

## Formulation and Evaluation of Poly Herbal Face Pack

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### ABSTRACT

The objective this work is to formulate and evaluate a polyherbal face pack for cosmetic purpose from herbal ingredients. Multani mitti, Sandalwood powder, Neem powder, Rose petal powder, Orange peel powder, Nutmeg, and aloe vera powder were procured from the local market and were dried, powdered, then passed through sieve, mixed geometrically and evaluated for its organoleptic and physico-chemical, general powder, microscopical characters and chemical evaluation.. The dried powder of combined form had passable flow property which is suitable for a face pack. The microscopical characters of dried powder of combined form were noted 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 non toxic nature, reduce the allergic reactions and time tested usefulness of many ingredients. Thus in the present work, we found good properties for the face packs and further optimization studies are required on this study to find the useful benefits of face packs on human use as cosmetic product.

**Keywords:** Polyherbal face pack, Herbal cosmetics, Formulation and evaluation, Formulation and evaluation, Physicochemical characterization

### INTRODUCTION

Everybody wants to get fair and charming skin. Now a day, Acne, black head, pimples, dark circle are common among youngsters and person who suffers from it. According to Ayurveda, Skin problems are normally due to impurities in blood. Accumulated toxins in the blood during improper food and lifestyle are causing skin related diseases. Various herbs, medicines are described in Ayurveda for blood purification. [2] Cosmetics are generally accessible goods that are intended to beautify, clean, and enhance the beauty of the skin [3,4]. The face packs which are mentioned in ayurveda help women to get rid of wrinkles, dark circles, pimples and acne. Herbal face packs increase the fairness and smoothness of skin. There are various kinds of face packs described in Ayurveda which have nourishing, healing, cleaning, astringent and antiseptic properties Cosmetics are commercially available products that are used to improve the appearance of the skin by action of cleansing, beautifying, promoting attractiveness. In ayurveda, the herbal paste is called as “mukha lepa” used for as a facial therapy. This

herbal paste smeared on face to treat acne, pimple, scars, marks and pigments. [5] Face pack is the smooth powder which is used for facial application. These preparations are applied on the face in the form of liquid or pastes and allowed to dry and set to form film giving tightening, strengthening and cleansing effect to the skin. They are usually left on the skin for ten to twenty-five minutes to allow all the water to evaporate, the resulting film thus contracts and hardens and can easily be removed. The warmth and tightening effect produced by application of face pack produces the stimulating sensation of a rejuvenated face, while the colloidal and adsorption clays used in these preparations remove the dirt and grease from the skin of the face. When the applied face pack is eventually removed skin debris and deposited dirt gets removed with it. [6]. Good herbal face pack should provide essential nutrients to the skin in the form of a free-flowing powder that can be applied to the face for external use. To give the needed nutrients it should penetrate into the subcutaneous tissue. Every type of skin is specific for the requirement of skin pack. Different types of packs are now available for oily, normal and dry skin types. Face packs are used to

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improve the skin's fairness and smoothness. It helps to get rid of wrinkles, pimples, acne and dark bags under the eyes. [7] 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 [8].

#### Advantages:

1. They help to restore the absorption of light and light skin in a short time.
2. Daily use of natural masks brightens skin, improves skin tone and inflammation.
3. Face packs usually remove dead cells of skin.
4. They help to prevent premature aging of skin.
5. Nourishes the skin fruit face packs supply essential nutrients to skin.
6. They help to restore the lost shine and glow of skin in short span of time.

#### Disadvantage:

1. One Face Pack should not be used on all faces:
2. Since all parts of our face do not have the same skin type.
3. Sometimes it takes a long time for facial packing to dry.
4. It is difficult to apply a facial pack to a person with dry skin.

#### Benefits Of Applying Face Pack:

1. Helps to reduce acne, pimples, scars and marks depending on its herbal ingredients.
2. The scars and marks of skin can be reduced by adding fine powder of sandal and orange lentils with acne face pack.

