

# Formulation and evaluation of multipurpose herbal cream

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**Abstract:** 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 papaya* (Papaya), *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.

*Azadirachta indica* (Neem) and *Ocimum sanctum* (Tulsi) are well known for its medicinal value in Indian traditional system of medicine. There is growing demand cosmetics for herbal in the world market and they are invaluable gifts of nature. Therefore, I tried to make multipurpose Herbal cream containing the extract of *Azadirachta indica* and *Ocimum sanctum*

**Keywords:** Cosmetic, Herbal cream, Turmeric, Papaya, Aloe-vera, Neem, Tulsi Herbal Drugs extracts, Herbal multipurpose cream, Evaluations.

## INTRODUCTION

The demand of cosmetics due to the availability of herbal cosmetics is increasing predominantly. 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 and required moisture (Mali AS, et al., 2015). The herbal cream is basically water in oil type of emulsion. The natural ingredients chosen for preparation of herbal cream are turmeric, papaya, aloe-vera, tulsi, and neem. The choice of these ingredients is based on their individual properties. Aloe-vera is used as a moisturizer and anti-acne agent (Christaki EV and Florou-Paneri PC, 2010) Turmeric is an Asian cosmetic useful to impart a golden radiance to the complexion. It also provides anti-inflammatory and antiseptic properties.

Neem is helpful against a wide range of skin, disease including eczema, psoriasis, and dry skin (Bhowmik D, et al., 2010) Tulsi is used to add glow to the skin and to promote wound healing In addition to these health

promoting properties, tulsi is recommended as a treatment for a range of condition including anxiety, cough, and skin diseases (Sah AK, et al., 2018). Papaya is used to the anti-wrinkle cleansing, enzymes action and anti-inflammatory The main aim of our work is to develop an herbal cream which can give as multipurpose effect like moisturizer, reduce acne and skin irritation, dry skin, wrinkle, rashes, etc. Cosmetic are the products applying on the body.

Cream is defined as semisolid emulsions which are oil in water (o/w) or water in oil (w/o) type and these semisolid emulsions are intended for external application 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.



Figure 1: Aloe-vera leaf



Figure 2: Papaya fruit



Figure 3: Turmeric powder



Figure 4: Tulsi leaf



Figure 5: Neem leaf

Face cream are used as cosmetic for softening and cleansing action. The Ayurvedic system of medicine was one of the most important systems that uses herbal plants and extract of the treatment of managements of various disease state (Viswanathan MV, et al., 2003) (Figures 6 and 7). An emulsion is a system in which one fluid is dispersed in another with which it immiscible. Macroscopic separation of phase is prevented by addition of a suitable surfactant (Imhof A and Pine DJ, 1997). Water-in-oil emulsion is employed more widely for the treatment of dry skin and emollient application (Mohamed MI, 2004). Additional value can be given to this formulation by including active ingredient with specific cosmetic effects. Particularly advantages cosmetic emulsion preparation is obtained when antioxidants are used as active ingredients (Bleckmann A, et al., 2021). The function of skin cream is to protect the skin against different environmental condition,

weather and gives soothing effect to skin. There are different types of cream like cleansing, cold, foundation, vanishing, night, massage, hand and body creams. The poly herbal cosmetic formulation is receiving recognition all over the world, as they give the enhanced feeling of purity, protection and effectiveness. A large quantity of cream exists in the bazaar use synthetic polymers, emulsifiers, perfuming agents, pigments, surfactant and thickeners to form the base. There is wide need to substitute toxic synthetic agents from base using natural agents



Figure 6: Formulation of herbal cream



Figure 7: Extraction of herbal plants

#### BOTANICAL NAME AND USES OF HERBAL PLANTS

- 1) Aloe-vera leaf
- 2) Papaya fruit
- 3) Turmeric powder
- 4) Tulsi leaf
- 5) Neem leaf

##### 1) Aloe-vera leaf :-

Botanical Name:- Aloe barbadensis miller.

Family :- Asphodelaceae (Liliaceae)

Uses :-

- It contains healthful plant compounds.
- It has antioxidant and antibacterial properties.

- It accelerates wound healing.
- It reduces dental plaque.
- It helps treat canker sores.
- It reduces constipation.
- It may improve skin and prevent wrinkles.
- It lowers blood sugar levels.

2) Papaya fruit :-

Botanical Name:- *Carica papaya*

Family :- Caricaceae

Uses :-

- The papaya fruit contains two enzymes, papain and chymopapain.
- Both enzymes digest proteins, meaning they can help with digestion and reduce inflammation.
- Papain is an ingredient in some over-the-counter digestive supplements to help with minor upset stomach.

3) Turmeric powder :-

Botanical Name:- *Curcuma longa*

Family :- Zingiberaceae

Uses :-

- it was traditionally used for disorders of the skin, upper respiratory tract, joints, and digestive system.
- Today, turmeric is promoted as a dietary supplement for a variety of conditions, including arthritis, digestive disorders, respiratory infections, allergies, liver disease, depression, and many others.

4) Tulsi leaf :-

Botanical Name:- *Ocimum sanctum* or *Ocimum tenuiflorum*

Family :- Lamiaceae

Uses :-

- Natural Immunity Booster
- Reduces Fever (antipyretic) & Pain(analgesic)
- Reduces Cold, Cough & Other Respiratory Disorders
- Reduces Stress & Blood Pressure
- Anti-cancer Properties
- Good for Heart Health
- Good for Diabetes Patients
- Useful in Kidney Stones & Gouty Arthritis

5) Neem leaf :-

Botanical Name:- *Azadirachta indica*

Family :- Meliaceae.

