International Journal of Current Trends in Pharmaceutical Research
Home Page: https://pharmaresearchlibrary.org/journals/index.php/ijctpr
CODEN (USA): IJCTGM | ISSN: 2321-3760 | Publisher: Pharma Research Library
Int. J. Curnt. Tren. Pharm, Res., 2025, 13(1): 80-89
DOI: https://doi.org/10.30904/j.ijctpr.2025.4851

A Review on Preparation and Evaluation of Herbal Face Creams and It's Applications in Pharmaceutical field

K. Sunil Kumar*[1], Sk. Aabid[2], Sk. Sameer[2], S. Pavan Kumar[2], V. Aswani[2]
[1]Associate Professor, Department of Pharmaceutics, Swathi College of Pharmacy, Venkatachalam (P&M), SPSR Nellore–524 320, A.P. India.
[2]Swathi College of Pharmacy, Venkatachalam (P&M), SPSR Nellore–524 320, A.P. India.

A B S T R A C T

Herbal 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. Cosmetics are easily available today in the form of creams, lips, perfumes, eye shadows, nail polishes, hair sprays etc. Some cosmetics such as face powder give light to the skin after applying a basic cream. Then we have lipstick, which is used by many women of all ages. They are made with wax and cocoa butter in the required amount. Cosmetics such as creams, gels, and cologne are used daily by both women and men. Creams work as a facial cleanser in most cases. Recently, anti-aging creams have been developed that can keep skin looking younger for years. The best cleaning products are cleansing cream, soap and water. Cosmetic creams work as a skin moisturizer for dry, dry and cracked skin. It basically softens, softens and removes unwanted impurities from the skin. Face cream are semi-solid preparation. They are commonly used to hydrate and improve complexion of skin. Main aim of this research project is to prepare a herbal cream and evaluate its efficacy. Formulation is evaluated for various factors like pH, consistency, stability, appearance, homogeneity and organoleptic properties. Satisfied result was acquired from the formulation. The skin is the most accessible part of the body and as a result is at high risk of injury. The need for cream-based remedies is also increasing day by day.

Keywords: Herbal cream, Herbal medicine, Cosmetic creams, Facial creams, Novel components.

A R T I C L E I N F O

Corresponding Author
K. Sunil Kumar
Associate Professor, Department of Pharmaceutics ,
Swathi College of Pharmacy,
Venkatachalam, SPSR Nellore–524320, A.P. India.

Article History:
Received : 21 June 2025
Revised : 19 July 2025
Accepted : 23 Aug 2025
Published : 08 Sept 2025

Citation: K. Sunil Kumar, *et al.* A Review on Preparation and Evaluation of Herbal Face Creams and It's Applications In Pharmaceutical Field. Int. J. Curnt. Tren. Pharm, Res., 2025, 13(1): 80-89.

C O N T E N T S

1. Introduction

The skin is the largest organ and primary defensive barrier of the human body, performing vital physiological functions including thermo regulation, maintenance of metabolic homeostasis, and protection against environmental insults. Given its visible nature, skin conditions significantly influence social perception and interpersonal dynamics. Empirical evidence indicates that individuals with youthful skin characteristics often exhibit enhanced social confidence and reduced psychological stress during interpersonal interactions. Driven by these psychological demands and the non-invasive nature of topical skincare, daily skincare has become an indispensable sociocultural practice and a health necessity for urban populations worldwide[1-2]. The historical trajectory of skincare innovation parallels advancements in human technology. Archaeological evidence from ancient

civilizations reveals the early use of plant extracts to protect and enhance the skin. With the Industrial Revolution (17th–19th centuries) and contemporary biotechnological progress, the definitions and compositional systems of skincare products have grown increasingly sophisticated. This evolution has transformed skincare from gender-specific luxury items into daily essentials for all demographic groups, including male consumers and pediatric populations. However, mainstream modern skincare products face limitations such as ingredient irritancy, environmental toxicity, singular mechanisms of action, and hormonal dependency. Herbal skincare products address these issues through natural polyphenols, terpenoids, and other compounds that enable multi target regulation while improving biodegradability, thereby balancing efficacy and ecological safety.

Herbal ingredients have become critical resources in this field, with a growing number of bioactive phytochemicals being incorporated into cosmetic formulations. Ancient medical texts such as the *Huangdi Neijing* (The Yellow Emperor's Inner Classic, 475–221 BC) and *Shennong Bencao Jing* (Divine Farmer's Materia Medica, Han Dynasty) document over 200 plant-based medicines with dermatological applications. The *Zhouhou Beiji Fang* (Jin Dynasty) systematically categorized 33 herbal formulas for cosmetic purposes, such as the Qi Bai San formulation for skin brightening. Modern scientific validation has converted these historical insights into commercialized active ingredients, including camellia oil, aloe polysaccharides, and ginsenosides.

