

FORMULATION AND EVALUATION OF POLYHERBAL FACE PACKSwati Siddheshwar Londhe*¹, Mangesh Gautam Bhosale² and Amol Arun Joshi³¹Assistant Professor, ASPM'S K. T. Patil College of Pharmacy, Osmanabad.²Assistant Professor Ramkrishna Paramhansa College, Osmanabad-413501, Maharashtra.³Principal, ASPM'S K. T. Patil College of Pharmacy, Osmanabad.***Corresponding Author: Swati Siddheshwar Londhe**

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ABSTRACT

The aim of this work is to formulate and evaluate an herbal face pack for glowing skin by using natural herbal ingredients. The natural herbal ingredients such as Gram Flour, Rice flour, charcoal powder, Arjuna Powder, Lemon peel Powder, Nutmeg, Manjishta, saffron, Turmeric, Aloe Vera were purchased from local market in the form of dried powder. All powdered natural ingredients were sieved using #120 mesh, weighed accurately and mixed geometrically for uniform formulation and then evaluated for parameters including Organoleptic, physicochemical, physical, phytochemical, irritancy along with stability examination. The dried powder of combined form had passable flow property which is suitable for a face pack. 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. In this study it is concluded that all the formulations of face packs found to be good in physical parameters, free from skin irritations so 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: Face Pack, Cosmetics, Glowing, Natural, Formulation, Evaluation, Skin, Herbal.**INTRODUCTION**

Since from ancient period of time, people are aware of the use of plants for the healthy, glowing and beautiful skin. Cosmetics are products used to clean, beautify and promote attractive appearance.^[1] Cosmetics are commercially available products that are used to improve the appearance of the skin by action of cleansing, beautifying, promoting attractiveness. From the ancient time, different herbs are used for cleaning, beautifying and to manage them. Face skin is the major part of the body, which indicates the health of an individual.^[2] Skin of the face is the major part of the body, which is a mirror, reflecting the health of an individual. A balanced nutrition containing amino acids, lipids and carbohydrates are required for the skin to keep it clear, glossy and healthy. In ancient times, women were very conscious about their beauty and took special care of their specific skin types.^[3]

It consists of materials such as amino acids, lipids and carbohydrates etc. So that a balanced nutrition is required for the skin to keep it clear glossy and healthy.³ 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.^[4]

Face pack is the Fine powder which is used for application on Face. These preparations are applied on the face in the form of liquid or pastes and allowed to dry for giving tightening, and cleansing effect to the skin.^[5] 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.

Face packs are basically additives delivering some additional benefits. Different types of herbal face packs are used for different types of skin. Herbal face packs are helps to reduce wrinkles, pimples, acne and dark circles. Also increase the fairness and smoothness of skin. It also helps someone to boost their confidence. Ayurveda is the most useful and successful means for achieving this purpose.^[6,7]

MATERIALS AND METHODS

All the natural materials used in the present study i.e., Gram Flour, Rice flour, charcoal powder, Arjuna Powder, Lemon peel Powder, Nutmeg, Manjishta, saffron, Turmeric, Aloe Vera were purchased from local market Osmanabad in a form of dried powder and were authenticated at ASPM'S K. T. Patil College of Pharmacy, Osmanabad.

Gram flour

It has certain properties that treat acne and has been used for this purpose in India for centuries. For one, the zinc in besan has been shown to fight the infections that cause your face to erupt with acne. Secondly, it also helps control excess sebum production and soothes inflamed skin.^[8]

Rice Flour

Rice flour can be applied to cure some forms of skin ailments. In Indian subcontinent, rice water is duly prescribed by Ayurvedic practitioners as in undigested form. It aids the growth of useful bacteria for normal bowel movements an effective ointment to cool off inflamed skin surfaces.^[9]

Charcoal powder

Activated charcoal, when used in a face mask, helps bind the oil and dirt in your pores and pulls them out. Make pores appear smaller it takes care of oily skin. Activated charcoal when used in a mask or a face wash helps pull out the excess oil from your skin, leaving it clean and smooth.^[10]

Arjuna Powder

Arjuna bark extract (Arjuna chaal) prevents skin aging. The main and most important role of arjuna bark is it reduces acne marks (Ghadde) natural way. Aging is associated with an increase in the number of free radicals. Arjuna has good antioxidant property that prevents skin damage caused by these free radicals. It strengthens the skin barrier and induces sebum production to reduce the signs of dry skin and protect the skin from external challenges.^[11]

Lemon peel powder

Makes for a natural skin whitening agent that helps to do away with marks, blemishes, and spots pigmentation.

lemon peels are high on vitamin C and comes with exfoliating properties that in addition, helps add a degree of fairness to the skin in the most natural manner.^[12]

Nutmeg

Nutmeg is widely used for its analgesic, anti-inflammatory, antiseptic and anti-bacterial property¹⁴. It helps in reducing wrinkles, fine lines and other signs of aging. It also helps in reducing acne scars and to make them less visible.^[13]