3. These face packs masks provides a soothing and relaxing effect on skin.
4. Regular use of natural face packs brings glow to skin, improve skin texture and complication.
5. The harmful effects of pollution and harsh climates can be effectively combated with judicious use of face packs.
6. Formation of wrinkles, fine lines and aging of skin can be effectively controlled by using natural face packs.
7. Natural face packs made the skin look young and healthy [9]

#### Precautions to be Taken While Applying Face Pack

1. Select the face pack according to your skin type. Take opinion of natural therapist or
2. concerned skin expert before applying face pack.
3. 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 enlargement of open pores.
4. Apply face pack once in a week.
5. Don't try to peel or scratch the dried face pack. This may harm underlying skin. 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.
6. 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.
7. Avoid applying face pack near "eye zone" [10]

#### Ingredients and it's scientific name:

**Table No. 1: Ingredients and it's scientific name**

Sr.No.	Common Name	Scientefic Name
1	Multani Mitti	Calcium bentonite
2	Turmeric	Curcuma longa
3	Aloe vera	Aloe barbadensis
4	Sandalwood	Santulum alba
5	Neem	Azadirachta indica
6	Nutmeg	Myristica fragrans
7	Rose petals	Rosa rubiginosa



**Fig. No.1: Ingredients of Polyherbal face pack**

### Information of Ingredients:

#### 1. Multani Mitti:

**Scientific name:** Aloe barbadensis.

**Synonym:** aloe, kumari.

**Family:** Asphodelaceae.

**Chemical constitute:** Amino acid, vitamins, lipids, sterols, tannin and enzymes, phenol, saponin, anthraquinones.

#### Uses:

- 1) Moisturizing agent delivers smoothening property to the skin.
- 2) Remove dead skin cells.
- 3) Treating acne, sunburn.
- 4) Rights ageing.



**Fig. no.2: Multani Mitti**

Calcium bentonite helps skin by different ways like diminishing pore sizes, removing blackheads and whiteheads fading freckles, soothing sunburns, cleansing skin, improving blood circulation, complexion, reducing acne and blemishes and gives a glowing effect to a skin as they contain healthy nutrients. Multani mitti is rich in magnesium chloride. [12]

#### 2. Turmeric:

**Scientific name:** Curcuma longa.

**Synonym:** Turmeric root, wild curcuma.

**Family:** Zingiberaceae.

**Active constitute:** Curcumin I, Curcumin II, III, dihydrocurcumin, 3-6% polyphenolic compounds, curcuminoid's, Demethoxy curcumin and bisdemethoxy curcumin.

#### Uses:

1. Antibacterial activity.
2. Antifungal activity
3. Also adds glow to the skin.



**Fig. no.3: Turmeric**

Turmeric is mainly used to rejuvenates the skin. It delays the signs of aging like wrinkles and also possesses other properties like antibacterial, antiseptic and anti-inflammatory. It is best sources of blood purifier. It is effective in treatment of acene due to its antiseptic and antibacterial properties that fight pimples and breakouts to provide a youthful glow to your skin. It also reduce the oil secretion by the sebaceous gland. [13]

#### **4. Aloe Vera:**

**Scientific name:** Aloe barbadensis.

**Synonym:** aloe, kumari.



**Fig. no.4: Aloe vera**

Aloe Vera is a great moisturizing intended for a skin. Aloe Vera rejuvenates skin, hydrates this and keeps skin layer looking fresh all the time. Aloe Vera has anti-microbial activity rendering it ideal to deal with acene and pimples. Aloe Vera powder contains several nutrients like glycerin, sodium palmate, sodium carbonate, sodium pain kemelate, sorbital, etc[14].

#### **5. Sandal Wood:**

**Family;** Asphodelaceae.

**Chemical constitute:** Amino acid, vitamins, lipids, sterols, tannin and enzymes, phenol, saponin, antithraquinones.

**Uses:**

1. Moisturizing agent delivers smoothening property to the skin.
2. Remove dead skin cells.
3. Treating acene, sunburn.
4. Rights ageing.

**Scientific name:** Santalum alba. Synonym: Sandal, Indian sandalwood oil. Family: Santalaceae.

**Chemical constitute:** 90% Sesquiterpenic alcohols of which 50-60% is the tricyclic alpha- santalol, betasantalol comprises 20-25%.