Current skincare strategies focus on five core objectives: photoprotection, anti-aging, hydration, pigmentation correction, and anti-irritation. Most plant-derived active components naturally possess properties to repair and protect the skin from environmental pollution, chemical exposures, atmospheric temperature fluctuations, and UV radiation, making them preferred sources of photoprotective agents. The use of sunscreens to prevent premature skin aging and skin cancer represents a simple and cost-effective approach. Notably, studies suggest that cosmetics containing Chinese herbal ingredients are more suitable for highly sensitive skin, as traditional herbs or their active compounds reduce intracellular ROS levels, demonstrating potent antioxidant properties with particular advantages in anti-aging and anti-photoaging. The efficacy of herbal products and specific phytochemicals in mitigating aging has been scientifically validated[3-6]. Representative examples of well-researched botanicals include aloe, ginseng, and saffron. Natural herbs meet the multifunctional demands of skincare due to their proven efficacy, multi-target mechanisms, and favorable safety profiles.

While medicinal herbs demonstrate advantages in skin brightening and antioxidant effects, their oral administration presents narrow safety margins, particularly concerning hepatorenal toxicity, gastrointestinal complications, and hypersensitivity reactions]. For example, *Angelica dahurica* effectively inhibits melanin synthesis and promotes keratinocyte proliferation but can induce photosensitive liver injury and renal tubular necrosis when ingested orally. Topical application through surface or epidermal-layer delivery offers a safer alternative by reducing systemic exposure and avoiding toxicity. Market analyses indicate exponential growth in herbal cosmeceuticals, with over 400 specialized manufacturers operational by 2011 and a projected compound annual growth rate (CAGR) of 14.3% through 2030. Nevertheless, significant challenges remain regarding standardized protocols for product development and clinical application, regulatory oversight, and evidence-based guidelines. Cosmetics are cosmetic products containing medicinal ingredients designed to improve the health and beauty of the skin. Skin cosmeceutical is a product used in the treatment or prevention of skin abnormalities (disease).

Cosmetic products have the following features:

The product is chemically active and intended for use on normal or near-normal skin. Products with good antibacterial properties (cosmetics). Since skin diseases are mild, the risk of this product should be very low. Skin care cosmeceuticals Products: Cosmetics and skincare products are widely used in daily beauty. The skin, the largest organ of the human body, protects the internal environment against skin damage that can be caused by external radiation, air pollution, chemicals, and industrial processes. Using cosmetics or other beauty products does not make the skin or the environment look beautiful. Cosmetic products contain chemicals or chemical like substances that can affect the biological activity of the skin, depending on the type of activity they have. Skincare cosmetics improve the appearance, texture, or function of the skin[7].

2. Physiology of skin Epidermis

The epidermis is the outer layer of the skin composed of stratified keratinized squamous epithelium that varies in thickness in different parts of the body. The palms and soles of the feet are the thickest. The epidermis has no blood vessels or blood vessels, but its deeper layers are bathed in fluid between the dermis, which provides oxygen and nutrients and flows out in the blood glands. Dermis: Dermis is tough and durable. It consists of connective tissue with a matrix containing collagen fibers intertwined with elastic fibers. When the skin is overstretched, the elastic fibers can break, causing permanent stretch marks or stretch marks that can occur during pregnancy and obesity. Collagen fibers bind water and give the skin its tensile strength, but as this ability decreases with age, wrinkles appear. Fibroblasts, macrophages and mast cells are the main cells in the dermis. Beneath it is the deepest part of the areola tissue and is different from adipose tissue.

Subcutaneous Gland:

Contains epithelial secretory cells derived from the same tissue as the hair follicle. They secrete an oily substance called sebum in the hair follicles on the skin of all parts of the body except the palms and feet. They are usually found on the scalp, face, armpits and groin skin. In areas of transition from one epithelium to another, such as the lips, eyelids, nipples, labia minora, and glans, sebaceous glands are found independently of secreted hair follicles.

Functions of skin

1) Protection 2) Regulation of body temperature 3) Formation of vitamin D 4) Cutaneous sensation 5) Absorption 6) Excretion

Creams Creams are cosmetic products that can be applied to the skin. Cream is defined as an "oil-in-water or water-in-oil liquid or semi-solid emulsion" formulation, the consistency of oil and water differs from oil and water. Classification of creams All the skin creams can be classified on a different basis: 1) According to function, e.g., cleansing, foundation, massage, etc. 2) According to characteristics properties, e.g., cold creams, vanishing creams, etc. 3) According to the nature or type of emulsion.

Types of creams according to function, characteristic properties, and type of emulsion: 1) Make-up cream (o/w emulsion): a) Vanishing creams. b) Foundation creams. 2) Cleansing cream, cleansing milk, cleansing lotion (w/o emulsion) 3. Winter cream (w/o emulsion): a) Cold cream or moisturizing creams. 3) All-purpose cream and general creams. 4) Night cream and massage creams. 5) Skin protective cream. 6) Hand and body creams.

