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Research Article

Formulation and Evaluation of Herbal Face Pack

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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, turmeric, sandalwood, saffron, milk powder, rice flour, orange peel was 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. 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.

INTRODUCTION

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. 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. [1] Face packs with natural constituents are rich in vital vitamins that are essential for the health and

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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. 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. [2]

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. 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, turmeric, sandalwood, saffron, milk powder, rice flour, orange peel, banana peel. [3,4]

Benefits Of Herbal Face Pack-

1. Nourishes the skin. Fruit face pack supply essential nutrients skin

2. Helps to decrease, acne, pimple, scars, and marks depending on its natural ingredients
3. Face packs using for decrease dead cells of skin surface
4. The skin face masks provide as 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 packs helps to improves complexion
7. The harmful effects of pollution climates can be effectively use of face packs
8. They help to prevent aging of skin
9. Natural ingredients face packs make the skin look bright, young and healthy [5]

Precautions-

1. Some precautions are useful for better skin glowing and cleaning
2. The face pack is used for applying according to your skin type
3. Concerned to the skin expert be for use of any natural therapy on face
4. Maximum 15-20 minutes stay on face and after that wash the face and completely remove the medicaments
5. applied face pack should be dried
6. Do not scrub fastly
7. Avoid applying face pack near "eye zone" because the skin around eye [6]

Herbal face pack content-

1. Multani mitti-

Chemical Constituent- Its composition includes Hydrated aluminium silicates, magnesium chloride and calcium bentonite which is similar to bentonite clay.

Benefits- 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, it contains bentonite, magnesium, sodium, and calcium which are highly absorbent and offer various skin benefits.

Helps to improve appearance of skin in different ways by removing blackheads, whiteheads, fading freckles, minimizes pore size, reduces acne and blemishes and gives a glowing effect to a skin. Fuller's earth powder is also beneficial for soothing sunburns, cleansing skin, improving blood circulation. [8]



Fig. No.1 Multani Mitti

2. Turmeric-

Biological source- Turmeric is derived from the rhizomes (underground stems) of the *Curcuma longa* L. plant belonging family Zingiberaceae.

Chemical Constituent -The additional phytochemicals present in **turmeric** (Haldi) include alpha-terpineol, Alpha-pinene, azulene, borneol, beta-carotene, caffeic acid, cinnamic acid, caryophyllene, eugenol, limonene, guaiacol, linalool, p-cymene, turmerone, p-coumaric acid, vanillic acid, phellandrene, and sabinene.

Uses-

1. Turmeric helps lead to healthy and glowing skin.
2. It might be effective for skin diseases like acne, eczema, etc.

3. antiseptic and antibacterial properties.
4. It may also help against premature ageing [7]



Fig. No. 2 Turmeric

3. Sandal wood-

Biological source- sandalwood is the heartwood and roots of the *Santalum album* tree plant belonging family Santalaceae.

Chemical Constituent - Sandalwood oil contains more than 90% sesquiterpenic alcohols of which 50–60% is the tricyclic α -santalol. β -Santalol comprises 20–25%.

Uses-

1. Sandalwood for the face may reduce skin diseases.
2. sandalwood powder may have antibacterial effects against certain bacteria causing acne and pimples
3. It may help relieve the itchy red rash and mild swelling of the skin. [9]



Fig. No. 3 Sandalwood

4. Orange peel-

Biological source- Orange peel is the fresh or dried outer part of the pericarp of the Citrus aurantium or Citrus sinensis (sweet orange) plant belonging family Rutaceae.

Chemical Constituent- The literature indicates that the orange peel contains 23% sugar, 22% cellulose, 25% pectins and 11% hemicellulose.

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 ^[10]



Fig no. 4 Orange peel

5. Rice Flour-

Biological source- Rice is the plant species Oryza sativa belonging family Gramineae.

Chemical Constituent- Rice main carbohydrate is starch, which is composed of amylose and amylopectin. The rice grain constitutes 12% water,

75%–80% starch and only 7% protein with a full complement of amino acids.

Uses –

1. Rice Flour Fights Ageing
2. Rice Flour Controls Sebum Production
3. Rice Flour Calms Your Skin
4. Rice Flour Repairs Skin ^[11]

MATERIALS AND METHOD-

Materials-

Multani mitti, Orange peel, Turmeric, Rice flour, Sandalwood powder.

Methods-

The powdered dried natural ingredients were sieved using #120 mesh, weighed accurately and mixed geometrically for uniform formulation mentioned in Table. The prepared face pack was then stored in an air tight container for evaluation of various parameter. ^[12]

Formulation table-

Table no. 01 Formulation table of Herbal face pack

Sr. No.	Constituent	Scientific Name	Percentage
1	Multani mitti	Calcium bentonite	25
2	Turmeric	Curuma longa	25
3	Sandalwood	Santalum album	15
4	Rice flour	Oryza sativa	20
5	Orange peel	Citrus sinensis	15

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, to treats Acne. [12]

Evaluation of face pack-

1. Morphological Evaluation

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.

