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A comprehensive review of herbal face pack: Efficacy, formulations and skin benefits

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Abstract

Development & evaluation of herbal face pack utilizing the butterfly pea plant, which has anti-inflammatory, antioxidant, antibacterial, and antiviral qualities, is the main goal of this study. An attempt has been made to integrate modern formulation methods into a composition based on natural ingredients. Herbal face packs were made with powdered butterfly pea flowers, Multani mitti, aloe, turmeric, neem, rice flour, and orange peel. The components were then systematically incorporated after all ingredients had been uniformly blended geometrically using the serial dilution method. Organoleptic studies showed that it was smooth, pale yellow, and washable. Promising outcomes from the face pack formulation made it a good substitute for artificial aging treatments. It emphasizes the necessity of more research, such as comparative clinical trials and long-term stability study, to confirm its therapeutic efficacy.

Keywords: Herbal facepack, skin, efficacy, formulation

Introduction

According to the definition, herbal face pack is a skin care product that contains plant-based ingredients. When applied to the face, it has multiple benefits, such as nourishing the skin, reducing the appearance of acne, removing dead skin cells, creating a calming and soothing effect, restoring the skin's shine and glow quickly, and preventing premature aging. Applying a natural face pack is an excellent way to slow the onset of skin sagging, fine lines, and wrinkles. The skin is tightened, strengthened, and cleansed after applying these preparations & then letting them dry and harden into a film.

Most people leave them on for 10–25 minutes for the water to evaporate; after that, the film forms, contracts, and is easy to remove. Applying a face pack, which has a warming and tightening effect, can make you feel like your face has been revitalized, all while the colloidal and adsorption clays in the pack dissolve oil and grime. Skin debris and filth are ultimately washed away when the face pack is removed. Herbal face packs come in a variety of kinds, each tailored to a certain skin type. Reduce the appearance of wrinkles, acne, dark circles, and pimples with the use of herbal face pack. Improve skin's evenness and texture as well. Be sure to choose a face pack that is appropriate for your skin type before applying it. After taking off your mask, massage your face with an ice cube. Avoid using a face wash or scrub too aggressively, and keep the face pack away from your eyes^[1].

Natural face packs are great for your skin's health and radiance because they include a lot of vitamins. There is a mountain of evidence showing how great these compounds are for skin. Natural face masks are simple to apply. Because they stimulate blood flow in the facial veins, they make the skin look more vivacious^[1, 4].

This post will show you how to makeherbal face pack that can naturally lighten and brighten your complexion, whether you're a man or a woman. This face pack can be made at home and has a natural lightening effect on the skin. It's great for oily skin types that get blackheads and acne. The many advantages of herbal face packs versus chemical-based packs have led to their widespread use in recent years. They do not cause any harm, allergies, or addictions. Preservatives are not added to them. They are simple to make and keep for longer periods of time^[2].

Because of increased pollution, allergies, germs, etc., human skin has grown more delicate and prone to premature aging, necessitating research on herbal face packs. To wash and nourish the skin of the face, one makes a medicinal herbal face pack. In order to meet the quality criteria, all the parameters were calculated after the synthesis. make herbal face mask that works for every kind of skin and then assess it three times.

The pack will be formulated and tested in this study. Useful ingredients for skin care include: rice flour, which repairs and calms the skin, turmeric, which rejuvenates the face and effectively treats acne, orange peel powder, which protects against oxidative stress, skin dehydration, and free radical damage, aloe powder, which moisturizes the face, neem powder, which minimizes wrinkles and other signs of aging, and butterfly pea flower powder, which is a powerful antioxidant and prevents premature aging^[1].

Advantages of Face pack^[2]

- Enhances muscle tone.
- Maintains the skin's elasticity and flexibility.
- Clears trapped impurities and particles.
- Promotes better blood circulation.
- Nourishes the outer layer of the facial skin.
- Delivers vital nutrients to skin.
- Regular application of natural face masks brightens the complexion, evens out skin tone, and reduces inflammation.
- Provides the skin with essential nourishment.
- Boosts circulation, contributing to healthier skin.
- Helps in exfoliating and removing dead skin cells.
- Enhances overall skin texture and appearance.