Uses :-

- Nourishes Skin.

- Treats Fungal Infections.
- Useful in Detoxification.
- Increases Immunity.
- Insect & Mosquito Repellent.
- Prevents Gastrointestinal Diseases.
- Treats Wounds.

## BENEFITS OF HERBAL PLANTS

1) Aloe-vera leaf :-

- Its anti-inflammatory properties can reduce pain, swelling, and soreness of wounds or injuries
- It has a cooling effect on rashes or sunburns
- It supports the production and release of collagen
- Help in keeping your face health and gives you a natural shine
- Aloe-vera is rich in moisturizing properties it helps in removing dead cells
- Prevent or reduce wrinkles and dark spots of your face
- Moisturizes dry skin
- Soothes irritated skin
- Remove sign of ageing

2) Papaya fruit :-

- It used to the wrinkle reduction
- It is used to the enzyme action
- It used to the anti-inflammatory properties
- Control acne
- Remove dead skin cells
- Improve skin tone
- Soothes irritated skin
- Hydrates dry skin
- Help weight loss
- Supporting skin health
- Skin and healing

3) Turmeric powder :-

- 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
- Reduce dark circles
- Could help psoriasis eczema
- Clears the skin
- Promotes weight loss
- Protect your body from free radicals

- Anti-microbial agent

#### 4) Tulsi leaf powder :-

- Natural immunity booster
- Reduce stress and blood pressure
- Good for skin health
- Useful in kidney stone
- Fight acne
- Supports healthy skin aging
- Soothes skin condition like eczema
- Great for healing skin problem
- Good source of vitamin K

#### 5) Neem leaf powder :-

- Acts as a shield against dandruff
- It can be used for both face and hair
- Treat dry scalp making it smooth and shiny
- Increase radiance and produce ageing effect
- Increase blood circulation
- Help to treat ulcers
- 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

### MATERIALS AND METHODS

#### Collection of plants material

Turmeric, papaya, 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 natural drugs on commercial scale, attention should be paid for the use of skilled labour.

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. Opium and papaya latices are collected after coagulation of latex. Plant collecting is the acquisition of plant specimens for the purpose of research, cultivation, or as a hobby. Plant specimens may be kept a live but are more commonly dried and pressed to preserve the quality of the specimens. Plant collecting is an ancient practice with records of a Chinese botanist collecting roses over 5000 years ago.

#### METHODS OF PREPARATION

#### 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 (Ashara K, et al., 2013).

Table 1: Roles of Each Ingredients

S. No	Ingredients	Roles
1	Turmeric	Glow your skin and antiseptic, anti-inflammatory
2	Ripe papaya	Anti- wrinkle, cleansing, enzymes action, anti-inflammatory
3	Aloe-vera	Anti-ageing, reduce acne and pimples
4	Tulsi	Antibacterial, add glow to the face
5	Neem	Relieves skin dryness promote wound healing
6	Bees wax	Emulsifying agent
7	Liquid paraffin	Lubricating agent
8	Borax	Alkaline agent
9	Methyl paraben	Preservative
10	Distilled water	Vehicle
11	Rose oil	Fragrance

### EXTRACTION PROCESS

#### 1. Preparation of aloe-vera extract:

Collect mature and fresh aloe-vera leaf from plant and washed it with distilled water. Dried it is hot air oven. Leaf dissected longitudinally by sterile knife. The semi-solid aloe-vera is collected. Remove fibers and impurities form it. Aloe-vera extract is obtained (Figure 9).

#### 2. Preparation of ripe papaya extracts (papaya oil):

To make the papaya oil, take a tablespoon of every finely cut, ripe but firm organic papaya, pieces in a bowl. Add in 2 tablespoon of any unrefined oil of your choice now take the bowl and place it over a pan of gently simmering water. The top bowl with the oil should not touch the water in the bottom bowl and the

flame should be on the lowest possible setting the entire time we're making the oil. Continue cooking like this for 30 minutes using double boiler method will help preserve to top up with water every 10 minutes. After 30 minutes remove the top bowl and strain out the oil. Now you make the papaya oil is obtained (Figure 10)

### 3. 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 (Figure 11).

### 4. Preparation of tulsi extract:

Tulsi leaves were collected and washed with distilled water and dried 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 water bath at 80°C to 100°C for 5 to 10 minutes then filtered the solution use by filter paper and clear extract of tulsi leaves (Figure 12).

### 5. 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 (Figure 13).

## CONCLUSION

By using turmeric, papaya, aloe-vera, neem and tulsi the cream showed multipurpose effect and all herbal ingredients were used showed different significant activities. Based on the results we can say that all formulation F1C, F2C and F3C were stable at room temperature and can be a safely used on the skin. Therefore according to statement of F2C is better formulation than F1C and F3C of formulation of herbal cream. The present work focuses on the potential of herbal extract from cosmetic purpose. The uses of cosmetic have been increased in many folds in personal care system. The uses bioactive ingredient in cosmetic influence biological functions of skin and provide nutrients necessary for the healthy skin.

The prepared formulation showed good spreadability, no evidence of phase separation and good consistency during the study period. The prepared 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.

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