Herbal Face Creams: A Scientific Review of Natural Ingredients for Skin Care

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***Abstract*—Herbal face creams have gained significant attention in recent years due to their perceived natural benefits and minimal side effects compared to synthetic counterparts. This review paper aims to provide a comprehensive overview of the formulation and evaluation methods employed in the development of herbal face creams. The review encompasses a thorough examination of various herbal ingredients commonly used in face cream formulations, highlighting their therapeutic properties and mechanisms of action. Furthermore, it delves into the formulation strategies employed to optimize the stability, efficacy, and sensory attributes of herbal face creams, including emulsion systems, viscosity modifiers, and preservatives.Evaluation methods play a crucial role in assessing the quality and performance of herbal face creams. This paper explores a spectrum of evaluation techniques, including physicochemical characterization, stability studies, microbiological testing, and in vitro/in vivo efficacy assessments. Additionally, it discusses regulatory considerations and safety aspects pertinent to the development and commercialization of herbal face creams.In conclusion, this review provides valuable insights into the formulation and evaluation of herbal face creams, emphasizing the importance of synergistic herbal combinations, formulation optimization, and rigorous evaluation methodologies in developing high-quality, efficacious,and safe products for skincare applications.**

***Index Terms*—Herbal skincare, Formulation optimization, Evaluation methods, Face cream formulations.**

I. INTRODUCTION

Herbal face creams have gained significant attention in the cosmetic and pharmaceutical industries due to their natural composition and potential skin benefits. These formulations incorporate bioactive plant extracts, essential oils, and natural ingredients to provide hydration, nourishment, and therapeutic effects without the harmful effects of synthetic chemicals. The formulation of herbal face creams involves the selection of suitable herbal ingredients based on their skin benefits, such as anti-aging,moisturizing, anti-inflammatory, and antimicrobial properties. Commonly used herbal components include aloe vera, turmeric, neem, green tea, and sandalwood, which are known for their antioxidant and healing effects. Characterization of herbal face cream is essential to evaluate its quality, stability, and effectiveness. Various physicochemical parameters such as pH, viscosity, spreadability, homogeneity, and microbial stability are analyzed to ensure the cream is safe and effective for use. additionally, in vitro and in vivo studies may be conducted to assess skin compatibility and therapeutic efficacy. This study on the formulation and characterization of herbal face cream aims to develop a safe, effective, and stable herbal-based skincare product that aligns with the growing consumer demand for natural and eco-friendly cosmetic alternatives. Creams are a solid preparation for oil and water. erbal cosmetics are in high demand due to the availability of novel components and the financial incentives for producing profitable products and maintaining high quality standards. Cosmetics

are items that are used to apply to the skin. Face cream is a product that softens and cleanses the skin. The Ayurvedic system of medicine is one of the most prominent systems of medicine that employs herbal plants and extracts to treat and manage a variety of diseases. [1] Synonyms for aloe vera Aloe Barbadensis is a member of the Liliaceae family, which includes 300 species. Aloe vera is a cactus-like plant that grows well in hot, dry conditions, and it is widely grown. Avocado oil's antioxidants and anti-inflammatory compounds keep your skin smooth, robust, and elastic. Avocado oil may be found at any health or food shop and can be used to:

- soothe irritated skin
- skin that has become chapped
- moisturise dry skin
- skin hydration and moisturization
- UV protection is important for the skin.
- safeguard your skin from harm

Avocado oil is frequently mistakenly referred to it as an essential oil, although this isn't the case. Avocado oil is a carrier oil, that means it is thick and has a green colour. Cocoa butter is a form of plant fat derived from cocoa beans. By fermenting, drying, roasting, and pressing the beans, manufacturers may obtain luscious cocoa butter. They make cocoa powder outof the remainder.

