

**EFFECTS OF DIFFERENT CONCENTRATIONS OF *Theobroma cacao*
BEANS IN LOWERING THE BLOOD CHOLESTEROL LEVEL
OF MALE *Rattus rattus domesticus*
(SPRAGUE-DAWLEY RAT)**

An Undergraduate Thesis 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 Major in Human Biology

Marigin A. Villatito

Desiree F. Yapoyco

February 2008

ABSTRACT

The study tested the efficiency of cacao in terms of its cholesterol lowering capability using male Sprague-Dawley rat as test organism. Randomized Complete Block Design (RCBD) was used with the five groups of Sprague-Dawley rat consists of two control groups and three different concentrations labeled as T₀ negative (without fattening control group), T₀ positive (with fattening control group), T₁ (0.64g/ml), T₂ (0.48g/ml) and T₃ (0.32g/ml). The male Sprague-Dawley rats underwent acclimatization, preparation and administration of buttered pellets. *Theobroma cacao* beans were collected and prepared to cocoa powder, administered to Sprague-Dawley rat in different concentrations. Blood was extracted and measured through serum cholesterol. As a result, *Theobroma cacao* lowered the blood cholesterol of Sprague-Dawley rats in 0.48g/ml to 0.32g/ml concentration. Increasing the effectivity of the treatment within an advised dietary intake lowers the blood cholesterol. The decreasing effect of blood cholesterol is attributed to the antioxidants (Phytosterol and polyphenol) present in *Theobroma cacao* that prevent the absorption of LDL in the gastrointestinal tract.

TABLE OF CONTENTS

TITLE PAGE.....	1
ABSTRACT.....	2
ACKNOWLEDGEMENT.....	3
TABLE OF CONTENTS.....	4
1.0 INTRODUCTION	
1.1 BACKGROUND OF THE STUDY.....	6
1.2 CONCEPTUAL FRAMEWORK.....	7
1.3 STATEMENT OF THE PROBLEM.....	8
1.4 HYPOTHESIS.....	8
1.5 SCOPE AND LIMITATION.....	8
1.6 SIGNIFICANCE OF THE STUDY.....	9
1.7 DEFINITION OF TERMS.....	9
2.0 REVIEW OF RELATED LITERATURE	
2.1 CONCEPTUAL LITERATURE.....	11
2.2 RELATED STUDIES.....	18
3.0 METHODOLOGY	
3.1 RESEARCH DESIGN.....	21
3.2 RESEARCH SETTING.....	21
3.3 RESEARCH PROCEDURE.....	22

3.4 DATA GATHERING AND STATISTICAL ANALYSIS.....	25
4.0 RESULT AND DISCUSSION	
4.1 RESULT.....	26
4.2 DISCUSSION.....	27
5.0 SUMMARY, CONCLUSION AND RECOMMENDATION	
5.1 SUMMARY.....	30
5.2 CONCLUSION.....	30
5.3 RECOMMENDATION.....	31
APPENDIXES	
Appendix A: PHOTO DOCUMENTATION.....	32
Appendix B: RAW DATA.....	39
Appendix C: STATISTICAL ANALYSIS.....	40
Appendix D: TIMETABLE FOR RESEARCH.....	41
Appendix E: BUDGETARY REQUIREMENTS.....	42
REFERENCES.....	43
CURRICULLUM VITAE.....	46