

EFFECT OF ETHANOLIC CRUDE EXTRACT OF Euphorbia hirta

(TAWA-TAWA) TO Danio rerio (ZEBRAFISH)

EARLY EMBRYO DEVELOPMENT

An Undergraduate Research Presented to the

Faculty of the Biological Sciences Department

College of Science and Computer Studies

De La Salle University - Dasmariñas

Dasmariñas City

In Partial Fulfillment of the Requirements

for the Degree of Bachelor of Science Major in Human Biology

JOHN ERICKSON L. FERNANDEZ EISSEN RAM C. MEDINA

March 2014

De La Salle University - Dasmariñas BIOLOGY PROGRAM



ABSTRACT

The effects of ethanolic crude extract of *Euphorbia hirta* (tawa-tawa) to the *Danio rerio* (zebrafish) early embryo development were observed. Three different concentrations of the ethanolic crude extract of the plant were induced to the zebrafish embryos after being collected and transferred to the well plates. The embryos were observed after 24hpf and after 144hpf. The lowest concentration of the ethanolic crude extract of the plant does not cause any malformations in the embryos both 24hpf and 144hpf. On the other two concentrations, malformations such as oedema, enlargement of the caudal region, and fin malformations was observed. These shows that on higher concentration the ethanolic crude extract of *Euphorbia hirta* (tawa-tawa) will cause malformations when induced in the *Danio rerio* (zebrafish) embryos.



TABLE OF CONTENTS

Title Page	1
Acknowledgments	2
Abstract	3
Table of Contents	4
CHAPTER 1 INTRODUCTION	
1.1 Background of the Study	6
1.2 Conceptual Framework of the Study	8
1.3 Objective of the Study	9
1.4 Scope and Limitation	9
CHAPTER 2 REVIEW OF RELATED LITERATURE	13
CHAPTER 3 METHODOLOGY	
3.1 Research design	26
3.2 Research setting	27
3.3 Research procedure	





3.4 Data Gathering	26
CHAPTER 4 RESULTS AND DISCUSSION	27
CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS	36
Cited Reference	38
Appendices	
A. Preliminary Test	42
B. Endpoints of the Study	43
C. 30% Epiboly	45
D. Normal Development of Zebrafish Embryo	46
E. Malformed Zebrafish Embryo from 144hpf	47
F. Preparation of Extract	50
G. Zebrafish Gathering and Spawning	51
H. Inducing of Extract to the Zebrafish Embryos	52
I. Viewing of Induced Zebrafish Embryos	53
J. Stages of Zebrafish Embryo Development	54
K. Curriculum Vitae	55