



# Formulation And Development Of Multipurpose Herabl Cream

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## Abstract:

Objective: To formulate and evaluate herbal cream using Aloe Vera gel, extracts of Neem (*Azadirachta indica*) and Tulsi (*Ocimumtenuiflorum*), Amla, Rose Water, Liquid Paraffin, Methyl Paraben used as preservative to give multipurpose effect.

Herbal cosmetics Cream are products used to enhance an individual's appearance. The purpose of this work was to

Formulation of herbal cream for the purpose of moisturizing, nourishing and treating various skin diseases. The herbal

Cream has best properties and having nutritional values using less chemical which protects the skin from the

Various skin problem. Since the cream was prepared by using simple ingredients and simple method so the

Cream is also economical.

Natural remedies are more acceptable in the belief that they are safer with fewer side effect than the synthetic

Ones. So, the values of herbs in the cosmetics have been extensively improved in personal care system and

There is greater demand for the herbal cosmetics now a days in market.

## INTRODUCTION-

### Definition of herbal cosmetic cream:-

The word "cosmetic" arises from Greek word "cosmetics" which mean to the adorn. Herbal cream is defined as, the preparation used to enhance the human appearance More herbal ingredient is used to provide define cosmetic benefits only is called as "herbal cosmetic: "The demand of herbal medicines is increasing rapidly due their lack of side effect.

Now a days the demand of herbal cosmetics is increasing day by day. Herbal formulations are receiving more concentration in public because of their high-quality properties and less side effects Additionally, it also provides the skin with necessary nutrients. The poly herbal cosmetic formulations are receiving recognition all over the world, as they give the enhanced feeling of purity, protection and effectiveness. A large quantity of creams is existing in the market under the make of natural, protected, organic, and herbal.

Most of the creams at present existing in the market use the synthetic polymers, emulsifiers, perfuming agents, pigments, surfactants and thickeners to form the base. There is wide need to substitute toxic synthetic agent from base using natural agents. The natural ingredients chosen for preparation of herbal cream are Neem, Amla, Aloe-vera and Tulsi. Synthetic agent from base using natural agents. Neem is helpful against a wide range of skin diseases including eczema, psoriasis, dry skin, wrinkles and rashes. Amla fruit is one of the most natural sources of vitamin e which brightness your complexion, helps fade hyperpigmentation and even protects your skin from damaging effects of age and pollution..

we are using herbal cosmetics as much as possible. The basic idea of skin care cosmetic lies deep in the Rigveda, Yajurveda, Ayurveda, Unani and Homeopathic system of medicine. These are the products in which herbs are used in crude or extract form. These herbs should have varieties of properties like antioxidant, anti-inflammatory, antiseptic, emollient, anti - seborrhatic, antikerolytic activity and antibacterial etc.

Cosmetics are developed to reduce wrinkles, fight acne and to control oil secretion.[1]

## HERBAL CREAM

The herbal approach of proper skin care is principally based on three essential steps.

1. Cleanse
2. Nourish
3. Moisture

Whatever may be the type of skin: These three steps are external care of the skin to protect from a constant effects of environment stress and skins natural process of cells degradation decay.

Therefore, in order to help the skin, look young and radian

1. Exfoliation to remove dead skin cells.
2. Epidermal stimulation for new cell growth.
3. Improve capillary blood flow
4. Penetration moisture and nutrients to replenish all layers of ski

