

## Review Article

# FORMULATION AND EVALUATION OF HERBAL FACE PACK

Author: Hariom Patel<sup>1</sup>\*, Rekha Birle<sup>2</sup>, Ranjeet Singh Bargode<sup>3</sup>

<sup>1,2,3,4,5</sup> Institute of Pharmacy, Sage University Indore Madhya Pradesh Indore.

### KEYWORDS:

Face Pack, Herbal, healthy skin

### ARTICLE HISTORY

Received Date: 05/04/2026

Revised Date: 07/04/2026

Accepted Date: 08/05/2026

Published Date: 05/06/2026

DOI: 10.69557/2czdkk06

### CORRESPONDING AUTHOR

Hariom Patel

[rekhabirle5@gmail.com](mailto:rekhabirle5@gmail.com)

### ABSTRACT

The aim of this work is to develop and evaluate an herbal face pack designed to promote healthy, shiny, skin using natural ingredients. The Natural Face Pack contains essential vitamins and nutrients that support skin health and improve appearance. The formulation was tested using several parameters, including organoleptic characteristics, physico-chemical properties, stability, sensitivity testing, and microbial load. The results demonstrated that the formulation was physically stable, non-irritant, and retained its consistency even under conditions necessary to maintain microbiological stability. Ayurvedic ingredients incorporated into the face pack help reduce wrinkles, acne, and dark circles, making the skin smoother and clearer. The natural herbs used in the formulation provide additional benefits by improving skin texture, reducing blemishes, and promoting overall skin wellness. Regular use of the herbal face pack is beneficial for improving blood circulation in the facial veins, which enhances the skin's natural glow and health. The study concludes that herbal face packs prepared with natural ingredients are effective, safe, and beneficial for regular skincare. They can be used as a natural alternative to chemical-based facial products, reducing the risk of irritation and side effects. This research supports the use of herbal formulations for skincare and highlights their potential in maintaining skin health and beauty naturally.

## INTRODUCTION

Skin is the largest organ of the human body, covering about 1.5–2 m<sup>2</sup> and weighing 4–5 kg. It acts as a protective barrier against microorganisms, chemicals, physical injury, and UV radiation, while also helping maintain homeostasis. Its key functions include protection, temperature regulation, sensation, excretion, and vitamin D synthesis. It is also important in cosmetic science as many products are applied directly to it. The skin has three main layers: epidermis, dermis, and hypodermis. The epidermis is the outermost layer made of keratinized cells and has five sublayers: stratum corneum (protective dead cells), stratum lucidum (in thick skin), stratum granulosum (keratin formation), stratum spinosum (strength), and stratum basale (cell regeneration). It contains specialized cells like keratinocytes, melanocytes, Langerhans cells, and Merkel cells. The dermis lies below the epidermis and provides strength and elasticity through collagen and elastin. It contains blood vessels, nerves, hair follicles, sebaceous glands (produce sebum), and sweat glands (help in temperature control and waste removal). It has two layers: papillary (upper, thin) and reticular (lower, thick). The hypodermis is the deepest layer made of adipose tissue. It cushions the body, stores energy, provides insulation, and connects the skin to muscles and bones.

### Method of preparation

Firstly collect fresh **Neem leaves, Rose petals, Green Tea leaves, Turmeric rhizomes, and Sandalwood chips**. Wash thoroughly to remove dirt. Dry in **shade** for 7–10 days until completely moisture-free. Shade drying preserves active compounds. Grind each dried material separately using a **mortar and pestle** or **mechanical grinder** to a fine powder. Ensure powders are **completely dry** to prevent clumping. Pass each powder through a **fine mesh sieve (80–100 µm)** to obtain **uniform particle size**, ensuring smooth texture and better skin application. Accurately weigh the following using an **analytical balance**: Neem Powder – 20 g, Rose Petal Powder – 20 g, Green Tea Leaf Powder – 10 g, Turmeric Powder – 10 g, Sandalwood Powder – 10 g, Multani Mitti – 30 g. Place all powders in a clean, dry glass beaker or bowl. Mix thoroughly using a **spatula** for 15–20 minutes to ensure a **homogeneous blend**. Check visually for uniform color and absence of lumps. Transfer the final powdered face pack into **airtight, moisture-free containers**. Label containers with **name, batch number, and date of preparation**. Store in a **cool, dry place away from sunlight**.

