
FACULTY OF ENGINEERING

**DEPARTMENT OF POLYMER, TEXTILE AND
INDUSTRIAL ENGINEERING**

FINAL YEAR PROJECT REPORT

**NATURAL DYE EXTRACTION FROM MIRABILIS JALAPA
FLOWERS AND ITS APPLICATION ON COTTON/POLYESTER
FABRICS**

By

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ABSTRACT

Textile materials used to be coloured for value addition, look and desire of the customers. Anciently, this purpose of colouring textile was initiated using colours of natural source, until synthetic colours/dyes were invented and commercialized. The worldwide demand of natural dyes is of great interest due to the increased public awareness about the atmospheric and environmental pollution caused by the commercially available synthetic dyes. There has also been an increase in the use of the textile materials containing polyester / cotton dyed with synthetic dyes which are regarded as toxic and non-biodegradable. According to the world, health and safety standards need to be observed and maintained to protect the environment and humans.

Mirabilis Jalapa dye extract has been applied on only cotton and wool fabric samples therefore this study focused on its application on polyester and cotton fabrics the commonly used materials in the textile industry using ferrous sulphate and copper sulphate as mordant in varying quantities.

In this study; GSM, thickness of the fabrics were tested, the dye extract was analyzed using the PH meter, FTIR and the UV- spectrophotometer, fastness properties and the dye strength that is color strength and tensile strength were also tested. The dyed fabric samples showed good wash and rub fastness, increasing tensile strength properties with increasing mordant quantities. Therefore, the Mirabilis Jalapa flowers offer a potential source for natural dye to be used in the textile dyeing industry.

DECLARATION

I **TUKASHABA ANNITAH** Reg. NO **BU/UG/2017/94** declare that this project research work is my original work except where I have cited.

STUDENT'S SIGNATURE.....

DATE.....

DEDICATION

I dedicate this report to all my lecturers, PTI Pioneers, family members, relatives, friends and my parents Mr. Nkirihakye Silvestre and Mrs. Bamutaririne Scovia for the love, care and tireless efforts rendered to me

May the Almighty God bless them abundantly.

ACKNOWLEDGEMENT

With great pleasure, I want to appreciate Madam **TUSIMIRE YVONNE** and Mr. **MUSINGUZI ALEX** for their great and tireless efforts bestowed unto me to ensure the quality of my research work. Not forgetting the Busitema University, the department of Polymer, Textile and Industrial Engineering, all lecturers and my fellow students for their support and collaboration throughout this academic journey.

May God bless them abundantly.

APPROVAL

I hereby submit in this research project report with permission from the following supervisors.

MADAM TUSIIMIRE YVONNE

Signature.....

Date.....

MR. MUSINGUZI ALEX

Signature.....

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