Herbal Creams Today, herbal extracts are used in cosmetics to increase beauty and attractiveness. Cosmetic herbs are classified according to their dosage forms (sugar, powder, soap, medicine, etc.) and according to the body or body used; skin, hair, nails, teeth mouth etc. For cosmetics Creams are semisolid emulsions that are applied to the skin or mucous membranes. Low-fat moisturizers that disappear on the skin are called disappearing creams. It softens the skin without leaving any marks. Vanishing cream is an oil-in-water emulsion formulation consisting of an aqueous phase and an oil phase. Depending on the ratio of water to oil, creams can be mixed with water and washed easily, or they can be liquid. It is probably the most prescribed drug. Most patients find it easier to use as it is less greasy, messy, and sticky. The evolution of traditional medicine has been responsible for securing world health for centuries until the advent of allopathic medicine.

The latter technique is rapidly gaining acceptance and now dominating the medical field, as it uses modern knowledge of biology and chemistry for discovery and treatment. However, the involvement of traditional preparations (mostly many herbal remedies) is increasing because these products are generally considered safe; Conventional single-molecule-based drugs used in allopathic medicine can have serious side effects. The skin is the first open border of the body. Signs of aging appear on the skin. Although skin aging does not pose any threat to humans, it can have negative effects on the human brain. Many premature aging occurs as a direct or indirect result of the skin's interaction with the environment. Sun exposure is believed to be a significant, undesirable change in the skin. The photochemical reaction prevents the harmful effects of UV radiation on the skin caused by excessive oxygen production.

Advantages of herbal creams

Herbs are important for their disease prevention and health promotion properties having the following advantages which are described below: Natural cosmetics are natural and generally do not contain synthetic ingredients that can harm the skin. It is safe to use safe and effective natural cosmetics. They are hypoallergenic, dermatologist tested and proven to be safe to use anytime, anywhere. Because they are made from natural ingredients, people do not need to worry about acne or skin irritation.

Suitable for all skin types Whether you are brunette or fair skinned; You will find natural cosmetic products suitable for your face, such as foundation, eye shadow and lipstick. Women with oily or sensitive skin can use it and not worry about their skin getting worse. 4) Many options. These products are more valuable than synthetic products. They are available at affordable prices and are inexpensive on sale. According to the estimates of the World Health Organization, about 80% of the world's population rely on natural products for treatment due to the side effects and rising prices of modern medicine. 5) No side effects. Synthetic beauty products can cause skin irritation and acne. They can clog pores and leave skin dry or oily. With natural cosmetics, you don't have to worry about these. Use natural ingredients to avoid side effects; People can use them anytime and anywhere. 6) Cosmeceuticals Cosmetics make up the largest segment of the beauty industry. Cosmeceuticals are cosmetic products designed to improve the health and beauty of the skin by providing specific effects, from acne control to sunscreen to anti-wrinkle.

Disadvantages of herbal creams

1) Chemicals and/or additives may irritate the skin causing contact dermatitis 2) Some chemicals have poor permeability to the skin 3) Allergic reactions may occur 4) Use of drugs that require less plasma is too much to benefit.

Ideal properties of a Face Cream

It should possess with pleasant and accepting colour and odour. 2. It should easily spread and provide a pleasant feeling during and after application to the facial skin. 3. The cream should provide protection from various environmental factors, including wind, temperature, UV-light, etc. 4. It should reduce the drying of skin and improve its dull appearance. 5. It should have the ability to smoothen and soften the skin. 6. The cream should be stable for a prolonged period of time. 7. It should be free from microbial contamination. 8. Should be non-allergenic and non-irritant to the skin[8-9].

3. Benefits of a Face Cream

It deeply hydrates the facial skin without leaving it feeling greasy or oily. 2. Help to attract and retain the moisture. 3. Helps in preventing the premature ageing of the skin and provides radiance to it. 4. It helps in improving the texture of the skin. 5. It soothes irritation and redness, thus leaving the skin calm and comfortable. 6. It promotes an even skin tone, thus reducing the uneven pigmentation. 7. It helps in boosting the production of collagen which reduces sagging and gives a lifted appearance. 8. Avoids very oily skin without removing the skin's natural barrier of protection.

Aging is a progressive decline in physiological function, leading to either age-related diseases or geriatric syndromes, including cardiovascular and obstructive pulmonary diseases, musculoskeletal disorders, several types of cancer, neuro-degenerative diseases, and skin

