
FACULTY OF ENGINEERING

DEPARTMENT OF TEXTILE AND GINNING ENGINEERING

FINAL YEAR PROJECT PROPOSAL

COSMETIC FUNCTION OF TEXTILES TREATED WITH FRAGRANCE EXTRACTS
FROM SELECTED PLANT SPECIES

AKELLO ANGELLA

BU/UP/2015/608

akangella2017@gmail.com

SUPERVISORS: *DR KAMALHA EDWIN*

MADAM NAMUGA CATHERINE.

A fourth-year project proposal report submitted to the department of Textile and Ginning leading to the award of Bachelors in Textile Engineering

DECLARATION

I AKELLO ANGELLA BU/UP/2015/608 hereby declare that this project proposal research is my original work following my hard work and research, and it has not been presented to any Institution of higher learning for any academic award.

Signature

Date.....

ACKNOWLEDGEMENT

Firstly, I thank the almighty Father for guiding me throughout my entire struggle in compiling this project proposal report.

Secondly, with great joy I acknowledge my dear supervisors Madam Namuga Cathy and Dr. Kamalha Edwin for their continuous guidance, ultimate help and encouragement during all the stages of this proposal.

Lastly, with deep gratitude I thank all my classmates for their encouraging words, advise and team spirit. I love you all.

DEDICATION

My special gratitude to my father Denis Okello, my mother Lily, and my siblings for their continuous love and support. Not forgetting my lovely friends and relatives for always being there for me whenever I needed them.

APPROVAL

This is to certify that the proposal titled COSMETIC FUNCTION OF A COTTON FABRIC TREATED WITH A NATURAL FRAGRANCE has been executed under supervision by

Supervisors

Ms. Namuga Catherine

Date.....

Sign.....

Dr. Kamalha Edwin

Date.....

Sign.....

ABSTRACT

Lemon grass is used for various purposes as spice in tea, beverages and also its used in the cosmetic industry because it's essential oil contains aromatic compounds which is citral.

Eucalyptus is also used as a spice in beverages, food preservatives and been used as an insect repellency, eucalyptus contains an aromatic compound called eucalyptol which is responsible for the fragrance in the eucalyptus leaves. Frangipani flowers which is yellow and white is used in cosmetic industries because of its mild scent due to the presence of a few aromatic compounds. Gas chromatography mass spectrometer equipment was used to analyse the components that are present in each essential oil.

Citric acid was used as a cross linking agent to bind the oils onto the cotton fabrics, citric acid is a natural crosslinking agent and its biodegradable and environmentally friendly. Two washes were performed on the treated fabrics to assess for the durability of the scents on the fabric, and after these two washes, there was a decrease in the intensity of the scents on the fabrics and this could have been due to cross linking agent being used, since essentials are organic compounds, they could have oxidized during the exposure to air.

List of tables.

Table 1: a few examples of plants being extracted in uganda..... 3
Table 2.4.1: ingredients being used in cosmetotextiles..... 10

Table of Contents

DECLARATION	ii
ACKNOWLEDGEMENT	iii
DEDICATION	iv
APPROVAL	v
ABSTRACT.....	vi
CHAPTER ONE: INTRODUCTION	1
1.1 BACKGROUND	1
1.2 PROBLEM STATEMENT	5
1.3 OBJECTIVES	5
1.3.1 Main objective	5
1.3.2 Specific objectives	5
1.4 JUSTIFICATION.	6
1.5 SIGNIFICANCE.....	6
1.6 SCOPE.....	6
1.6.1 Geographical scope	6
1.6.2 Conceptual scope	6
1.6.3 Time scope	6
CHAPTER TWO: LITERATURE REVIEW	7
2.1 LEMON GRASS	7
2.2 EUCALYPTUS.....	8
2.3 PLUMERIA FRANGIPANI.....	9
2.4 SOME OF THE PREVIOUS STUDIES THAT HAVE BEEN DONE IN COSMETOTEXTLES.	10
CHAPTER THREE: MATERIALS AND METHODS.....	13
3.1 MATERIALS.....	13
3.2 METHODS	14
3.2.1 EXTRACTION PROCESSES.	14
3.3 CHARACTERISATION OF THE ESSENTIAL OILS.	16
3.3 APPLICATION OF THE EXTRACTED ESSENTIAL OILS ONTO THE COTTON FABRICS.	18
3.4 STUDYING THE PERFORMANCE AND DURABILITY PROPERTIES OF THE COTTON FABRIC FUNCTIONALIZED WITH PLANT EXTRACT.....	18

3.4.1 Assessment of durability by washing of the treated fabrics.....	18
3.4.2 Analysis of retention and intensity of the different aromas.	19
None 1.....	20
CHAPTER FOUR: RESULTS AND DISCUSSIONS	21
4.1 Extraction process	21
4.2 Characterisation of the essential oils.....	21
4.2.1 Characterization of frangipani oil.	21
4.2.2 Characterization of lemon grass oil.....	23
4.2.3 Characterization of eucalyptus oil.....	25
4.3 Assessment of durability of the scents on the fabrics after washing.....	27
4.3.1 Lemon grass treated fabrics.	27
4.3.2 Eucalyptus treated fabrics.	27
4.3.3 Frangipani treated fabrics.....	28
CHAPTER FIVE: CHALLENGES, CONCLUSIONS, RECOMMENDATIONS	29
5.1 Challenges.....	29
5.2 Conclusions.....	29
5.3 Recommendations.....	29
APPENDICES	30
REFERENCES.	31