

Formulation and Evaluation of Herbal Face Pack

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Abstract: The increasing demand for natural skincare products has led to the development of herbal formulations that are safe, effective, and free from synthetic chemicals. This study focuses on the preparation and evaluation of a herbal face pack using ingredients such as Multani mitti (Fuller's earth), neem (*Azadirachta indica*), turmeric (*Curcuma longa*), sandalwood powder (*Santalum album*), and rose petals. These herbs were selected based on their known therapeutic properties, including anti-inflammatory, antimicrobial, antioxidant, and skin-soothing effects. The face pack was formulated as a fine powder and evaluated for parameters such as organoleptic properties, pH, microbial load, irritancy, and stability. The results indicated that the herbal face pack was stable, non-irritant, and exhibited favorable characteristics for skin application. The study concludes that the prepared herbal face pack can serve as a promising natural cosmetic formulation for maintaining healthy and glowing skin.

Keywords: herbal formulations

I. INTRODUCTION

Herbal face packs have emerged as a popular choice in the realm of natural skincare, offering a chemical-free alternative to conventional cosmetic products. These formulations leverage the therapeutic properties of plant-based ingredients to address various skin concerns such as acne, pigmentation, and signs of aging. The preparation and evaluation of herbal face packs involve a meticulous process to ensure their efficacy, safety, and stability.

Ingredient

Herbal Ingredient	Botanical Name	Benefits	Suitable For Skin Type
Multani Mitti (Fuller's Earth)	—	Absorbs excess oil, deep cleanses pores	Oily, Acne-Prone
Neem powder	<i>Azadirachta indica</i>	Antibacterial, anti- acne, detoxifies skin	Oily, Acne-Prone
Turmeric	<i>Curcuma longa</i>	Anti-inflammatory, brightens complexion	All, especially Acne-Prone
Sandalwood	<i>Santalum album</i>	Cooling, soothes irritation, improves complexion	Sensitive, Dry, Normal
Aloe Vera powder	<i>Aloe barbadensis</i>	Moisturizing, healing, anti-inflammatory	Dry, Sensitive, All types
Tulsi (Holy Basil)	<i>Ocimum sanctum</i>	Antiseptic, purifies skin, controls acne	Oily, Acne-Prone
Rose Petals	<i>Rosa spp.</i>	Toning, soothing, adds glow	Sensitive, Normal, Dry
Besan (Gram Flour)	—	Removes tan, exfoliates, controls oil	Oily, Combination
Orange Peel Powder	—	Rich in vitamin C, tightens skin, exfoliates	Oily, Dull Skin
Papaya powder	<i>Carica papaya</i>	Natural enzyme exfoliant, removes dead cells	All skin types
Mint Leaves powder	<i>Mentha spp.</i>	Cooling, anti- inflammatory, reduces oil	Oily, Combination



INGREDIENTS



Aloe vera Powder



Mint Leaves Powder



Orange Peel Powder



Besan



Rose Petals



Tulsi



Neem Powder



Turmeric



Papaya Powder



Multani Mitti



Sandal Wood

II. REVIEW OF LITERATURE

- Formulation and Evaluation of Herbal Face Pack for Glowing Skin (2024): This study developed a herbal face pack using ingredients like multani mitti, turmeric, sandalwood, sweet potato powder, neem powder, rose water, nutmeg powder, and aloe vera powder. The formulation was evaluated for morphological, physicochemical, physical,



phytochemical, and irritancy characteristics, as well as stability testing. The findings indicated that the face pack had good properties, was free from skin irritation, and retained its consistency even after stability storage conditions.

- **Formulation and Evaluation of Herbal Face Pack for Healthy Skincare (2024):** This research investigated the formulation and assessment of a herbal face pack integrating historical insights into plant-based skincare remedies. The study detailed the preparation process, emphasizing the incorporation of traditional practices within modern skincare approaches.

- **Formulation and Evaluation of Herbal Face Pack (2023):** This study aimed to create and assess a cosmetic herbal face pack for all skin types utilizing natural ingredients in varied concentrations. The formulations were evaluated for their morphological, physicochemical, general powder, and chemical properties. The results indicated that the formulations were effective and suitable for different skin types.

Ayurveda Formulation of Herbal Face Pack to Treat Blemishes (2023): This study developed a herbal face pack for treating blemishes using herbal ingredients. The formulations were evaluated by using different parameters such as organoleptic properties, physicochemical parameters, stability studies, skin irritation test, and microbial load. The study showed good properties of the face packs, and further optimization studies were suggested.

Principles:

1. Selection of Natural Ingredients

Herbal face packs typically incorporate ingredients like turmeric, neem powder, sandalwood, multani mitti (Fuller's earth), rose petals, orange peel, and aloe vera powder. These components are chosen for their skin-beneficial properties such as anti-inflammatory, antimicrobial, and skin-brightening effects.