disorders. Nowadays, the hypothesis that the aging process, age-related diseases, and geriatric syndromes share the same molecular and cellular mechanisms has been highlighted. Together, all age-related diseases, physiological aging, and geriatric syndromes produce a heavy economic and psychological burden for patients and their families. Among the various aging manifestations, skin aging is a process implicated with changes in skin appearance, aesthetic manifestations, and the development of several skin diseases. Skin aging is a natural, physiological, biochemical, and time-dependent process, resulting from a complex interaction between intrinsic and extrinsic factors, which produce cumulative deleterious changes in skin layers, morphology, physiology, and appearance. Intrinsic factors are determined by genetic and physiological changes, whereas extrinsic factors are promoted by external stimuli, including ultraviolet radiation, diet, air pollution, abuse of tobacco and alcohol, lifestyle, toxins, and others. Physiological skin changes affect the regulation of body temperature, fluid balance, loss of electrolytes and proteins, production of vitamin D, waste removal, sensory perception, immune response, and skin barrier function. Aesthetic effects, such as wrinkles, skin spots, loss of elasticity, and thinning, affect the skin's appearance and induce emotional, mental, and psychosocial problems. On the other hand, the skin aging process is also closely related to an increased occurrence of cutaneous disorders and the development of dermatoses, benign and malignant tumors, itching, chronic wounds, dry skin, and skin depigmentation, which affect skin health and reduce the likelihood for a healthy aging process.

The skin has been recognized as the largest organ of the human body with a key role in the communication between the human body and the external world, including other organisms. The skin protects the body against mechanical and chemical damages, provides innate and adaptative responses, enables body thermoregulation, and acts as a sensory organ. Moreover, skin is important to one's personal identity, closely related to one's physical appearance, self-esteem, and self-consistency, which are basic self-concepts that define the consumption of cosmetics, personal care products, and other aesthetic products. Self-esteem and self-consistency are the basis of consumers' purchases of cosmetic products, with a global size of the cosmetics industry reported at USD 380.2 billion in 2019 and a projection that it will reach USD 463.5 billion by 2027. In the last few years, cosmetics and pharmaceutical companies have dramatically increased their development of new, safe, and efficacious drugs and therapeutical strategies to treat and prevent skin aging-related diseases. Nowadays, several anti-aging strategies are available for dermatologists, but each one has advantages and disadvantages. Approaches to preventing and treating skin aging, including cosmetical skincare, correct sun protection, aesthetic non-invasive procedures, topical products (with antioxidants and cell regulator properties), invasive procedures (chemical peelings, radiofrequency, injectable skin bio-stimulators, and fillers among others), systemic agents (antioxidants and hormone therapy), and strategies to limit or reduce the exogenous factors of aging, such as the correction of one's lifestyle and behavior habits, were recently revised. On the other hand, consumers are concerned with their health and well-being, demanding non-invasive products with safety and efficacy based on natural bioactive products in cosmetics and other skincare products. Although the bioprospection of active natural products, mainly of plant origin, has been overshadowed by the advent of new biotechnologies, the synthesis of new chemical compounds, and international regulatory systems for biodiversity access and conservation, plant biodiversity is a rich source of newly active molecules. The chemical diversity of compounds of plant origin includes different classes of secondary compounds, among which the following stand out: phenol, flavonoids and derivatives, anthocyanidins, anthocyanins, tannins, coumarins, terpenoids, stilbenes, and alkaloids compounds. Moreover, plant species are also an extraordinary source of raw materials for the development of standardized herbal-derived products with scientific evaluations of their efficacy, safety, and quality control. They are useful in controlling many diseases, including the prevention and treatment of skin disorders, particularly skin aging processes[10].

In this review, we aimed to update and systematize the available data on the pharmacological activities of herbal-derived products evaluated by in vitro, ex vivo, and in vivo experimental studies, including clinical trials, providing data and insights for further studies and an evaluation of the potential applications of these active ingredients for the development of new cosmetic formulations. For this, an extensive review of the last 10 years was performed using the PubMed and Science Direct databases, targeting the main plant-based products potentially reported as anti-aging products, mainly those able to beneficially modulate the endogenous mediators and transcription factors associated with skin aging. Scientific evidence analysis was based on the use of in vitro, ex vivo, and in vivo studies, prioritizing those products with clinical trials and pharmacodynamic data. Although several selected products were based on plant extracts and different herbal formulations, chemically not characterized, those formulations here highlighted were fully evaluated in pharmacological studies and can be used for the development of herbal-derived products with skin anti-aging properties, mainly those reported as active products in clinical trials. Here, we summarize the main products of plant origin, highlighting those with efficacy, safety, quality control, and pharmacological actions on the main skin aging-related processes, such as skin elasticity, skin wrinkles production, skin hydration, skin pigmentation, and oxidative stress.

Collagen is a fibrillar protein (polymer consisting of amino acids) that forms the conjunctive and connective tissues in the human body, especially the skin. This molecule is one of the most abundant in many living organisms due to its connective role in biological structures. It has been established that collagen fibers are damaged with the passage of time, losing thickness and strength, which has been strongly related with skin-aging phenomena. All proteins that have a structure based on three helix

polypeptidic chains belong to the collagen family, with 26 types having been identified. It is not enough to have the right amount of collagen in the right place—it also has to be the collagen of the right type. The most abundant types of collagen in the skin are Types I and III; their fibrils being largely responsible for the skin's mechanical properties, such as strength, texture, and resilience.

