

# Formulation and Evaluation of Herbal Cold Cream

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**Abstract:** Cold cream, also termed Fatty Cream in the European Pharmacopoeia, is a water in oil (W/O) emulsion. This article covers its uses, formulation, preparation, tests, history, and ideal properties. Originally, druggists in pre-1st century times compounded rosewater cream, chilling it on ice for a refreshing skin treatment. The term "cold cream" derives from the Latin word "refrigeran," signifying "making cold," as its application induces water evaporation, resulting in a cooling sensation. A cosmetic product encompasses any substance intended for contact with various external parts of the human body, including the epidermis, hair system, nails, lips, external genital organs, teeth, and oral cavity mucous membranes. These products serve purposes such as cleansing, perfuming, altering appearance, correcting body odour, and preserving.

**Keywords:** Herbal skincare cream, Water in oil emulsion, Alovera gel, Turmeric

## I. INTRODUCTION

Cold cream is a cosmetic product and the term "cosmetics" originates from the Greek word "Kosmtikos," signifying proficiency, arrangement, and expertise in enhancing beauty. According to the Indian Drug and Cosmetic Act, cosmetics are described as any item intended to be rubbed, poured, sprinkled, spread on, or otherwise applied to the human body or any part thereof, for the purpose of cleaning, beautifying, promoting attractiveness, or altering appearance, including those intended for use as a component of cosmetics.

Cold creams are primarily utilized in skincare regimens, such as facial masks or lip balms, owing to their hydrating qualities. Additionally, they serve as effective makeup removers. During colder, windy conditions, cold weather creams, typically enriched with vitamin E, jojoba, and natural oils like olive oil, rose petals, and various fruit extracts, particularly grape seeds, shield facial skin from dryness, imparting radiance, softness, and fairness. Hence, it's essential for consumers to include a face cream in their winter skincare arsenal. These winter care creams cater to all skin types normal, oily, and dry by alleviating signs of peeling caused by winter dryness and nurturing delicate facial skin. The potent moisturizing formula within these creams also addresses therapeutic needs during the winter months. Cold cream consists of a blend of water and specific fats, typically incorporating beeswax and assorted fragrances, formulated to soften the skin and eliminate makeup. Unlike the oil-in-water emulsion of vanishing cream, cold cream is a water-in-oil emulsion, earning its name because it appears to vanish upon application to the skin.

### Benefit Turmeric in Health

- i. Natural anti-inflammatory agent
- ii. Antioxidant
- iii. Brain health
- iv. Mood booster
- v. Heart health
- vi. Arthritis relief



## **II. LITERATURE REVIEW**

1. Studies on aloe vera's moisturizing properties
2. Research on herbal extracts' antioxidant and anti-inflammatory effects
3. Reviews of natural ingredients' benefits for skin health

### **Potential Drawbacks:**

1. May not be suitable for extremely oily skin
2. Some users may experience allergic reactions to certain ingredients

### **Future Directions:**

1. Further research on specific herbal ingredients' benefits
2. Development of customized formulations for specific skin concerns
3. Increased focus on sustainability and eco-friendliness

Overall, herbal cold cream is a popular and effective solution for dry skin, offering long-lasting hydration and protection. Its natural ingredients and non-greasy texture make it suitable for daily use.

Herbal cold creams are a popular choice for skin care, especially during dry winter months. Here's a review of some popular herbal cold creams:

### **Top-Rated Herbal Cold Creams**

**Eeshha Herbal Hydrating Cold Cream:** This cream has a pleasant, subtle scent and a thick yet easily spreadable consistency. It's lightweight, non-greasy, and hydrates the skin well, making it suitable for all skin types. It contains aloe vera and jojoba oil, and is priced at ₹135. Users have given it a 4.5-star rating <sup>1</sup>.

**Ayur Herbal Cold Cream with Aloe Vera:** This cream is based on aloe vera, a time-tested product for skin health. It's effective in fighting rough and dry skin, and is considered a good and economical option. Users have appreciated its benefits in soothing skin dryness.

**Vaadi Herbals Cold Cream with Almonds & Saffron:** This cream is moisturizing, non-greasy, and has a good fragrance. It's suitable for dry skin and is priced reasonably. Users have given it a 4-star rating, praising its moisturizing properties <sup>2</sup>.

