



# Formulation and evaluation of moisturizing cream

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## Abstract:

The physicochemical properties of each manufactured moisturizing cream formulation were assessed, including pH, particle size, spreadability, viscosity, and in vitro occlusivity test results. Adult skin has a surface area of about 2 sq m, weighs 4.5 to 5 kg, and accounts for nearly 16% of the body's weight. From 0.5 mm on eyelids to 4.0 mm on heels, it is thick. However, the body's overall thickness is between 1 and 2 mm. In a square centimetre of skin, there are typically 10 hair follicles, 12 nerves, 15 sebaceous glands, 100 sweat glands, 3 blood vessels within 92 cm of a nerve, and  $3 \times 10^6$  cells. Normal skin is very smooth, but as people age, their skin becomes rougher due to negative environmental factors. The pH of skin, which is the pH of the film of aqueous and soluble material present on the surface of the skin, ranges from 4 to 5.6. Sebum aids in sweat production, and fatty acid affects the pH of the skin's surface. The pathogen and other organisms' ability to grow is also prevented or limited by the range of its acidic pH. Skin provide the protection against sunlight also ultra violet rays. It is synthesis vitamin D

**Keywords:** Cosmetic , moisturizing cream, Hibiscus Aloe Vera, machanism of action, Evaluation

## Introduction:

**Skin :** the skin is the biggest organ in the human body and absorbs approximately one-third of all blood flow. The skin, also known as the coetaneous membrane, it is the outermost layer that covers and protects the body's surface from the external environment. This complex and sizable organ joins forces with the mucosal lining of the urogenital, digestive, and respiratory systems to produce a capsule that isolates the internal body structure from the external environment.

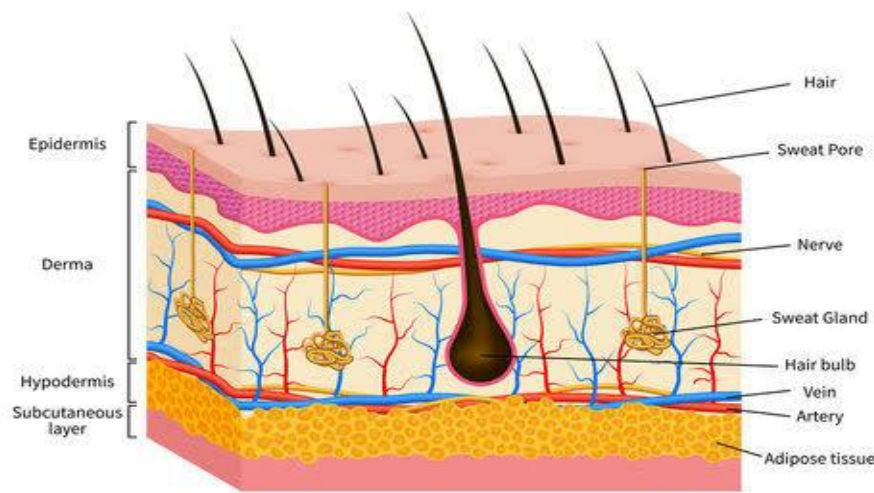
### • Skin structure:

1. Epidermis: superficial, thinner portion of epithelial tissues
2. Dermis: Deeper, thicker connective tissue
3. Hypodermis :Deep to the dermis, but not exactly the part of skin , is the subcutaneous layer comprising aerolar and adipose tissue

### • Skin thickness:

Each layer of skin has a different thickness depending on the area of the body and is divided into two categories: the epidermal layer and the dermal layer.

## SKIN ANATOMY



### 1) Epidermis

it is the uppermost layer of multi layer of skin , composed of stratified kertainised squomonas epithelial. It contains four principal types of cells,such as kertainocytes (90%) , melanocyte , lagerhans cells and Markel cells

**0.8 mm** on the plasm and sores down to 0.6 mm on eyelids

#### a) Stratum corneum ( horney layer)

The topmost layer, known as the stratum corneum, consists of 20–30 layers of keratin and horny scales composed of dead keratinocytes, or anucleate squamous cells. The thickness of this layer fluctuates the most, notably in callused skin. The dead keratinocytes in this layer release defensins, which are a component of our first line of defense.

