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Formulation and Evaluation of Polyherbal Face pack

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1. ABSTRACT:

Since ancient times, people have been aware of the use of plants to create healthy, glowing and beautiful skin. Cosmetics are products used to clean, beautify and promote an attractive appearance. Cosmetics are marketed products used to improve the appearance of the skin by cleansing, beautifying and enhancing its attractiveness. Since ancient times, various herbs have been used for cleaning, decoration and healing. The skin of the face is the largest part of the body, which tells about the health of a person. The skin of the face is the largest part of the body, which is a mirror reflecting human health. Keeping your skin clear, glowing and healthy requires a balanced diet that includes amino acids, lipids and carbohydrates.

INTRODUCTION:

In ancient times, women were very conscious of their beauty and took care of their specific skin types. It consists of materials such as amino acids, lipids and carbohydrates etc. That the skin needs a balanced diet to stay bright and healthy. In Ayurveda, the herbal paste is called "mukha lepa" which is used for facial care.

This herbal face paste treats acne, pimples, scars, marks and pigmentation. A face pack is a fine powder that is used on the face. These preparations are applied to the face in the form of liquids or pastes and left to dry to achieve a firm and cleansing effect on the skin.

They are usually left on the skin for 10-25 minutes so that all the water evaporates, as a result of which the resulting

film shrinks and hardens and is easily removed.

The warmth and firming effect created by the application of the face pack creates an invigorating feeling of a rejuvenated face, while the colloidal and adsorbent clays used in these products remove dirt and oil from the facial skin.

2. MATERIALS AND METHODS:

All natural materials used in this study, viz. gram flour, rice flour, charcoal powder, arjuna powder, orange peel powder, nutmeg, saffron, turmeric, aloe Vera were purchased from local market as Beed dried powder and confirmed. The details of the herbal material used to make the face pack are given below.

a) Gram flour:

It has certain properties that treat acne and has been used for centuries in India for this purpose. First, the zinc in besan has been shown to fight infections that cause facial acne breakouts. Second, it also helps control excess oil production and soothes inflamed skin.

b) Rice Flour:

Some skin diseases can be treated with rice flour. In the Indian subcontinent, Ayurvedic practitioners prescribe rice water in a properly undigested form. It promotes the growth of beneficial bacteria for normal intestines and is an effective.

c) Charcoal powder:

Activated charcoal, when used in a face mask, helps bind oil and dirt in the pores and draw them out. Reduces pores and treats oily skin. Activated charcoal, when used in a mask or toner, helps remove excess oil from the skin, leaving it clean and smooth.

d) Arjuna Powder:

Arjuna bark extract (Arjuna chaal) prevents skin aging. The most important and important function of Arjuna bark is that it reduces acne marks (Ghadde) naturally. Aging is associated with an increase in free radicals. Arjuna has good antioxidant property that prevents skin. Damage caused by these free radicals. Strengthens the skin's protective layer and stimulates sebum production, reduces signs of skin dryness and protects the skin from external influences.

e) Orange peel powder:

Makes a natural skin lightener that helps remove marks, impurities and pigmentation. Orange peels are rich in vitamin C and have exfoliating properties that also help improve the smoothness of the skin in the most natural way.

f) Nutmeg:

Nutmeg is widely used for its analgesic, anti-inflammatory, antiseptic and antibacterial properties. It helps reduce wrinkles, fine lines and other signs of aging. It also helps reduce acne scars and make them less visible.

g) Saffron:

It consists mainly of the dried stigmas and tips of Crocus sativus, a plant of the Iridaceae family. It is rich in carotenoid glycosides, which mostly contain terpenoids. It lightens the skin tone and makes the skin look pale and radiant.

h) Turmeric:

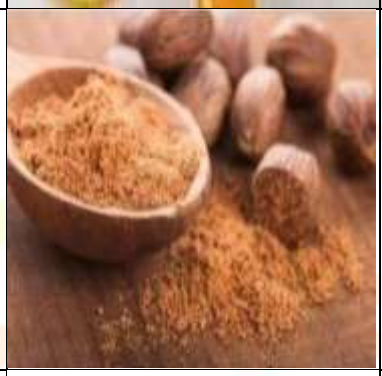
Turmeric was used in this preparation because of its blood purifying properties and because of its antiseptic effect, it helps heal wounds. Treats skin diseases caused by blood impurities. It is a very good anti- inflammatory and anti-allergic agent. The phytoconstituents in it, mainly terpenoids, help to lighten the skin tone. Turmeric slows down signs of aging such as wrinkles, improves skin elasticity. It improves pigmentation, uneven skin tone and dull skin.

i) Aloe Vera:

Aloe Vera is an excellent skin moisturizer. Aloe Vera rejuvenates the skin, moisturizes it and keeps the skin layer fresh all the time. Aloe Vera has antimicrobial properties, making it ideal for treating acne and pimples. Aloe Vera powder contains several nutrients such as glycerine, sodium palmate, sodium carbonate, sodium palmate, sorbitol, etc.

