



# FORMULATION AND EVALUATION OF NATURAL POLYHERBAL FACE PACK

**Pooja Vitthal Pawar<sup>1\*</sup>, Pooja Pralahadrao Ambhure<sup>2</sup>, Anuradha Tukaram Jaid<sup>3</sup>,**

<sup>1</sup>*Student of Bachelor in Pharmacy, Faculty of Pharmacy, Dr. Babsaheb Ambedkar Technological University, Raigad, Lonere.*

<sup>2</sup>*Department of Pharmaceutics, Faculty of Pharmaceutics, Dr. Babsaheb Ambedkar Technological University, Raigad, Lonere*

<sup>3</sup>*Department of Pharmacology, Faculty of Pharmacology, Dr. Babsaheb Ambedkar Technological University, Raigad, Lonere*

*\*Corresponding Author*

## ABSTRACT

*The aim of this project is to create and test a herbal cosmetic face pack for all skin types utilising natural components in varied doses.*

*Three different mixtures that include, chandan powder, multanimitti, orange peel, neem powder, Sandalwood, respectively.*

*Physicochemical, general powder, and chemical properties. They were then sieved through number 85, geometrically mixed, and evaluated for their organoleptic, flow characteristics, making it appropriate for a face pack.*

*The majority of cosmetic products on the market are synthetic in nature and have a variety of negative side effects when used. An extended length of time. Use of herbal cosmetics is one remedy for this issue. Herbal cosmetics are thought to be generally safe with little adverse effects.*

**KEY WORD:** *Face Pack, Skin, Natural Ingredient, Natural product.*

## INTRODUCTION

Everyone aspires to have beautiful skin that is fair. Acne, black heads, pimples, and dark circles are now very frequent among young people and those who have the condition. According to Ayurveda, blood impurities.

Among young people and those who have the condition. According to Ayurveda, blood impurities are typically the cause of skin issues. Skin-related disorders are brought on by toxins that have built up in the blood due to poor diet and lifestyle choices. In Ayurveda, various herbs and medications are specified for different skin types. Women who have wrinkles, dark bags under their eyes, pimples, or acne can get rid of them with the aid of the ayurvedic face packs. The fairness and smoothness of the skin are improved by herbal face packs. We can use herbal face packs to their fullest.

Potential by using them in accordance with the type of skin we have. These face packs improve skin radiance and are the greatest ayurvedic remedy for boosting fairness. One of the most traditional and attractive ways to cleanse the skin is using face packs. Ayurveda describes a variety of face packs with nourishing, healing, cleansing, astringent, and antiseptic effects. Face packs can be made at home using common ingredients found in the kitchen and house. Ayurveda describes a variety of face packs with nourishing, healing, cleansing, astringent, and antiseptic effects. Face packs are easy to make. (1)

Ayurveda suggests using face packs to ladies. Women get rid of wrinkles, dark bags, pimples, and acne. The fairness and smoothness of the skin are improved by herbal face packs. The greatest ayurvedic treatment to promote fairness is ayurvedic face packs, which make the skin glow. A face pack is a smooth powder that is applied to the face. A good herbal face pack should penetrate the subcutaneous tissue and provide the skin with the nutrients it needs. To provide the necessary nutrition. Different herbal face packs are required for different skin types. Ayurvedic face packs are used to lighten dark spots, acne, and wrinkles, dark circles. (3)



## OBJECTIVE

- 1 Feeds the skin. Essential fruit face packs are available. Vitamins for the skin.
- 2 Depending on its herbal ingredients, aids in reducing acne, pimples, scars, and marks.
- 3 Face packs typically remove skin's dead cells.
- 4 The skin is soothed and relaxed by these face masks.
- 5 They aid in quickly restoring the skin's lost radiance and glow
- 6 Regular use of natural face masks improves skin texture and complexion while giving skin aglow.
- 7 The wise application of face packs can effectively counteract the negative effects of pollution
- 8 Harsh environments
- 9 They aid in preventing early skin ageing(4)