### SKIN:-

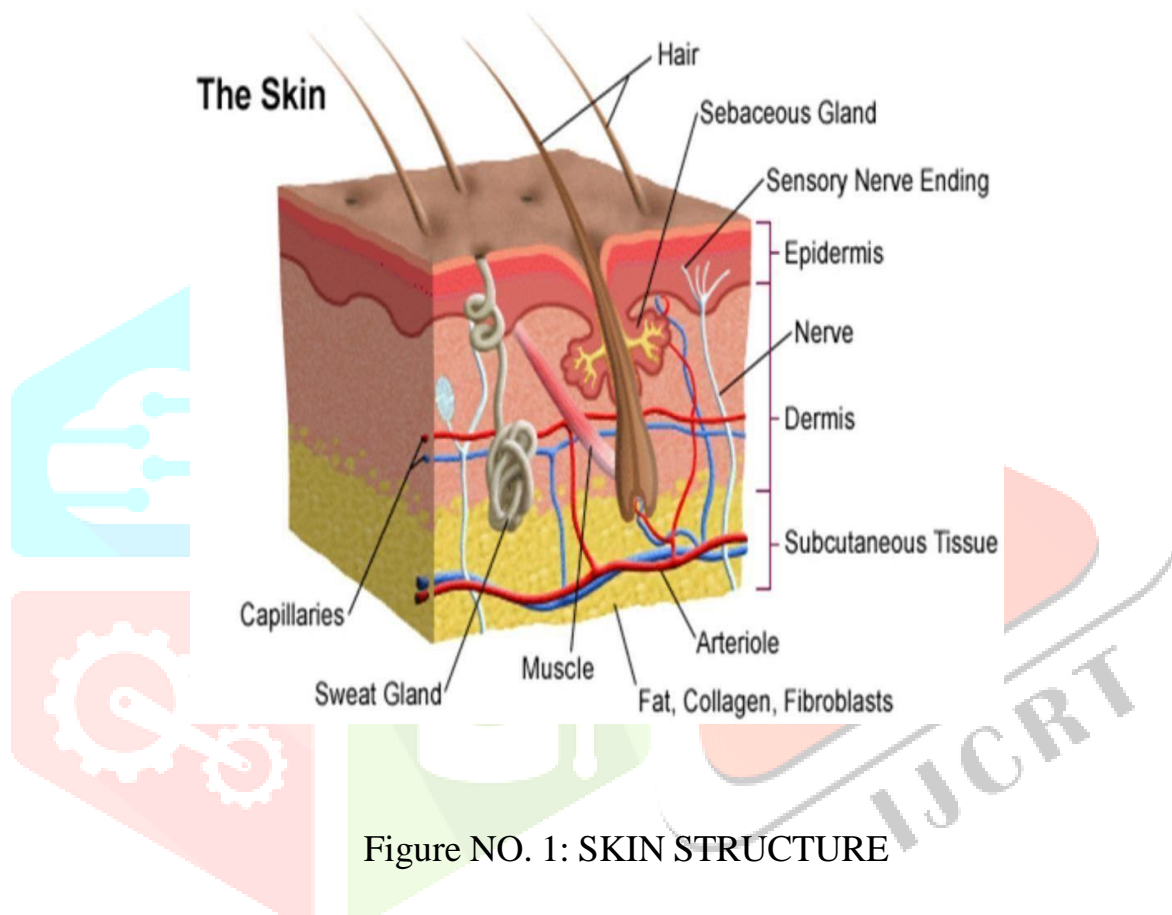


Figure NO. 1: SKIN STRUCTURE

The skin is the largest organ in human body. For the average adult human, the skin has surface area of between 1.5 to 2.0 square meter. The thickness of skin varies. Considerably over all parts of the body and between men (1.3 mm) and women (1.26 mm) and the young and the old skin is composed of three primary layers: the epidermis, the dermis and the hypodermis. Ph of skin varies from 4-5 to 6.[2]

### Epidermis:-

epidermis is the outer most layer of the skin. The epidermis contains no blood vessels and is nourished by diffusion from dermis. The main type of cell which make up the epidermis are keratinocytes, melanocytes, Langerhans cells and Merkel's cells. The epidermis helps the skin to regulate body temperature.

Elpidermis is divided into the following sublayers or strata

- Stratum corneum
- Stratum lucidum
- Stratum granulosum
- Stratum spinosum
- Stratum germinant

**Dermis :-**The dermis layer of skin beneath the epidermis that consists 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 gland.

**Hypodermis:** -The hypodermis is not part of the skin, and lies below the dermis. It consists of loose connective tissue, adipose tissue and elastin. The main cell types are fibroblast, microphases, and adipocytes fat serves as padding and insulation for the body.

