

# FORMULATION AND EVALUATION OF POLYHERBAL FACE MASK

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## Abstract

Natural face packs or masks are beneficial for promoting blood circulation, revitalizing the skin, maintaining suppleness, and removing debris from the pores. Creating a natural face mask with various plant powders is a commendable effort, as herbal cosmetics are non-toxic and reduce allergic reactions. The study found favorable effects of face packs, but further optimization is needed to fully understand their benefits as beauty products. The research aims to evaluate natural extract treatments for face sheet masks, which can moisturize the skin, remove excess oils and toxins, and cleanse the pores. These masks are typically made from microfibers or cellulose materials. As awareness grows about environmental impacts of industrialization, there is a trend towards using items made from natural ingredients. Natural extracts have various uses, including as antioxidants in medicinal medicines and pharmaceutical flavors. Indian nettle leaf and red sandalwood were chosen as botanicals for this study. The extraction process involved steam boiling to produce oil from the plants, with moisture content and regain tests conducted on the samples.

**Keywords;-** Face sheet mask, Natural face mask, polyherbal face mask

## Introduction

Cosmetics have been used for centuries to cleanse, beautify, and enhance the appearance of the skin. The use of different herbs for skincare has been prevalent since ancient times. The skin, especially the face, reflects an individual's<sup>1,2</sup> overall health and requires a balanced nutrition with components such as amino acids, lipids, and carbohydrates to maintain its clarity and health<sup>3</sup>. Ayurveda refers to the herbal paste used for facial therapy as "mukhalepa," which is applied to treat various skin conditions like acne, pimples, scars, marks, and pigmentation<sup>4</sup>. Sheet masks have been a skincare staple for quite some time, and the benefits they offer are truly invaluable. These masks work wonders for hydrating the skin, eliminating excess oils and impurities, and refining the look of pores<sup>5</sup>. Typically made from materials like microfibers or cellulose, sheet masks are designed to be effective and comfortable<sup>6</sup>. Notably, these facial sheet masks are incredibly affordable, making them accessible to everyone. Their cost-effectiveness also means that they are a budget-friendly alternative to frequent spa visits and expensive cosmetic purchases<sup>7</sup>. As environmental concerns continue to grow due to industrialization, there is a rising trend in favor of using products containing natural ingredients. Natural extracts serve multiple functions and are recognized for their antioxidant properties, making them ideal for creating pharmaceutical products and flavors. These extracts are available in various forms, including solid, fluid, and powder extracts<sup>8</sup>. In today's modern lifestyle, many people tend to avoid sunlight and are exposed to pollution, while also consuming unhealthy foods. These factors can lead to an increase in free radicals within the body. Excessive exposure to sunlight can particularly lead to the accumulation of free radicals, which can have negative effects on the skin, such as dullness, uneven tone, dark spots, and roughness. Consequently, taking care of one's skin and using products like creams, lotions, or serums becomes crucial in slowing down these skin changes and reducing the appearance of wrinkles.

A quality skin serum can offer benefits like firmer and smoother skin, minimized pores, and increased moisture. The key ingredients for healthy skin remain consistent across different products, regardless of texture or personal preference. These products can also be helpful for various skin conditions such as psoriasis, shingles, itching, as well as for minor skin infections due to their antibacterial and anti-fungal properties. The skincare product contains anti-hyperlipidemic vitamins such as B12, A, C, and E, as well as hormones like Auxins and Gibberellins. Aloe Vera has been used medicinally for various purposes, primarily known for its emollient, purgative, antibacterial, anti-inflammatory, antioxidant, aphrodisiac, and antifungal properties. Oranges, belonging to the rutaceae family, are widely cultivated for various products globally, including orange juice and peel. Their acidic qualities aid in pore cleansing, regulating sebaceous glands, and preventing blocked pores for individuals with oily skin.

