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### Formulation and Evaluation of Herbal Face Pack

**Rani R. Shidore<sup>1</sup>, Pranjali A. Shinde<sup>2</sup>, Prof. Sushma T. Nakhate<sup>3</sup>, Dr. Tushar T. Shelke<sup>4</sup>**

<sup>1,2</sup> Student, <sup>3</sup> Guided, <sup>4</sup> Principal

Genba Sopanrao Moze College of Pharmacy

#### ABSTRACT

The primary goal of scientists "Across the globe" in the twenty-first century has been to create environmentally friendly products. In today's world, herbal face packs made with safe and more effective than synthetic alternatives. This study promotes using herbal face packs made with safe, natural ingredients instead of synthetic ones. This research aims to formulate and evaluate herbal face packs emphasizing the advantages of using herbal ingredients to address skincare issues. Herbal cosmetics have few adverse effects and are safe for regular usages. The most common skin problems are acne, redness, wrinkles, dark circles, pimples, and dry, dead skin.

Herbal cosmetics like face packs, washes, and lotions can help reduce these issues. This study focused on creating a powder-based herbal face pack using natural ingredients such as sandalwood, rose petals, Multani Mitti, grape powder, neem powder, nutmeg powder, Turmeric, and Mulethi Rich in vitamin A, E, and C grape powder has been utilized as a key element in natural or herbal cosmetics because of its potential to boost collagen production in the body and treat wrinkles and acne. The evaluation parameter indicate that the current face pack is safe to use.

Keywords: face pack, natural product, washing, moisturizing, softening, and herbal cosmetics

#### INTRODUCTION

People have known since ancient times that using plants can result in skin that is beautiful, healthy, and shining. Products for cleansing, beautifying, and promoting an active appearance are called cosmetics. Everyone aspires to have attractive, pale skin. Acne, blackheads, pimples, and dark circles are frequent among anyone with acne, even children. Due to poor diet and lifestyle skin-related disorders occur by toxins that have accumulated in the blood. One important component of the body that serves as a mirror and reflects a person's health is the skin of the face, the skin needs a balanced diet that includes lipids, carbs, and amino acids to stay clean, smooth, and healthy. Women in the past extremely self-conscious about their appearance and took extra care of their particular skin type. People still use natural treatments today, particularly in rural and mountainous areas, such as plant extracts for cosmetic purpose like neem, aloe vera, orange peel, rose, and some for blood cleansing, as well as herbs like sandalwood, turmeric, and rock salts. it's lovely. Additives like face packs provide a few more advantages. It reduce wrinkles, acne, pimples and provide smoothness, fairness to the skin. Additionally, it helps someone feel more confident.



Dark Circles



Pimples

#### TYPES OF FACIAL SKIN ISSUE

1. Dark Circles
2. Acne And Pimples
3. Blackheads

## FACE PACK

Face pack smooth powders are mostly applied to the skin of the face. In the form of liquid or semisolid paste Usually. These preparations are left to stand for 20 to 25 minutes to allow water to evaporate from the formulation, which makes it easier to remove the film. To enable water evaporation from the formulation, which can be easily removed as a film, these preparations are usually left to sit for 20 to 25 minutes. The greatest formulas for protecting our faces from the sun are natural ones.

Here are some natural face pack examples. The greatest face pack for glowing skin may be made by combining honey and milk. The natural honey face pack has a remarkable antibacterial effect that keeps the face free of acne and pimples. It also helps to moisturize extremely dry skin and gives it a natural glow.

The most useful ingredients for face packs, face wash, and face cream are natural products with six abundant sources of vitamin C, lemon is a popular bleaching agent that helps to keep skin healthy by eliminating dead skin cells and other contaminants.

Additionally, it keeps skin free from cracking, especially in the winter, and it protects age spots and discolorations by mildly whitening the skin. Because they boost collagen formation, multivitamins, particularly E, A and D, are abundant in almonds and act as natural antioxidants that improve skin.

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## BENEFITS

### The Advantages Of Using Face Pack

1. The skin should be nourished by it. A lot of fruit face packs give the skin vital nutrients.
2. Herbal face packs can help diminish scars, pimples, and black or white heads on the skin.
3. These formulations are used to remove harmful germs from skin blemishes. For instance, rose water, orange peel, fine powder, etc. face packs are cosmetics products that can remove dead skin cells.

After being applied, these products give the face calming and emollient effect. The face pack provides immediate protection from dangerous contaminants once it is applied.

4. Using herbal face packs daily enhances the texture of the skin and gives it a glow.
5. A herbal face pack promotes healthy, youthful skin.
6. Choosing the appropriate face pack for your skin type and consulting a skin specialist before putting it on your skin are also crucial.
7. Face pack should only be applied to the skin for 15 to 20 minutes at most; prolonged use can result in wrinkles and aging.

