



## Research Article

### REJUVENATION OF SKIN BY PREPARED *CITRUS AURANTIUM*, *LYCOPERSICON ESCULENTUM*, *SANTALUM ALBUM* AND *PRUNUS DULCIS* HERBAL FACE MASK: FORMULATION AND EVALUATION

Devika Tripathi \*<sup>1</sup>, Sangeeta Mishra <sup>1</sup>, Jagannath Sahoo <sup>2</sup>, Dinesh Kumar Sharma <sup>3</sup>, Awani Kumar Rai <sup>1</sup>, Pranay Wal <sup>1</sup>

<sup>1</sup>Institute of Pharmacy, Pranveer Singh Institute of Technology, NH-2 Bhauti, Kanpur, India

<sup>2</sup>School of Pharmaceutical and Population Health Informatics, DIT University, Dehradun, India

<sup>3</sup>Himalayan Institute of Pharmacy, Dehradun, India

\*Corresponding Author Email: tripd990@gmail.com

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#### ABSTRACT

The main objective of the work is the formulation and evaluation of a natural herbal face mask for rejuvenation and glowing skin from locally available ingredients. *Citrus aurantium*, *Lycopersicon esculentum*, *Santalum album*, *Prunus dulcis*, Rose petals, *Camellia sinensis* leaves were procured from the local market and were dried, powdered, then passed through sieve no-100, mixed geometrically, and packed in an airtight container for converting into unique formula. The distinguishing microscopically characters of individual powders were noted, and quantitative measurements were taken. The powder had passable flow property which is suitable for a face mask. The particle size of the powder was found to be 20 -25µm. Herbal face mask is used to stimulate blood circulation, rejuvenates the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores and provide glow and flawless skin. The non-toxic nature reduced allergic reactions and easy availability of herbs making them acceptable and useful for users.

**Keywords:** Herbal, natural, face mask, *Citrus aurantium*, rejuvenation, formulation, evaluation.

#### INTRODUCTION

Cosmetics are defined as products purposely for cleansing, beautifying, promoting attractiveness, or alternating one's appearance. The use of Herbs is widely increased as remedial agents because of ease of availability, nontoxic nature, and their multi-use. These days Acne, blackhead, pimples, dark circle are common among youngsters and person who suffers from it. According to Ayurveda, Skin problems are normally due to impurities in the blood<sup>1</sup>. Accumulated toxins in the blood during improper food and lifestyle are causing these skin-related diseases. Facial masks are one of the most promising herbal cosmetics remedies described in Ayurveda that help women to get rid of skin problems such as wrinkles, dark circles, pimples, and acne. Herbal face masks increase the fairness and smoothness of the skin. Maximum benefits of herbal face masks can be obtained by using them according to skin type<sup>2</sup>. Face masks are one of the oldest and beautiful methods of cleansing skin. A face mask is a smooth powder that is used for facial application and must be able to provide essential nutrients to the skin and should be penetrable enough to the subcutaneous tissues for delivering the required nutrients. Natural herbal Face masks are less complicated and pretty simple to use<sup>3</sup>. They help us in looking after skin and also prove its worthiness by increasing the circulation of the blood within the veins of the face. Face masks give temporary effects but improve the skin glow by their continuous use as herbal ingredients repair the skin and prevent it from further damages.

#### Usefulness of Face-packs <sup>4-8</sup>

- By supplying essential and remarkable nutrients helps in nourishing the skin.

- Helps in the possible reduction of acne, pimples, scars, and pigmentation.
- Removal of dead cells of the skin can be possible by using face packs.
- Also soothes and relaxed the facial skin to maintain its natural glow.
- Rejuvenation of skin can be achieved in a short period.
- The harmful effects of pollution and harsh climates can be effectively combated with the judicious use of face packs.
- Helps in the prevention of premature aging of the skin.
- Helps in controlling wrinkles, fine lines, and sagging of skin by regular use of face packs.
- Herbal face packs maintain the skin to look young and healthy.
- Responsible for maintaining the elasticity and improving the blood circulation of facial skin.

#### MATERIALS AND METHODS

The materials used in the present study were purchased from a local market, powdered for further use. Detail of plants used for the preparation of face mask is given below:

***Citrus aurantium*:** Common name Orange, family (Rutaceae) acts as natural bleach, has instant glow property, prevents acne, blemishes, wrinkles, and aging. Used for their notable anti-bacterial, anti-fungal, and antioxidant properties<sup>8-9</sup>.

***Lycopersicon esculentum*:** Common name Tomato, family Solanaceae used a bleaching agent. Has antioxidant, antiseptic and anti-aging property. It also cures acne and has a moisturizing effect and has ability to reduce blackheads<sup>10-11</sup>.

**Santalum album:** Common name, family Santalaceae. Sandalwood has an anti-tanning and anti-aging property. It also helps the skin in many ways like toning effect, emollient, antibacterial properties, cooling astringent property, soothing and healing property<sup>12</sup>.

**Prunus Dulcis:** Common name Almond, family Rosaceae. Mostly used as a cleanser for scrubbing effect and also has a moisturizing effect<sup>13</sup>.

**Rose petals:** Commonly known as Rose, family Rosaceae, used as Perfume<sup>14-15</sup>.

### Preparation of face mask

All the herbal ingredients are in dry form and grind to make a fine powder by using a size reduction mill. The prepared face mask was then stored in an air-tight container for further evaluation.

