

## Formulation and evaluation of multipurpose herbal cream

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### Abstract

Herbal cosmetic are the preparations used to improve the individual appearance. The main aim of this study to prepare herbal cream which can give multipurpose effect, like moisturizer, reduce acne, reduce skin irritation, dry skin, rashes, nourishing and cure various disease of the skin. In this preparation used different crude drugs like Aloe barbadensis (Aloevera leaves), Azadirachta Indica (Neem leaves), Curcuma longa (Turmeric rhizomes), Holy Basil (Tulsi leaves) are used to formulate the cream. The selection of ingredients based on their different medicinal properties of the agents. The cream is subjected to various evaluation parameters like pH, Irritancy, viscosity, phase separation ans spread ability, stability, wash ability and various organoleptic properties.

**Keywords:** Aloe barbadensis, *Azadirachta indica*, Curcuma longa, Multipurpose cream, herbal cosmetic

### Introduction

The concept of beauty and cosmetics is an ancient as a mankind of civilizations. An Indian herbs and its significant are popular worldwide. The demand of herbal cosmetics due to the availability of new ingredients the economic rewards for developing a successful product and maintain the quality of product. Creams are used as a cosmetic for softening and cleansing action. The demand of cosmeceuticals rapidly expanding.

Cosmetics are developed to purpose of beautifying, cleansing, promoting attractiveness, fight acne, reduce wrinkles and control oil secretion. Herbal formulation always gives the good activity and less side effect. Creams are semisolid preparation containing one or more medicinal agent dissolved in either water in oil emulsion or oil in water emulsion or water washable bases. The function of skin cream is a protect the skin against different environmental condition, weather and gives soothing effect to the skin. The main purpose of our work is to formulate herbal cream which can produce multipurpose effect, like moisturizer, reduce acne and irritation, reduce skin conditions like poriasis, eczema, wrinkles, dry skin, rashes and add glow to the skin. Aloevera, Neem, Tulsi, Turmeric these herbal ingredients are used in our preparation. Aloevera acts as a Anti ageing, Anti microbial, Anti inflammatory agents and reduce the pimples and acne and used as treatment of burn wounds. Neem is used to promote wound healing, relieves skin dryness, itching, redness and used to reduce pigmentation ans scars. Neem is used as antifungal and anti inflammatory. Tulsi is used to add glow to the skin and to promote wound healing. Turmeric is used as a antibacterial and glow to the skin.

### Materials and methods

#### Materials

The plant materials like

- Aloevera (*Aloe barbadensis*)
- Neem (*Azadirachta indica*)
- Tulsi (Holy Basil)
- Turmeric (*Curcuma longa*)

### Herbal Drug Profile

#### Aloevera

Synonym: *Aloe barbadensis*

Biological source: Dried latex of leaves of *Aloe barbadensis*.

Family: Asphodelaceae

Molecular weight: 267.279

Therapeutic uses:- A number of beneficial effects of aloevera including immunomodulatory wound and burn healing, hypoglycemic, anticancer, gastro protective, antifungal and anti-inflammatory properties.



Fig 1

#### Neem

Common Name: Neem

Biological name: *Azadirachta Indica*

Kingdom: Plantae

Genus: *Azadirachta*

Species: *Azadirachta Indica*

Family: Meliaceae

**Chemical Constituent:** Azadirachtin, Nimbolinin, Nimbin, Nimbidin, Nimbidol, Sodium nimbinat, gedunin, salanin.

**Therapeutic Uses:-** Immunomodulatory, Anti-inflammatory, Antiulcer, Antimalarial, Antifungal, Antibacterial, Antiviral, Antioxidant, Anticarcinogenic

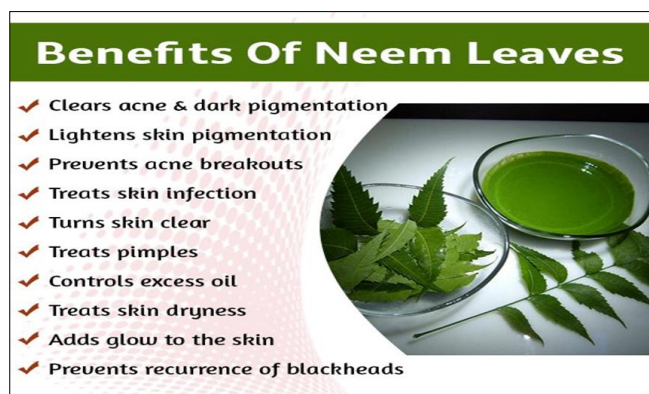


Fig 2

### Tulsi

Synonym: Holy basil, Tulsi

Biological source: *Ocimum Sanctum*

Family: Labiatae

Therapeutic uses: Antibacterial, Anti-Inflammatory, Antiviral, Antiviral, Antifungal, Anticancer



Fig 3

### Turmeric

Synonym: Haldi

Biological source: *Curcuma longa linn*

Family: Zingiberaceae

### Therapeutic uses

Turmeric is used as an herbal medicine for rheumatoid arthritis, conjunctivitis, skin cancer, small pox, chicken pox, wound healing, urinary tract infection.

