

FORMULATION AND EVALUATION OF SKIN CARE HERBAL FACE PACK

Khule Rushikesh Jalindar*¹, Prof. Dhone Vijay Sir*²

*¹Student, Ashvin College Of Pharmacy, Manchi Hill , Tal.Sangamner, Dist.Ahmednagar, India.

*²Guide, Ashvin College Of Pharmacy, Manchi Hill , Tal.Sangamner, Dist.Ahmednagar, India.

ABSTRACT

The objective of this research is to formulate and assess a herbal remedy for inflamed skin using naturally sourced medicinal plants. Various herbal ingredients, including manjistha powder, banana powder, red pepper powder, rose petal powder, and sandalwood powder, were procured in dry powder form from local markets, while aloe vera was obtained from a manufacturing facility. All powders underwent sieving through a #85 mesh to ensure consistency, then were accurately weighed and blended geometrically to achieve uniformity. The formulations were evaluated based on several parameters, encompassing morphology, physicochemical properties, physical characteristics, phytochemical composition, irritation potential, and stability. This study aims to develop face masks that can be easily prepared with readily accessible materials.

Keywords: Skin, Herbal Face Pack, Formulation, Evaluation.

I. INTRODUCTION

Ayurveda highlights the benefits of face masks for women, aiding in the reduction of wrinkles, dark circles, freckles, and acne. Herbal face masks enhance the skin's balance, and their benefits vary based on individual skin types. These masks not only improve skin tone but also serve as an effective Ayurvedic remedy for enhancing fairness. Utilizing facial masks is one of the oldest and most effective methods for skin cleansing. Ayurveda identifies various types of face masks that offer nourishing, cleansing, healing, astringent, and antiseptic properties. We can easily create these treatments at home using common kitchen ingredients. Facial treatments are cost-effective and free from side effects, allowing for naturally radiant skin. Throughout history, the use of medicinal plants for beauty, cleansing, and skin care has been well-documented. Since ancient times, people have recognized the significance of plants in maintaining healthy skin. Cosmetic oils are often employed for cleansing, beautifying, and enhancing one's appearance. The skin on the face is the largest surface area of the body.

Advantages of Herbal Skin Care Face Packs:

1. Nourishes the skin. Fruit-based face packs infuse the skin with vital nutrients.
2. Assists in reducing acne, pimples, scars, and blemishes based on their herbal composition.
3. Typically eliminate dead skin cells.
4. Provide a calming and soothing effect on the skin.
5. Aid in rejuvenating the skin's lost shine and radiance in a short time.
6. Consistent use of natural face masks enhances skin luminosity, texture, and complexion.
7. Effectively counteracts the damaging impacts of pollution and harsh weather through proper application of face packs.
8. Help prevent early signs of aging.
9. Formation of wrinkles, fine lines, and sagging skin can be effectively managed with the use of natural face packs.

Desirable Qualities of Face Packs:

- The product must be both physically and chemically stable.
- It should be devoid of any gritty particles.
- A pleasant fragrance is essential.
- It needs to effectively cleanse the skin.
- Upon application, it should create a sensation of skin tightening.

II. LITERATURE REVIEW

1. AO Maske, M Pandhare, DW Ashwin et al. (2019) This research paper focuses on the formulation and evaluation of a herbal face pack: its formulation, assessment, and stability analysis. The objective of this study is to create and evaluate a herbal face pack aimed at achieving glowing skin using natural ingredients. The formulation incorporates natural elements like banana peel, red lentils, and aloe vera. Consequently, we developed a herbal face pack that utilizes these readily available ingredients. Upon evaluation, we observed favorable properties in the face pack, which was free from skin irritation and maintained its consistency even under stable storage conditions.
2. According to J. Wäldchen, P. Mäder, et al. (2018), understanding different species is crucial for preserving biodiversity. The traditional method of identifying plants through conventional keys is often complicated and time-consuming, and it can be quite frustrating for those lacking expertise due to the use of specialized botanical terminology. However, advancements in technology—such as digital cameras, mobile devices, remote database access, and new image processing and pattern recognition methods—have enabled the possibility of automated species identification.
3. As stated by Pal, S.K. and Shukla, Y. et al. (2003), this research paper discusses herbal medicines, which represent centuries of therapeutic practices accumulated by indigenous healthcare practitioners. There is a growing demand for herbal treatments in the developing world for primary healthcare, driven not only by their cost-effectiveness but also by their cultural acceptability, compatibility with the human body, and low incidence of side effects.

