

## LIST OF CONTENTS

<b>AUTHENTICITY STATEMENT</b> .....	i
<b>APPROVAL SHEET</b> .....	i
<b>VALIDITY SHEET</b> .....	iii
<b>ABSTRACT</b> .....	v
<b>ACKNOWLEDGEMENT</b> .....	vi
<b>LIST OF CONTENTS</b> .....	ix
<b>LIST OF TABLES</b> .....	xi
<b>LIST OF FIGURES</b> .....	xii
<b>CHAPTER I INTRODUCTION</b> .....	1
1.1 Research Background.....	1
1.2 Research Problems .....	3
1.3 Research Objectives .....	3
1.4 Research Benefits .....	4
1.5 Authenticity Research.....	4
<b>CHAPTER II LITERATURE REVIEW</b> .....	7
2.1 Theoretical Basis .....	7
1. Areca Nut Plant .....	7
2. Extraction .....	11
3. Facial Wash Gel Preparation .....	13
4. Material Monograph.....	14
5. Antibacterial Test.....	18
6. <i>Staphylococcus aureus</i> Bacteria .....	21
2.2 Halal Product Analysis .....	23
2.3 Theoretical Framework.....	26
2.5 Hypothesis .....	27
<b>CHAPTER III RESEARCH METHODS</b> .....	28
3.1 Types and Design of Research.....	28
3.2 Time and Place of Research .....	29
3.3 Research Variables.....	29
3.4 Variable Operational Definition.....	30

3.5 Research Materials .....	32
3.6 Research Procedures.....	32
1. Plant Determination.....	32
2. Areca Nut Extraction.....	32
3. Phytochemical Screening .....	33
4. Making Facial Wash Gel Preparations .....	34
5. Evaluation of Facial Wash Gel Preparation.....	34
6. Antibacterial Test.....	36
3.7 Data Analysis.....	38
3.8 Research Flow Chart .....	39
3.9 Research Schedule.....	40
<b>CHAPTER IV RESULTS AND DISCUSSION .....</b>	<b>41</b>
4.1 Areca Nut Extraction Results and Yield Calculation .....	41
4.2 Phytochemical Screening Areca Nut Extract.....	43
4.3 Facial Wash Gel Preparation from Methanol Extract of Areca Nut Seed ..	49
4.4 Evaluation of Facial Wash Gel Preparation.....	51
1. Organoleptic Test.....	51
2. Homogeneity Test.....	53
3. pH Test.....	55
4. Viscosity Test.....	56
5. Spread Power Test .....	57
6. Foam Power Stability Test.....	58
4.5 Results Antibacterial Against <i>Staphylococcus aureus</i> Bacteria.....	60
4.6 Halal Product Analysis .....	66
<b>CHAPTER V CONCLUSIONS AND SUGGESTIONS .....</b>	<b>74</b>
5.1 Conclusion.....	74
5.2 Suggestion .....	74
<b>BIBLIOGRAPHY .....</b>	<b>75</b>

## LIST OF TABLES

<b>Table 1.</b> Originality of Research.....	4
<b>Table 2.</b> Gel Preparation Formulation Facial Wash.....	28
<b>Table 3.</b> Operational Definition.....	30
<b>Table 4.</b> Research Schedule.....	40
<b>Table 5.</b> Maceration Results of Areca Nut Extract ( <i>Areca catechu L.</i> ).....	41
<b>Table 6.</b> Phytochemical Screening Results of Areca Nut Extract( <i>Areca catechu L.</i> ) .....	43
<b>Table 7.</b> Organoleptic Test Results.....	51
<b>Table 8.</b> Homogeneity Test Results.....	53
<b>Table 9.</b> pH Test Results.....	55
<b>Table 10.</b> Viscosity Test Results.....	56
<b>Table 11.</b> Spread Power Test Results.....	58
<b>Table 12.</b> Foam Power Test Results.....	59
<b>Table 13.</b> Antibacterial Inhibitory Power Test Results.....	62
<b>Table 14.</b> Halal Product Analysis.....	66



## LIST OF FIGURES

<b>Picture 1.</b> Areca nut plant.....	8
<b>Picture 2.</b> Structure of alkaloid compounds .....	9
<b>Picture 3.</b> Flavonoid compound structure .....	10
<b>Picture 4.</b> Structure of tannin compounds.....	10
<b>Picture 5.</b> Saponin compound structure .....	11
<b>Picture 6.</b> Carbopol Structure.....	15
<b>Picture 7.</b> TEA Structure .....	15
<b>Picture 8.</b> SLES Structure .....	16
<b>Picture 9.</b> Propylene Glycol Structure.....	17
<b>Picture 10.</b> BHT Structure.....	17
<b>Picture 11.</b> <i>Staphylococcus aureus</i> .....	23
<b>Picture 12.</b> Theoretical Framework.....	26
<b>Picture 13.</b> Conceptual Framework.....	27
<b>Picture 14.</b> Layout of Wells in Petri Dishes .....	29
<b>Picture 15.</b> Inhibition Zone Diameter Measurement.....	38
<b>Picture 16.</b> Research Flow Chart.....	39
<b>Picture 17.</b> Flavonoid reactions with Mg metal and HCl.....	45
<b>Picture 18.</b> Mayer test reaction .....	46
<b>Picture 19.</b> Wagner test reaction.....	47
<b>Picture 20.</b> Dragendorff test reaction .....	47
<b>Picture 21.</b> Saponin hydrolysis reaction.....	48
<b>Picture 22.</b> Tannin test reaction with FeCl.....	49