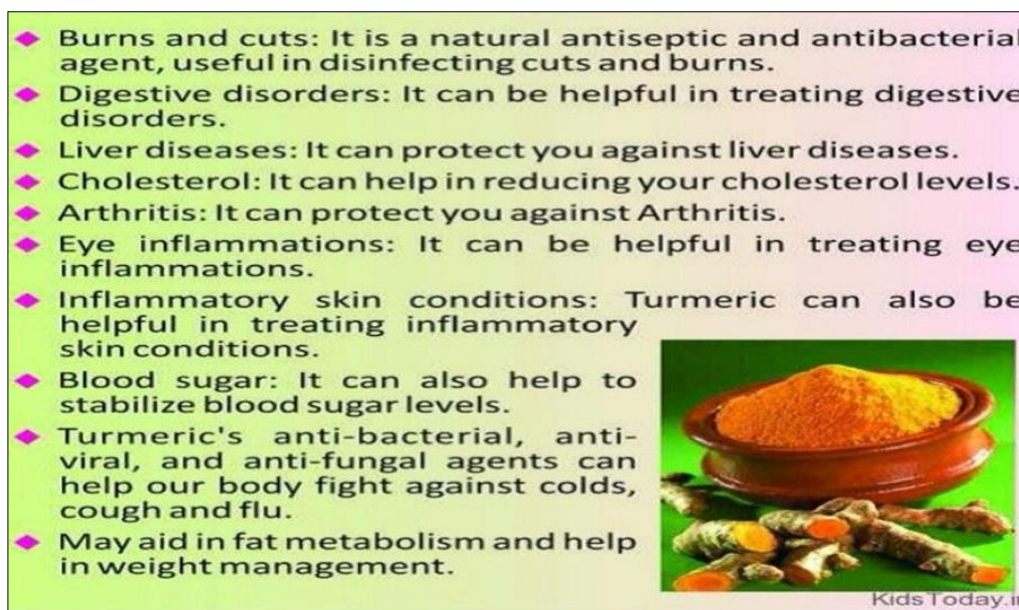


Fig 4

### Methods

Collection of plant material. Neem, Tulsi, Aloe vera, Turmeric collected from local area.

### Extraction of plant material

#### Extraction of Aloe-vera gel

1. Mature healthy and fresh aloe-vera leaves were collected and washed with distilled water
2. Then after drying of leaves hot air oven the outer part of leaf was dissected longitudinally using sterile knife
3. Then the aloe vera gel that is colourless parenchymous tissue was removed using the sterile knife
4. Then the filtered using muslin cloth to remove impurities
5. Then the filtrate or filter product which is a clear aloe vera gel was used in preparation

### Extraction of Neem Leaves

1. Neem leaves are collected and washed with distilled water and dried in hot air oven.
2. Then after proper drying leaves were powdered.
3. Then 5g of Neem leaves powder+Dimethyl sulfoxide was taken in a volumetric flask and shaken for 3d on mechanical shaker.
4. Then the solution was heated on a water bath at 80-100° C and concentrated up to 20 ml and then filtered using a muslin cloth to remove impurities.
5. Then the filtrate or filter product obtained, which is cleared solution or clear extract of neem leaves was used in the preparation.

**Extraction of Tulsi Leaves**

1. Tulsi leaves were collected and washed with distilled water and dried hot air oven
2. Then after proper drying the leaves were powdered
3. Then one gram of tulsi leaves powder +10 ml dimethyl sulphoxide was taken in volumetric flask and shaker 3d REMI RSB12 mechanical shaker
4. Then solution was heated on water bath at 80-100 °C for few minutes and then concentrated up to 20ml and then filtered using muslin cloth to remove impurities

5. Then the filtrate or filter product obtained clear extract of Tulsi leaves was used in the preparation

**Extraction of Turmeric Powder**

1. Turmeric powder is extracted with alcohol in soxhlet extractor.
2. The alcoholic extract is concentrated under reduced pressure and dried.
3. This dried extract used in the preparation of hebal cream.