III. AIM AND OBJECTIVES

Aim

Based on a review of existing literature, various pharmacological effects have been examined regarding different plant parts by numerous researchers, along with their traditional chemical properties. Thus, the objective of this project is to create and assess a herbal skincare face pack utilizing natural ingredients.

Objectives:

This aim will be achieved through the following specific objectives:

- To formulate and evaluate an effective herbal face pack that promotes glowing skin using natural components.
- To support skin elasticity, eliminate embedded dirt particles, and enhance blood circulation.
- To investigate the antifungal and antimicrobial properties of the herbal face pack.

Plan of Work:

- Collection and identification of various plant materials
- Extraction of active compounds from the plant materials
- Preparation of a powdered form of dried crude drugs
- Sieving of the powder for a fine consistency
- Formulation of the face pack by combining all ingredients
- Evaluation tests of the face pack
- Phytochemical screening for active constituents

IV. MATERIALS AND METHODS

This study utilized natural materials that are readily available locally, including sandalwood, rose petals, red lentils, banana peels, and aloe vera.

➤ Manjistha :

- Botanical Name : Rubia cordifolia
- Family : Rubiaceae
- Chemical Constituents : Quinones, iridoids, oleananes, triterpenoids

Manjistha is a climbing, green plant from the Rubiaceae family, characterized by a red rhizome base and roots. It can reach a height of up to 1.5 meters and features a smooth, four-sided stem. The dark green leaves grow in clusters of 4 to 7 around the trunk and are spirally arranged in groups of four at each node, resembling an

upright tree. When applied both internally and externally, it has revitalizing effects on the skin, aiding in the reduction of acne, freckles, and pigmentation spots. The paste is effective for various skin conditions, including acne, facial blemishes, and leucoderma.

➤ **Banana Peel Powder:**

- Family : Musaceae
- Genus : Musa
- Botanical Name : Musa paradisiaca

➤ **Aloe Vera:**

- Botanical Name of Aloe Vera : Aloe barbadensis miller
- Family :Liliaceae
- Chemical Components : Vitamin B12, folic acid, choline, glucose, fructose, Aloin
- Uses : Soothing and moisturizing skin

Aloe vera is arguably the most popular plant for skincare. The gel-like substances found in Aloe vera seem to alleviate minor skin issues effectively. It is rich in vitamin E, which significantly helps to prevent skin aging and irritation. Aloe vera juice enhances skin brightness, fosters an even complexion, delays the aging process, and diminishes the appearance of fine lines and wrinkles. Those struggling with skin concerns can find relief with aloe vera, which is conveniently available in various forms such as moisturizer, gel, cleanser, or other skincare products.

Effective Skin Cleanser:

Dal Masoor Dal is packed with essential nutrients including proteins, vitamins, and minerals. It serves as an excellent skin cleanser, effectively removing impurities and enhancing skin health. Masoor Dal also fortifies the skin, aiding in the reduction of wrinkles and fine lines, making it a gentle and natural anti-aging solution. Additionally, its antioxidant properties help neutralize free radicals, making it particularly beneficial for darker skin tones and for those with acne-prone skin or various other skin concerns.

➤ **Rose Petals Powder**

- Scientific Name : Rosa centifolia
- Family :Rosaceae
- Genus : Rosa

Rose petal powder boasts significant antibacterial properties along with beneficial vitamins K, C, and B. It contains a substantial amount of antioxidants. This rose powder is particularly effective in alleviating redness, especially after sun exposure, and supports collagen production in the skin. The high levels of vitamins A and C found in roses further encourage the body's collagen synthesis.

