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## International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

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# Preparation and Evaluation of Herbal Cream Used in the Treatment of Skin Disorders

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**ABSTRACT:** Millions of people worldwide suffer from eczema, a habitual seditious skin condition that calls for safe and effective treatment results. Because of their perceived safety and effectiveness, herbal drugs have drawn attention for their eventuality in controlling eczema. The purpose of this study was to produce and assess a herbal cream that uses natural substances that are known to have anti-inflammatory, hydrating, and skin- soothing goods in order to treat eczema. Aloe vera, Melia dubia excerpt (neem), and turmeric excerpt were among the precisely chosen sauces used in the expression of the herbal cream. Turmeric excerpt serves as an applicable base. Using the proper detergents, the expression process involves removing the bioactive constituents from the sauces and incorporating them into a cream base using normal operating procedures. The herbal cream passed physicochemical characterization in order to estimate its pH, spread- capability, and stability. likewise, the cream displayed noteworthy anti-inflammatory and antioxidant parcels, suggesting its pledge in reducing inflammation and oxidative stress associated with eczema.

**KEYWORDS:** Eczema, Herbal cream, Formulation, Evaluation, Anti-inflammatory, Anti- eczematous.

### Herbal Cream:

Creams are semisolids dosage forms containing one or more drug substances dissolved or dispersed in a suitable o/w or w/o emulsion base. Creams are more fluid compared to other semisolid dosage forms, such as ointment and pastes. Creams have a whitish, creamy appearance, which is a result of scattering of light from their dispersed phases, such as oil globules. This distinguishes them from simple ointments, which are translucent.

Creams based on o/w emulsions are useful as washable bases, whereas w/o emulsions have emollient and cleansing action. As described earlier, an o/w cream with high water content is also known as a vanishing cream. Upon rubbing this cream on the skin, the external/continuous aqueous phase evaporates, leading to an increased concentration of a water-soluble drug in the oily film that adheres to the skin. This increase in the concentration gradient of the drug across the stratum corneum promotes percutaneous absorption.

Cream based on w/o emulsions, such as cold cream, are useful as softening and cleansing agents. The name, cold cream, refers to the cooling sensation with the slow evaporation of the dispersed aqueous phase.

## I. INTRODUCTION

Skin disorder are conditions that affect your skin. These diseases may cause rashes, inflammation, itchiness or other skin changes. Some skin conditions may be genetic, while lifestyle factors may cause others. Skin disease treatment may include medications, creams or ointments, or lifestyle changes.

Like other tissues, skin is afflicted by all types of pathological changes, including hereditary, inflammatory, benign and malignant (neoplastic), endocrine, hormonal, traumatic, and degenerative processes. Emotions affect the health of the skin as well. The reaction of the skin to these diseases and disorders differs from that of other tissues in many ways. For example, extensive inflammation of the skin may affect metabolism within other organs and systems of the body, causing Anemia, circulatory collapse, disorders of body temperature, and disturbance of water and electrolyte balance in the blood.

Skin disorders are tightly associated with the immune system, and the interaction between the skin and the immune system determines the presentation and prognosis of various skin disorders and the clinical heterogeneity between patients. Immunologic skin diseases include a series of skin disorders, while most of these disorders we have no clear understanding. Numerous cytokines, inflammatory mediators, and immunocytes contribute to the occurrence. Epigenetic mechanisms may play a role in linking genetic and environmental factors, adding additional elements to the mechanism of skin diseases.





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### II. MATERIAL AND METHOD

#### 1. Plant material and Chemical used

- Tulsi, Turmeric, Aloe vera, Neem are taken from the local market.
- Beeswax, Liquid Paraffin, Borax, Methyl paraben, distilled water, Rose water was taken from the college laboratory.

#### 2. Method

##### 2.1 Pre-formulation Study

**(a) Test for Tannins:** About 0.5 ml of the plant extract was boiled with 1 mL of distilled water and 2-3 drops of Ferric chloride was added to the Mixture; which was then observed for blue-black coloration indicating the presence of tannins.

**(b) Test for Alkaloids:** The plant extract was dissolved in 100 mL of water, filtered, and cooked in steam with 2 mL of the filtrate and three Drops of 1% HCl. Then, 1 mL of the heated mixture was combined with 6 mL of the Mayer-Wagner reagent. The Appearance of a cream or brown-red colored precipitate indicated the presence of alkaloids.

**(C) Test for Saponins:** About 0.5 millilitres of the extract and 5 mL of distilled water were combined and agitated. Then, the formation of foam Confirmed the presence of saponins.

**(d) Test for Flavonoids and Glycosides:** 200 mg of the plant extract was mixed with 10 mL of ethanol and filtrated. 2 mL of the filtrate, concentrated HCl, and Magnesium ribbon were mixed. The formation of a pink or red color indicates the presence of flavonoids. Adding 1 mL of Distilled water and NaOH to 0.5 mL of crude extract, the formation of a yellowish color indicated the presence of glycosides.

