



Comparative Study on Printing of Rose and Linen Fabric Using Marigold and Banana Flower as Flower Impression Print

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Abstract: This study was planned to evaluate the comparison of geometrical properties of Rose fabric & linen fabric and a comparison of the performance properties of Rose and Linen Fabric printed with banana and marigold flowers by pounding process. Major non-removable stains in flowers are banana and marigold so it is used for permanent print on both fabrics. Vinegar and salt have been used as a mordant.

The result of the study both fabrics have a good result on color fastness 4\5 mordanted with vinegar than salt but linen was found better than the Rose fabric in the geometrical property.

Index Terms – Flower Impression Print, Rose Fabric, Linen Fabric, Vinegar, Banana and Marigold Flower.

I. INTRODUCTION

The art form of flower impression print, commonly referred to as floral impressionism or pounding, uses the natural shapes and patterns of flowers as inspiration for its prints. In order to create a realistic representation of the flowers, the method includes pressing fresh flowers into cloth, sometimes with the use of a printing press or by hand hammering. To bring out the nuances and colors of the original flowers on the fabric. It is an eco-friendly way of printing a floral print on the fabric. If it is on processes of large production, which make a big revolution in the textile industry to producing a print on fabric in an eco-friendly manner.

The serious problem and complaints about the textile industry is the largest polluting industry. Most pollutants are affecting water bodies and land by mixing synthetic dye waste and synthetic fabric waste to become landfills. To avoid the situation further, we need to adapt to the user and manufacture the products with sustainability to maintain the environment and not pollute more and more.

Most of the flowers are non-toxic and even taken as food and medicine so they won't harm nature and human health. Thus, the flowers can be used as a dye to make prints on fabrics that are not harmful to the environment. Flower impression printing (pounding) is the better and best way of making prints in a sustainable way. These prints are done on sustainable fabric which can be used and trough on land which will decay and not harm nature.

2. METHODOLOGY

- Research on pounding technic, Rose Fabric, Linen Fabric
- Sourcing of sustainable fabric (Rose and Linen fabric) from its Manufacturing Unit
- Flower Impression Print (Pounding) on Rose and Linen fabric by using Banana and Marigold flower
- Geometrical and performance properties were tested before and after printing on rose and linen fabric using salt and vinegar mordant.

Mordanting processes:

Vinegar and salt is the mordent used on both rose and linen fabric in this process.

- As a general rule take a vessel and add one part of a salt & Vinegar with 16 parts of water
- Mix the solution until the salt & Vinegar dissolves
- Add one part of the fabric into the mordent (vinegar & salt) solution
- Press the fabric into the solution until it is completely wet
- Simmer the fabric for 60 minutes
- After 60 minutes take the fabric from the solution
- Gently squeeze the fabric and remove the moisture content in it
- Dry the fabric in shade

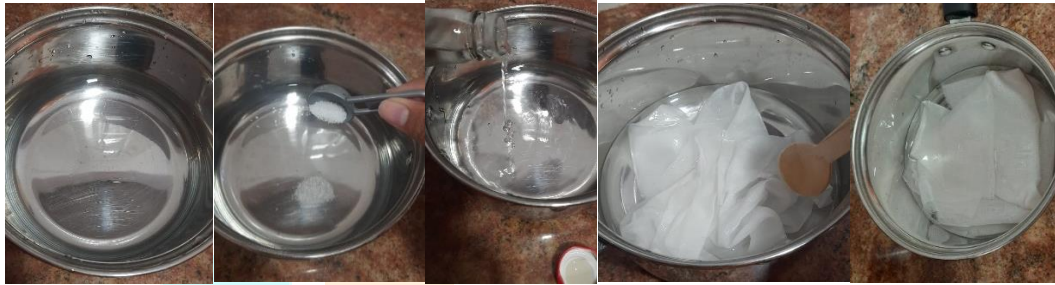


Fig. 1 Mordant (Vinegar) on Rose and Linen fabric

Flower Impression Print:

The mordent treated fabric is dried in the shade and it is ironed. marigold and banana flower the fabric is placed on top of the thick sheet. Then the fabric is separated into two parts. One part of the fabric is printed with a banana flower and another part is a printer by a marigold flower and its petal.



Fig. 2 Pounding of flowers



Fig. 3 Pounding of Flower Print After Printing

Testing:

- EPI and PPI
- GSM
- Thickness
- Tensile Strength
- Tearing Strength
- Collor Fastness to Washing and Rubbing

IV. RESULTS AND DISCUSSION

- **Comparative of Geometric Properties tested on Rose and Linen Fabric**

Table 4.1 Before and After flower impression print on linen fabric

Mordant	Salt		Vinegar	
	Before printing	After printing	Before printing	After printing
Thickness in mm	32.6	15.3	32.6	15.5
GSM	148	150	148	150.5
EPI	48.6	52	48.6	52
PPI	43.3	42	43.3	42
Tearing Strength in g (Warp)	72.5	73.4	72.5	73.4
Tearing Strength in g (Weft)	52.5	53.2	52.5	53.2
Tensile Strength in kg (Warp) kg/cm ²	11.4	12.2	11.4	12.2
Tensile Strength in kg (Warp) kg/cm ²	19.9	20.2	19.9	20.2

Table 4.2 Before and After flower impression print on Rose fabric

Name of the test	Before printing with mordant(salt)	After printing with Mordant (Salt)	Before printing with Mordant (Vinegar)	After printing with Mordant (Vinegar)
Thickness in mm	13.3	15.3	13.3	15.5
GSM	77.3	79.5	77.3	79
EPI	51.6	52	51.6	52
PPI	42.6	42	42.6	42
Tearing Strength in g (Warp)	35	36	35	36
Tearing Strength in g (Weft)	40	41.2	40	41.2
Tensile Strength in kg (Warp) kg/cm ²	9.5	10.4	9.5	10.4
Tensile Strength in kg (Warp) kg/cm ²	9.2	9.8	9.2	9.8

- Comparative of Color fastness test on printed Rose and Linen Fabric**

Table 4.3 Color Fastness to Rubbing on printed linen

linen fabric print - mordent with salt		
Color Fastness to Rubbing		
stain on cotton	Dry	Wet
Banana	4\5	4
Marigold	4	2\3

Table 4.4 Color Fastness to Rubbing on printed linen

linen fabric print - mordent with Vinegar		
Color Fastness to Rubbing		
stain on cotton	Dry	Wet
Banana	5	4\5
Marigold	5	3\4

Table 4.5 Color Fastness to Rubbing on printed rose fabric

Rose fabric print - mordent with salt		
Color Fastness to Rubbing		
stain on cotton	Dry	Wet
Banana	5	4
Marigold	4\5	4

Table 4.6 Color Fastness to Rubbing on printed rose fabric

Rose fabric print - mordent with Vinegar		
Color Fastness to Rubbing		
Stain on cotton	Dry	Wet
Banana	5	4\5
Marigold	4\5	4

Table 4.7 Color Fastness to washing on printed rose and linen fabric

Flower impression print on mordent (Vinegar)		
Color Fastness to Rubbing		
Fabric Type	Rose	Linen
Staining on cotton (Banana)	4	4\5
Staining on cotton (Marigold)	4\5	4\5

The result of the study both fabrics have a good result on color fastness mordanted with vinegar than salt but linen was found better than the Rose fabric in the geometrical property.

II. ACKNOWLEDGMENT

I would like to record my sincere gratitude and thanks to my academic mentor, Mrs. Nagaveni K. Asst. Professor, Dept. of Fashion Design, for the guidance and support throughout my research

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