➤ **Sandalwood Powder**

- Botanical Name: Santalum album
- Synonym : Santalales
- Family : Santalaceae
- Genus : Santalum

Sandalwood possesses anti-aging properties that help protect the skin from the harmful effects of pollution, while also keeping it cool, hydrated, and healthy. This Ayurvedic herb has anti-inflammatory benefits, making it effective for treating various skin conditions and diminishing scars. The oil derived from sandalwood, particularly from its heartwood, is the primary source of both commercial and cultural significance. For those with oily skin, sandalwood can be beneficial in eliminating dark spots.

V. METHOD OF PREPARATION

Step 1: All necessary herbal powders for the face pack were meticulously measured using a digital balance. The details of the quantities and compositions are provided below.

Table 1:

Sr no	Ingredient	Quantity for 20g	Properties
1	Manjishta extract	10.85gm	Antibacterial
2	Banana peel powder	1gm	Antifungal and Antibiotic
3	Aloe vera gel	2gm	Moisturizes the skin
4	Red lentils powder	1gm	Antioxidant
5	Rose petals powder	1gm	Antibacterial
6	Sandalwood powder	2gm	Antitanning and Anti-aging
7	Glycerin	3ml	Hydrates skin and relieves dryness
8	Methyl Paraben	0.4	Preservative

Refer to Table for the formulation:

Step 2: Grind all solid ingredients and sieve them through a #120 mesh.

Step 3: Combine all powdered ingredients in the specified quantities using a mortar and pestle.

Step 4: Added 10ml of manjishta (alcoholic extract) and mixed it thoroughly using a pestle.

Step 5: Incorporated glycerin and methyl paraben as preservatives, blending the mixture well.

Step 6: Stored the prepared face pack in a tightly sealed container for later use.

Guidelines for Using Facial Creams:

1. Select facial masks that are appropriate for your skin type.
2. Avoid leaving the facial scrub on your skin for more than 15-20 minutes, as prolonged exposure may lead to wrinkles, sagging skin, and enlarged pores.
3. Keep the face mask away from the eye area, as the skin there is delicate.
4. Use the face mask once a week and refrain from removing or drying it prematurely.

Evaluation of Herbal Face Pack:

Organoleptic Assessment: Organoleptic parameters such as texture, color, aroma, and consistency were assessed manually for their physical characteristics.

Irritancy Test: The total number of commercially produced face masks used over a specific period was monitored for signs of irritation, redness, and swelling.

Rheological Analysis:

Tapped Density:

Tapped density refers to the mass acquired after a powder material is compacted within a specialized machine. Initially, the size of the powder mass is noted, and then the measuring cylinder or barrel is subjected to one minute of mechanical tapping. The dimensions or overall measurements are recorded until the smallest size or the most significant change is detected. Tapped density is quantified in grams per cubic centimeter. It represents the heightened bulk density achieved through mechanically tapping a container that holds the powder sample.

Bulk Density:

Bulk density signifies the mass-to-volume ratio of an unpacked powder sample, including the void spaces between particles. As a result, bulk density is influenced by both the density of the individual powder particles and the arrangement of these particles within the powder bed.

It can also be measured in grams per cubic centimeter (g/cm^3). The bulking characteristics of a powder rely on how the sample was prepared, treated, and stored, meaning the way it was handled significantly matters. The particles can be compressed to yield a variety of bulk densities, and even a minor disturbance in the powder

bed can alter its bulk density. Therefore, accurately measuring the bulk density of a powder can be quite challenging to reproduce consistently. When reporting findings, it is crucial to detail the methods used for determination.

VI. RESULTS AND DISCUSSION

Organoleptic Evaluation:

The results of the evaluation are presented in a table showcasing the organoleptic and general characteristics of the powder. The analysis of attributes such as nature, color, odor, and the characteristics of the dried powder from the combined formulation under investigation provided vital insights for organoleptic assessment.