### **History**

Centuries ago, civilizations like the Greeks and Egyptians pioneered cold cream, combining beeswax, olive oil, and rosewater for moisturizing benefits. The term "cold cream" gained prominence in the 19th century, evolving through various recipes. Notably, the Greek physician Galen crafted a soothing emulsion of water, beeswax, and olive oil. Over time, modern formulations have expanded to cater to diverse skincare needs, while still preserving the hydrating and nourishing essence of cold cream.

Certainly! Cold cream has been around for a long time, with its roots going back to ancient civilizations like the Greeks and Egyptians. They used natural ingredients like beeswax, olive oil, and rosewater to make skincare products that moisturized and soothed the skin.

In the 19th century, the term "cold cream" became popular because it gave a cooling feeling when applied. One famous version was made by a Greek doctor named Galen, who mixed water, beeswax, and olive oil to create a luxurious cream that made skin softer and protected it.

Today, cold creams have gotten even better thanks to advancements in science. They still keep the skin hydrated and healthy, but now they might have extra stuff like vitamins and plant extracts.

### **Origins**

The concept of cold cream was first developed by Galen, a renowned Greek physician and pharmacist, in the Roman Empire. Galen's original formulation consisted of rose petals, beeswax, and water, which became known as "Galen's cream". This cream was designed to moisturize and protect the skin <sup>1 2</sup>.



### **Evolution**

Over time, the recipe for cold cream has undergone significant changes, refinements, and optimizations. The original formulation has been modified to include various natural ingredients, such as olive oil, and other herbal extracts, to enhance its moisturizing and skin-protecting.

### **Cold Cream**

Cold cream is a mixture of water and specific fats, often beeswax and scented ingredients, crafted to soften skin and remove makeup. Unlike vanishing cream, which is an oil-in-water emulsion, cold cream is a water-in-oil emulsion, known for its cooling sensation upon application. Its name stems from this refreshing effect it leaves on the skin. Variations of cold cream have been utilized for nearly two millennia. Cold creams are either water-in-oil or oil-in-water emulsions containing certain fats, typically beeswax, and perfumed ingredients. They're applied to the skin to enhance smoothness and facilitate makeup removal. The term "cold cream" originates from its ability to impart a cooling sensation upon application. Although cold cream primarily consists of fatty and oily substances, its slow water evaporation upon skin contact creates a cooling effect, classifying it as a water-in-oil (W/O) emulsion.

In cold cream formulations, the oil phase predominates, making it an oil-based semisolid preparation. It's also known as Unguentum or Ceratum Refrigerans, typically comprising mineral oil, beeswax, borax, and water. Cold cream serves as a soothing and cleansing cosmetic, usually exhibiting a thick and oily consistency.

Herbal cold cream is a natural alternative to traditional cold creams, typically made with ingredients like herbal extracts, essential oils, and natural waxes. It's often used for moisturizing and soothing dry or irritated skin, especially during cold weather or harsh environmental conditions.

### **Benefits of Herbal Cold Cream**

- Moisturizes and nourishes dry skin effectively.
- Soothes irritation and reduces redness.
- Helps to repair and protect the skin's natural barrier.
- Provides long-lasting hydration without feeling greasy.
- Suitable for sensitive skin types.
- Helps to improve skin texture and tone over time.
- Offers a refreshing and comforting sensation when applied.
- Free from harsh chemicals and artificial fragrances, making it gentle on the skin.
- Enhances the effectiveness of other skincare products by creating a smooth base for makeup application.
- Can be used as a soothing after-sun treatment to help alleviate sunburn discomfort.

### **Ideal Characteristics of Herbal Cold Cream**

- **Natural Ingredients:** Formulated with herbal extracts and natural oils to nourish and soothe the skin.
- **Hydration:** Provides deep and long-lasting hydration without feeling heavy or greasy.
- **Non-comedogenic:** Does not clog pores, suitable for all skin types including sensitive and acne-prone skin.
- **Gentle Formulation:** Free from harsh chemicals, artificial fragrances, and irritants, making it gentle on the skin.
- **Skin Repair:** Helps repair and protect the skin's natural barrier, aiding in the healing process for dry or damaged skin.
- **Multipurpose:** Can be used for various purposes such as moisturizing, soothing irritation, and as an after-sun treatment.
- **Quick Absorption:** Absorbs quickly into the skin without leaving a sticky residue.
- **Enhances Skin Texture:** Improves skin texture and tone over time, leaving it smooth and radiant.
- **Refreshing Sensation:** Provides a refreshing and comforting sensation upon application, leaving the skin feeling rejuvenated.