Manjistha

It helps in the management of various skin diseases like acne, infections, wounds etc. due to its anti-inflammatory, antibacterial and antioxidant properties. It also helps to improve skin complexion and reduce dark spots when used with honey.^[14]

Saffron

Mainly consists of dried stigmas and upper parts of styles of plant known as *Crocus sativus*, belonging to the family Iridaceae. It is rich in carotenoid glycosides, mainly containing terpenoids. It lightens the skin tone and provides fair and glowing skin.^[15]

Turmeric

Turmeric has been used in this preparation due to its blood purifying property and helps in wound healing, because of its antiseptic action. It cures the skin diseases occurring due to blood impurities. It is a very good anti-inflammatory and anti-allergic agent. The phytoconstituents, mainly terpenoids present in it helps to lighten the skin tone. Turmeric delays the signs of aging like wrinkles, improves skin elasticity. It cures pigmentation, uneven skin tone and dull skin.^[16]

Aloe Vera

Aloe Vera is a great moisturizer intended for a skin. Aloe Vera rejuvenates skin, hydrates this and keeps skin layer looking fresh all the time. Aloe Vera has anti-microbial property rendering it ideal to deal with acne and pimples. Aloe Vera powder contains several nutrients like glycerin, sodium palmate, sodium carbonate, sodium palm kemelate, sorbitol, etc.^[17]

Table 1: List Of Ingredients.

| Sr. No. | Common Name | Figure | Category |
|---------|-------------|---|--|
| 1 | Gram flour |  | Tan removal, anti-Bacterial, reduces redness and irritation, treat acne, removes dark spots. |

| | | | |
|---|-------------------|---|---|
| 2 | Rice Flour |  | Antibacterial, Antifungal, Antioxidant, Heal acne .anti-aging |
| 3 | Charcoal Powder |  | Detoxify skin, clean and minimize open pores to less them visible. |
| 4 | Arjuna powder |  | Anti-ageing ,removes acne scars(ghadde) |
| 5 | Lemon peel Powder |  | Improves fairness, Antibacterial, Soothe sunburn, remove suntan, Exfoliates skin, Fight Acne. And reduces hyperpigmentation |
| 6 | Nutmeg |  | Treat Acne and spots Smoothing, cooling effect and improves fairness, reduces rashes, burns and infections. |

| | | | |
|----|-----------|---|---|
| 7 | Manjishta |  | Anti- inflammatory, improve skin complexion. |
| 8 | Saffron |  | Soothing agent, Improve complexion and skin tone, Treats dry skin, Remove suntan, treat acne. |
| 9 | Turmeric |  | Anti-Bacterial, Anti-septic, improve skin colour. |
| 10 | Aloe Vera |  | Antiseptic, Antioxidant, soothing effect to skin. Moisturizing Agent. |

Methods of preparation

The powdered dried natural ingredients were sieved using #120 mesh, weighed accurately and mixed

geometrically for uniform formulation mentioned in **Table 2**. The prepared face pack was then stored in an air tight container for evaluation of various parameter.



Figure Prepared face pack.

Table 2: Composition of Herbal face pack.

| Sr. No | Constituents | Scientific Name | Family Name | Percentage |
|--------|-------------------|---------------------------|----------------|------------|
| 1. | Gram Flour | <i>Cicer arietinum</i> | Fabaceae | 15 |
| 2. | Rice Flour | <i>Oryza sativa</i> | Gramineae. | 10 |
| 3. | Charcoal powder | <i>Trema orientalis</i> | Cannabaceae | 05 |
| 4. | Arjuna | <i>Terminalia arjuna</i> | Combretaceae | 05 |
| 5. | Lemon Peel Powder | <i>Citrus limon</i> | Rutaceae | 15 |
| 6. | Nutmeg | <i>Myristica fragrans</i> | Myristicaceae | 10 |
| 7. | Manjishta | <i>Rubia cordifolia</i> | Rubiaceae | 10 |
| 8. | Saffron | <i>Crocus sativus</i> | Iridaceae | 10 |
| 9. | Turmeric | <i>Curuma longa</i> | Zingiberaceae | 10 |
| 10. | Aloe Vera | <i>Aloe barbadensis</i> | Asphodelaceae, | 10 |

Procedure for application of face pack

The pack should be applied on wet face, For Oily skin add curd/Tomato Juice/Potato Juice/lemon Juice....For Dry skin add Row milk/Rose Water/ Normal Water forming a paste with optimum thickness. It should be applied evenly on the face with the help of a brush. It should be left for 15-25 minutes for complete drying. Then it should be removed with the help of a wet sponge/Or Wash your face with Lukewarm water.