### **Ideal Properties of Herbal Cold Cream**

1. It should not normally be diluted.
2. The pH of the cold cream must be optimum
3. Its consistency should be optimum so that it can be easily put out from the container and apply easily.
4. Should give a cooling effect on the skin after external application.
5. It must provide a thin waxy protective layer on the skin to protect the water evaporation from the skin surface.
6. Should give a faster emollient effect, so that very dry skin can swell up and become soft within a short time.
7. Less greasy than ointment and Easily spread on the skin.
8. It should be physically and chemically stable throughout its shelf-life.
9. The excipients should be compatible with each other. It should be sterile.

### **Advantages of Herbal Cold Cream :-**

1. It Prevents ageing and dehydration of skin.
2. As cold creams contain enough amount of water and oil, they keep skin safe from the rough environments,
3. They also keep skin moisturized and safe
4. Cold creams are designed to remove makeup and smooth the skin
5. Medicated cold cream is mainly used as topical pharmaceutical dosage form for the treatment of skin.
6. To help in the maintenance of moisture balance of skin and avoid rough skin co uses of cold cream (non- medicated).

7. As cleansing preparation to remove make
8. To provide an emollient effect and oily protective layer on the skin.
9. Also, provide a chemical barrier as with sun block ingredients.[3]

## 2. AIM AND OBJECTIVE AIM

The aim of present study is to formulate and evaluate the herbal ingredients-based face cream consisting of neem extract, aloe Vera gel, Tulsi and Amla

### Objectives

1. To prepare Herbal cream using extract of Neem, Tulsi, Aloe Vera and amla extract
2. To evaluate formulated herbal cream for various parameter like Determination of pH,
  3. Primary skin irritation test, Visual appearance, Viscosity, Spreadability, Stability studies, Rheological studies. Thermal behaviour Saponification value and Acid value
4. Formulation of the poly herbal anti-ageing cream using the extracts.
  - Preparation of extract with different solvent of leaves of two different identified plants. Preliminary phytochemical investigation of different extract of the plants.
  - To prevent aging of skin
6. To reduce the rate of premature ageing
7. To nourish and beautify the skin

## 3. LITERATURE REVIEW :-

### 1. Somnath S Davkhar, Aarti S Bhandari, Sanjivani , Formulation and Evaluation of Multipurpose Herbal Cream

Herbal cosmetics are products that are used to improve one's look. The goal of the research was to develop a herbal cream for moisturizing, nourishing, whitening, and treating various skin diseases. Curcuma longa (Turmeric powder), Carica amla (Amla), Aloe barbadensis (Aloe-vera leaves), Azadirachta indica (Neem leaves), and Ocimum sanctum (Tulsi leaves) are some of the basic drugs used to make the cream.

The selection of components is based on the agents' various therapeutic characteristics. Various evaluation parameters are used to the cream.

**Keywords:-** Cosmetic, Herbal cream, Turmeric, Amla , Aloe-vera, Neem, Tulsi.

### 2. Akash S. Mali<sup>1</sup>, Karekar P<sup>2</sup>, Dr. Yadav A. V<sup>3</sup>

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 Moistening, Nourishing, lightening & Treatment of various diseases of the skin. Different crude drugs; Aloe barbadensis (Aloe Vera leaves), Ocimum Sanctum (Tulsi-leaves), Azadirachta Indica (Neem-leaves), Curcuma longa (Turmeric-

rhizomes), Cedro Oil(Lemon Peel), Myristica fragrans(Nutmeg seeds), Olum rosae(Rose Oil), Orange Oil, Prunus dulcis (Almond oil) were taken.

**Keywords:** Herbal cream, Anti ageing, Cosmeceutical, Microbial Stability

### 3. Sujit Karpe, Shashikant Modekar, Anand Bhagwat and Aniket Bagade

Herbal cosmetics are meant to improve and beautify the appearance of people. The current study used the water-in-oil method to develop and assess herbal cold creams including plant extracts, liquid paraffin as a lubricant, beeswax as a stabilizer, and methylparaben as an antibacterial agent to nourish and moisturize the skin. Almond oil and neem oil are used to make the cold cream. Pharmaceutical creams are used for a variety of cosmetic functions, such as moisturizing, cleansing, beautifying, and altering appearance. These semi-solid preparations are safe for use by the general public and society. Herbal cosmetics are goods that are used to improve and beautify human appearance. The purpose of the current study was to create and evaluate herbal cold creams using plant extracts prepared using the water in oil method to nourish and moisturize.

