



Formulation And Evaluation Of Lens Culinaris Face Pack

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Abstract

In this study, natural substances such as Multani mitti, turmeric, masoor dal, neem, sandalwood powder, aloe vera powder, and rose powder will be used to make a cosmetic herbal face pack. The product was examined for stability, irritancy, physicochemical characteristics, and organoleptic properties. According to the study, the product was skin-friendly, non-irritating, and effective. You can keep the face pack in the fridge and use it with honey. Because they have less negative effects than synthetic ones, herbal cosmetics are more widely used. To ascertain their advantages for human application, more optimization research is required.

Keywords: skin, parameters, packs, herbs, stability, ingredients.

Introduction

Cosmetics are items that are used to improve, clean, and beautify a person's look. For generations, people have utilized herbs for their medical, cosmetic, and cleaning qualities. Cosmetics are defined under the Drugs and Cosmetics Act 1940 as products meant to be applied to the human body in order to cleanse, beautify, promote attractiveness, or change appearance. Phytochemicals derived from a variety of plant sources are found in herbal cosmetics, which have fewer adverse effects than conventional cosmetics. Throughout history, these organic herbs have been utilized for medical, cosmetic, and cleansing purposes. They also help to maintain good skin. Herbal pastes known as "Mukhalepa" were used in Ayurvedic face therapy in India to treat conditions like pigmentation, rashes, acne, and pimples. Smooth powders applied to the face called herbal face packs are an inexpensive, non-invasive treatment option.

Need :-

- To provide a natural skincare solution free from harsh chemicals.
- To treat common skin issues like tanning, acne, dullness, and dryness.
- To maintain healthy, glowing, and youthful skin using traditional, plant-based remedies.
- To offer a cost-effective and safe alternative to commercial skincare products.

Objective:-

- Cleanse the skin by removing dirt, oil, and dead cells.
- Detoxify and purify pores using natural ingredients.
- Brighten and even out skin tone by reducing tanning and pigmentation.
- Soothe and heal irritated or sun-damaged skin.
- Hydrate and nourish the skin with herbal extracts.
- Prevent skin problems like acne, blackheads, and fine lines.

Excipients:-

All ingredients used in this formulation were sourced from trusted suppliers to maintain quality and consistency. Turmeric powder (fine, organic) was obtained from a local Ayurvedic pharmacy, while pure sandalwood powder came from a licensed supplier. Rice powder was prepared by grinding and sieving cleaned, dried grains. Rose petals and orange peels were shade-dried and powdered. Tomato, neem, and aloe vera powders were sourced from a herbal supplier. Potato powder was made by drying and grinding potato slices. Food-grade milk powder was procured from an authorized supplier. Multani mitti was purchased from

an Ayurvedic store in fine, lump-free form. Saffron strands from the spice market were finely ground. Masoor dal powder was prepared by grinding dried lentils.