#### b) Stratum lucidium:

The palms and soles have thicker skin, with two to three cell layers. This thin, transparent layer is made up of eleidin, a byproduct of keratohyalin transformation

#### c) Stratum granulosm( granular layer)

Cell layers, which have lamellar and keratohyalin granules inside diamond-shaped cells. Keratin precursors seen in keratohyalin granules eventually agglomerate, crosslink, and form bundles. Glycolipids are found in the lamellar granules and are secreted onto the cell surface.

d) Stratum spinosumThe prickle cell layer, which consists of 8–10 irregularly shaped polyhedral cells with cytoplasmic processes—also referred to as "spines"—that extend outward and make desmosome contact with nearby cells. This layer contains dendritic cells.

#### e) Stratum germinativum ( basal layer and deemoepidermal junction)

Also known as stratum basle, is the deepest layer, separated from the dermis by the basement membrane (basal lamina) and attached to the basement membrane by hemidesmosomes. The cells found in this layer are cuboidal to columnar mitotically active stem cells that are constantly producing keratinocytes. This layer also contains

## 1) Dermis:

The dermis is another deeper region that lies between the epidermis and the subcutaneous fatty Region. It is formed by connective tissues containing collagen and elastin fibers. The superficial part of the dermis, called the papillary layer. These collagen and elastin fibers give the skin strength to be tight and elastic.

## 2) Hypodermis:

The subcutis, the skin's deepest layer, is made up of a network of collagen and fat cells. The subcutis, sometimes referred to as the hypodermis or subcutaneous layer, serves as the body's shock absorber and insulator, preserving heat and shielding internal organs. This layer is also traversed by lymph vessels, nerves, blood vessels, and hair follicle.

## Topical drug delivery:

Over the past few decades, medications have been given to treat illnesses using a number of methods, including oral, sublingual, rectal, parental, topical, inhalation, etc. In order to limit the pharmacological or internal effects of a drug to the skin's surface, topical delivery refers to the application of a drug-containing formulation to the skin for the purpose of treating a cutaneous condition or the cutaneous symptoms of a general illness (like psoriasis).

- **The Benefits of topical drug delivery are ease of use and convenience.**
- Avoid the first-pass metabolism.
- As an alternative to oral dosage. Decreased likelihood of experiencing digestive issues.
- Less chance of abuse.

## Skin appendages:

### Blood vessels:

The blood vessels supply nutrients and oxygen to the skin and take away cell waste and cell products. The blood vessels also transport the vitamin D

### Lymph Vessels:

The lymph vessels bathe the tissues of the skin with lymph, a milky substance that contains the infection-fighting cells of the immune system.

### Hair Follicles

The hair follicle is a tube-shaped sheath that surrounds the part of the hair that is under the skin and nourishes the hair.

### Sweat Glands:

The average person has about 3 million sweat glands. Sweat glands are classified according to two types:

Apocrine glands are specialized sweat glands that can be found only in the armpits and pubic region.

Eccrine glands are the true sweat glands. Found over the entire body. these glands regulate body temperature by bringing water via the pores to the surface of the skin, where it evaporates and reduces skin temperature.

### Nerve Endings:

The dermis layer also contains pain and touch receptors that transmit sensations of pain, itch, pressure and information regarding temperature to the brain for interpretation

## Collagen fibres

The dermis is held together by a protein called collagen, it is made by fibroblasts. Collagen is a tough, insoluble protein found throughout the body in the connective tissues that hold muscles and organs in place.

## Function of skin :

- Provides a protective barrier against mechanical, thermal and physical injury and hazardous substances.
- Reduces harmful effects of UV radiation.
- An immune organ to detect infections etc.

