



FORMULATION AND EVALUATION OF HERBAL FACE CREAM

Ms. Swati Prakash Jamathe

Guidance By : Assist .Prof Pooja G. Sakharkar

Ishwar Deshmukh Institute of Pharmacy ,Digras

Abstract : The formulation and evaluation of herbal face cream aim to harness the therapeutic properties of natural ingredients for skincare. This study focuses on developing a face cream that combines the benefits of various herbal extract known for their antioxidant, anti-inflammatory and moisturizing properties. Ingredients such as Aloe vera , amla , cucumber peel were selected for their well -documented skincare benefits. Aloe vera , amla , cucumber peel are medicinal plant they are used as traditionally from ancient year in various herbal medicines such Ayurveda, Siddha and Homoeopathic. Cosmetics and some medicinal products are made up from the mucilaginous tissue in the centre of aloe vera leaf and called aloe vera gel. Aloe vera gel contains no anthraquinone. Which are responsible for the strong laxative affects of aloes. However ,total leaf extract may contain Anthraquinone. Aloe vera contain active constituents like Vitamines, Enzymes, Minerals ,Sugars,Saponis,Amino acids .Amla contain Amino acid like glutamic acid , proline, ans Asparic acids , Protein, Minerals,etc. Cucumber peel are rich in fiber and contains minerals like magnesium, Potassium and silica. The silica is an essential components to keep your muscles,bones and tendons healthy. It also hydrates our skin, improves complexion and vision.

KEY WORDS : Aloe vera, Amla , Cucumber peels, Face cream , Evaluation

INTRODUCTION

Cosmetics is a Greek word which means to 'adorn' addition of something decorative to a person or thing .It may be defined as a substance which comes in contact various parts of the human body like skin , nail, lips, teeth and mucous membranes etc. cosmetic substances help improving or changing the out ward show of the body also mask the odour of the body . It protects the skin and hee keeps it in good condition. In general cosmetics are external preparations which areaya applied on the external parts the body. Cosmeceutical is a products used in treatment or prevention of skin abnormalities or disease. Skin is the largest organ of the body . there are three structural layer to skin: The Epidermis ,The Dermis and Subcutis .Hair ,nails sebaceous sweat and apocrine gland are regarded as derivatives of skin.

BASIC STRUCTURE OF SKIN

Skin are mainly classified 3 layers . it plays important role in our body

- 1.Epidermis
2. Dermis
- 3.Subcutis (Hypodermis)

Epidermis : Epidermis it is the outer most covering of stratified squamous epithelial tissue lacking blood vessels. The major portion of epidermis is made up of keratinocytes (cells). These keratinocytes synthesis a protein called keratin. The epidermis varies in thickness from 0.05mm on the eye lids to 0.8 to1.5mm on soles of the feet and palms of the hand . Epidermis is divided into the following 5 sublayer of the epidermis.

- Stratum coreneum
- Stratum lucidum
- Stratum granulosum
- Stratum spinosum
- Stratum germinativum (also called Stratum basale)

Dermis : The dermis is the layer of skin beneath the epidermis that consist of epithelial tissue and cushions the body from stress and strain . The dermis is tightly connected to the epidermis by basement membrane .It contains hair follicles ,sweat gland ,sebaceous gland apocrine. The demis varies in rickness ranging from 0.6mm eyelids to 3mm on the back palms soles. It is found below the epidermis and composed of tough ,supportive cell of matrix .

Subcutis : The subcutis is also known as Hypodermis. The hypodermis is not part of the skin and lies below the demis .It consist of loose connective tissue, adipose tissue and elastin. The main cell types are fibroblasts, macrophages and adipocytes. This is made up of loose connective tissue and fat which can be up to 3cm thick on the abdomen. It protects body from external trauma and insulates from cold. It acts as a main storage site for fat and therefore energy.

