



**UNIVERSITY OF NAIROBI**

**COLLEGE OF BIOLOGICAL AND PHYSICAL SCIENCES**

**DEPARTMENT OF CHEMISTRY**

**PHYTOCHEMICAL INVESTIGATION OF THREE LEGUMINOSAE  
PLANTS FOR LARVICIDAL ACTIVITY AGAINST *Aedes Aegypti***

**BY**

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I 56/80611/2012**

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTERS  
OF SCIENCE IN CHEMISTRY OF THE UNIVERSITY OF NAIROBI**

**2015**

## DECLARATION

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. It has not been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. The research was carried out in the Department of Chemistry of the University of Nairobi.

Marco Makungu

I 56/80611/2012

  
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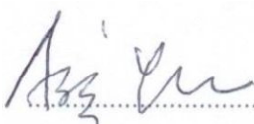
This thesis has been submitted for examination with our approval as University supervisors.

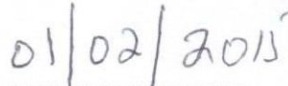
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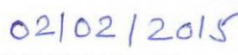
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## **DEDICATION**

This thesis is dedicated to my wife Nakaniwa (Kekuu) and my children Jenipha Modest Makungu and Jossia Madi Makungu

## ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my supervisors Prof. Abiy Yenesew and Dr. Solomon Derese who introduced me to the fascinating field of Natural Products Chemistry research. Thank you for your inspiring and supportive guidance. Your optimistic attitude and consistent enthusiasm towards research are the qualities I most wish to emulate. Dr. Albert Ndakala and Dr. Joseph J. Magadula are also warmly acknowledged for constructive comments, advice, and continuous support throughout the studies.

I am greatly indebted to Dr. Matthias Heydenreich, University of Potsdam, for high resolution NMR and MS analysis. In line with this, I have been lucky to meet and work with many outstanding people. I thank the PhD students Tsegaye Deyou, Negera Abdissa, Ivan Gumula, Yoseph Atilaw, Souaibou Yaouba, and MSc students, Dennis Akampurira, Rogo Michael and George Kwesiga for academic and social support.

I am also grateful to the German Academic Exchange Services (DAAD) and the Natural Products Research Network for Eastern and Central Africa (NAPRECA) for the award of scholarship. I extend my thanks to Mr. Kevin Omwomo of the School of Biological Sciences, University of Nairobi, for technical support in the larvicidal tests, Mr. F. Mbago (Department of Botany, University of Dar es Salaam) and Mr. P. Mutiso, (School of Biological Sciences, University of Nairobi) for identification of the plants.

I would also like to thank the academic and technical staff of the Department of Chemistry, University of Nairobi for their cooperation, encouragement and support during my research. Finally, I would like to thank the Prime Minister's Office, Regional Administration and Local Government, Tanzania as well as University of Dar es Salaam for the provision of the study leave.

## LIST OF ABBREVIATIONS AND ACRONYMS

ANVR	African Network for Vector Resistance	IFS	Isoflavone Synthase
1D	One Dimension	IMM	Integrated Mosquito Management
2D	Two Dimensions	IUCN	International Union for Conservation of Nature
<i>br s</i>	<i>Broad singlet</i>	<i>J</i>	Coupling constant
CC	Column Chromatography	LC <sub>50</sub>	Concentration causing 50% Lethality
CHI	Chalcone Isomerase	<i>m</i>	<i>multiplet</i>
CHS	Chalcone Synthase	<i>m/z</i>	Mass to charge ratio
CoA	Co-enzyme A	MeOH	Methanol
COSY	Correlation Spectroscopy	MHz	Mega Hertz
CD	Circular Dichroism	NADH	Nicotinamide Adenine Dinucleotide Dehydrogenase
<i>d</i>	<i>doublet</i>	NaTHNac	National Travel Health Network and Care
DCM	Dichloromethane	NIAID	National Institute of Allergy and Infectious Diseases
DCPP	Disease Control Priorities Project	NMR	Nuclear Magnetic Resonance
<i>dd</i>	<i>double doublet</i>	NOESY	Nuclear Overhauser and Exchange Spectroscopy
DHF	Dengue Hemorrhagic Fever	NICD-NHLS	National Institute for Communicable Diseases -Division of the National Health Laboratory Service
DMSO	Dimethylsulphoxide	SPRTTD	Special Programme for Research and Training in Tropical Diseases
DSS	Dengue Shock Syndrome	<i>t</i>	<i>triplet</i>
ED <sub>50</sub>	Effective Dose at 50%	SD	Standard Deviation
EI-MS	Electron Impact Ionization Mass Spectrometry	TDNP	Tanzania Daima News Paper
ESI	Electrospray Ionization	UNICEF	United Nation Children Fund
EtOAc	Ethyl acetate	UV	Ultra-Violet
HMBC	Heteronuclear Multiple Bond Correlation	ORD	Optical Rotatory Dispersion
HMQC	Heteronuclear Multiple Quantum Coherence		
HSQC	Heteronuclear Single Quantum Correlation		
Hz	Hertz		
IC <sub>50</sub>	Inhibitory Concentration at 50%		

## TABLE OF CONTENTS

DECLARATION .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENTS .....	iv
LIST OF ABBREVIATIONS AND ACRONYMS .....	v
LIST OF FIGURES .....	xi
LIST OF TABLES .....	xii
LIST OF SCHEMES .....	xiii
LIST OF APPENDICES .....	xiv
ABSTRACT .....	xvi
CHAPTER ONE .....	1
INTRODUCTION .....	1
1.1    Background .....	1
1.2    Problem Statement .....	5
1.3    Objectives .....	6
1.3.1    Overall Objective .....	6
1.3.2    Specific Objectives .....	6
1.4    Justification of the Research .....	6
CHAPTER TWO .....	8
LITERATURE REVIEW .....	8
2.1    Mosquito-Borne Diseases .....	8