



Overview on Formulation and Evaluation of Polyherbal Face Pack

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ABSTRACT:

the Polyherbal Face Pack Because of their safety, effectiveness, and low side effects, polyherbal skincare compositions are becoming more and more popular. In order to address common skin issues like acne, pigmentation, and dullness, this study focuses on the design and evaluation of a polyherbal face pack that combines the therapeutic qualities of several herbal components. The formulation includes ingredients like neem for its antimicrobial benefits, sandalwood for skin soothing, aloe vera for skin repair and hydration, turmeric for its antibacterial and anti-inflammatory effects, and Multani mitti (Fuller's Earth) for its oil-absorbing and cleansing qualities. The chosen herbs' skinimproving qualities are attributed to their abundance of bioactive substances, including flavonoids, alkaloids, and phenolic compounds.

Keywords: Polyherbal Formulation, Face Pack, Skincare, Natural Ingredients, Evaluation, Skin Health.

1. Introduction:

Queen Cleopatra, the Egyptian goddess of beauty, was said to have improved her youth and beauty by bathing in donkey milk.¹ In order to improve their appearance, women understood how to manufacture their own face packs using minerals and herbs including rock salt, aloe, turmeric, tomato, honey, sandal wood, gram flour, potato, lemon, clay, mint, and rose water.² These days, different herbs are being identified in order to create new products that benefit customers more by improving their skin's smoothness, depigmentation, radiance, etc. The market is booming with demand for beauty items. Because of their therapeutic qualities, a number of botanical extracts are used to make pricey cosmetics.³ Originally known as the "toilet mask" or "face glove," Madame Rowley's invention was registered in 1875 under the name "Mask for Medical Purpose." Facial masks are commonly thought to improve skin radiance, cleanse pores, nourish, rejuvenate, and lessen pigmentation and wrinkles.⁴

The health of a person is reflected in their facial skin.^{5,6} It is composed of lipids, carbs, and amino acids; therefore, it needs a supplement that is well-balanced to keep skin healthy and radiant.⁷ Herbs have been used extensively to manage beauty since ancient times. The herbal face pack is intended to heal sunburns, wrinkles, acne, scars, and pigmentation.⁸ Secondary metabolites such as phenolic, flavonoids, polyphenolic, terpenoids, and vital vitamins are included in natural face packs. Have antibacterial, antiseptic, anti-inflammatory, and antioxidant qualities that are critical to the health and glow of our skin.⁹ Magnesium chloride, aluminum silicate, and calcium bentonite make up



Multani Mitti, also known as Fuller's Mitti. Throughout Indian history, multani mitti has been used in conjunction with sandal wood paste and gram flour to improve beauty in a number of ways, including skin cleansing, pore size reduction, blood circulation enhancement, dead cell removal, complexion, calming effects, and acne reduction. During World War II, soldiers' feet were treated with a mixture of mutani mitti and water to lessen inflammation.¹⁰

In traditional Ayurvedic, Unani, and Siddha systems, turmeric (*Curcuma longa* L.), also known as haldi (Zingiberaceae), is utilized as a spice and a significant medication.¹¹ Often called "Indian saffron," this golden yellow spice is indigenous to Southeast Asia. It is abundant in skin-care ingredients like fatty acids, vitamins, antioxidants, and curcumin, a phenolic molecule. The great bulk of turmeric's skin benefits are caused by curcumin.¹² Turmeric is frequently used to treat a wide range of illnesses, including liver problems, rheumatism, diabetes, skin cancer, wounds, urinary tract infections, and respiratory



conditions.¹³ One of the significant phytochemicals found in turmeric is curcuminoids, often known as curcumin, which have a number of pharmacological characteristics, including antimalarial, anticancer, hypolipidemic, immunostimulatory, and antioxidant effects. Turmeric's anti-inflammatory and antioxidant qualities make it useful as a cosmetic for reducing scars, depigmentation, and aging.^{14*15*16*17}

Neem (*Azadirachta indica*), a member of the Meliaceae family, includes limonoids, nimbin, nimbidin, and nimbolide, among other phytoconstituents. The pigment melanin, which is produced via a process known as melanogenesis, determines skin color. Brown or gray areas appear on the skin of the face due to hyperpigmentation. Because *Azadirachta indica* includes phytochemicals including limonoids that function as melanogenesis inhibitors, it can help with hyperpigmentation.¹⁸ The claimed pharmacological characteristics include antioxidant,¹⁹ anti-inflammatory²⁰, antidiabetic²¹, antipyretic, antimicrobial²², anticancerous²³, and hepatoprotective²⁴. Sandal wood (*Santalum alba*), also known as Chandana, is a member of the Santalaceae family. As an astringent, sandalwood causes soft tissue contraction, which tightens and soothes the skin, brightens it, and minimizes the visibility of pores. It is also helpful for skin diseases like psoriasis,



dermatitis, and eczema. Additionally, it keeps the skin clean and helps lessen infection in regions that have cuts, pimples, or superficial wounds. When applied to the skin, sandalwood paste reduces redness, acne, tanning, and aging. Because of its drying properties, it might hasten healing.