**Keywords:** Cold cream, herbal cosmetics, night flowering jasmine, herbal cold cream

### 4. NIKHIL NITIN NAVINDGIKAR<sup>1\*</sup>, K. A. KAMALAPURKAR<sup>1</sup>, PRASHANT S. CHAVAN<sup>2</sup>

Cream is classified as oil in water and water in oil emulsion. It is applied on outer part or superficial part of the skin and its main ability is to remain for a longer period of time at the site of application. The function of a skin cream is to protect the skin against different environmental condition, weather and gives soothing effect to the skin. There are different types of creams like cleansing, cold, foundation, vanishing, night, massage, hand and body creams. The main aim of our work is to develop a herbal cream which can give multipurpose effect, like moisturizer, reduce acne and skin irritation, reduce skin diseases like eczema, psoriasis, dry skin, wrinkles, rashes etc. and also adding glow to the face.

**Keyword:-** Azadirachta indica (Neem), Ocimum tenuiflorum/Ocimum sanctum (Tulsi), Herbal cosmetic, Multipurpose cream

### 5. ANSHUL SHARMA <sup>1</sup>, MANEESH BANYAL<sup>2</sup>, JYOTI GUPTA<sup>3</sup>, SWATI JOSHI<sup>4</sup>

Herbal cosmetics are products intended to enhance and beautify human appearances. In order to nourish and moisturize the skin, the current study set out to formulate and evaluate herbal cold creams that contained plant extracts, liquid paraffin as a lubricating agent, bees wax as stabilizer, methyl paraben as an antibacterial agent by using the water in oil method. The cold cream is prepared by using the neem oil and almond oil. After preparation of cream, cream were evaluated for different parameters like appearance, PH, viscosity, stability test, dye test, spread ability & Test for microbial growth. From evaluation study it was concluded that it is a very good attempt to formulate the herbal face pack containing naturally available ingredients like neem



## 6. Shital.V.Sirsat; Rupali B. Dhore; Samiksha B.Tembhare; Dipali G. Kale; Sanjivani S. Sarkate

The purpose of the present research work was to formulate and evaluate vanishing herbal cream. Herbal creams offer several advantages over other creams. The majority of existing creams which has prepared from drugs of synthetic origin and give extra fairness to face, but it has several side effects such as itching or serveral allergic reactions.

### 3. MATERIALS AND METHODS :-

Plant material like Aloe vera, Neem, Tulsi and Amla were collected from herbal Botanical Garden of IPER. Rose oil and other additives required for the formulation of desired herbal cream were taken from institute.[4]

### EXCIPIENT AND HERBAL INGREDIENT WITH THEIR ROLES- TABLE NO. 2

SR. NO.	INGREDIENTS	ROLES
01	ALOE VERA	Anti-aging Anti Inflammatory, Moisturizing, and Pimple
02	TULSI	Anti Acne, Anti-aging
03	NEEM	Promote wound healing, relieves skin dryness, itching and redness
04	AMLA	Treat skin pigmentation, treat acne, good skin tone and remove dead skin cells
05	TURMERIC	Anti-septic , Anti Inflammatory ,Skin Glow
06	BEES WAX	Emulsifying agent, stabilizers and give thickness to the cream.
07	LIQUID PARAFFIN	Lubricating agent.
08	METHYL PARABEN	Preservative
09	ROSE OIL	Fragrance
10	BORAX	Alkaline agent which reacts with emulsifying agent to form soap

## COLLECTION OF PLANT MATERIAL:-

Turmeric, aloe-vera, tulsi, and neem were collected from local botanical garden. Irrespective of the type of crude drug and area of collection, there cannot be two opinions that drug are collected suitably when they contain maximum concentration of active ingredients. The advantage of existing environment condition is also taken into consideration while collecting the crude drugs while collecting the laboural drugs on commercial scale, attention should be paid for the use of skilled lab. The fruits are collected depending upon the part of fruit used. They collected either ripe or half ripe, but full grown. Rhizomes are collected, when they stored ample of reserve food material and contain maximum content of chemical constituent.

