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Moisturizing Hibiscus body lotion

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Abstract

The increasing demand for natural and herbal skincare products has led to significant advancements in the cosmetic industry. This study focuses on the development of an herbal body lotion infused with Hibiscus flower extract (Hibiscus rosa-sinensis), renowned for its skin-enhancing properties. Hibiscus contains bioactive compounds such as anthocyanins, flavonoids, polyphones, vitamin C, and mucilage, which contribute to its antioxidant, anti-inflammatory, and hydrating effects.

The study outlines the extraction process of hibiscus flower bioactives, formulation of the lotion using natural emulsifiers and humectants, and evaluation of its physicochemical properties. The lotion is designed to provide deep hydration, improve skin elasticity, and reduce oxidative stress, making it a sustainable alternative to conventional chemical-based lotions. Various tests for stability, efficacy, and consumer acceptability are conducted to assess the product's viability.

The results indicate that the herbal lotion enhances skin hydration, promotes a youthful glow, and reduces environmental damage caused by free radicals. Given the growing preference for organic and eco-friendly cosmetics, this research emphasizes the role of plant-based ingredients in modern skincare formulations. The study also discusses potential challenges, such as preservation, stability, and large-scale production, while highlighting opportunities for commercial application.

Keywords: Hibiscus; Herbal lotion; Moisturizing properties; Skin

1. Introduction

Herbal Cosmetics, here referred as Products, are formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic advantages only, shall be called as "Herbal Cosmetics". The herbal cosmetics are those when natural herbs and their products used for their aromatic value in cosmetic preparation among consumers for herbal products triggered the demand for natural products and natural extracts in cosmetics preparations.

The skincare industry has witnessed a paradigm shift toward herbal and organic formulations, as consumers become more conscious of the adverse effects of synthetic chemicals found in conventional skincare products. The demand for safe, effective, and environmentally friendly skincare solutions has driven research into botanical ingredients with therapeutic properties.

Among these, Hibiscus rosa-sinensis, commonly known as the hibiscus flower, has gained significant attention for its rich bioactive composition. Traditionally used in Ayurvedic and Chinese medicine, hibiscus is known for its rejuvenating

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and skin-conditioning properties. It is often referred to as the "Botox plant" due to its ability to improve skin elasticity, promotes collagen synthesis, and reduce signs of aging.

Herbal body lotions are formulated to nourish, hydrate, and protect the skin, using plant-derived extracts, natural oils, and emulsifiers. Unlike synthetic lotions, which often contain parabens, sulfates, and artificial fragrances, herbal formulations offer biocompatibility with minimal side effects. This study aims to harness the potential of hibiscus extract in a body lotion formulation, providing a scientifically backed and eco-conscious alternative to commercial skincare products.

The skin is the largest organ of the body, with a entire area of about 20 square feet. The skin protects us from germs and the elements, helps regulate body temperature, and permits the sensations of touch, heat, and cold.

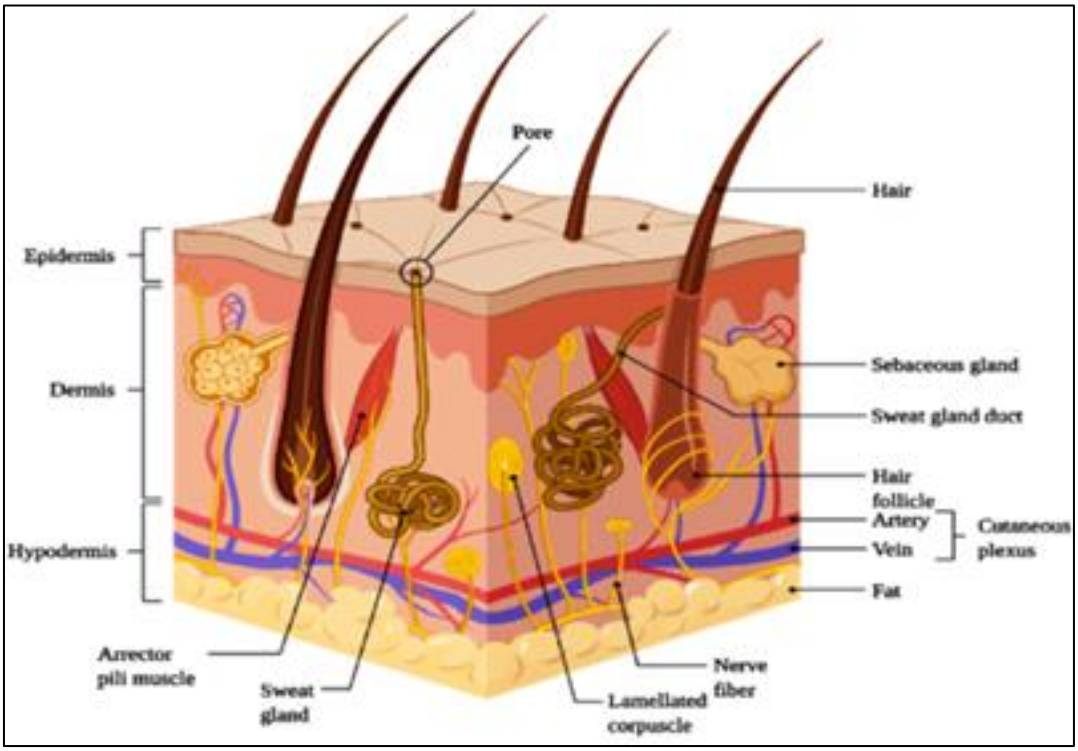

Figure 1 Anatomy of Skin

Skin has three layers: The epidermis, the outermost layer of skin, provides a waterproof barrier and creates our skin tone.The dermis, beneath the epidermis, contains tough connective tissue, hair follicles, and sweat glands. The deeper subcutaneous tissue (hypodermis) is made of fat and connective tissue.The skin colour is created by special cells called melanocytes, which produce the pigment melanin. Melanocyte is located in the epidermis.