**Table 1:** Excipients and Herbal ingredients with their roles

Sr.no.	Ingredients	Roles
1.	Aloevera gel	Anti-ageing, Moisturizer, reduce acne and pimples.
2.	Neem extract	Wound healing, relieves skin dryness, itching
3.	Turmeric extract	Antibacterial, add glow to the face.
4.	tulsi	Treat skin problems like acne, blackheads
5.	Bees wax	Emulsifying agent
6.	Liquid paraffin	Lubricating agent
7.	Borax	Alkaline agent
8.	Propyl paraben	preservative
9.	Distilled water	vehicle
10.	Rose water	fragrance

**Table 2:** Formulation Component

Sr.no.	Ingredients	Formulation F1H	Formulation F2H	Formulation F3H
1.	Aloe vera gel	1.5ml	1ml	1ml
2.	Tulsi extract	1.5 ml	0.2 ml	0.4 ml
3.	Neem extract	0.5ml	0.2ml	0.4 ml
4.	Turmeric	0.05 gm	0.05 gm	0.05gm
5.	Bees wax	3gm	3.5 gm	3gm
6.	Liquid paraffin	10 ml	15 ml	13 ml
7.	Borax	0.2 gm	0.4 gm	0.3 gm
8.	propyl paraben	0.02 gm	0.04 gm	0.03gm
9.	Rose oil	Q. S	Q. S	Q. S
10	Distilled water	Q. S	Q. S	Q. S

**Formulation of Herbal cream**

1. Heat the liquid paraffin and Bees wax in a borosilicate glass beaker at 75°C and maintain that heating temperature (oil phase).
2. In another beaker, dissolve borax, propyl paraben, in distilled water and heat this beaker to 75°C to dissolve borax and propyl paraben and to get clear solution (aqueous phase).
3. Then slowly add this aqueous phase to heated oily phase
4. Then add measured amount of Aloe vera gel, Neem extract, Tulsi extract, Turmeric extract and stir vigorously until it forms a smooth cream .
5. Them add few drops of rose water as a fragrance.
6. 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 smooth texture of the cream and to mix all ingredient properly.
7. This method is called as a slab technique of preparation of cream.

**Evaluation parameters of cream****pH test**

The pH meter was calibrated using standard buffer solution. About 0.5g of the cream was weighed and dissolved in 50.0ml of distilled water and its pH was measured. pH is found in between 5-6.5.

pH of formulation 1(F1)-6.2

pH of formulation 2(F2)-6.1

pH of formulation 3(F3)-6.3

**Colour and odour**

Physical parameters like colour and odour were examined by visual evaluation.

**Homogeneity**

The formulations were tested for the homogeneity by visual appearance and by touch.

**Irritancy**

Mark the area on the left hand dorsal surface. Then the cream was applied to that area and the time was noted. Then it is checked for irritancy, erythema, edema if any for an interval upto 24 hour and reported.

**Table 3**

Sr.no.	Formulation	Irritant effect	Erythema	Edema
1.	F1H	Nil	Nil	Nil
2.	F2H	Nil	Nil	Nil
3.	F3H	Nil	Nil	Nil

### Viscosity

Viscosity of cream was done by using Brooke field viscometer at a temperature of 25°C using spindle No.63 at RPM.

### Wash ability

A small amount of cream was applied on the hand and it is then washed with tap water.

This cream is easily washable with tap water.

### 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.

This prepared herbal cream is non-greasy

**Table 4:** Organoleptic parameters

Sr.no.	Parameters	Formulation F1H	Formulation F2H	Formulation F3H
1.	Colour	Faint green	Faint green	Faint green
2.	Odour	Pleasant	Pleasant	Pleasant
3.	Texture	Smooth	Smooth	Smooth
4.	State	Semisolid	Semisolid	Semisolid

### Spreadability

Spreadability is carried out for all three formulations, that is F1H, F2H, F3H. The less time taken for the separation of both the slides better the spreadability. Therefore according to statement F2H has better spreadability.

**Table 5**

Sr.no.	Formulation	Time (sec)	Spreadability(gxcm/sec)
1.	F1H	7	2.14
2.	F2H	5	3.0
3.	F3H	6	2.5

### Advantages of herbal cream

1. The herbal cream are natural free from all the harmful synthetic chemical.
2. Compatible with all types of skin like oily skin, dry skin.
3. The natural ingredients used assure no side effects.
4. Safe and effective to use. In comparison with other beauty product available in market
5. Suitable for all skin type.
6. Not tested on animals.
7. No side effects.
8. Budget-friendly.

### Disadvantages of herbal cream

1. Herbal cream have slower effect as compare to.
2. They are difficult to hide taste and odour.
3. Manufacturing process is time consuming.
4. Skin reactions like itching, peeling, irritation, reddening etc might happen.

### Conclusion

The prepared herbal cream has best properties and having nutritional values using less chemicals which protect the skin from the various skin problems. Since the cream was prepared by using simple ingredients and simple methods. Herbal cosmetic formulation is safe to use and protect the skin.

By using Aloe vera gel, Neem, Tulsi, Turmeric the cream showed the multipurpose effect and all herbal ingredients

were used showed different significant activities. Based on the results we can formulate these three formulations F1H, F2H, F3H were stable at room temperature and can be safely used on the skin.

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