- Sustainable Packaging: Packaged in eco-friendly and recyclable materials to reduce environmental impact.

## **Aim and Objectives**

### **1. Moisturization:**

To deeply hydrate and nourish dry or rough skin, especially during cold weather, using natural ingredients.

### **2. Protection:**

To protect the skin from harsh environmental conditions such as wind, cold, and pollution by forming a protective barrier.

### **3. Soothing Effect:**

To calm and relieve irritated or sensitive skin through herbal extracts known for their anti-inflammatory and soothing properties (e.g., aloe vera, chamomile).

### **4. Natural Healing:**

To promote skin healing and regeneration using herbs with medicinal properties like neem, tulsi, or turmeric.

### **5. Non-toxic and Chemical-free Care:**

To provide a skincare alternative that is free from synthetic chemicals, artificial fragrances, and harmful preservatives.

### **6. Herbal Ingredients And Apparatus:**

Apparatus Required

1. Beaker
2. Measuring Cylinder
3. Glass rod
4. Thermometer
5. Water Bath
6. Weighing balance.

Herbal Ingredients and excipient required:-

1. Borax
2. Bees wax
3. Rose water
4. Liquid Paraffin
5. Turmeric
6. Alovera gel



Fig. 1:- Preparation of Herbal Cold Cream



### 1. Borax:-

Borax, also known as sodium borate, is a mineral and a salt of boric acid. It's commonly used in household cleaning products, as a buffering agent in chemical laboratories, and even as an ingredient in some cosmetics. It has various applications due to its cleaning and antiseptic properties. Borax is used in lotions and creams. Borax is combined with wax to improve the consistency of lotions and creams. It also work as an emulsifier when used with wax and it is mostly used in hand soaps. It is excellent ingredient used for cleaning as it's alkaline in nature.

Borax, recognized primarily as a cleaner, is also a common ingredient in various household items, including specialty toothpastes, cosmetics like lotions and sunscreens, and paint. Additionally, it serves as a precursor to significant boron compounds such as boric acid, extensively used in insecticides

Borax is sometimes included in herbal cold creams for its potential benefits in skincare. In these formulations, borax may act as a preservative, emulsifier, or mild antiseptic. Additionally, it can contribute to the cream's texture and help stabilize the ingredients. However, it's essential to note that borax may not be suitable for everyone, so individuals with sensitive skin should be cautious when using products containing borax. Always check the ingredient list and consult with a healthcare professional if you have any concerns.



Fig. 2:- Borax

### 2. Bees wax

Synonyms: Cera alba, white wax. Family: Apidae

Biological Source: Beeswax is produced by honeybees, primarily *Apis mellifera*, through the secretion of wax glands located on the abdomen of worker bees.

Chemical Constituents: Beeswax primarily consists of esters of fatty acids and long-chain alcohols. The major constituents include:

- a) Ester:- Myricyl palmitate, Palmitate esters.
- b) Fatty acid:- Palmitic acid, Oleic acid, Linoleic acid
- c) Alcohol:- Myricyl alcohol
- d) Hydrocarbon:- Nonacosane, Hentriacontane.

Beeswax is a key ingredient in homemade cosmetics, but I haven't talked about it yet. Beeswax plays a crucial role in herbal cold cream formulations as it acts as a natural emulsifier, helping to bind together the water and oil components of the cream. Additionally, beeswax provides a protective barrier on the skin, helping to retain moisture and prevent moisture loss, making it especially beneficial for dry or sensitive skin types. It also contributes to the creamy texture and helps the cream to spread smoothly on the skin.







Fig. 3 :- Bees wax

### Rose water

Synonyms: Attar of roses, Rose hydrosol.

Rose water is a fragrant liquid made by steeping rose petals in water. It's commonly used in cooking, cosmetics, and religious ceremonies for its delicate scent and flavor. Certainly! Rose water has been used for centuries in various cultures for its beauty and health benefits.

