

## Formulation and evaluation of herbal face pack for glowing skin

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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 multani mitti, turmeric, sandalwood, saffron, milk powder, rice flour, orange peel were purchased from local market in the form of dried powder. The powder of banana peel was prepared by shade drying commercially, all powdered natural ingredients were sieved using #120 mesh, weighed accurately and mixed geometrically for uniform formulation and then evaluated for parameters including morphological, physicochemical, physical, phytochemical, irritancy along with stability examination. Thus, in the present work, we formulated a herbal face pack which can be easily made with the easily available ingredients. After evaluation, we found good properties for the face packs, free from skin irritation and maintained its consistency even after stability storage conditions. Results of the study scientifically verified that herbal face pack having enough potential to give efficient glowing effect on skin. The overall study is useful to substantiate product claims due its useful benefits on the human beings.

**Keywords:** Skin, Herbal face pack, Formulation, Evaluation.

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### 1. Introduction

Since the ancient era, people are aware of the use of plants for the essential needs of a healthy and beautiful skin. Cosmetics are products used to clean, beautify and promote attractive appearance [1]. 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.[2] Even today, people especially in rural areas, and hilly regions go for the natural remedies like plants extracts for various cosmetics purposes like neem, aloe vera, tulsi, orange peel, rose etc. Herbal cosmetics are the products which are used to purify and beautify the skin. The main advantage of

using herbal cosmetic is that it is pure and does not have any side effects on the human body. People have rough skin and when they don't take sufficient care, then the skin turns dark due to overexposure to the sun, other pollutants etc.[3] In this article we have formulated herbal face pack to whiten, lighten and brighten the skin naturally for men and women. This face pack has natural skin lightening property and can be easily prepared at home.[4] Face packs with natural constituents are rich in vital vitamins that are essential for the health and glow of the skin. These substances have been proven to be beneficial for skin in many ways. Natural facial packs are easy to use. They increase the circulation of the blood within the veins of the face, thereby increasing the liveliness of the skin. [5] A good herbal face pack must supply necessary nutrients to the skin, available in the form of free-flowing powder

applied facially for the external purpose. It should penetrate deep down the subcutaneous tissues to deliver the required nutrients. Every type of skin is specific for the requirement of skin pack. Nowadays different types of packs are available separately for the oily, normal and dry skin. Face packs are used to increase the fairness and smoothness of the skin. It reduces wrinkles, pimples, acne and dark circles of the skin. [6] Face packs which are recommended for oily skin prone to acne, blackheads, usually control the rate of sebum discharge from sebaceous glands and fight the harmful bacteria present inside acne lesion. The leftover marks of skin can be reduced by incorporation of fine powders of sandalwood, rose-petals and dried orange peels. Herbal face packs are nowadays being used on a large scale, due to the various benefits of them over chemical based packs. They are non-toxic, non-allergic and non-habit forming. They are natural in every aspect, having larger shelf life. They have no added preservatives. They can be easily formulated and stored over a larger span of time. Present research article deals with the formulation and evaluation of herbal face pack for glowing skin by using natural materials i.e., multani mitti, turmeric, sandalwood, saffron, milk powder, rice flour, orange peel, banana peel.

## 2. Materials and methods

Present research article deals with the formulation and evaluation of herbal face pack for glowing skin by using natural ingredient i.e., multani mitti, turmeric, sandalwood, saffron, milk powder, rice flour and orange peel. They were purchased from local market in the form of dried powder. The powder of banana peel was prepared by shade drying commercially. All ingredients authenticated at Botany department of M. B. Patel Science College, Sakoli (M.S.). The details of the natural ingredient used for the formulation of herbal face pack are mentioned below.

### 2.1 Ingredients of formulations

#### 2.1.1 Multani Mitti



**Figure 1: Multani mitti**

Multani mitti 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 magnesium chloride. [7]

#### 2.1.2 Turmeric



**Figure 2: Turmeric Powder**

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. [8]

#### 2.1.3 Sandal wood



**Figure 3: Sandalwood Powder**

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. [9]

#### 2.1.4 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. [10]



**Figure 4: Saffron**

### 2.1.5 Milk Powder



**Figure 5: Milk powder**

Milk powder is very beneficial for skin, as it provides nourishment for dry, rough skin for the longer duration. Milk cream either in the form of powdered raw milk or milk as such provides a brilliant shine to skin. This is beneficial in hydrating the face deeply and makes skin youthful, lustrous and flawless. It bleaches the skin to remove dark spots, pigmentation, acne etc. This pack also removes blackheads, whiteheads, and other skin imperfections naturally. This facial pack helps in fading sun tan. [11]

