



**THE EFFECTS OF SYNEPHRINE AND YOHIMBINE TO THE
BODY WEIGHT AND CENTRAL NERVOUS SYSTEM
STIMULATION OF *Rattus norvegicus* B. 1769
(Norway Rat)**

An Undergraduate Research Presented to the
Faculty of the Biological Sciences Department
College of Science
De La Salle University - Dasmariñas
Dasmariñas, Cavite

In Partial Fulfilment of the Requirements
for the Degree of Bachelor of Science Major in Human Biology

**LUIGI MIGUEL ISIDRO
CLAUDIA ANGELA SETIAWAN**

March 2012



ABSTRACT

Slimming products have been overflowing with its claim to overcome the effects of our obese-promoting culture. Billions are spent annually by the consumers of these products, unaware of its true efficacy and safety. This study is conducted to analyze whether these products can indeed help in weight lose without adverse effects. Synephrine and yohimbine, the most common ingredients in many slimming products, were tested upon twelve male and twelve female Norway rats. The central nervous system (CNS) stimulation and body weight were measured weekly by the use of CNS stimulation tests (Bernas 2009) and top load balance respectively. After two weeks of acclimatization and four weeks of experiment, the test organisms gained weight instead of losing weight. There is an increase of body weight in majority of the test subjects, but it is only significant in males ($p= 0.001464$). There is no significant difference between the effects of synephrine, yohimbine, and mixture of synephrine and yohimbine ($p= 0.54115$). Although most of the parameters of the CNS stimulation test scored zero before and after the experiment, there was a slight increase in the respiratory rate of the test organisms before and after the experiment (before= 0, after= 1). Based on the respiratory rate, synephrine, yohimbine, and mixture of synephrine and yohimbine showed no significant difference on its effects to the CNS stimulation of the test organisms ($p= 0.881033$). There is also no significant difference between the respiratory rate of males and females ($p= 0.313628$). Increase in body weight and CNS stimulation cannot be attributed to the chemicals since the test subjects in the control groups also experienced weight gain and slight CNS stimulation. Thus, synephrine and yohimbine at the given doses are ineffective for weight loss, but are still safe for the central nervous system. Synephrine and yohimbine have no synergistic effect as proven by the experiment. Gender also has no implication in body weight and CNS stimulation.



TABLE OF CONTENTS

Title Page	1
Approval Sheet	2
Acknowledgments	4
Abstract	5
Table of Contents	6
CHAPTER 1 INTRODUCTION	
1.1 Background of the Study	8
1.2 Conceptual Framework	9
1.3 Statement of the Problem	10
1.4 Hypotheses	11
1.5 Scope and Limitations	11
1.6 Significance of the Study	12
1.7 Definition of Terms	13
CHAPTER 2 LITERATURE REVIEW	
2.1 Conceptual Literature	16
2.2 Related Studies	22
CHAPTER 3 METHODOLOGY	
3.1 Research Design	27
3.2 Research Setting	27



3.3 Research Procedure	28
3.4 Data Gathering and Statistical Analysis	31
CHAPTER 4 RESULTS AND DISCUSSION	
4.1 Results	32
4.2 Discussion	37
CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS	
5.1 Conclusions	41
5.2 Recommendations	41
Cited References	43
Appendices	
A. Raw data	45
B. Central nervous system (CNS) stimulation test	51
C. Photodocumentation	56
Curriculum Vitae	58