iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** V **Month of publication:** May 2026

DOI: https://doi.org/10.22214/ijraset.2026.82732

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue V May 2026- Available at www.ijraset.com

A Review: Formulation and Evaluation of Herbal Crack Cream

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Abstract: ***A frequent dermatological problem brought on by dryness, environmental causes, and dehydration is cracked skin, especially on the hands and feet. An all-natural, safe, and efficient substitute for synthetic creams is offered by herbal formulations. The creation and assessment of a herbal crack cream using aloe vera, turmeric, camphor, coconut oil, mustard oil, rose oil, beeswax, and glycerin is the main objective of this study. Aloe vera for skin hydration and healing, turmeric for antimicrobial and anti-inflammatory effects, camphor for irritation relief, coconut and mustard oils for deep moisturization, rose oil for skin nourishment, beeswax as a natural emulsifier and barrier protector, and glycerin for humectant qualities were all chosen based on their therapeutic qualities. Standard emulsification methods were used to create the cream, and it underwent physicochemical analyses, including testing for skin irritation, pH, spreadability, viscosity, and stability. The outcomes showed that the herbal crack cream's formulation had good stability, a non-greasy texture, efficient moisturizing, and quick healing capabilities. The composition was discovered to be safe, efficient, and devoid of dangerous ingredients, making it a viable substitute for the treatment of dry and cracked skin. This study supports the creation of natural, reasonably priced, and effective formulations for dermatological purposes while highlighting the potential of skincare products based on herbs.***

Keywords : Herbal crack cream, Aloe vera, Turmeric, Camphor, Coconut oil, Mustard oil, Rose oil, Beeswax, Glycerin, Skin hydration, Wound healing, Moisturization, Anti-inflammatory, Antimicrobial, Natural skincare, Dermatological formulation.

I. INTRODUCTION

With a total size of almost 20 square feet, the skin is the biggest organ in the body. The epidermis, the skin's outermost layer, establishes our skin tone and acts as a waterproof barrier. Cosmetics are useful products that are widely used worldwide to preserve and enhance the overall appearance of the face and other body parts, such as the skin, eyes, hair, hands, etc. Herbal cosmetics are preparations that are linked to medications, nutraceuticals, and active bio-ingredients. Products used to cleanse and beautify the skin are called cosmetics. The first recorded use of cosmetics is attributed to Egyptians in 4000 B.C. Pharmaceuticals are essentially drug products and are defined as products that prevent, mitigate, treat or cure disease and affect the structure or function of the body. The skin underneath your feet is often dry, rough and chapped. Disorders - Athlete's foot, psoriasis, eczema, thyroid disease, diabetes and some other skin conditions can be the cause of cracked heels. Maintaining healthy skin is important for a healthy body. Natural treatment is cheap and claimed to be safe. A review of some plants for the treatment of skin diseases is provided that summarizes the recent technical advancements that have taken place in this area during the past 17 years. It is also suitable raw material for production of new synthetic agents. items that prevent, alleviate, treat, or cure disease and have an impact on the body's structure or function are referred to as pharmaceuticals, which are basically medicine items. The skin beneath your feet is frequently chapped, rough, and dry. Disorders: Thyroid disease, diabetes, psoriasis, eczema, athlete's foot, and a few other skin problems can result in cracked heels. A healthy body depends on having good skin. Natural remedies are inexpensive and said to be safe. Additionally, it can be used as a basic material to create new synthetic agents. There are many therapeutic plants in Varnyakashaya, according to Ayurvedic literature, particularly Charksamhita. Herbs such as chandun, haldi, khas, nagkheshara, manjistha, and yastimadhu are used to achieve a radiant complexion,whereas arusa, amla, bavchi, guduchi, and chakmard are cited as kustaharan. Skin disorders can be effectively treated using herbs such as amalaki, haridra, khadira, vidyanga, jati saptaparna, and karavira of varying potential from khshthagna and mahakashiya. Herbs used to make cosmetics have a variety of qualities, including antibacterial, antioxidant, anti-inflammatory, and antiseptic effects.

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In contrast to translucent ointments, creams are semisolid emulsion systems that appear opaque .Cream is used externally .Creams are meant to be applied to the skin and mucous membranes .Their consistency is contingent upon the

1) Water in oil or oil in water is an emulsion.
2) Internal phase solid nature.

A. *Benefits*

1) Heals cracked heels and dry skin by softening hard, rough skin.
2) Deep moisturization helps reduce dryness and flaking.
3) Reduces pain and irritation caused by skin fissures.
4) Supports skin repair and improves skin elasticity.
5) May help prevent infection because some herbal ingredients have antibacterial or antifungal properties.
6) Makes skin softer and smoother with regular use.