Disadvantages of Face pack^[2]

1. Some people might find its potent plant odor offensive.
2. May be slightly difficult to rinse off and can cause a tingling sensation that some users might find uncomfortable.
3. Contains parabens, meaning it is not made entirely from natural ingredients.
4. One Face Pack should not be used on all faces -Since all parts of our face do not have the same skin type.
5. Sometimes it takes a long time for facial packing to dry.
6. It can lead to skin irritation and may occasionally result in redness after application.
7. Irritation: Some herbal face packs can cause irritation, redness, swelling, or itching. To test for an allergic reaction, you can apply the face pack to the back of your hand and leave it on for 15 minutes.
8. Drying time: Herbal face packs can take a long time to dry.
9. Application: It can be difficult to apply an herbal face pack to dry skin.
10. Contamination: Herbal ingredients can be contaminated and unsafe for human consumption.
11. Wrinkles: Leaving a face pack on for too long can cause wrinkles, sagging skin, and enlarged pores.

Ingredients used for Facepack

Table 1: Ingredients and Manufacturer

Ingredient	Manufacturer Name
Multani mitti	India Mart
Aloe powder	Herbanic India, Farmoganic health and beauty.
Butterfly pea flower powder	Saara Products
Turmeric powder	Nani agro foods, Anu foods, Malpani spices and Dhanhar Products LLP.
Neem powder	Aadhunik Ayurveda, Kirpal Export Overseas and Neem India products Pvt Ltd.
Orange peel powder	Archie Enterprises and VCos Cosmetic and Pvt Ltd.
Rice flour	Anu Foods, Mithuna Foods and Jay Jayagro.

Ingredient Profiling

1) Multani Mitti

Biological source and family: Rich in minerals like magnesium, silica, quartz, calcium, and iron. Traditionally sourced during wool cleaning using clay slurry.

Chemical constituents: Contains hydrated aluminum silicates, magnesium chloride, and calcium bentonite; similar to bentonite clay.

- **Uses in general:** Used in hair and skincare, treats sunburns and allergies.
- **Uses in face pack:** Deep cleanses skin, enhances blood flow, clears black/whiteheads, and reduces acne.

2) Aloe Vera Powder

Biological source and family: Obtained from dried latex of Aloe barbadensis (Family: Liliaceae).

Chemical constituents: Includes anthracene, aloe glycosides (barboline, isobarboline).

- **Uses in general:** Heals wounds and soothes heat irritation.
- **Uses in face pack:** Hydrates skin, delays aging, and controls acne-causing bacteria.

3) Butterfly Pea Flower Powder

Biological source and family: Derived from Clitoria ternatea (Family: Fabaceae).

- **Chemical constituents:** Rich in anthocyanins, flavonoids, triterpenoids, and cyclic peptides.
- **Uses in general:** Used in herbal teas, cosmetics, and mixed beverages.
- **Uses in face pack:** Reduces wrinkles, lightens spots, hydrates, and soothes acne-related irritation.

4) Turmeric

Biological source and family: Rhizome of Curcuma longa (Family: Zingiberaceae).

- **Chemical constituents:** Contains curcuminoids (curcumin, demethoxycurcumin, bisdemethoxycurcumin) and volatile oils.
- **Uses in general:** Antiseptic, antibacterial, and blood purifier.
- **Uses in face pack:** Fades pigmentation and acne scars.

5) Neem Powder

Biological source and family: Made from leaves and oil of Azadirachta indica (Family: Meliaceae).

- **Chemical constituents:** Includes azadirachtin, nimbin, quercetin, salannin, and fatty acids.
- **Uses in general:** Anti-inflammatory, antifungal, promotes healing and scalp care.
- **Uses in face pack:** Treats acne, slows aging, and brightens skin.

6) Orange Peel Powder

Biological source and family: Dried peel of *Citrus aurantium* (Family: Rutaceae).

Chemical constituents: Volatile oil (2.5%), hesperidin, isohesperidin, vitamin C, pectin, and glycosides.

- **Uses in general:** Fights aging and acne; rich in vitamin C.
- **Uses in face pack:** Exfoliates, brightens complexion, and reduces blemishes.

7) Rice Flour

Biological source and family: Derived from seeds of *Oryza sativa* (Family: Poaceae).

Chemical constituents: Mainly starch, with proteins, fats, fiber, vitamins, and minerals.

- **Uses in general:** Used as a skin-brightening exfoliant.
- **Uses in face pack:** Gently exfoliates, hydrates, lightens skin, and controls oil.

