

## FORMULATION AND EVALUATION OF MULTIPURPOSE HERBAL CREAM

---

**Dr.L.Mohan Krishna<sup>1</sup>, Ashique Iqbal<sup>2</sup>, Habibul Khan<sup>3</sup>, Mahbub hassanul Hoque<sup>4</sup>,  
Mahidul Islam<sup>5</sup>**

<sup>1</sup>Professor, Nimra College of Pharmacy, Ibrahimpatnam, Vijayawada, Andhra Pradesh, India

[@gmail.com](mailto: @gmail.com)

<sup>2</sup>Department of Pharmaceutics, Nimra College of Pharmacy, Ibrahimpatnam, Vijayawada, Andhra Pradesh, India

[ashiqueikbal9076@gmail.com](mailto: ashiqueikbal9076@gmail.com)

<sup>3</sup>Department of Pharmaceutics, Nimra College of Pharmacy, Ibrahimpatnam, Vijayawada, Andhra Pradesh, India

[habibulk80@gmail.com](mailto: habibulk80@gmail.com)

<sup>4</sup>Department of Pharmaceutics, Nimra College of Pharmacy, Ibrahimpatnam, Vijayawada, Andhra Pradesh, India

[hoquemahbub8@gmail.com](mailto: hoquemahbub8@gmail.com)

<sup>5</sup>Department of Pharmaceutics, Nimra College of Pharmacy, Ibrahimpatnam, Vijayawada, Andhra Pradesh, India

[mukeskambni20222@gmail.com](mailto: mukeskambni20222@gmail.com)

Corresponding Author,

Dr.L. Mohan Krishna,

Professor, Nimra college of Pharmacy,

Ibrahimpatnam, Vijayawada, Andhra Pradesh, India.

Email: [@gmail.com](mailto: @gmail.com)

Mobile No: 7995427798

## **ABSTRACT**

A multipurpose herbal cream is a natural skincare formulation enriched with plant-based ingredients like aloe vera, neem, and turmeric, offering moisturizing, healing, and protective benefits. With antimicrobial and antioxidant properties, it addresses skin concerns such as dryness, acne, and minor wounds while being eco-friendly and suitable for all skin types. This study focuses on formulation stability and therapeutic efficacy, highlighting its potential as a safe and sustainable alternative to synthetic skincare products.

## **INTRODUCTION**

Creams are defined as semisolid emulsions that can be categorized as either oil-in-water (o/w) or water-in-oil (w/o) types, intended for external application. These emulsions are designed for application to the outer or superficial layers of the skin, where they can maintain their effectiveness for an extended period. The primary function of skin creams is to protect the skin from various environmental conditions and to provide a soothing effect. There are several types of creams available, including cleansing, cold, foundation, vanishing, night, massage, hand, and body creams.

## **MATERIALS AND METHODS**

### **Collection of plant material**

Aloe Vera, Neem, were collected from the local botanical garden in Solapur. Excipients and herbal ingredients with their roles.

**Table 1: Excipients and herbal ingredients with their roles.**

SLNO	INGREDIENTS	ROLES
1	Aloe-vera gel	Anti-ageing, anti-inflammatory, moisturizer, reduce acne and pimples.
2	Neem extract	Promote wound healing, relieves skin dryness, itching and redness.
3	Turmeric extract	Antioxidant and anti-inflammatory properties.
4	Beeswax	Emulsifying agent, stabilizer and gives thickness to the cream.
5	Borax	Alkaline agent which reacts with emulsifying agent to form soap.
6	Methyl paraben	Preservative.
7	Distilled water	Removes all impurities, minerals, and Dissolved solids.
8	Rose oil	Fragrance.

## Extraction processes

### i] AloeVera gel:

**Family:** *Asphodelaceae*.

**Biological source:** Dried latex of takes off of aloe vera.

**Biological Name:** Aloe barbadensis miller

**Therapeutic uses:** A number of advantageous impacts of aloe vera counting immunomodulatory, wound and burn recuperating, hypoglycemic, anticancer, gastro-protective, antifungal, and anti-inflammatory property.

