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Review Paper

An Analytical Review of the Efficacy and Safety of Herbal-Based Moisturizers in Skincare

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ABSTRACT

Herbal moisturisers have garnered considerable interest owing to their natural constituents and medicinal advantages. The primary objective of this study is the formulation of a herbal moisturising cream with Aloe Vera Gel, Neem Gel, and supplementary excipients. These components were selected for their anti-inflammatory, antioxidant, and skin-soothing properties. The objective of this study was to develop a formulation with outstanding moisturising properties while ensuring safety and efficacy for skin care. A series of assessments were conducted to appraise the cream's quality and efficacy, encompassing organoleptic evaluation, microbiological analysis, dilution, spreadability, irritancy testing, pH measurement, and washability. The pH level was modified to ensure compatibility with the skin's natural barrier. The irritancy test confirmed the cream's safety for sensitive skin, while the spreadability test evaluated its ease of use. Washability assessments determined the cream's ability to adhere to the skin under normal conditions, while microbiological evaluations confirmed the product's safety against contamination. The results were compared with those of commercially available herbal moisturisers. In every test, the formulation yielded positive results. It had no discernible irritancy, a pH that was adjusted, and remarkable spreadability. The washability tests confirmed the cream's efficacy post-washing, while the microbiological examination affirmed the product's safety. The herbal moisturizer lotion had a more natural composition and better moisturizing capabilities than commercially available lotions. This study offers a viable option for artificial moisturizers and demonstrates the potential of natural components in cosmetic products. The findings show that this formulation might give more advantages for skin health, boosting the expanding herbal skincare sector.

INTRODUCTION

The skin is the largest organ in the human body. It is the outermost, typically soft and flexible layer of

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a vertebrate animal's body. Sensation, regulation, and protection are its three main functions. Skin has a crucial immune role in defending the body from infections and excessive water loss because of its interactions with the outside world [1]. The epidermis, dermis, and subcutaneous tissue are the three layers that make up the skin [2, 3]. A semi-solid mixture of water and oil is termed a cream. A considerable percentage of the oil was simply removed with water. Oil-based creams contain a high oil concentration and water that combine more readily [4, 5]. The stratum corneum's water content and the lipids on the skin's surface are crucially balanced to sustain the skin's appearance and functionality. The elastic outer layer that is constantly renewing is termed the epidermis. The innermost layer, known as the dermis, is home to sebaceous glands, hair follicles, and sweat glands. The subcutaneous layer, which is composed of fat and connective tissue, lies beneath the dermis [6]. The foundation of Indian medicine has been herbal cosmetics, which have few or no negative side effects and offer a variety of functions, including antibacterial, antiseptic, humectant, anti-inflammatory, and antioxidant characteristics. The word "cosmetics" derives from the Greek word "kosmestikos," which meaning "to adorn." Since then, goods intended to enhance looks or beautify the skin have been referred to as cosmetics. It is simple to remove with water washing. When applied to the skin, they don't cause inflammation. The water phase offers the skin with additional protection. At body temperature, it dissolves. It enters the body through the natural pores in the skin's epidermis [7]. Disruption of the skin barrier resulted in numerous skin problems. The most prevalent problem is a decrease in water content, which causes dry skin symptoms like roughness, scaling, fissures, redness, and an uncomfortable tightness that commonly itches and stings [8].

The purpose of moisturizer treatment is to maintain the integrity and health of the skin by making the patient look healthy. The basic features of humectancy, occlusivity, and emolliency are shared by all moisturizers, despite the fact that many are touted as natural, safe, organic, and herbal [9]. In order to treat common skin disorders, the current study is to manufacture and assess a herbal moisturizing cream that would protect and moisturize the skin by covering it with a smooth and emollient layer.

Human epidermis

The skin serves as the external covering of the body. It is the most extensive organ of the integumentary system. The skin comprises multiple layers of ectodermal tissue and safeguards the underlying muscles, bones, ligaments, and internal organs. Human skin resembles that of most other mammals, except it lacks protective features. Despite being nearly entirely populated by hair follicles, human skin seems devoid of hair. There are two general skin types: hairy skin and uneven skin. The term "kutan" literally denotes "skin". The skin is essential for safeguarding the body against infections and preventing excessive water loss. Its further roles encompass insulation, temperature regulation, sensation, vitamin D production, and protection of vitamin B folate. Significantly impaired skin endeavours to recuperate by generating scars. [9]