Collagen has been used in skin creams for decades, with claims that it improves the structure of the skin. However, questions remain regarding the veracity of these claims. Collagen fibers are too large to penetrate into the epidermis when applied to the surface of the skin. The effect of collagen is ascribed to its penetration. Thus, it can be assumed that a collagen cream has no effect on skin. " Only collagen injections have some noticeable cosmetic effects, but since collagen injections are derived from the tissues of cows (often called bovine collagen), allergic reactions often occur following the injections, which has discouraged their use among many practitioners.

To overcome the challenge of poor penetration of the collagen fibers, formulation developers use partially hydrolyzed collagen (i.e., amino acids or peptides) that can penetrate the skin.3 Native collagen properties are different from those of hydrolyzed collagen. After denaturation, the triple-helix structure of native collagen changes to a random coil form due to dissociation of the hydrogen bonds when collagen undergoes hydrolysis. This process breaks the bonds in the polypeptide chain, resulting in a large number of peptides. These broken-down fragments cannot reassemble to build collagen in the skin layers. Peptides and amino acids do have some beneficial biological functions, such as cell proliferation and a water-holding capacity, but they are different from those of collagen itself.

In the present research, we prepared micronized marine collagen (m-collagen) fibers and inserted them into a cream. The micronized collagen in the cream was found to penetrate the stratum corneum (SC) barrier. We used collagen isolated from the *Molva molva* fish. Marine collagen is rich in type I and type III collagen, and its irritancy to the human skin is negligible.7 Particles size was measured by environmental scanning electron microscopy (ESEM) and dynamic light scattering (DLS) devices. Skin roughness following treatment with a cream containing m-collagen was evaluated by optical profilometry.

The antioxidant activity of collagen was evaluated using the electron paramagnetic resonance (EPR) technique by measuring the changes in free radical production in the presence or absence of microfibrillar collagen. The depth of collagen penetration in human skin was monitored using a non-invasive optical technique called iterative multiplane optical property extraction (IMOPE). The technique uses a laser and camera for the detection of light phase changes that can follow the presence of collagen particles in deep skin layers. The technique is based on light propagation through a diffuser substance, such as skin. Since the optical properties of light parameters are affected by the structure of the skin, they can monitor the presence of different particles within the skin layers. Optical profilometry was conducted for evaluating skin topography and roughness.

Method of formulation:

- All the raw ingredients including tamarind seeds powder, orange peel powder, rose petals powder and saffron were triturated in a mortar pestle.
- In a china dish, heat the liquid paraffin and beeswax to 75°C and maintain the temperature (Oil phase).
- Dissolve borax and methyl paraben in distilled water in a different china dish. Heat the beaker to 75° C to dissolve the ingredients and produce a transparent solution (Phase of water). 4
- Then, using a mortar and pestle, gradually add this watery phase to the oily phase while stirring in a single direction to prevent lumps.
- 5. Then add all the raw ingredients and raisin extract to the cream base and mix it. Add few drops of Rose oil as a fragrance to impart the aroma and mix all the ingredients properly.

Properties:

- They are easy to apply.
- They spread easily on the skin.
- They are pleasant in appearance .
- They cause less irritation to the skin
- They should melt or liquefy.
- They should produce flushing action on skin and it’s pore openings.
- They should form an emollient film on the skin after application.
- They should not make skin dry which happens in case, when the skin is washed with water and soap.
- They also help in softening, lubricating and protecting skin apart from cleansing purposes

Criteria:

- smooth consistency
- sticky
- non irritant
- easily washable
- elegant look
- a uniform mixture
- free from gritty particle
- Less greasy and easy to apply
- Better contact with skin
- Should have satisfactory shelf life
- Should form a thin film with a little pressure
- If colored , should not stain the cloth

Advantages:

- Convenient and easy to apply .
- Avoidance of first pass metabolism
- Inconveniences of intravenous therapy and of the various conditions of absorption like pH changes , presence of enzyme , gastric emptying time etc.

Disadvantages

- Skin irritation and contact dermatitis may occur due to the drug and excipient.
- Poor permeability of some drugs through skin .
- Possibility of allergy reactions

- Can be used only for drugs which require very small plasma concentration for action .
- In many cases , It favors microbial growth and causes product spoilage.
- A shorter shelf life because of presence of flavouring agents and colouring agents.

Types:

Oil Creams :

- Dispersion Phase – Oil
- Continuous Phase – Water
- Oil in water (O/W) cream which are composed of small droplets of oil dispersed in a continuous phase.
- More comfortable and cosmetically acceptable as they are less greasy and more easily washed off using water.
- Emulsification agents of natural origins (bees wax , wool alcohols , wool fat).
- Emollient and creamy , white or translucent and stiff .
- Water in oil (W/O) creams which are composed of small droplets of water dispersed in continuously oily phase .
- 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 an O/W cream .
- More moisturizing as they provide an oily barrier which reduces water loss from the stratum corneum, the outermost layer of the skin.