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## MATERIAL AND METHODS



Fig. No.1: Ingredients

Rose petal, Multani mitti, Grape powder, Neem, Sandalwood, Turmeric, Nutmeg, and Mulethi are all herbal constituents used in this work. Were collected in dried powder form from the local market of Wagholi and verified at G. S. Moze college of pharmacy, Wagholi, Pune.

### Rose Petal Mulethi

#### 1. Sandalwood (Santalum Album)

Synonym - Lignum Santali, yellow sandalwood

Family – santalaceae SandalwoodTurmeric Nutmeg

Biological Source – Heartwood from Santalum album's stem and roots

Chemical Constituents - Fatty Acids: palmitic acid, oleic acid Amino Acids and Proteins,

Tannins and Flavonoids, Vitamins and Minerals



Fig. No. 2: Sandalwood Powder

In Indian tradition, sandalwood is the most precious tree, used for a variety of uses. Its wood is the most expensive, and it is also famed for its scent. Sandalwood is primarily used in a variety of products, including wood, oil, powder, and more. Oil is used in pharmaceutical formulations, cosmetics, and fragrances.

Sandalwood has a sweet, ambrosial scent and is employed in a good deal of traditional deodorant and body spray formulations. This is used to treat a number of original and systemic illness, including chickenpox, diarrhea, and poisoning.

#### 2. Rose Petal (Rosa centifolia)

Synonym- Cabbage rose.

Family – Rosaceae

Biological Source- Dried rose petals.

Chemical Constituent – It has high-quality vitamin C, crude fibers, iron, protein content geranyl acetate, geraniol, linalool, and benzyl alcohol.



Fig. No. 3 : Rose Petal Powder

Vitamin K, C, and B are included in rose petal powder, which also has a high concentration of antioxidants and antibacterial qualities.

#### 3. Multani Mitthi (Calcium bentonite)

Synonym- Fuller's earth, Bleaching clay

Chemical Formula -  $[(MgAl)_5Si_8O_{22}(OH)_4 \cdot 4H_2O]$ .

Chemical Constituents – Hydrated aluminum silicates, magnesium chloride, and calcium bentonite and has a composition similar to bentonite clay.



**Fig.No. 4: Multani Mitti**

Because they contain healthy nutrients, Multani mitti help the skin in numerous ways, including reducing pore sizes, removing pores and blackheads, fading dots, soothing sunburns, cleansing the skin, improve blood circulation and complexion, remove acne and scars, and giving the skin healthy glowing appearance.

Multani mitti will help to make your skin radiant and excellent for aggravated and irritated skin, Multani mitti is rich in magnesium chloride.

#### **4. Grapes Powder (*Vitis vinifera*)**

**Synonym-** Wine grape

**Family-** Vitaceae

**Biological Source-** Fresh and dried fruits of *Vitis vinifera*

**Chemical Constituents-** It contains acids, Sugars, Phenolic compounds, flavonoids, anthocyanins, tannins, lipids



**Fig. No. 5: Red grape Powder**

With its moisturizing, anti-aging, and skin brightening qualities, red grape powder which is rich in antioxidants, vitamin A, E, C and resveratrol, can be a useful addition to herbal face pack.

Skin health and anti-aging :- these involves lessening the visibility of age spots, fine lines, and wrinkles.

Furthermore, by encouraging the synthesis of collagen, a protein necessary for keeping skin firm and youthful-looking, grape powder may increase the elasticity of the skin.

#### **5. Neem Powder (*Azadirachta indica*)**

**Synonym-** Melia Azadirachta

**Family-** Meliaceae

**Biological Source-** Fresh or dried leaves.

**Chemical Constituents-** leaves contain ingredients such as Nimbin, nimbanene, 6desacetylnimbinene, nimbandiol



**Fig. No. 6: Neem Powder**

Neem is a tropical tree native to azadirachita, India, that is a member of the Meliaceae family. Mahogany is connected to evergreen plants. The Indian tree known as Enemies is also grown in a number of other nations, including Burma, South Asia, and West Africa. 21 different chemical moieties, including ascorbic acid, 17 hydroxyazadiradione, nimbin, and nimbandiol, are found in neem leaves.

Neem powder offers numerous therapeutic benefits, including antibacterial, anti-inflammatory, and anti-cancer effects. Because of its antibacterial and anti-inflammatory qualities, neem is used as an anti-acne treatment for oily and acne-prone skin. Additionally, the powder helps prevent and heal pimples on the face and functions as an antioxidant. Neem has the ability to purify the blood and is useful for this reason

#### **6. Turmeric (*Curcuma longa*)**

**Synonym**-Indian saffron, Haldi

**Family**- Zingiberaceae

**Biological Source**- Dried rhizomes

**Chemical Constituents**- Turmeric contains about 5% curcumanoids. Curcumanoid contains curcumine-I, curcumine-II, curcumine-III. Turmeric contains about 5% volatile oil.