Evaluation of face pack**Organoleptic Evaluation**

It refers to the evaluation of the herbal face pack by its color, odor, appearance, texture etc. The external characters of the formulation were examined based on the method described by Siddiqui *et al.*^[18]

Physicochemical evaluation

Physicochemical parameters were determined, including the determination of extractive value, ash value, pH and moisture content.^[19]

Physical evaluation

The particle size was tested by microscopy method. The flow property of the dried powder of combined form was evaluated by performing Angle of Repose by funnel method, bulk density and tapped density by Tapping Method.^[20]

Phytochemical evaluation-

The aqueous extract of the herbal face pack was evaluated for the presence of different phytoconstituents as per the standard procedures.^[21]

Irritancy test

Mark an area (1sq.cm) on the left-hand dorsal surface. Definite quantities of prepared face packs were applied to the specified area and time was noted. Irritancy, erythematic, edema, was checked if any for regular intervals up to 24 hrs. and reported.^[22]

Stability studies

Stability testing of prepared formulation was conducted by storing at different temperature conditions for the period of one month. The packed glass vials of formulation stored at different temperature conditions

like, room temperature and 400C and were evaluated for physical parameters like color, odour, pH, consistency and feel.^[23]

RESULT AND DISCUSSION

Following evaluation parameters were performed to ensure superiority of prepared face pack.

Organoleptic Evaluation

Herbal face pack was evaluated for Organoleptic parameters showed in the **Table 3**. The colour of formulation was Brown. The odour of prepared formulations was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness was acceptable as per requirement of cosmetic formulations.

Table 3: Organoleptic Evaluation.

| S. No | Parameter | Observation |
|-------|------------|--------------|
| 1. | Color | Brown Colour |
| 2. | Odour | Pleasant |
| 3. | Appearance | Smooth, fine |
| 4. | Texture | fine |
| 5. | Smoothness | smooth |

Physicochemical Evaluation

Herbal face pack was evaluated for physicochemical parameters showed in the **Table 4**. The pH of formulation was found close to neutral. The ash content and moisture content was within limit. The particle size of formulations was found in the range of 24.3±2.5µm.

Table 4: Physicochemical Evaluation.

| Sr. No | Parameter | Observation |
|--------|--------------------|-------------|
| 1. | pH | 6.92 |
| 2. | Loss on Drying | 2.9 |
| 3. | Ash content | 89 ± 0.352 |
| 4. | Particle size (µm) | 24.3±2.5 |

Phytochemical Evaluation

Herbal face pack was evaluated for phytochemical parameters showed in the **Table 5**. It was found to be a presence of phytoconstituents such as carbohydrates,

alkaloids, glycosides, tannins and volatile oil which act as good nourisher for the skin.

Table 5: Phytochemical evaluation.

| S. No | Phytoconstituents | Observation |
|-------|-------------------|-------------|
| 1. | Carbohydrates | + |
| 2. | Alkaloids | + |
| 3. | Glycosides | + |
| 4. | Tannins | + |
| 5. | Volatile oil | + |

Physical Evaluation (powder property)

Herbal face pack was evaluated for physical parameters (powder property) showed in the **Table 6**. Rheological findings justified the flow (powder) properties of the herbal face pack. It was found to be a free-flowing and non-sticky in nature.

Table 6: Evaluation of flow properties.

| Sr. No. | Parameter | Observation |
|---------|-----------------|-------------|
| 1 | Tapped density | 1.326gm/ml |
| 2 | Bulk density | 1.09gm/ml |
| 3 | Angle of repose | 32.510 |
| 4 | Hausner's ratio | 1.232 |
| 5 | Carr's index | 22.93% |

Irritancy Test

The results of irritancy test were shown in **Table 7**. The formulation showed absence of irritation, redness and swelling during irritancy studies. This formulation have safe to use on skin.

Table 7: Irritancy Test.

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

Stability Studies

The results of stability were shown in **Table 8**. No change in color, odour, texture and smoothness was observed at mentioned conditions of stability except pH. The stability studies showed a slight change in pH of formulation at 400C.

Table 8: Stability Test.

| S. No | Parameter | Room temperature | 400C |
|-------|------------|------------------|-------------|
| 1. | Color | No change | No change |
| 2. | Odour | No change | No change |
| 3. | PH | 6.92 ± 0.12 | 6.87 ± 0.13 |
| 4. | Texture | Fine | Fine |
| 5. | Smoothness | Smooth | Smooth |

CONCLUSION

In the present study, people need cure for various skin problems without side effects. Natural remedies are more

acceptable in the belief that they are safer with fewer side effects than the synthetic ones. Herbal ingredients opened the way to formulate cosmetics without any harmful effect. Herbal face packs are considered as sustaining and productive way to advance the appearance of skin. Thus in the present work, Herbal formulations have growing demand in the world market. Herbal face packs are used to stimulate blood circulation, rejuvenate the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. It is a our good attempt to formulate the herbal face pack containing natural herbal ingredients such as Gram Flour, Rice flour, charcoal powder, Arjuna Powder, Lemon peel Powder, Nutmeg, Manjishta, saffron, Turmeric, Aloe Vera. After evaluation, we found good properties for the face packs, free from skin irritation and maintained its consistency even after stability storage conditions. It has been revealed that herbal face pack having enough potential to give efficient crystal clear, Healthy and glowing effect on skin. The overall study is useful to substantiate product claims due its useful benefits on the human beings.

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