

# A Formulation and Evaluation of Multipurpose Herbal Cream

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## ABSTRACT

Home grown gorgeousness care products are the procedure used to advancement the human appearance. The maximum fact of our effort is to make a home-grown cream which can distribute multipurpose effect similar as a moisturizer, reduce skin break out and skin frustration or irritation. The home-grown cream has best properties as well as having nourishing values utilizing less chemical which secures the skin from the different skin issue. Since the cream was arranged by utilizing candid ingredients also basic technique therefore the cream is also cost-effective.

We take four herbals (Natural) components in our formulation, which are Aloe vera gel (Aloe barbadensis), Neem Leaves (Azardirachta Indica), Turmeric (curcumin Longa), and Cucumber. Altogether the products were found to be stable with no mark of stage separation and no modification in color. The cream was ready with the cream base that is bees wax, Liquid Paraffin, Ehanol, Borax, Methyl Paraben, Propyl paraben, Distilled Water, Jasmine oil, Aloe vera gel, Dimethyl sulphoxide, Extract of Neem, Turmeric and Cucumber. Via Slab Technique, we have established three sets of our herbal cream formulations, i.e. F1, F2 and F3. Altogether three sets remained estimated for different parameters like appearance, pH, Viscosity, Washability, Spreadability, greasiness, Stability. All the three formulations F1, F2 and F3 displayed good appearance, pH, viscosity, washability, spreadability, stability and greasiness was detected. Similarly, the formulations F1, F2, F3 exhibited to no redness and frustration (Irritation), in Irritancy Study then they remained easily washable. All three formulations of set remained stable on room temperature.

**KEYWORDS:** Herbal cream, Aloe vera, Neem Leaves, Turmeric, Cucumber, Evaluation

## INTRODUCTION:

Herbal (Natural) cream, now mentioned as products or formulations, are expressed, with many acceptable pharmaceutical (Medicinal) ingredients are used to deliver well-defined advantages, will be termed as herbal constituents are used to deliver defined advantages only, shall be called as herbal formulations or herbal products.<sup>[1]</sup>

The knowledge of majesty as well as gorgeousness maintenance products is basically as ancient as humanity and development. Today's the awareness of natural gorgeousness care products are increasing step by step home grown strategies commonly stand out for of their great movement and moderately minor or nothing related effects with manufactured drugs.<sup>[2]</sup> Beauty care products are formed to reduce wrinkles, fight skin inflammation as well as to control oil secretion. For different types of skin conditions like skin self-protective, sunscreen, aggressive to skin breakdown, against defect and against maturation are

prearranged using mixtures of materials, also systematic or industrial. The skin and hair majesty of persons depend on the wellbeing, tendencies, regular work, climatic conditions and maintenance. The skin for the reason that of needless straightforwardness to strength will dry out (dehydrate) during summer then causes wrinkles, acnes, defects, pigmentation, as well as sun related burns. The shocking winter make problems of the skin like as breaks, scratches, soaking and diseases. The over-all types of creams are chilly, removal, vanishing, formation, scrub, night, hand and body creams. The main reason for our efforts is to number off a home-grown cream which can bring multipurpose effect, like an ointment, lotions, reduce skin breakdown and disorder, lessening skin conditions like psoriasis, scales, dermatitis, creases, dry skin, acne and so on and also add glow to the skin. A giant quantity of creams is present in the marketplace under the different types of brands to regular, protected, natural, and home grown.<sup>[2]</sup> We have used four main ingredients in our formulation, such as, Aloe vera gel, water dissolve extract of Neem, Turmeric, Cucumber.<sup>[2,3,4]</sup>

#### **ADVANTAGES OF HERBAL CREAMS:**

- Presence herbal (Natural), they have the minimum injurious effect on the skin or other body parts.
- They are moderately extra safe.
- They offer flexibility in formulation.
- They have proven effects from ancient times.
- They are safe and effective to use in assessment with other gorgeousness products or formulations inundated in the marketplace.
- They are appropriate used for all skin natures.
- They are not tried on animals.
- They have not any side effects.
- They have budget-friendly.
- Treats pimples, inflammation and different skin condition.
- Control plenty oil secretion.
- Makes the glossy skin and smoother (flatter).
- Retains the pH regulate of the skin.
- 100% harshness free.
- It improves the strength of the skin and the body parts.
- Mixture of Phyto-constituents can be combined.<sup>[5]</sup>

#### **IDEAL PROPERTIES OF THE HERBAL CREAMS:**

- It should be not produced any poisonous effect on application or operation.
- They should be ideal elements size.
- They should produce soothing effect.
- Thicker than a lotion or ointments, keeping its shape and structure.
- They should spread homogeneously on the skin or body parts surface.
- Needs preservative or protective agents to increases the shelf life of the formulations.
- They should be well-matched with skin pH.
- It should be the sterile formulation.
- It should be non-inflammatory.<sup>[6]</sup>

### ANATOMY AND PHYSIOLOGY OF THE SKIN:

The skin is the body's major organ or a tissue. It is made up of three layers, which has a specific function of each layer of the skin.

