

COMPARISON OF THE COLOUR AND COLOURFASTNESS OF COTTON FABRIC
DYED WITH *ARCHIDENDRON JIRINGGA* USING THE TYPICAL DYEING AND
MORDANTING METHODS

ZURAI DAH BINTI HASHIM

Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons) Textile Technology
in the Faculty of Applied Sciences
Universiti Teknologi MARA

JANUARY 2015

ACKNOWLEDGEMENT

I wish to express my sincere appreciation to all those individuals who have directly or indirectly contributed in completing the proposal. I am highly indebted to PM Dr. Khadijah Omar for her guidance and constant supervision as well as for providing necessary information regarding the Final Year Project (FYP) and also for her support in completing the study.

I would like to express my gratitude towards my parents, family and members for their kind co-operation and encouragement which help me in completion of this study. My thanks and appreciation also go to my Texas Organization of Faculty of Applied Sciences for giving me such attention of time and people who have willingly helped me out with their abilities.

Table of Contents

CHAPTER 1	1
INTRODUCTION	1
1.1 Background of study	1
1.2 Objectives of the study	2
1.3 Scope of study	2
1.4 Significant of study	2
CHAPTER 2	3
LITERATURE REVIEW	3
2.1 Dyes	3
2.1.1 Synthetic Dyes	3
2.1.2 Natural Dyes	4
2.2 Extraction of Natural Dyes	5
2.3 Application of Natural Dyes	6
2.3.1 Pre-mordanting, Meta-mordanting and Post-mordanting	6
2.4 Dyeability of natural dyes on textiles	8
2.5 <i>Archidendron Jiringa</i>	11
2.5.1 Usage of <i>Archidendron Jiringa</i>	11
2.6 Colour fastness properties of natural dyes	12
CHAPTER 3	14
METHODOLGY	14
3.1 Materials	14
3.2 Methods.....	14
3.2.1 Water extraction of <i>Archidendron Jiringa</i>	14
3.2.2 Mordanting and dyeing process	15
a) Pre-mordanting technique.....	15

b) Meta-mordanting technique.....	17
c) Post-mordanting technique	19
3.3 Evaluation of dyed cotton fabric.....	21
3.3.1 Colour/Shade using colour computer	21
3.3.2 Colourfastness to washing	21
3.3.3 Colourfastness to perspiration.....	21
3.3.4 Colourfastness to crocking.....	22
3.3.5 Colourfastness to light	22
CHAPTER 4	23
RESULTS AND DISCUSSION	23
4.1 Shade/colour of dyed fabric	23
4.2 Colourfastness to washing	24
4.3 Colourfastness to perspiration.....	25
4.4 Colourfastness to light	27
4.5 Colourfastness to crocking.....	28
CHAPTER 5	31
CONCLUSION AND RECOMMENDATIONS	31
5.1 Conclusion	31
5.2 Recommendations.....	32
REFERENCES	33

ABSTRACT

The study investigated the effects of different methods of application of mordanting and dyeing of cotton fabric with dyes from the *Archidendron Jiringga*. The methods of application of mordants used includes pre mordanting, meta mordanting and post mordanting. The effects on cotton were analyzed based on the shade and the colourfastness to washing, light, perspiration and crocking. Aqueous extraction method was used to extract the dye. The study showed that for all the mordanting methods, the colour produced on the cotton fabric is uneven brown colour and meta mordanting method gave the best result in term of shade compared to the other methods. In term of the colourfastness, post mordanting gave the best result for wash fastness and pre mordanting gave the best result of crocking fastness. For perspiration colourfastness, pre mordanting and post mordanting gave the best colourfastness and for light fastness, post mordanting method gave the best colourfastness.