**Table 1: Formulation Composition of Face Mask**

Ingredients	Quantity taken
Citrus aurantium	10%
Lycopersicon esculentum	10%
Santalum album	10%
Prunus Dulcis	10%
Rose petals	10%
Water	q.s.

## EVALUATION OF FACE MASK

### Morphological Evaluation

The prepared face mask was examined for its morphological parameters i.e. color, odor, appearance, texture, etc.

### Physicochemical evaluation

#### pH

The pH was measured by using a digital pH Meter.

#### Moisture content

Insufficient drying may lead to possible enzymatic deterioration of active principles because this evaluation of moisture content is important for the plant drugs. It was carried out by taking about 2 gm of powder drug in Petri dish placed in Hot air oven and measures the weights for 30min after cooling the dish up to standard weight.

#### Total ash value

Ash values are important for determining inorganic contents which are characteristic of the herb. It was calculated by taking 2 gm of powder drug in silicon dish previously ignited and weighed. Then, the temperature was increased by gradually increasing the heat not exceeding to red color. After complete burning, ash is cooled and weighed.

## EVALUATION OF POWDER CHARACTERISTIC

General powder characteristics parameters were evaluated under this section including particle size, angle of repose, bulk density, and tapped density.

#### Particle size

Particle size was determined by the sieving method by using I.P. Standard sieves by mechanical shaking for 10 min.

### Angle of repose

It is defined as the maximum angle possible in between the surface of the pile of powder to the horizontal flow. A required amount of dried powder is placed in a cylindrical tube open at both ends is placed on a horizontal surface. Then the funnel should be raised to form a heap. The height and radius of the heap are noted and recorded. For the above method, the angle of repose ( $\theta$ ) can be calculated by using the formula.

$$\theta = \tan^{-1}(h/r)$$

Where,  $\theta$  – Angle of repose, h – Height of the heap, r – Radius of the base

### Bulk density

Bulk Density is the ratio between the given mass of a powder and its bulk volume. The required amount of the powder is dried and filled in a 50 ml measuring cylinder up to 50 ml mark. Then the cylinder is dropped onto a hardwood surface from a height of 1 inch at 2-second intervals. The volume of the powder is measured. Then the powder is weighed. This is repeated to get average values.

### Tapped density

Tapped density is an increased bulk density attained after mechanically tapping a container containing the powder sample. After observing the initial powder volume or mass, the measuring cylinder or vessel is mechanically tapped for 1 min and volume or mass readings are taken until little further volume or mass change was observed. It was expressed in grams per cubic centimeter (g/cm<sup>3</sup>).

## RESULTS

**Morphological studies:** Morphology studies were done by visually observing the color, odor, texture, and results are presented in Table 2.

**Table 2: Results of Morphological Evaluation**

Parameters	Results
Nature	Fine powder
Color	Reddish-brown
Odor	slight
Taste	characteristic
Texture	fine

**Physicochemical studies:** The pH, moisture content, and total ash values for the prepared face mask were calculated as per the procedure mentioned in section materials and methods and the results are presented in Table 3.

**Table-3: Results of Physicochemical Parameter Evaluation**

Physicochemical Parameters	Results
pH	7.2
Moisture content	4.9%
Total ash value	4.2

**Powder Characteristic Studies:** Prepared face mask powder was evaluated for powder flow characteristics i.e. particle size, angle of repose, bulk density, and tapped density, and results are presented in Table 4.

**Table 4: Results of Powder Characteristic Evaluation**

Powder Characterization	Results
Particle size	20-25 $\mu$ m
Angle of repose	15 <sup>o</sup> + 1 <sup>o</sup> 02''
Bulk Density	0.484g/cc
Tapped density	0.406g/cc

## DISCUSSION

The prepared face mask for glowing skin was evaluated for both morphological and physicochemical parameters. The yield of total ash was found to be 4.3g total ash and acceptable moisture content was found to be 4.9%, which indicated that the powder of combined form was hygroscopic in nature. For pH values, dried powder of combined form was dissolved (1% dispersion of powder form) in distilled water and measured the pH with a pH meter. The pH was obtained as 7.2 which indicated a slightly alkaline nature. The combined powder was also evaluated for its general powder characteristics. Values of particle size, angle of repose, bulk density and tapped density obtained for powder were found to be 18-25 $\mu$ m, 15 $^{\circ}$ ±1 $^{\circ}$ 02'', 0.484g/cc and 0.406g/cc respectively.

## CONCLUSION

Formulations based on natural herbs are best suited for use with the belief that is safer with fewer side effects than the chemical synthetic ones. Thus, in the present work, formulation of a natural herbal face mask was easily attained by using naturally available remarkable herbal ingredients. All evaluation results depicted that the herbal face mask having enough potential to necessitate efficient glow and rejuvenation on facial skin. It is also useful to substantiate product claims for their useful benefits to human beings. Since natural ingredients are non-toxic, non-habit forming, they take time to remove the defects from roots. A prepared face mask does not contain any other toxic chemicals like artificial color, preservatives, and fragrances thus can be stored and used for longer duration of time. As, this prepared face mask is a complete herbal preparation thus increasing the acceptability of the product.

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