3. TABLE 1: LIST OF INGREDIENTS:

Sr. No.	Common Name	Figure	Category
1	Gram flour		Anti-Bacterial, Reduce redness, Removes dark spots.
2	Rice Flour		Anti-Bacterial, Anti-Fungal, Anti-Oxidant
3	Charcoal Powder		Detoxify skin, Clen and minimize open to less them visible.
4	Arjuna powder		Anti-Ageing, Remove acnescars

5	Orange peel		Anti-Bacterial, Improves fairness, Remove suntan.
6	Nutmeg		Treat acne and spot Smoothing, Cooling effect, Improve fairness.
7	Saffron		Soothing agent, Improve complexion And skin tone.
8	Turmeric		Anti-Bacterial, Anti-Septic, Improve skin color.

9	Aloe Vera		Anti-Septic, Anti-Oxidant, Smoothing effect to skin.

4. METHOD OF PREPARATION:

- Take dried powders from natural ingredients.
- Sieve the dried powder through #120 mesh.
- Accurately weighed and mixed to achieve a geometrically uniform composition as shown in Table 2.
- Prepared face pack was then kept in an airtight container for evaluation of various parameters.

Table 2: Composition of Herbal face pack:

Sr. No	Constituents	ScientificName	Family Name	Percentage
1.	Gram Flour	Cicer arietinum	Fabaceae	15
2.	Rice Flour	Oryza sativa	Gramineae	15
3.	Charcoal powder	Trema orientalis	Cannabaceae	10
4.	Arjuna powder	Terminalia arjuna	Combretaceae	05

5.	Orange Peel Powder	Citrus limon	Rutaceae	17.75
6.	Nutmeg	Myristica fragrans	Myristicaceae	10
7.	Saffron	Crocus sativus	Iridaceae	0.25
8.	Turmeric	Curuma longa	Zingiberaceae	15
9.	Aloe Vera	Aloe barbadensis	Asphodelaceae	12

Procedure for application of face pack:

The pack should be applied to a wet face:

- For oily skin: add curd/tomato juice/potato juice/orange juice.
- For dry skin: Add raw milk / rose water / plain water to form a paste of optimal thickness.
- Apply evenly to the face with a flat brush.
- It should then be removed with a wet sponge/or wash the face with lukewarm water.

5. EVALUATION OF FACE PACK:

- **Organoleptic Evaluation:**

It refers to evaluating an herbal face pack based on its color, smell, appearance, texture, etc. The external properties of the preparation were studied based on the method described by Siddiqui. etc.

Physicochemical evaluation:

Physico-chemical parameters including determination of extractive value, ash value, pH and moisture content were determined.

- **Physical evaluation:**

Particle size was tested using a microscope. The flow properties of the powder dried in the combined form were evaluated by determining the angle of repose using the funnel method, and determining the bulk density and impact density using the impact method.

- **Phytochemical evaluation:**

The aqueous extract of the herbal face pack was evaluated for the presence of various phyto-constituents using standard methods.

- **Irritancy test:**

Mark an area (1 square cm) on the left back surface. Certain amounts of the prepared face packs were applied to the selected area and the time noted. Irritation, redness, swelling was monitored at regular intervals up to 24 hours and reported.

- **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 400oC and were evaluated.

- **Organoleptic Evaluation:**

The color of formulation was Brown. The odor of prepared formulations was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness were acceptable as per requirement of cosmetic formulations.

Herbal face pack was evaluated for organoleptic parameters showed in the Table

Sr. No	Parameter	Observation
1.	Colour	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 were within limit.

The particle size of formulations was found in the range of 24.3±2.5µm

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:**

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.

Herbal face pack was evaluated for phytochemical parameters showed in the Table 5 Table.

Sr. No	Phyto-constituents	Observation
1.	Carbohydrates	+
2.	Alkaloids	+
3.	Glycosides	+
4.	Tannins	+
5.	Volatile oil	+

- **Physical Evaluation (powder property):**

The physical parameters (powder property) of the herbal face pack were assessed and are displayed 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.

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:**

Table 7 displayed the findings of the irritancy test. In testing on irritancy, the formulation did not cause any redness, swelling, or irritation. It is safe to apply this formulation on skin.

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 colour, 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 400oC.

Sr. No	Parameter	Room temperature	400°C
1.	Colour	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

6. Phytochemical Evaluation

1) Determination of rheological properties of the prepared pack: Physical parameters such as unused (mass) density, utilized density, angle of repose, Hausner ratio, etc for the formulation, Carr indices were observed and calculated. Apparent density refers to the fitting of particles or granules that need to be packed together The Hausner ratio is calculated as D /D',

Where,

D is the useful density and the apparent density. Carr index helps measure powder flow based on apparent Determination of moisture content:

Weigh about 1.5 g of the powdered medicine into a heavy, shallow, thin porcelain dish. Dry up Bake at 100°C or 105°C until two consecutive weights differ by no more than 0.5 mg. Allow to cool in desiccators and weigh. Weight loss is usually recorded as moisture. Angle of calm, It is defined as the maximum possible angle between the surface of the powder pile and the horizontal flow.

