

## TABLE OF CONTENTS

|  |      |
|--|------|
| VALIDITY SHEET .....                             | ii   |
| ACKNOWLEDGEMENT .....                            | iii  |
| ABSTRACT.....                                    | v    |
| ABSTRAK.....                                     | vi   |
| AUTHENTICITY STATEMENT.....                      | vii  |
| TABLE OF CONTENTS.....                           | viii |
| LIST OF TABLE .....                              | x    |
| LIST OF FIGURE.....                              | xi   |
| CHAPTER I INTRODUCTION.....                      | 1    |
| 1.1    Research Background .....                 | 1    |
| 1.2    Research Problems.....                    | 3    |
| 1.3    Research Objectives.....                  | 4    |
| 1.4    Research Benefits.....                    | 4    |
| 1.    Theoretical Benefits .....                 | 4    |
| 2.    Practical Benefits .....                   | 4    |
| 1.5    Authenticity of Research.....             | 4    |
| CHAPTER 2 LITERATURE REVIEW .....                | 7    |
| 2.1    Theoretical Basis.....                    | 7    |
| 2.1.1    Citronella Plant .....                  | 7    |
| 2.1.2    Dysmenorrhea .....                      | 9    |
| 2.1.3    Aromatherapy Liniment Preparations..... | 15   |
| 2.2    Halal Product Analysis.....               | 18   |
| 2.3    Theoretical Framework.....                | 21   |
| 2.4    Conceptual Framework.....                 | 21   |
| 2.1    Hypothesis.....                           | 21   |
| CHAPTER 3 RESEARCH METHOD .....                  | 23   |
| 3.1    Research Design.....                      | 23   |
| 3.2    Research Period and Location.....         | 23   |

|   |   |    |
|---|---|----|
| 3.3                                       | Population and Sample.....  | 24 |
| 3.4                                       | Research Variables.....   | 25 |
| 3.5                                       | Variable Operational Definition.....  | 25 |
| 3.6                                       | Research Materials.....   | 26 |
| 3.7                                       | <i>Ethical Clearance</i> .....  | 27 |
| 3.8                                       | Eksperimental Procedure .....   | 27 |
| 3.9                                       | Data Analysis.....  | 31 |
| 3.10                                      | Halal Product Analysis.....   | 31 |
| 3.11                                      | Research Flowchart.....   | 31 |
| 3.12                                      | Research Schedule .....   | 32 |
| CHAPTER 4 RESULT AND DISCUSSION .....     |   | 33 |
| 4.1                                       | Formulation of Citronella Essential Oil Aromatherapy Liniment Preparations                      | 33 |
| 4.2                                       | Quality Evaluation of Citronella Essential Oil Aromatherapy <i>Liniment</i> Preparations.....   | 35 |
| 4.3                                       | Effect of Citronella Essential Oil Aromatherapy Liniment Therapy on Dysmenorrhea Decrease ..... | 44 |
| 4.4                                       | Halal Analysis of Citronella Essential Oil Aromatherapy Liniment Products..                     | 52 |
| CHAPTER 5 CONCLUSIONS AND SUGGESTION..... |   | 56 |
| 5.1                                       | Conclusions.....  | 56 |
| 5.2                                       | Suggestion.....   | 56 |
| REFERENCES .....                          |   | 57 |



## LIST OF TABLE

|   |    |
|---|----|
| Table 1 Authenticity of Research.....   | 4  |
| Table 2 Formulation of Aromatherapy Liniment Aromatherapy Lemongrass Essential Oil (Cymbopogon nardus) in 50 ml ..... | 23 |
| Table 3 Variable Operational Definition .....   | 25 |
| Table 4 Research Schedule .....   | 32 |
| Table 5 Data on Visual Test Results and Stability Test.....   | 35 |
| Table 6 Homogeneity Test Results of Liniment Preparations and Stability Test Data.....                                | 39 |
| Table 7 Irritation Test Result Data.....  | 41 |
| Table 8 Data on pH Stability Test Results of Liniment Preparations and their Stability Tests .....                    | 43 |
| Table 9 Data on the Average Duration of Healing (days) of Dysmenorrhea in Respondents .....                           | 45 |
| Table 10 Halal Analysis Results of Citronella Essential Oil Aromatherapy Liniment Products .....                      | 53 |



## LIST OF FIGURE

|  |    |
|--|----|
| Figure 1 Citronella plant ( <i>Cymbopogon nardus</i> ) ..... | 8  |
| Figure 2 Menthol structure.....                              | 17 |
| Figure 3 Champor structure .....                             | 18 |
| Figure 4 Numeric Rating Scale.....                           | 30 |