## MATERIAL :-

1. **Aloe- vera :-** Aloe-vera is a medicinal plant. It is having a many profitable property to make cream. It contains anti-oxidant and anti- bacterial property

### Some other benefits of Aloe vera

- \* Prevent or reduce wrinkles and dark spots of your face
- \* Moisturizes dry skin
- \* Soothes irritated skin
- \* Remove sign of ageing
- \* Fights acne and blemishes
- \* Remove dark circles and puffiness
- \* Relieves eczema and psoriasis[5]



ALOE VERA

2. **Neem :-** Azadirachta indica commonly called as neem. It is also medicinal plant. It shows skin benefits property relieves skin dryness promote wound healing.



### Some other benefits of neem:-

- \* Keep the skin healthy and glowing
- \* Neem has anti-bacterial properties which get rid of pimples
- \* Neem lightens and blurs the scars left behind by acne
- \* Neem is anti-nature with fatty glycosides
- \* Neem is rich and vitamin E wrinkles
- \* Fatty acids and neem nourish
- \* Help soothe eczema
- \* Treat acne



inflammatory in  
acids and

in anti-oxidant  
that reduce

vitamin E in  
the skin

### NEEM

**3. Turmeric :-** Turmeric is known for its antioxidant and anti-inflammatory properties, which can be beneficial for the skin. It's often used in creams and masks to help brighten the complexion and reduce redness.

### Some other benefits of turmeric :-

- \* Natural anti-inflammatory compound
- \* Improve heart health and prevent against alzheimer's and cancer
- \* Powerful antioxidant
- \* Treat and prevent diabetes
- \* Improve skin health
- \* Treats depression
- \* Cures acne
- \* Reduce dark circles
- \* Could help psoriasis eczema
- \* Clears the skin
- \* Helps wound healing
- \* Promotes weight loss



## TURMERIC

**4. Amala:-** Amala, also known as Indian gooseberry, is rich in vitamin C and antioxidants, which can help nourish and rejuvenate the skin. It's often used in skincare products to promote a healthy and youthful complexion.

### Some other benefits of Amla :

- \* Brighten the skin and even out the complexion.
- \* Amla also has antioxidant properties that can protect the skin from damage caused by free radicals.



### AMLA LEAVES

**5. Tulsi:-** Tulsi, also known as holy basil, has been used in Ayurvedic medicine for centuries. It has antimicrobial and anti-inflammatory properties, which can be beneficial for the skin. Tulsi can help smooth irritation, reduce acne, and promote a healthy complexion. It's a popular choice for herbal creams due to its calming and purifying effects

### Some other benefits of Tulsi:-

- \* Good for skin health
- \* Fight acne
- \* Supports healthy skin aging
- \* Great for healing skin problem
- \* Good source of vitamin K
- \* Super beneficial for skin
- \* Helping anti-aging
- \* Prevent acne



**Other supporting ingredient :-**

1. **Borax :-** Borax, combined with wax, is used in many cosmetic products like creams, gels, and lotions. It is famously used in hand soaps to help wash off the oil or grease from the hands. Borax's alkaline nature makes it a perfect ingredient in cleansers and toners. In cosmetic products, borax is sometimes used as an emulsifier, buffering agent, or preservative for moisturizing products creams, shampoos, gels, lotions, bath bombs, scrubs, and bath salts. Borax is also an ingredient combined with glue and water to make "slime," a gooey material that many kids enjoy playing with right from creams[6]

**BORAX**

2. **Bees wax :-** Beeswax is an incredibly versatile substance — it can be mixed into solutions to create a host of medical, cosmetic and home care products. It is used as an emulsifying agent.