Rose water is a popular ingredient in herbal cold creams due to its hydrating and soothing properties. When added to a cold cream formula, it can help moisturize the skin while providing a subtle fragrance. Cold creams are often used as a gentle moisturizer, especially for dry or sensitive skin, and the addition of rose water enhances their benefits, making them a luxurious treat for the skin. In herbal cold creams, rose water not only adds a delightful scent but also contributes to the overall therapeutic effect. Its natural anti-inflammatory properties can help soothe irritated skin, while its gentle astringent properties may help tone and tighten pores. Additionally, rose water is rich in antioxidants, which can help protect the skin from environmental stressors and promote a healthy complexion. Overall, incorporating rose water into herbal cold creams enhances their moisturizing, soothing, and rejuvenating qualities, making them a favorite in skincare routines.



Fig. 4 :- Rose water

### Liquid Paraffin-

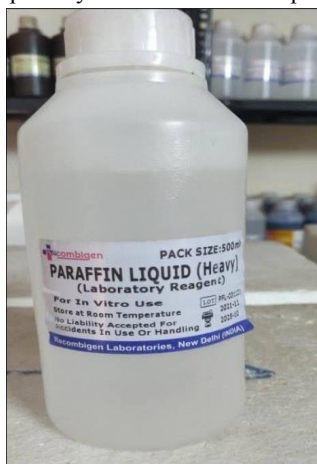
Liquid paraffin, also known as mineral oil, is a clear, odorless oil derived from petroleum. It's often used in skincare products like lotions, creams, and ointments due to its ability to lock in moisture and prevent water loss from the skin.

Liquid paraffin, also known as mineral oil, is a colorless and odorless oil derived from petroleum. It's a highly refined



and purified form of petroleum, consisting of a mixture of alkanes. Liquid paraffin is also utilized in the pharmaceutical industry in laxatives and as a lubricant for medical devices. In addition, it's found in various household products such as baby oils, makeup removers, and bath oils.

Liquid paraffin is sometimes used in the formulation of cold creams, including herbal cold creams. It serves as an emollient, helping to moisturize and soften the skin. In cold creams, liquid paraffin works alongside other ingredients such as herbal extracts, oils, waxes, and water to create a rich and hydrating cream that can soothe and protect the skin, especially in dry or cold weather conditions. In herbal cold creams, the addition of herbal extracts can provide additional benefits such as antioxidant properties, soothing effects, and potential aromatherapeutic benefits. These herbal extracts can vary widely depending on the formulation and intended use of the cold cream. Overall, liquid paraffin plays a role in ensuring that the cold cream provides adequate hydration and forms a protective barrier on the skin.



**Fig 5 :-Liquid Paraffin**

**Turmeric:- Synonyms :- Haldi Family:- Zingiberaceae**

**Biological Source:-** It comes from the rhizomes (underground stems) of the *Curcuma longa* plant.

**Chemical Constituents:-** Turmeric contains curcuminoids, with curcumin being the most prominent compound. Other constituents include turmerones, atlantones, and zingiberene.

Turmeric is a spice known for its vibrant color and distinct flavor. It's also celebrated for its potential health benefits, thanks to its active compound, curcumin, which has antioxidant and anti-inflammatory properties. People often use it in cooking, traditional medicine, and even skincare. Turmeric is a common ingredient in herbal products due to its numerous health benefits. It's often included in supplements, teas, and topical creams for its potential antioxidant, anti-inflammatory, and immune-boosting properties.

Including turmeric in a herbal cold cream could offer potential benefits due to its anti-inflammatory and antioxidant properties. It may help soothe irritated skin and reduce redness, making it a popular ingredient in skincare products aimed at calming sensitive or inflamed skin, such as cold creams. However, it's essential to consider individual sensitivities and skin types before incorporating any new ingredient into a skincare routine.

**Preparation of turmeric extracts:-**

- i. 1 kg of turmeric was washed with lukewarm water, air-dried and milled into a fine powder. The standard method of blanching was used for washing turmeric.
- ii. The water was boiled at 100°C, and then turmeric was placed in boiling water for 30–35 s, turmeric was removed from boiling water and placed in cooled water.
- iii. After washing with cooled water, moisture was removed by placing them at room temperature.
- iv. Washed turmeric was sliced, placed in an oven at 70–75 °C for 7–8 h and dried.
- v. Dried turmeric was removed from the oven.



vi. Turmeric was crushed, again placed in an oven for 10 min to remove the moisture completely then milled into a fine powder.