Objectives: [3]

- To extract and characterize bioactive compounds from hibiscus flowers for incorporation into the lotion.
- To develop a stable herbal body lotion using natural ingredients and emulsification techniques.
- To analyze the physicochemical properties of the lotion, including viscosity, pH, texture, and absorption rate.
- To evaluate the moisturizing, antioxidant, and anti-inflammatory effects of the lotion.
- To test the stability and shelf life of the formulation under different storage conditions.
- To assess consumer acceptability through sensory evaluation and dermatological testing.

1.1. Potential Benefits of Hibiscus-Infused Body Lotion: [5]

- Hydration and Miniaturization
- The mucilage content in hibiscus acts as a natural humectant, locking in moisture and preventing dehydration.
- Helps in repairing dry and flaky skin, making it supple and soft.

2. Material and methods

Collection of Materials: Hibiscus Flowers, Aloevera, Honey, Glycerine, Vitamine E Capsules and Almond Oils is collected from SMBT Campus and the local area of Dhamangaon, Nashik and MethyleParaben and Guargum was collected from Pharmaceutics lab (SMBT IODP, Nashik)

2.1. Extraction of Hibiscus Flowers

- Fresh hibiscus flowers are collected and dried for 3-4 weeks in room temperature
- The dried flowers put in a mortar pestle and to coarse powder
- Weighing the 50gm of Hibiscus powder put in soxhlet apparatus for extractor containing 500 ml of methanol; allow standing for 3 days for 6 hours daily.
- After the extraction, the content was filtered with help of filter paper in order to get particle free extract.
- Finally extract was evaporated using an evaporator.

Figure1 Extraction of Hibiscus flowers

Table 1 Formulation Table

Ingredient	F1	F2	F3
Hibiscus flower Extract	5 ml	3 ml	4.5 ml
Aloevera gel	3 gm	2.5 gm	2 gm
Honey	2.5 ml	2 ml	2 ml
Glycerin	4 ml	4.5 ml	4 ml
Vitamin E Capsules	3 capsules	3 capsules	2 capsules
Almond Oil	2 ml	2 ml	1.5 ml
Methyl Paraben	0.02gm	0.02 gm	0.02 gm
Gaur gum	1 gm	1 gm	1 gm

2.2. Method of Preparation Herbal Lotion:

- Taken glycerin, aloe vera gel, honey, Vitamin E capsule, almond oil in a beaker with contiguous tritutation.
- Then add methyl paraben in above solution and guar gum with stirring
- Add finally hibiscus flower extract.

Figure 2 Hibiscus Body lotion

2.3. Evaluation test

- **Appearance:** A visual inspection of the lotion's appearance was conducted.
- **Color:** A visual inspection revealed the cream's color.
- **Odor:** The lotion's scent was evaluated by sniffing
- **P^H:** A digital PH meter and a PH paper were used to measure the produced herbal lotion's PH.
- **Spreadability:** To determine the lotion's spreadability, a sample was sandwiched between two slides and crushed to a consistent thickness using a specific weight for a predetermined amount of time.
- **Irritancy test:** A particular region of the left hand's dorsal surface was treated with the lotion.
- **Test of Removal:** The applied area was washed with water to test how easy it was to remove the cream. .
- **Stability Test:** The formulation was put in the middle of the petri dish, and the plates were then incubated for 72 hours at 37°C to examine the all-microbial growth.

Table 2 Evaluation Table

Parameter	F1	F2	F3
Color	Faint Brown	Faint Brown	Faint Brown
Odor	Pleasant	Pleasant	Pleasant
Texture	Smooth	Smooth	Smooth
Washability	Easily washable	Easily washable	Easily washable
PH	5.2	5.3	05
Spread ability	Easily spreadable	Easily spreadable	Easily spreadable
Viscosity			
Irritancy Test	Non-irritable & non allergic on the skin	Non-irritable & non allergic on the skin	Non-irritable & non allergic on the skin
Stability Test	No microbial growth is observed After 4 months	No microbial growth is observed After5 months	No microbial growth is observed After 6 months

3. Results and Discussion: [6]

The formulated herbal body lotion with hibiscus flower extract demonstrated significant benefits in terms of hydration, skin nourishment, and overall skin health. The results of the study and product testing indicate that hibiscus extract plays a crucial role in improving skin texture, reducing dryness, and enhancing skin elasticity. Herbal preparation was brownish in color. The pH was found between 5 to 6 and the lotion did produce any skin irritation when applied.

Overall, the results confirm that the herbal body lotion with hibiscus extract is an effective, natural, and skin-friendly alternative to commercial lotions.

4. Conclusion

In this study, A Hibiscus lotion formulation was created and assessed based on physiological factors such as pH, spreadability, ease of removal, and irritancy test, as well as organoleptic features (color, odor, and appearance).The current study focuses on herbal extracts.

The development of an herbal body lotion using hibiscus flower extract highlights the effectiveness of natural ingredients in skincare. Hibiscus is well-known for its rich antioxidant, moisturizing, and anti-aging properties, making it an excellent choice for a body lotion formulation. This lotion offers a safe and chemical-free alternative to conventional skincare products while providing deep hydration, nourishment, and skin protection.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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