## METHODS AND MATERIAL

- **Material**

1. Orange peel
2. Nutmeg
3. Multani mitti
4. Neem
5. Chandan wood

### ❖ Profile of Herbal Ingredient's

#### 1. Orange peel

**Synonym:** Citrus sinensis (sweet orange) Bitter orange, Citrus aurantium.



**Family:** Rutacea.

**Genus :** Citrus

Active components include: Limonene (90%), Citral (4%), Vitamin C, Pectin, Hesperidine, Aurantimaricin, Aurantimaric acid, Octanal (39%), Decanal (42%), Monoterpene (91%) and at least 2.5% Volatile Oil. (4)

Orange is citrus fruit which highly contain vit C and other nutrient which are helpful to skin the product have so many medicinal value according to their different uses in many type of formulation such as food industry, folk medicine, cosmetic etc peel are the skin part of the orange, in epidermis of orange contain epicuticular wax which present small aromatic gland has responsible to smell .Orange prevents the skin from free radical breakdown, help to maintain skin rehydration and oxidative stress. (4)

## Uses

1. Prevents skin damage from free radicals.



2. Treats flaky, dry, and irritated skin
3. Rehydrates skin that needs it.
4. Replenishes moisture
5. Stops oxidative stress in skin cells for healthy, young skin.
6. Supports the renewal of tattered cells
7. As a skin whitening agent, it works.
8. Eliminates tan. Full of anti-aging qualities
9. Enhances the shine of healthy skin. (6)

## 2) Nutmeg

**Synonym:** - Myristica fragrans

**Family:** - Myristicaceae

Myristica fragrans, sometimes known as nutmeg, belongs to the Myristicaceae family of plants.

**Species:** Myristica.

### Nutmeg's active ingredients

Include 5 to 15% volatile oil, lignin, stearin, starch, gum, coloring agents, and 0.08% acid. Calcimine, Myristicin, Geraniol, Borneol, Pinene, Camphene, and Dipentene are all present in volatile oil. It also has trace amounts of isoeugenol, pycmene, euglol and safrol. Nutmeg is widely used for its analgesic, anti-inflammatory, antiseptic and anti-bacterial property. It helps in reducing wrinkles, fine lines and other signs of aging. It also helps in reducing acne scars and to make them less noticeable. Number of species in the genus Myristica produce the seeds or ground spice known as nutmeg. A dark leaved evergreen plant known as Myristica fragrans is farmed for the two spices that come out of its fruit. nutmeg, which is made from the seed, and mace, which is made from the seed covering. Moreover, it serves as a commercial source for nutmeg butter and an essential oil. Although the seeds of the California nutmeg, *Torreya californica*, resemble those of *Myristica fragrans*, they are unrelated to the latter and are not utilised as spices. (7) Trace amounts of isoeugenol, pycmene, eugenol, and safrol.