Fig. 7 :- Turmaric

#### **Aloe vera :-**

Synonyms:- Aloe barbadensis Miller , Indian aloe. Family:- Asphodelaceae

Biological Source:-Aloe vera is a succulent plant known for its thick, fleshy leaves, native to the Arabian Peninsula but cultivated worldwide.

Chemical Constituents:-Aloe vera gel contains various compounds, including polysaccharides (such as acemannan), anthraquinones (such as aloin), vitamins, enzymes, minerals, and amino acids.

Aloe vera is a succulent plant with thick, fleshy leaves that contain a gel-like substance. This gel is widely used in skincare and herbal products for its moisturizing, soothing, and healing properties. It's often found in lotions, creams, gels, and even beverages. Aloe vera can help hydrate the skin, reduce inflammation, and promote wound healing, making it a popular ingredient in various cosmetic and herbal formulations.

Aloe vera is frequently included in herbal cold creams for its moisturizing and soothing properties. Its gel can help hydrate and calm the skin, making it a beneficial ingredient in cold creams designed to provide relief to dry or irritated skin, especially during colder weather. Combined with other herbal extracts and oils, aloe vera can contribute to a nourishing and protective formula for skincare.



Fig.8:-Aloe-vera





Preparation of Alovera gel:-

- i. Leaf Selection: Choose mature, healthy aloe vera leaves.
- ii. Cleaning: Wash the leaves thoroughly under running water to remove any dirt or debris.
- iii. Cutting: Use a sharp knife to cut off the edges and slice open the leaf lengthwise to expose the gel-filled interior.
- iv. Scraping: With the a knife, gently scrape out the gel from the leaf.
- v. Collecting: Collect the extracted gel into a clean container.



Fig.9 :- Aloe vera Gel

Formulation of Herbal Cold Cream:-

The Herbal Cold Cream can be prepared by following steps:

- i. Firstly, melt the beeswax and liquid paraffin together until well combined.
- ii. In a separate break, heat the rose water until warm but not boiling.
- iii. Dissolve the borax in the warm rose water.
- iv. Slowly pour the borax and rose water mixture into the melted beeswax and oil, stirring constantly.
- v. Add the prepared aloe vera gel and turmeric powder to the mixture and stir well until everything is evenly combined.
- vi. Remove the mixture from heat and let it cool slightly.
- vii. Pour the cream into clean, sterilized jars and let it cool completely before sealing

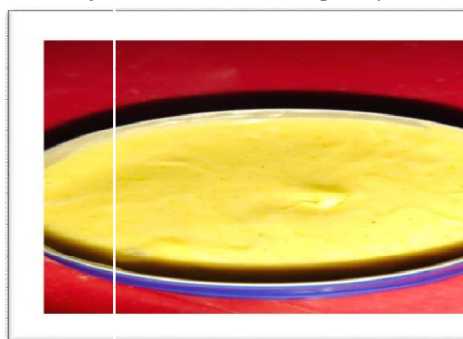


Fig.10:- Herbal Cold Cream

Formulation Table:- (for 10 gm)

Sr.no.	Ingredients	Role of Ingredients	Formulation 1	Formulation 2	Formulation 3
1	Bees wax	Thickening emollient	2.5gm	5gm	10gm
2	Liquid paraffin	Moisturizing	2ml	5 ml	15ml
3	Borax	Emulsifier, Preservative	0.2gm	1.15gm	2.25gm
4	Aloe-vera gel	Soothing	2gm	3.5 gm	5.5gm



5	Turmeric powder	Anti-inflammatory	0.5gm	1.75gm	2.25gm
6	Rose water	Fragrance, Anti-oxidant	2.5ml	2.5ml	5 ml

Table no.1:-Formulations Table

### Evaluation of Herbal Cold Cream

#### 1) Organoleptic evaluation:-

The physical appearance of herbal cold cream was inspected visually against dark background. The average of three readings is recorded. The result is given in the table no.02

#### 2) Washability test:-

Apply a small amount of the cream to the skin, massage it in, then wash with lukewarm water and a gentle cleanser. Evaluate how easily it rinses off without leaving a greasy residue, and observe the condition of the skin post-wash for cleanliness and hydration. The result is given in the table no.03