**(e) Test for Phenols:** About 1 mL of the extract was combined with three drops of  $\text{FeCl}_3$ , and 1 mL of  $\text{K}_2\text{Fe}(\text{CN})_6$ . The formation of greenish blue forms confirmed the presence of phenols.

##### 2.2 Formulation of Cream

- Take the liquid paraffin and beeswax in a borosilicate glass breaker and heat at  $75^\circ\text{C}$  and maintain that heating temperature (oil phase). In another beaker, dissolve borax and distilled water by maintaining temperatures  $75^\circ\text{C}$  with a water bath.
- Stir the solution with a glass rod until all solid particles get dissolved (Aqueous phase). Then gently add the heated aqueous phase to the heated oily phase while continuous stirring.
- After mixing both phases, immediately add aloe vera extract, neem extract, and tulsi extract it with continuous mixing using a glass rod until it forms a smooth cream. When the cream is formed, then add rose oil as fragrance, and time was noted. Irritancy, erythema, and edema were checked if any for regular intervals of up to 24 hr.

S.NO.	Ingredients	F1HC	F2HC	F3HC
1.	Neem extract	2.7ml	1.67ml	2ml
2.	Aloe-vera extract	0.9ml	0.28ml	0.67ml
3.	Tulsi extract	2.7ml	1.67ml	2ml
4.	Turmeric extract	2.7ml	1.67ml	2ml
5.	Beeswax	5.45gm	5gm	5.30gm
6.	Liquid paraffin	18.1ml	21.5ml	20ml
7.	Borax	0.40gm	0.60gm	5.50gm



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8.	Methyl paraben	0.3gm	0.06gm	0.050gm
9.	Distilled water	q. s	q. s	q. s
10.	Rose water	q. s	q.s	q. s

**Table 4.4 Method of preparation**

### III. EVALUATION PARAMETERS OF HERBAL CREAM

#### 1 Spreadability

The Spreadability of samples was determined. Take 0.5 g herbal cream formulation was placed within a circle of 1 cm diameter on a glass slide over which a second glass plate was placed, a weight of 500 g was allowed to rest on the upper glass slide for 5 min. Spreadability refers to the area covered by a fixed amount of herbal cream sample after the uniform spread of the sample on the glass slide. The increase in the diameter is because of the spreading of the test herbal cream

#### 2 Irritancy

Test Mark a neighbourhood (1 sq. cm) on the left dorsal surface. The cream was applied to the required area and time was noted. Irritancy, erythema, and edema were checked if any for normal intervals up to 24 h and reported.

#### 3 Washability

A small amount of cream was applied and washed under running water.

#### 4 Phase separation

This test was conducted because of no any phase separation in the formulated cream. The formulated herbal cream was kept intact in a closed container at 25-100 °c not exposed to light Phase separation was observed every 24 h for 1 mo. Daily changes in phase separation were checked.

#### 5 PH

0.5 g cream was taken and dispersed in 50 ml distilled water and then pH was measured by using digital PH meter.

#### 6 Greasiness

Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily or grease-like.

### IV. RESULT AND DISCUSSION

#### 1. Phytochemical Screening

S.No.	Tests	Tulsi	Turmeric	Aloe vera	Neem
1.	Tannins	+	-	-	+
2.	Alkaloids	+	+	+	+
3.	Saponins	+	-	+	-
4.	Phenol	+	+	+	+
5.	Flavonoids	+	+	-	+

**Table 2. Phytochemical Screening**



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### 2. Organoleptic Property

Features	F1	F2	F3
Color	Faint yellow	Faint yellow	Faint yellow
Odor	Mild herbal	Mild herbal	Mild herbal
Texture	Smooth	Smooth	Smooth
State	Semi-solid	Semi-solid	Semi-solid

**Table 3. Organoleptic Property**

### 3. Determination of PH, Spreadability, Washability, Phase Separation

**Table 4. Determination of pH, Spreadability, Washability, Phase separation**

Features	F1	F2	F3
pH	6.3	6	5.8
Spreadability	53.7	40.3	47.4
Washability	Easily washable	Easily washable	Easily washable
Phase separation	No phase separation	No phase separation	No phase separation



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**Fig.no.1. Herbal Cream**

### V. CONCLUSION

Curcuma longa, Aloe barbadensis miller, and Melia Dubia were used in the development of a herbal cream that showed promise as a topical therapy for eczema. It had favourable stability and physicochemical characteristics. In vitro, it showed strong anti-inflammatory and anti-eczematous actions. These results imply that the herbal cream may be used as a safe and efficient complement to traditional eczema therapies. Additional clinical research is necessary to confirm its safety and effectiveness in human beings.

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