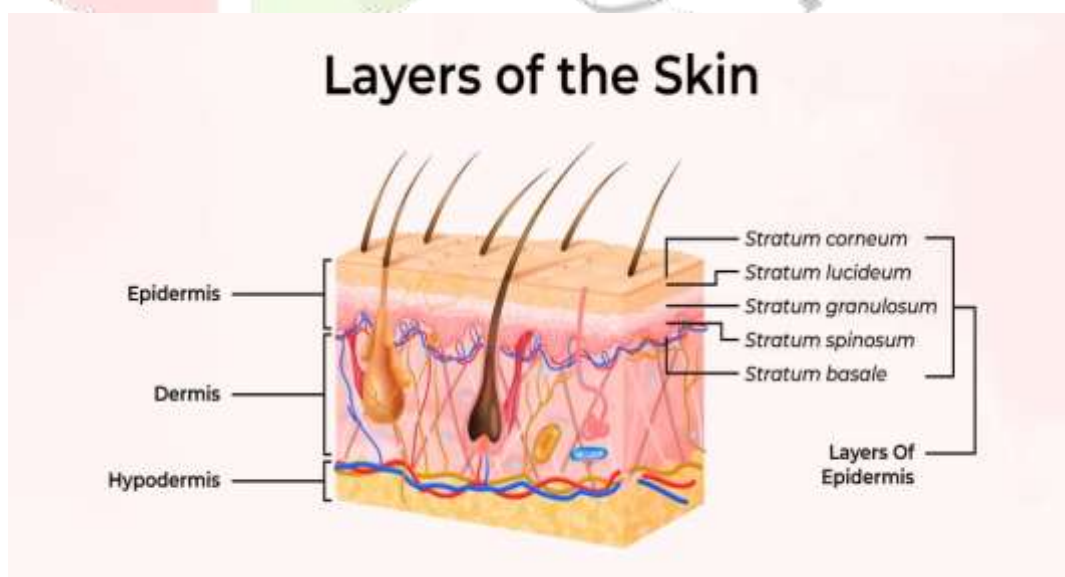


Fig.No.01 Physiology of Skin

Herb is derived from Latin word herba and oldarere French word herbe . Herb is consisting of ‘ A any plant which leaves , steam, flower roots and seeds used for different purpose like food , medicine ,flavouring perfume etc .

Herbal formulation are receiving more concentration in public because of their high -quality properties and also less side effects. Cream are defined as ‘ a semisolid dosage form containing one or more drug substance dissolve or dispersed in a suitable base intended for external application to the skin or mucous membrane . creams may be considered as pharmaceutical product and cosmetics used in variety of skin condition. Herbal face cream is used as cosmetics for softening and it give cleansing action . The Ayurvedic system of medicine was one of the most important system that use an herbal plant of extract of the treatment of management of various disease. There are various types of cream according to function , characteristics, properties and type of emulsion. Aloe vera has been used for host purpose since the ancient Egyptians called it the “plant of immortality” also known as Ghritkumari in Hindi, Kalabandain Telegu , Katrali in Tamil , Kmarrin Malayalam etc. aloevera performs miracles not just for skin but for your hair and health as well. Aloe vera is common plant that was originally native to hot , dry climate of the Arabian peninsula. Aloe vera incorporates over 400 different species that grown and cultivated all over the world. Aloe vera plant contain a huge variety of different nutrient, vitamins, minerals, enzyme that make it so versatile and beneficial to human health. Aloe vera helps with sunburn through powerful healing activity . aloe vera used as moisturizer and anti-acne agent. Amla also referred to as Indian gooseberry or amla .Amla is belongs to kingdom plantae and family Euphorbiaceae. Amla has out 5 out of 6 taste recognized by Ayurveda. It tastes fairly sweet, bitter, salty, sour as well as astringent simultaneously. It contain vitamin C considered important to slow the ageing radicals. vitamin C is a scavenger of free radicals which break them down and contain amino acid , glutamic acid proline and aspartic acids etc. amla showing anticancer, antioxidant, antibacterial activity. Cucumber (Cucumber sativus L.) belongs to Cucurbitaceae family such melon , watermelon , pumpkin, It is widely consumed fresh salads or fermented (pickles) or as a cooked vegetable. They are widely used for various skin problems including swelling under the eyes and sunburn . It is believed that they promote refreshing , cooling , healing ,soothing, emollient and anti-itching effect to irritated skin. Cucumber sativus L. include water, protein , fat, carbohydrate , mineral, phosphorous, iron, and vitamin B.

IDEAL PROPERTIES OF HERBAL FACE CREAM

- They are easy to apply
- They spread easily on the skin
- They are pleasant in appearance.
- They causes less irritation to skin.
- They should not make dry skin which happens in case when the skin is washed with water or soap.

COSMETOLOGICAL IMPORTANCE OF ALOE VERA

1) ALOE VERA



Biological name : Aloe Barbadensis

Synonym : Aloe vera , Korpada , Kumarin

Biological source : It consists of dried or fresh mucilage of Aloe vera

Family : Liliaceae

Chemical constituents : Anthraquinones , Aloin , Aloin , enzyme , vitamins , minerals , saponins , salicylic acid , Amino acid .

It grows mainly in the dry region of Africa, Asia, Europe and America . In India , it is found in Rajasthan, Andhra Pradesh , Gujarat, Maharashtra And Tamil Nadu.

IMPORTANCE

1) **It acts as moisturizer**

Aloe vera is an excellent natural moisturizer. Its gel -like consistency helps to hydrate the skin without leaving it greasy, making it suitable for all skin types.

2) **Healing burns and sunburns**

Aloe vera is renowned for its soothing and cooling properties , which can help in healing sunburns and minor burns. It reduces redness and provides relief from the heat.