- Protection against microorganisms, drying, ultraviolet radiation and mechanical damage; the skin
  - Mobility: The skin allows the body to move smoothly.
- Endocrine function: The skin initiates biochemical processes related to the production of vitamin D
- Exocrine activity: It is done by releasing water, urea and ammonia. The skin secretes products
  - Such as sebum, sweat and pheromones and performs important immunological functions by
  - Temperature regulation: The skin participates in temperature regulation by conserving or
  - Releasing heat and helps maintain the water and homeostatic balance of the body

## Skin Disease:

### A. Vitiligo:

Vitiligo is a disorder where some skin areas turn white due to a loss of natural pigment Melanin, the pigment that gives your skin its typical color, is produced by cells called melanocytes.

B. **Scabies:** Caused by human scabies mites, scabies is a common and excruciating skin illness. Although it can afflict persons of any age, it most frequently strikes the young and old. The minuscule parasitic mites responsible for scabies are no bigger than a pinhead. Scratchy marks and red, scaly patches make up the scabies rash; later, it can get infected and grow

C) **psoriasis:** A prevalent skin condition that affects roughly 2% of the population is psoriasis. It affects both men and women equally, at any age, and has an unpredictable cyclical pattern. It does not leave skin scars and is not contagious. The skin is an intricate organ consisting of multiple layers. A malignancy of the skin's pigment cells is called cutaneous malignant

D) **Melanoma:** When caught early, there's usually a positive prognosis. It is not communicable. The Greek word "melas," which meaning black, is where the name "melanoma" originates. The black substance called melanin is what gives skin its natural color.

E) **Eczema (Atopic Eczema):** This skin ailment is inflammatory in nature.

### Cream

Cream can be applied on the skin. Creams are defined as "viscous liquid Or semi-solid emulsions of either the oil-in-water or water-in-oil type" dosage forms which consistency varies By oil and water.

Creams are used for cosmetic purposes such as cleansing, beautifying, improving appearances, protective or For therapeutic function. The term 'cream' has been traditionally applied to semisolid formulated as either water-in-oil (e.g.: cold cream) or oil-In-water (e.g.: vanishing cream).

### TYPES OF SKIN CREAMS :

They are divided into two types:

1. Oil-in-Water (O/W) : creams which are composed of small droplets of oil dispersed in a continuous phase, And an emulsion in which the oil is dispersed as droplets throughout the aqueous phase is termed an oil-In-water (O/W) emulsion.
2. Water-in-Oil (W/O): creams which are composed of small droplets of water dispersed in a continuous oily Phase. When water is the dispersed phase and an oil the dispersion medium, the emulsion is of the water-in-Oil (W/O) type

## CLASSIFICATION OF CREAMS :

**GENERAL INGREDIENTS USED IN SKIN CREAMS :** The raw materials which are used in a manufacturing of skin creams include:

- **Water:**

This is the most important and widely used raw material in any cream formulation. These are The cheapest and easily available. In skin creams, water is used as solvent to dissolve other ingredients Of creams. Water which is free of any toxins, pollutants, microbes, etc.it is used in preparation of Creams. it depends upon how much quantity of water is used in the Formulation

- **Oil, fats and waxes:** Oil, fats and waxes and derivatives there form comprise an essential portion of Creams. Waxes act as an emulsifier, fats act as a thickener and oil act as a perfuming agent, Preservative, etc. according to its function .Oil may be two types' mineral and glyceride.

- **Mineral oil:**

Mineral oil consists of hydrocarbons derived from petroleum oil .Mineral oil is clear, Odourless, and heavily refined oil .it is widely used in cosmetics. Mineral oil rarely causes allergic Reactions and it cannot become solid and clog pores of the skin. it Helps to reduce water loss from the body and keeps body moisturized.

- **Glyceride oil:** Glyceride oil is mostly vegetable oils. Examples of glyceride oils are almond oil, Arachis oil, castor oil, coconut oil, olive oil etc.

- **Vegetable oil:**

Form a barrier on the surface of the skin and slow down the loss of water, helping to maintain Plumpness of skin. Vegetable oils may also be used to increase the thickness of the lipid or oil portion Of cream or personal care products. (19) E.g. Almond oil, germ oil, avocado oil, sunflower oil etc.

