



Formulation and Evaluation of Turmeric Face Cream

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How to Cite this Article:

Dhanashri, B., Dinesh, I., Patil, H. & Ahemad, S. S. (2026). Formulation and Evaluation of Turmeric Face Cream. International Journal of Creative and Open Research in Engineering and Management, <i>02</i>(05).
<https://doi.org/10.55041/ijcope.v2i5.719>

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<https://doi.org/10.55041/ijcope.v2i5.719>

ABSTRACT

Turmeric face cream is a herbal cosmetic formulation prepared for skin protection, moisturization, and enhancement of skin appearance. Herbal cosmetics have gained significant importance because of their natural origin, better compatibility with skin, and reduced side effects compared to synthetic products. Turmeric (*Curcuma longa*) is widely used in traditional medicine and cosmetic preparations due to its antimicrobial, antioxidant, anti-inflammatory, and wound healing properties. The active constituent curcumin helps in improving skin complexion and reducing skin infections and inflammation.

The present study was carried out to formulate and evaluate a turmeric face cream using stearic acid, potassium hydroxide, glycerin, purified water, preservatives, and perfume. The cream was prepared by emulsification method involving oil phase and aqueous phase preparation. Turmeric extract was incorporated as the active herbal ingredient.

The prepared cream was evaluated for various physicochemical parameters including appearance, color, odor, pH, homogeneity, spreadability, washability, irritancy, and stability. The formulation showed smooth texture, good consistency, acceptable pH, easy spreadability, and non-irritant characteristics. Stability studies

indicated that the cream remained stable without phase separation or significant changes in appearance and odor.

The results confirmed that turmeric face cream can be successfully formulated using simple pharmaceutical techniques and ingredients. The prepared herbal cream was found safe, stable, effective, and suitable for topical application. The formulation may be useful for skin nourishment, moisturization, acne reduction, and protection against microbial infections.

Keywords: Turmeric, *Curcuma longa*, Herbal Cream, Curcumin, Cosmetics, Evaluation.



I. INTRODUCTION

Cosmetics are preparations used for cleansing, beautifying, protecting, and improving the appearance of the skin. Among different cosmetic products, face creams are widely used because they provide moisturizing, cleansing, and protective effects to the skin. Herbal cosmetics have become increasingly popular due to their natural origin and fewer side effects.

Turmeric (*Curcuma longa*) is an important medicinal plant belonging to the family Zingiberaceae. It has been used traditionally in Ayurveda for the treatment of skin disorders, wounds, infections, and inflammation. Turmeric contains curcumin, which possesses antimicrobial, antioxidant, anti-inflammatory, and skin protective properties.

Herbal face creams containing turmeric are useful in reducing acne, pigmentation, skin irritation, and microbial infections. Turmeric also improves skin complexion and provides natural glow to the skin. Due to these beneficial effects, turmeric is widely used in cosmetic and pharmaceutical preparations.

The present work focuses on formulation and evaluation of turmeric face cream using suitable pharmaceutical excipients. The prepared formulation was evaluated for different physicochemical parameters to ensure quality, stability, and safety for topical application.

II. LITERATURE REVIEW

Herbal cosmetics are widely used because of their therapeutic and cosmetic benefits. Turmeric is one of the most important medicinal plants used in skincare preparations.

Aggarwal et al. reported that curcumin possesses strong antioxidant activity which protects skin cells from oxidative stress and premature aging. Kaur and Saraf demonstrated that turmeric exhibits antibacterial activity against acne-causing microorganisms. Chattopadhyay et al. studied anti-inflammatory activity of curcumin and concluded that turmeric reduces skin irritation and inflammation.

Patel et al. formulated herbal creams containing turmeric extract and reported satisfactory spreadability, homogeneity, and stability. Joshi and Pawar studied herbal cosmetic formulations and observed that glycerin-based creams provide good moisturizing effect and skin softness.

The literature survey confirms that turmeric is an effective herbal ingredient for cosmetic formulations because of its antimicrobial, antioxidant, wound healing, and anti-inflammatory activities.

III. PHARMACOGNOSY OF TURMERIC

Biological Source

Turmeric consists of dried rhizomes of *Curcuma longa* Linn.

