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Formulation and Evaluation of Herbal Lotion of Aloe-Vera

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Abstract: *The demand for herbal-based skincare products has surged due to their perceived safety and efficacy. This study focuses on the formulation and evaluation of a herbal lotion incorporating natural ingredients known for their therapeutic properties. The primary constituents of the lotion include Aloe vera, Neem, and Turmeric, which are renowned for their moisturizing, antibacterial, and anti-inflammatory effects respectively. The formulation process involved the extraction of active components from these herbs, followed by their incorporation into a stable emulsion.*

Various concentrations of the herbal extracts were tested to determine the optimal blend that provides maximum benefits without causing irritation. The lotion's physicochemical properties, such as pH, viscosity, and stability were assessed using standard methodologies. The evaluation phase included in vitro and in vivo testing to ascertain the lotion's effectiveness and safety. The in vitro studies involved antimicrobial assays and antioxidant tests, which confirmed the lotion's ability to inhibit bacterial growth and scavenge free radicals. In vivo testing was conducted on volunteers to evaluate the lotion's moisturizing effect, skin compatibility, and user satisfaction.

Keywords: Aloe-vera, Herbal Lotion, Herbal Cosmetic, Herbal Formulation, Wound Healing, Skin Diseases, Medicinal Plant, Anti-inflammatory, Pharmacological Properties

I. INTRODUCTION

Aloe is also common in both traditional Chinese and Ayurveda medicine. The aloe Vera is derived from Arabic word “Aloe” meaning “shining bitter substance” while “Vera” in latrine means “true”. The plant aloe Vera has a history dating back to biblical time. There are over 250 species of aloe grown around the world. Only two species are grown commercially

This plant has been known by number of names such as “the wand of heaven”. “heaven blessing” “the scilent healer” aloe was previously considered in family liliaceae but now it has been placed in its own family Aloeace. Aloe-vera has a beneficial effects on human health and cure many disease.Active ingredient of plant- leaves has three layers the outermost layers consist of 15-20 cells thick protective layer synthesizing carbohydrate and protein.the active component of aloe include anthraquinone, chromones, polysaccaride and enzymes. Al, B, Ba, Ca, Fe, Mg, Na, P ,Si etc has also been reported to be present in aloe-vera plant has triangular- fleshy leaves with serrated edges, yellow tubular flowers and fruits Contain numerous seed. Aloe-vera is a natural product that is now a day frequently used in.

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Fig No. 1: Aloe-Vera Herbal Lotion

Ancient Uses and Cultural Significance:

1. Ancient Egypt:

Aloe vera was considered the "plant of immortality" and was given as a burial gift to pharaohs. Queen Cleopatra reportedly used it in her beauty regime.

2. Ancient Greece and Rome:

Greek scientists like Aristotle and Dioscorides recognized its medicinal value and used it to treat wounds, burns, and other skin conditions.

3. Ancient India:

Aloe vera was revered as "Ghrita Kumari," believed to rejuvenate women and provide a sense of youth.

4. Traditional Chinese Medicine (TCM):

Aloe vera, known as "lu hui," was used for its cooling and purging effects on the body. From Ancient to Modern Times

5. Global Trade and Distribution:

Christopher Columbus and the British East India Company helped popularize aloe vera through global trade routes.

6. Industrialization and Commercialization:

The stabilization of aloe vera gel in the 1960s allowed for wider distribution and commercialization of products containing the gel.

Benefits of Herbal Lotions

1. Deep Hydration Without Greasiness:

Aloe vera is composed of over 90% water, making it an excellent natural moisturizer. When formulated into lotions, it penetrates the skin deeply, providing hydration without leaving a greasy residue. This makes aloe vera lotions ideal for all skin types, including oily and acne- prone skin.

2. Soothes Sunburns and Skin Irritations:

The cooling and anti-inflammatory properties of aloe vera help soothe sunburns, rashes, and other skin irritations. It accelerates the healing process by promoting collagen synthesis and reducing inflammation.

3. Enhancs Skin Healing:

Aloe vera's rich composition of vitamins, minerals, and antioxidants supports skin regeneration. It aids in the healing of minor cuts, burns, and other skin injuries by stimulating skin cell growth and reducing scar formati

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4. Supports Anti-Agin:
The antioxidants in aloe vera, including vitamins C and E, help combat free radicals that contribute to premature aging. By promoting collagen production and skin elasticity, aloe vera lotions can reduce the appearance of fine lines and wrinkles.