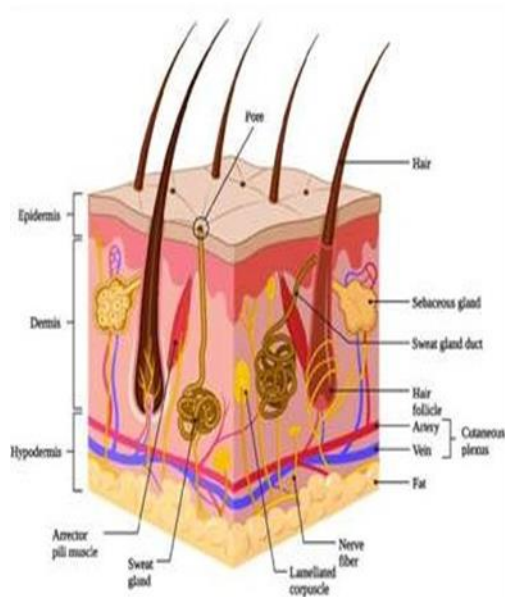


Fig no 1 Human epidermis

Moisturizing cream[9]

A facial moisturizer is a creamy lotion or emulsion, ointment, or balm that contains emollients that assist the skin maintain moisture. Moisturizing chemicals supply moisture to the surface layers of the skin. Their main benefit for the skin is that they seal it, trap in moisture and nutrients and protect it from environmental irritants. moisturizers are used to treat specific skin disorders such as psoriasis, ichthyosis vulgaris, dry skin, and irritation associated with atopic dermatitis. Most commonly they form the basis or support for topical treatments such as Whitfield ointment. They are typically coupled with humectants such as salicylic acid and urea.

Advantages [10]

1. Simple to use.
2. Application simplicity.
3. Avoidance of hazard.
4. No particular risk or technician is necessary for the application.

5. Prevent changes in medication levels between and among patients.

6. Excellent patient compliance

7. The advantage of employing cream formulations is there, Usefulness; they are easy to wash and clean and may be applied directly to the skin without leaving any trace.

Ideal features of moisturizer cream [11].

The ideal attributes for a moisturizer cream are that each person's expectations and outcomes are so distinct, finding the perfect moisturizer can be tough. Nonetheless, they need to contain particular features that enable them to be used in a range of circumstances.

1. It ought to reduce and halt more twelves.
2. In order to restore the lipid barrier, it should replicate and improve the skin's moisturizing retention mechanism.
3. Instead of leaving the skin feeling sticky, it should be able to leave it feeling soft.
4. It should be non-comedogenic, hypoallergenic, non-sensitizing, and fragrance-free.
5. It should be absorbed right away, giving you instant hydration.
6. It should improve the skin's lifeless appearance and lessen dryness.
7. It needs to be aesthetically pleasing.

Types of creams

Herbal cream

Herbal creams are emulsions consisting of water and oil. They might include neem, papaya, aloe vera, turmeric, and tulsi. Herbal creams contain diverse tinctures, extracts, and essential oils.

Natural vitamins and minerals can be found in herbal creams without the use of possibly harmful synthetic additives. Various varieties of herbal creams [11].

They can be classified into two groups:

a) Oil-in-water (O/W) Creams: O/W creams are defined as creams that are made up of microscopic oil droplets dispersed throughout a continuous phase. On the other hand, oil-in-water (O/W) emulsion is one that has oil droplets scattered throughout the aqueous phase [11].

b) Water-in-oil (W/O) Creams: W/O creams are defined as formulations that contains water and oil in a continuous phase. When the dispersion medium is oil and the dispersed phase is water, the emulsion is referred to as water-in-oil (W/O) type [11].

Methods of preparation

Oil in Water (o/w) Moisturizer Preparation The oil-soluble ingredients and emulsifier are combined in a beaker and melted in a water bath at 75 °C. In a separate beaker, water, water-soluble compounds, and preservatives are melted at 75 °C. The water phase is added gradually and triturated until a clicking sound is generated after the oil phase has been heated and placed in a mortar and pestle. Lastly, as the temperature drops, preservatives and possibly perfumes are applied. This preparation will have a higher proportion of water than oil [12].

Water in Oil (without) Moisturizer Preparation In a single beaker, the emulsifier and oil-soluble ingredients are melted at 75 °C and at 75°C, it melted. After melting, the water phase is put in a mortar and pestle, and the oil phase is added little by little while being triturated until a clicking sound is generated. The scenting agent is supplied until the proper temperature of the cream has been obtained. There would be a bigger quantity of oil phase and less

water phase in this preparation [12]. The compositions of moisturizers vary depending on the delivery method. The most widely used delivery mechanism is a cosmetic emulsion. The active components are present in various steps of the emulsification process.

Experimental work Preparation of Extract:

The fresh leaves of the plant were taken washed with water and powdered into a paste for further extraction. Extraction with water 300 g of fresh leaves of A. were taken prepared as above. The leaves were removed with water for 12 hours at room temperature. Extraction was carried out by maceration. The supernatant was filtered after 12 hours. The extract was labeled as Active A (liquid form).

