



# Innovative Dyeing On Hemp Fabric Using Clay Mud

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*Abstract:* The main purpose of this project is to develop a mud dyed garment for summer which will give a cool feel and protect the skin. This study's objective is to dye Hemp Fabric using mud and utilize natural ingredients like Soya milk and Amla powder as mordants. The process is completely sustainable and make an eco-friendly product to the market. The mud used here is kind of rare type of mud available in some part of Kerala. The product developed is aesthetically functional as well as interesting. And this also gives consumers knowledge about a healthy dyeing process.

The materials required in the project where easily available. The Clay Mud, Soya milk, and Amla powder. The first process was to pre- wash the fabric used in the process. Then make the dye solution by adding soya milk and amla powder with the clay mud. To get the best result leave the dyebath as long as possible, best is overnight. Once it is dyed the fabric is washed and kept for drying and then stitched It into a beautiful summer wear dress for women.

A person prefers comfort while choosing a garment, especially during summer they try to wear which gives them good feel. And this mud dyed garment can give this feel and can attract a customer. The light weight outfit and the yellowish colour obtained gives a minimal look to the garment, and creates a masterpiece product from the natural ingredients.

**Keywords -Mud dyeing, Sustainable, Fabric, Mordant, Summer Wear.**

## I. INTRODUCTION

Mud dyeing is a natural process of dyeing fabrics using clay mud. It is an age-old traditional method followed by people. In different places dyeing is done in different methods. In Sumba in 90's during World War 2 people used mud dyed garments, where as In India Angami Nagas community from Nagaland used to dye their garments by boiling them in Tsopru plant water and then burry the fabric in mud for couple of days. Each place and people had different interesting methods of dyeing where they use different mordants. Even the mordants used in the process is natural such as barks, fruits, plants and so on. Africa is the best-known place for mud dyeing. A mud dyed cloth is known as Bogolanfini in Africa. Clay mud is best for dyeing. Mud dyeing is a fascinating process. The mud dyed fabric gives a beautiful brownish colour and it is long lasting. The colour of the mud changes according to the location and climatic changes. As the mud colour changes the colour we get while dyeing will be different as it can vary from black-grey to red -brown

shade of colours. No toxic chemicals and heat are involved in the dyeing process and this mud dyeing technique brings back the ancient method of natural dyeing and colours used.



FIG. 1

The clay used for dyeing is a kind of clay seen in Kerala, Kasaragod district where people use it in the making of pottery. A Village called Erikulam well known in making clay pot. It is the only village where clay pots are made. All villagers are involved in the making of the pots. To make this clay mud they mix three types of soil which is found in that specific area. The mud named chedi mannu, Kuppa chora, and chora. These are found in the paddy fields in that area. After the cultivation they dig deeply and then once we get these three muds types, they mix it either through machine or if it is a rainy season, because of the water flow the mud gets mixed. No fertilizers or pesticides are used in this mud. This mud type is found in three places in Kerala.



FIG 2

The irons present in the mud helps in fixation of colour. Here for the dyeing process the mordants used are soya milk and amla powder. Soya milk is an effective mordant for fibres, it helps the fabric in fixation of colours. The soya milk is made by soaking the seeds overnight and then blending it and extracting the milk. It is a non-toxic mordant used here. As soya milk amla powder (Gooseberry) is also a reactive mordant used for dyeing. Amla powder is used to dye any kind of natural fabric. It is a very strong mordant, where the colour will not bleed. The dried gooseberry is converted into powder and used in the dye bath. Because of the high tannin content in the gooseberry, it is used as a mordant. Both the mordants are natural and will not cause any harm to the environment and humans. It is good for skin too. The mud dyeing process with these two mordants make a completely eco-friendly or natural process of dyeing.



FIG 3

Mud dyeing is a process of dyeing fabric using clay mud. It contains natural minerals which make it eco-friendly and sustainable. It is fascinating process. Only water is needed in this process, no heat and chemical substances are included. The mud-dye is a long-lasting color and it will not fade in the sun. The mud-dyed fabric gives a cool feel while wearing it.