3) **Anti- inflammatory**

Aloe vera contains vitamins , enzymes and amino acids that have anti – inflammatory properties that can reduce skin inflammation, making it useful for treating acne, eczema, and psoriasis.

4) **Wound and healing**

Aloe vera has properties that promote wound healing by stimulating the production of collagen which is essential for skin repair. It also has antimicrobial properties that can help prevent infection.

5) **Acne treatment**

Aloe vera has antibacterial properties that help reduce acne causing bacteria. Its anti – inflammatory effects can also reduce redness and swelling associated with acne.

Amla



Biological name : *Phyllanthus emblica*

Synonym : Amla , Avla , *Emblica officinalis*, Indian goose berry

Biological source : It dried as well as fresh fruits of the plant .

Family : Euphorbiaceae

Chemical constituents : Tannins, Phyllembelin – gallic acid , and vitamin C .

Amla is native to India and also grows in tropical and subtropical regions of Pakistan , Uzbekistan, Sri Lanka , South East Asia , China Malaysia.

Importance

1) **Rich in vitamin C**

Amla is one of the richest sources of vitamin C, which helps in boosting collagen production, leading to firmer more youthful skin. Vitamin C also helps in lightening dark spots and improving overall skin tone.

2) **Antioxidant Properties :**

Amla is packed with antioxidants that help fight free radicals which can cause premature aging. This helps reduce the appearance of fine lines, wrinkles and age spots.

3) **Brightening and Even Toning**

The vitamin c content in amla helps the skin and promote an even skin tone by reducing hyperpigmentation and dark spots caused by sun damage or acne scars

4) **Collagen production**

Amla contains nutrients that support collagen production in the skin . collagen is essential for maintaining skin elasticity and firmness, helping to prevent sagging and promoting a more youthful complexion.

5) **Healing Properties**

Amla has been traditionally use in Ayurvedic medicine for its wound healing properties. It can help promote faster healing of cuts ,scrapes and minor skin irritation thanks to its antimicrobial and anti-inflammatory effects.

3)Cucumber Peel



Biological name : Cucumber Sativus L.

Synonym : Cucumber , Khira

Biological source : It is derived from the plant Cucumis sativus

Family : Cucurbitaceae

Chemical constituents : Carbohydrate , Fats , vitamins

The most important cucumber cultivars originate from Europe ,Asia , the middle East some parts of the U.S.A

Importance

1) Hydration

Cucumber peel is rich in water content, making it tightly highly hydrating for the skin. Its helps replenish and maintain skin hydration levels, the skin feeling soft.

2) Pore Tightening

Cucumber peel contains silica, mineral that helps tighten and Firm the skin. Applying cucumber peel topically can help minimize the appearance of enlarge pores and improve skin texture.

3) Colling Sensation

Cucumber peel has a cooling effect on the skin which can help soothe and refresh tired or overheated skin. It is particularly beneficial for puffiness and eye bags when used as an eye mask.

4) Natural Cleanser

The enzymes present in cucumber peel have mild cleansing properties that help remove dirt, oil, and impurities from the skin's surface. Using cucumber peel as facial cleanser can help keep the skin clean and clear.

5) Soothing Properties

The cooling effect of cucumber peels can soothe irritated and inflamed skin, making them effective for treating sunburns, rashes and minor skin irritations.

MATERIAL AND METHOD

Collection of Herb

The extraction process used in this research study was collected from local shop. The collected herbs are dried stored in air tight containers.

Preparation of Extraction

The extraction process used in this research study is maceration. The maceration means soaking the herbs in suitable solvent during the soaking period the cell become softened and help in the passing of solvent into the make the soluble ingredient to be dissolved.

Extraction process :

Active ingredient : Amla , Cucumber peel , Aloe vera

a) Amla Extract:

Preparation : Dry the amla fruits and grind them into a coarse powder.

Maceration process : Place the amla powder in clean jar and cover it with suitable solvent mix with water or alcohol. Seal the jar and let it for 1-3 days, shaking it occasionally.

Strain : After maceration strain the liquid through a fine mesh or cheesecloth to remove the solid particles. The liquid extract is now ready for use.

b) Cucumber peel Extract :

Cucumber peel and dry the peels . Grind the dried peel into coarse powder .

Maceration : Place the cucumber peel powder in clean jar and cover it with a suitable solvent mix with water or alcohol .Seal the jar and let it for 1-3ays , shaking it occasionally.

Strain : After maceration strain the liquid through a fine mesh or cheesecloth to remove the solid particles . The liquid extract is now ready for use.

c) Aloe vera Extract :

Preparation ; Take a coarse powder of aloe vera.

Maceration process : Place the aloe vera powder in clean jar and cover it with suitable solvent mix with water or alcohol. Seal the jar and let it for 1-3 days, shaking it occasionally.