**BEES WAX**

3. **Methyl paraben:-** kind of paraben is methylparaben. Chemicals called parabens are frequently added to items as preservatives to extend their shelf lives. They are added to food or cosmetic products to stop mold and other dangerous microorganisms from growing [19]. Water is used as a diluent in preparation of cold cream for better



**MYTHYL PARABEN**

**4. Rose:-** Rose petals are steeped in water to create rose-flavored water. It is the hydrosol fraction of the rose petal distillate, which is a leftover after rose oil is extracted for use in fragrances. Throughout Eurasia, rose water is also utilized for religious purposes, as a component of several cosmetic and medicinal products, and to flavor food



**RESE WATER**

## **METHODS OF PREPARATION :-**

### **1.Slab method:-**

The components are mixed until a uniform preparation is attained. One small scale, as in extemporaneous compounding, other will use an ointment mill. If components of an ointment react with metal hard rubber spatula may be used. Put this cream on the slab and add few drops of distilled water if necessary and mix the cream in a geometric manner on the slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called as slab technique or extemporaneous method of preparation of cream .[7]

### **2.Trituration method:-**

Use for finely divided insoluble powder particles or liquid. Insoluble powder is added by geometric dilution. Liquid is added by making well in center and avoid air pocket formation. Reduce the solid medicament to fine powder medicaments is mixed with small amount of base on ointment slab with a stainless steel spatula until a homogenous products in formed.



### 3. Fusion method:

Fusion is the act or procedure liquefying or melting by the application of heat. By fusion method, all or some of the components of an ointment are combined melted together and cooled with constant stirring until congealed. Ointment base are melted decrease order of their melting point. Highest melting point should be melted first low melting point next. This avoid over heating of substance of low melting point incorporate medicaments slowly to the melted mass stir thoroughly until mass cools down and homogenous products is formed.

### 4.FORMULATION OF CREAM :-

Take the liquid paraffin and bees wax in a borosilicate glass breaker at 75°C and maintain that heating temperatures (oil phase). In other beaker, dissolve borax and methyl paraben in distilled water by maintaining temperatures 75°C with water bath. Stir the solution with glass rod until all solid particles get dissolve (Aqueous phase). The gently add heat edaqueous phase in heated oily phase with continue stirring (Ashara K, etal., 2013). After mixing both phases, immediately add aloe-vera extract, neem extract, tulsi extract, and turmeric extract and add ripe amla into it with continues mixing by glass rod until it forms a smooth cream . When cream is formed, then add rose oil as fragrance. Put this cream on the slab and add few drops of distilled water if necessary and mix the cream in a geometric manner on the slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called as slab.[8]

### EXTRACTION PROCESS :-

Extraction is a separation process consisting of the separation of a substance from a mixture[9]

#### Preparation of turmeric extract:-

Take 1 g turmeric powder in 10 ml distilled water and shaken in 250 ml volumetric flask heated in water bath at 80°C to 100°C for 5 to 10 minutes. Then filtered it and it and turmeric extract is obtained



**Preparation of aloe-vera extract:-**

Collect mature and fresh aloe-vera leaf from plant and washed it with distilled water. Dried it in hot air oven. Leaf dissected longitudinally by sterile knife. The semi-solid aloe-vera is collected. Remove fibers and impurities from it. Aloe-vera extract is obtained

**Preparation of neem extract:-**

Collect fresh neem leaves and wash it with distilled water. Dried it in hot air oven and then powdered take 5 gm neem powder in 20 ml Dimethyl sulfoxide at 100°C for 5 to 10 minutes. Then filter it by filter paper and clear solution is obtained



**Preparation of tulsi extract:** Tulsi leaves were collected and washed with distilled water and dried in hot air oven. Then after proper drying, the leaves were powdered. Then 1 gm tulsi leaf powder + 10 ml Dimethyl sulfoxide was taken in a volumetric flask. Then the solution was heated on a water bath at 80°C to 100°C for 5 to 10 minutes then filtered the solution using filter paper and clear extract of tulsi leaf was obtained.

**5. EVALUATION PARAMETER:-****Physical Evaluation:-**

In this the cream was observed for-[10]

- Colour
- Order
- Texture
- State



## Determination of pH

0.5 gram of cream was taken and disposed in 50 ml distilled water and then pH was measured using digital pH paper.

## Skin irritation test

The experiment was carried out by applying about 130 grams of cream on human hand to test skin irritation test.