Medicated Cream

- Hydrocortisone cream - treat rashes like poison oak or poison ivy, psoriasis and eczema.
- Antibiotic creams- abrasions or small wounds to treat minor infections.
- Antifungal creams- ringworm, Candida Intertrigo or Candida diaper rash.
- Zinc oxide cream- sunblock activity and for infant diaper rash

Other Types

- Regeneration face cream .
- Emollient face cream .
- Anti- ageing face cream
- Anti- wrinkle face cream
- Hydrating face cream
- Hypoallergenic and fragrance – free creams
- Mattifying creams

Preparation:

- Preparation of the oil phase: Flake/powder ingredients, sometimes dry blended in advance, are dispersed into mineral oil or silicone oil. Heating may be required to melt some ingredients.
- Hydration of aqueous phase ingredients: Emulsifiers, thickeners and stabilizers are dispersed into water in a separate vessel. Heating may be required to accelerate hydration
- Forming the Emulsion: The two phases are blended under vigorous agitation to form the emulsion.
- Dispersion of the Active Ingredient: The active ingredient often makes up only a small proportion of the formulation; this must be efficiently dispersed to maximize yield and product effectiveness

TRITURATION

- Used for finely divided insoluble powder particles or liquids.
- Insoluble powders are added by geometric dilution.
- Liquids are added by making well in centre.
- Air pocket formation avoided.
- Mortar and pestle used when we have large quantities.
- Involved use of glass slab when small quantities are used.

LEVIGATION

- Incorporation of insoluble coarse particles.
- Insoluble coarse powder is rubbed with molten base or liquid or semisolid base.
- Also knows as Wet grinding.
- A considerable shearing force is applied to avoid grittiness.

FUSION METHOD

- The fusion method is followed when the drugs and other solid are soluble in the ointment bases.
- The base is liquefied and the soluble components are dissolved in the molten base.
- The congeal mixture is then speculated or triturated to obtain a smooth texture.
- Care is taken to avoid thermal degradation of the base or other components during the fusion process.

MECHANICAL ADDISION

- Water- removable creams are basically hydrophilic type emulsions.
- A hydrophilic emulsifying agent is included in the aqueous phase in order to obtain stable oil-in-water dispersion.
- Sodium lauryl sulfate is used in the preparation of hydrophilic ointment.

Applications

- Cleansing creams is a facial care product that is use to remove dead skin cells ,oil , dirt, and other types of pollutants from the skin of the face.
- Vanishing creams are used in hot climates which cause perspiration on the face.
- The provision of a barrier to protect the skin.
- To aid in the retention of moisture (especially water -in-oil)
- Creams can be used for administering drugs via the vaginal route (e.g. Triple sulfa vaginal creams Creams are used to help sun burn.
- Recent advancements in facial creams preparation Creams Containing Microspheres
- Albumin microsphere containing vitamin A can be administered by using creams 222 ± 25 micrometer size of microsphere of vitamin A were produced by emulsion method

Lamellar Faced Cream:

They are liquid paraffin in water emulsion prepare from certified/fatty alcohol.

Creams Containing Lipid Nanoparticles:

The development of a water-in oil cream containing small particles of solid paraffin was studied. The ancient science of cosmetology is believed to have originated in Egypt and India, but the earliest records of cosmetic substances and their application dates back to Circa 2500 and 1550 B.C, to the Indus valley civilization. There is evidence of highly advanced ideas of self beautification and a large array of various cosmetic usages both by men and women, in ancient India. Many of these practices were subtly interwoven with the seasons (Sanskrit: Rutus) and the normal rituals of life (Sanskrit: Dinacharyā). Significantly, the use of cosmetics was directed not only towards developing an outwardly pleasant and attractive personality, but towards achieving merit (Sanskrit: Punya), Longevity with good health (Sanskrit: Aayush and Aarogyam) and happiness (Sanskrit: Anandam). In this context, the earliest reference of a beautician is from the great epic Mahabharata, where the Pandavas were in exile incognito. Draupadi worked for the queen of Virāta (Northern district of India). She called herself Sairandhri (A female attendant in the women's sections of the palace). There is a reference of her carrying a Prasādhana Petikā (A vanity case containing substances to beautify, toiletries and accessories to decorate)[11-16].

The word cosmetics defined as "Substances of diverse origin, scientifically compounded and used to i) cleanse, ii) allay skin troubles, iii) cover up imperfections and iv) beautify" (Encyclopedia Britannica, 1970), is used in this paper in a wider sense to include Oral hygiene as well. Different *Lepās* (Masks or applications) were recommended for different seasons for body beautification. The ingredients used during the cold seasons were quite different from those used in warm seasons. In fact *Ashtānga Hridaya* (a 1500 year old book of Ayurveda) offers six different formulations to be used for the six seasons of the year. Similarly special cosmetic *Tailams* (Oils) and *Ghritas* (Clarified butter or ghee) were used for facial beautification. Superfluous hair was considered to be a stigma and a large number of depilatory agents were recommended to get rid of it. Special ingredients were used for hair washes. Many remedies have been indicated for hair growth, prevention of falling hair and premature graying. Hair dyes, fragrant hair rinses and fumigants were also in use.