**Serum Sheet Mask:**-Cosmetics have been used for centuries to cleanse, beautify, and enhance skin appearance. Ancient herbs, like "mukhalepa" in Ayurveda, are used for facial therapy to treat acne, pimples, scars, marks, and pigmentation. Sheet masks, made from microfibers or cellulose, are affordable and effective in hydrating, eliminating excess oils, and refining pores. They offer a budget-friendly alternative to frequent spa visits and expensive cosmetic purchases.<sup>9</sup>

**Oily Skin:**-Oily skin, also known as seborrhea, is a common cosmetic condition caused by enlarged sebaceous glands producing excessive sebum, resulting in glossy, greasy skin. This study covers sebaceous gland anatomy and physiology, including sebum manufacture, storage, and release, as well as their connection to skin moisture and water barrier function. Oily skin features a shiny, greasy appearance, less apparent creases, and visible, larger pores. Sebum, a waxy, oily fluid, is essential for skin health.<sup>10</sup>

**Acne pimples:** -Acne, caused by oil, germs, dead skin cells, and debris, can clog pores in the skin, leading to pimples or zits. Daily acne can negatively impact self-esteem and, over time, can result in irreversible scars. Acne can also cause irreversible damage.

**Dryness of skin:**-Dry skin, also known as winter itch, is a common skin condition characterized by itching, flaking, cracking, peeling, and roughness. It is most common in the lower legs, upper arms, thighs, and abdomen. Dry skin can also cause eczema. Dry skin can feel tight and lifeless, and may itch or itch when touched. Factors contributing to dry skin include hot or cold temperatures, low humidity, and hot water soaking. Overall, dry skin is a common skin issue during winter.

## BENEFITS OF MASK SHEET

Fruit face masks are essential for skin nourishment, reducing acne, pimples, scars, and marks. They contain herbal ingredients that remove dead skin cells, providing a soothing and relaxing effect. These masks also restore lost shine and glow in a short time.

## MATERIAL METHOD

**Aloe vera gel :-**Aloe vera, a medicinal plant used since 1500 BC in Greece, China, and Mexico, contains 75 compounds including minerals, amino acids, vitamins, and water. Its mucopolysaccharides, amino acids, and zinc promote skin integrity, moisture retention, erythema reduction, and ulcer prevention. Aloe vera also has anti-ageing properties and reduces skin infection. Regular use of aloe vera in serum can make skin radiant and youthful.<sup>11,12</sup>

**Coffee :-**Coffee, rich in antioxidant and prooxidant compounds like caffeine and chlorogenic acids,<sup>13</sup> has been explored for its potential in personal care products due to its antioxidant and anti-aging properties. Caffeine neutralizes free radicals, inhibits lipid peroxidation, and protects cells from damage. Chlorogenic acid, a biologically active polyphenol, has antioxidant, anti-inflammatory, and anti-microbial properties. Coffee silverskin extracts can reduce intracellular ROS production, improve hydration and firmness, and protect against UV radiation-induced skin photoaging.<sup>14</sup>

**Cucumber:-**Cucumber, a water-based ingredient, is a hydrating and safe option for sensitive skin due to its lack of harsh ingredients. Its juice can reduce eye swelling, soothe damaged skin, and make eyes feel refreshed. A homemade cucumber toner can help with damaged skin, while cucumber juice can dilute potent essential oils like tea tree oil for acne-prone skin. Cucumber can be rubbed on skin, over acne spots, or used under a sheet mask. It helps maintain skin pH, freshens, prevents acne breakouts, and prevents wrinkles. Overall, cucumber is a reliable and effective skin treatment.

**Vitamin Eoil :-**Vitamin E is a group of compounds absorbed through food that contribute to the human body's normal functioning. It is also beneficial when applied topically in skincare, protecting delicate skin from damage

and acting as a hydrating agent. It is both a 'humectant' and 'emollient', helping the skin absorb water and trap it. Vitamin E supports the immune system and helps cells regenerate. It has antioxidant and anti-inflammatory properties, making it essential for everyday health. It is most commonly known for its benefits for skin health and appearance, particularly when applied topically to reduce inflammation and make the skin appear younger.