- **Waxes:**

Which are used in preparation of cream includes beeswax, carnauba wax, ceresin, spermaceti, etc. Waxes are used in cosmetics because it helps to keep an emulsion from separation of oil and liquid Components. These waxes also increase the thickness of the lipid portion and sticks on the surface of

- **Emollients:**

Otherwise known as moisturizers, emollients are skin-softening or dry-skin-treatment products. The majority of emollients, including mineral oil, squalene, and lanolin, are types of oil or grease.

- **Humectants:**

Present in most skin care formulas, humectants are significant, multipurpose compounds. Hydroscopic organic substances are known as humectants. These substances have the ability to take in and hold onto moisture. Humectants include things like betaine, sodium PCA, glycerin, hydroxyethyl urea

- **Fragrances:**

Fragrances are substances that provide an aroma or including sweet and pleasant smell

### Mosturizing cream

Emollients, often known as moisturizers, are cosmetic preparations that are used to hydrate, protect, and lubricate the skin. The sebum that healthy skin produces typically carries out these tasks.

#### 1.7.4 Advantages of Moisturizers

1. It reduces the chances of skin problems.
2. It can reduce the appearance of other blemishes.
3. It helps your skin stay young. It is fight to wrinkles.

### 1.7.5 Disadvantages of Moisturizers

1. Allergens
2. Fire risk
3. The safety of the ingredients it contains

- **Machanism of action of mosturizing cream**

It functions by giving the skin enough moisture to restore itself. Skin that has enough moisture in it is more elastic and smooth. By increasing collagen, it aids in the skin's renewal. In addition, it reduces dryness, redness, and itching while suppressing inflammation. In order to preserve the integrity of the skin, this cream stops the water content of the skin from evaporating and allows the skin to rehydrate from inside.

- **Application of mosturizing cream :**

Cream was created to treat eczema, which is brought on by an overactive immune system it is frequently brought on by stress, allergens, or irritants, and psoriasis, a chronic autoimmune condition that causes the rapid accumulation of skin cells, resulting in scaly, red patches and inflammation.

### 1)Study Of Drug Profile

#### Hibiscus flowers



Hibiscus flower stunning, but when used in personal care products, the fantastic Hibiscus benefits for your skin can be unlocked. The vibrant, showy flower contains a diverse range of plant compounds, including antioxidants, vitamins, minerals, and malic acid, all of which promote Glowing Skin. It functions as a natural Botox. It also Improves skin tone, moisturizes skin, cleans pores, and protects against skin infections. Let's look at the Hibiscus Flower Skin Benefits and what else dried hibiscus flowers for skin does.

- Family: malvalaceae
- Geographical source: Tropical Asia , china , India
- Biological source:

Flowering plant that belongs to the family Malvaceae, also known as mallow family. The Hibiscus flowers are large and showy, and the genus grows into herbs, shrubs or small trees.

- Chemical constituents:

Some chemical constituents found in hibiscus Rosa sinensis are cholesterol, stigmasterol, beta sitosterol and fructose and Glucose also alkanes group are present

Synonyms:

Mahagua.

Mahoe.

Cotton rose.

Roselle.

Jamaica sorrel.

Swamp rose mallow.

Hibiscus mutabi

Shoeblack plant.

Pharmacological activity:

#### 1)Antibacterial activity:

Discuss about the antibacterial activity of Hibiscus rosa sinensis flower extract. In this study, the flower extract of Hibiscus rosa sinensis works against human pathogens. From the disc and agar diffusion method they evaluated the antibacterial activity

#### 2)Analgesic Activity

It studied on Hibiscus rosa sinensis and identified its analgesic activity. . In recent study, aqueous and alcoholic extracts obtained from the dried leaves of Hibiscus rosa sinensis. This extract has analgesic activity and it is dose dependent. The extractability percentage was found to be 20%

#### 4)Antipyretic activity

It studied about the effect of Hibiscus rosa sinensis as an anti pyretic in rats. The antipyretic activity was determined by using the leaves of Hibiscus rosa sinensis and v wistar rat. Aqueous and alcoholic extract of Hibiscus rosa sinensis were used to reduce the increased temperature and compared with control group