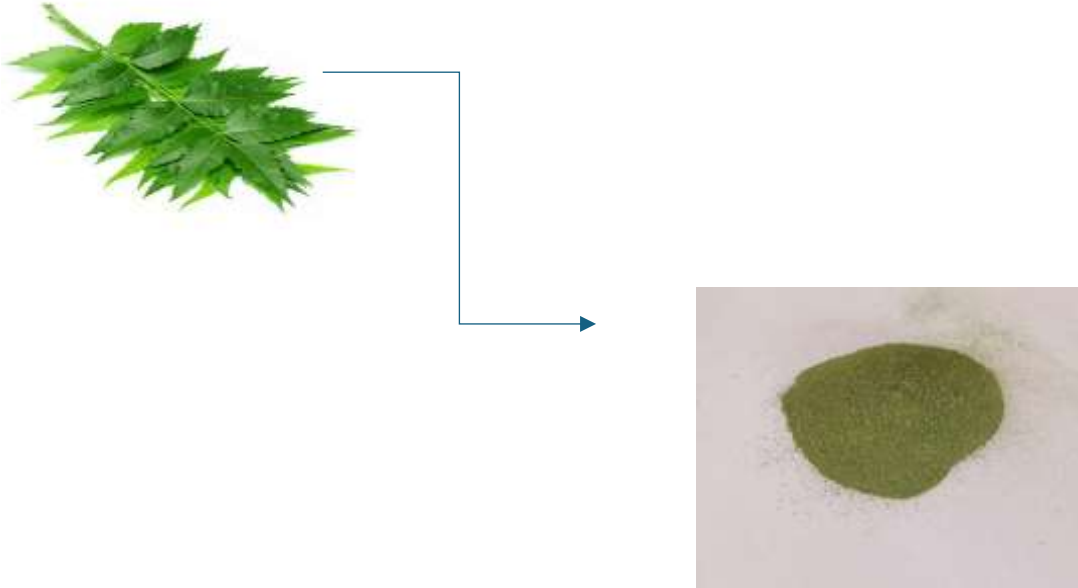


### Uses

- It lightness the skin's pigment.
- Due to its mild abrasiveness, nutmeg is an excellent skin exfolia
- Because of its anti-oxidant and anti-agung qualities, nutmeg treats oily skin while also making skin Soft and smooth. Hence, it encourages the development of youthful skin.
- The pigmentation is lessened.
- The mild abrasive quality of nutmeg makes it a fantastic skin exfoliant.
- As result, skin becomes soft and smooth.
- deals with greasy skin.
- Anti-oxidant and anti-aging effects are present in nutmeg. Hence, it encourages youthful skin. natural (8)



### 3) Neem:



**Botanical name:** - *Azadirachta indica*

**Family:** - Meliaceae

**Genus:** - *Azadirachta*

A tree in the mahogany group Meliaceae is known as *Azadirachta indica*, also known as neem, nimtree, or Indian lilac. It is a species of the genus *Azadirachta*, one of just two species, and is indigenous to much of Africa and the Indian subcontinent. Typically, tropical and semi-tropical climates are where it is grown. In Islands in southern Iran, neem trees are also present. Neem oil is made from its fruits and seeds. (9)

#### ACTIVE CONSTITUENTS

Nimbin, Salannin, And Valassin. Azadirachtin, Salannin, Meliantriol, or Nimbin were considered the top four Limonoids Compounds, Because limonoids have insecticidal and pesticidal properties,

Neem a tree of *azadirachita indica* which belongs to the family of meliaceae, it grown in tropical region evergreen plant has related to mahogany. neem is basically is Indian tree it also grown in several other countries like Burma, south asia and west Africa(10)

#### Uses

1 -Neem leaves powder has and many medicinal properties like anti- cancer, anti- inflammatory and antiseptic.

2 neem are very beneficial to oily and acne skin it is used as anti acne due to its have antibacterial and anti inflammatory properties.

3.The powder has also had anti oxidant agent and it's prevented and cures skin pimples, neem has potency to pure the blood (11)

#### ❖ Multani Mitti

They also provide the Appearance of glowing skin because they are rich in vital Nutrients. Multani mitti is known as fuller earth widely used substance as a home remedy in any Asian countries for various purpose like it is used as a skin cleansing agent and cleansing for hair, also used to give Multani mitti is a natural cleanser with various skin benefits, including oil reduction, acne treatment, skin tone levelling, and brightening skin.

In modern era it is used as bleaching agent and as dust absorbent (12) Of Multani mitti. Multani mitti helps to skin by different behavior like it removing the blackheads and whiteheads of the skin, effective against sun rays to prevent skin, usable for improving blood circulation, remove complexion and for skin glowing. Fuller earth contain health beneficial nutrients mainly rich in magnesium chloride (13)



**Fig: Multani mitti**

❖ **Sandal wood**

Sandalwood has an anti-tanning and anti-aging property. It also helps skin in many ways like toning effect, Emollient, antibacterial properties, cooling astringent property, soothing and healing property.