Ideal Properties

1. High Aloe Vera Concentration:
Aloe vera should be the primary ingredient, with a purity percentage ranging from 70% to 99.75%. This ensures the lotion delivers the full benefits of aloe vera, including hydration, soothing, and skin repair properties.

2. Optimal pH Level:
The lotion's pH should be between 4.5 and 5.5, aligning with the skin's natural pH. This balance helps maintain skin integrity and prevents irritation.

3. Non-Greasy and Lightweight Texture:
The lotion should have a smooth, non-greasy texture that absorbs quickly without leaving a sticky residue. This enhances user comfort and encourages regular use.

4. Free from Harsh Chemicals:
An ideal aloe vera lotion is free from parabens, sulfates, artificial fragrances, and dyes. This makes it suitable for sensitive skin and reduces the risk of allergic reactions.

5. Added Beneficial Ingredients:
Incorporating ingredients like glycerin, vitamin E, and natural oils can enhance the lotion's moisturizing and antioxidant properties, providing additional skin benefits.

Ingredients

1. Aloe-vera
2. Coconut Oil
3. Rose Water
4. Vitamin E Capsule
5. Glycerine
6. Carbomer
7. Honey
8. Lemon oil
9. Borax
10. Bees wax

1. Aloe-Vera

Aloe vera is a succulent plant native to the Arabian Peninsula but is now widely cultivated in tropical and subtropical regions around the world. The plant is renowned for its thick, fleshy leaves that contain a clear gel used in various medicinal and cosmetic applications. This gel is known for its soothing properties, particularly in treating burns and skin irritations.

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Fig No. 2: Aloe-Vera

Biological Source:
1. Scientific Name: Aloe vera (L.) Burm.f.
2. Family: Asphodelaceae (formerly Liliaceae)

Aim and Objective

Aim:
Formulation and Evaluation of Herbal Lotion of Aloe-Vera

Objective:
1. To prepare good quality product.
2. To formulate lotion that is safe for all types of skin.
3. To formulate lotion that locks natural moisture and provides essential hydration to skin that gives healthy and soft skin
4. To evaluate herbal lotion.
5. To effective the protection to Skin & free from any toxicity.
6. To keep your skin soft, smooth and hydrated.
7. To study antimicrobial activity of girt aloe Vera

Experimental Work:
Material and Method:
1. Materials:
A. Aloe-vera
B. Coconut Oil
C. Rose Water
D. Vitamin E Capsule
E. Glycerine
F. Carbomer
G. Honey
H. Lemon oil
I. Borax
J. Bees wax

2. Methods: Formulation:
Creating a homemade aloe vera herbal lotion is a wonderful way to harness the plant's natural Soothing and hydrating properties. Here's a simple formulation you can try.

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Table No. 1: Quantity Table

Sr. No.	Ingredients	Quantity
1	Aloe vera	150ml
2	Coconut Oil	120ml
3	Rose Water	240ml
4	Vitamin E	14 Capsule
5	Glycerin	150ml
6	Carbomer	Q.S.
7	Honey	Q.S
8	Lemon oil	Q.S.

Evaluation Test of Herbal Body Lotion:

1. Absorption Test:

Applying the lotion to the skin and rubbing it in until it was fully absorbed was how the Absorption test was carried out.

2. Skin Irritancy Test:

To assess for irritant reactions such as swelling, itching, and redness, a formulation was applied To the back of the hand and left on for 15 minutes. Impact on the skin.

3. Homogeneity And Transparency:

The homogeneity test was evaluated through tactile and visual inspection. This was completed Graphically following lotion settling in appropriate beakers. Formulas were examined for Transparency, lotion removal efficiency, after-feel, and smear kind.

4. Smoothness Test:

We used touch testing to measure the lotion's smoothness; we rubbed the lotion between their Fingertips and noted any changes in feel. We noted if the lotion felt harsh, homogenous, Clumped, or silky.

Result:

Sr. No.	Test	Result
1.	pH	4.5 – 7.0
2.	Viscosity	2000 – 50000 cPs
3.	Spreadability	5 – 7 cm
4.	Skin Irritancy	No irritation
5.	Washability	Easily removable with water
6.	Homogeneity	Uniform consistency
7.	Microbial Growth	No growth observed
8.	Stability	No significant changes over time

Table No. 3: Evaluation Results

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