Table 2: Organoleptic Evaluation

Sr no	Parameter	Observation
1	Colour	Brown
2	Odour	Pleasant
3	Texture	Fine
4	Appearance	Smooth
5	pH (0.1 solution)	6.5
6	Washability	Easily washable
7	Moisture Content	0.3
8	Skin Condition Post-Wash	Soft and clear

Observation:

The stability test, conducted over a one-month period at varying temperatures, demonstrated the inert characteristics of the face pack concerning its color, fragrance, appearance, texture, and pH levels.

Irritancy Test:

The following table summarizes the findings from the irritancy trial. The formulated product exhibited no signs of irritation, redness, or swelling during the irritancy test.

Table 3:

Sr. No	Parameter	Observation
1	Irritation	Minimal irritation
2	Redness	none
3	Swelling	None

Observation:

The irritancy test yielded negative results for irritation, redness, swelling, and photoirritancy. Moreover, the herbal ingredients in their natural form, Without chemical additives, proved to be compatible with skin proteins.

VII. CONCLUSION

The herbal face pack is designed to rejuvenate facial muscles, sustain skin elasticity, eliminate trapped dirt particles, and enhance blood circulation. The advantages of herbal cosmetics lie in their non-toxic nature. This face pack delivers vital nourishment to the skin, aiding in the removal of blemishes, acne, pimples, scars, and other imperfections. It exfoliates the skin while offering a soothing, calming, and cooling effect. Regular use of herbal face packs can significantly enhance skin texture and complexion. Threats like pollution and extreme weather conditions adversely affect the skin. Therefore, this study focused on creating an herbal face pack using readily available natural ingredients, including banana peel powder, sandalwood powder, rose petal powder, red lentils, and aloe vera. It is recommended that the formulated product remains physicochemically and

microbiologically stable, aligning with the attributes of a standard cosmeceutical formulation for effective skincare.

VIII. REFERENCES

- [1] Shoba Rani R. & Hiremanth. Textbook of Industrial Pharmacy, Drug Delivery Systems, & Cosmetics & Herbal Drug Technology, 2nd Edition, Universities Press (India) Ltd.
- [2] Okereke J.N., Udebuani A.C., Ezeji E.U., Obasi K.O., & Nnoli M.C. (2015). "Possible Health Implications Associated with Cosmetics: A Review," Scientific Journal of Public Health, 3(5-1), 58-63.
- [3] Wäldchen, J., & Mäder, P. (2018). "Plant Species Identification Using Computer Vision Techniques: A Systematic Literature Review," Archives of Computational Methods in Engineering, 25, 507-543.
- [4] World Health Organization (WHO). (2007). "WHO Guidelines for Assessing the Quality of Herbal Medicines with Reference to Contaminants and Residues."
- [5] Morejon, B. & Michel, K. (2023). "A Zone-of-Inhibition Assay to Screen for Humoral Antimicrobial Activity in Mosquito Hemolymph," Frontiers in Cellular and Infection Microbiology, 13, Article 891577.
- [6] Kumar K.S., Bhowmik D., Duraivel S., & Umadevi M. (2012). "Traditional and Medicinal Uses of Banana," Journal of Pharmacognosy and Phytochemistry.
- [7] Aglawe SB, Gayke AU, Mindhe SA, Rane VG. Development and assessment of a herbal face pack. Int J Pharm Biol Sci. 2018;8:49-52.
- [8] Neware PR, Rahangdale RS, Patle OD, Suryavanshi MM, Donode PS, Sirsat NS. Creation and evaluation of a herbal face pack suitable for acne-prone and dull skin.
- [9] Kumar, K.K., Sasikanth, K., Sabareesh, M., and Dorababu, N., 2011. Development and assessment of a diacerein cream. Asian J Pharm Clin Res, 4(2), pp.93-98.
- [10] Nemade, C.T. and Baste, N., 2014. Creation and evaluation of a herbal facial scrub. World J Pharm Res, 3(3), pp.4367-4371.
- [11] Buhse, L., Kolinski, R., Westenberger, B., Wokovich, A., Spencer, J., Chen, C.W., Turujman, S., Gautam-Basak, M., Kang, G.J., Kibbe, A., and Heintzelman, B., 2005.