



FORMULATION AND EVALUATION OF MULTIFUNCTIONAL POLYHERBAL COLD CREAM

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ABSTRACT :-

Herbal cold cream is an innovative skincare product formulated using natural ingredients, including neem oil, coconut oil, aloe vera, honey, rose water, beeswax, and borax. This blend of botanical extracts offers a holistic approach to skin care, providing hydration, soothing, and cleansing properties. The formulation, a water-in-oil emulsion, delivers a cooling sensation upon application due to the evaporation of water, making it ideal for moisturizing dry skin and removing makeup. Herbal cold cream leverages the healing properties of herbs, with anti-inflammatory, antibacterial, and emollient effects, while ensuring minimal irritation. With a focus on skin safety and environmental sustainability, this product is crafted to meet modern cosmetic needs, offering a natural alternative to synthetic options. Through rigorous evaluation for pH balance, viscosity, spreadability, and microbial safety, herbal cold cream stands out as a versatile, skin-friendly option for daily use, promoting healthier and more radiant skin.

Both men and women frequently use cosmetics to enhance their appearance and add beauty. Because herbal cosmetics are safe, demand for them is rising these days. Additionally, because they are made using natural herb and shrub extracts, they have less adverse effects. It is widely embraced due to its high standards of quality, affordability, and ease of use. Herbal cosmetics can be made in a variety of ways, such as cold cream formulations that include natural extracts of crude medications like neem and turmeric, or fruit extracts like Bombax Ceiba Fruit Pulp, among other substances. Cold cream is an emulsion that produces a chilling effect on the skin when applied because the water in the emulsion slowly evaporates.

These formulations can be assessed using a number of evaluation parameters, including pH, viscosity, irritancy, spreadability, microbial growth, thermal stability, homogeneity, acid value, saponification value, accelerated stability studies, patch test, smear test, after feel, washability, physical properties, dye test, after feel, in vitro diffusion study, and more.

Keywords: Herbal Cosmetics, Cold Cream, Natural Extract, Tulsi, Emulsion, aloe vera.

Introduction

In recent years, there has been a growing shift towards herbal and natural skincare products due to their perceived safety, minimal side effects, and broad therapeutic benefits. Among these, topical formulations such

as cold creams have gained significant attention not only for their cosmetic value but also for their potential in delivering active botanical ingredients that nourish, protect, and repair the skin.

A cold cream is a semi-solid emulsion, typically water-in-oil (W/O), known for its moisturizing and soothing properties. Traditionally used to hydrate dry skin, modern cold creams have evolved to include a variety of therapeutic functions such as anti-inflammatory, antibacterial, antioxidant, and anti-aging effects. The integration of multiple herbal extracts into such formulations can result in a multifunctional polyherbal cold cream, offering a synergistic effect from various bioactive compounds.

Polyherbal formulations, derived from the combination of several medicinal plants, are a cornerstone of traditional systems like Ayurveda and Unani. These formulations are believed to enhance therapeutic efficacy and reduce toxicity by combining the pharmacological properties of individual herbs. Incorporating such a concept into topical preparations opens up a wide range of applications for skin care, especially for conditions such as dryness, irritation, pigmentation, and microbial infections.

This research focuses on the formulation and evaluation of a multifunctional polyherbal cold cream using selected medicinal plant extracts known for their dermatological benefits. The aim is to develop a stable, effective, and cosmetically acceptable product that not only moisturizes but also exhibits added benefits such as antioxidant, antimicrobial, and anti-inflammatory properties.

The study involves:

- Selection of suitable herbal ingredients based on ethnobotanical and pharmacological data,
- Formulation of cold cream using standard techniques,
- Physicochemical and microbial evaluation of the product, and
- Assessment of its stability and therapeutic efficacy.



Fig: 1 Herbal cold cream

What Is Cold Cream...?

"Cold cream is an emulsion of water and certain fats, typically beeswax and other fragrance ingredients, intended to remove makeup and smooth skin."

In order to give moisturizing properties and gently remove makeup, cold cream is a thick, oil-based emulsion that blends water and fats, such as beeswax.

