



QUARTERLY RESEARCH PROGRESS REPORT

QUARTER: 2nd

Research Title: Nanomaterial-encapsulated microbial inoculant as tuber sett coating to enhance growth, yield and micronutrient uptake of purple yam

I. Program/Project/Study Objectives

Project Objectives:

1. To formulate and characterize alginate-encapsulated *Bacillus megaterium* as microbial inoculant for tuber sett coating of purple yam
2. To evaluate performance of alginate-encapsulated *Bacillus megaterium* inoculant on the growth and yield of purple yam under pot experiments.
3. To evaluate performance of alginate-encapsulated *Bacillus megaterium* inoculant on the anthocyanin content of purple yam

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

This project is relevant to the primary mission of the university in research and development to generate knowledge and technologies that will contribute to advance knowledge, economic development, social development, and environmental sustainability.

Increasing yam production using new and improved technologies can provide good food sources, increase farmer income, and accelerate yam-derived products for food manufacturing and production.

III. Highlights of accomplishments within the quarter

A. Targets for the quarter

- Preparation and encapsulation of *B. megaterium* in nanomaterial-alginate microbeads
- Evaluation of encapsulated microbial inoculant
- Pot experiment of purple yam

B. Highlights of accomplishments

- Encapsulated *B. megaterium* in nanomaterial-alginate microbeads
- Prepared the screenhouse and other materials to be used in the pot experiment of purple yam
- Analyzed soil samples for pH and submitted soil samples to Central Analytical Services Laboratory (CASL) for micronutrient (Fe, Cu and Zn) analysis