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Formulation And Evaluation Of Herbal Aloe-Vera Papaya Cold Cream

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Abstract

Cosmetics are the preparations which used to beautify and enhance the human appearances. Herbal cold cream are skincare products formulated with natural ingredient, typically herbs and plant extracts, to soothe and moisturize the skin, especially during colder weather when skin tends to dry out more easily. These recipe serve as a guide for making a Herbal Aloe-vera Papaya cold cream that contains aloe-vera, Papaya and rose oil, well-known natural ingredient with medicinal, Nutritional and skin-soothing qualities.

The Aim of the present research was to formulate and evaluate the aloe cold containing plant extracts purpose of nourishing and moistening the skin and develop a herbal cream for moisturizing, nourishing, whitening, and treating various skin diseases. The formulated cream showed good consistency and spreadability, pH, no evidence of phase separation during study period of research. The selection of component is based on the agents various therapeutic characteristics and no side effects.

Keyword: Cosmetic, Herbal cream, Papaya, Aloe-vera

I INTRODUCTION

The cosmetics are the word derived from Greek word – 'kosmestikos' which means to adorn. From that time the materials which are used to promoting appearances or to beautify the skin are called as cosmetic[2]. A form of emulsion-based moisturizer called cold cream is intended to protect, soothe, and hydrate the skin. Cold cream is the water in oil emulsion. The demand for cosmetics is increasing due to the growing popularity of herbal products. Herbal formulations are gaining more public attention because of their high quality and fewer side effects. They also nourish the skin with essential nutrients and provide adequate hydration. Creams are semi-solid formulations that contain one or more medicinal agents, either dissolved or dispersed in a water-in-oil or oil-in-water emulsion, or another type of water-washable base. They are typically classified into two types: oil-in-water and water-in-oil emulsions. Creams are applied to the face or other external parts of the skin, with the benefit of adhering to the application site for an extended period. The primary function of a skin cream is to protect the skin from various environmental factors and provide a soothing effect. Common types of creams include cold creams, cleansing creams, vanishing creams, foundation creams, massage creams, night creams, hand creams, and body creams. Aloe vera and Papaya

these herbal constituents are used in our medication. Aloe vera acts as Anti-ageing, anti-inflammatory and Cooling agent, papaya acts as Anti-aging, Antioxidant

Merits of Cold Cream

1. **Moisturizing Effect:-** Cold cream acts as an excellent moisturizer, especially for dry and sensitive skin, by forming a barrier that prevents water loss.
2. **Cleansing Agent:-** It effectively removes dirt, makeup, and impurities from the skin without stripping away natural oils.
3. **Soothing Properties:-** It helps calm irritated or inflamed skin due to its emollient-rich composition.
4. **Protective Layer:-** Provides a protective coating against cold weather and environmental stressors.
5. **Non-Irritating:-** Suitable for most skin types, including sensitive skin, due to its gentle formulation.
6. **Improves Skin Texture:-** Regular use can lead to softer, smoother skin.

Demerits of Cold Cream

1. **Comedogenic Potential:-** Cold creams, especially those with heavy oils like mineral oil or petrolatum, may clog pores and cause acne in oily or acne-prone skin types.
2. **Greasy Residue:-** Due to their water-in-oil emulsion base, cold creams can leave a greasy or sticky feeling on the skin, which some users may find uncomfortable.
3. **Limited Absorption:-** Unlike lightweight moisturizers, cold creams often sit on the surface of the skin and are not fully absorbed, which may not be ideal for deep hydration.
4. **Not Ideal for All Climates:-** In hot and humid conditions, cold creams may feel too heavy and lead to sweating or breakouts.
5. **Short Shelf Life (if herbal):-** Herbal or natural cold creams may have a shorter shelf life and require preservatives to maintain stability.

Application of Cold Cream

1. **Facial Cleanser:-** Cold cream is commonly used as a gentle facial cleanser to remove dirt, makeup, and excess oil without drying the skin.
2. **Moisturizer:-** It serves as a deep moisturizer, especially effective in winter, to treat dry, flaky, or rough skin by providing a protective lipid barrier.
3. **Night Cream:-** Applied before bedtime, cold cream can hydrate and soothe the skin overnight, helping repair and soften the skin.
4. **Soothing Cream for Sensitive Areas:-** Used on sensitive areas such as under the eyes or on irritated skin due to its mild and non-irritating nature.
5. **Protective Cream:-** It acts as a shield against harsh environmental elements like wind and cold weather.

II . MATERIAL AND METHOD

1. Aloe vera

Aloe vera is a succulent plant species well-known for its medicinal and cosmetic uses.



Fig No.1 Aloe vera gel

Table No.1 Description of Aloe vera

Kingdom	Plantae
Class	Liliopsida
Family	Asparagales
Genus	Aloe

Applications

1. Medicinal:-

- i.Skin treatment: Soothes burns, sunburns, and minor cuts.
- ii.Anti-inflammatory & healing: Often used in creams and ointments.
- iii.Digestive aid: Aloe latex (the yellow sap) has laxative properties—but overuse can be harmful.