"This calming cream helps to soothe and nourish the skin while eliminating impurities. It is a mixture of water and oils, including beeswax."

"Cold cream is a kind of water-in-oil emulsion that uses natural components like beeswax to nurture the skin and give it a cooling effect."

- **Additional Suggestions**

"Cold cream is a water and fat emulsion that is used to remove makeup and smooth skin. It typically contains beeswax and other fragrance ingredients."

The thick, oil-based emulsion known as "cold cream" blends water and lipids, including beeswax, to offer moisturizing properties and gently remove makeup.

"The combination of water and oils, including beeswax, in this calming lotion helps to soothe and moisturize the skin while eliminating pollutants." "A form of water-in-oil emulsion, cold cream uses natural components like beeswax to nurture and cool the skin."

➤ **INGREDIENTS OF FORMULATIONS:**

Every natural ingredient utilized in this study, including coconut oil and neem oil from the local market, was used as a dried powder. Below are specifics about the plant material utilized in the cold cream recipe.

1. Oil of Neem
2. Water with roses
3. Oil from coconut
4. Boran
5. Honey
6. Beeswax
7. Aloe Vera
8. Leaves of Tulsi

1. Neem oil

1. Oil of neem

The seeds of the neem tree contain neem oil, a naturally occurring insecticide. Neem oil is a blend of several ingredients. The most potent ingredient for keeping pests away and eliminating them is azadirachtin, which is produced from neem oil. Clarified is the term for the remaining piece.

hydrophobic neem oil. Because of its antioxidant qualities, it protects skin from inflammation and acne. Identify and treat fungal infections. antibacterial and antifungal qualities.

