ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 12| Issue: 5| May 2026|| Journal DOI: 10.36713/epra2013 ||SJIF Impact Factor 2026: 8.753 || ISI Value: 1.188

FORMULATION AND EVALUATION OF TURMERIC CREM

Pooja Madhukar Korde, Shubham S. Kharat, Klyani Ghodake

1. ABSTRACT

Herbal creams are widely used in skincare because they contain natural ingredients that are safe, effective, and have fewer side effects compared to synthetic products. The present study was aimed at the formulation and evaluation of a herbal turmeric cream using turmeric extract as the main active ingredient. Turmeric, obtained from Turmeric, is well known for its anti-inflammatory, antibacterial, antioxidant, and skin-protective properties. It is traditionally used for the treatment of acne, pimples, skin infections, wounds, pigmentation, and to improve skin glow.

The herbal turmeric cream was prepared by using suitable ingredients such as turmeric extract, beeswax, stearic acid, liquid paraffin, glycerin, borax, methyl paraben, rose water, and distilled water. The oil phase and aqueous phase were prepared separately and mixed at the same temperature with continuous stirring to obtain a smooth and stable cream. The prepared formulation was evaluated for various physicochemical parameters including color, odor, appearance, consistency, pH, spreadability, viscosity, washability, homogeneity, irritancy, and stability.

The evaluation results showed that the prepared cream had good appearance, smooth texture, suitable pH close to skin pH, good spreadability, easy washability, and no signs of irritation on the skin. Stability studies indicated that the cream remained stable under different storage conditions without phase separation or changes in color and odor. The presence of turmeric provided beneficial effects such as antimicrobial and antioxidant

KEYWORDS: *Herbal cream, Turmeric, Herbal formulation, Skin care, Topical preparation, Antioxidant activity, Anti-inflammatory activity, Stability evaluation, Spreadability, pH determination.*

2.INTRODUCTION

Herbal cosmetics are widely used today because they are considered safer and produce fewer side effects compared to synthetic cosmetic products. Among different herbal ingredients, turmeric is one of the most important medicinal plants used in skincare preparations due to its antimicrobial, anti-inflammatory, antioxidant, and wound-healing properties. The scientific name of turmeric is Curcuma longa, and it belongs to the Zingiberaceae family. Turmeric contains an active constituent called curcumin, which is mainly responsible for its therapeutic activities.

Since ancient times, turmeric has been used in traditional systems such as Ayurveda for treating skin disorders, improving complexion, reducing acne, healing wounds, and protecting the skin from infections. Herbal creams prepared from turmeric are becoming popular because they help maintain healthy skin naturally. Turmeric cream provides nourishment, moisturization, and protection to the skin while reducing irritation and inflammation.

Creams are semisolid dosage forms intended for external application on the skin. They are easy to apply, easily washable, and provide prolonged contact with the skin. Herbal creams containing turmeric extract are used for cosmetic as well as medicinal purposes. These creams can help in the treatment of acne, pimples, pigmentation, dryness, minor cuts, burns, and microbial infections. Turmeric cream is also used to improve skin glow and maintain skin softness.

The formulation of herbal turmeric cream involves the preparation of an oil phase and aqueous phase, followed by mixing both phases at suitable temperatures to obtain a stable cream. Various ingredients such as beeswax, stearic acid, liquid paraffin, glycerin, borax, preservatives, and turmeric extract are used in proper proportions to prepare the cream. The prepared formulation should possess good appearance, smooth texture, homogeneity, spreadability, and stability.

Evaluation of the herbal turmeric cream is an important step to determine the quality, effectiveness, and stability of the formulation. Different evaluation parameters include physical appearance, pH, viscosity, spreadability, washability, irritancy test, homogeneity, stability study, and microbial test. These tests ensure that the cream is safe, effective, stable, and suitable for topical application.

Nowadays, there is an increasing demand for herbal skincare products because people prefer natural and eco-friendly products over chemical-based cosmetics. Herbal turmeric cream is therefore considered a beneficial formulation due to its therapeutic value, safety, affordability, and easy availability of raw materials.

Thus, the present study focuses on the formulation and evaluation of herbal turmeric cream to develop a safe, effective, and stable herbal cosmetic preparation for skin care and protection.