Composition of herbal Face pack

Table 2: Formulation table

Ingredients	Quantity (50 g)
Multani mitti	10 g
Aloe powder	10 g
Turmeric	5 g
Neem powder	5 g
Orange peel powder	5 g
Rice flour	5 g
Butterfly pea flower powder	10 g

Method of preparation^[8]

The concentration of each ingredient was varied across three distinct formulations. We used sieve #120 to accurately measure and grind the contents into a fine powder. Next, the materials were uniformly blended using the serial dilution method in a geometrical fashion. The face pack was carefully placed into a polyethylene bag that could be sealed shut. Categorized and utilized for more research.

Method for application^[9]

Measure out 5 grams of the face pack powder mixture. Blend with 3–4 milliliters of rose water or plain water until a paste forms. Spread this paste evenly over your face and wait ten to fifteen minutes for it to dry. Carefully scrub the powder off your skin once it dries, then remove the pack and rinse it off with water. If you rub the face pack gently over your skin for a few minutes, it will also act as a scrub.

Evaluation^[10, 11, 12]

Instrument and Apparatus

Table 3: List of Instruments

Particular	Manufacturing company
Electronic Balance	Wensar
pH Meter	Systronics
Hot Air Oven	Krithish scientific

Table 4: List of Apparatus

Particular	Quantity
Beaker	50ml, 250 ml
Measuring Cylinder	10ml, 50ml
Funnel	-
Volumetric Flask	10ml
Test tube	10ml

Evaluation

1) Organoleptic Evaluation

The face pack was assessed for color, odor, appearance, texture, and smoothness using visual inspection and touch.

2) Physical Evaluation

Physical properties of the powder such as flowability and density were tested:

- Angle of Repose:** The powder was allowed to fall from a funnel (6 cm height), and angle was calculated.
- Bulk Density:** Determined by placing 25 g of powder in a graduated cylinder and calculated.
- Tapped Density:** 10 g of powder was tapped for 10–15 min & calculated.
- Hausner's Ratio:** Indicates flowability.

3) Physicochemical Evaluation

Assesses quality and stability via:

- pH:** A 10% dispersion was tested using a calibrated digital pH meter.
- Moisture Content (LOD):** 3 g sample was dried at 100–108°C to constant weight.

$$\% \text{ Moisture} = [(W2 - W3) / (W2 - W1)] \times 100$$

- Ash Value:** Indicates purity and detects adulteration.

$$\text{Ash \%} = (\text{Weight of residue} / \text{Initial weight}) \times 100$$

- Particle Size:** Determined microscopically following standard methods.

4) Phytochemical Evaluation:

Tests conducted on aqueous extract to identify plant-based compounds:

a) Aloe – Borax Test

Filtrate + borax + water → green fluorescence (presence confirmed)

b) Turmeric – Terpenoids

- Powder + H₂SO₄ → crimson color
- Aqueous extract + boric acid + alkali → greenish-blue color

c) Neem – Triterpenes (Salkowski Test)

Extract + chloroform + H₂SO₄ → yellow or red layer indicates triterpenes

d) Orange Peel – Monoterpenoids

Orange oil in alcohol remains neutral on litmus (monoterpenoids present)

e) Rice Flour – Carbohydrates

- **Molisch's Test:** Violet ring confirms carbohydrates
- **Fehling's Test:** Red precipitate confirms reducing sugars

f) Butterfly Pea – Flavonol Glycosides & Triterpenes (Salkowski Test)

Chloroform extract + H₂SO₄ → yellow or red layer confirms triterpenes

5) Irritancy Test

Face pack applied to a 1 cm² area on forearm. Observed for any irritation, redness, or swelling over 24 hours.

Results

All of the evaluation parameters' findings pointed to the herbal face pack's high quality and safety. Table 5 displays the organoleptic data.

Table 5: Organoleptic evaluation

Parameter	Observation
Color	Pale Yellow
Odor	Pleasant
Appearance	Smooth
Texture	Fine

2. Physical evaluation^[15]

Using a microscope, we can determine the particle size. Different methods are used to determine the flow properties of the dry powder.

Table 6: Physical evaluation

Parameter	Observation
Tapped Density	0.39 gm/ml
Bulk Density	0.43 gm/ml
Angle of Repose	32.61
Hausner's ratio	0.9
Carr's index	21.94%

3. Physicochemical evaluation^[16]

Find out what the appropriate parameters are for each ingredient used to make the face pack in terms of their physicochemical properties, such as their Ash value, moisture levels, pH, extractive value, etc.