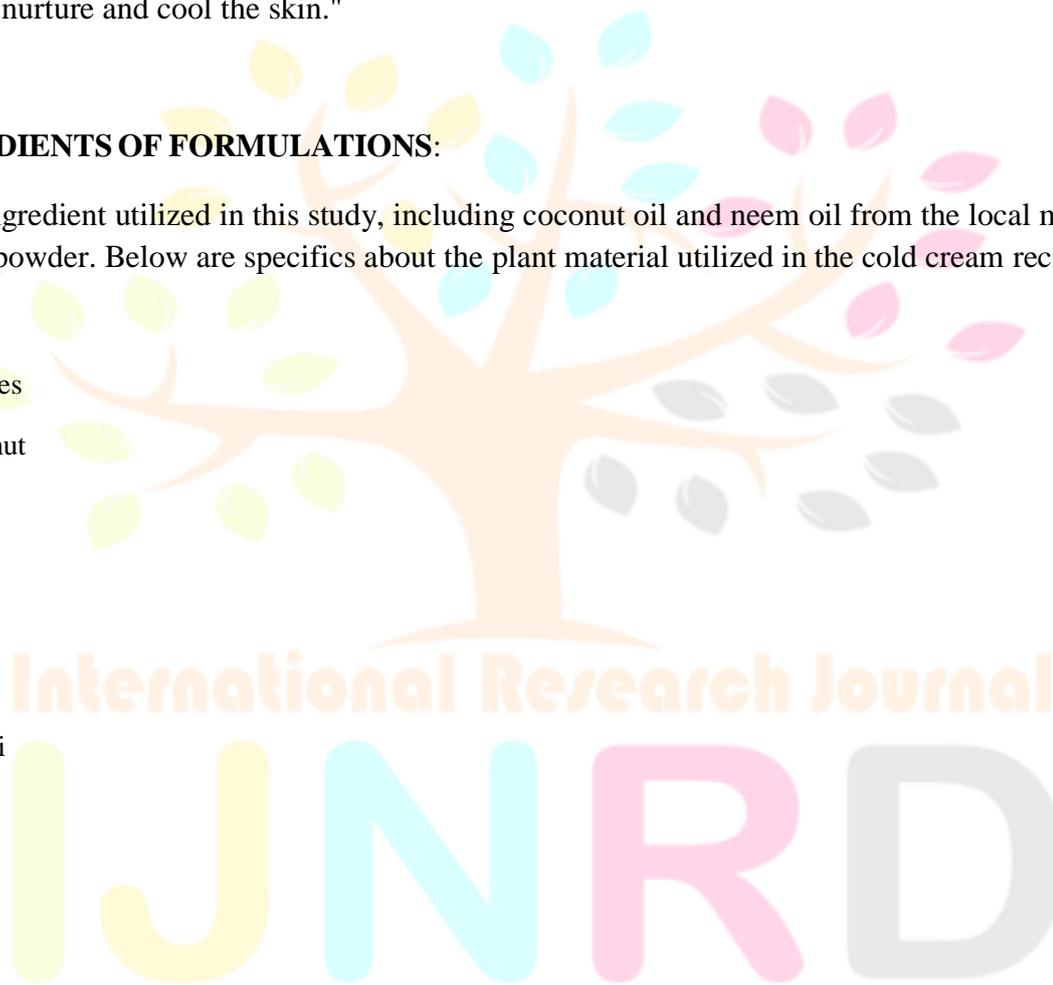




Fig:2 Neem oil

2. Rose water

When added to other moisturizing components like glycerin or ceramides, rose water becomes even more hydrating. Allawh claims that "these aid in hydrating the skin, preserving the skin barrier, and stopping additional water loss from the skin." It shouldn't take the place of your existing moisturizer, either. The fact that rose water lightens red skin and improves complexion is not surprising, considering that it has been used for hundreds of years as a beauty therapy.



Fig:3 Rose water

3. Coconut oil

1. Moisturizing properties: Coconut oil helps hydrate and soften the skin.
2. Emollient properties: Coconut oil can help soothe and calm dry, irritated skin.
3. Stability: Coconut oil can contribute to the stability and texture of cold cream formulations.

- **Potential Benefits**

1. Hydration: Coconut oil in cold cream can help lock in moisture.
2. Skin soothing: Coconut oil's emollient properties can help calm irritated skin.
3. Nourishment: Coconut oil's fatty acids can provide nourishment to the skin.



Fig: 4 Coconut oil

4.Borax

Because it is gentle and antibacterial, borax is frequently included in skincare products like body lotions, shampoos, and creams. It contributes to the creation of stable and efficient products by acting as an emulsifier, buffer, or preservative. Borax is a versatile chemical utilized in a wide range of cosmetic products, from scrubs and bath bombs to creams and lotions. It is a useful component in many skincare products because of its capacity to emulsify, buffer, and preserve.



Fig: 5: Borax

5. Beeswax

- **Beeswax Benefits**

Beeswax offers a range of benefits for skin and hair. Its protective properties create a barrier on the skin's surface, shielding it from environmental stressors and harsh weather conditions. Additionally, beeswax helps lock in moisture, promoting healthy hair growth and soothing dry skin.

- **Key Properties**

1. Protective barrier: Beeswax creates a protective layer on the skin.
2. Humectant properties: Beeswax attracts and retains moisture.
3. Natural exfoliant: Beeswax gently removes dead skin cells.
4. Antibacterial properties: Beeswax supports skin health and helps heal skin issues.

- **Benefits for Skin and Hair**

1. Soothing*: Beeswax calms and softens dry, irritated skin.
2. Protection: Beeswax shields skin from environmental stressors.



Fig: 6 Bees wax

6. Honey

The Advantages of Honey :-

Honey is a naturally occurring material that is high in antioxidants and minerals because of its distinct composition, it can be used for a number of purposes, such as:

Wound Healing and Skincare:-antibacterial characteristics: Honey has antibacterial capabilities due to the enzymatic production of hydrogen peroxide and active ingredients such methylglyoxal. .

Cosmetic Uses :-1. Soothing and moisturizing: The humectant and emollient qualities of honey soothe and moisturize the skin. 2. Hair care: The conditioning properties of honey promote the health of hair.



Fig: 7 Honey

7. Aloe Vera

- **Skin Benefits**

1. **Moisturizing:** Aloe vera hydrates and softens skin.
2. **Soothing:** Aloe vera calms irritated skin and reduces redness.
3. **Acne treatment:** Aloe vera's antibacterial properties help reduce acne.
4. **Wound healing:** Aloe vera accelerates wound recovery.