B. *Drawbacks*

1) Poor stability of herbal ingredients
2) Short shelf life
3) Risk of microbial contamination
4) Difficulty in maintaining uniform quality
5) Possible skin irritation or allergy
6) Problems with texture and smell

II. SKIN AND CRACKED HEELS

A. *Structure of Skin*

The skin consists of three major layers:

1) Epidermis
2) Dermis
3) Hypodermis

The epidermis is the outer protective layer responsible for preventing water loss.

B. *Causes of Cracked Heels*

The major causes include:

1) Dry skin
2) Dehydration
3) Aging
4) Obesity
5) Diabetes mellitus
6) Nutritional deficiency
7) Standing for long hours
8) Open-back footwear
9) Poor foot care

C. *Symptoms*

1) Dry and rough skin
2) Thickened heel skin
3) Pain during walking
4) Itching and irritation
5) Bleeding from cracks

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III. HERBAL INGREDIENTS USED IN CRACK CREAM

Many medicinal plants and natural substances are used in herbal crack cream formulations.

Ingredient	Activity
Aloe vera	Moisturizing and wound healing
Neem	Antibacterial and antifungal
Turmeric	Anti-inflammatory and anti-septic
Coconut oil	Skin softening
Beeswax	Thickening and protection
Tulsi	Antimicrobial action
Olive oil	Nourishing effect
Shea butter	Moisturizing effect

A. Description of Herbal Ingredients

1) Aloe vera: Aloe vera contains vitamins, amino acids, and enzymes that help hydrate the skin and promote wound healing.
2) Neem: Neem possesses antibacterial and antifungal properties that help prevent infection in cracked skin.
3) Turmeric: Turmeric contains curcumin, which acts as an anti-inflammatory and antiseptic agent.
4) Coconut Oil: Coconut oil softens the skin and reduces dryness.
5) Beeswax: Beeswax acts as a thickening agent and forms a protective layer on the skin.
6) Tulsi: Tulsi has antimicrobial and antioxidant properties.

B. Advantages of Herbal Crack Cream

1) Natural and safe
2) Fewer side effects
3) Good moisturizing action
4) Promotes wound healing
5) Prevents microbial infection
6) Cost-effective
7) Suitable for long-term use

C. Disadvantages of Herbal Crack Cream

1) Poor stability
2) Short shelf life
3) Risk of microbial contamination
4) Difficulty in standardization
5) Possible allergic reactions

D. Ideal Properties of Herbal Crack Cream

An ideal herbal crack cream should have:

1) Smooth texture
2) Pleasant odour
3) Good spreadability
4) Non-greasy nature
5) Easy washability
6) Good stability
7) Non-irritating effect

IV. TYPES OF CREAMS

A. Creams are Classified Into

1) Oil in Water (O/W) Cream: Water forms the external phase. These creams are non-greasy and washable.
2) Water in Oil (W/O) Cream: Oil forms the external phase. These creams are greasy and provide prolonged moisturizing effect.

B. Formulation of Herbal Crack Cream

Ingredients Required

Oil Phase

- Beeswax
- Coconut oil
- Stearic acid
- Liquid paraffin

Water Phase

- Herbal extracts
- Distilled water
- Glycerin
- Preservatives

C. Method of Preparation

The emulsification method is commonly used.

Procedure

1) Oil-soluble ingredients are melted together.
2) Water-soluble ingredients are dissolved separately.
3) Both phases are heated to equal temperature.
4) The aqueous phase is slowly added into the oil phase with continuous stirring.
5) Stirring is continued until a smooth cream is formed.
6) Perfume is added after cooling.
7) The cream is filled into suitable containers.

D. Evaluation of Herbal Crack Cream

Evaluation helps determine the quality, stability, and safety of the cream.

Physical Appearance

The cream is examined for:

- Color
- Odor
- Consistency
- Texture
- Smoothness

E. pH Determination

The pH should be compatible with skin pH to avoid irritation.

Spreadability

Spreadability determines ease of application.

$$S = \frac{M \times L}{T}$$

Where:

- S = Spreadability
- M = Weight applied
- L = Length moved
- T = Time taken

F. Homogeneity

The formulation should be uniform without lumps.

Viscosity

Viscosity determines consistency and flow property.

Washability

The cream should be easily washable with water.

G. Skin Irritation Test

The formulation is tested on the skin to check irritation or redness.

Stability Study

Stability studies are carried out under different storage conditions to observe:

- Color changes
- Odor changes
- Phase separation
- Consistency changes

H. Microbial Test

Microbial testing ensures absence of harmful microorganisms.

Stability Studies of Herbal Cream

Stability studies are important to determine:

- Shelf life
- Product quality
- Physical stability
- Chemical stability

The cream is stored at different temperatures and humidity conditions for a specific period.