The outermost layer of the skin is epidermis which is responsible for producing or forming new skin cells, shielding the body from undesirable substances, as well as retaining moisture or humidity to retain the skin well hydrated.<sup>[7,8]</sup>

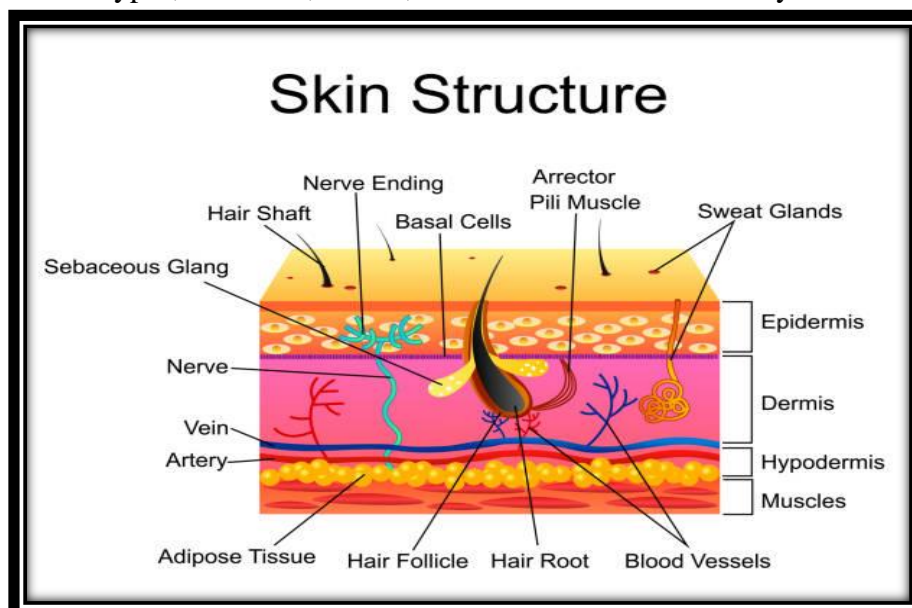
The middle dermis layer of the skin is responsible for supporting and strengthening, flexibility of the skin. It benefits to keep the skin moisturized and nourishes the epidermis.<sup>[9]</sup> It also supports to fine sensations, feelings as well as assistances control the skin temperature.<sup>[10]</sup>

The innermost layer of the skin is subcutaneous tissue protects the body against variations in body temperature and also physical effects.<sup>[11]</sup> It stretches the body and contoured shape or form also attaches the skin to the internal organs, tissues of the body. It similarly stores fat cells used for energy as well as supports to regulates or control the body temperature.<sup>[3,12]</sup>

### FUNCTIONS OF THE SKIN:

1. The skin is acts as a protective shield against the heat, UV lights, Injury, inflammation, as well as different types of the infections.
2. Skin regulate and control the body temperature.
3. Skin stores water and maintain the skin hydrate.
4. Skin stores Fat cell for energy production.
5. It prevents the loss of water.
6. Skin is the sensory organ.
7. It prevents the entry of the bacteria into body through the skin.
8. It acts as a barrier between the body organ and its environment.
9. Skin helps to make Vit.D, when exposed to the sun.
10. Our skin has a different types, thickness, colour, and texture all over our body.

Our skin has a different types, thickness, colour, and texture all over our body.<sup>[13]</sup>



**FIG: ANATOMY AND PHYSIOLOGY OF THE SKIN**

## The Epidermis

The epidermis is the outermost layer of the skin. The thickness of the epidermis is depending on wherever it is on the body. The thinnest on the eyelids (approximately half a millimetres) and thickest on our palms and soles about the 1.5 millimetres.<sup>[14]</sup>

### Conditions and disorders of the epidermis include as follows:

- Acne
- Boils
- Dandruff
- Eczema
- Melanoma

### Epidermis is made up of the five layers as follows:

#### 1. Stratum Corneum:

The Stratum Corneum is the upper layer of the epidermis of the Skin.

Its works is:

Helps your skin retain moisture and prevent loss of water.

Avoid Unwanted Substances into the body through the Skin.