**Fig: Sandal wood**

The tree of sandal wood is most valuable tree used for many purpose in Indian tradition, its wood are the most expensive and the tree also known as for its aroma. Sandalwood are mainly use d in many form like wood, oil, powder. oil is used for cosmetics, perfumes, and pharmaceuticals formulations(14). The plant belong to the class of santalum album have family santalaceae in india it is also known as Hindi name chandan. Sandalwood is used to treat many way like diuretic, expectorant, and stimulant it has sweet and aromatic in odor, used in various deodorant and body spray preparation in tradition system is used to treat various systemic and local disorder like diarrhea, poisoning, chickenpox (15)

Our formulation we used sandalwood has a anti ageing and anti tannin agent which is helps to maintain skin many ways like emollient, cooling due to astringent properties, cooling and quick healing it a strong anti bacterial agent (16)

**PREPARATION OF POLYHERBAL FACE PACK:**

• **Drying**

All the powder are in dry form and grinded.

• **Size Reduction**

The crude ingredients were collected and these ingredients were size reduced using driven mixer individually.

• **Sieving:**

Then this fine powder was passed through sieve no:60,80, to get the sufficient quantity of fine powder.



- **Weighing:**

All the required herbal powders weigh.

- **Mixing:**

All these fine ingredients were mixed throughly by mixer to form a homogeneous fine powder.

- **Packing and Labeling:**

Then it was packed and labeled suitably

- ❖ **Method of application:**

Take a powder mixture made up of neem leave Orange peel powder, nutmeg powder, Multani mitti, and Sandalwood. To create a smooth paste, add 3-4ml of rose Water or water. Apply this paste all over your face, give It 10 to 15 minutes to dry. Gently scrape pack off skin once Powder has dried, then rinse it of with water. When gently Massaged into the skin for a few minutes, face pack also Functions as:

- **Apply to face pack**

1. Place the made face pack powder inside a basin with the rose water.
2. Mix thoroughly to create a paste with the correct thickness.
3. Use a brush to apply it uniformly all over the face.
4. Hide the pimples and imperfections.
5. Let in the same condition for 20-25 minutes to dry completely

- **Chart of formulation face pack**

Sr. No	Ingredients	Quntitiy
1.	Orange peel	3 gm
2.	Nutmeg	3 gm
3.	Neem	1 gm
4.	Mulatani mitti	5 gm
5.	Sandal wood	3 gm

- ❖ **METHOD OF EVALUATIONS**

- Organoleptic Evaluations:**

A number of organoleptic characteristics, including colour, Oduor, look, texture, and consistency, were assessed for the Prepared face pack. The senses of touch and sensation were Used to evaluate colour, smell, and texture visually. Grittyness, and washability of the substance are among the Organoleptic factors that were personally assessed for their physical attributes.

- ❖ **PHYSICOCHEMICAL EVALUATION**

- Physical and chemical parameters, such as moisture content, extractive values, pH, and ash value.

Determining moisture content:

The amount of moisture in plant drugs is crucial because insufficient drying could result in the active

Ingredients losing some of their potency due to enzymatic deterioration. Loss on drying was used to calculate

### 1) **Moisture content (LOD)**

Weigh accurately of 3gms of the powder medicine should be weighed before being placed in a petri dish and Heated to between 100 and 108 degrees Celsius. Drugs. It aids in judging the product's purity and overall

#### **Determining Moistures Content**

it is dfined as the amount of water that can be removed without water that can be removed without alteratin of chemicals structure of frains.

- **Procedure**

1. Take 2-3 gram of ground sample
2. Places this sample in a air oven at 130c for about 1-2 hr
3. Afterwards the sample are taken out and placed in decicator to cool down
4. The drop in weight of sample was measured.
5. Moisture content material based on the sirf between the initial weight and final weight of sample



## 2) Total ash value

Total ash value is defined to measure the total amount of material produced after complete incineration of the drug material at as low temperature as possible about 450°C to all the carbons

### • Procedure

1. Weight sample in (in previous dried and weight dish / crucible)
2. heat the dish carefully over a small flame to char the material.
3. Ignore in a muffle furnace at 550°C
4. Grey ash is obtained
5. Cool in the desiccator
6. If wetting show ash to be carbon free, remove dish from desiccator
7. Weight the dish
8. Repeat the operation of two successive weighing
9. record the lowest mass.
10. Calculate the result.

