

Pharmacognostical and  
Biological Investigation of  
*Manilkara zapota* (Fam.  
Sapotaceae) cultivated in  
Egypt

*A Thesis Submitted*

*By*

Nesrin Mohamed Ahmed Fayek  
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(Pharmacognosy)

*Under The Supervision of*

Prof. Dr. Meselhy Ragab Meselhy  
Professor of Pharmacognosy, Faculty of Pharmacy,  
Cairo University

Dr. Mohamed Youssef Moussa  
Associate Professor of Pharmacognosy, Faculty of  
Pharmacy, Cairo University

Dr. Azza Ramy Abdel-Moneim  
Lecturer of Pharmacognosy, Faculty of Pharmacy,  
Cairo University

Pharmacognosy Department  
Faculty of Pharmacy  
Cairo University  
A.R.E.  
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا

عِلْمَ لَنَا إِلَّا هَا

عَلَّمْتَنَا إِنَّكَ أَنْتَ

الْعَلِيمُ الْحَكِيمُ

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## Abbreviations

AlCl <sub>3</sub>	Aluminum Chloride
AlCl <sub>3</sub> /HCl	Aluminum Chloride/Hydrochloric acid
ax	axial
br.s	Broad singlet
C	Carbon
CC	Column Chromatography
CH <sub>2</sub> Cl <sub>2</sub>	Methylene chloride
CHCl <sub>3</sub>	Chloroform
<sup>13</sup> C-NMR	<sup>13</sup> Carbon-Nuclear Magnetic Resonance
cv	Cultivar
cvs	Cultivars
d	Doublet
dd	Double of doublets
DMSO	Dimethyl Sulfoxide
DPPH	2,2-diphenyl-1-picrylhydrazyl
EI/MS	Electron Impact Mass Spectrum
eq	Equatorial
EtOAc	Ethyl acetate
EtOH	Ethanol
FAME	Fatty Acid Methyl Ester
Fig.	Figure
g	Gram
GLC	Gas Liquid Chromatography
H	Hydrogen
h	Hour(s)
HMBC	Heteronuclear Multiple Bond Coherence
<sup>1</sup> H-NMR	<sup>1</sup> Hydrogen(Proton)-Nuclear Magnetic Resonance
Hz	Hertz
IR	Infra red
<i>J</i>	Coupling constant
kg	Kilogram
L.cut	Longitudinal cut
LD <sub>50</sub>	Median lethal dose
m	Multiplet
m/z	Mass/charge ratio
M <sup>+</sup>	Molecular ion peak
MeOH	Methanol