#### Uses of hibiscus flower in skin

- Fights aging skin
- Improve and even skin tone
- Tighten skin pores
- Prevent acne and control inflammation
- Speed up wound healing
- Protect collagen into skin
- **Extraction process of hibiscus**

1. A total 10g of dried flower was soaked in 50 ml of hot water
2. Which was boiled for 30 min.
3. And kept for 24 hours and Then filtered through sterile filter paper
4. Evaporated by using solvent distillation apparatus

## 2)Excipients profile

An important step in the development of herbal preparations is the development of its dosage Forms. Herbs and herbal extracts cause typical problems in formulation development such as Hygroscopicity, microbial contamination, stickiness. Smoothness and stability . Most known herbal medicines act directly on the pathogen, exerting anti-infective effects and stimulating The host's innate and adaptive defense systems. Therefore, by improving immunotherapy, these plants Have become a versatile tool to improve the body's natural resistance to infections The herbal medicines in the formula have been studied To some extent and their medicinal properties are well known.

### 2.1)Beeswax



#### Definition:

Beeswax is obtained from the honeycombs of bees (Fam. Apidae, e.g. *Apis mellifera* L) after the honey has been removed by draining or centrifuging. The combs are melted with hot water, steam or solar heat; The melted product is filtered and cast into cakes of yellow beeswax.

- Synonyms :

White beeswax, yellow beeswax, cera alba, cera flava.

- Biological Source:

Beeswax is the purified wax obtained from honeycomb of hive bee, *Apis mellifera* Linn and other species of *Apis*,

- Family: Apidae.

- Geographical Source:

It is mainly found in Jamaica, Egypt, Africa, India, France, Italy, California etc.

- Chemical Constituents:

Beeswax contains myricin, which is melissyl palmitate; melting point 64°C, free cerotic acid ( $C_{26}H_{52}O_2$ ), myricyl alcohol ( $C_{30}H_{61}OH$ ) is liberated when myricyl palmitate is saponified. Melissic Acid, some unsaturated acids of the oleic series, ceryl alcohol, and 12 to 13% higher hydrocarbons are Present.

- Chemical test:

Fats, fixed oils and resin are often added to beeswax. These can be detected by the following test.

Saponification Cloud Test: Boil 0.5 g beeswax for 10 min. in 8 ml of 10% sodium hydroxide solution. Make up the original volume, filter through glass wool and acidify with HCl. If fats, fatty acids or resins are present a precipitate is formed. Fats may be saponified potash, but are practically unaffected by

- Pharmacological activity:

Beeswax can help the skin attract and retain moisture and is often used in skin care products and Cosmetics.

#### Uses:

1)is used in the preparation of ointments, plaster, and polishes. Beeswax can relieve diaper rash

2) Beeswax can soothe eczema and psoriasis flare-ups

3) Beeswax can protect against the sun's harmful rays

4) Beeswax can relieve itching

5) Beeswax protects your skin from environmental toxins

## 2.2) ALOE VERA

### Definition :-

A gelatinous substance obtained from a kind of aloe, used especially in cosmetics to soften or soothe the skin. Or The plant that yields aloe vera, grown chiefly in the Caribbean area and the southern US.

### • Classification :-

Kingdom- Plantae ( plantes, Planta, Vegetal, plants)

Subkingdom- Viridiplantae ( green plants)

Infrakingdom- Streptophyta ( land plants)

Superdivision- Embryophyta

Division- Tracheophyta (vascular plants, tracheophytes)

Subdivision- Spermatophytina (spermatophytes, seed plants, phanerogames)

Class- Magnoliopsida

Superorder- Lilianae ( monocots, monocotyledons, monocotyled)

- 
- Family- Xanthorrhoeaceae



Genus- Aloe L. -(aloes)

Species- Aloe vera (L.) Burm. f. (Barbados aloe, acíbar, aloe vera, )

### • Biological source:

It consists of fresh leaves of aloe barbadensis millerl belongs to the family liliaceae.F

Family: Asphodelacea (liliaceae).