Stain : After maceration strain the liquid through a fine cheesecloth to remove the solid particles. The liquid extract is now ready for use.

CREAM FORMULATION

Bees wax , propylene glycol was taken in first beaker . Then heat on a water bath uniform mixing .After few minutes oil phase was formed . Aloe vera extract, amla extract and cucumber peel extract ,Distilled water, white soft paraffin and glycerine, zinc oxide . Sodium Benzoate was taken in second beaker .Mixing all ingredients by heating on water bath , aqueous phase was formed. Oil phase was added into aqueous phase and continuous stirring was done until semisolid mass was formed.



Fig No 2 : Cream Formulation

Sr.No.	Ingredient	Quantity	Roles
1.	Aloevera	1.5gm	It can help moisturize skin
2.	Amla	1.3gm	Vitamin c and antioxidant present in amla and helps to brighten the skin
3.	Cucumber peel	1.3gm	It contain antioxidant component reduce the wrinkles
4.	Bees wax	3.3gm	It softening properties and enhance skin elasticity
5.	White soft paraffin	9ml	It forming a protective layer on the skin surface to prevent moisture loss
6.	Methyl paraben	0.4ml	It increases the self life and avoid bacterial and fungul growth
7.	Distilled water	q.s	It can help to remove dirt and use as a mixing cream
8.	Menthol	0.2ml	It giving a cooling effect
9.	Glycerine	1ml	It increases skin hydration relieve dryness and refresh the skin surface
10.	Propylene glycol	1ml	To increase moisturizing
11.	Zinc oxide	0.8gm	To protect the skin against irritation
12.	Sodium benzoate	0.2gm	It is an antifungal and antibacterial agent

Table No 1 ; Excipients and herbal ingredients used with their quantity and roles

EVALUATION OF HERBAL FACE CREAM

Physical Evaluation

Colour:

The colour of the cream was observed by visual examination

Odour:

The odour of cream was found to be characteristics

State:

The state cream was examined visually. The cream was solid in state

Consistency:

The formulation was examined by rubbing cream on hand manually. The cream having smooth consistency.

Washability:

Formulation was applied on the skin and then ease extends of washing with water was checked.

Non-irritancy test:

Herrbal cream formulation was evaluated for the non-irritancy test. Preparation shown no redness and irritancy.

pH:

pH of prepared herbal cream was measured by using digital ph meter. The solution of cream was prepared by using 100ml of distilled water and set aside 2h.ph was determined in three times for solution and the average value was calculated .

Spreadability:

Spreadability of formulated cream was measured by placing sample in between two slides then compressed to uniform thickness by placing a definite weight for a definite time. The specified time required to separate the two slides was measured as spreadability.

Spreadability was calculated by the following formula :

Formula-

$$S=M \times L / T$$

Where,

S= Spreadability

M= Weight tide to the upper slide

L= Length of glass slide

T= Time taken to separate the slides

Viscosity :

Viscosity of cream was done by using brooke field viscometer at the temperature of 25 °C using spindle no.63 at 5rpm.

Phase separation:

The prepared cream was transferred in a suitable wide mouth container. Set aside for storage , the oil phase and aqueous phase separation were visualizing after 24h.

After feel:

Emoliency slipperiness and amount of reduce left after the application of the fixed amount of cream was found to be good.

RESULT

The present research was the formulation and evaluation of polyherbal cream. The evaluation parameter were coming under results, like the physical evaluation of polyherbal cream, ph of the cream, spreadability, washability , non-irritancy test, viscosity and phase separation was shown in table no.02.

Sr.no.	Parameter	Results
1	Colour	White green
2	Odour	Characteristics
3	State	Semisolid
4	Consistency	Smooth
5	pH	6.7
6	Spreadability	7.2gm/cm
7	Washability	Easy washable
8	Viscosity	39015
9	Non-irritancy test	Non-irritant

10	Phase separation	No phase separation
11	After feel	Emollient

Table no 2 : Result of Herbal Face Cream

DISSCUSSION

The present work was the formulation and evaluation of polyherbal cream. This cream formulation was o/w type of emulsion, hence this formulation was easily washed with plane water after application. The prepared formulation was good spreadability. Viscosity and Ph of the cream was good. Cream does not show any type of phase separation during storage. The cream was non-greasy in nature and easily removable after application. The formulation was non-irritant and not harm to the skin.

CONCLUSION

Formulation of cream was done by slab technique. The cream was evaluated on several parameters which gave good results on its safety and efficacy. In the coming days due to progress in the pharmaceutical industry more advanced technique are being developed for formulation and evaluation of cream. There is a huge demand for herbal based face cream and this demand can be increased in the upcoming years as herbal constituents based creams are safer and proven to be efficient when compared to synthetic face creams.

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