**Uses:**

1. Anti-tanning property.
2. Anti-aging property.

3. Skin softening effect.
4. Pimple and acene treatment.
5. Clear complexation.



**Fig. no.5: Sandalwood**

Sandalwood has an anti-tanning and anti-aging property. It also helps in many ways like toning effect, emollient, antibacterial property, cooling astringent property, soothing and healing property. [15.16]

#### **6. Neem:**

**Biological Source:** Azadirachta indica

**Family:** Meliaceae.

**Geographical source:** It is found in India, Pakistan, Sri Lanka, Malaya, Indonesia, Japan, Tropical region of Australia and Africa. In India, it is found in Uttar Pradesh, Maharashtra, Tamil Nadu, Rajasthan, and M.P.



**Fig. no.6: Neem**

Neem (Azadirachta Indica) has anti- fungal and anti-bacterial properties, rich in Vitamin C and also in sensitive or oily skin. It also helps in treating other skin problems such as blackheads, pigmentation, dullness and pre-mature ageing. It is also having anti-inflammatory, antiseptic and highly beneficial for oily and acne prone skin. An anti-acne effect is due to antimicrobial, anti-inflammatory and anti-oxidant activities of various chemical constituents [17].

#### **7. Nutmeg:**

**Nutmeg biological source:** - Obtained from kernel of dried ripe seeds of Myristica fragrans.

**Family:** - Myristicaceae.

**Chemical constituents:** - Borneol, Clemicine, Myristicin, Geraniol, Camphene & Dipentene

**Uses:** - Carminative, Stimulant, Aromatic, Stomachic, Induce abortion & Narcotic action [18]. Nutmeg's analgesic, anti-inflammatory, antiseptic, and antibacterial properties are well- known. It helps to reduce fine lines, wrinkles, and other signs of ageing. It also helps to reduce and hide acne scars [19].





**Fig. no.7: Nutmeg**

#### **8. Orange peel:**

**Synonyms** - Citrus sinensis (sweet orange) Citrus aurantium (bitter orange)

**Family:** - Rutaceae

**Genus:** - Citrus Active

**constituents:** Limonene (90%), Citral (4%), Vitamin C, Pectin, Hesperidine, Aurantimaricin Aurantimaric acid, Octanal (39%), Decanal (42%), Monoterpene (91%) and contains no less than 2.5% Volatile oil

#### **Uses: -**

1. Protects skin from free radical damage.
2. Heals dry, flaky, and itchy skin.
3. Hydrates dehydrates skin.
4. Brings back moisture.
5. Prevents oxidative stress in skin cells, for youthful, glowing skin.
6. Helps in renewing worn-out cells
7. Works as a skin lightening.
8. Removes tan.
9. Loaded with anti- ageing properties.
10. Promotes healthy skin glow



**Fig.no.8: Orange Peel**

#### **Rose Petal:**

**Botanical name:** Rosa rubiginosa

**Family:** Rosaceae

**Chemical Constituents:** carboxylic acid, myrcene, vitamin C, kaempferol, and quercetin

**Rose petals use:** Rose petals powder is rich with the antibacterial properties, all with the positive effects of vitamins K, C and B. It also has good amount of antioxidants [10]



**Fig. no. 9: Rose Petal**

### **Method of Preparation:**

#### **Formulation: -**

Raw material were gathered from market and home. The natural ingredients were shed dried, powdered and sieved using # 44 mesh, weighed accurately and mixed. For the evaluation of various parameters, the formulated face pack was stored in an air tight container.

#### **Procedure:**

1. Weigh accurately all herbal powder such as Orange peel powder, Chandan powder, Neem powder and Tomato powder.

2. Mix them together to form a uniform mixture with the help of mortar pestle.
3. Weigh accurately Rice powder, Multani Mitti, Shalmali, Turmeric, Masoor dal, Sesame seed and mix them together to form a uniform mixture.
4. In this mixture, add prepared herbal drug and triturate to form a uniform drug powder of face.

#### **Procedure of Herbal Face Pack Application:**

Take prepared face pack powder in a bowl as per the requirement and add rose water to mix. Mix well and apply over the facial skin. Cover the acne and blemishes spots too. Kept as it is for complete drying for 20 to 25 min and then wash with cold water.



**Fig. No. 10: Applied Herbal face pack**

### **Evaluation of Face Pack:**

Following evaluation parameters were preferred to ensure superiority of prepared face pack

#### **1. Organoleptic evaluation:**

The organoleptic parameters include its nature, color, odor, feel and consistency which were evaluated manually for its nature, odor, feel and consistency

which were evaluated manually for its physical properties.