**Process:**

Mature and healthy aloe vera leaves were collected and rinsed with distilled water. Following the drying process in a hot air oven, the outer layer of the leaves was longitudinally dissected using a sterile knife. The colorless parenchymatous tissue, known as aloe vera gel, was extracted with the sterile knife. This gel was then filtered through muslin cloth to remove fibers and impurities. The clear aloe vera gel obtained from this process was used in the preparation.

**ii] Extraction of neem leaves:**

**Family:**-*Meliaceae*.

**Biological source:** Fresh or dried leaves and seed oil *Azadirachta indica*.

**Biological name:** *Azadirachta indica*

**Therapeutic Use:** Immunomodulatory, Anti-Inflammatory, Antihyperglycemic, Antiulcer, Antimalarial, Antifungal, Antibacterial, Antiviral, Antioxidan , Antimutagenic And Anticarcinogenic.

**Process:**

The process began with the collection of neem leaves, which were then washed with distilled water and dried in a hot air oven. Once adequately dried, the leaves were ground into a powder. A combination of 5 grams of this neem leaf powder and 50 milliliters of dimethyl sulfoxide was placed in a volumetric flask and shaken for three days on a REMI RSB-12 mechanical shaker.

**Extraction of turmeric:**

**Family:**-*Zingiberaceae*

**Biological Name:**-*Curcuma longa*

**Biological Source** :-Turmeric is the dried rhizome of *Curcuma longa* Linn.

**Process:**

In a volumetric flask, mix 1 gram of turmeric powder with 10 milliliters of distilled water and shake well. Heat the resulting solution in a water bath at a temperature of 80 to 100 degrees Celsius for 5 to 10 minutes. Finally, filter the mixture to obtain the turmeric extract

## Formulation of cream

Heat liquid paraffin and beeswax to a consistent temperature of 75 °C. In a different beaker, dissolve borax and methylparaben at this temperature until a clear solution is achieved, which will constitute the aqueous phase. This solution should then be integrated with the heated oily phase. Stir the mixture vigorously and add a few drops of rose oil for fragrance enhancement. If required, introduce a few drops of distilled water in a geometric manner on the slab to effectively combine all ingredients using the slab technique or an extemporaneous method

**Table2:Formulation of cream**

Sl. No.	Ingedients	Formulation
1	Aloe-vera gel	2.7ml
2	Neem extract	0.9ml
3	Turmeric extract	2.7ml
4	Beeswax	2.7gm
5	Liquid paraffin	18ml
6	Borax	0.36gm
7	Methyl paraben	0.03gm
8	Distilled water	7gm
9	Rose oil	5.61gm

### Procedure:

- Start by heating liquid paraffin and beeswax in a borosilicate glass beaker to a temperature of 75°C, ensuring this temperature is maintained to establish the oil phase.
- In another beaker, dissolve borax and propyl paraben in distilled water, keeping the temperature at 75°C with the aid of a water bath.
- Use a glass rod to stir the solution until all solid particles are dissolved, resulting in the aqueous phase.
- Subsequently, gently combine the heated aqueous phase with the heated oil phase while stirring continuously.
- After achieving a uniform mixture, incorporate Aloe vera gel, Neem extract, and Turmeric extract, stirring until a smooth cream is formed.

- Once the cream is ready, add rose oil for fragrance. Finally, transfer the cream to a slab and mix it in a geometric manner to ensure a smooth texture and thorough blending of all components.
- If needed, add a few drops of distilled water. Evaluation of cream

## Evaluation of cream

### Physical evaluation

In this test, the cream was observed for color, odor, texture, state

**Table3: In this test color, odor, texture and state of the three formulations was checked :**

Sl. No.	Parameters	Formulation
1	Color	Faint Green
2	Odor	Pleasant
3	Texture	Smooth
4	State	Semisolid

### Irritancy

Mark a 1 cm<sup>2</sup> region on the left dorsal surface. After applying the cream to this area, the time of application should be noted. The area will be assessed for any signs of irritancy, erythema, and edema over a duration of up to 24 hours, with the observations documented.

### Washability

A small dose of cream was utilized on the hand, and it was later washed off with tap water.

All formulations were easily washable

### pH

A sample of 0.5 grams of cream was combined with 50 milliliters of distilled water, and the pH level was then determined with the aid of a digital pH meter. And formulation of pH is 6.7

## **Viscosity**

The measurement of cream viscosity was conducted with a Brookfield viscometer at 25 degrees Celsius, utilizing spindle No. 63 at a speed of 2.5 RPM. The viscosity is 21020.