2. Cosmetic:- Found in moisturizers, shampoos, and face masks for its hydrating and soothing properties.

3. Food & Beverage:- Aloe vera gel is sometimes used in juices and supplements (usually after removal of latex, which is toxic in large amounts).

2. Papaya

Papaya gel is a skincare product or homemade remedy made primarily from papaya fruit extract or pulp, often blended into a gel base like aloe vera or a cosmetic gel medium. It is known for its natural exfoliating, brightening, and soothing properties.



Fig No.2 Papaya gel

Table No.2 Description of Papaya

Kingdom	Plantae
Class	Magnoliopsida
Family	Caricaceae
Genus	Carica
Order	Brassicales

Applications

1. Nutritional Uses:-

- i. Papaya fruit is rich in vitamins A, C, and E, folate, dietary fiber, and antioxidants.
- ii. It is consumed fresh, in smoothies, salads, or processed into jams, juices, and dried snacks.[4]

1. Medicinal Uses:-

- i. Digestive aid: Contains papain, a proteolytic enzyme that helps digestion and is used in treating dyspepsia.
- ii. Antioxidant and anti-inflammatory: Reduces oxidative stress and inflammation.
- iii. Antimicrobial and antifungal properties: Useful in traditional medicine for wound healing and infections.[5]

1. Pharmaceutical Applications:-

- i. Papain is used in enzymatic drug formulations for wound debridement.
- ii. Seed extracts have shown potential anti-helminthic and contraceptive properties.[6]

1. Industrial Applications:-

- i. Papain is used in meat tenderizing, brewing, and textile industries.
- ii. Latex is used in cosmetics and dentifrices.[7]

3. White Bees Wax:-

White beeswax is a natural substance produced by honeybees and is widely used in cosmetics, pharmaceuticals, and food industries.



Fig No.3 White Bees Wax

Table No.3 Description of White bees wax

Kingdom	Animalia
Phylum	Arthropoda
Class	Insecta
Order	Hymenoptera
Family	Apidae
Genus	Apis
Chemical Composition	Hydrocarbon, Fatty acid, Free acids,alcohols[3]

Applications

1. Cosmetics: Used in lip balms, lotions, creams, and makeup products as a thickening agent and emollient.
2. Pharmaceuticals: Acts as a binder or time-release agent in pills and ointments.
3. Food industry: Used as a coating agent (E901) for candies and fruits, and in chewing gum bases.
4. Candlemaking: Preferred for decorative or scented candles where a lighter color is desirable.

4. Liquid Paraffin

Liquid paraffin is a highly refined mineral oil, derived from petroleum. It is also known as Mineral oil (when used in cosmetic or pharmaceutical contexts), Paraffinum Liquidum (in INCI labeling), White oil (in industrial usage).



Fig No.4 Liquid Paraffin

Table No.4 Description of Liquid paraffin

Chemical Composition	Hydrocarbons
Form	Liquid at room temperature
Sources	Derived from refining crude oil
Colour	Colourless
Odour	Odourless

Applications

1. Pharmaceutical and Medical Uses=

- i. Laxative: Used orally to relieve constipation by lubricating the bowel (short-term use only).
- ii. Skin protectant/emollient: Treats dry, scaly skin conditions (eczema, psoriasis).
- iii. Nasal sprays and eye lubricants (as a base or ingredient).

2. Cosmetic Uses=

- i. Moisturizers and creams
- ii. Baby oil
- iii. Lip balms
- iv. Makeup removers

3. Industrial Uses=

- i. Lubricants for machinery
- ii. Plasticizers in PVC production
- iii. Anti-rust agents
- iv. Textile and leather processing

5. Borax

Borax is a naturally occurring mineral also known as sodium borate, disodium tetraborate, or tetraborate. It's a white powder composed of soft, colorless crystals that dissolve easily in water.



Fig No.5 Borax

Table No.5 Description of Borax

Chemical Composition	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$
Chemical Name	Sodium Borate
Order	Odourless
Composition	Boron, Sodium, Oxygen and Hydrogen
colour	White or Colourless

Applications

1. Household Cleaning: Used in detergents, laundry boosters, and general-purpose cleaners.
2. Pest Control: Acts as an insecticide, especially effective against ants and cockroaches.
3. Slime Making: Used as an activator in DIY slime (popular among kids).
4. Glass and Ceramics: Helps reduce melting temperature, improves durability.
5. Metallurgy: Acts as a flux to remove impurities.
6. Cosmetics: Occasionally used as a preservative or pH buffer (though less common now).
7. Laboratory: Used in buffer solutions and for some chemical reactions.

6. Methyl Paraben

Methylparaben is a type of paraben, which is a group of chemicals used mainly as preservatives. Chemically, it's called methyl 4-hydroxybenzoate. It appears as a white, odorless powder.