#### **2. Irritancy test:**

Mark an area of 1sq.cm on the left hand dorsal surface. A definite quantity of prepared face packs was applied to the specified area and time was noted. Irritancy, erythema, edema was checked if any for regular intervals up to 24 hrs and reported.

### 3. Determination of rheological properties of the prepared pack:

Physical parameters like untapped (Bulk) density, tapped density, angle of repose, Hausner's ratio and Carr's index were observed and calculated for the formulation. Bulk density refers to the adjustment of particles and granules to pack themselves collectively. The Hausner's ratio is calculated as  $D/D'$  where  $D$  is the tapped density and  $D'$  the bulk density, Carr's index helps to measure powder flow from bulk density.

- **Angle of repose:**

It is defined as the maximum angle in between the surface of pile of powder to the horizontal flow

- **Bulk density flow:**

Density is the ratio between the given mass of a powder and its bulk volume. Required amount of the powder is dried and filled in 50 ml measuring cylinder up to 50 ml mark. Then the cylinder is dropped onto a hard wood 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 reported to get average values. The bulk density is calculated by using the below given formula.

Bulk density = Volume/mass.

- **Tapped density:**

Tapped density is an increased bulk density attained after mechanically tapping a container containing the powder volume or mass the measuring cylinder or vessel is mechanically tapped for 1 min and volume or mass reading are taken until little further volume or mass change was observed. It was expressed in gram per cubic centimeter ( $\text{g/cm}^3$ ).

### 4. pH

Weigh the test sample (5 gm) and place it in a flask. Fill the flask with 100 ml distilled water, close it, and set it aside in the shade for a minute. Allow one hour for it to settle. Transfer an adequate amount of the clear aqueous solution from the flask into the beaker to calibrate the pH meter. Calculate the pH level and report it.

### 5. Wash ability:

This is the common method for checking the wash ability of the formulation. The formulation was applied on the skin and then ease and extend of washing with water were checked manually by using 1 litre of water is used to remove all content of the formulations were applied on the surface.

### 6. Stability Studies:

Stability testing of prepared formulation was conducted at room temperature were evaluated for physical parameters like color, odour, pH, consistency and feel.

### RESULT:

The different formulations of face pack was prepared and evaluated for physical parameters. The flow property parameters showed free flowing properties.

**Organoleptic evaluation:** The color of formulations were different due to variation in composition of content. The order of prepared formulation was good acceptable which is desirable as cosmetic formulations. Organoleptic evaluation showed that the pack is smooth and pleasant-smelling powder

**Table No. 2: Organoleptic evaluation**

S. No.	Parameter	Observations
1	Colour	Brown Colour
2	Odour	Pleasant
3	Appearance	Smooth & fine
4	Texture	Fine
5	Smoothness	Smooth



**Irritancy Test:** Irritancy test showed negative results for irritancy, redness and swelling as the herbals in their natural form without addition of chemicals were found to be compatible with the skin proteins.

**Table No. 3 Irritancy Test**

S. No.	Parameter	Observations
1	Irritation	No
2	Redness	No
3	Swelling	No

**pH:**

pH of the polyherbal face pack is found to be near about 6.92

The result of stability were shown in the following table, no change in colour, odour, texture and smoothness was observed at mentioned conditions of stability except pH.

**Stability Studies:****Table No. 4: Stability Studies**

S. No.	Parameter	Room Temperature
1	Colour	No change
2	Odour	No change
3	pH	6.92±0.12
4	Texture	Fine
5	Smoothness	Smooth

**CONCLUSION:**

Natural remedies are the best treatment of any disease, because these are safer than the synthetic ones. At a time, people need treatment for various skin problems without side effects, so natural remedies are best option for this. The herbal face pack is used to rejuvenate the muscles, maintain the elasticity of the skin, remove adhered dirt particles and improve the blood circulation. It is used in the treatment of acne, pimple, scars, and marks, and provides a soothing, calming and cooling effect on the skin. The natural face packs are used for controlling premature aging to the skin, wrinkles, fine lines and loosing of skin. It can provide natural face after using this. It is a very good combination of herbal face pack containing naturally available ingredients like multanimitti, turmeric, aloe vera, sandalwood, orange peel, neem and nutmeg.

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