Fig:8 Aloe vera

- **Health Benefits**

1. **Anti-inflammatory:** Aloe vera reduces inflammation.
2. **Antioxidant:** Aloe vera protects against oxidative stress.
3. **Digestive health:** Aloe vera may support digestive health.

- **Other Benefits**

1. **Sunburn relief:** Aloe vera soothes sunburned skin.
2. **Skin conditions:** Aloe vera may help manage skin conditions like eczema.

Aloe vera's versatility and natural benefits make it a popular ingredient in skincare and health products.

8. Tulsi leaves:-

synonyms: Gauri, bahumanjari, pavani, gramya, surasa, vishnuvallabha, pavani, apetakshashi, bhutaghi, devdandubhi, sulabha

Biological Source: Tulsi is made from the fresh and dried leaves of *Ocimum* species, including *Ocimum basilicum* L. and *Ocimum sanctum* L.

Family: Lamiaceae. **Chemical Constituents:** Linalol, eugenol, methyl chavicol, methyl cinnamate, linolen, ocimene, pinene, cineol, anethol, estragole, thymol, citral, and camphor are among the many active chemicals found in tulsi plants.



Fig:9 Tulsi Leaves

- **USES**
- Tulsi promotes skin brilliance.
- Tulsi can help constrict skin pores.
- Tulsi helps treat skin infections and disinclinations of all kinds.
- Tulsi helps heal acne facial markings.
- combats acne and encourages immature- looking skin
- It treats skin issues well and relieves eczema.
- It helps with anti-aging and is an excellent source of vitamin K, which is veritably salutary for skin.

✓ **The apparatus required laboratory-scale production as follows:**

1. Measuring Cylinder
2. Beaker
3. Stirrer
4. Glass rod
5. Thermometer
6. Water bath

✓ **METHOD OF PREPARATION**

The formulation of cold cream can be prepared by adding to different phases which is given as follows:

1. Melt solid ingredients (beeswax, borax) using indirect heat.
2. Add oils (coconut oil, neem oil) and stir well.
3. Dissolve borax in water with continuous heat and stirring.

4. Combine borax solution with oil mixture, stirring continuously for 5 minutes with heat.
5. Remove from heat and stir until cooled.

➤ **FORMULATION TABLE:**

Sr. no	Ingredients	Quantity
1	Borax	0.16 gm
2	Coconut oil	10 gm
3	Neem oil	0.2 gm
4	Honey	2.5 gm
5	Rose water	2 ml
6	Aloe vera	2.5 gm
7	Beeswax	3.2 gm
8	Tulsi	2gm



Fig:10 Multifunctional Polyherbal Cold Cream

➤ **Evaluation of cold cream**

To ensure the quality and effectiveness of cold cream, various tests are conducted:

1. Physical Properties

- Color, odor, and appearance are observed.

2. Washability

- The cream's washability is tested by applying it to the skin and observing its removal.

3. pH Determination

- A digital pH meter is used to measure the cream's pH value.

4. Viscosity

- A Brookfield viscometer measures the cream's viscosity at 100 rpm.

5. Spreadability Test

- The cream's spreadability is calculated using the formula: $S = M \times L/T$.

6. Irritancy Test

- The cream is tested for skin irritation, redness, and inflammation.

7. Microbial Test

- The cream is checked for microbial growth after 24 hours.

8. Homogeneity Test

- The cream's uniformity is evaluated by visual appearance and touch.

➤ RESULT AND DISCUSSION

1. Physical properties

The physical properties of formulated cream was observed for colour, odour and appearance.

Sr No	Properties	Result
1	Colour	Crimish
2	Odour	Pleasant
3	Texture	Smooth

2. Washability

Washability test is carried out by applying the small amount of cream on hand and then washing with tab water.

3. PH Determination

PH of cold cream was found to be range in 5 which is good for skin.

4. Viscosity

Viscosity is check by Brookfield viscometer.

5. Spreadability

The spreadability show that the formulated cold cream has good spreadability property. The range of spreadability was found to be 24.4 g. cm/s.

6. Irritancy test

When the formulated cold cream wash applied on hand there is no produce irrigation, edema, and inflammation during the studies. The cream is safe for use.

