

**BIOCONTROL OF ENTERICS ISOLATED FROM PIG MANURE USING
“EFFECTIVE MICROORGANISMS” (EM)**

An Undergraduate Research presented to
The Faculty of the Biological Sciences Department

College of Science

De La Salle University – Dasmariñas

Dasmariñas, Cavite

In partial Fulfillment

of the Requirements for the Degree of

Bachelor of Science in Biology

Major in Human Biology

JOHN CHRISTOPHERSON A. DELOS SANTOS

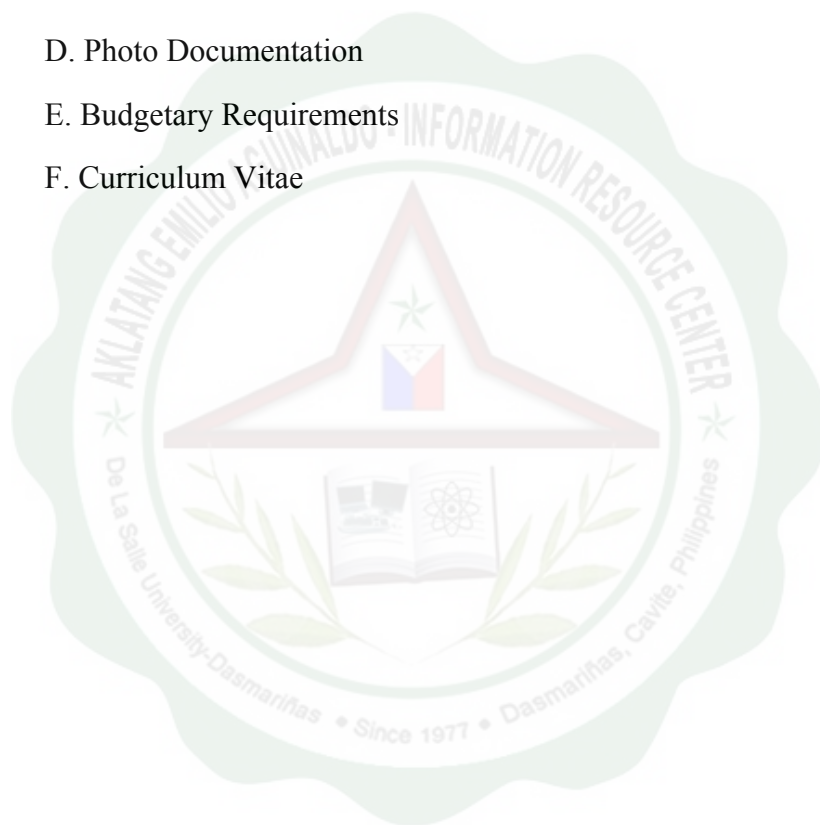
GERARD F. LAPIÑA

March 2009

TABLE OF CONTENTS

Abstract	5
Acknowledgement	6
CHAPTER 1 INTRODUCTION	
1.1 Background of the Study	7
1.2 Conceptual Framework	9
1.3 Statement of the Problem	10
1.4 Hypotheses	10
1.5 Significance of the Study	10
1.6 Scope and Limitations	11
1.7 Definition of Terms	11
CHAPTER 2 REVIEW OF RELATED LITERATURE	
2.1 Conceptual Literature	12
2.2 Related Studies	22
CHAPTER 3 METHODOLOGY	
3.1 Research Design	24
3.2 Research Setting	24
3.3 Research Procedure	24
3.4 Data Gathering and Statistical Analysis	27
CHAPTER 4 RESULTS AND DISCUSSION	
4.1 Results	28
4.2 Discussion	33
CHAPTER 5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	
5.1 Summary of Findings	40
5.2 Conclusion	40

5.3 Recommendation	41
Literature Cited	42
Appendix	
A. Standard Procedure	47
B. Raw Data and Statistical Analysis	50
C. Time Table for Research	62
D. Photo Documentation	63
E. Budgetary Requirements	66
F. Curriculum Vitae	67



ABSTRACT

This study dealt on the survival of enteric pathogens isolated from pig manure treated with “Effective Microorganisms” (EM). The enteric pathogens that were used in the study were *E. coli*, *E. aerogenes*, *V. cholerae*, and *S. typhi*. Pre-test Post-test Control Group Design was employed as the experimental design with two treatments: T₀, the control group, was treatment of the isolated enteric bacteria with *Bacillus subtilis*; T₁, was the mixed culture of enteric bacteria with Effective Microorganisms; and T₂ was the mixed culture of the enteric bacteria with Effective Microorganism cells. Agar Well Diffusion Assay was used as a preliminary test to investigate the antagonistic effect of biocontrol agents against enteric pathogens. Miles and Misra were performed to determine the initial and final count of the enterics. Results showed that the Effective Microorganisms (EM) was able to inhibit the growth of all the enterics tested. The bacterial count decreased ($P < 0.05$) when EM was administered. Therefore, it can be concluded that the EM was effective in reducing the growth of enteric pathogens isolated from the pig manure.