It is made up of dead, flattened cells known as the keratinocytes that are shelter approximately for two weeks. Keratinocytes Forms keratin, a fibrous protein which helps to provide structure to our skin, hair, as well as nails.

#### 2. Stratum Lucidum:

The stratum lucidum is a distinct layer of the epidermis which is the thicker epidermis at the palms of the hands and soles of the feet and also thinner areas, its cells and functions are bonded with further layers.

The functions of the stratum lucidum:

1. Stratum Lucidum allows the skin to stretch.
2. It contains a protein which helps to skin cells degenerate.
3. It protects our palms and soles since the effects of friction.
4. It makes your skin waterproof.

Stratum Lucidum layer is also made up of dead, flattened keratinocytes.

#### a) Stratum Granulosum:

The outermost layer of the skin is Stratum granulosum layer which contains keratinocytes that are gradually being pushed toward the surface of the skin. While moving through this layer, cells start to lose their structure as well as characteristic and also become further like the dead, flattened keratinocytes of the outermost layers of the skin.<sup>[15]</sup>

This skin layer also contains lipids (a type of fatty acid) that help form a waterproof barrier which is prevents our body from losing fluid through the skin.

#### b) Stratum Spinosum:

The Stratum Spinosum is the layer of the skin, or squamous cell layer, is the thickest part of the epidermis of the skin.

**It contains:**

- Newly formed keratinocytes.
- Langerhans cells which help fight infection.

Stratum Spinosum is the main barrier that keeps foreign substances in the environment from getting into your body through the skin.<sup>[16]</sup>

### 3. Stratum Basale:

Stratum Basale also called as the basal cell layer, the Stratum Basale is the bottom layer of the epidermis of the skin.

Stratum Basale contains several important types of cells:

- Column-shaped stem cells that push older keratinocytes toward the surface, wherever they flatten as well as die.
- Melanocytes, that produce pigments which gives our skin its colour.
- Merkel cells, which sense of touch. <sup>[3,4,17,18]</sup>

## EXPERIMENTAL WORK

### Aim:

Formulation and Evaluation of the Multi-Purpose Herbal Cream Including Turmeric, Neem Leaves, aloe vera and Cucumber.

### Materials and Methods:

#### Drugs:

1. Turmeric
2. Neem Leaves
3. Aloe Vera
4. Cucumber

#### Chemicals:

1. Borax
2. Liquid Paraffin
3. Methyl Paraben
4. Propyl Paraben

#### Others:

1. Bees wax
2. Distilled water
3. Lavender Oil

**Glassware:** Beaker, Sterrer, China Dish, Slides, Thermometer, Volumetric flask, Dropper Containers.

**Equipment's:** Digital pH Meter, Blender, Weighing balance, heating Mantel, Sterile Knife.

Formulation of herbal Cream is prepared by using extracts of different ingredients like Aloe vera, Turmeric, Neem Leaves, Cucumber with the borax, Liquid Paraffin, Bees wax, Distilled Water and preservative used as Methyl Paraben and Propyl Paraben. The fragrance oil used as Lavender Oil.

### Material and Their uses:

**Table No.1 Material and Their Uses**

INGREDIENTS	ROLES
Neem	Relieves Skin Dryness, Itching and redness
Aloe vera	Anti-ageing, Anti-inflammatory, Moisturizer, reduce acne and pimples
Turmeric	Anti-aging, Healing wounds, lighten our skin, reduce acne and Pimples, Cure dermatitis, Reduce dark circles

<b>Cucumber</b>	Anti-oxidant, soothing and Cooling effect
<b>Bees Wax (Yellow)</b>	Emulsifying Agents, Stabilizer
<b>Borax</b>	Alkaline agents which are react with emulsifying agents to form cream, soaps, etc.
<b>Methyl Paraben</b>	Preservative
<b>Propyl Paraben</b>	Preservative
<b>Lavender Oil</b>	fragrance
<b>Liquid Paraffin</b>	Lubricant Agent

**Collection of Material:**

Aloe Vera Leaves, Neem Leaves and Cucumber was collected from SSCOP Campus and the Local Area in Morgaon, Baramati and Borax, Liquid Paraffin, Distilled Water was Collected from Pharmaceutics Lab (SSCOP, Palshiwadi). The Bees Wax purchased online from Amazon (AARSHVED NATURAL LLP, Thane). Lavender oil was collected from Hadapsar, Pune.

**PROCEDURE:**

**Extraction Process:**

**1. Neem Leaves:**

Take a Neem Leaves and washed with purified water. After the wash grind with mixer and extract the juice of neem leaves with the help of muslin cloth. Then collect in the beaker and label it.

