

**EFFECT OF SOYMILK ON EPIDIDYMAL HISTOPATHOLOGY IN
WISTAR RATS (*Rattus norvegicus*)**

FINAL ASSIGNMENT

To Fulfill the Requirement for the Degree of Bachelor of Medicine



By :

Zaw Myo Aung

105070108121015

**MEDICAL PROGRAMME
FACULTY OF MEDICINE
UNIVERSITY OF BRAWIJAYA**

MALANG

2014

TABLE OF CONTENTS

	Page
Title	i
Certification Page	ii
Acknowledgement	iii
Abstract	v
Abstrak	vi
Table of Contents	vii
List of Figures	xi
List of Tables	xii
List of Appendix	xiii
CHAPTER 1 INTRODUCTION	
1.1 Background	1
1.2 Statement of the Problems	3
1.3 Objectives of the research	3
1.3.1 General Objective	3
1.3.2 Specific Objective	4
1.4 Significance of the Research	4
CHAPTER 2 LITERATURE REVIEW	
2.1 Soybean (<i>Glycine max</i>)	5



2.1.1	Taxonomy	5
2.1.2	Description and Functions	5
2.2	Isoflavones and Phytoestrogens	6
2.3	Male Reproductive System	8
2.3.1	Histology of Epididymis	10
2.3.2	Formation of Vacuoles in Epithelial Cells	12
2.3.3	Spermatogenesis	14
2.3.4	Testosterone	15
2.3.5	Estrogen	17
2.4	Endocrine Disruptors	18
2.5	Infertility	19
 CHAPTER 3 CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESIS		
3.1	Conceptual Framework	21
3.2	Research Hypothesis	23
 CHAPTER 4 METHODOLOGY		
4.1	Research Design	24
4.2	Population and Sample	24
4.2.1	Population	24
4.2.2	Sample	24
4.2.3	Sample Size Estimation	25
4.2.4	Sample Characteristics	25
4.2.5	Exclusion Criteria	26
4.3	Variable Identification	26
4.3.1	Dependent Variable	26

4.3.2	Independent Variable	26
4.4	Location and Time of Study	26
4.5	Instrumentation (Research Materials and Equipments)	26
4.5.1	Soy Milk Preparation	26
4.5.2	Normal Diet Preparation	27
4.5.3	Soy Milk Administration	27
4.5.4	Surgical and Histological Equipments	27
4.5.5	The Rats' Maintainer and Weight Measuring Equipment	27
4.6	Operational Defination	27
4.7	Experimental Procedures	28
4.7.1	Soy Milk Preparation	28
4.7.2	Soy Milk Administration	28
4.7.3	Dissecting Wistar Rats	29
4.7.4	Histopathological Slides Preparation	29
4.7.5	Epithelial Cell and Cell with Vacuole Counting	30
4.8	Research Framework	31
4.9	Data Analysis	32

CHAPTER 5 RESEARCH RESULTS AND DATA ANALYSIS

5.1	Research Results	33
5.2	Data Analysis	36
5.2.1	Test of Normality	36
5.2.2	Homogeneity of Variance Test	37
5.2.3	Kruskal-Wallis Test	37
5.2.4	Mann-Whitney Test	38
5.2.5	Spearman Correlation	39



CHAPTER 6 DISCUSSION

6.1 Discussion 41

CHAPTER 7 CONCLUSION

7.1 Conclusion 45

7.2 Suggestions 45

References 46

Appendix 53

Verification of Thesis Originality 65