#### 3) pH

Test the herbal cold cream's pH using meter, aiming for a pH of 4.5 to 5.5 for skin compatibility. Adjust the formulation if necessary. The result is given in the table no.04

#### 4) Irritancy Test:-

Conduct an irritancy test by applying a small amount of the herbal cold cream to a discreet area of skin for 24 hours. Monitor for any signs of irritation. If none occur, the cream is safe for use. The result is given in the table no.05

#### 5) Spread ability:-

The spread ability was expressed in terms of time in seconds taken by two slides to slip off from the cream, placed in between the slides, under certain load. Lesser the time taken for separation of the two slides better the spread ability. Two sets of glass slides of standard dimension were taken. Then one slide of suitable dimension was taken and the cream formulation was placed on that slide. Then other slide was placed on top of the. Then a weight or certain load was placed on the upper slide so that the cream between the two slides was pressed uniformly to form a thin layer. Then the weight was removed and excess of formulation adhering to the slides was scrapped off. The upper slide was allowed to slip off freely by the force of weight tied to it. The time taken by the upper slide to slip off was noted. The result is given in the table no.06

Spread ability =  $\frac{m \times l}{t}$  Where,

m Standard weight which is tied to or placed over the upper slide (30g) l = length of a glass slide (5 cm)

t = time taken in seconds.

#### 6) Homogeneity:-

Take small samples from different parts of the container. Check for consistency and texture. Look for any signs of separation. Mix the samples and assess overall uniformity. If consistent throughout, the cream passes the test; otherwise, adjustments may be needed.

#### Uses of Herbal Cold cream:-

1. Moisturizes:- Hydrates dry skin.
2. Protects:- Shields skin from harsh weather.
3. Soothes:- Calms irritated skin.
4. Nourishes:- Provides essential nutrients.
5. Heals:- Aids in minor wound recovery.
6. Anti-aging:- Helps reduce fine lines.



7. Makeup removal:-Gentle cleansing.
8. Massage:- Promotes relaxation.
9. Night use:- Overnight hydration.
10. Versatile:-Can be used on various body parts.

Advantages Of Herbal Cold Cream:-

- 1) Natural Ingredients: Harnesses the power of botanical extracts.
- 2) Gentle Formulation: Suitable for sensitive skin types.
- 3) Moisturizing: Provides deep hydration to combat dryness.
- 4) Soothing: Calms irritation and inflammation.
- 5) Healing Properties: Helps in the recovery of minor skin issues.
- 6) Antioxidants: Fights free radicals, promoting skin health.
- 7) Non-toxic: Free from harmful chemicals often found in conventional creams.
- 8) Environmentally Friendly: Often packaged in eco-conscious materials.
- 9) Versatile: Can be used for various skincare needs.

Result:-

- 1) Organoleptic evaluation:-

Sr.no.	Parameter	Formulation 1	Formulation 2
1.	Color	Creamy off white	Faint Yellowish
2.	Odour	Mild sweet	Strong Sweet, Mild earthy
3.	Texture	Smooth, Creamy	Thicker
4.	State	Semi-solid	Semi-solid

- 2) Washability test

Sr.no.	Formulation	Result
1	F1	Easily Washable
2	F2	Slightly more residue

Table no.03

- 3) pH:-

Sr.no.	Formulation	Result
1.	F1	5.3
2.	F2	5.3

Table no.04

- 4) Irritancy test:-

Sr. No.	Formulation	Result
1.	F1	No Irritancy
2.	F2	Modirate Irritancy

Table no.05

- 5) Spread ability:-

Sr. No.	Formulation	Result
1.	F1	Easy
2.	F2	Slightly Thicker

Table no. 06



7. Direction to use:

Cleanse Face  
↓  
Apply Cream  
↓  
Massage Gently  
↓  
Focus on Dry Areas  
↓  
Allow Absorption  
↓  
Morning/Evening Use

### III. CONCLUSION

The formulation and evaluation of herbal cold cream using turmeric and aloe vera offer a promising natural skincare product with potential therapeutic benefits. By incorporating turmeric, known for its anti-inflammatory and antioxidant properties, and aloe vera, valued for its soothing and moisturizing effects, the cold cream formulation provides a holistic approach to skincare.