1. **Turmeric:**

Botanical Name:- Curcuma longa Family:-Zingiberaceae

Use:-Antiseptic

Part used:- Rhizome



2. **Sandal wood:**

Botanical Name:- Santalum album Family:Santalaceae

Use:Antiseptic

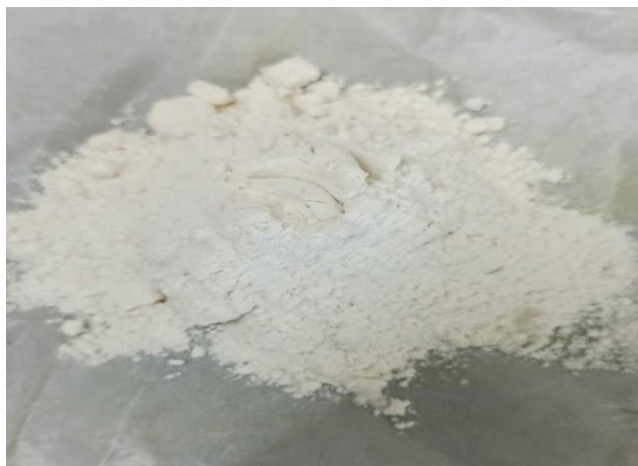
Part used:-Heartwood



3. **Rice flour:**

Botanical Name:- Oryza sativa Family:-Poaceae

Use:-Exfoliation,oil control



Part used:- Grains

4. ROSE PETALS POWDER:

Botanical Name:- Rosa indica

Family:-Rosaceae

Use:-Cooling,skin toner



Part used:- petals

5. Orange peel powder : Botanical Name:- Citrus sinensis Family:-Rutaceae

Use:-Natural astringent

Part used:- peel



6. Tomato powder :

Botanical Name:- Solanum lycopersicum Family:- Solanaceae

Use:-Skin lightening,antioxidant

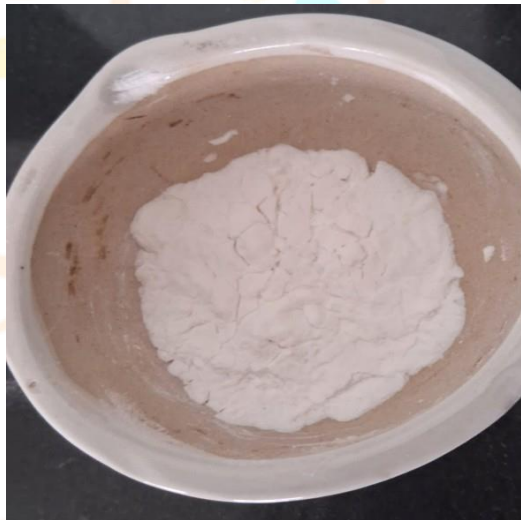


Part used:- fruit

7. Potatoes powder :

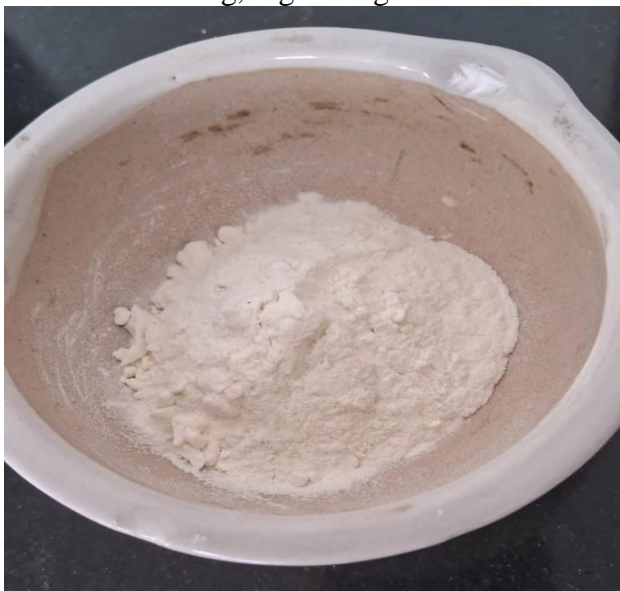
Botanical Name:- *Solanum tuberosum* **Family:-**Solanaceae

Use:-Anti-pigmentation **Part used:-** tuber



8. Milk powder :

Use:-Moisturizing, brightening **Part used:-** milk solids



9. Multani mitti :



Use:-Deep cleansing

10. **Neem powder :**

Botanical Name:- Azadirachta indica Family:-Meliaceae

Use:-Anti-bacterial,acne control



Part used:- Leaves

11. **Saffron powder :**

Botanical Name:- Crocus sativus Family:-Iridaceae

Use:-Anti-oxidant,enhancer Part used:- Stigma



12. **Masoor dal powder : Botanical Name:- Lens culinaris Family:-Fabaceae**

Use:- Exfoliant,cleanser



Part used:- Dried masoor dal seed

13. Aloe vera :

Botanical Name:- *Aloe barbadensis miller* **Family:-**Asphodelaceae

Use:-Anti-inflammatory,smoothing **Part used:-** leaf pulb



Raw Material Selection:-

Methodology:-

Ensure all ingredients are fresh, organic, and free from pesticides. Use mature versions of aloe vera, potato, tomato, orange, and masoor dal for better active compound content.

Cleaning and Preparation:-

Wash all fresh items (potato, tomato, orange, aloe vera, neem leaves) thoroughly to remove dirt and residues. Peel and chop where necessary (e.g., potato, aloe vera, tomato). Soak masoor dal and rice for 4–6 hours, then drain before drying.

Drying Process:-

Use shade drying or a dehydrator (at 40–50°C) to preserve nutrients. Turmeric, sandalwood, Multani mitti, saffron, milk powder: Use in powder form or dry as needed. Rose petals, neem leaves, orange peels: Sun or shade dry until crisp. Potato, tomato, aloe vera: Dry into flakes or use freeze-drying for better preservation. Masoor dal, rice: Dry completely after soaking. Milk: Use pre-dried milk powder or spray-dried form.

Powdering:-

Use a grinder or pulverizer to convert dried materials into fine powder. Sieve through a fine mesh (100–200 microns) to ensure uniformity.

Formulation of face pack:

This composition is ideal for general skin care, with an emphasis on brightening, exfoliating, and hydration.

Formula of face pack:

Sr. no	Ingredients	Quantity taken (gram)	Functions
1	Turmeric Powder	9 g	Active ingredient with anti-inflammatory and skin-brightening properties; reduces pigmentation
2	Sandalwood Powder	9 g	Soothing agent, astringent, and antioxidant; tightens and calms skin.
3	Rice Flour	12 g	Exfoliant and oil absorbent; smoothens skin and controls shine.