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FIG:-TURMERIC CREAM

- **ADVANTAGES**

1. Natural and Safe
2. Anti-inflammatory Action
3. Antimicrobial Property
4. Wound Healing Effect
5. Antioxidant Activity
6. Improves Skin Complexion
7. Moisturizing Effect
8. Fewer Side Effects

- **DISADVANTAGES**

1. Skin Staining
2. Possible Allergy
3. Strong Odor
4. Limited Stability
5. Poor Penetration
6. Variation in Herbal Quality
7. Slow Therapeutic Effect
8. Shorter Shelf Life

- **Medicinal Uses of Turmeric Cream**

1.Wound healing – Helps minor cuts, burns, and scratches heal faster.
2.Anti-inflammatory action – Reduces redness, swelling, and skin irritation.
3.Antimicrobial effect – Helps protect skin from bacterial and fungal infections.
4.Acne treatment – Can reduce pimples and acne-related inflammation.
5.Skin brightening – Improves complexion and reduces dark spots.
6.Moisturizing effect – Keeps dry skin soft and hydrated.
7.Eczema and dermatitis relief – May soothe itchy and inflamed skin.
8.Anti-aging effect – Antioxidants help reduce signs of aging and wrinkles.

- **Treatment with Herbal Turmeric Cream**:

1. Minor cuts and wounds
2. Acne and pimples
3. Skin redness and irritation
4. Dry and rough skin
5. Fungal or bacterial skin infections
6. Mild burns and insect bites
7. Dark spots and uneven skin

- **PROPERTIES**

1. Appearance
2. PH
3. Consistency
4. Spreadability

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5. Homogeneity
6. Washability
7. Viscosity
8. Stability
9. Skin Compatibility

USES OF TURMERIC CREAM FOR FACE

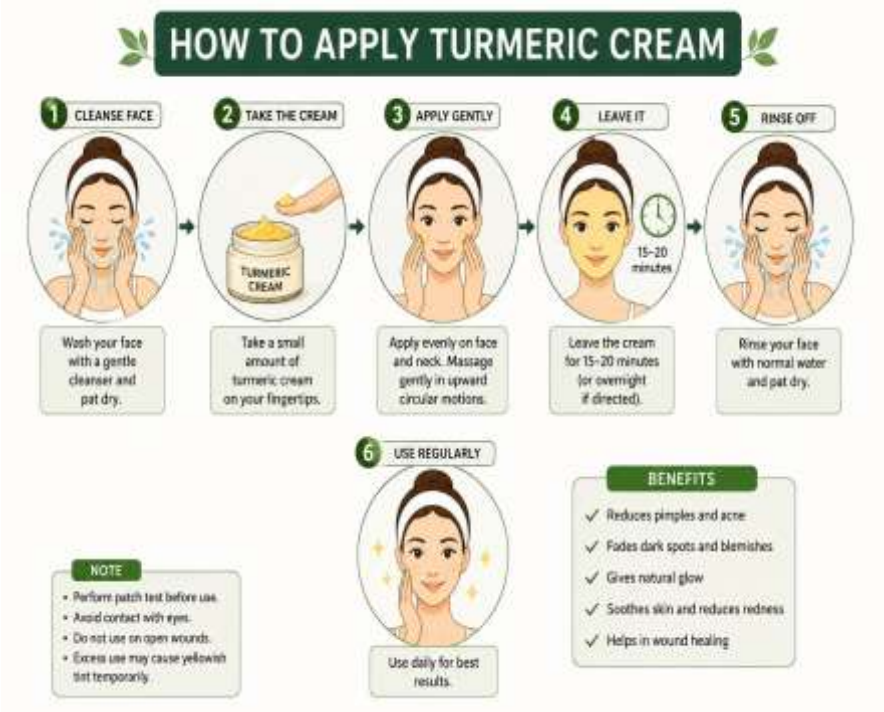
1. Reduces pimples and acne
2. Helps remove dark spots and blemishes
3. Gives natural glow to the skin
4. Reduces pigmentation and tanning
5. Helps control excess oil on face
6. Moisturizes and softens the skin
7. Reduces redness and skin irritation
8. Helps in wound healing and scar reduction
9. Protects skin from bacterial infection
10. Improves overall skin texture
11. Helps reduce signs of aging and wrinkles
12. Acts as an antioxidant for healthy skin
13. Brightens dull skin complexion
14. Helps soothe sunburn and inflammation
15. Keeps skin fresh and healthy