### • Geographical source:

Aloe species are mostly inhabitants of arid climates, and are widely distributed in Africa, India and arid areas

- Chemical components:

Aloe Vera gel consists of water, amino acids, vitamins, lipids, sterols, tannins And enzymes, and also contains phenol, saponins, anthraquinones, which have antiviral, antibacterial and Antifungal effects.

- Mechanism of action:

Aloe stimulates fibroblasts, which produce collagen and elastin fibers, making the skin more elastic and Less wrinkled. It also has a leveling effect on the superficial squamous epidermal cells, sticking them Together, which softens the skin.

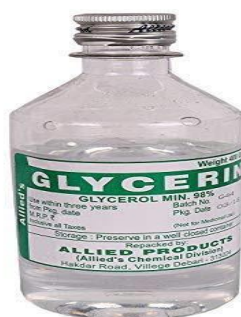
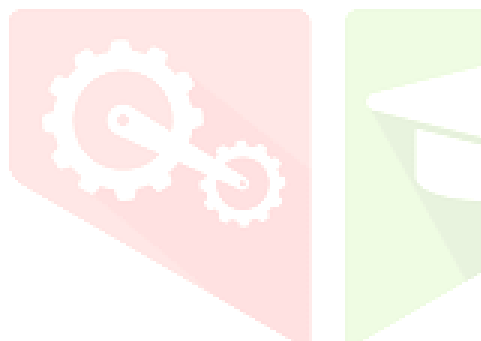
- Pharmacological activity:

Aloe vera has traditionally been used to treat skin injuries (burns, cuts, insect Bites and eczema) and digestive problems due to its anti-inflammatory, antimicrobial and wound-healing

### Uses :-

- It has antioxidant and antimicrobial properties.
- It accelerates wound healing.
- It may improve skin and prevent wrinkles.

### 2.3) GLYCERIN:



IUPAC name: Propane-1,2,3-triol

Other names: 1,2,3-Trihydroxypropane

Chemical formula:  $C_3H_8O_3$

Molar mass: 92.094 g·mol<sup>-1</sup>

Appearance: Colorless

Odor: Odorless

Density: 1.261 g/cm<sup>3</sup>

Melting point: 17.8 °C (64.0 °F; 290.9 K)

Boiling point: 290 °C (554 °F; 563 K)

## 2.4) ROSE WATER :



- Definition :-

Scented water made with rose petals, used as a perfume and formerly for medicinal and culinary purposes.

- Classification : -

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Eudicots

Clade: Rosids

Order: Rosales

- Family: Rosaceae

Subfamily: Rosoideae

Tribe: Roseae

Genus: Rosa L.

Botanical name :- *Rosa rubiginosa*

Synonym :- *Rosa*

- Biological Source :-

Family :- Rosaceae

- Geographical Source:-

Most rose species come from Asia, less from North America, and some from Europe and Northwest

Marital factors:

The main decomposition is geraniol, which is added as a synthetic compound or in the form of palmarosa Oil containing it, either to rose petals during distillation or to the final product, which lowers the pourPoint. It can be raised to the standard value by adding spermaceti.

- Pharmacological Activity :-

Actions emotional and physical heart medicine

Gentle astringent (mucous membrane tonic)

Aromatic nervine

Antispasmodic

Anti-scorbutic

Anti-microbial anti-biofilm Nutritive Inflammatory

- Chemical constituents

-Volatile Oils- Damascenones, Pinenes, Nerol, Linalool, Limonene, Geraniol...

Tannins- Gallic acid Cyanin (seeds) Vitamin C, Carotenoids, Lycopene, B3, E, K (the Hips)

Beta-sitosterol

Phenolics- Quercetin & isorhamnetin derivatives (isoquercetin & isorhamnetin-3-O-rutinoside)

**Uses:-**

- Cosmetic- rosehip seed oil, rose toners, 'anti-aging'
- Helps soothe skin irritation.
- Soothes sore irritation
- Reduces skin redness.
- Helps prevent and treats infections.
- Contains antioxidants.
- Heals cuts, scars, and burns.

