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FORMULATIOM AND EVALUATION OF HERBAL PAPER SOAP

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ABSTRACT

Bacterial skin infections are indeed one of the most common infections in people, requiring significant attention for avoid this infection and to maintain healthy skin. Some herbal plant extracts have antiseptics and antimicrobial activity. This innovative paper soap is a sustainable, portable, and gentle cleansing solution. Made from natural fibers and infused with nourishing ingredients, this paper soap dissolves in water to create a rich lather, providing a convenient and eco-friendly alternative to traditional soaps. This study demonstrates the potential of flaxseed paper soap as a sustainable and eco-friendly alternative to traditional soap products. The use of flaxseed oil and natural ingredients in the formulation provides a unique combination of benefits for skin health and environmental sustainability.

KEYWORD: Flaxseed oil, Eco-friendly, Portable, Herbal paper soap.

INTRODUCTION

Paper soap

Paper soap refers to small, dry sheets of soap that are packaged in paper or lightweight material. These sheets are designed to be portable, convenient, and easy to use. They typically dissolve in water, releasing a gentle cleansing agent for washing hands or other purposes. Paper soap is often used in travel, outdoor activities, or in situations where traditional liquid soap is not available.

Herbal paper soap

Polyherbal paper soap is an innovative, eco-friendly soap product that combines herbal extracts with a paper-like packaging.

Types of paper soap

1. Antibacterial Paper Soap
2. Moisturizing Paper Soap
3. Medicated Paper Soap
4. Herbal Paper Soap

MATERIAL AND METHODS

Material used in formulation

Sr. No.	Ingredients (Synonym)	Biological source (Family)	Use
1.	Flaxseed oil (linseed oil) 	It is derived from the the dried, ripe seed of Linumusitatissium Linn. **Family**: Linaceae.	1. Protect it from germs. 2. Remove impurities 3. Stimulate the skin.
2.	Neem oil (Margosa) 	It Consist Of All Aerial Parts Of Plant Known As Azadirachtaindica. **Family:** Meliaceae.	1. Antimicrobial Agent. 2. Anti-inflammatory. 3. Anti-fungal.
3.	Almond oil (Amygdaluscommunis) 	Almond oil is a obtained by expression from the seeds of Prunusamygdalus. **Family:**Rosaceae.	1. Moisturizing agent. 2. Remove dirt from pores.
4.	Sudium Lauryl Sulphate (Sodium dodecyl sulfate)	It is an anionic surfactant naturally derived from coconut and palm kernel oil.	1. SLS which is a detergent and foaming agent. 2. Remove oily

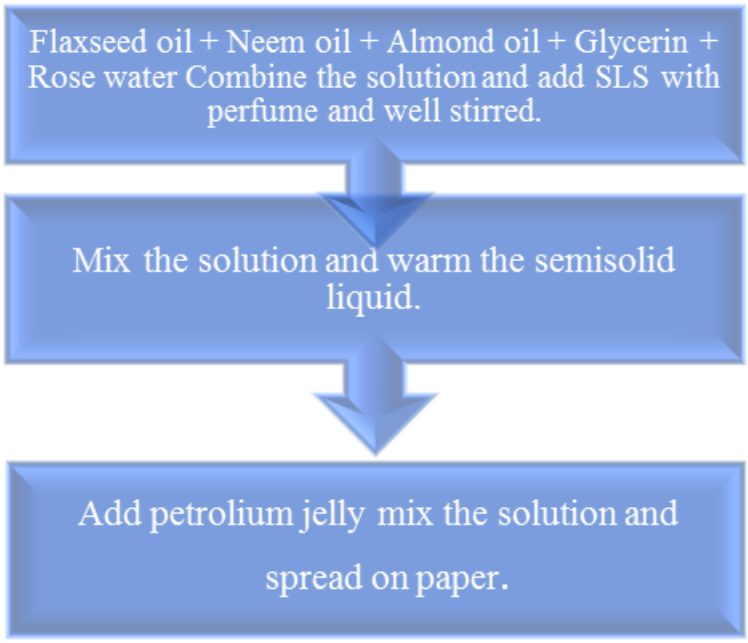
			residue.
5.	White petroleum jelly (White soft paraffin) 	It is derived from petroleum, Which is a hydrocarbon based product.	1. Used as polishes. 2. Enhance the moisturing properties.
6.	Rose water (Rose Attar) 	It is obtained from the petals and sepals of the rose plant, Rosa x damascene. **Family:** Rosaceae.	1. Used as fragrance. 2. Moisturing agent.