Table-1 for 100 gm

| Ingredient            | Quantity (g) | Purpose                                   |
|-----------------------|--------------|-------------------------------------------|
| Neem Powder           | 20 g         | Antimicrobial, anti-acne                  |
| Rose Petal Powder     | 20 g         | Skin toning, soothing                     |
| Green Tea Leaf Powder | 10 g         | Antioxidant, anti-aging                   |
| Turmeric Powder       | 10 g         | Anti-inflammatory, skin brightening       |
| Sandalwood Powder     | 10 g         | Cooling, soothing, complexion improvement |
| Multani Mitti         | 30 g         | Oil absorption, deep cleansing            |

## EVALUATION

**Organoleptic Evaluation** assesses herbal face pack quality based on sensory parameters such as color, odor, texture, appearance, and consistency. The formulation should have uniform color, pleasant odor, fine and smooth texture, and be free from impurities. After mixing, it should form a smooth, spreadable paste, provide a soothing effect, and be easily washable. Stability of these properties ensures product quality and shelf life.

### Color:

The herbal face pack should exhibit a uniform and consistent color throughout the formulation. The color should be natural and characteristic of the herbal ingredients used, such as green, brown, or beige. Any discoloration or unevenness may indicate degradation or poor-quality raw materials. Stable color also reflects proper processing and good storage conditions.

### Odor:

The formulation should have a pleasant and characteristic herbal fragrance. The odor should be natural and not overpowering, ensuring user acceptability. There should be no foul, rancid, or unusual smell present in the product. Any undesirable odor may indicate spoilage, contamination, or instability.

### Texture:

The texture of the powder should be fine, smooth, and free-flowing. It should not contain lumps, grittiness, or coarse particles. Uniform particle size helps in easy mixing and better application on the skin. A good texture ensures even distribution and improved performance of the face pack.

### Appearance:

The overall appearance of the formulation should be clean and visually appealing. It should be homogeneous in nature without any visible separation. The product must be free from impurities, dust, or foreign particles. A good appearance indicates proper formulation and handling practices.

### Consistency (after mixing):

When mixed with water or rose water, it should form a smooth paste. The paste should be homogeneous without lumps or separation. It should have an ideal consistency that is neither too thick nor too runny. Proper consistency ensures easy spreading and good adherence to the skin.

### Feel on Application:

The formulation should feel soft and smooth when applied to the skin. It should provide a soothing, cooling, or refreshing sensation. There should be no irritation, itching, or burning upon application. A pleasant feel indicates good compatibility with the skin.

### Washability:

The face pack should be easy to remove using normal water. It should not require excessive rubbing or harsh scrubbing. No sticky or heavy residue should remain after washing. Good washability improves user

convenience and satisfaction.

### **Stability of Characteristics:**

The organoleptic properties should remain stable during storage. There should be no significant change in color, odor, or texture over time. Stability indicates good formulation and longer shelf life.

### **PHYSIOCHEMICAL EVALUATION:**

#### **Determination of pH**

pH is an important parameter in the physicochemical evaluation of herbal face packs. It indicates the acidity or alkalinity of the formulation. For cosmetic use, the pH should be compatible with the natural skin pH (around 5.5 to 7). A suitable pH helps in maintaining the skin's protective acid mantle. If pH is too acidic or too alkaline, it may cause irritation or dryness. Herbal ingredients can influence the final pH of the formulation. Therefore, pH adjustment is essential for safety and efficacy. It ensures better skin tolerance and product acceptability.

#### **Moisture Content**

Moisture content refers to the amount of water present in the herbal face pack powder. It is an important factor affecting stability and shelf life of the formulation. High moisture content may lead to microbial growth and spoilage. It can also reduce the flowability and quality of the powder. Low moisture content improves stability and prevents contamination. It is usually determined by drying the sample to a constant weight. Controlled moisture ensures better storage properties. It directly affects product safety and longevity.

#### **Particle Size & Bulk Density**

Particle size plays a key role in the smoothness and application of the face pack. Smaller and uniform particles ensure better mixing and spreadability. Coarse particles may cause rough texture and skin irritation. Bulk density indicates the packing ability of the powder particles. It affects flow properties.

#### **Ash Value**

**Ash value** represents the total amount of inorganic residue present after complete combustion. It helps in determining the purity of the herbal formulation. High ash value may indicate contamination or adulteration. It is used to detect the presence of earthy or inorganic materials. Different types include total ash, acid-insoluble ash, and water-soluble ash. Acid-insoluble ash is especially important for detecting silica contamination. It is a standard quality control parameter in herbal products. It ensures authenticity and cleanliness of raw materials.