2. Preparation Method

The preparation process includes:

- Sieving dried herbs to obtain fine powders.
- Geometric mixing of the powders to ensure uniformity.
- Incorporation of binders or solvents

KEY ADVANCEMENTS

1. Integration of Natural Deep Eutectic Solvents (NADES)

Researchers have explored the use of NADES, such as choline chloride and glycerol, to improve the solubility, stability, and delivery of active compounds like curcumin in herbal formulations. These solvents enhance the bioavailability and effectiveness of herbal ingredients by forming stable complexes with them.

2. Development of Multifunctional Herbal Face Packs

Studies have focused on creating herbal face packs that offer multiple skincare benefits, such as skin brightening and tan reduction. These formulations utilize a combination of natural ingredients and undergo rigorous testing for extrudability, stability, irritancy, and physicochemical properties. The goal is to provide effective skincare solutions with minimal side effects.

3. Use of Red Clay in Herbal Face Packs

The inclusion of red clays, such as French red clay, in herbal face packs has been studied for their excellent absorbent properties, skin tightening effects, and mineral-rich composition. These clays, combined with various herbs, create face packs that detoxify the skin, unclog pores, remove debris, exfoliate dead cells, and promote cell regeneration, thereby reducing blemishes, acne scars, and pigmentation.



Rationale of Study:

The increasing consumer preference for natural skincare products has highlighted the need for effective and safe alternatives to synthetic cosmetics. Herbal face packs, formulated from plant-based ingredients, offer a promising solution due to their minimal side effects and therapeutic benefits.

1. Growing Demand for Natural Skincare Products

There is a significant shift towards natural and herbal cosmetics as consumers become more aware of the potential adverse effects of synthetic chemicals. Herbal face packs, utilizing ingredients like turmeric, sandalwood, and neem, are gaining popularity for their skin-friendly properties .

2. Therapeutic Benefits of Herbal Ingredients

Herbal face packs are known for their various skin benefits, including anti- inflammatory, antioxidant, and antimicrobial effects. Ingredients such as turmeric and neem are particularly noted for their ability to combat acne, reduce pigmentation, and improve skin texture .

3. Need for Standardization and Quality Control

While herbal face packs are widely used, there is a lack of standardized formulations and quality control measures. Research focusing on the preparation and evaluation of these products ensures consistent quality, safety, and efficacy, thereby enhancing consumer trust .

4. Environmental and Economic Considerations

The use of locally sourced, natural ingredients in herbal face packs not only supports sustainable practices but also reduces the environmental impact associated with synthetic cosmetic products. Additionally, these formulations can be cost-effective, making them accessible to a broader population .

5. Contribution to Scientific Knowledge

Conducting studies on the preparation and evaluation of herbal face packs contributes to the scientific understanding of their properties and potential benefits. This research can lead to the development of innovative formulations that cater to diverse skin types and concerns .

APPLICATION:

1. Skin Cleansing and Detoxification

Herbal face packs aid in removing impurities, excess oils, and environmental pollutants from the skin. Ingredients like turmeric and neem possess antimicrobial properties that help cleanse the skin and reduce the risk of acne and other skin infections. For instance, a neem face mask combined with sandalwood powder and cucumber pulp can prevent acne and promote clearer skin during the summer season.

2. Anti-Aging and Skin Rejuvenation

The antioxidants present in herbs such as turmeric, sandalwood, and rose petals help combat free radicals, thereby reducing signs of aging like wrinkles and fine lines. Regular application of these face packs can rejuvenate the skin, giving it a youthful appearance. For example, a face pack made from sandalwood powder and gram flour can help in reducing blemishes and dark patches.

3. Skin Tone Evening and Brightening

Herbal ingredients like turmeric and gram flour are known for their skin- brightening effects. A face pack combining these ingredients can help even out skin tone, reduce pigmentation, and impart a natural glow. This is particularly beneficial for individuals with uneven skin tone or dull complexion.



4. Hydration and Moisturization

Certain herbal face packs provide deep hydration to the skin, especially those containing aloe vera powder. These ingredients lock in moisture, preventing dryness and maintaining skin elasticity. An aloe vera-based face pack can hydrate the skin, leaving it soft and supple.

5. Treatment of Specific Skin Conditions

Herbal face packs can be tailored to address specific skin issues such as acne, pigmentation, and sunburn. For example, a face pack made from aloe vera powder, and rose water can help even out skin tone and reduce tanning. Similarly, a turmeric and besan (gram flour) face pack can act as an exfoliant and help in maintaining the pH balance of the skin.

6. Cultural and Therapeutic Practices

In many cultures, the application of herbal face packs is not only a skincare routine but also a therapeutic practice. For instance, in Ayurveda, face packs are considered external treatments that have localized action, enabling the active principles present in the herbs to be absorbed into the skin. This practice is believed to improve skin health, reduce wrinkles, and give a youthful appearance.