MAIN BENEFITS OF TURMERIC IN FACE CREAM

- Anti-inflammatory action
- Antibacterial activity
- Antioxidant property
- Skin brightening effect
- Natural healing propert

HOW TO APPLY

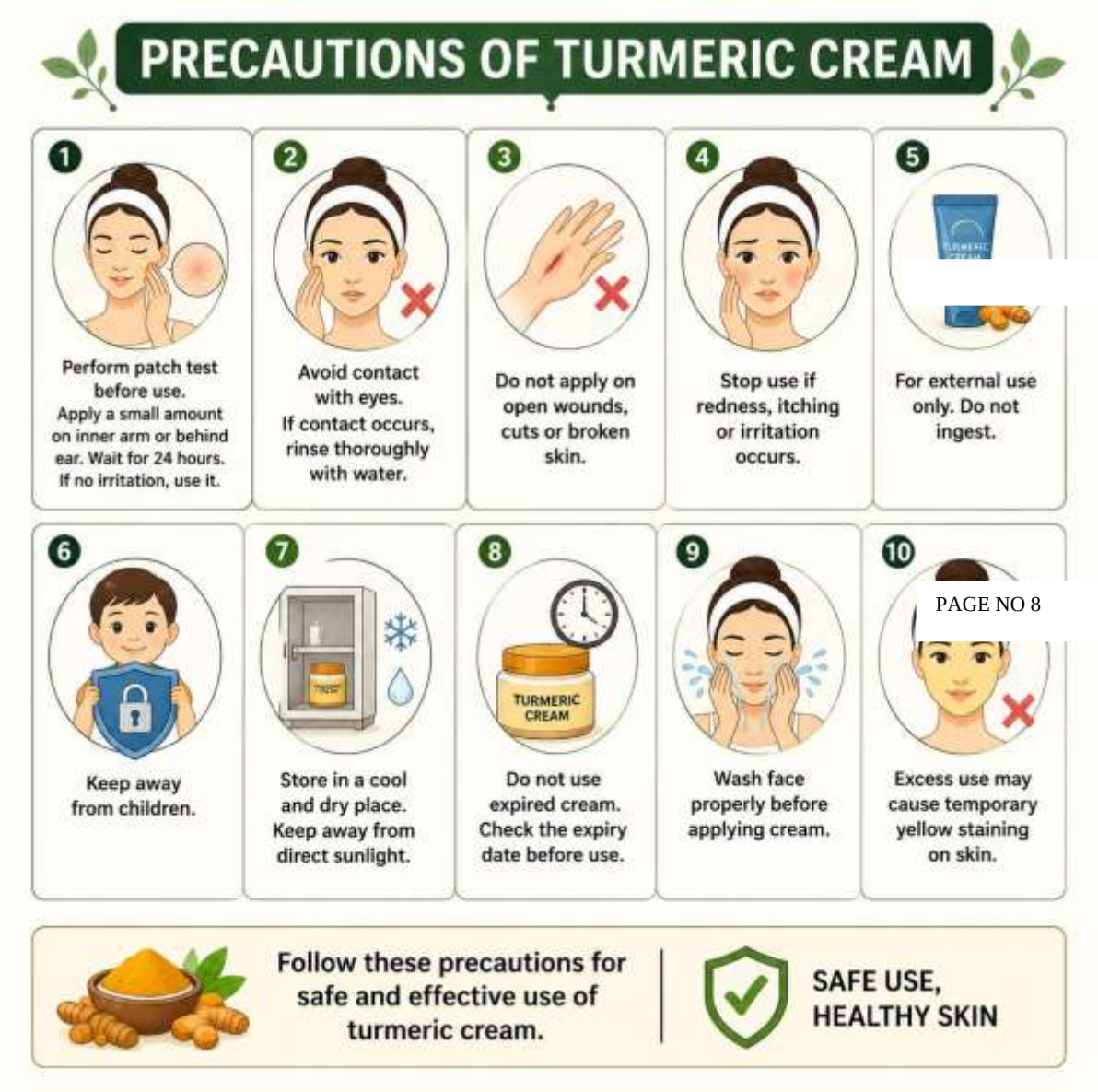
- Wash face properly
- Apply small amount of turmeric cream on face
- Massage gently for 2–3 minutes
- Leave for 15–20 minutes or overnight (as directed)
- Wash with normal water if needed