Table 7: Physicochemical evaluation

Parameter	Observation
pH	5.8
Loss on Drying (%)	3.67
Ash content (% w/w)	93 ± 0.732
Particle size (µm)	22.5 ± 26.9

1) pH

Table 8: pH of Face Pack

Sample	pH Reading	Range
Sample1	5.20	5- 7
Sample2	5.53	5-7
Sample3	6.67	5-7
Average = 5.8		

4. Phytochemical Evaluation^[16, 17]

We tested the herbal face pack's water-based extract for phytochemical components.

a) Determination of presence of phytoconstituent in aloe powder

Table 9: Presence of phytoconstituents in aloe powder

Test	Observation	Inference
Borax Test: A small amount of filtrate is mixed with borax and shaken until dissolved. A few drops of this solution are added to water, producing green fluorescence.	Green fluorescence observes. 	Aloe present.

b) Determination of presence of phytoconstituent in Turmeric

Table 10: Presence of phytoconstituents in turmeric

Test	Observation	Inference
Powdered drug with sulphuric acid gives crimson color.	Crimson color observed. 	Terpenoids present.
An aqueous turmeric solution with boric acid turns reddish brown, which changes to greenish blue upon adding alkali.	Reddish brown color observed. 	Terpenoids present.

c) Determination of presence of phytoconstituent in Neem**Table 11:** Presence of phytoconstituents in neem

Test	Observation	Inference
Test for Triterpenoids (Salkowski's test): It detects terpenoids by filtering chloroform-mixed mixtures. After stirring the filtrate, strong sulfuric acid is added and left to stand. Sterols are red at the bottom, while triterpenes are golden yellow.	Golden yellow layer observed. 	Triterpenes present.

d) Determination of presence of phytoconstituent in orange peel powder**Table 12:** Presence of phytoconstituents in orange peel powder

Test	Observation	Inference
A solution of freshly extracted orange oil in dehydrated alcohol shows a neutral reaction on litmus paper.	Red litmus paper stays red.	Monoterpenoids present.

e) Determination of presence of phytoconstituent in Rice flour**Table 13:** Presence of phytoconstituent in Rice flour

Test	Observation	Inference
Molisch's Test: Filtrate is treated with alcoholic α-naphthol; a violet ring at the interface confirms carbohydrates.	Violet ring is observed 	Carbohydrates Present.
Fehling's Test: Hydrolyzed filtrate is neutralized, then heated with Fehling's A & B solutions.	Red precipitate observed 	Carbohydrates Present.

f) Determination of presence of phytoconstituent in Butterfly pea flower powder**Table 14:** Presence of phytoconstituent in Butterfly pea flower powder

Test	Observation	Inference
Salkowski's Test: Extract is mixed with chloroform, filtered & treated with concentrated sulfuric acid. A red lower layer indicates sterols; a golden-yellow layer suggests triterpenes.	Golden yellow layer observed. 	Triterpenes present.

5. Irritancy Test

This formulation is intended for external use only. During irritancy studies, it showed no signs of irritation, redness, or swelling.

Table 15: Irritancy test

Parameter	Observation
Irritation	No
Redness	
Swelling	

Discussion

The prepared face pack had a good aroma, a light yellow hue, and a smooth, fine texture, according to the findings of many tests. The powder mass of Herbal face pack is found to be of passable characteristic. While the pH of the formulation was 5.8 and particle size was found to be 22.5 - 26.9 μm . The chemical constituents like terpenoids, triterpenoids, monoterpeneoids and carbohydrates was present in face pack. The lack of redness, rashes, or swelling observed in the irritancy test suggests that the face pack is both safe and appropriate for skin application. The formula leaves no visible stains on skin and is easily rinsed off.

Conclusion

These days, people want a solution to their skin problems that doesn't have any negative side effects. The use of herbal ingredients paved the path for the development of cosmetics devoid of harmful side effects. An effective and long-lasting method of improving the skin's appearance is the herbal face pack. This study makes a commendable effort to create a herbal face pack using components that are readily available in nature, like Multani mitti, turmeric, aloe vera, neem, orange peel, rice flour, and butterfly pea flower powder.

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