Fig No.6 Methyl paraben

Table No.6 Description of Methyl Paraben

Chemical Formula	$\text{CH}_3(\text{C}_6\text{H}_4(\text{OH})\text{COO})$
Chemical Name	Methyl-4-hydroxybenzoate
Order	Odourless
Colour	White or Colourless

Applications

1. Preservative:

- i. Prevents the growth of bacteria, mold, and yeast in products.
- ii. Common in lotions, creams, shampoos, deodorants, and makeup.
- iii. Used in oral and topical pharmaceuticals.
- iv. Sometimes found in processed foods and beverages.

2. Combination with Other Parabens:- Often used in combination with ethylparaben, propylparaben, or butylparaben to enhance antimicrobial effectiveness.

7. Rose Oil

Rose oil is a highly fragrant essential oil extracted from the petals of roses, primarily the Damask rose (*Rosa damascena*) and Cabbage rose (*Rosa centifolia*). It is widely used in perfumery, aromatherapy, and skincare due to its rich floral scent and therapeutic properties.



Fig No.7 Rose oil

Table No.7 Description of Rose oil

Kingdom	Plantae
Class	Angiosperms
Order	Rosales
Family	Rosaceae
Genus	Rosa
Chemical Composition	Citron

Applications

1. Hydration & Moisturization
2. Anti-Aging Properties
3. Soothing Inflammation
4. Acne Treatment
5. Stress and Anxiety Reduction
6. Mood Enhancement
7. Sleep Aid

III. PROCEDURE:

METHOD FOR PREPARATION OF HERBAL ALOEVERA PAPAYA COLD CREAM

Take all the glassware's and wash them properly with water then dry it in hot air oven.

Step I : Oily phase preparation:- Weigh the 4.0 gm of White bees wax and melted with mineral oil by heating on a water bath at the temperature of 70°C i.e. (Mixture A)

Step II : Aqueous phase preparation:- Water is heated in another container at the same temperature and added with borax i.e. (mixture B). Mixture B is slowly added to the mixture A with stirring to form a creamy emulsion. In the last step, the preparation is brought down to 40°C added with a suitable perfume.

IV. FORMULATION COMPOSITION

Table No.8 Formulation Table

Sr. no	INGREDIENTS	QUANTITY	USES
1	White bees wax	4 gm	Stiffing agent or emulsifier
2	Liquid paraffin	7ml	Lubricant laxative
3	borax	2gm	Emulsifier
4	Distilled water	5ml	Solvent
5	Aloe-vera	1gm	Cooling agent
6	Papaya	1gm	Anti-aging and Antioxidant
7	methyl paraben	0.2gm	Preservative
8	Rose Oil	1-2 drps	Perfume

V. HERBAL ALOE-VERA PAPAYA COLD CREAM FORMULATION



Fig No. 8 Formulation

VI. EVALUATION PARAMETERS

Evaluation of Aloevera papaya cold cream:-

A. Determination of Physical Appearance:- It includes the Evaluation of Colour, Odour and texture of cold cream

Table No.9 Physical Observation

PARAMETERS	RESULTS
Colour	White yellowish

Description: as a result there is no irritation and have a sense of cooling.



Fig No. 9 Sensitivity Test

Table No. 10 Sensitivity Observation

PARAMETER	RESULT
Irritation Effect	No

C. Spreadability:- The spread ability was measured in terms of the number of seconds it took for two slides to separate from the cream that was positioned in between them when subjected to a specific load. Better the spread ability, the shorter the time required to separate the two slides. A slide with the appropriate dimensions was selected, and the cream formulation was placed on it. The formulation was subsequently layered with another slide. After that, a weight or other specific load was applied to the upper slide, pressing the cream in the space between the two slides evenly to create a thin layer. Later the weight was removed off, and the additional formulation that had stuck to the slides was scraped 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.

D. pH:- The pH of aloevera papaya cold cream was measured using a pH meter. The probe uses a glass electrode to conduct a modest voltage. The voltmeter measures electronic impedance in glass electrodes and shows pH units instead of volts. To take a measurement, submerge the tip of the instrument in the semisolid until the meter registers the reading.

Table No.11 pH observation

PARAMETERS	RESULTS
pH	7.0

E. Viscosity:- Cream's viscosity was measured at 25 °C using an Ostwald viscometer and spindle number 63 spinning at 2.5 RPM. The findings indicated that the viscosity of all three formulations was suitable.

VII. RESULT

The formulated cold cream exhibited no redness, edema, inflammation and irritation . The texture and the uniformity of the colour was checked. The emolliency, slipperiness and amount of residue not after the application of fixed amount of cream. The cream was easily removed by washing with tap water.

VIII. CONCLUSION

Herbal Aloe-vera papaya cold cream is a hydrating formula that blends the calming properties of Aloe vera with the nourishing emollients of traditional cold creams and papaya has antioxidant property. It is designed to moisturize and protect the skin, making it particularly effective in dry or cold weather. The cream helps retain moisture, reduce inflammation, and create a protective barrier against environmental irritants. With its gentle, non-greasy texture, it is suitable for all skin types and provides deep nourishment without clogging pores. Herbal Aloe-vera papaya cold cream is ideal for daily use.

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