



## TABLE OF CONTENT

COVER PAGE.....	i
LEGALIZATION SHEET .....	ii
PLAGIARISM FREE DECLARATION .....	iii
FOREWORD .....	iv
TABLE OF CONTENT .....	vi
LIST OF TABLES .....	viii
LIST OF FIGURES .....	ix
LIST OF APPENDICES .....	x
ABSTRACT.....	xi
CHAPTER I INTRODUCTION .....	1
1.1 Background .....	1
1.2 Problem statement .....	4
1.3 Research objectives .....	5
1.4 Benefits.....	5
CHAPTER II LITERATURE REVIEW.....	7
2.1 Edible Flower .....	7
2.2 Phenolic Compounds.....	8
2.3 Ultrasound-assisted Extraction.....	11
2.4 Method validation.....	18
2.5 Design of Experiments .....	22
2.6 Response Surface Methodology .....	24
2.7 Research Hypothesis .....	24
CHAPTER III MATERIALS AND METHOD .....	25
3.1 Time and Place of Research .....	25
3.2 Research Material and Instrument.....	25
3.2.1 Plants Material (samples).....	25
3.2.2 Chemicals and Reagent.....	27
3.2.3 Instrument .....	27
3.3 Research Implementation .....	28
3.3.1 Sample Preparation .....	28
3.3.2 Ultrasound-assisted extraction (UAE) .....	28



3.3.3 Solvent screening .....	30
3.3.4 Determination of individual phenolic compounds by UPLC-PDA ..	31
3.3.5 Experimental Design and UAE Optimization.....	32
3.3.5 Kinetic study .....	33
3.3.7 Real sample application .....	35
3.4 Data Analysis .....	35
<b>CHAPTER IV RESULT AND DISCUSSION .....</b>	<b>36</b>
4.1 Determination of Individual Phenolic Compound .....	36
4.2 Solvent Screening.....	38
4.3 Optimization of UAE Method.....	40
4.4 Study of the Optimal Extraction Time .....	47
4.5 Precision and accuracy .....	49
4.6 Real sample application .....	51
<b>CHAPTER V CONCLUSION AND SUGGESTIONS.....</b>	<b>56</b>
5. 1 Conclusions .....	56
5.2 Suggestions.....	57
<b>REFERENCES.....</b>	<b>58</b>
<b>APPENDICES .....</b>	<b>64</b>