### Formula

$$\% \text{ total ash} = \frac{\text{Weight of Ash}}{\text{Weight of Sample}} \times 100$$

### Measurement of pH:

It is a measurement of the product's acidity or alkalinity Goods evaluated on a 0–14 scale. The pH of the face pack's composition in rose water was discovered.

### RHEOLOGICAL EVALUATION

It provides a general overview of the product's visco elastic flow characteristics. For the formulation, physical variables such as the angle of repose, the tapped density, the bulk density, index were measured and calculated.

#### 1. Tapped Density

A graduated measuring cylinder containing a powder sample is mechanically tapped to raise the bulk density. A powder's compressibility and flow characteristics can both be predicted using the tap density of the material. In a graduated cylinder, the capacity of the packing can be measured

#### 2. Bulk Density

The volume of each pore in the powder sample is taken into account while calculating bulk density. Bulk Density is a word used to describe a way to package particles or granules. The graduated cylinder was filled with 25gms of powder that had been weighed out. It was remarked how much space the powder took up.

#### 3. Angle of repose

The steepest angle of fall or dip in relation to the horizontal plane to which a material can be piled without slumping is known as the angle of repose, or critical angle of repose, of a granular material.

It is crucial for the processing, storing, and transporting of particulate materials systems, because it affects how well the various particles adhere to one another, it is also helpful to quantify the flow characteristics of powder. The fixed funnel cone method determines the height (H) above a piece of paper

that is placed on a flat surface. The prepared mixture was gently poured through the funnel until the conical heap peak just brushed the tip. "R" here stands for the radius of the conical pile.

Angle of repose ( $\alpha$ ) is calculated using the equation

$$\Theta = \tan^{-1}h/r$$

#### 4) Tapped Density

A graduated measuring cylinder containing a powder sample is mechanically tapped to raise the bulk density. A powder's compressibility and flow characteristics can both be predicted using the tap density of the material.

In a graduated cylinder, the capacity of the packing can be measured.

The volume of each pore in the powder sample is taken into account while calculating bulk density. A graduated measuring cylinder containing a powder.

### BENEFITS AND PRECAUTION

#### BENEFITS OF APPLYING FACE PACK

1. Nourishes the skin. Fruit face packs supply essential nutrients to skin
2. Helps to reduce, acne, pimple, scars and marks depending on its herbal ingredients
3. Face packs usually remove dead cells of skin
4. These face masks provide a soothing and relaxing effect on skin



5. They help to restore the lost shine and glow of skin in short span of time
6. Regular use of natural face masks bring glow to skin, improve skin texture and complex
7. The harmful effects of pollution and harsh climates can be effectively combated with judicious use of face pack.
8. They help to prevent premature aging of skin
9. Formation of wrinkles, fine lines and sagging of skin can be effectively controlled by using natural face pack
10. Natural face packs make the skin look young and healthy

Face packs which are recommended for acne, pimple, black heads usually control the over discharge of sebum from sebaceous glands and remove the harmful bacteria inside acne lesion.

The scars and marks of skin can be reduced by adding fine powder of sandal, rose petals and orange lentils with acne face pack.

### PRECAUTIONS AFTER APPLYING FACE PACK

- a. Select the face pack according to your skin type. Take opinion of natural therapist or concerned skin expert before applying face pack.
- b. The face pack should not be left on face more than 15 to 20 minutes. Keeping for very long time may result in formation of wrinkles, sagging of skin and
- c. Enlargement of open pores.
- d. Apply face pack once in a week. Don't try to peel or scratch the dried face pack. This may harm underlying skin
- e. Spray water (which is at room temperature) on face before removing dried face pack. After removing the mask, roll an ice cube on facial skin. This helps to close open pores and tightens skin. It also tones and soothes the skin
- f. Do not scrub face vigorously. This may result in eruption of pimples and dark spots. Stay away from heat when you have applied face pack
- g. Avoid applying face pack near "eye zone". The skin around eye is very delicate. The process of removing face pack may damage skin around eyes.