Vitamins A, C, E, D, B1-3, minerals, vital amino acids, terpenoids, phenolic compounds, and polysaccharides are all found in aloe vera (*Aloe barbadensis*), which protects the skin.^{26*27*28} Because of its antimicrobial qualities, aloe vera has long been used to heal skin conditions. Skin benefits greatly from aloe vera's moisturizing properties. Pharmacological



properties of aloe vera have been claimed to include anti-inflammatory,²⁹ laxative³⁰, antiviral, antitumor³¹, antiseptic, moisturizing and antiaging activities.³² In India, gram or besan flour (*Cicer arietinum*), a member of the Fabaceae family, has traditionally been used as a skin and pulse. Fatty acids, proteins, beta-carotene, and vitamins (such as riboflavin, foliate, and niacin) are all abundant in gram flour. By lowering tan, oil, and pores, gram flour exfoliates the skin without irritating it and aids in the restoration of natural skin. Blockheads are eliminated, acne scars are lessened, and gram flour has anti-aging properties.^{33,34}

Rice flour (*Oryza sativa*), a member of the Oryzoideae family, has been used to improve the appearance of skin and hair. Among the compounds found in rice are γoryzanol, ferulic acid, para-amino benzoic acid, phytic acid flavonoids, anthocyanins, proanthocyanins, tocopherols, and tocotrienols.³⁵ Rice's bioactive ingredients provide antiaging properties, make skin glow, shield skin from UV ray damage, and shed dead cells to make skin appear younger. Additionally, rice flour exhibits antibacterial, anti-inflammatory, wound-healing, and antioxidant properties.³⁶ The queen of flowers is rose petals powder! As well as the emblem of beauty and love. Procyanidins, proanthocyanidins, flavonols,



anthocyanins, ellagitannins, and phenolic acids are among the active compounds found in rose petals.^{37,38,39} Rose petal powder is an effective nerve healer, skin cleanser and moisturizer, skin tone maintainer, exfoliator, antioxidant, anti-inflammatory, and anti-aging agent.⁴⁰

The orange peel (*Citrus sinensis*), which is a member of the Rutaceae family, is high in vitamin C, folic acid, minerals (zinc, potassium, salt, iron, manganese, and calcium), flavonoids, beta carotene, heperidin, pectin, fiber, and amino acids.⁴¹ According to reports, orange peel has antibacterial, antioxidant, larvicidal, antitumor, and anti-inflammatory properties.^{42,43} Peel is used to make cosmetic products including face packs, lotions, and creams, as well as antifungal soaps.⁴⁴ Natural oils and vitamin C assist to keep skin



hydrated and lessen the appearance of aging symptoms. Oranges' natural oils, vitamin C, and citric acid provide several health benefits, including cleansing, toning, and glowing skin, as well as depigmentation, wrinkle elimination, and a reduction in DNA damage.^{45,46}

2. Material and Methods

2.1 Plant Materials

Turmeric, neem, orange peel, multani mitti, gram flour, rose petals, sandal wood, rice flour, aloe vera, and other ingredients were bought from the local market in the Chickballapur district of Karnataka, India. Utilized in the creation of a herbal face mask after being dried and powdered.

2.2 Preparation of Polyherbal Face Pack

A specific ratio of each of the ingredients listed in table no. 1 (fig. no. 1) makes up the four formulations of the Polyherbal Face Pack (f1–f4). The necessary ingredients were run through sieve No. 100. Following a geometric mixing of all the ingredients, the prepared face pack was packaged.

Making a polyherbal face pack for application: Put the necessary quantity of herbal face pack powder in a bowl, then mix in rose water to form a smooth paste.

The skin was covered with the smooth paste of the prepared face pack.

2. After 30 to 40 minutes, rinse with cold water.

3. After letting it sit for 30 to 40 minutes, rinse it with cold water.⁴⁷

Table 1. Formulation of polyherbal formulation (F1-F4) 100 gm each formulation

No.	Name of the ingredients (in powder form)	Quantity of ingredients for 100 gm			
		F1	F2	F3	F4
1	Neem	3	3.5	3.2	3.7
2	Turmeric	5	5	5.8	5.3
3	Multani mitti	20	22	18	15
4	Gram flour	20	15	22	10
5	Rice flour	10	4	3.5	3
6	Orange peel	17	18	15	20
7	Rose petals	5	6	10	8
8	Sandal wood	15	10	11	13
9	Aloe vera	5	8	7	10

2.3 Methods of Evaluation ^{48,49}

The prepared Polyherbal Face packs were evaluated by:

2.3.1 Organoleptic Evaluation of Face Pack by Checking the Colour, odour, appearance and texture.

1. Determination of Moisture Content
2. Total Ash
3. Acid- Insoluble Ash
4. Water-Soluble Ash
5. Rheological Evaluation
 - Bulk Density
 - Tapped Density
 - Angle of Repose
 - Hausner's ratio and Carr's index

3. Results and Discussion

3.1 Organoleptic Evaluation

3.2 Physicochemical Evaluation

3.3 Rheological Evaluation

4. Conclusion

Combining the advantages of several herbs to enhance skin health, polyherbal face packs are a safe, natural, and efficient skincare treatment. In order to prepare them, plant-based ingredients must be chosen, combined, and assessed for safety, effectiveness, and compatibility. Research validates their capacity to improve skin texture, regulate oil production, and lessen pigmentation, all while being economical and environmentally beneficial. Their medicinal value can be further increased through standardization and customized formulations.

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