### 2.1.6 Rice Flour



**Figure 6: 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. [12]

### 2.1.7 Orange peel



**Figure 7: Orange peel powder**

Orange peel is a covering of citrus fruit which contains different nutritional source such as vitamin C, calcium, potassium and magnesium. It prevents the skin from free radical damage, skin hydration and oxidative

stress. Also it has instant glow property, prevent acne, blemishes, wrinkles and aging. [13]

### 2.1.8 Banana peel



**Figure 8: Banana peel**

Banana peel has both antifungal and antibiotic components. The natural antibiotic acts against Mycobacterium, Norepinephrine, dopamine, and serotonin are also present in the ripe peel and pulp. [14]

### 2.2 Methods of preparation

The powdered dried natural ingredients were sieved using #120 mesh, weighed accurately and mixed geometrically for uniform formulation mentioned in Table 1.[15] The prepared face pack (Figure 9) was then stored in an air tight container for evaluation of various parameter.

**Table 1: Composition of Herbal face pack**

Sr. No	Constituent	Scientific Name	Percentage
1.	Multanimitti	Calcium bentonite	15
2.	Turmeric	<i>Curuma longa</i>	15
3.	Sandalwood	<i>Santalum album</i>	10
4.	Saffron	<i>Crocus sativus</i>	05
5.	Milk Powder	-----	15
6.	Rice flour	<i>Oryza sativa</i>	20
7.	Orange peel	<i>Citrus sinensis</i>	10
8.	Banana peel	<i>Musa acuminata</i>	10



**Figure 9: Prepared face pack**

### 2.3 Procedure for application of face pack

The pack should be applied daily on wet face, forming a paste of it in water with optimum thickness. It should be applied evenly on the face with the help of a brush. It should be left for 15 minutes for complete drying. Then it should be removed with the help of a wet sponge.

## 2.4 Evaluation of face pack

### 2.4.1 Morphological 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.* [16]

### 2.4.2 Physicochemical evaluation

Physicochemical parameters were determined, including the determination of extractive value, ash value, pH and moisture content. [17]

### 2.4.3 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. [18]

### 2.4.4 Phytochemical evaluation.

The aqueous extract of the herbal face pack was evaluated for the presence of different phytoconstituents as per the standard procedures. [19]

### 2.4.5 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. [20]

## 6. 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 40<sup>0</sup>C and were evaluated for physical parameters like color, odour, pH, consistency and feel. [21]

## 3. Result and Discussion

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

### 3.1 Morphological Evaluation

Herbal face pack was evaluated for morphological parameters showed in the **Table 2**. The colour of formulation was pale yellow. 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 2: Morphological Evaluation**

S. No	Parameter	Observation
1.	Color	Pale yellow
2.	Odour	Pleasant
3.	Appearance	Smooth, fine
4.	Texture	fine
5.	Smoothness	smooth

### 3.2 Physicochemical Evaluation

Herbal face pack was evaluated for physicochemical parameters showed in the **Table 3**.

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 3: 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

### 3.3 Phytochemical Evaluation

Herbal face pack was evaluated for phytochemical parameters showed in the **Table 4**.

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 4: Phytochemical evaluation**

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

### 3.4 Physical Evaluation (powder property)

Herbal face pack was evaluated for physical parameters (powder property) showed in the **Table 5**. 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 5: Evaluation of flow properties**

Sr. No.	Parameter	Observation
1	Tapped density	1.428gm/ml
2	Bulk density	1.08gm/ml
3	Angle of repose	32.61 <sup>0</sup>
4	Hausner's ratio	1.322
5	Carr's index	21.94%

### 3.5 Irritancy Test

The results of irritancy test were shown in **Table 6**. The formulation showed absence of irritation, redness and swelling during irritancy studies. This formulation have safe to use on skin.

**Table 6: Irritancy Test**

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

### 3.6 Stability Studies

The results of stability were shown in **Table 7**. 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 40<sup>o</sup>C.

**Table 7: Stability Test**

S. No	Parameter	Room temperature	40 <sup>o</sup> C
1.	Color	No change	No change
2.	Odour	No change	No change
3.	P <sup>H</sup>	6.92 ± 0.12	6.87 ± 0.13
4.	Texture	Fine	Fine
5.	Smoothness	Smooth	Smooth

### 4. Conclusion

Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones. 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 multani mitti, turmeric, sandal wood, saffron, milk powder, rice flour, orange peel and banana peel. 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 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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