4	Rose Petals Powder	8 g	Humectant and anti-inflammatory; hydrates and calms irritated skin.
5	Potato Powder	8 g	reduces dark spots and evens skin tone
6	Tomato Powder	8 g	Antioxidant (lycopene); protects skin from oxidative stress and UV damage.
7	Orange Peel Powder	8 g	Exfoliant and collagen booster; brightens complexion and refines texture.
8	Milk Powder	8 g	Moisturizing agent and mild exfoliant (lactic acid); softens and nourishes skin
9	Multani Mitti	10 g	Absorbent and detoxifying agent; removes impurities and excess oil.
10	Neem Powder	5 g	Antibacterial and antifungal; prevents acne and reduces inflammation.
11	Saffron	1 g	Antioxidant and skin-brightening agent; evens skin tone and protects from free radicals.
12	Masoor Dal Powder	7 g	Exfoliant; gently removes dead skin cells and improves texture.
13	Aloe Vera Gel	7 g	Hydrating agent and anti-inflammatory; soothes and promotes healing

Method of Preparation:

All the selected herbal ingredients — turmeric powder, sandalwood powder, rice flour, potato powder, tomato powder, rose petals powder, orange peel powder, milk powder, multanimitti powder, neem leaves powder, saffron, masoor dal powder, and aloe vera powder — were accurately weighed in suitable proportions.

↓

All powders were first passed through a 60-mesh sieve to obtain a fine, uniform texture.

↓

The sieved powders were then mixed thoroughly in a clean, dry mortar and pestle to ensure homogeneity.

↓

Saffron strands were crushed into a fine powder separately and added to the mixture.

↓

The entire blend was mixed until a uniform, fine powder was obtained.

↓

The final herbal face pack powder was stored in an airtight container to protect it from moisture and contamination.

Evaluation of Herbal Face Pack

1) Morphological Evaluation

Herbal face pack was evaluated for morphological Parameters showed in the Table 1. The colour of Formulation as dry powder was muted yellowish orange and as wet powder was a warm golden brown. The odour of prepared Formulations was pleasant and good acceptable which is Desirable to cosmetic formulations. Appearance and texture was acceptable as per requirement of cosmetic Formulations.

a) **Consistency test:** The consistency of the formulated herbal face pack was evaluated to determine its spreadability and ease of application.

Procedure: Sample Preparation: A fixed amount (e.g., 2 g) of the powdered herbal face pack was mixed with a measured quantity of rose water (e.g., 2 mL) to form a homogeneous paste.

b) **Spreadability Test:** The spreadability of the formulated herbal face pack was evaluated manually to assess its ease of application and uniformity on the skin surface.

Procedure: A fixed quantity (1 gram) of the prepared herbal face pack paste was taken and applied to a clean, dry area on the back of the hand (or forearm). The sample was spread gently using a glass slide under uniform pressure in a circular motion for 30 seconds. The diameter (in mm) of the area covered by the face pack was measured using a ruler or caliper.

A consistent face pack should exhibit smooth texture, uniform viscosity, and moderate spreadability without running off the skin.

2) Physicochemical Evaluation:-

pH test:-The pH of the herbal face pack was assessed to determine its suitability for topical application. A uniform paste was prepared by mixing 1 gram of the face pack powder with 2–3 mL of distilled water. A pH

indicator strip (universal pH paper, range 1–14) was immersed in the sample for approximately 2–3 seconds. The resulting color change was immediately compared with the standard color chart provided by the manufacturer.

The observed pH value was 5.0, indicating a mildly acidic nature, which is within the ideal pH range for skin (4.5–6.5). This suggests that the formulation is compatible with skin and is unlikely to cause irritation or disrupt the skin's natural acid mantle.

3) Physical Evaluation (powder property)

Herbal face pack was evaluated for physical Parameters (powder property) showed as below.

a) Tapped Density:

Procedure:

The same measuring cylinder containing the powder was tapped manually (usually 100 taps) until no further volume reduction was observed. The final tapped volume was recorded.

b) Bulk Density

Procedure:

An accurately weighed quantity (e.g., 25g) of the herbal face pack powder was transferred into a 100 mL graduated measuring cylinder without applying pressure. The initial volume (V_0) occupied by the powder was recorded.

c) Carr's Compressibility Index (Optional but Recommended)

It is calculated by the tapped density and bulk density with the formula. This index is used to assess powder flowability:

- 5–15%: Excellent
- 16–20%: Good
- 21–25%: Fair

4) Irritancy Test

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

Precautions to be taken while applying Herbal Face Pack:

When using a herbal face pack, make sure to choose one that is appropriate for your skin type and visit a skin expert or natural skin therapist first. To avoid wrinkles, sagging, and enlargement of open pores, do not leave the pack on your face for longer than 15 to 20 minutes. Before removing the dry face pack, sprinkle it with water to avoid scratching it. After removing the mask, apply an ice cube to the skin to shut open pores, tighten, and soothe it. The face pack should not be used on allergic skin, and overcleaning may cause acne and dark patches. It is critical to keep away from heat and avoid applying the face.