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PRECAUTIONS

1. Avoid contact with eyes.
2. Do not apply on open wounds or cuts.
3. Stop use if redness or irritation occurs.
4. Use only external application.
5. Keep away from children.
6. Store in a cool and dry place.
7. Do not use expired cream.
8. Wash face before applying cream.
9. Excess use may cause temporary yellow staining on skin.



3.LITERATURE SURVEY

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2. Jesica IA, Maillinda P, Wijaya OV et al. (2025) developed turmeric rhizome shaving cream and found good moisturizing property with satisfactory physical evaluation.
3. Semwal A et al. (2022) prepared a polyherbal cream containing turmeric and observed good homogeneity and skin compatibility.
4. Vandana D and Pawar S (2019) developed topical herbal gel of curcumin and reported improved spreadability and anti-inflammatory activity.
5. Verma A and Ahuja D (2023) formulated herbal cream with turmeric and fenugreek extract and found improved skin moisturizing effect.

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6. Gund A, Jawale S and Walunj K (2022) prepared polyherbal cream containing Curcuma longa and observed good pharmaceutical properties.
7. Kumari P and Bais S (2023) formulated herbal gel containing turmeric and reported effective anti-inflammatory activity.
8. Ahmad A and Gunaseelan V (2025) prepared anti-acne herbal cream with turmeric and found good antimicrobial activity against acne-causing bacteria.
9. Jalalmanesh S et al. (2022) studied topical turmeric cream and reported improvement in skin lesion healing.
10. Baviskar KD et al. (2024) developed skin-lightening herbal face cream with turmeric and noted improved skin brightness. Dip Banerjee et al. (2022) formulated and evaluated a herbal body lotion containing turmeric with antibacterial activity.
11. Sharma Nitin et al. (2025) reviewed different methods used in the formulation and evaluation of turmeric herbal cream.
12. Mali A.S. et al. (2015) reported the preparation of multipurpose herbal cream with good skin protection properties.
13. Kapoor S. and Saraf S. (2010) formulated herbal moisturizer cream containing herbal extracts for improved skin hydration.
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15. Singh Mandeep et al. (2011) developed herbal cosmetic cream and evaluated its physicochemical properties and stability.
16. Vikas Chander et al. (2019) formulated herbal cream useful for skin nourishment and protection from skin disorders.
17. Narendra Sharma et al. (2025) formulated herbal turmeric cream with suitable consistency, pH, and stability.
18. Chanchal Sharma et al. (2025) evaluated oil-in-water herbal cream for spreadability, viscosity, pH, and microbial load.
19. Samiksha Laxman Bait et al. (2025) formulated and evaluated herbal turmeric cream and reported good stability, spreadability, antimicrobial and anti-inflammatory activity.
20. Pushpendra Kumar Saini et al. (2025) prepared an oil-in-water herbal cream containing turmeric, aloe vera and neem extracts which showed good homogeneity and skin compatibility.
21. Manish Gautam Athwale et al. (2024) developed a multipurpose turmeric cream and observed satisfactory physicochemical properties and skin protective effects.
22. Divya Devi et al. (2024) formulated a herbal cream containing turmeric and aloe vera and found good consistency, pH and stability.
23. Sunayana K.C. et al. (2024) prepared antimicrobial herbal cream enriched with turmeric and reported significant antioxidant and antimicrobial activity.
24. Bhumika Kumar et al. (2023) reviewed the therapeutic role of curcumin in dermatological disorders and highlighted anti-inflammatory and antioxidant properties.
25. Harshkumar Brahmbhatt et al. (2023) formulated herbal ointment containing neem and turmeric extracts and found good stability and antimicrobial activity.
26. Neha Shivathaya et al. (2022) evaluated polyherbal face cream containing turmeric extract and observed acceptable viscosity, spreadability and stability.
27. Vera Estefania Kaban et al. (2022) prepared turmeric extract cream and reported suitable pH, viscosity and skin compatibility for topical application.
28. Archana Dhyani et al. (2019) formulated multipurpose herbal cream using turmeric, neem and aloe vera with satisfactory evaluation parameters.

