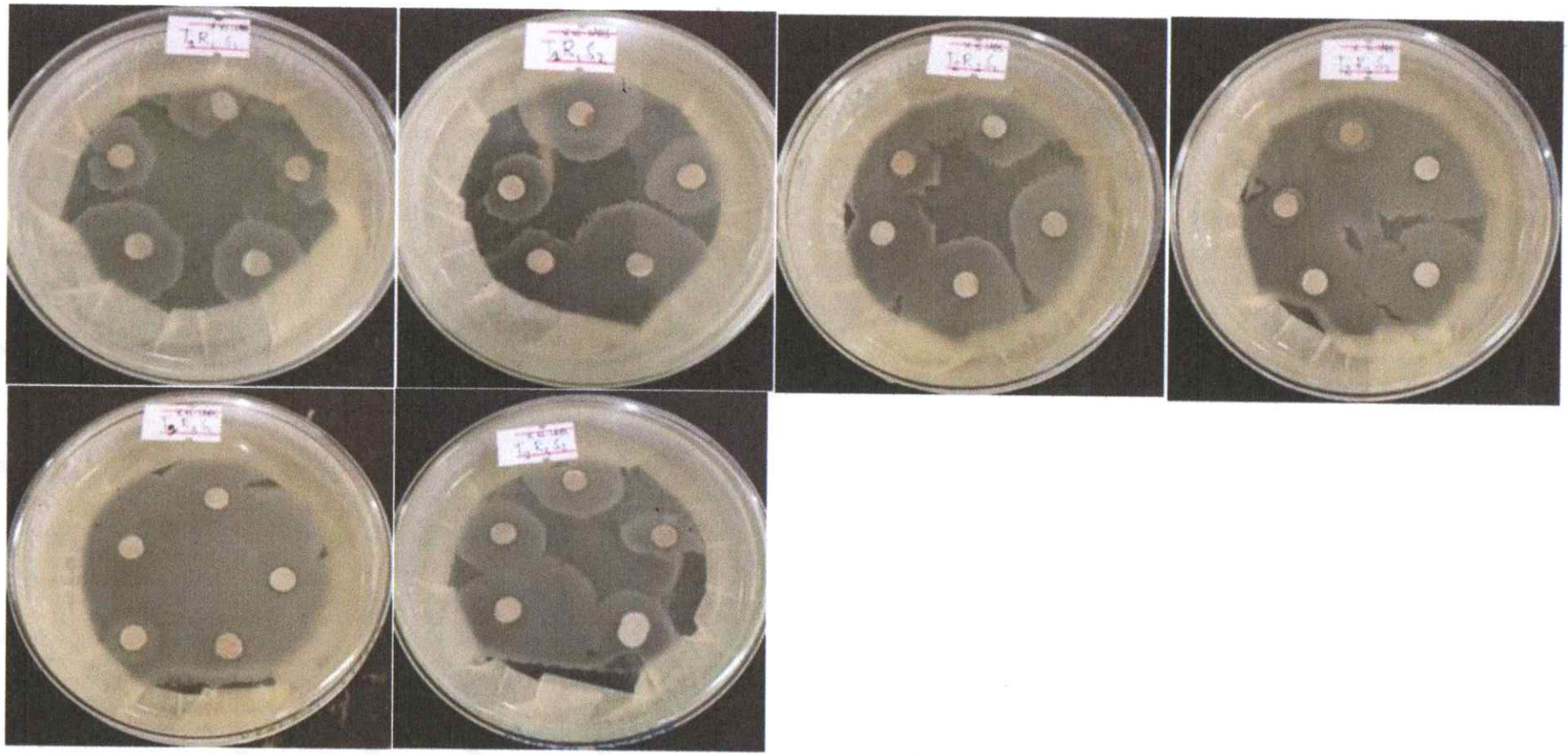

Figure 4. Above are photos taken 48 hours after disk diffusion assay of LABS isolates against *Xanthomonas* sp.

1. Publications/Presentations

Quarterly Outputs	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter/Annual
A. **Journal Publications** (complete citation in APA style)			N/A	
A.1. Scopus/WoS-indexed			N/A	
			N/A	
A. 2. Other Publications			N/A	
			N/A	
B. **Book/ Book Chapter**			N/A	
			N/A	
C. **Paper/Poster Presentations** (complete citation)			N/A	
C.1. Local/Institutional			N/A	
			N/A	
C.2. Regional			N/A	

			N/A	
			N/A	
C.3 National			N/A	
C.4 International			N/A	
D. **Newsletter/ techno guides, and other relevant publications**			N/A	
			N/A	

2. Technologies/Products, and Patents/Trademarks/Copyrights/Utility Models/Industrial Designs, and other IPs commercialized/utilized by the Industry

Title/Name of Technology/Products (include generator/author/inventor)	**Short Description**	**Type of IP** (Patent/Utility Model, Industrial Design, Copyright)	**Status** (Utilized/Commercialized)	**Technology Adopter** (if available online, pls. provide link)
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Note: Type of IP (Patent, Utility Model, Industrial Design, Copyright)

IV. Policy Reports/Recommendations

Title/Name of Policy/Policy Brief	Short Description	Policy Details (pls. provide a copy of the endorsement or approved policy advisory)
N/A	N/A	N/A
N/A	N/A	N/A

V. Citation or Attribution by other R&D Works

Publication, Patents or Policy Outputs (APA style where applicable)	Citation by others (APA style where applicable)
N/A	N/A
N/A	N/A

VI. R&D Linkages Forged/Maintained

Title of MoA/MoU	Department & Agency Involved	Period Covered	Budget (If applicable)
N/A	N/A	N/A	N/A

VII. Awards and Recognitions

Awardee	Name of Award	Awarding Body	Date & Venue
N/A	N/A	N/A	N/A

VIII. List of Equipment/Apparatus Purchased/Upgraded or Facilities Enhanced through the Project

Equipment/Facilities/Apparatus	Department/Faculty	Total Cost	Funding Source
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

IX. Relevant Research Outputs Utilized by the Industry or by Other Beneficiaries (Information/Technology)

Name of the Research Outputs	Short Description	Industry Capacitated/Other Beneficiaries (if applicable)
N/A	N/A	N/A

X. Problems Encountered and Recommendations

	Detailed Description
Problem/Issues Addressed	Contamination on the isolates and delay or unavailability of the materials used for the project. Constant reisolation was done just to make sure that the isolates are still pure and useful.

Strategic Action Plan Taken	Person Responsible	Timeline		Resources Required	Potential Risks
		Date to Begin	Date Due		
Constant follow-up at the procurement office for the requested chemicals/materials	SRA SL PL	October 2025	Dec 2025	Human resource	The requested chemicals/materials are still not procured, hence will delay the research activities.

Submitted by:

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