Formulation of moisturizing cream Base

A simple water-based oil has been added so that it does not impair the evaluation of the moisturizing capabilities of Active. The cream base was produced according to the provided process.

All elements of phase A (oily phase) and phase B (aqueous phase) were collected in separate jars.

They were allowed to melt fully by heating them to a temperature of 70-80°C. The oil phase was then added to the aqueous phase with continual stirring until a cream was formed. The cream was crushed to the required consistency and appearance.

Formulation of cream

Heat the liquid paraffin and beeswax in a borosilicate glass beaker to 75 °C and maintain this heating temperature at °C (oily phase). In another beaker, dissolve borax and methylparaben in distilled water and heat this beaker to 75°C to dissolve borax and methylparaben to obtain a clear solution. Slowly add this aqueous phase to the



heated oil phase . Add a determined amount of broad bean extract, turmeric extract, amla extract and neem extract and mix vigorously till you have a creamy mixture. Add a few drops of rose oil for aroma.

Evaluation tests

An examination of the moisturizing cream

Organoleptic Evaluation

a) Colour and appearance: It was examined physically based on its colour and condition.

b) Texture: The cream was assessed for non-grittiness and smooth application.

b) Odour: Each formulation's smell was examined for a distinctive scent.

Homogeneity

The extract's uniform dispersion throughout the moisturizing cream was examined for each formulation [13].

pH

pH Using a ph meter, the pH of each formulation was measured within the required range of 6.7 to 7.3 [1, 13].

Spreadability

To test the moisturizing cream's ability to spread, a small amount of it was applied to a petri dish, and for one to two minutes, 0.5 grams of weight was placed on top of it [1] .

Viscosity

A cream's viscosity suggests that it can be spread out with less shear force [1, 13] .

Emulsion type (Dye Test)

A tiny quantity of cream is poured on a glass slide and mixed with methylene blue dye. Put a cover slip on and look at the continuous phase and dispersed phase colors under the microscope.

Skin irritation test

After applying the moisturizing creams to a specific area of the skin, any irritation or reaction was noticed [13] .

After feel

After using the moisturizing lotion, the amount of residue, emollience, and slipperiness were analysed.

Removal

After washing with tap water, the cream's ease of removal was evaluated.

Evaluation Table: Herbal Moisturiser Creams (2025) [14-16]

Table no 1 Evaluation Table: Herbal Moisturiser Creams

Brand/Product	Key Herbal Ingredients	Skin Type	SPF	Texture	Consumer Rating (1–5)	Price (USD)
Forest Essentials Cream	Ashwagandha, Sandalwood, Aloe Vera	Dry to Normal	No	Rich Cream	4.6	38.00
Biotique Morning Nectar	Honey, Wheatgerm, Seaweed	All Skin Types	Yes	Light Lotion	4.3	10.00

Himalaya Nourishing Cream	Aloe Vera, Winter Cherry, Indian Kino	Normal to Dry	No	Light Cream	4.4	6.99
Khadi Natural Moisturizer	Almond Oil, Neem, Aloe Vera	Normal to Dry	No	Medium Cream	4.2	9.50
Kama Ayurveda Eladi Cream	Eladi Oil, Coconut Milk, Aloe Vera	Normal to Dry	No	Rich Cream	4.5	42.00
Just Herbs Moisturizing Gel	Aloe Vera, Cucumber, Indian Ginseng	Oily/Acne-Prone	No	Gel-Based	4.3	14.00
SoulTree Nourishing Cream	Brahmi, Almond Oil, Turmeric	Normal to Dry	No	Thick Cream	4.2	22.00

Trends in Herbal Moisturisers (2025)

- Preference for **Ayurvedic** and **vegan-certified** products.
- Shift towards **non-toxic preservatives** and **recyclable packaging**.
- Greater consumer awareness around **ingredient sourcing** and **ethics**.

CONCLUSION

The purpose of this paper review is to inform and inspire people to understand the psychological and physical benefits of using moisturizers with properties like water retention, mechanical skin repair, and influence for those who suffer from skin-related issues or are unable to take care of their skin. Demands for moisturizers are expanding with time as the world's population, which comprises clients of all ages, becomes more urbanized and beautifies society. The need for moisturizers will expand as the world becomes more urbanized and the population ages. Evaluations of the aforementioned moisturizing components must show improvement based on sophisticated standards taken into account for moisturizing impact. The greatest moisturizers are still subject to trial trust, which is normally important until data is obtained to discover which moisturizing products are appropriate for them.

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