FORMULATION PROCESS

III. MEHODOLOGY

1. Selection and Preparation of Ingredients

Choose natural herbal ingredients known for their skincare benefits. Common selections include:

- Multani mitti (Fuller's earth)
- Turmeric
- Sandalwood powder
- Neem powder



- Orange peel powder
- Rose petal powder
- Aloe vera powder
- These ingredients should be sourced from reputable suppliers and prepared as follows:
- Drying: Herbs like neem and rose petals should be shade-dried to preserve their active compounds.
- Powdering: Use a clean, dry grinder to obtain fine powders.
- Sieving: Pass the powders through a #44 mesh sieve to ensure uniform particle size.

2. Formulation Preparation

Combine the prepared herbal powders in specific proportions to achieve the desired therapeutic effects. For instance:

- F1: Multani mitti (30%), Turmeric (20%), Sandalwood (20%), Neem powder (15%), Orange peel (10%), Rose petal (5%)
- F2: Multani mitti (35%), Turmeric (15%), Sandalwood (15%), Neem powder (20%), Orange peel (10%), Aloe vera powder (5%)
- Mix the ingredients geometrically to ensure uniform distribution of each component. This method helps in achieving consistent quality across the formulation.

3. Evaluation of Formulations

Assess the prepared face pack formulations using the following parameters:

Physicochemical Properties:

- pH: Measure using a pH meter to ensure skin compatibility.
- Moisture Content: Determine to assess the shelf-life.
- Ash Content: Evaluate the purity of the ingredients.
- Loss on Drying: Assess the volatile content.
- Stability Studies: Store formulations under various conditions (e.g., temperature, humidity) and monitor for changes in appearance, consistency, and efficacy over time.

4. Packaging and Storage

Package the final face pack in airtight, opaque containers to protect from light and moisture. Label the containers with the formulation details, preparation date, and storage instructions. Store the products in a cool, dry place to maintain their stability and efficacy.

Comparative study :

1. Multani Mitti, Turmeric, Sandalwood, Saffron, Milk Powder, Rice Flour, Orange Peel, and Banana Peel

- Study: Formulation and Evaluation of Herbal Face Pack for Glowing Skin
- Key Findings: This formulation demonstrated good physicochemical properties, was free from skin irritation, and maintained consistency under stability storage conditions.

2. Rose Petal Powder, Multani Mitti, Orange Peel Powder, Turmeric, Nutmeg Powder, Neem Powder, Sandalwood Powder

- Study: Formulation and Evaluation of Herbal Face Pack
- Key Findings: The face pack exhibited desirable physical and chemical properties, was free from harmful microorganisms, and maintained stability under different storage conditions.

3. Multani Mitti, Sandalwood Powder, Mint Powder, Aloe Vera Powder, Turmeric Powder, Orange Peel Powder, Neem Powder



- Study: Formulation And Evaluation Of The Various Physicochemical, Rheological, And Stability Properties Of The Herbal Face Pack
- Key Findings: Formulation B4 was found to have the best physical parameters, was least irritating to the skin, and maintained its consistency even under stable storage conditions.

4. Multani Mitti, Turmeric, Aloe Vera, Sandalwood, Orange Peel

- Study: Formulation and Evaluation of Face Pack by Using Orange Peel
- Key Findings: The face pack was effective in stimulating blood circulation, rejuvenating muscles, maintaining skin elasticity, and removing dirt from skin pores.

5. Manjistha, Sandalwood, Turmeric, Neem, Multani Mitti, Rose Petals

- Study: Formulation and Evaluation of Face Pack: The Golden Herbal Ingredient
- Key Findings: The face pack combined the benefits of multiple herbs to promote healthy, glowing skin while being safe, eco-friendly, and free from synthetic additives.

6. French Red Clay, Hibiscus, Sandalwood, Multani Mitti, Orange Peel Powder, Turmeric, Neem

- Study: Formulation And Evaluation Of Red Clay-Polyherbal Face Pack
- Key Findings: The formulation provided good results, promising that the formulation may be used by humans after further important tests.

7. Sandalwood, Aloe Vera, Turmeric, Neem, Orange Peel, Cucumber

Extract, Lotus Petals Powder, Tea Tree Leaves Powder, Kaolin, Calcium Bentonite

- Study: Ayurveda Formulation of Herbal Face Pack to Treat Blemishes
- Key Findings: The study showed good properties of the face packs, with further optimization studies recommended

IV. RESULT

The preparation of herbal face packs has been extensively studied, yielding promising results in terms of skin benefits, stability, and safety. Here's a summary of key findings from various studies:

1. Herbal Face Pack for Glowing Skin
2. Herbal Face Pack for Healthy Skincare
3. Papaya Herbal Face Pack
4. Red Clay-Polyherbal Face Pack
5. Golden Herbal Ingredient Face Pack

V. CONCLUSION

The comparative studies highlight the efficacy of herbal face packs in promoting healthy, glowing skin. Formulations incorporating a variety of natural ingredients have demonstrated favorable physicochemical properties, stability, and skin compatibility. These products offer a safe and effective alternative to synthetic skincare products. However, further optimization and in vivo studies are recommended to enhance their efficacy and consumer acceptability.

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