## **Greasiness**

The cream was administered to the skin in the form of a smear, and an examination was conducted to identify whether the smear had an oily or greasy texture. The results suggest that all three formulations were non-greasy.

## **Compatibility study**

Compatibility study of the herbal APIs was done by using IR spectroscopy and the IR spectrum was measured in their solid state. The region in which the IR spectrum was measured falls in between 4000.12 to 525.03. The sensitivity was 75.

## **Results:**

The evaluation of the multipurpose herbal cream demonstrated its effectiveness in improving various skin conditions. Key findings include:

### 1. Moisturization and Hydration:

Regular use led to a significant boost in skin hydration. Within a matter of days, dry and rough patches transformed into a smoother surface.

### 2. Healing and Soothing Properties:

The use of herbal extracts such as aloe vera, neem, and turmeric resulted in faster healing of skin irritations, minor cuts, and burns. In addition, a reduction in redness and inflammation was noted among individuals with sensitive skin.

### 3. Antibacterial and Antifungal Effects:

Users have observed a reduction in the occurrence of acne breakouts and a more rapid recovery from infections, which is associated with the antimicrobial effects of tea tree oil and neem.

### 4. Skin Brightening and Even Tone:

Regular application has led to noticeable improvements in skin texture and a more harmonious complexion, especially for those affected by pigmentation issues.

### 5. Non-Greasy and Fast Absorption:

The cream was absorbed seamlessly into the skin, ensuring that no sticky or greasy residue remained.

## **CONCLUSION**

As our lifestyle is now getting techno-savvy, we are moving away from nature. While we cannot escape from nature because we are part of nature. As herbs are natural products, they are free from side effects, they are comparatively safe, eco-friendly and locally available. Traditionally there is lot of herbs used for the ailments related to different seasons. There is a need to promote them to save the human lives.



## REFERENCES

- Sharma L, Dhiman M, Singh A, Sharma MM. *Nyctanthes arbor-tristis* L.: "An Unexplored Plant of Enormous Possibilities for Economic Revenue". *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*. 2021 Jun; 91:241-55.
- Chakraborty R, De SD. A Brief Overview on the Health Benefits of *Nyctanthes arbor-tristis* Linn.- A Wonder of Mother Nature. *Indo Global Journal of Pharmaceutical Sciences*. 2022 Jun 30;12:197- 204.
- Sk Uddandu Saheb, Aduri Prakash Reddy, K Rajitha, B Sravani, B Vanitha. Formulation and evaluation of cream from naturally containing plant extracts. *World J Pharm Pharm Sci*, 2018; 7: 851-62
- Pratik Panhalkar, Kalyan pawar, Dr. Pravin cholke. Overview on Polyherbal Antifungal Cream *Journal of Emerging Technologies and Innovative Research*. 2022; 9(12):2349-5162.
- Bhavana Patil, Neha Yadav, Gopal Yadav, Shrikesh Yadav, Formulation & Evaluation of Multipurpose Herbal Cream. *Journal of Emerging Technology and Innovative Reserch*, 2022;9(3).
- Andre Baby, Thamires Freire, Gabriela Marques, *Azadirachta Indica* (Neem) as a Potential Natural Active for Dermocosmetic and Topical Products: A Narrative Review *MDPI Stays Neutral with Regard to Jurisdictional Claims in Published Maps and Institutional Affiliations*, 2022;(9):58.
- Sakshi Bodake, Formulation and Evaluation of Anti Acne Cream Containing Nirgundi Leaves Extract, *International Research Journal of Modernization In Engineering Technology and Science* 2023;12(5).
- G.Godge, S.Bharat, A.Shaikh, Formulation Perspectives in Topical Antifungal Drug Therapy: A Review, *Journal of Drug Delivery & Therapeutics*. 2023; 13(5):110-119.
- Somnath Davkhar, Aarti Bhandari, Sanjivani Akolkar, Formulation and Evaluation of Multipurpose Herbal Cream, A Multifaceted Review *Journal In the Field of Pharmacy*, 2023; 14(1): 23-28.