II. TYPES OF CREAM

Oil in Water (o/w): Composed of small droplets of oil dispersed in a continuous phase. They are more comfortable and cosmetically acceptable as they are less greasy and more easily washed off using water.
e.g: Vanishing cream, Foundation cream, Shaving cream, Hand cream.
Water in oil (w/o): Composed of small droplets of water dispersed in continuous oily phase. They are more difficult to handle but many drugs which are incorporated into creams are hydrophobic and will be released more readily from a w/o cream than o/w cream they are also more moisturizing as they provided an oily barrier which reduces water loss from the stratum corneum, the outermost layer of the skin.
IDEAL PROPERTIES OF HERBAL FACE CREAM:
• Good penetrating property so that the drug present in cream penetrates into skin and shows the desired property.
• It should be non-toxic so that it does not have any adverse effects on skin such as itching, rashes or redness.
• They should be optimum particle size.
• They should produce emollient effect.
• Thicker than a lotion, maintaining its shape, for example, a 50/50 emulsion of oil and water.
INGREDIENTS USED IN HERBAL CREAM:
Water Phase : 30g Aloe Vera Gel
40g Distilled Water
7.5g Glycerine
Oil Phase : 13g Avocado Oil
3.7g Cocoa Butter
5g Emulsifying Wax
Other functional ingredients, and additives:
0.5g Preservative
3 drops Lavender Essential Oil
2 drops Orange Essential Oil

III. METHOD OF PREPARATION

Materials & Methods (o/w, w/o)
Add the required quantity of ingredients in sufficient amount of Base water and prepare a solution by herbal heating on water bath.

In the above solution, add required quantity of herbal extractAdd solution drop wise into solution 2. When both the phases mixed properly, add methyl paraben as preservative

The Formulated polyherbal cream was kept aside for about an hour in cool and dry place indirectly to sunlight till it sets completely and was used after 48 hours after keeping at room temperature for stability and analytical testing Packed in container and store in cool place.

IV. EVALUATION PARAMETERS

- Physical evaluation: The prepared herbal cream was observed for colour, odour, texture, state in physical evaluation.
- Irritancy test: An area of 1sq.cm is marked on the left-hand dorsal surface. Then cream is applied to the specified area and time is noted. Irritancy, erythema, edema was checked, if any, for regular intervals up to 24hrs and reported.
- Spread ability: Adequate amount of cream is taken between two glass slides and a weight of 100gm is applied on the slides for 5 minutes. It can be expressed as,

  S=m*l/t

  Where,

  m = weight applied to upper slide.

  l = length moved on the glass slide.

  t = time taken.
- Viscosity: Viscosity of formulated herbal creams can be determined by using bookfield viscometer
- Homogenity: The formulation was treated for homogeneity by visual appearance and by touch.
- Removal: The ease of removal of the herbal creams applied was examined by washing the applied part with tap water.
- Dye test: The scarlet dye is mixed with the cream. Place a drop of cream in a slide and cover with a cover slip and examine it under a microscope. If the disperse globule appears red and the ground colorless then it is o/w type and the reverse condition appears in w/o type of creams.
- Type of smear: After application of cream, the type of film or smear formed on the skin was checked.
- Determination of pH: The pH of the formulated herbal cream can be measured on a standard digital pH meter at room temperature by taking adequate amounts of the formulation diluted with a suitable solvent in a suitable beaker.

V. CONCLUSION

The herbal preparation is beneficial for easy application and no side effects and are mostly preferred by peoples. The uses of creams have been increased in many folds in cosmetic as well as medicinal values. The uses of bioactive ingredients in topical formulation influence biological functions of skin and provide nutrients necessary for healthy skin. Due to anti-bacterial and anti-inflammatory properties of herbs like aloevera, sandalwood, turmeric, etc, it prevents skin related disorders also improved skin tone, protects from damaging UV rays. The study revealed that herbal cream is very safe and does not produce any toxic and adverse reactions compared to marketed semisolid products. The Formulated Herbal face cream has a

pleasant odor, a smooth consistency, and a semi solid state. It also has good rheological properties and physical properties such as pH, viscosity, spreadability, washability, after-feel, non-irritancy, and no greasiness. Additionally, it's stable and doesn't undergo phase separation, making it a great choice for skincare. The formulation and evaluation of herbal cream yielded promising results, with formulation F3 emerging as the preferred formulation due to its superior consistency and stability. The enhanced texture and spreadability of F3 make it an ideal candidate for skincare applications, offering a smooth and uniform application experience. Overall, the formulation and evaluation of herbal cream, with F3 as the standout formulation.

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