Experimental work

Formulation table

Sr. No.	Ingredient	Quantity	Use
1.	Flaxseed oil	4.6ml	Stimulate skin
2.	Neem oil	1.69ml	Antifungal
3.	Almond oil	2 ml	Remove dirt
4.	Sodium lauryl sulphate	2 gm	Surfactant
5.	White petroleum jelly	1.2gm	Moisturizing agent
6.	Rose water	4.7ml	Fragrant
7.	Glycerin	3.6 ml	Emollient

Poly herbal paper soap formulation procedure



Phytochemical screening for flaxseed oil

Test For Steroids and Triterpenoids

1. Liebermann Burchard Test – Mix 2-3 ml of flaxseed oil with 2-3 ml of chloroform in a test tube. Add 1-2 ml of acetic anhydride to the test tube. Carefully add 1-2 ml of concentrated sulfuric acid to the test tube. Observe the color change and formation of a green or blue ring at the junction of the two liquids.

Test for glycosides

1. Keller killiani test – Mix 1 ml of flaxseed oil with 1 ml of Keller-Kiliani reagent. Observe for a blue or green color.

2. Bromine water test – Add 2-3 ml of flaxseed oil to a test tube. Add 2-3 ml of bromine water to the test tube. Observe the color change and formation of a reddish-brown or yellowish-brown color.

Test for saponins

1. Foam test – Mix 10-20 ml of flaxseed oil with 100-150 ml of distilled water in the graduated cylinder. Shake the cylinder vigorously for 10-15 seconds to create foam. Stop shaking and observe the foam formation. Record the height of the foam in millimeters (mm) using the graduated cylinder markings. Allow the foam to settle for 5-10 minutes. Record the height of the remaining foam in mm.

Tests for flavonoids

1. Alkaline reagent test – Add 1ml flaxseed oil with sodium hydroxide observe deep yellow colour appears, then become colourless.
2. Shinod's test - Mix 1 ml of flaxseed oil with Shinoda reagent. Observe yellow or orange color.

Test for tannins

1. Gelatin test – Sample solution was treated with gelatin solution and observe the white precipitate.
2. Lead tetra acetic acid test – Flaxseed oil is treated with lead tetra acetate solution and observe the precipitation.

Test for proteins

1. Biuret test – Flaxseed oil is mixed with copper sulphate and sodium hydroxide Violet or red colour indicate.
2. Ninhydrin test – Flaxseed oil is mixed with Ninhydrin solution observe the purple colour.

Test for carbohydrates

1. Molish test – Flaxseed oil is mixed with alcoholic alpha naphthol and conc. Sulphuric acid, and observe violet precipitation.
2. Benedict's test – Sample solution was treated with benedict's reagent observe the dark red precipitation.
3. Fehling's test - To 2 mL of extract, treated with fehling's solution A & B observe the dark red precipitation.

Test for starch

1. Iodine test – mix iodine solution with potassium iodide observe the blue colour.

Evaluation parameter

Physico- chemical

Sr. No	Parameters
1.	Color
2.	Odour
3.	Texture

PH Level: - Measure the pH level of the paper soap solution.

Foam height:- Measure the foam hight after 25 strokes and standing for 5 – 6min.

Foam retention:- Measure the foam retention after specified time.

Sensitivity:- Conduct a patch test to check for any inflammation or rashesh.

Paper spread ability: - Check if a pinch of the product can be easily spread on paper.

Irritation:- Apply the product to the skin for 10 min to check for any irritation.

RESULTS

Sr. no.	Parameter	Observation
1.	Color	Yellowish
2.	Odour	Plesant
3.	Texture	Smooth

1. Physical appearance in formulation:
2. Determination of pH : 6.15
3. Determination of spreadability: 16.69 gcm/sec
4. Determination of foam hight : High foam hight shows a better foaming properties.
5. Determination of foam retention: 5 min.
6. Skin irritation: No skin irritation
7. Sensitivity: No rashes

CONCLUSION

- Exhibits good foaming properties: The foam hight test showed that herbal paper soap produces a rich and creamy lather.
- Is gentle on the skin: The skin irritation test showed that herbal paper soap is mild and non irritating to the skin.
- Antimicrobial properties: Herbal extract can help to reduce the growth of microorganisms on the skin.
- Natural and eco-friendly: Herbal paper soap is natural and biodegradable alternative to traditional soaps.

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