It is critical to minimize heat and avoid applying the face pack near the eye area, as the sensitive skin around the eyes may be harmed during removal. It is recommended that you apply the face pack once a week. Avoid scraping or scratching the dried face pack, since this might injure the underlying skin.

Storage:

Storage of Herbal Face Pack Store the herbal face pack in a cold, dry, well-closed container, away from moisture. Herbal face packs are generally stored in well-sealed plastic container.

Result and discussion:-

1) Morphological Evaluation

Table 1: Morphological Evaluation

Sr. No	Parameters	Observation(Dry powder)	Observation(Wet powder)
1	Colour	Muted yellowish orange	A warm golden brown
2	Appearance	Smooth powder	Thick creamy paste
3	Texture	Dry and powdery	Smooth and creamy

a) Consistency test:

Table 2:- Consistency results

Sample code	Test	Obsrvation
Powder sample	Sample+ rose water	Good consistency



b) **Spreadability Test**

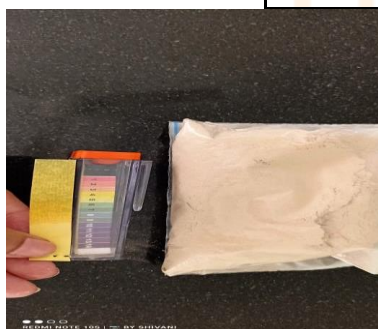
Table 3: Spreadability result

Sample Code	Amount Applied (g)	Spread Diameter (mm)	Text ure	Ease of Spread
Sample1	1.0	30	Smoo th	Easy

2) **Physicochemical Evaluation:- pH test:-**

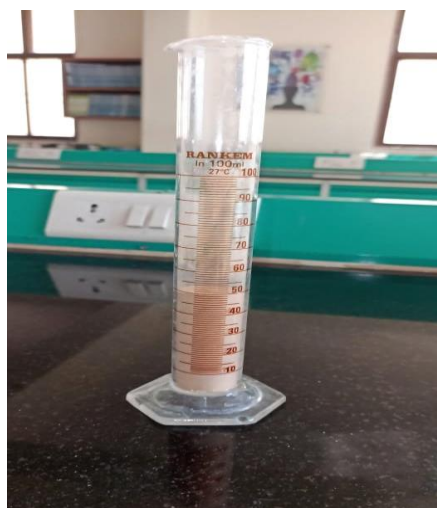
Table 3: pH result

Sample Code	pH Value	Ideal Skin pH Range	Compatibilit y
FI	5.0	4.5–6.5	Compatible



3) **Physical Evaluation (powder property)**

a) **Tapped Density**



Formula:

$$\text{Tapped volume } (V^t) = \text{Initial volume } (V) - \text{Final volume after tapped } (V)$$

$$= 50 - 40 = 10$$

$$\text{Tapped Density} = \frac{\text{Mass of powder } (M)}{\text{Tapped volume } (V)}$$

$$= \frac{25}{10}$$

$$= 2.5 \text{ g/mL}$$

b) Bulk Density

Formula:

$$\text{Bulk Density} = \frac{\text{Mass (g)}}{\text{Volume (mL)}}$$

$$= \frac{212.5}{100} = 2.125 \text{ g/mL}$$

c) Carr's Compressibility Index

Formula:

$$\text{Carr's Compressibility Index} = \frac{\text{Tapped density} - \text{Bulk density}}{\text{Tapped density}} \times 100$$

$$= \frac{2.5 - 2.125}{2.5} \times 100 = 15\%$$

Table 4: Evaluation of flow properties



Sr. No	Parameters	Observation
1.	Tapped density	2.5gm/mL
2.	Bulk density	2.125gm/mL
5.	Carr's index	15%



4) Irritancy Test

Table 5: Irritancy Test

Sr.no	Parameters	Observation
1.	Irritation	No
2.	Redness	No
3.	Swelling	No

Conclusion:

Herbal face packs are safe cosmetics that increase blood flow, suppleness, and skin health. They are safe and reasonably priced because they contain a variety of herbs with therapeutic properties. Using natural materials such as multanimitti, turmeric, aloe vera, sandalwood, orange peel, powdered rose petals, saffron, mashoor dal and rice flour, this study seeks to make a herbal face pack. Even when stored steadily, the face packs maintain their consistency, exhibit good qualities, and cause no skin irritation.

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