**Tomato:**-Tomatoes are a versatile and effective anti-oxidant, antiseptic, and anti-aging agent. They help treat acne, moisturize, repel blackheads, and restore skin glow. Slightly acidic, they contain potassium and vitamin C, which help fight free radicals. Lycopene, an antioxidant, also helps fight free radicals. Tomatoes are the edible berry of the plant *Solanum lycopersicum*, which originated in western South America and Central America. The Nahuatl word *tomatl* gave rise to the Spanish word *tomate*, from which the English word *tomato* derived.

**Soaking the sheet mask :-**To apply a sheet mask, soak it in serum for 10-15 minutes before applying it to the face. This crucial part of the mask adds numerous benefits, making it essential to soak the entire mask thoroughly.

**Start By Cleansing Your Skin :-**To clean your skin, use a gentle facial cleanser with warm water and lather gently. Pat your face dry with a soft towel, ensuring most water is removed, and your skin is not bone-dry.

**Apply your tonner :-**Use a gentle facial cleanser with warm water, lather gently, and pat your face dry with a soft towel, ensuring most water is removed and your skin is not bone-dry.

**place the sheet mask on your face:-**Place the sheet mask on your face starting at your forehead and work your way down to your eyes, nose, mouth, and chin. Apply the mask carefully, smoothing out any bumps or wrinkles in an outward motion, ensuring it clings to your skin as much as possible.

### **Wait 20 minutes before removing the sheet mask**

During this time, avoid moving the sheet mask, read a book, watch a TV show, meditate, or take a quick bath. Enjoy whatever helps you relax, regardless of your activities.

**Don't wash your face:-**Misconception: After removing a sheet mask, leave residue on your skin. This is the nutrient-rich serum from the mask. Instead of cleansing, gently pat the remaining serum into your skin until most of the excess is absorbed. This ensures the mask remains effective and beneficial.

**Apply Serum, Eye Cream and Moisturizer:-**To finish your skin care routine, apply more serum if desired, as sheet masks already contain a powerful serum. Apply eye cream and moisturizer, ensuring vitamins and nutrients are locked into the skin while replenishing cells and enhancing skin glow. It's up to you whether your skin needs more or not.

### **CARE TAKEN WHILE USING MASK SHEET**

Sheet masks often contain information on which skin types benefit the most from the product. For sensitive skin, try dense, creamy, foaming cleansers that balance pH.<sup>15</sup> Avoid leaving the mask on for too long, as it may dry out and pull moisture back. Set a timer if you're worried about losing track of time.<sup>16</sup> Instead of scrubbing, wipe, or washing, use your fingers to dab in the essence.<sup>17</sup> If using a morning sheet mask, apply an SPF product to protect your skin from the sun. Gently rub the mask off with lukewarm water and avoid vigorous rubbing. Pat your face dry after rinsing.<sup>18</sup>

### **EXPERIMENTAL METHOD OF SERUM**

Take all the ingredients given below in table.

1raw cucumber and 1raw tomato is added in a grinder.

Grind them well and after grind filter them using muslin cloth.

Take ½ teaspoon coffee and add in the serum of tomato and cucumber .

Take 2 teaspoon aloe vera gel and 2 capsules of vitamin Eoil added then in the given solution.

Mix them well using glass stirrer until all the substance mix well.

Now add 2-3 drops of rose water for good fragrance.

Dip the sheet mask in this serum for 10-20 minutes,so that the mask can absorb the serum well.

Now the face mask sheet serum is well absorb and is ready to apply on face.

## MATERIALS USED IN FORMULATION

Sr. No.	Ingredients	Weight
1	Cucumber juice	20ml
2	Tomato juice	10ml
3	Coffee	2.8gm
4	Aloe vera gel	20ml
5	Vitamin E oil	Q.S.
6	Lavender oil	Q.S.



