

# ANTIMICROBIAL FINISHING ON SOCKS - ENHANCED FRESHNESS AND HYGIENE

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## Abstract

We done with our Project Without Chemical Use focused on eco-friendly natural materials. The best in eco-friendly fabrics. This project was concerned to develop an eco-friendly natural herbal finishing to organic cotton and poly-cotton socks from the extraction of MEXICAN MINT leaf by using antibacterial finishing. We are using two types of binders for this process one is PONEGRANATE PEEL and another one is ALOVERA GEL.

**Keywords:** MEXICAN MINT: PONEGRANATE PEEL:ALOVERA GEL

## Introduction

In ancient time there is a bit of complex history for socks. The purpose and design of the socks were varies from period to period depends on their end use. In ancient time socks were invented just for keeping people warm. The following are the two main purpose for invention of socks

1. Protection
2. Warmth

Now-a-day's people were facing problems while wearing socks for too long period because finishing given for the socks were chemical finishing. So that we used natural antibacterial finishing for our product. So, that their won't be any issues while wearing the socks for longer period. The main aim is to use only natural materials for our product.

Organic cotton fabrics are generally understood as cotton that is grown from plants without chemical fertilizers or pesticides which are not genetically modified, though organic cotton has less environmental impact than conventional cotton and it costs more for its production.

## COMMON PROPERTIES OF MEXICAN MINT, POMEGRANATE PEEL AND ALOVERA GEL

The three common properties are listed below

- Defend against colds
- Improves skin
- Prevent wrinkles

## MATERIALS AND METHODOLOGY

Organic cotton was purchased in fabric stage from the fabric dealer, Erode, Tamil Nadu. Since the end use is going to be used for socks.

### Mexican Mint Powder:

Mexican mint extracts applied on our fabric has medicinal properties in treating various skin diseases and wound

### Pomegranate Peel:

Peel has goods with antimicrobial properties are desirable in many applications for minimizing the transmission of microbes, infection, and diseases. These properties can also improve the lifetime of textiles

## ALOE VERA:

Aloe vera has goods with antimicrobial properties are desirable in many application for minimizing the transmission of microbes, infection, and diseases. These properties can also improve the lifetime of textiles.

## PAD DRY CURE METHOD:

The most common application method for easy-care and durable Press finishes is a pad dry cure method .

## EXTRACTION OF MEXICAN METHOD:

We need collect all the materials required for the process because it is an continuous process. First we need to collect 5gm of Mexican mint powder and 50ml ethanol for the extraction process.

## EXTRACTION OF POMEGRANATE PEEL:

First need to called the peel of the pomegranate fruit and then need to take a hot water in a glass then to add the pomegranate peel in the glass .leave it for 2hrs and the collect the water which is used as binder.

## EXTRACTION OF ALOE VERA:

We need to collect aloe vera and then need to take gel and mix well like liquid gel form is used as another binder.

## METHODOLOGY:

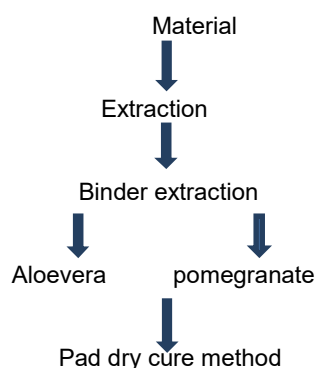




Figure 1



Figure 5



Figure 2



Figure 6



Figure 3



Figure 7

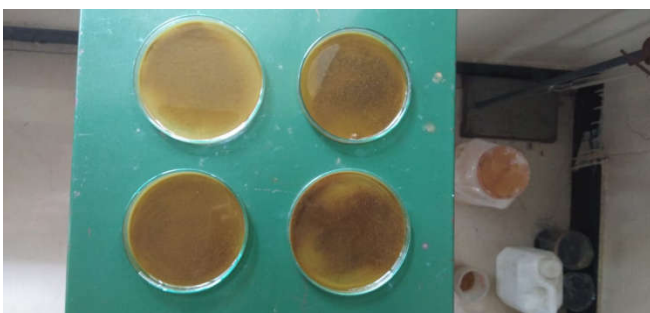


Figure 4

- Figure 1: Mexican mint
- Figure 2: Pomegranate peel
- Figure 3: Alovera gel
- Figure 4: Mexican mint powder extraction
- Figure 5: Extraction dry powder
- Figure 6: Pad-dry cure method
- Figure 7: Antimicrobial finished socks

Absorbency test cotton has excellent absorbency, comparatively other materials. In Perspiration fastness cotton has the excellent ratting.

As per the antimicrobial test report Bamboo has the excellent ratting comparatively other materials.

**ABSORBENCY & PERSPIRATION TEST:**

TESTS	COTTON	WOOL	BAMBOO	POLYCOTTON
Absorbency Test	5sec	8sec	7sec	9sec
Perspiration	4-5	4	4	3-4

**ANTI-MICROBIAL TEST:**

SAMPLE	SPECIES	CONTACT TIME:0hrs	CONTACT TIME:12 hrs	REDUCTION
Cotton	Staphylococcus epidermidis	1.9E+04	<11.11	≥76.33%
wool	Staphylococcus epidermidis	1.9E+04	<11.11	≥72.57%
Bamboo	Staphylococcus epidermidis	1.9E+04	<11.11	≥80.48%
Polycotton	Staphylococcus epidermidis	1.9E+04	<11.11	≥71.86%

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