Fragrant bath powders and body deodorants also find frequent mention. Oral hygiene in the form of care of teeth, mouth deodorants and coloring of lips were daily chores to be religiously pursued. It appears that the whole range of modern cosmetic usage was conceived by the ancient Indians and was practiced with the help of natural resources then available. In the book published by the author,210 different botanicals have been studied and 314 formulations are listed and described. Of these 151 botanicals are identified, 21 are unidentified, and 38 remain uncertain. The scientific name of the plant species is followed by references equating the Sanskrit/Prakrit name or synonym and the references given in parenthesis relate to the scientific name only. "Take *Masura*—a lentil common in India (*Lens culinaris* Medic.) and pound with Madhu (Honey). The paste so prepared, rubbed for seven nights, gives the splendor of the petals of the white lotus flower to the face".

Applications of Facial creams:

Cure for pimples: The application of plaster composed of Kustumburu [Dhana, Dhania, English name: Coriander] (Coriandrum sativum Linn.), Vacha or Vekhanda (Acorus calamus Linn.), Lodhra [Lodhar, Lodhra. English name: The Lodh tree] (Symplocos racemosa Roxb.) and Kushtha or Kosta (Saussurea lappa Clarke.) pasted together is also recommended for curing pimples".

Deodorant powder

The powder from the barks of Sahakara [Aam, Amba, English name: Mango] (Mangifera indica Linn.) tree and Dadima [Dadim, Dalimba; English name: Pomegranate] (Punica granatum Linn.) tree, mixed with Shankha (Fragrant Shell) powder and applied to the relevant part of the body, removes bad odour. The powder made of Chincha (Tamarindus indica Linn.) and Karanja (Pongamia glabra Vent.) seeds, if applied also removes bad odour.

Uses:

The research involved in this work was to compile the cosmetic formulae from various sources and then to find the proper equivalent botanical names for the Sanskrit and Prakrit terminologies (For the ingredients used in the formulae). This was done with the help of native people and experienced vaidyas in South India and Maharashtra. Identification was done by studying the properties of the plant and if these plant names were the actual ingredients used. Herbal medicine, also called botanical medicine or phytomedicine, refers to the use of any plant's seeds, berries, roots, leaves, bark, or flowers for medicinal purposes. Long practiced outside of conventional medicine, herbalism is becoming more mainstream as up-to-date analysis and research show their value in the treatment and prevention of disease. Recently, the World Health Organization estimated that 80% of people worldwide rely on herbal medicines for some aspect of their primary healthcare. Plant drugs are frequently considered to be less toxic and freer from side effects than the synthetic ones.

Along with other dosage forms, herbal drugs are also formulated in the form of ointment and creams. Medicated ointments contain a medicament dissolved, suspended or emulsified in the base. Ointments are used topically for several purposes, example, as protectants, antiseptics, emollients, antipruritic, keratolytics and astringents. Ointment bases are almost always anhydrous and generally contain one or more medicaments in suspension or solution or dispersion. Ointment bases may be hydrocarbon (oleaginous), absorption, water removable and water soluble type. The delivery of drugs through the skin has long been a promising concept because of the ease of access, large surface area, vast exposure to the circulatory and lymphatic networks and noninvasive nature of the treatment.

A Cream is a preparation used for the application to the skin. Creams are also applied to the mucus membrane such as vagina, rectum. Creams may be considered as pharmaceutical products and cosmetics used in variety of skin conditions. Creams are semi solid preparation of Oil and Water. O/W Creams which are composed of small droplets of Oil dispersed in continuous Water Phase. O/W type are more comfortable and more acceptable cosmetically(3,4) they are less greasy, easily washed off using Water. W/O Creams which are composed of small droplets of Water dispersed in continuous Oil Phase. W/O types are more difficult to handle they are also moisturing more as they provide oily barrier which reduce water loss from stratum corneum[17-21]

- Cleansing
- Emollient Effect
- Aid in retention of Moistures (W/o Creams)
- Physical/ Chemicals barrier like Sun screen.

Face Creams:

- Face Creams are used as cosmetic for softening and cleansing action.
- Emollient are non Cosmetic moisture preparations which come in the form of Creams, Ointment, Lotions and Gels. Emollient help the skin to feel comfortable.
- Emollient action provide a protective film for Patient with conditions such as eczema or psoriasis. Emollient are essential part of skin care.
- Emollient action are used in skin beauty application such as lipsticks, lotions, and other cosmetic products.

Ingredients for Face Creams:

Calendula:

It have anti Inflammatory and healing effects. It is used for the treatment of insect bites, cut, small wound.