4.AIM & OBJECTIVE

AIM:- Formulation and Evaluation of Herbal Turmeric Cream.

OBJECTIVE

- To formulate a herbal cream using Curcuma longa extract as the active ingredient.
- To prepare a safe and stable topical cream for facial skin application.
- To evaluate the physical properties of the cream such as color, odor, texture, and consistency.
- To determine the pH of the formulation for skin compatibility.
- To assess spreadability and washability of the cream.
- To study the stability of the herbal cream under different storage conditions.
- To evaluate skin irritation or sensitivity after application.
- To examine the antimicrobial and anti-inflammatory potential of the turmeric cream.
- To improve skin appearance by reducing acne, pigmentation, and dryness.
- To develop an effective herbal alternative to synthetic skin creams.
- To study the washability of the cream.
- To check the consistency of the formulation.
- To evaluate irritation or sensitivity on the skin.
- To study the antimicrobial activity of turmeric cream.
- To evaluate the anti-inflammatory effect of the cream.
- To determine the stability of the formulation under storage conditions.
- To prevent microbial contamination in the product.
- To prepare a safe and effective topical herbal preparation.
- To develop a cost-effective herbal cosmetic product.
- To promote the use of natural and herbal skincare products.

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- **NEED OF WORK**

Increasing skin problems
↓
Side effects of synthetic creams
↓
Need for safer herbal products
↓
Selection of turmeric as herbal drug
↓
Formulation of herbal turmeric cream
↓
Evaluation of cream quality
↓
Safe and effective facial skin care product

5.PLAN OF WORK

Selection of herbal ingredient (Turmeric)
↓
Collection of materials
↓
Preparation of turmeric extract
↓
Formulation of cream base
↓
Incorporation of turmeric extract
↓
Preparation of herbal cream
↓
Evaluation of cream
(Color, odor, pH, viscosity, spreadability)
↓
Stability study
↓
Skin irritation test
↓
Final analysis and conclusion

6.MATERIALS AND METHODS FOR HERBAL TURMERIC CREAM

Materials

Ingredients Used for 5gm Cream

SR NO	INGRETIENTS	QUANTITY	USE
1	Turmeric powder	0.25g	Anti-inflammatory and antibacterial agent
2	Aloe vera gel	2ga	Moisturizer and soothing agent
3	Coconut oil	1.5ml	Emollient
4	Beeswax	0.75g	Thickening agent
5	Rose water	4ml	Cooling and fragrance
6	Vitamin E capsule	1`capsule	Antioxidant and skin nourishing agent

TURMERIC

- **Biological Source**

Turmeric is obtained from the dried rhizomes of Curcuma longa belonging to the family *Zingiberaceae.*

- **Common Name**
  - Turmeric
  - Haldi

- **Chemical Constituents**
  - Curcumin
  - Essential oils

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- Turmerone
- Proteins
- Carbohydrates
- Vitamins and minerals

Properties of Turmeric Powder

1. Anti-inflammatory property
2. Antibacterial activity
3. Antioxidant effect
4. Antifungal activity
5. Wound healing property
6. Skin brightening effect

Uses in Turmeric Cream

i. Reduces acne and pimples
ii. Helps remove dark spots
iii. Improves skin glow
iv. Reduces skin irritation and redness
v. Helps in wound healing
vi. Protects skin from infections

- **Colour and Odour**
- Colour: Yellow to orange-yellow powder
- Odour: Characteristic aromatic odour

Role in Herbal Cream

- Turmeric powder acts as the active herbal ingredient in the cream and provides therapeutic and cosmetic benefits for healthy skin.



