



**QUARTERLY RESEARCH PROGRESS REPORT
FIRST QUARTER (January – March, 2023)**

Research Title: Assessment of Climate Smart Agriculture in Hilly Upland Areas

I. Program/Project/Study Objectives

Objectives:

1. *To assess and evaluate the influence of the different double hedgerow's combinations on the soil erodibility.*
2. *To assess the physico-chemical properties of the soil on the influence of IMO6, EM, and Vermicast application in the contour hedgerows on the degraded upland.*

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

III. Highlights of accomplishments within the quarter

A. Targets for the quarter

1. Regular observation and checking on the experimental site.
2. Double hedgerow plant maintenance.
3. Sacking, storing of newly produced indigenous microorganism (IMO6) and effective microorganism (EM).
4. Land preparation on the experimental area; clearing and weeding followed by manual furrowing.
5. Application of bio-organically made fertilizers i.e. Vermicast, Indigenous Microorganism (IMO6) and Effective microorganism (EM) to all treatment plots.
6. Purchased mung bean (*Vigna radiata*) Var. Pag-asa 16 seeds in VSU agronomy shed house as test crop.
7. Data gathering on mung bean plant growth performance and soil erodibility.
8. Care and management on mung bean plants after planting.

B. Highlights of accomplishments

1. Perform area maintenance and cleaning through weeding to the treatment plots, under brushing on fruits planted (i.e. mango and abyo), grass cutting the trail to project site and any other surroundings near the experimental area.
2. Under brushing on newly cut vetiver, madre de agua and madre de kakaw plants was performed in the experimental area. Likewise, pruning of hedgerows were done in order to minimize over shading of the test crop.
3. Newly produced bio-organic fertilizers were sacked and stored in a cool place and safe room.
4. Removing plant debris and uprooting unwanted plants was also done at the experimental area. Also, manual furrowing was performed at a desired length and width.
5. After furrowing, bio-organically made fertilizers i.e. Vermicast, IMO6 and EM were applied to its designated treatment plots.
6. Prior to planting, mung bean seeds were prepared and exposed to sun for effective germination and were sown evenly in the prepared furrows by drill method at a distance of seventy (0.70) m with fifteen to twenty (15-20) seeds per linear meter. The seeds then were covered with thin layer of soil.
7. After 1 week from planting, data gathering were performed. Gathered data includes: number of days from sowing to flowering, number of days from sowing to maturity, plant height, stem diameter, leaf length, leaf width and number of leaves. Likewise soil erodibility was also measured monthly.
8. Proper care and management of the experimental area were done regularly through hand weeding and under brushing. First hand weeding with shallow cultivation will be performed two weeks after seedling emergence. The succeeding hand weeding operation will be performed two weeks after the first weeding. Likewise, thinning of excess seedlings after planting mung bean seeds was done.

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	NA	NA
Output Indicator		
1. Number of research outputs completed within the year	NA	NA
2. Percentage of research outputs published in internationally-referred or CHED recognized journal within the year	NA	NA

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)	NA				
B. New Information	NA				

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	NA			
Institutional				
National				
International				
b. Semi-popular publ'n (newsletter, etc.)	NA			
c. Popularized pub'ln (technoguides, etc.)	NA			
d. Book Chapter/s	NA			
e. Books	NA			

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	Publisher
NA									
NA									

V. Issues, Problems, and Recommendations

1. Delayed planting of mung bean seeds as test crop due to subsequent heavy rainfall conditions.

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