

## Review Article

# A Systematic: Review Article on Cold Cream

Ruchita Phalaskar\*, Tanvi Salunkhe, Rahul Mane, Rutika More, Huzaifa Jhatam

Raigad College of Pharmacy, Mohopre, 402301

appearance. The demand for herbal cosmetics is increasing because they are safe, natural, and have fewer side effects. These products are commonly used by both men and women to enhance their beauty and have fewer side effects. These products are made using extracts from herbs and plants, which makes them affordable and widely accepted. Herbal cold creams are formulated with natural ingredients such as neem, turmeric, and fruit extracts like Bombax ceiba pulp. When applied, they give a cooling effect due to the slow evaporation of water in the formulation. The prepared herbal creams can be evaluated using different parameters such as pH, viscosity, spreadability, irritancy, microbial stability, thermal stability, acid value, saponification value, washability, color, and in vitro diffusion studies.

**Keywords:** Herbal cosmetics, Natural extracts, Cold cream, Neem, Turmeric, Fruit extract.

## INTRODUCTION

Cosmetics are products commonly used to beautify, cleanse, and protect the skin. The term cosmetic is derived from the Greek word 'kosmestikos', meaning to adorn. Among various cosmetic preparations, cold cream is a popular formulation belonging to the water-in-oil (W/O) emulsion type. Cold creams provide prolonged contact with the skin compared to other semi-solid preparations and impart a smooth, non-greasy feel. [1,2] The oily phase of the cream acts as an emollient, helping to soften and moisturize the skin, while the water phase provides additional hydration and cooling. Cold cream helps restore moisture to dry

skin, removes impurities from pores, and produces a cooling sensation upon application. It melts at body temperature and is easily washable, making it convenient for regular use. Cold creams are generally non-irritating and suitable for various skin types. The formulation penetrates the skin through natural pores, maintaining softness and suppleness. In recent years, advanced formulations such as anti-aging cold creams have been developed to preserve youthful skin for longer durations. Common cleansing agents include cleansing creams, soap, and water, with cold creams often preferred for their mildness and moisturizing effect. [1,2,3]



Fig. Cold Cream

**Advantages Of Herbal Cold Cream: -**

1. Helps prevent skin aging and dehydration. [3]

2. The balanced composition of water and oil protects the skin from harsh environmental conditions. [2]
3. Keeps the skin moisturized, nourished, and protected. [1]
4. Formulated to gently remove makeup while leaving the skin soft and smooth. [3]
5. Medicated cold creams can be used as topical pharmaceutical preparations for treating various skin conditions. [4]
6. Helps maintain the skin's natural moisture balance and prevents dryness or roughness. [4]

#### **Ideal Characteristics of Cold Cream: -**

1. It should have an appropriate consistency that allows easy application and smooth removal from the container. [5]
2. The formulation should remain stable and not require dilution. [4]
3. The ideal pH range should be between 4.6 and 6.0, matching the natural pH of the skin. [5]

4. It should possess a low sensitization index, minimizing the risk of allergic reactions. [3]
5. The cream should be aesthetically pleasing in appearance and texture. [4]
6. It must be non-dehydrating, non-greasy, and non-staining on the skin. [5]

#### **MATERIAL AND METHOD: -**

Excipients Used in the Preparation of Cold Cream: -  
**Beeswax:**

Beeswax is a natural wax secreted by honeybees belonging to the genus *Apis*. It is produced in the form of small scales from eight wax glands located on the abdomen of worker bees. These scales are collected and utilized within the hive. Chemically, beeswax is composed mainly of esters of fatty acids and long-chain alcohols, providing emollient and stabilizing properties in cosmetic formulations. [6]



**Fig. Beeswax**

#### **Liquid paraffin:**

Liquid paraffin, also known as paraffinum liquidum or *mineral oil*, is a highly refined form of mineral oil used in cosmetics and pharmaceuticals. It acts as an

excellent moisturizer and emollient. It should not be confused with the fuel-grade paraffin (kerosene). In cosmetics, it forms a protective layer on the skin surface, preventing water loss and maintaining smoothness. [7]



**Fig. Liquid Paraffin**

**Borax:**

Borax, chemically known as sodium borate ( $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$ ), is a naturally occurring mineral and a white crystalline salt. When dissolved in water, it forms an alkaline solution. In cold cream formulations, borax serves as an emulsifying agent, helping to stabilize the oil and water phases. [5,6]

Turmeric is obtained from the rhizomes of *Curcuma longa*, a perennial herb belonging to the family Zingiberaceae. Native to the Indian subcontinent and Southeast Asia, turmeric thrives in warm and humid climates. It is widely known for its medicinal, antioxidant, and anti-inflammatory properties, making it a beneficial addition to skincare formulations. [7,5]

**Turmeric:**

**Fig. Turmeric**

**Rose Oil:**

Rose oil is an essential oil derived from the petals of various species of roses. It can be obtained through steam distillation (rose otto) or solvent extraction

(rose absolute), with the latter being more common in perfumery. Despite its high cost, rose oil remains a popular ingredient due to its pleasant fragrance and soothing properties for the skin. [7,8]