FIG:- TURMERIC

AELOEVERA GEL

Biological Source

Aloe vera gel is obtained from the fresh leaves of Aloe vera belonging to the family *Liliaceae.*

Common Name

- Aloe vera
- Ghritkumari

Chemical Constituents

- Aloin
- Aloe-emodin
- Vitamins (A, C, E)
- Enzymes
- Amino acids
- Polysaccharides

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Properties of Aloe Vera Gel

1. Moisturizing property
2. Anti-inflammatory activity
3. Cooling effect
4. Antibacterial property
5. Antioxidant activity
6. Wound healing property

Uses in Turmeric Cream

- Hydrates and softens skin
- Reduces dryness and irritation
- Helps soothe sunburn
- Improves skin healing
- Gives smooth texture to cream
- Enhances skin glow

Colour and Odour

A. Colour: Transparent to pale green gel
B. Odour: Mild characteristic odour

Role in Herbal Cream

Aloe vera gel acts as a natural moisturizing and soothing agent in turmeric cream. It improves skin hydration and enhances the therapeutic effect of the cream.



FIG:-AELOEVERA GEL

COCONUT OIL

- **Biological Source**

Coconut oil is obtained from the dried kernel (copra) of Cocos nucifera belonging to the family Arecaceae.

Common Name

- Coconut Oil
- Naral Tel / Nariyal Oil

Chemical Constituents

- Lauric acid
- Myristic acid
- Palmitic acid
- Caprylic acid
- Vitamin E
- Fatty acids

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Properties of Coconut Oil

1. Moisturizing property
2. Antibacterial activity
3. Antifungal property
4. Skin softening effect
5. Anti-inflammatory activity
6. Nourishing property

Uses in Turmeric Cream

- Moisturizes dry skin
- Makes skin soft and smooth
- Helps reduce skin irritation
- Improves cream texture
- Helps in wound healing
- Prevents skin dryness

Colour and Odour

- Colour: Clear to pale yellow
- Odour: Pleasant characteristic coconut odour

Role in Herbal Cream

Coconut oil acts as a natural emollient and moisturizing agent in turmeric cream.



FIG:- COCONUT OIL

BEESWAX

Biological Source

Beeswax is obtained from the honeycomb of Honey bee produced by honey bees of the genus Apis.

Common Name

- Beeswax
- Madhumakhi Wax

Chemical Constituents

- Esters
- Fatty acids
- Long-chain alcohols
- Hydrocarbons
- Vitamin A

Properties of Beeswax

1. Thickening property
2. Emulsifying property
3. Moisturizing effect
4. Protective barrier formation
5. Skin softening property
6. Non-irritant nature

Uses in Turmeric Cream

- Gives thickness and consistency to cream

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- Helps in emulsification of oil and water phase
- Makes cream smooth and stable
- Prevents moisture loss from skin
- Improves texture and spreadability
- Protects skin from dryness

Colour and Odour

- Colour: Yellow to light brown
- Odour: Mild honey-like pleasant odour

Role in Herbal Cream

Beeswax acts as a natural thickening and stabilizing agent in turmeric cream. It improves cream consistency, stability and provides a protective moisturizing layer on the skin.



FIG:- BEESWAX

ROSE WATER

Biological Source

Rose water is prepared by distillation of fresh petals of Rosa damascena belonging to the family Rosaceae.

Common Name

- Rose Water
- Gulab Jal

Chemical Constituents

- Phenyl ethyl alcohol
- Citronellol
- Geraniol
- Nerol
- Flavonoids
- Essential oils
-

Properties of Rose Water

1. Cooling property
2. Refreshing effect
3. Mild antiseptic activity
4. Skin soothing property
5. Hydrating effect
6. Pleasant fragrance

Uses in Turmeric Cream

- Provides cooling and soothing effect
- Helps maintain skin freshness
- Improves fragrance of cream
- Hydrates and tones the skin
- Reduces skin irritation and redness
- Enhances smooth texture of cream

Colour and Odour

- Colour: Clear transparent liquid
- Odour: Pleasant rose fragrance

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Role in Herbal Cream

Rose water acts as a natural fragrance and soothing agent in turmeric cream. It refreshes the skin and improves the overall quality and acceptability of the cream.



FIG :- ROSE WATER

VITAMIN-E CAPSULE

Biological Source

Vitamin E is a fat-soluble vitamin obtained from vegetable oils, nuts, seeds and synthetic sources. The active form commonly used in creams is Tocopherol or Tocopheryl acetate.