## Extractive Value

Extractive value indicates the amount of active constituents extracted using solvents. It helps in evaluating the quality and potency of herbal ingredients. Different solvents like water and alcohol are used for extraction. Higher extractive value suggests better presence of phytochemicals. It is useful in identifying the nature of bioactive compounds. It also helps in detecting adulteration or poor-quality drugs. Both water-soluble and alcohol-soluble extractives are measured. It ensures consistency and effectiveness of the formulation.

## Viscosity & Spreadability

Viscosity refers to the resistance of a semi-solid formulation to flow. It is important for determining the consistency of the face pack after mixing. Spreadability indicates how easily the paste spreads on the skin. Good spreadability ensures uniform application and better coverage. Too high viscosity makes application difficult and uneven. Too low viscosity results in dripping and poor adherence. These properties affect user experience and product performance. They are essential for cosmetic acceptability.

## Stability Studies

Stability studies evaluate the behavior of the formulation over time. They are conducted under different temperature and humidity conditions. These studies help in assessing physical and chemical changes. Parameters like color, odor, and pH are observed during storage. Microbial stability is also an important aspect. It ensures that the product remains safe and effective throughout shelf life. Any degradation indicates poor formulation or packaging issues. Stability testing is essential for quality assurance.

## Particle Size Analysis:

Particle size analysis is the evaluation of the size and distribution of particles present in a herbal face pack formulation, which directly affects its texture, spreadability, and skin compatibility.

---

## RESULTS

The present study was successfully carried out for the formulation and evaluation of a herbal face pack using natural ingredients such as multani mitti, neem powder, turmeric, sandalwood, and orange peel powder. All selected ingredients were carefully processed, mixed in appropriate proportions, and formulated into a fine powder suitable for topical application. The prepared herbal face pack was evaluated for various parameters to determine its quality, safety, and effectiveness. The organoleptic properties revealed that the formulation possessed a pleasant color, characteristic herbal odor, smooth texture, and uniform appearance, which are desirable for user acceptance. The physicochemical evaluation showed that the pH of the formulation was within the acceptable range (6.5–7), making it compatible with skin and reducing the chances of irritation. The particle size of the powder was found to be fine and uniform, which ensured better adhesion.

## REFERENCES

1. Mithal, B. M., & Saha, R. N. *A Handbook of Cosmetics*. Vallabh Prakashan, New Delhi, 2012, pp. **1–25, 95–110**.
2. Lavanya, K., Saraswathi, K. N., & Babu, B. S. “Formulation and Evaluation of Herbal Face Pack.” *International Journal of Research in Pharmaceutical Sciences*, 2017, pp. **50–55**.
3. Kapoor, V. K. *Herbal Cosmetics for Skin and Hair Care*. CBS Publishers, New Delhi, 2005, pp. **30–60**.
4. Khandelwal, K. R. *Practical Pharmacognosy Techniques and Experiments*. Nirali Prakashan, Pune, pp. **25–40, 150–165**.
5. Nema, R. K. *Textbook of Cosmetics*. CBS Publishers and Distributors, 2011, pp. **70–90, 140– 155**.
6. Patel, A. A., et al. “Herbal Cosmetics: Trends and Technology.” *International Journal of Pharmaceutical Sciences Review and Research*, 2013, pp. **80–85**.
7. Singh, S. K., & Singh, M. “Herbal Cosmetology: An Overview.” *Journal of Applied Pharmaceutical Science*, 2012, pp. **35–40**.
8. World Health Organization (WHO). *Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants*, 2003, pp. **1–72**.
9. Chaudhuri, R. K. “Natural Products in Cosmetics.” *Clinics in Dermatology*, 2001, pp. **45–50**.
10. Dureja, H., et al. “Cosmeceuticals: An Emerging Concept.” *Indian Journal of Pharmacology*, 2005, pp. **155–159**.
11. Harry, R. G. *Harry’s Cosmeticology*. Chemical Publishing Company, New York, 2000, pp. 200–230.
12. Barel, A. O., Paye, M., & Maibach, H. I. *Handbook of Cosmetic Science and Technology*. CRC Press, 2009, pp. **150–180**.
13. Ali, A., Akhtar, N., & Khan, B. A. “Skin Care Cosmetics and Herbal Ingredients.” *Journal of Medicinal Plants Research*, 2011, pp. **164–170**.
14. Pandey, S., & Meshya, N. “Herbal Cosmetics: Current Trends and Future Prospects.” *International Journal of PharmTech Research*, 2010, pp. **120–125**.
15. Sharma, P. P. *Cosmetics: Formulation, Manufacturing and Quality Control*. Vandana Publications, 2014, pp. **10–45, 120–135**.