

PREPARATION, FORMULATION AND EVALUATION OF HERBAL CREAM FOR SKIN DISEASES USING EXTRACTS OF AZADIRACHTA INDICA (NEEM), ACALYPHA INDICA, TRIDAX PROCUMBENS AND ALTERNANTHERA SESSILIS

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1. ABSTRACT

The use of herbal medicines for the treatment of skin diseases has gained increasing attention due to their safety, efficacy and minimal side effects. Medicinal plants such as *Azadirachta indica*, *Acalypha indica*, *Tridax procumbens* and *Alternanthera sessilis* possess significant antimicrobial, anti-inflammatory and wound-healing properties. The present review focuses on the preparation, formulation and evaluation of herbal cream using extracts of these plants for the treatment of various skin disorders. The plant extracts contain bioactive compounds such as flavonoids, tannins, alkaloids and phenolic compounds which contribute to their pharmacological activities. Herbal creams are commonly prepared using oil-in-water emulsion bases containing stearic acid, cetyl alcohol, liquid paraffin and glycerin. The formulation is evaluated using parameters such as pH, viscosity, spreadability, homogeneity, stability and skin irritation tests. The combination of these plant extracts in a

topical formulation may provide effective treatment for skin infections, wounds, burns and inflammatory skin diseases. This review highlights the therapeutic potential of polyherbal cream and its importance in modern dermatological treatment.

2. KEYWORDS: Herbal cream, skin diseases, *Azadirachta indica*, *Tridax procumbens*, wound healing, polyherbal formulation.

3. INTRODUCTION

Skin is the largest organ of the human body and acts as a protective barrier against environmental pathogens. Skin diseases such as eczema, acne, dermatitis and infections are commonly observed worldwide. Synthetic drugs used for treatment often cause adverse effects such as irritation and allergic reactions. Therefore, herbal medicines are widely used as safer alternatives.

Medicinal plants like *Azadirachta indica*, *Acalypha indica*, *Tridax procumbens* and *Alternanthera sessilis* have been traditionally used in the treatment of skin disorders. These plants contain several bioactive compounds responsible for antimicrobial, anti-inflammatory and wound healing activities. Herbal creams prepared from these extracts provide localized treatment and improve skin health.

4. Review of Medicinal Plants

4.1 *Azadirachta indica* (Neem)

- Family: Meliaceae
- Active compounds: Nimbidin, Azadirachtin, flavonoids
- Uses:
 - Antibacterial
 - Antifungal
 - Treatment of acne, eczema and wounds

4.2 *Acalypha indica*

- Family: Euphorbiaceae
- Contains alkaloids, tannins and flavonoids
- Used in traditional medicine for:
 - Skin infections
 - Inflammation
 - Wound healing

4.3 *Tridax procumbens*

- Family: Asteraceae

- Rich in carotenoids, flavonoids and tannins
- Activities:
 - Wound healing
 - Antimicrobial
 - Anti-inflammatory

4.4 Alternanthera sessilis

- Family: Amaranthaceae
- Contains phenolic compounds and flavonoids
- Pharmacological activities:
 - Antioxidant
 - Anti-inflammatory
 - Skin protective effects

5. Preparation of Plant Extracts

1. Collection of plant leaves
2. Washing and shade drying
3. Grinding into coarse powder
4. Extraction using Soxhlet apparatus with ethanol or methanol
5. Filtration and concentration using rotary evaporator
6. Storage of extract for formulation

6. Formulation of Herbal Cream

Herbal cream is prepared using **oil-in-water emulsion technique**.

Ingredients

- Stearic acid
- Cetyl alcohol
- Liquid paraffin
- Glycerin
- Triethanolamine
- Distilled water
- Plant extracts

METHOD

1. Oil phase and aqueous phase are heated separately to about 70 °C.
2. The aqueous phase is slowly added to the oil phase with continuous stirring.
3. Plant extracts are incorporated during mixing.
4. The mixture is stirred until it cools and forms a uniform cream.

7. Evaluation of Herbal Cream

The formulated cream is evaluated using the following parameters:

- Appearance and homogeneity
- pH determination
- Spreadability test
- Viscosity measurement
- Washability test
- Stability studies
- Skin irritation test
- Antimicrobial activity

8. Applications in Skin Diseases

The polyherbal cream can be used for:

- Acne treatment
- Wound healing
- Burns and cuts
- Skin infections
- Anti-inflammatory skin conditions

9. CONCLUSION

Herbal creams formulated using extracts of *Azadirachta indica*, *Acalypha indica*, *Tridax procumbens* and *Alternanthera sessilis* offer promising therapeutic potential for the treatment of skin diseases. The presence of various phytochemicals provides antimicrobial, antioxidant and wound-healing effects. Polyherbal topical formulations can serve as safer and effective alternatives to synthetic dermatological products.

10. REFERENCES

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