**Fig. Rose Water**

**Aloe Vera:**

Aloe vera is a succulent plant species of the genus Aloe, native to the Arabian Peninsula and widely cultivated in tropical and arid regions. The plant is

well known for its therapeutic properties and has long been used in skincare and medicinal products. Aloe vera gel provides hydration, promotes healing, and soothes irritated skin. [8]



**Fig. Aloe Vera**

**Olive oil:**

Olive oil is a natural fat obtained by pressing the fruits of the olive tree (*Olea europaea*), native to the Mediterranean region. Rich in antioxidants and fatty

acids, it has been used since ancient times in food, medicine, and skincare. In cold cream formulations, olive oil acts as a nourishing and moisturizing agent, enhancing skin softness and elasticity.<sup>[8,9]</sup>



**Fig. Olive Oil**

**Distilled water:**

Distilled water is purified water obtained by boiling and condensing steam into a separate container, leaving behind impurities and minerals. It serves as

the aqueous phase in cream formulations, ensuring product purity and preventing contamination from dissolved solids.<sup>[9,7]</sup>

**Preparation of Cold Cream: -**

**Table 1: Composition of Herbal Cold Cream: -**<sup>[9,10,7]</sup>

| Sr. No. | Ingredient      | Quantity                   |
|---------|-----------------|----------------------------|
| 1       | Beeswax         | 6 g                        |
| 2       | Liquid Paraffin | 18 ml                      |
| 3       | Borax           | 0.3 g                      |
| 4       | Turmeric Powder | 0.3 g                      |
| 5       | Rose Oil        | 0.06 ml                    |
| 6       | Aloe Vera Gel   | q.s. (quantity sufficient) |
| 7       | Olive Oil       | 0.3 ml                     |
| 8       | Distilled Water | q.s. (quantity sufficient) |

**Method of Preparation: -**

Beeswax was melted in a small dish placed on a hot plate. To the molten beeswax, liquid paraffin was

added, and the mixture was maintained at a temperature of about 70 °C. In a separate 100 ml beaker, borax was dissolved in distilled water and heated along with olive oil on another hot plate at the

same temperature (70 °C) to prepare the aqueous phase. Both the oil and aqueous phases were maintained at equal temperatures to ensure proper emulsification.<sup>[6,7]</sup> Turmeric powder and aloe vera gel were then incorporated into the aqueous phase. The hot borax solution was slowly added, drop by drop, to the melted beeswax mixture with continuous stirring to form a smooth and uniform emulsion. Finally, a few drops of rose oil were added to impart fragrance. The mixture was stirred continuously until it cooled and a smooth, semi-solid cream was obtained.<sup>[9,10,8]</sup>

## Evaluation Tests for Herbal Cream

### 1. Organoleptic Properties: -

The organoleptic characteristics such as color, odor, and appearance of the prepared cream were evaluated visually to assess its physical acceptability.<sup>[11]</sup>

### 2. Determination of pH: -

The pH of the freshly prepared herbal cream was measured using a digital pH meter at room temperature to ensure compatibility with the skin's natural pH range.<sup>[10]</sup>

### 3. Determination of Homogeneity: -

The homogeneity of the formulation was checked visually and by touch to confirm the absence of any coarse particles, lumps, or phase separation, ensuring a smooth and uniform texture.<sup>[9]</sup>

### 4. Determination of Spreadability: -

Spreadability indicates how easily the cream spreads on the skin surface. The therapeutic effectiveness of a topical formulation depends partly on its ability to spread uniformly.<sup>[11]</sup> Approximately 3 g of cream was placed between two glass slides to form a thin layer of uniform thickness. A weight of 5 g was placed on the upper slide for 5 minutes to remove air and ensure uniform contact. Then, an additional 10 g weight was attached to the upper slide and allowed to move with the help of a string tied to a hook. The time taken for the two slides to slip apart by 10 cm was recorded.<sup>[10,11]</sup> The spreadability (S) was calculated using the following formula:

$$S = m \times L / T$$

Where, S = Spreadability. M = Weight tied to the upper slide

L = Distance moved by the slide (cm). T = Time taken (seconds)

### 5. Determination of Type of Smear: -

To assess the type of smear, a small quantity of cream was applied to the skin surface of a human volunteer. The film formed after application was observed for greasiness or dryness, indicating the nature of the cream.<sup>[12,11]</sup>

### 6. Determination of Viscosity: -

The viscosity of the formulated cream was determined using a Brookfield Viscometer with spindle number S-64 operated at 20 rpm and 25°C. The viscosity readings were taken three times, and the average value was recorded.<sup>[12,13]</sup>

### 7. Irritancy Test: -

The formulated cream was tested for skin irritation by applying it to a small area of the skin. No redness, edema, irritation, or inflammation was observed during the study, indicating that the formulation is safe for topical use.<sup>[12]</sup>

### 8. Dilution Test: -

This test was performed to determine the type of emulsion (oil-in-water or water-in-oil). The cream was diluted with water and oil separately. If the emulsion mixed well with water, it was identified as an oil-in-water (O/W) type. If it mixed well with oil, it was identified as a water-in-oil (W/O) type.<sup>[12]</sup>