I. Quality Control Tests

Quality control tests include:

- pH test
- Viscosity test
- Spreadability
- Homogeneity
- Stability study
- Irritation test
- Microbial test

J. Applications of Herbal Crack Cream

Herbal crack creams are used for:

- Cracked heels
- Dry skin
- Rough skin
- Minor cuts
- Skin nourishment
- Foot care treatment

K. Recent Advances in Herbal Cosmetics

The demand for herbal cosmetics has increased because consumers prefer natural products. Modern herbal formulations include:

- Nano-herbal creams
- Polyherbal formulations
- Herbal gels
- Herbal ointments

Research is being carried out to improve stability and effectiveness of herbal products.

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V. FUTURE PROSPECTS

Future research should focus on:

1) Standardization of herbal extracts
2) Clinical studies
3) Better preservatives
4) Improved stability
5) Advanced formulation methods

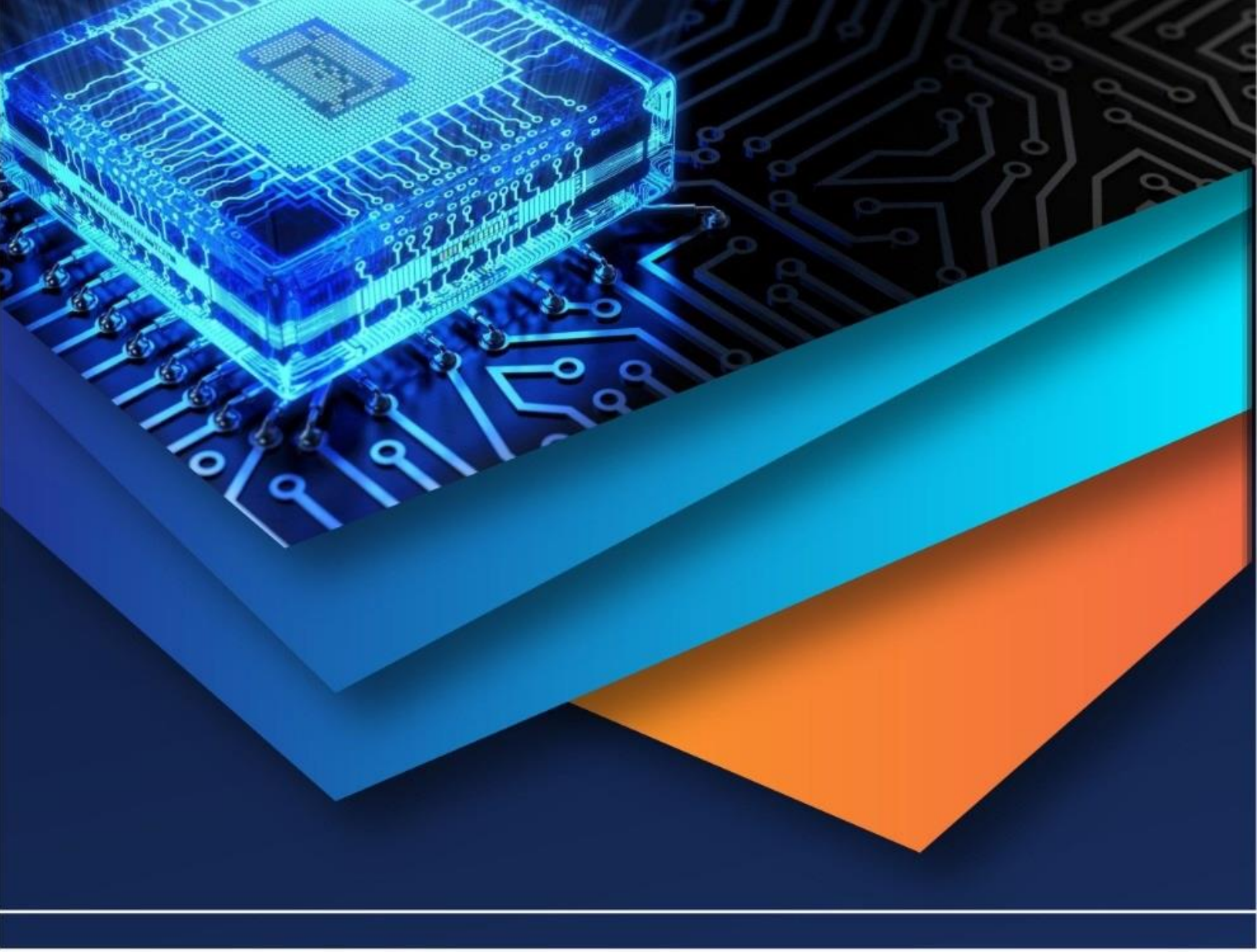
VI. CONCLUSION

Herbal crack creams are effective topical formulations used for treating cracked heels and dry skin conditions. Natural ingredients such as Aloe vera, neem, turmeric, and coconut oil provide moisturizing, antimicrobial, and healing effects. Proper formulation and evaluation are essential to ensure quality, safety, and stability. Herbal creams are safer alternatives to synthetic products and have significant future potential in pharmaceutical and cosmetic industries.

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