## Viscosity

Viscosity of cream was done by using Brookfield viscometer at the temperature of 25 degrees Celsius using a spindle number 2.5 rpm.2

## Spreadability

The spreadability was expressed in the term of time in seconds taken by two slides to slip off from the cream, placed in between the slides under certain loads. Lesser the time taken for the separation of the two slides better the spread ability. Two sets of Glass slides of standard dimension were taken. Then once slide of suitable dimension was taken and the cream formulation was placed that on the slide. Then other slide was placed on the top of the formulation. Then a weight or certain load was place on the upper side so that the cream between the two slides was pressed uniformly to form a thin layer.

Then the weight was removed and excess of the population adhering to the slide was scrapped off. The upper slide was allowed to slip off freely by the force of weight tied on it. The time taken by the upper slide to slip off was noted."

Where,

Spread ability- $m \times 1/t$  mg

m standard weight which is tied to or placed over the upper slide (30) 1-length of glass slide (5 cm).

t time taken in seconds.

## Stability testing

Stability testing is the process by which pharmaceutical manufacturers observe their product over predetermined lengths of time in specific environmental conditions to determine if there is any change in the quality of the Active Pharmaceutical Ingredient (API) or Final Product (FP).

## Rheological study

Rheology in the personal care industry the rheological properties of creams and lotions are largely influenced by the ingredients and by the manufacturing process. Whether the consumer perceives the product as being pleasant must first be investigated in sensory tests, directly on the skin.

## Saponification value

Introduce about 2gm of substance refluxed with 25 ml of 0.5N alcoholic KOH for 30 minutes, to this ml of phenolphthalein added and titrated immediately, with 0.5 N HCl.

Where,

a the volume of titrant in ml

b the volume of titrant in ml w-the weight of substance in

## Acid value

10gm of substance dissolved in accurately weighed, 50 ml mixture of equal volume of alcohol and solvent ether, the flask was connected to reflux condenser and slowly heated, until sample was dissolved completely, to this 1 ml of phenolphthalein. Added and titrated with 0. IN NaOH [1], until faintly pink colour appears after shaking for 30 second."

Acid value  $n \times 5.61 / w$  Where,

n the number of ml of NaOH required. w the weight of substance.

## Washability

Small amount of cream is applied on the skin of and then it is washed with tap water.

## Greasiness

The cream was applied on the skin surface in the form of smear and checked if smear was oily or grease-like.

## RESULT AND DISCUSSION

Evaluation of all 3 formulation with marketed cream are given below.[11]

## Physical evaluations

formulated herbal cream was the further evaluated by using the physical parameter like colour, odour, Texture, State and results are given in table number 5.

## Determination of pH

The of the cream was found to be in range of 6-7 which is good for skin pH. All the formulations were shown pH nearer to skin required., Ph was measured using ph meter provided in pharmaceutical lab. Results shown in table no.06[12]

### Skin irritation test

Skin irritation test was determined by using a human being by applying a small amount of cream on the surface of the skin and expose it to various temperatures are various conditions finally observed any rashes redness, itching, another problem occurs or not. Results shown in table no.07

### Viscosity

Viscosity of a cream is done by using Brookfield viscometer at temperature 25 degrees Celsius using spindle no. 03 at 10.0 RPM. Dvii model with T-bar spindle in combination with helipad stand. Spindle T-03 was used for the measurement of viscosity of all the gels. The T-bar spindle(T-03) was lowered perpendicular in the center taking care that spinder does not touch the bottom of the jar. According to the results all the six- formulation showed adequate viscosity. Results shown in table no. 08

### Spreadability

Spread ability of formulation was determined by an apparatus suggested by Multimer. Which was fabricated in laboratory and used for study. The apparatus consists of wooden block, with a fixed glass slide and movable glass slide with one end tied to weight pan rolled on the pulley, which was in horizontal level with fixed slide. The Spreadability of three formulations was carried out and out of that for F2 the time taken by the 2 slide to separate is less show as said in the description of the evaluation test are less the time taken for the separation of the 2 slides better the stability so according to the statement F2 shows better spread ability. Results shown in table no.09

### Stability testing

Stability testing is done by placing the cream at variable temperature conditions Changes are checked and also properties like phase separations are also checked. All the creams are stable as no changes occurs in their properties. Results are given in table no. 10