**2. Aloe vera Gel:**

To use a fresh aloe vera leaf from a plant and washed with purified water. Wash it well, removing any dirt. Then the outer part of the leaf was dissected using a sterile knife. Remove the aloe vera gel, using the sterile knife. Then it is blend in blender and to form aloe vera gel.

**3. Cucumber:**

To use a fresh cucumber washed with purified water. Then it is blend in blender ad form a cucumber gel. This gel is used for the further preparation.

**FORMULATION OF THE CREAM**

**Formulation Table:**

**Table No.2 Formulation Table**

Sr. No	Ingredients	F1	F2	F3
1.	Aloe Vera Gel	1.5 ml	1 ml	2 ml
2.	Neem Extract	0.5 ml	0.5 ml	0.5 ml
3.	Cucumber Extract	0.2 ml	0.4 ml	0.5 ml
4.	Turmeric	0.1 gm	0.2 gm	0.3 gm
5.	Liquid Paraffin	15 ml	16 ml	14 ml
6.	Borax	0.2 gm	0.3 gm	0.4 gm
7.	Methyl Paraben	0.01 gm	0.02 gm	0.015 gm

8.	Propyl Paraben	0.01 gm	0.02 gm	0.015 gm
9.	Bees Wax	3.4 gm	3.2 gm	3.6 gm
10.	Distilled Water	Q.S	Q.S	Q.S
11.	Lavender Oil	Q.S	Q.S	Q.S

### Oily Phase:

Heat Bees wax, Liquid Paraffin in beaker at a temperature 75<sup>0</sup> C in water bath.

### Aqueous Phase:

1. Dissolve borax in a beaker.
2. Add Methyl Paraben, Propyl Paraben and distilled water.
3. Mix the all ingredients with continuous stirring with heating at 75<sup>0</sup> C.
4. Transfer Aqueous Phase into oily Phase with continuous stirring.
5. Add Aloe vera gel, Neem extract, Cucumber extract and Turmeric in above mixture with continuous stirring.
6. Finally add Lavender oil for Fragrance.
7. Store in the container.

### EVALUATION OF CREAM:

**Physical Evaluations:** Formulated Herbal creams was further Evaluated by using the following Physical Parameter colour, odour, consistency and state of the formulation.

1. **Colour:** The colour of the cream was by visual examination.
2. **Odour:** The odour of cream was found to be Pleasant.
3. **State:** The state of cream was examined visually by naked eyes.
4. **Consistency:** The formulation was examined by rubbing cream on hand manually. The cream having smooth consistency.
5. **State of the Formulation:** The state of the formulation is semi-solid and homogeneous in nature.
6. **pH:** pH of prepared herbal cream was measured by using digital pH meter. pH was determined and value was calculated.
7. **Spreadability:** Cream should spread easily on the skin without too much effort and they do not produce greater friction in the rubbing process. The result show it is easily spread on hand surface.
8. **Washability:** formulation was applied on the hand and then washed with tap water.
9. **Homogeneity:** The homogeneity of the preparation was tested by visual appearance and touch. It was found that the cream was homogeneous and smooth consistent in nature.
10. **Type of smear (Greasiness):** It was found that the cream produced non-greasy film on the skin surface.
11. **Stability:** All formulations F1, F2, F3 were stable at room temperature and can be a safely used on the skin.

### RESULTS AND DISCUSSIONS

#### 1. Physical Parameter:

The different formulation of herbal cream was prepared and evaluated for physical parameters. The colour of formulation was light yellowish in colour. The odour of prepared formulations was good acceptable

which is desired as cosmetic formulations. The pH of all formulations are near to neutral range of the pH range i.e. in the range of 6 to 7 pH. All three formulations F1, F2, F3 showed good appearance, pH, adequate viscosity and no phase separation.

## 2. Irritancy test:

The Formulations F1, F2, F3 showed no redness, erythema and irritation study and they were easily washable.

## 3. Stability studies:

All three formulations F1, F2, F3 were stable and can be safely used on the skin. The Multipurpose Herbal Cream is Safe For use.

## CONCLUSION

Skin care problems are painstaking the major trouble these days. There are numerous products that are available in the market among which the majority are synthetic products. Synthetic products are extra harmful than the natural products. it is necessary to change some herbal formulation which has good results and which reduces damage in the skin. The main aim of our work is to develop an Herbal Cream which can gives effect as Moisturizer, reduce pimple and Reduce acne, dry skin, wrinkle, improve glow on skin, give good appearance to the customer.

All Three Herbal Formulations contained natural ingredients like Aloe vera, neem Leaves, Turmeric, cucumber showed significant different activities. Based on the results, we can suggest that all the three formulations F1, F2, F3 were stable at room temperature and can be safely used on the skin.

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