## 2.5) Coconut oil

**Definition:**

Coconut oil is a highly saturated oil that is traditionally made by extracting the oil from raw coconuts or dried coconut kernels

- **Generic name**

Coconut oil

- **Synonym:**

Coconut oil triglycerides, cocos nucifera

**Uses**

- Defending skin from microorganism
- Coconut oil for dry skin is highly moisturizing
- Coconut oil help to treat acne
- It contributes to more even skin tone

## 2.6) Liquid paraffin :

The way liquid paraffin functions is by preventing the skin's outer layer from losing water. As a result, the skin becomes softer and less parched. White soft paraffin helps to moisturize the skin, prevents water from evaporating from the skin's surface, and leaves a film of oil on the skin.

## 2.7) METHYL PARABEN:

Methylparaben is a type of paraben. Parabens are chemicals that are often used as preservatives to give Products a longer shelf life. They're added to food or cosmetics to prevent the growth of mold and other Harmful bacteria. It's a preservative, González says methylparaben is effective at preventing microbial Growth and germs such as bacteria and mold in skincare and cosmetic formulations.

## 2.8) STEARIC ACID:

Stearic acid is an emulsifier, emollient, and lubricant that can soften skin and help to keep products from separating. Stearic acid is used in hundreds of personal care products, including moisturizer, sunscreen and make up, soap, baby lotion

**2.9) DISTILLED WATER** Water has been referred to as 'the universal solvent' in cosmetics. In combination with emulsifiers, water can be mixed with 'thicker' ingredients, such as butters and oils, to facilitate the formation of emulsions used to create moisturizing cream



## 3) Material and methods:

### Material:

| Sr.no. | Drug name       | F1  | F2  | F3  |
|--------|-----------------|-----|-----|-----|
| 1.     | Hibiscus        | 2   | 1   | 0.5 |
| 2.     | Bees wax        | 5   | 4   | 4   |
| 3.     | Aloe vera       | 4   | 3   | 2.5 |
| 4.     | GLYCERIN        | 4   | 3   | 4   |
| 5.     | Rose water      | 0.5 | 1   | 2   |
| 6.     | Coconut oil     | 1   | 1   | 2   |
| 7.     | Methyl paraben  | 0.5 | 1   | 1   |
| 8.     | Steric acid     | 0.2 | 0.5 | 1   |
| 9.     | Liquid parafin  | q.s | 1   | 1   |
| 10.    | Distilled water | 7   | 7   | 7   |

**Method:**

1. Collect all the ingredients and glassware
2. In one beaker add liquid paraffin, beeswax, coconut oil, Glycerin(oil phase)
3. In another beaker add steric acid, methyl paraben, rose water
- 4.Heat on water bath at temperature 60-65 5. both breaker and then after few seconds water phase and oil phase with continuous string
- 6.Add hibiscus and Aloe vera extract and fragrance and turmeric powder
- 7.Put into container and label it
- 8.Evaluate the mosturizing cream

**4.EVALUATION PARAMETER****4.1.Physical Appearance / Visual Inspection**

Formulation was evaluated in term of their clarity, color, odor and texture.

**4.2 .Determination of pH :**

This is basically refers to acidity levels of substances. The normal value of pH (cream)) is pH 4-7. This Test was measured either by using digital pH meter or by pH paper.

**4.3 .Spreadability Test :**

Take a small amount of cream and apply on the skin surface then rubbed it. Evaluate the result.

**4.4. Washability Test :**

This test is also used to check quality of cream. In this first of all we have to add small amount of cream Which was applied on the hand. After that we have to washed with tap water.

**4.5.Irritancy Test :**

This is used to check the quality of materials as well as chemicals and whether it is harmful to skin / Mucosal or not. First of all, we have to mark area on left hand (dorsal surface). After that we have to Applied formulation of cream to that area and time was noted.Then we have to leave formulation for few Minutes by this we can checked for irritancy.