Through careful formulation, the synergistic effects of turmeric and aloe vera can enhance the cream's efficacy in addressing various skincare concerns, including inflammation, dryness, and irritation. The anti-inflammatory properties of turmeric help calm and soothe the skin, while aloe vera provides hydration and promotes healing. Evaluation of the herbal cold cream formulation involves assessing its physical characteristics, stability, safety, and efficacy. This includes tests for texture, color, odor, pH, viscosity, microbial contamination, and skin compatibility. Additionally, clinical studies and user feedback can provide valuable insights into the cream's performance and user satisfaction.

Overall, the formulation and evaluation process ensure the development of a high-quality herbal cold cream that harnesses the natural benefits of turmeric and aloe vera, offering consumers a safe, effective, and eco-friendly skincare solution.

### REFERENCES

- [1]. Kumar, A., Divyansh, N.A., Shukla, R. And Singh, G.P., 2022. Formulation and Evaluation of Herbal Moisturizing Cream. IJPPR, 25(1), pp.9-16.
- [2]. Sonalkar, M.Y. and Nitave, S.A., 2016. Formulation and evaluation of polyherbal cosmetic cream. World J Pharm Pharm Sci, 5, pp.772-9.
- [3]. Shah, N. And Methal, B.M., 2006. A Handbook of Cosmetic. Vallabh Prakashan.
- [4]. Mishra, B., Pandit, J.K. and Bhattacharya, S.K., 1990. Recent trends in drug delivery systems: transdermal drug delivery. Indian Journal of Experimental Biology, 28(11), pp.1001-1007.
- [5]. STORM, E.J., COLLIER, W.S., STEWART, F.R. and BRONAUGH, L.R.,
- [6]. 1990. Metabolism of xenobiotics during percutaneous penetration: role of absorption rate and cutaneous enzyme activity. Toxicological Sciences, 15(1), pp.132-141.
- [7]. Clewell, A., Barnes, M., Endres, J.R., Ahmed, M. And Ghambeer, D.K., 2012. Efficacy and tolerability assessment of a topical formulation containing copper sulfate and hypericum perforatum on patients with herpes skin lesions: a comparative, randomized controlled trial. Journal of drugs in dermatology: JDD, 11(2), pp.209-215.
- [8]. Clewell, A., Barnes, M., Endres, J.R., Ahmed, M. And Ghambeer, D.K., 2012. Efficacy and tolerability assessment of a topical formulation containing copper sulfate and hypericum perforatum on patients with herpes skin lesions: a comparative, randomized controlled trial. Journal of drugs in dermatology: JDD, 11(2), pp.209-215.



- [9]. Jayaprakash, A., 2023. Formulation And Evaluation of Multipurpose Herbal Cream. International Journal of Pharmaceutical Sciences, 1(07), pp.1-1.
- [10]. Goldberg, S.B., Sander, F.E., Rogers, N.H. and Cole, S.R., 2020. Dispute resolution: Negotiation, mediation, arbitration, and other processes. Aspen Publishing.
- [11]. Dhase, A.S., Khadbadi, S.S. and Saboo, S.S., 2014. Formulation and evaluation of vanishing herbal cream of crude drugs. Am J Ethnomed, 1, pp.313-8.
- [12]. Ruhil, P., Kumar, V. and Minochi, N., 2018. Formulation and Evaluation of Herbal cream used in the treatment of Arthritis A Research. Indian Journal of Research, 7(1), pp.127-128.
- [13]. Kamble, M., Raghatate, P. And Meshram, S., 2020. Formulation and Evaluation of Herbal Cold Cream Using Bombax Ceiba Fruit Pulp. International Journal of Research and Scientific Innovation, 7(2), pp.184-186.
- [14]. Rawlinson, H.G., 2001. Intercourse between India and the western world: from the earliest times of the fall of Rome. Asian Educational Services.
- [15]. Wang, G., 1998. The Nanhai trade: the early history of Chinese trade in the South China Sea. Times Academic Press.
- [16]. Krishnakumar, N., Parthiban, K.T. and Kanna, S.U., 2017. Production, management and utilization technology for sandal wood (Santalum album L.). Forest Technol: Complete Value Chain Approach; Scientific Publishers: New Delhi, India, pp.372-383