### Rheological studies

Rheology study is done by simply applying cream on skin. Flow property is check All cream is stable because they are able to flow properly. Results shown in table no.11

### Saponification value and Acid value

The results of acid value and saponification value of all formulation were presented in Table No. 12 and Table no. 13 and showed satisfactorily values

As per the result and studies conducted by us, the formulated Ayurvedic skin cream is O/W type emulsion, hence can be easily washed with plain water that gives better customer compliance. Our study indicated that the marketed as well as formulated formulations found to be more stable. Both formulations marketed and formulated had almost constant pH, homogeneous, emollient, non-greasy and easily removed after the application. The stable formulations were safe in respect to skin irritation and allergic sensitization. The extract of Curcuma longa has antiseptic activity, anti- inflammatory activity, and also increases whitening of skin. The sandalwood oil increases the glow on skin and has emollient properties. Hence all these properties are beneficial to normal human keratinocytes and it is safe and stable too.[13]

**Washability**

Small amount of cream is applied on the skin of and and then it is washed with tap water. Results are given in table no. 14.

**Greasiness**

The cream was applied on the skin surface in the form of smear and checked if smear was oily or grease-like. Results are given in table no. 15

**Table No. 05-Physical evaluations**

Sr no	parameter	F1	F2	F3	F4	Marketed
1	colour	Faint green	Faint green	Faint green	Faint green	white
2	Odour	pleasant	pleasant	pleasant	pleasant	pleasant
3	Texture	smooth	smooth	smooth	smooth	smooth
4	State	semisolid	semisolid	semisolid	semisolid	semisolid

**Table no 6 Determination of pH:-**

Sr.no	Formulation	pH
1	F1	7.45
2	F2	7.4
3	F3	7.57
4	F4	7.6
5	Marketed	7.7

**Table no. 7- Skin Irritancy test:-**

Sr.no	Formulation	Irritant effect
1	F1	Nil
2	F2	Nil
3	F3	Nil
4	F4	Nil
5	Marketed	Nil

**Table No.8- Spredability-**

Sr	Formulations	Time	Spredability
1	F1	40	7.2
2		35	6.0
	F2		
3	F3	45	7.5
4	F4	30	5.5
5	Marketed	30	5.6

**Table No 9- Stability Testing**

Sr No	Formulation	Stability
1	F1	Stable
2	F2	Stable
3	F3	Stable
4	F4	Stable
5	Marketed	Stable

**Table No 10- Rheological Studies**

Sr No	Formulation	Flowability
1	F1	Flowable
2	F2	Flowable
3	F3	Flowable
4	F4	Flowable
5	Marketed	Flowable

**Table No 11- Saponification value**

Sr	formulation	Saponification value
1	F1	35.06
2	F2	28.05
	F3	21.03
3		
4	F4	23.56
5	Marketed	27.04

**Table No 12- Acid value[14]**

Sr No	Formulation	Acid value
1	F1	4.48
2	F2	6.73
3	F3	5.16
4	F4	5.45
5	Marketed	5.61

**Table no13- Washability**

Sr No	Formulation	Washability
1	F1	Easily Washable
2	F2	Easily Washable
3	F3	Easily Washable
4	F4	Easily Washable
5	Marketed	Easily Washable



**Table no14- Greasiness [15]**

Sr No	Formulation	Greasiness
1	F1	Not - greasy
2	F2	Not – greasy
3	F3	Not – greasy
4	F4	Not – greasy
5	Marketed	Not - greasy

**CONCLUSION:-**

By using Aloe Vera gel, Neem and Tulsi and amla the cream showed a multipurpose effect and all these herbal ingredients showed significant different activities.

The formulation were stable at room temperature and can be safely used on the skin.

It has best properties and having nutritional values using less chemical which protects the skin from the various skin problem. Since the cream was prepared by using simple ingredients and simple method so the cream is also economical.

Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones.

From the result it can be concluded that herbal cream F2 formulated by using different extract like neem extract aloe Vera gel extract Tulsi and Amla gives better results compatible to marketed formulation.

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