### RESULT

#### • Organoleptic test

To ensure that the credited face pack was outstanding, the following evaluation criteria were used for organoleptic assessment.

The evaluation of a herbal face pack for organoleptic criteria is shown in Table 2

The prepared mixture was brown in colour.

The aroma of the finished mixture was pleasant and well tolerated which is ideal for cosmetic applications.

Sr.No	Parameter	Observation
1	Colure	Cream colure
2	Odour	Pleasant
3	Apperance	Smooth, fine
4	Texture	Fine

Table No. 2

#### • Biological Test

##### 1) An Irritation Test

An irritation test was performed on the skin produced by herbal face pack, and the results are shown in Table No. 3

The recipe for the herbal face pack during irritancy studies, did not exhibit any signs of redness, swelling, irritation.

Sr.No	Parameter	Observation
1	Irritation	Nil
2	Redness	Nil
3	Swelling	Nil
4	Photo anynyonce	Without Sensitivity

Table No. 3

As a result of the herbals in their product, the irritancy test for irritancy, redness, swelling, and photo anynyonce.

The proteins in the skin were discovered to be compatible with natural forms without the use of chemicals.





### 3) Rheological Table

Rheological results supported the flow characteristics of natural face mask. It was discovered to be Naturally free-flowing and non-sticky.

Sr no	Parameter	Observation
1	Volume density	0.49 g/ml
2	Density tapped	0.58 g/ml
3	Posing angle	26.56

**Table No. 4**

**Observation:** the face pack was discovered to be free flowing and non sticky in nature, rheological Data supported the flow characteristics of the product.

The outcomes demonstrated that the formulation was stable in every way.

### 3) Stability Studies :

A stability study of the prepared herbal face pack was conducted, and the results are shown in Table. No.5

No colour variation, smell, feel, smoothness, and pH were observed.

Sr No.	Parameter	Observation
1	Room temperature	35
2	Colour	Cream colour
3	Odour	Unpleasant
4	Tincture	Fine
5	Smoothness	Smooth
6	PH	6

**Table No.5**

Over the course of a month, stability tests conducted at various temperatures proved the face's inert state in terms of pH, colour, odour, appearance, and texture.

## DISCUSSION

Herbal face packs or masks are used to stimulate blood circulation, rejuvenates the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. The advantage of herbal cosmetics is their nontoxic nature, reduce the allergic reactions and time tested usefulness of many ingredients. Formulation was creamish yellow in color and had semisolid consistency.

The formulation was found homogenous, easily washable and also had very slightly alkaline pH which were compatible with normal skin physiology. Angle of repose is a characteristic related to inter particulate friction or resistance to the movement between the particles. The flow property has been classified as per limit of Indian Pharmacopoeia in terms of the angle of repose. The results of all these parameters indicated that the dried powder of combined form possess good flow properties and good packing ability. Consequently, it exhibited good flow properties for formulation to achieve soft, fresh and clean formulation.

## CONCLUSION

The combined powders' dried form demonstrated strong flow characteristics, making it ideal for just a face pack. An organoleptic analysis revealed that the pack was smooth and has a good smell.

The pack's flow characteristics were supported by rheological studies, which revealed that it was naturally free-flowing and non-sticky. No irritation existed, and the formulation was steady in all respects. Stability testing showed that the pack was inert. A herbal face pack was applied to refresh the muscles, keep the skin elastic, sweep away stuck-on debris, and enhance blood flow. Herbal-based cosmetics have the advantage of being nontoxic. It nourishes the skin on the face. These face pack gives the cooling effect. They do so in the quickest possible time to restore the skin's natural radiance.

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