### 9. Test for Microbial Growth: -

The microbial contamination of the cream was evaluated using the streak plate method. The samples were inoculated onto nutrient agar plates, while a control plate was maintained without the sample. All plates were incubated at 37°C for 24 hours. After incubation, the plates were observed for any signs of microbial growth, and the results were compared with the control. The absence of colonies indicated no microbial contamination.<sup>[12,13]</sup>

### 10. Patch Test: -

About 1–3 g of the formulated cream was applied evenly on a sensitive skin area, such as under the lower jaw. The cream was applied over an area of 1 cm<sup>2</sup>, and the site was observed after 24 hours for any signs of allergic reaction or irritation.<sup>[14,15]</sup>

### 11. Dye Test: -

To identify the type of emulsion, a small quantity of scarlet red dye was mixed with the cream. A drop of the dyed sample was placed on a microscope slide, covered with a cover slip, and examined under a microscope. If the dispersed globules appear red and the background remains colorless, the cream is of water-in-oil (W/O) type. Conversely, if the globules are colorless and the background appears red, the cream is of oil-in-water (O/W) type. [14,15]

### CONCLUSION: -

From the results of the evaluation studies, it can be concluded that the formulated herbal cold cream exhibited desirable characteristics such as good consistency, Spreadability, uniformity, suitable pH, and a non-greasy texture. No phase separation was observed during the stability study, indicating that the formulation was stable. The study suggests that the developed polyherbal cold cream is safe for topical application, as it is prepared entirely from natural herbal extracts. Herbal-based formulations are generally considered safer and have fewer side effects compared to synthetic products. Therefore, the use of herbal ingredients in cosmetic formulation.

### REFERENCES

1. Coggshall, W. L., & Morse, R. A. (1984). *Beeswax: Production, Harvesting, Processing, and Products*. Wigwams Press. ISBN: 978-1878075062.
2. PubChem. (2021). Borax. U.S. National Library of Medicine. Retrieved December 27, 2021, from [pubchem.ncbi.nlm.nih.gov](https://pubchem.ncbi.nlm.nih.gov).
3. PubChem. (2020). Curcumin. U.S. National Library of Medicine. Retrieved November 25, 2020.
4. Nedeltcheva-Antonova, D., Stoicheva, P., & Antonov, L. (2017). Chemical profiling of Bulgarian rose absolute (*Rosa damascena* Mill.) using GC–MS and TMS derivatives. *Industrial Crops and Products*, 108, 36–43.
5. National Center for Complementary and Integrative Health. (2020). Aloe vera. U.S. National Institutes of Health. Retrieved July 1, 2021.
6. Kennell, N. M. (2001). Most Necessary for the Bodies of Men: Olive Oil and Its By-products in the Later Greek Gymnasium. In M. Joyal (Ed.), *In Altum: Seventy-Five Years of Classical Studies in Newfoundland* (pp. 119–133).
7. Empire City Auto Parts. (2020). Distilled Water. Retrieved September 22, 2021.
8. Dusi, S., & Saminathan, J. (2020). Formulation and evaluation of herbal cold cream. *International Journal of Pharmacy Research & Technology*, 10(1).
9. R. M. (2015). *Pharmaceutics-II* (4th ed.). Vallabh Prakashan, pp. 222.
10. Maruthi, N., Nagaraja, T. S., Uma, M., Abdul Munaf, S., Arun, K. A., Abdul Jaseem, P. T., & Akarsh, M. S. (2021). Formulation, characterization, and evaluation of herbal cold cream. *Indo American Journal of Pharmaceutical Research*. ISSN: 2231-6876.
11. Vyas, N., & Dwivedi, S. (2020). *Herbal Drug Technology – Practical Lab Manual*. S. Vikas & Company Medical Publishers, pp. 33–34.
12. Srivastava Koka, S., & Shidhaye, S. (2020). *Handbook of Experimental Herbal Drug Technology*. S. Vikas & Company Medical Publishers, pp. 15–17.
13. Kamble, M., Raghatate, P., & Meshram, S. (2020). Formulation and evaluation of herbal cold cream using Bombax ceiba fruit pulp. *International Journal of Research and Scientific Innovation (IJRSI)*, 7(2), ISSN 2321–2705.
14. Lodhi, S., & Kori, M. (2020). *Practical Book of Herbal Drug Technology*. S. Vikas & Company Medical Publishers, pp. 29–31.
15. Navgire, T. D., & Pawar, M. B. (2021). Formulation and evaluation of cold cream. *International Journal of Creative Research Thoughts (IJCRT)*, 9(9), ISSN: 2320-2882.

**Cite:** Ruchita Phalaskar\*, Tanvi Salunkhe, Rahul Mane, Rutika More, Huzaifa Jhatam, A Systematic: Review Article on Cold Cream, *Int. J. Med. Pharm. Sci.*, 2026, 2 (3), 407-413. <https://doi.org/10.5281/zenodo.19239385>