**Fig. No. 7 : Turmeric**

It belongs to the zingiberaceae family and is a medicinal plant “that has” the botanical name *curcuma longa*. The plant is used to treat a wide range of acute and chronic illness because of its diverse biological activity. Turmeric has been utilized treating both localized and synthetic disease since ancient times.

Turmeric also having an anti-inflammatory property. It is also a potent antioxidant that can neutralize free radicals and may lessen and prevent damage from scavenging. The herb turmeric will be included in our study because of its many benefits, including its ability to heal wounds, purify blood, and act as an antibacterial. Turmeric contains a variety of phytoconstituents, including terpenoids,

Turmeric brought on by blood impurness. Terpenoids are important compounds that make up 70-72% of these helps to preserve the radiance of the skin, lessen wrinkles and other signs of aging, treat pigmentation, and enhance the general health of the skin.

#### **7. Nutmeg Powder (*Myristica fragrans*)**

**Synonym**- Myristica, Nux Moschata

**Family**- Myristicaceae

**Biological Source**- Dried kernels of the seeds of myristica fragrans.

**Chemical Constituents**- Bomeol, Clemicine, Myristicin, Geraniol



**Fig. No. 8 : Nutmeg Powder**

Nutmeg is widely recognized for its analgesic, anti-inflammatory, antiseptic, and antibacterial properties. It aids in reducing wrinkles, fine lines, and other signs of aging. Additionally, it helps diminish acne scars and makes them less noticeable. Nutmeg

#### **8. Mulethi (*Glycyrrhiza glabra*)**

**Synonym** - Liquorice, Yashtimadhu

**Family** – Fabaceae

**Biological Source** – Root of *Glycyrrhiza glabra* plant

**Chemical Constitution** – glycyrrhizin, lico-chalcone A and dehydroglyasperin



**Fig. No. 9 : Mulethi**

In herbal face packs, Mulethi(licorice) powder can be used to produce a glowing complexion, lessen inflammation and hyperpigmentation, and brighten and level out skin tone.

#### **Methods Of Preparation**

1. All the natural ingredients weighed by using weighing balance.
2. One by one all the natural ingredients sieved using sieve no. # 120.
3. To get a consistent mixture, thoroughly mix all the ingredients.
4. A self-sealing polyethylene bag containing the prepared face pack was prominently labelled. It is set aside for upcoming research.



**Fig. No. 10: Optimized Face Pack**

**Table 2: Composition of Face Pack**

Sr. No	Name Of Ingredients	Scientific Name	F1	F2	F3
1	Sandalwood	Santalum Album	5gm	<b>6gm</b>	4gm
2	Rose Petal	Rosa Centifolia	4gm	<b>7gm</b>	4gm
3	Multani Mitti	Calcium Bentonite	3gm	<b>4gm</b>	8gm
4	Red Grape Powder	Vitis Vinifera	4gm	<b>4gm</b>	5gm

5	Neem Powder	Azadirachta Indica	3gm	<b>2gm</b>	2gm
6	Turmeric	Curcuma Longa	2gm	<b>2gm</b>	3gm
7	Nutmeg	Myristica fragrans	2gm	<b>2gm</b>	2gm
8	Mulethi	Glycyrrhiza glabra	3gm	<b>3gm</b>	5gm

### Procedure For Face Pack Application

Applying the face pack involves taking the required amount of face pack in a bowl and mixing it with enough rose water.

Make a paste and evenly apply the paste to the face, avoiding eyes, and lips.

After applying, wait for 15-20 minutes, to make sure that it is completely dry, then wash it with cold water and cotton swab.



**Fig. No. 11 : Result Before And After Face Pack Application**

### Observation And Evaluation

The following tests were performed to determine the effectiveness of the herbal face pack.

#### 1. Organoleptic Evaluation

The Organoleptic evaluation is also called organoleptic or physical observation which includes observing its color, odor, taste, smell, and feeling which studies to evaluate its physical character.

#### 2. Physicochemical Evaluation

Physicochemical parameters were resolute, counting the determination of ash value, pH, and moisture content.

#### 3 .Physical Evaluation

The particle size was tested Using microscopy techniques, The flow property of the dried powder of combined form was evaluated by performing the Angle of Repose by funnel method, bulk density, Tapped density and grittiness by physical touching.

#### 4 .Phytochemical Evaluation

The aqueous extract of the herbal face pack was evaluated for various phyto-constituents following standard procedures.