2) Bulk density Bulk:

Density is the ratio between the given mass of a powder and its apparent volume. Required amount. The powder is dried and filled into a 50 ml measuring cylinder up to the 50 ml mark. Then the cylinder is dropped from a height of 1 inch onto a hardwood surface at 2 second intervals. The volume of dust is measured. The powder is then weighed. This is repeated to obtain average values. He The bulk density of is calculated using the following formula.

Bulk Density = Volume/Mass

3) Tapped density:

Impact density is an increase in bulk density achieved after mechanical impact on a container containing the dust sample. After observing the initial volume or mass of the powder, the measuring cylinder or container is placed. Is tapped mechanically for 1 minute and volume or mass measurements are taken until little volume or mass remains. Changes were observed. It was expressed in grams per cubic centimetre (g/cm3).

4) Particle size:

Particle size is a factor that influences a number of properties including granularity and dispersion ability Particle size was measured using I.P. measured. Standard sieves and mechanical agitation for ten minutes.

5) PH:

A calibrated digital pH meter was used to measure the PH of the formulation's 1% aqueous solution at constant.

6) Wash ability:

This is the common method for checking the wash ability of the formulation. The formulation was applied of the skin and then the ease and extent of water washing were checked manually with 1 litter of water was used to remove all contents of the formulation and was applied to the surface of a microbial test. The antibacterial activities of the four formulations were determined using the modified agar well diffusion method. In this method, nutrient agar plates were plated with 0.2 ml of 24-hour Escherichia coli culture broth and Staphylococcus aureus. The agar plates were allowed to solidify. A sterile 8 mm hole punch was used to cut out the wells. equidistance on each of the plates. 0.5 ml formulations, herbal extracts were added.

7) Microbial Assay:

The antibacterial activities of all four formulations were determined by modified agar well diffusion method. In this method, nutrient agar plates were seeded with 0.2 ml of 24 h broth culture of Escherichia coli and Staphylococcus aureus. The agar plates were allowed to solidify. A sterile 8 mm borer was used to cut wells of equidistance in each of the plates. 0.5 ml of formulations, herbal extracts were introduced into the wells at randomly. The plates were incubated at 37°C for 24 hours. The antibacterial activities were evaluated by measuring the zones of inhibition (in mm).

Application of poly-face herbal pack:

Applying the pack on a damp face on a regular basis is recommended. It should be made into an ideal paste by mixing water or rose water. Applying it evenly over the face with a brush is recommended. To ensure it dries completely, leave it for ten to twenty minutes. Then, a damp sponge should be used to remove it.

Prepared formulation:

Fig-1: Prepared formulation.

1. ADVANTAGE OF HERBAL FACE PACK:

- Herbal products don't have negative side effects
- It aids in eliminating our skin's dead cells
- Herbal products are in expensive
- Products made from herbs are widely accessible

2. DISADVANTAGE OF HERBAL FACE PACK:

- Sometimes our skin displays sign of irritability and redness
- Inflammation has taken place
- The effects of the face pack will develop Gradually.

7. CONCLUSION:

People in the current trial require side-effect-free treatments for a range of skin conditions. Because natural medicines are thought to be safer and have less adverse effects than synthetic ones, they are more widely accepted. The use of herbal components in cosmetic formulations allowed for the development of safe formulas. Herbal face masks are regarded as a long-lasting and effective method of improving skin look. As a result, the demand for herbal formulations on the global market is rising in the current work. Herbal face masks serve to retain skin elasticity, improve blood circulation, revitalize muscles, and clear impurities from pores.

We've made a decent effort to manufacture the herbal face pack with natural herbal ingredients including aloe vera, nutmeg, saffron, turmeric, and powdered charcoal, rice flour, gram flour, and arjuna powder. Our assessment revealed that the face packs had good qualities; they didn't irritate the skin and were consistent even after long storage.

8. RESULT AND DISCUSSION:

The results of evaluation are displayed in Table for organoleptic and 6physic- chemical and general powder evaluation. The study of nature, color, odor, taste, texture, wash ability, grittiness, moisture content and pH of dried powders of combined form under investigation provided the important feature of organoleptic and physicochemical evaluation. The moisture content value was found to be less than 5%. The acidic or alkaline nature of the dried powder of combined form was determined by preparing 1% dispersion of powder form in distilled water and measuring the pH with pH meter. The pH of 1% dispersion of powder was obtained as 5.9 which indicated that the powder of combined form was slightly acidic in nature.

Dried powder of combined form was evaluated for particle size, angle of repose, bulk density and tapped density before being formulated. Values of, tapped density, bulk density,angle of repose, , Carr's index, Hausner'sr ratio obtained for powder of combined. Form were found of B3 to be respectively, 0.43 g/ml, 0.46 g/ml, 31, 1.12 and, have good flow properties. The powder had good flow property which is suitable for a face pack. And it's easily washable with water.

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