Common Name

- Vitamin E Capsule
- Tocopherol Capsule

Chemical Constituents

- Alpha-tocopherol
- Tocopheryl acetate
- Antioxidants
- Fat-soluble compounds

Properties of Vitamin E

1. Antioxidant property
2. Skin nourishing effect
3. Moisturizing property
4. Anti-aging activity
5. Skin healing property
6. Protective effect against free radicals

Uses in Turmeric Cream

- Moisturizes and softens skin
- Helps reduce wrinkles and fine lines
- Improves skin glow and smoothness
- Protects skin from damage
- Enhances wound healing
- Increases shelf life of cream by preventing oxidation

Colour and Odour

- Colour: Light yellow oily liquid
- Odour: Mild characteristic odour

Role in Herbal Cream

Vitamin E capsule acts as a natural antioxidant and skin nourishing agent in turmeric cream. It protects the skin from oxidative damage and improves skin health and appearance.

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FIG:- VITAMIN E CAPSULE

Method of Preparation

Step 1: Preparation of Oil Phase
- Take beeswax and coconut oil in a beaker.
- Heat gently on a water bath until beeswax melts completely.

Step 2: Addition of Aloe Vera
- Add aloe vera gel slowly into the melted mixture.
- Stir continuously to obtain a smooth mixture.

Step 3: Addition of Turmeric
- Add turmeric powder little by little with continuous stirring.
- Mix properly to avoid lumps.

Step 4: Addition of Rose Water
- Add rose water slowly while stirring continuously.
- Continue mixing until a cream consistency forms.

Step 5: Addition of Vitamin E
- Add Vitamin E capsule oil at the end of preparation.
- Mix thoroughly to obtain a uniform cream.

Step 6: Cooling and Storage
- Allow the cream to cool at room temperature.
- Transfer the prepared cream into a clean airtight container.
- Store in a cool and dry place.

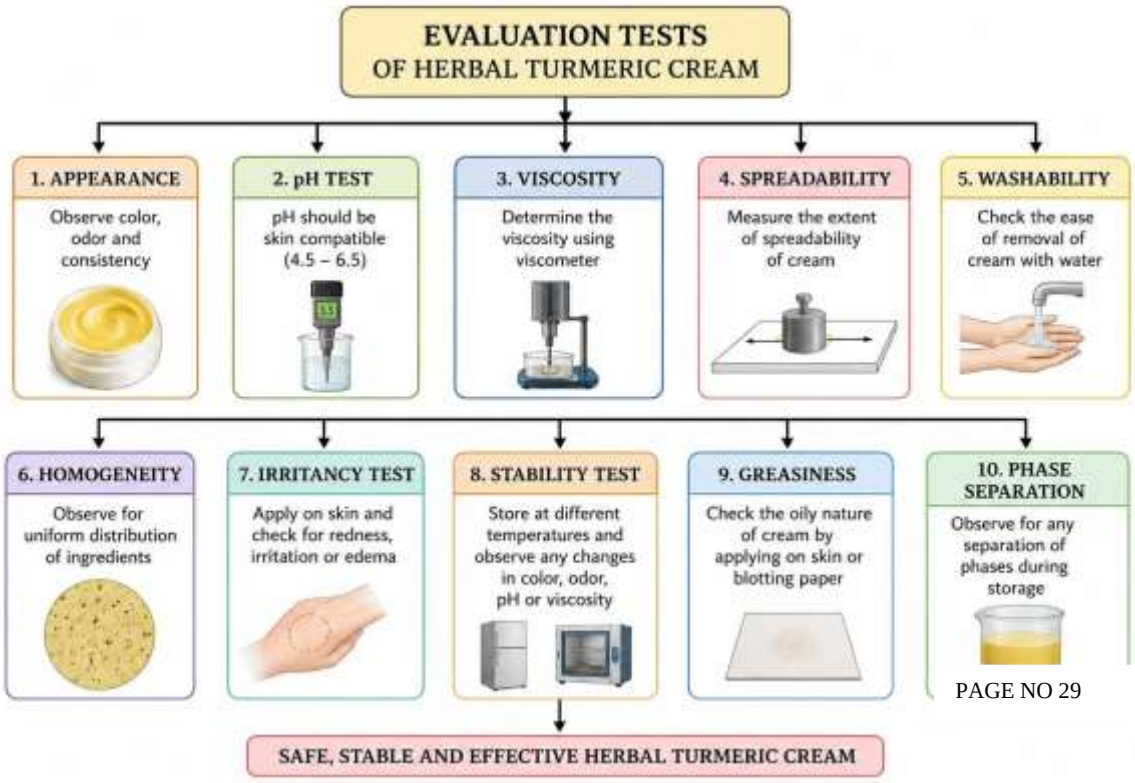
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7.EVALUATION TESTS OF HERBAL TURMERIC CREAM