2. Physicochemical evaluation

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

A. **pH:** The pH of the preparation was determined by using digital pH meter. The pH meter was initially calibrated at different pH using suitable buffer solution. A 10 % (w/v) dispersion of the preparation was prepared in distill water and pH was determined directly without any further dilutions.

B. **Moisture content:** For plant-based products moisture content and loss on drying (LOD) are important parameters. Insufficient drying of these agents may lead to enzymatic degradation of active principles. Moisture content of the preparation was determined by LOD method. 3 gm of sample was weighed accurately and placed in previously weighed petri plate (W_1). Weight of petri dish containing sample was recorded (W_2). Petri dish was placed in hot air oven at 100-108° C until contestant weight of sample was obtained.

C. **Ash value:** Ash value is generally the residues remaining after complete incineration of the powdered sample. It is used identity or purity

of the drug. Principally a very high ash value is representative of adulteration, contamination, substitution during preparation of the product. Ash values can be determined as follows:

- i. **Total Ash value:** Total ash value is used for determining low grade, exhausted products and also important for identifying excess of sandy, earthy matter with drug. About 2-4 gm the powdered sample was placed in a previously ignited and tarred crucible. The material was evenly spread on the crucible and ignited by gradually increasing the heat until it a white powder i.e. free from carbon was obtained. Followed by cooling the sample in desiccator and weight of sample was recorded. Percentage total ash was calculated with reference to the air-dried sample.
- ii. **Acid insoluble Ash value:** It is used to determine the earthy matter. Add 25 ml of hydrochloric acid to the crucible containing total ash and covered it with watch glass. The mixture was boiled gently for 5 minutes. Further watch glass was rinsed with 5 ml of hot water and added into the crucible. The insoluble matter was collected on an ash-less filter paper and washed with hot water until it became neutral. The filter paper containing the insoluble matter was transferred to the original crucible, dried on a hot plate and ignited to constant weight and subjected for cooling in desiccator for 30 minutes followed by weighing the sample. Percentage of acid insoluble ash was calculated in reference to air- dried sample.
- iii. **Water soluble ash value:** It is the difference in weight between total ash and residue after treatment of total ash with water. It is used to determine whether the material is exhausted by water or not. To the crucible containing



total ash, 25 ml water was added and boiled for 5 minutes. The insoluble matter was collected on an ash-less filter paper. Followed by washing with hot water and subjected for ignition for 15 minutes at temperature not exceeding 450° C. the sample was cooled, weighed and percentage of water-soluble ash was calculated in reference to air dried sample. [13,14]

3. Rheological evaluation:

- a. **Angle of repose-** 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(a) is calculated using the equation-

$$a = \tan^{-1} HR$$

- b. **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.
- c. **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. The calculation of bulk density is as follows:

$$D = mv$$

D stands for bulk density, M for particle mass, and V for the overall volume that they occupy.

- d. **Hausner's Ratio:** Because it is connected to interparticle friction, it can be used to forecast the characteristics of how powder flows. The Hausner's ratio is calculated using the equation Hausner's ratio = tapped density/bulk density
- e. **Carr's index:** Another indirect technique for determining the powder flow from bulk density is Carr's index. is intimately correlated with the particle size, cohesiveness, and relative flow rate. This method of generating powder flow characters is easy, quick, and well liked. The formula for calculating it is'

$$\% \text{ compressibility} = \frac{\text{tapped density} - \text{bulk density}}{\text{tapped density}} \times 100$$

4. 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.

5. 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°C and were evaluated for physical parameters like color, odor, pH, consistency and feel. [15,16]

RESULTS-

Table no. 02 Results of morphological evaluation

Sr. No.	Parameter	Observation
1	Color	Pale Yellow
2	Odor	Pleasant
3	Appearance	Smooth



4	Texture	Fine
5	Smoothness	Smooth

Table no. 03 Result of physiological evaluation

Sr. No.	Parameter	Observation
1	L. O. D.	5%
2	pH	Neutral
3	Ash Value	4.5
4	Extractive Value	8.7

Table no. 04 Result of rheological evaluation

Sr. No.	Parameter	Observation
1	Angle of repose	11.09 ⁰
2	Bulk density (gm/ml)	0.55
3	Tapped density(gm/ml)	0.74
4	Hausner's ratio	1.1
5	Carr's Index (%)	22.8

Table no. 05 Result of irritancy test

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

Table no. 06 Result of stability study

Sr. No.	Parameter	Room Temperature
1	Color	No Change
2	Odor	No Change
3	pH	6.62
4	Texture	Fine
5	Smoothness	Smooth

CONCLUSION-

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 our good attempt to formulate the herbal face pack containing natural herbal ingredients such as multani mitti, turmeric, sandal wood, rice flour and orange 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.

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