Aloe Vera:

Aloe Vera is an important key ingredients in wide range of beauty and skin care products.

Improve the effectiveness of sun screen products relives itching and swelling of the irritated skins.

- Hibiscus: Hibiscus is said to have tanning effect rich in amino acid.
- Semi Solid dosage forms: Semi solid dosage preparation includes Ointments, Paste, Emulsion and gels.
- Ointments: Semi solid preparations are meant for external application to the skin or mucous membrane they usually contain medicament which is either dissolved or suspended in base and emollients.
- Cream: Creams are semisolid emulsion. It is lighter than the ointments they are less greasy and easy to apply.

Paste:

External applications that differs from similar products containing high. Proportion of finely powdered medicament they are stiffer and gives protective action.

Gellies:

Gellies are transparent or translucent, non greasy semisolid preparation mainly used for External purpose.

Evaluation: Organoleptic Evaluation:

The Face Cream thus obtained was evaluated for its organoleptic properties like colour, odour and state. The appearance of the cream was judged by its colour and roughness and graded.

Test for microbial growth in formulated Cream:

The Formulated Creams were inoculated on the plates of agar media by streak plate method and a control was prepared by excluding the cream. The plates were placed into the incubator and are incubated at 37°C for 24 hours. After the incubation period, plates were taken out and checked for the microbial growth by comparing it with the control.

Stability Test:

In the mechanical test cream samples were inserted into centrifuge tube at a speed of 3750 RPM for half an hour or 5000 to 10000 RPM for 15 Minutes then observed whether a separation exist or not.

Homogeneity:

Homogeneity of the prepared creams was confirmed by the visual appearance and by touch.

After Feel:

Emolliency, slipperiness and amount of residue left after the application of the fixed amount of cream was found to be good.

Dye Test:

Under Microscopic observation the disperse globules appear red in colour and the ground is colorless the cream prepared is O/W type. The dye test confirms that all formulations were O/W type emulsion cream.

Removal:

All the cream formulations are applied on the skin was easily removed by washing with tap water.

Irritancy Test:

All formulations shows no redness edema inflammation and irritation and during irritancy studies these formulations are found to be safe to use for the skin.

Skin Whitening Test:

5 volunteers were selected for the following studies. All the preparation are applied and observed for 1 month. After 1 month skin test has been done that there is no pigmentation and skin gets whitens from F5 formulation than other formulations. So F5 formulation shows better result than other formulation containing single herb.

Stability Studies (Evaluation):

To assess the formulation stability, the stability studies were done. Each formulation were stored at 4°C room temperature and 40°C temperature for a month and observed for physical stability like colour[22-25].

Clinical Applications and Studies:

Anti-aging:

Retinoids, such as tretinoin, have been shown to improve fine wrinkles and skin texture, but effects may diminish upon discontinuation. Retinyl propionate, another retinoid, shows potential for anti-aging, but more research is needed. Hyaluronic acid, in serum formulations, increases skin hydration and improves skin appearance. Various anti-aging formulations combine multiple active ingredients like antioxidants, anti-inflammatories, and growth factors to target different aspects of skin aging[26-29].

Acne Treatment:

Retinoids, particularly trifarotene, are effective in treating facial and truncal acne.

Moisturization and Barrier Repair:

Moisturizers improve skin hydration by acting as humectants, emollients, and occlusives, increasing stratum corneum water content and reducing trans-epidermal water loss. They also contribute to skin barrier repair by smoothing the skin surface, covering fissures, and protecting against friction. Plant oils are also recognized for their anti-inflammatory, antioxidant, and skin barrier repair effects.

Sensitive Skin:

Novel moisturizing creams are being developed and studied for their efficacy in reducing redness and irritation in sensitive skin.

Exosomes:

Exosomes, which are extracellular vesicles, are being investigated for their potential in regenerative and cosmetic dermatology, including targeted drug delivery and as biomarkers[30].

4. Conclusion

The skin contains large amounts of collagen, whose fibers are responsible for the skin's mechanical characteristics, such as strength, texture, and resilience. One of the most important factors causing skin aging is a reduction in collagen in the dermal matrix. Facial creams, including moisturizers and anti-aging treatments, are widely used for skincare, with applications ranging from hydration and wrinkle reduction to addressing skin conditions like eczema and dermatitis. Proper application techniques, such as gentle upward strokes, can enhance the cream's effectiveness and potentially aid in lymphatic drainage[31-32]. Topical creams minimise facemask complications, thereby promoting compliance; topical lidocaine was the most effective in reducing pain and enabling facemask compliance. Topical hydrocortisone, diphenhydramine, and zinc oxide were effective in reducing facial redness, and topical petrolatum produced the best user satisfaction. The skin contains large amounts of collagen, whose fibers are responsible for the skin's mechanical characteristics, such as strength, texture, and resilience. One of the most important factors causing skin aging is a reduction in collagen in the dermal matrix.

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