### *Silt Soil*

Silt soil is a smooth and fine quality soil. It has the capacity to hold water better than sand soil. Silt soil have smaller particles than other soil type. It is made of rock and mineral particles. Silt soil is mainly used for agricultural purposes and it is more fertile. Silt soil is well drained due to the medium sized particles and can also hold moisture well. It is cold in nature and has silt texture. The soil is used in growing fruits & vegetables, climbers, shrubs, and other plants. When the mud is mixed with water it's texture

### *Clay Soil*

Clay soil is a type of soil comprised of fine mineral particles. It is soft, and loose earthy material. Clay soil is used in the making of the flower pots, bricks, gardening, constructions and so on. Clay soil is very heavy soil type, which has high nutrients. It remains wet and cold in winter season and dry in summer. It has the smallest particles compared to other soil particles. Clay soil is very sticky. It has no airspace because the particles are lightly packed and when it gets dry it becomes heavy. When it's wet we can mould it into any shape as we want. Clay soil is best for growing fruit trees, and ornamental plants. The ability of the soil to drain water is poor. One of the greatest properties of the clay soil is, it is erosion resistant.



FIG 4 CLAY SOIL

### **Hemp Fabric**

Hemp fabric is an organic fabric made from the hemp plant using organic techniques & methods. Hemp fabric is three times stronger than cotton. Also has good abrasion resistance. It is very durable. It easily absorbs dyes and get soften each wash with fibre being degraded. It is naturally resistant to mould and mildew. Hemp fabric wrinkles easily, at the same time it has poor drapability. It is also known as industrial hemp. Hemp fibers are from the stems of Cannabis Sativa. Hemp fabric have high tensile strength. Hemp fabric is an eco-friendly fabric. It is a best option for summer. Hemp is also used in the making of house hold textiles. No chemicals used in the growing of hemp plant. Hemp fabric can be used to make jeans, dresses, skirts, and so on. Hemp is best for blending.

Hemp fabric have lot of benefits which will not cause any harm. Hemp plant requires little amount of water than other plants and this plant also give back lot of nutrients to the soil. Hemp fabric can easily recycle and it is considered as the future of slow fashion hemp fabric creates an eco-friendly product where it proves that it is completely sustainable.





FIG 5 HEMP FABRIC

## METHOD OF DYEING

FIG 6 HEMP  
SOLUTION

FIG 7 CLAY MUD



FIG 8 DYE



FIG 9 AMLA POWDER



FIG 10 ADDING FABRIC



FIG 11 DYE BATH



FIG 12 MUD DYED FABRIC

STEP1: Pre wash the fabric in cold water.

STEP2 : Mix the clay mud in Soya Milk and water, make it into liquid form. The ratio of milk and water should be 1: 1.

STEP3: Add ¼ cup of Amla Powder into the Solution.

STEP4: Dip the Fabric in the Solution.

STEP 5: Soak the fabric in the dye bath overnight for better results.

STEP6: Take out the fabric, wash it and keep it for dyeing, a pure yellow colour will be obtained.

## CONCLUSION

Sustainable clothing is something we like to have in our daily life, which protect us from lot of health issues and at the same time save nature from the toxic chemicals. The mud dyeing is an old technique of dyeing which was used in early 80s and 90s. The clay mud gives a cool feel during summer and the clay mud dye can make our body cool through this dyeing process. The sustainable dyeing process and the natural colours obtained through the dyeing is attracting customers and giving them a promise of healthy world. The hemp fabric highly sustainable and best for dyeing, it has the capacity to absorb colour.

As designers it is our responsibility to make changes in the fashion world, by introducing eco-friendly or sustainable products into the market and give knowledge to the customers about it and introduce the different ways of dyeing and the ingredients.

Dyeing fabric using Mud proves that anything in the nature can be used in fashion and can be creative in a broad way. This method dyeing creates a uniqueness and thus creates a natural and sustainable product for the consumers. It is best suitable for the climatic condition in our country.

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