- **Physical Appearance Test**
  .The cream is checked for color, odor, texture, and smoothness.
- **pH Test**
  The pH of the cream is measured using a pH meter.
  Skin-friendly pH should be around 5–7.
- **Homogeneity Test**
  The cream is observed for uniformity and absence of lumps.
- **Spreadability Test**
  Determines how easily the cream spreads on the skin.
- **Washability Test**
  Checks whether the cream can be easily removed with water.
- **Viscosity Test**
  Measures the thickness and flow property of the cream.
- **Irritation Test**
  Applied on skin to check redness, itching, or irritation.
- **Stability Test**
  Cream is stored at different temperatures to observe changes in color, odor, and consistency.
- **Phase Separation Test**
  Checks whether oil and water phases separate during storage.
- **Antimicrobial Test**
  Evaluates antibacterial and antifungal activity of turmeric cream.



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RESULT

The herbal turmeric cream was prepared successfully by using natural ingredients such as turmeric, aloe vera gel, coconut oil, beeswax, rose water, and Vitamin E. The prepared formulation showed a smooth texture, good appearance, pleasant odor, and yellow color.

The evaluation studies confirmed that the cream possessed good homogeneity, satisfactory spreadability, easy washability, and suitable viscosity. The pH of the formulation was found to be within the skin-friendly range (5–7), indicating safe topical application.

No irritation, redness, or phase separation was observed during the study. The stability test showed that the cream remained stable under normal storage conditions. The formulation also demonstrated good antimicrobial and anti-inflammatory activity due to the presence of turmeric extract.
Overall, the herbal turmeric cream was found to be safe, stable, effective, and suitable for skincare applications.

CONCLUSION

The present study concluded that the formulated herbal turmeric cream showed good appearance, smooth texture, and acceptable consistency. The cream was easy to apply and easily washable from the skin. Turmeric possesses antibacterial, anti-inflammatory, and antioxidant properties which are beneficial for skin care. The prepared cream showed good stability, homogeneity, and skin compatibility without causing irritation. Hence, the herbal turmeric cream can be used as a safe and effective natural cosmetic preparation for maintaining healthy and glowing skin

The formulation and evaluation of herbal turmeric cream was successfully carried out using natural ingredients such as turmeric, aloe vera gel, beeswax, coconut oil, rose water, and vitamin E. The prepared cream showed good physical appearance, smooth texture, pleasant odor, and suitable consistency. The cream was found to be homogeneous and easily spreadable on the skin without leaving irritation.

Turmeric contains curcumin, which possesses antibacterial, antifungal, anti-inflammatory, and antioxidant properties. These properties help in protecting the skin from infections, pimples, acne, redness, and dryness. Aloe vera and vitamin E provide moisturizing and nourishing effects, while coconut oil helps maintain skin softness. Beeswax acts as a stabilizing and thickening agent in the formulation.

The evaluation parameters such as pH, washability, spreadability, stability, irritancy, and consistency were found to be within acceptable limits. The cream remained stable during storage and showed no phase separation or change in color and odor.

Therefore, the prepared herbal turmeric cream can be considered a safe, effective, economical, and natural cosmetic preparation for skin care. It may be useful for improving skin health and maintaining soft, healthy, and glowing skin with minimal side effects compared to synthetic creams.

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ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 12| Issue: 5| May 2026|| Journal DOI: 10.36713/epra2013 ||SJIF Impact Factor 2026: 8.753 || ISI Value: 1.188

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