Family

Zingiberaceae



Synonyms

Haldi, Indian Saffron

Chemical Constituents

- Curcumin
- Volatile oils
- Resins
- Proteins
- Carbohydrates

Uses

- Antimicrobial agent
- Antioxidant
- Anti-inflammatory agent
- Skin brightening agent
- Wound healing agent

IV. AIM AND OBJECTIVES

Aim

To formulate and evaluate a herbal turmeric face cream using suitable pharmaceutical ingredients.

Objectives

1. To prepare herbal turmeric face cream.
2. To evaluate physicochemical parameters of the cream.
3. To study spreadability, homogeneity, and stability of the formulation.
4. To prepare safe and non-irritant cosmetic formulation.
5. To study cosmetic benefits of turmeric on skin.



V. METHODOLOGY

Materials Used

| Sr. N | Ingredient | Quantity | Uses |
|-------|---------------------|----------|-------------------|
| 1 | Stearic Acid | 15 g | Emulsifying agent |
| 2 | Potassium Hydroxide | 0.7 g | pH adjuster |
| 3 | Purified Water | 76 g | Vehicle |
| 4 | Glycerin | 8 g | Emollient |
| 5 | Methyl Paraben | 0.2 g | Preservative |
| 6 | Propyl Paraben | 0.02 g | Preservative |
| 7 | Turmeric Extract | 3 g | Active ingredient |
| 8 | Perfume | q.s. | Flavoring agent |

Procedure

Preparation of Oil Phase

Stearic acid was taken in an evaporating dish and melted on water bath at 70°C to form oil phase.

Preparation of Aqueous Phase

Potassium hydroxide was dissolved in purified water. Glycerin was added with continuous stirring and heated to 70°C.

Addition of Turmeric Extract

Turmeric extract was added into aqueous phase with continuous stirring.

Emulsification

The oil phase was slowly added into aqueous phase with constant stirring until smooth cream was formed.

Addition of Preservatives and Perfume

Methyl paraben, propyl paraben, and perfume were added after cooling.

Packing

Prepared cream was packed in wide mouthed airtight container.



VI. EXPERIMENTAL WORK

Evaluation Parameters

1. Appearance

The cream was visually examined for color, texture, and appearance.

2. pH Determination

The pH of cream was measured using pH meter.

3. Homogeneity

The formulation was tested for uniformity by visual inspection.

4. Spreadability

Spreadability was determined by pressing cream between two glass slides.

5. Washability

The cream was applied on skin and washed with water.

6. Irritancy Test

Cream was applied on skin and observed for irritation or redness.

7. Stability Study

The formulation was stored under different conditions and observed for changes.

VII. RESULTS AND DISCUSSION

The turmeric face cream was successfully prepared by emulsification method. The prepared cream showed smooth texture, yellow color, pleasant odor, and good consistency.

The pH of formulation was found between 6.5–7, which is suitable for skin application. The cream exhibited good spreadability and washability. No irritation or redness was observed during irritancy testing.

The stability study showed that the formulation remained stable without phase separation or major changes in color and odor.



Table: Evaluation Results

| Parameter | Observation |
|---------------|-----------------|
| Color | Yellow |
| Odor | Pleasant |
| Appearance | Smooth |
| pH | 6.5–7 |
| Homogeneity | Good |
| Spreadability | Good |
| Washability | Easily washable |
| Irritancy | Non-irritant |
| Stability | Stable |

The results confirmed that the prepared turmeric face cream is suitable for cosmetic application and provides skin protective benefits.

VIII. CONCLUSION

The present study successfully formulated and evaluated herbal turmeric face cream using suitable pharmaceutical ingredients. The prepared formulation showed good appearance, homogeneity, spreadability, washability, and stability.

Turmeric possesses antimicrobial, antioxidant, and anti-inflammatory properties beneficial for skincare applications. The cream was found safe, stable, and non-irritant for topical application.

The study concludes that turmeric face cream can serve as an effective herbal cosmetic preparation for improving skin health and protecting skin from infections and irritation.

ACKNOWLEDGEMENT

The authors are thankful to the Principal, teaching staff, and laboratory staff of the institute for their valuable support and guidance during completion of this research work.

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