FIG :- Serum

## EVALUATION STUDY

### Physical Evaluation:-

The formulation's colour and appearance were visually observed, confirming a uniform distribution of extracts. The test confirmed the extract's brown colour and solution form, containing no residue.

**pH of the Serum :-**A pH meter was calibrated using a standard buffer solution. A ml of face serum was dissolved in 50 ml of distilled water, and its pH was calculated. The skin serum should have a pH between 4.1-6.7, while the herbal serum's pH is 6.2, which is basic and not acidic.



FIG :- pH paper

### Skin Irritation test:-

The herbal serum, formulated for skin application, should not cause skin irritation or sensitization. After topically applying the serum, it was tested for irritability, revealing that it was effective and did not cause any irritation.

### Stability Studies :-

Pharmaceutical or cosmetic product formulation requires stability studies to ensure physical and chemical stability and safety under accelerated conditions. These studies are conducted under specific conditions, such as 3-5°C, 25°C RH=60%, and 40°C ±2% RH=75%, as per ICH guidelines. Samples are withdrawn monthly and analysed for various parameters to ensure the product's safety and effectiveness.<sup>19</sup>

**Cyclical Temperature Test:-**The test involves daily temperature and humidity changes, cyclical at room temperature and frizzing temperature to stimulate temperature changes.

**Homogeneity:-**The prepared formulation showed even distribution of extracts, confirmed visually by the absence of particulate matter and by touch sensation.<sup>20</sup>

### RESULT AND DISCUSSION

Face serum formulation was brown liquid preparation with a smooth homogenous texture and glossy appearance. The formulation was re-dispersed within a seconds. After use, it felt like emollient, slipperiness and no residues were formed and easy to wash out.

**Physical appearance:-**Serum formulation was brown in color, not so viscous liquid preparation with a smooth homogenous texture and glossy appearance.

**pH:-** The pH of formulation was found 6.2. As the skin having an acidic pH around 4.1-6.7, this range of formulation is suitable for skin.

**Stability studies:-**The formulation was undertaken stability studies for physical and chemical change. No considerable variations in properties of the formulation were observed.

Temperature	Evaluation Parameters	Observation			
		0	1	2	3
3-5°C	Visual appearance	Translucent Brown	Translucent Brown	Translucent Brown	Translucent Brown
	Phase Separation	Nil	Nil	Nil	Nil
	Homogeneity	Good	Good	Good	Good
Room Temperature (25°C RH=60%)	Visual Appearance	Translucent Brown	Translucent Brown	Translucent Brown	Translucent Brown
	Phase Separation	Nil	Nil	Nil	Nil
	Homogeneity	Good	Good	Good	Good

40°C±2°C RH= 75%	Visual Appearance	Translucent Brown	Translucent Brown	Translucent Brown	Translucent Brown
	Phase Separation	Nil	Nil	Nil	Nil
	Homogeneity	Good	Good	Good	Good

Table 2: Stability Study Observation

## CONCLUSION

The aim of the study was to formulate herbal serum mask sheet for moisturizing and glowing activity on skin. Cosmeceuticals are skin-care products that cater for both cosmetics and drugs. In this serum Aloe Vera gel, Coffee, Cucumber, Vitamin E oil and Tomato was used. The fresh Aloe Vera gel from the inner central part (parenchyma) of the leaf often has a very good action in acne, pimples, eczema and other skin problems, burns due to heat, sun exposure and in treatment of radiation dermatitis<sup>1</sup>. Caffeine is an antioxidant that neutralizes excess free radicals, inhibits lipid peroxidation, protects cells from free radical damage, improves cell oxygenation. The juice of a cucumber can not only reduce swelling in the eye area, it can also soothe damaged skin and make your eyes look and feel refreshed. Vitamin E to your skin helps protect delicate skin from damage due to its antioxidant properties. Tomatoes help reduce open pores and blackheads and tomatoes contain high contents of potassium and vitamin C; this transforms the dullness of skins and restores glow to the skin<sup>2</sup>. The study was to formulate different herbals into a serum for moisturizing and glowing activity of skin.

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