**4.7.Phase separation**

This test is basically checked in 24 hr to 30 hr. For this we have to put cream in a closed container at aTemperature (30 – 80 °C). Keep this formulation away from light.

**4.8. Greasiness:**

Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily or Grease-like

**4.9. Compatibility Test :**

Apply a small amount of the product to a small patch of skin by using something suitable like a cotton bud or spatula. Wait at least 15 minutes with the actor. If there is any adverse reaction such as itching, Stinging, burning, redness, swelling, and so on – the product must be carefully removed right away. If There is a serious reaction, seek medical attention. After 24 hours, if there is no reaction, carefully remove The product using the appropriate removal method. Lastly, gently pat/wipe the skin with a cotton ball Dipped in warm water to remove all traces of the product.

#### 4.10. Thermal stability :

Thermal stability (at 20 °C, 30 °C and 40 °C) of the prepared formulations was determined according to Indian standard guideline

### 5)Results and discussion:

#### 5.1)Physical appearance and visual inspection :

The results of visual inspection series of formulation are listed in table form:

| Sr.no | Parameter | F1           | F2           | F3           |
|-------|-----------|--------------|--------------|--------------|
| 1     | Colour    | Cream colour | Cream colour | Cream colour |
| 2     | Odour     | Pleasant     | Pleasant     | Pleasant     |
| 3     | Texture   | Smooth       | Smooth       | Smooth       |
| 4     | State     | Semisolid    | Semisolid    | Semisolid    |

**Fig.** Evaluation of formulation of physical appearance

#### 5.2) Determination of PH

Moisturizing cream has been shown to be important for improving and enhancing the qualities Of skin, minimizing irritation to the skin and stabilizing the ecological balance of the dermis. The current Trend to promote moisturizing cream follower pH is one of the ways to minimize damage to the skin. Natural PH neraby 5.5 to 5.6

| sr.no | Formulation | PH  |
|-------|-------------|-----|
| 1.    | F1.         | 5.5 |
| 2.    | F2.         | 5.4 |
| 3.    | F3.         | 5.6 |

**Fig.** Determination of PH

#### 5.3) Spreadability test:

The spreadability of the three formulations that is F1, F2, and F3 was carried out and out of that for F2 the Time taken by the 2 slides to separate is less so as said in the description of evaluation test lesser the time Taken for separation of the two slides better the spreadability so according to this statement F2 showed Better spreadability.

#### 5.4)Irritancy test :

Mark the area (1 cm<sup>2</sup>) on left hand dorsal surface. Then the cream was applied to that area and the time Was noted. Then it is checked for irritancy, erythema, and edema if any for an interval up to 24 h and Reported. According to the results all the three formulations that is F1, F2 and F3 showed no sign of Irritancy.

#### 5.5)Compatibility Test :

Aloevera, Turmeric, Cucumber, Sandalwood, Almond oil and ingredient are compatible to each other and also compatible to human skin

### 6. SUMMARY AND CONCLUSION :-

#### • Conclusion:

The objective of present work is to developmen and evaluation of multiple emulsion for Enhancement of bioavailability or as a myme immobilization All three berbal prolong drug delivery system,ingredient shows Le (Aloe, cucumber ) 5 bow Different Significant activity, and the result were found according to the standard value, we can suggest That all ingredient were stable can safely use The herbal moisturizer cream is one of the good alternativePlace on Synthetic cream This product is highly effective for dry dehydrated skin.

- Summary:

Herbal cosmetics are the preparations used to enhance the human appearance. The aim of the Present research was to formulate the herbal Cream for the purpose of Moisturizing. Nourishing, Lightening & Treatment of various diseases of the skin. "hibiscus has high water content that soothes Your skin and keeps it hydrated. Also, hibiscus products helps oily skin. The aloe vera plant is a succulent that stores water in its leaves in the form of a gel. This gel is Highly moisturizing. . The Emulsions in cosmetic, can prevent degradation of an active ingredient and release at a control rate. Multiple emulsions were also investigated for cosmetics for their potential advantages of prolonged Release of active agent, incorporation of incompatible materials and protection of active ingredients by dispersion in internal phase

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