7. Microbial test

Take a small amount of cold cream place in a slide. Then observe under microscope. There is no observe any microorganism.

- **Benefits and applications of cold cream:**

1. Hydrates skin: Cold cream provides intense moisture to dry skin.
2. Soothes skin: Cold cream calms irritated skin and reduces redness.
3. Protects skin: Cold cream creates a barrier on the skin's surface, protecting it from environmental stressors.

- **Applications**

1. Facial moisturizer: Cold cream hydrates and nourishes facial skin.
2. Makeup remover: Cold cream gently removes makeup without stripping skin of its natural oils.
3. Lip care: Cold cream moisturizes and protects dry, chapped lips.
4. Body moisturizer: Cold cream hydrates and softens dry skin on the body.
5. Skin conditions: Cold cream may help soothe skin conditions like eczema, psoriasis, and dermatitis.

- **Advantages of cold cream:**

- **Skin Benefits**

1. Hydration: Cold cream provides intense moisture to dry skin.
2. Soothing: Cold cream calms irritated skin and reduces redness.
3. Protection: Cold cream creates a barrier on the skin's surface, protecting it from environmental stressors.

- **Versatility**

1. Multi-purpose: Cold cream can be used as a moisturizer, makeup remover, lip balm, and more.
2. Suitable for various skin types: Cold cream can be beneficial for dry, sensitive, or normal skin.

- **Convenience**

1. Easy to use: Cold cream is simple to apply and absorb.
2. Portable: Cold cream can be taken on-the-go, making it a convenient option for travel or outdoor activities.

- **Natural Ingredients**

1. Herbal benefits: Many cold creams are formulated with natural ingredients, providing additional skin benefits.
2. Less harsh chemicals: Cold cream can be a gentler alternative to other skincare products.

- **DIRECTION OF USE:**



After cleansing apply the cream over hand & body. Give gentle upward strokes when applying on face & neck.

➤ PRECAUTIONS

A few safety measures can assist improve the efficacy of cold cream and reduce any possible side effects. First, to guarantee compatibility and prevent irritation or allergic reactions, people with sensitive skin should conduct patch tests prior to general use. That's The frequency and quantity of applications should be used according to the manufacturer's instructions to avoid overuse, which can cause severe greasiness or pore clogging. Moreover, do not use cold cream to broken or irritated skin as this could make the condition worse or cause harm.

Furthermore, as cold cream might irritate or hurt the eyes, lips, or nostrils, it is best to avoid getting it there. Rinse with water if contact happens by accident. To preserve its effectiveness, store cold cream in a cool, dry location out of direct sunlight.

➤ Storage

Usually kept at room temperature, cold creams should be kept out of direct sunshine and heat sources. It's critical to keep the lid firmly closed to avoid moisture and air entering the product, which can cause deterioration.

In addition, it's best to keep cold creams out of areas with high temperatures, like those next to heaters or bathrooms where showers might cause temperature swings. Adhering to these storage recommendations preserves the cold cream's efficacy and shelf life.

➤ SUMMARY:-

Originating from the Greek term kosmestikos, which means "to adorn," cosmetics are items used to preserve and improve the appearance of the skin. A traditional cosmetic that aids in skin cleansing and hydration is cold cream, a water-in-oil emulsion. The material it is composed of such as aloe vera, honey, coconut oil, neem oil, beeswax, borax, and rose water. These organic substances offer a number of advantages for the skin, including moisturizing, antibacterial, and anti-inflammatory qualities.

Originally created by Galen, cold cream is mostly used to cleanse and soften skin, but it can also be used as shaving cream or to remove makeup. It is non-irritating, simple to wash, and gives the skin long-lasting hydration and defense. What's Melting oils and mixing them with water are the steps involved in making herbal cold cream. For its skin-benefitting qualities, honey and aloe vera are added. Through testing for pH, viscosity, spreadability, irritancy, and microbial development, the efficacy of the cream is assessed; the findings indicate that it is moisturizing, smooth, and safe. Herbal cold cream is useful for removing makeup and can also be used as a body lotion or lip balm. People with dry or sensitive skin will especially benefit from it. Because natural substances are safe and have few negative effects, their use in these formulations is growing in popularity.