#### 5. Irritancy Test

The Irritancy Test is performed to determine if a product tends to affect skin irritation when used by consumers. By penetrating through the skin's outer layer, several cosmetic items might irritate the skin.

## Result and Discussion

### 1. Organoleptic Evaluation-

The various organoleptic properties like as- color, odour, consistency, feel and nature that were evaluated by physically consideration. (Evaluate by touching with hands). Table, 3

**Table 3. Organoleptic Evaluation**

Sr. No.	Parameters	F1	F2	F3
1	Appearance	Powder(Free/Easily Flowing)	Powder (Free/Easily Flowing)	Powder (Free/Easily Flowing)
2	odour	Pleasant ,	Slight Pleasant	Pleasant ,
3	Colour	Slight Pinkish, Reddish	Slight Pinkish	Slight Pinkish , Reddish
4	Texture	Fine	Fine	Fine
5	Smoothness	Smooth	Smooth	Smooth

## 2 Physicochemical Evaluation- :

### 2.1. Determination Of Moisture Content-:

Fill a weighted flat and thin porcelain dish 2 gm with the powdered drugs. Dry at 100°C or 105°C in the oven until two successive weighings deviate by not more than 0.5 mg. Allow to cool in desiccators before weighing. We observe the slightly moisture loss in our all formulation, moisture content was within limit. This value of moisture content was indicated the powder was hygroscopic in nature. Result are shown in table no.4

### 2.2. Ash Value- :

The ash value is used to figure out how much inorganic matter is present in a plant. A silicon plate containing around 2 gm of powder medication was previously burned and weighed. Temperature was raised by progressively raising the heat until it reached a reddish color.

### 2.3. PH- :

The result of product stability were shown in Table 2. We were observing the pH with a suitable pH meter at 40oC. Results are mention in table no.4

**Table 4. Physicochemical Evaluation**

Sr. No.	Parameter	F1	F2	F3
1.	Ash Content	7.5 %	8.7%	6.5 %
2.	PH	6.1	5.7	6.4
3.	Moisture Content	10 %	12 %	12 %

## 3. Physical Evaluation -

The herbal face pack was evaluated by physical parameters, result mentioned in table no. 5. The size of any particle is also affect the some properties like as spread ability, grittiness, flow property etc. It's very important parameters for making a best facial formulation because the large and coarse powder being fraction on face skin. The particle size, Angle of Repose, Bulk Density and Tapped Density of our effective face pack (F2) was an average range b/w 22-25µm, 35.38 , 0.48gm/ml and free from of grittiness. Results are mention in table no. 5

**Table 5. Physical Evaluation**

Sr. No.	Parameters	F1	F2	F3
1	Particle size (mm)	26-30 mm	22-30mm	24-30mm
2	Angle of Repose	35.27 °	39.68 °	31.98 °
3	Bulk Density	0.43 gm/ml	0.48 gm/ml	0.52 gm/ml
4	Tapped Density	0.63 gm/ml	0.56 gm/ml	0.61 gm/ml

## 4. Phytochemical Evaluation-

The herbal face pack was evaluated through phytochemical investigation that show in table 4. This evaluation was useful for the determination of phytoconstituents that present in our preparation. We found an essential components like as- Alkaloids, Flavonoids, Tannins and Volatiles oils. These are all phytoconstituents were very important for the glowing of skin. Result are mention in table no. 6

**Table 6. Phytochemical Evaluation**

Sr. No.	Phytoconstituents	Observations
1	Alkaloids	+ (Present)
2	Tannins	+
3	Flavonoids	+
4	Volatile Oils	+

### 1. Irritancy Test-

The result mentioned in table no.7 All 3 formulations were shown and not cause any type of irritation and itching. F2 formulation was show a better effect compares to F3. Result are mentions below

**Table 7. Irritancy Test**

Sr No.	Parameter	Observation
1	Redness	No
2	Irritation	No
3	Swelling	No

### 2. Stability Studies

**Table 8. Stability Studies**

Sr. No.	Parameter	Room Temperature	40°C
1	Color	No change	No Change
2	Odour	No change	No change
3	PH	6.5	5.7
4	Texture	Fine	Fine
5	Smoothness	Smooth	Smooth

## Conclusion

The general consensus is that natural and ayurvedic remedies are safer and have fewer side effects than chemical ones. Utilizing plant-based ingredients rich in bioactive compounds, these formulations help cleanse, nourish, and rejuvenate the skin without adverse effect. Benefits of herbal cosmetics include reduced allergic reactions and safety. The formulation of these face packs is advantageous, cost-effective, and exceeds all evaluation criteria. The incorporation of traditional knowledge with modern scientific evaluation, including phytochemical and pharmacological assessment, enhances the credibility and efficacy of these formulation because of its positive effects on people, the common and smooth appearance is useful for confirming product claims.

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