➤ CONCLUSION:-

Since natural medicines are thought to be safer and have less adverse effects than synthetic ones, they are more widely accepted. In the global market, demand for herbal formulations is rising. Herbal face packs are thought to be a long-lasting and effective method of improving skin appearance. Herbal face packs or masks are used to renew those muscles, increase blood flow, keep the skin supple, and clear the pores of debris. As a result, the current effort to create a herbal face pack with readily available natural ingredients like neem and almond is commendable.

➤ REFERENCES:-

- 1.Miss. Shalu Manisha, 2Prof. Dr.Hingane.L.D . Formulation and evaluation of cold cream from natural ingredients ISSN: 2456-3315
2. Arjun Yadav¹ , Girijesh kumar Yadav*² , Prof.(Dr) Mohd. Wasiullah³ , Shasikant Maurya⁴ A Review Article on Formulation and evaluation of cold cream ISSN: 22497781

3. N. Shah, B.M.Methal, (2006) A Handbook of Cosmetic, VallabhPrakashan.
4. Saraf, S., & Kaur, C. D. (2010). Phytoconstituents as photoprotective novel cosmetic formulations. *Pharmacognosy reviews*, 4(7), 1.
5. B.S., Kalpesh K. Mehta, Anshu Gupta (2016). *Dispensing Pharmacy A Practical Manual* (p.p. 389-399). Pharma Med Press.
6. K.Kokate,A.P.Purohit, S.B.Gokhale (2014) *Textbook of Pharmacognosy*. Nirali Prakashan 50th edition, p.p. 9.1 & 14.132.
7. S. Khadabadi, S.L. Deore, B.A. Baviskar. (2014), *Pharmacognosy and Phytochemistry, A Comprehensive Approach*, published by Pharma Med Press, 1st edition, p.p.8.4
8. Panda, H. (2000). *Herbal Cosmetics Hand Book*. National Institute of Industrial Re.
9. Mali, A. S., Karekar, P., & Yadav, A. V. (2015). Formulation and evaluation of multipurpose herbal cream. *International Journal of Science and Research*, 4(11), 1495-1498.
10. Prasanna A. Datar. (2013) Formulation and evaluation of polyherbal gel prepare using Carbopol 934 for treating skin disease in comparison with ointment using emulsifying ointment, *Research and Reviews: Journal of Pharmaceutics and Nanotechnology*, 1(1): 20-21.
11. UddanduSaheb*, Aduri Prakash Reddy, K. Rajitha, B. Sravani, B. Vanitha,(2018). Formulation and Evaluation of Cream from containing plant extracts, *World Journal of Pharmacy and Pharmaceutical Sciences*, 7(5):851-862.
12. R. Patel, H. U.Momin, R.L. Dhumal, K. L. Mohite, (2017), *Prepara preparation Formulation And Evaluation Of Multifunctional Polyherbal Cold Cream*Shree Goraksha College Of Pharmacy And Research Center,Khamgaon. Page 22 and evaluation of multipurpose herbal cream, *Adv Pharm Life sci Res*;5(1):27-32.
13. Himaja, N. (2017). Formulation and Evaluation of Herbal Cream from AzadirachtaindicaEthanolic Extract. *Journals: Int J Res Drug Pharm Sci*, 1(1), 23-6.
14. Mukherjee, P. K. (2002). Quality control of herbal drugs: an approach to evaluation of botanicals. *Business Horizons*.
15. N. Shah, B.M.Methal, (2006) A Handbook of Cosmetic, VallabhPrakashan.
16. Saraf, S., & Kaur, C. D. (2010). Phytoconstituents as photoprotective novel cosmetic formulations. *Pharmacognosy reviews*, 4(7), 1.
17. B.S., Kalpesh K. Mehta, Anshu Gupta (2016). *Dispensing Pharmacy A Pract Manual* (p.p. 389-399). Pharma Med Press.
18. Shah RN, Methal BM. *A Hand book of Cosmetics* Page No.1
19. Myers D, *Surfactant Science and Technology*, VCH Publishers: 1992, Pp. 209-247