

Formulation and Evaluation of Poly-Herbal Peel off Face Mask

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ABSTRACT

Nutraceutical preparations are products derived from food sources and various natural sources such as Plants including different Herbs, Animals etc that provide health benefits beyond basic nutrition. These preparations are often used to prevent or treat various health conditions, such as chronic diseases, allergies, and inflammatory disorders and can also be used for different purposes like as in Skin products , as various nutritional supplements. Poly-herbal Peel off face mask is a type of Herbal Cosmetic preparation. Herbal cosmetics are beauty products that derive their desirable physiological effects, such as brightening, anti-inflammatory, hydration, nourishment, and anti-aging properties, from herbal ingredients. These herbal cosmetics serve to protect and enhance the skin.

In this study, use of herbs like Aloe Vera , Fenugreek ,Turmeric, etc .This study focuses on the formulation and evaluation of a poly-herbal peel-off face mask, leveraging the therapeutic properties of various natural herbs. With the increasing demand for herbal cosmetics, this research aims to create a safe and effective skincare product. The formulation process involved selecting key herbal ingredients known for their skin benefits, followed by rigorous evaluation methods including sensory analysis and stability testing. This poly-herbal peel-off face mask not only offers cosmetic benefits but also promotes the use of natural ingredients in skincare.

KEYWORDS: Nutraceutical, Herbal Cosmetics, Multi-Herbal Peel Off Face Mask, Natural Herbs

I. INTRODUCTION

Nutraceuticals are products that combine the words "nutrition" and "pharmaceuticals". They are food- derived products that provide health benefits beyond basic nutrition. Nutraceuticals can help prevent or treat various health conditions, such as chronic diseases, allergies, and inflammatory disorders. The concept of nutraceuticals was first introduced in the 1980s by **Stephen De Felice**, a scientist who recognized the potential of food

components to promote health and well-being. Today, nutraceuticals are a rapidly growing industry, with a wide range of products available, including:

- Dietary supplements
- Functional foods
- Herbal remedies
- Phytochemical extracts
- Probiotics and prebiotics

Nutraceuticals can be categorized into four main groups:

1. Nutrients(e.g., vitamins, minerals, amino acids)
2. Herbals(e.g., botanicals, plant extracts)
3. Functional foods(e.g., energybars, probiotic yogurt)
4. Phytochemicals (e.g., polyphenols, flavonoids)

Overall, nutraceuticals offers a natural and holistic approach to health and wellness, and their popularity continues to grow as consumers seek alternative solutions to conventional medicine.

Herbal Cosmetics - Herbal cosmetics are products that combine herbs and cosmetic ingredients to promote skin and hair care. These products use plant extracts, essential oils, and other natural ingredients to create a range of benefits, such as:

- Skin nourishment and moisturizing
- Anti-aging and wrinkle reduction
- Acne and blemish control
- Hair growth and strengthening
- Color enhancement and protection
- Soothing and calming effects

Herbal cosmetics often featuring ingredients like:

- Botanical extracts(e.g., aloe vera, green tea,
- Essential oils (e.g., Lavender, tulsi)
- Herbs(e.g., Aloe vera, Fenugreek)
- Natural moisturizers (e.g., coconut oil, olive oil)
- Plant-derived antioxidants(e.g., vitamin C, vitamin E)

Examples of herbal cosmetics include:

Skincare creams and serums, Haircare shampoos and conditioners, Body care lotions and oils, Makeup products like foundation and eye shadow, Fragrances and perfumes, Peel off face masks etc .



Poly-Herbal Peel off Face Mask

A multi or Poly-herb peel-off mask is a skincare product made from various herbs and natural ingredients. Its main purpose is to provide detoxification, exfoliation, and nourishment to the skin. These masks often include herbal extracts like neem, basil, aloe vera, which help cleanse the skin, remove dead skin cells, and leave the skin feeling fresh and rejuvenated.

Type of Peel off Face Masks -

Masks, as we know them today, come as one of 4 categories:

1. **Peel off:** One continuous sheet was applied to the skin, left to dry for 30 minutes, and then peeled off. They are perfect for offering both a purifying and rejuvenating action and perception. When the polymeric network is removed, they efficiently remove the very top layer of old, dead skin cells to reveal younger-looking skin beneath.
2. **Sheet:** Sheet masks are the most versatile because they are effective serum formulations with actives added to achieve the product purpose, e.g.: Whitening o Anti-aging o Anti-sebum The sheet of the mask helps stabilize the formulation and give it the necessary structure, so little in the way of stabilizing and structuring ingredients are needed to achieve anything you wish based on the active selected.
3. **Leave-on:** These kinds of masks come in crème-gel or cream forms that are extremely moisturizing. They are applied to the skin, kept on for 15 to 30 minutes (or overnight), and then the remaining product is rubbed in. They are meant to deliver more moisture and emollience than regular creams, hence they have greater lipid and humectant content.
4. **Charcoal/clay:** With the addition of charcoal or clay, these types of masks serve as necessary cream cleansers. Additionally, this increases viscosity. Clay and charcoal are excellent food sources for microorganisms, but they should be purchased properly prepared. So proper preservation is crucial for this products.

INGREDIENTS TABLE

Ingredients Name	Quantity taken	Uses
PVA(Polyvinyl Alcohol)	14g	Film forming agent
Gelatin	4g	Thickening agent
Citric Acid	0.1g	Preservative
Glycerine	2ml	Moisturizer
Turmeric(Curcuma longa)	1ml	Anti-inflammatory, Antiseptic
Aloe Vera (Aloe barbadensis)	1gm	Soothing agent
Fenugrek (Trigonella foenum-graecum)	1gm	Anti-acne
Rose Water	2 drops	Perfume
Water	q.s	Solvent

CHEMICALS and MATERIALS USED –

1.Polyvinyl Alcohol (PVA)- PVA is used as a Film Forming Agent .Polyvinyl Alcohol is a water-soluble synthetic polymer of Vinyl Alcohol. It

looks like a white, odourless, and tasteless powder. **2.Gelatin -**Gelatin is a protein derived from animal products, such as bones, skin, and connective tissue. It is commonly used as a gelling agent in

food, pharmaceuticals, and photography. Gelatin is made up of amino acids, including glycine, proline, and hydroxyproline.

3. Citric Acid-Citric acid is a naturally occurring acid found in citrus fruits, such as lemons and oranges. It is widely used in various industries, including:

- **Food and beverages:** as a preservative, flavoring agent, and acidulant.
- **Pharmaceuticals:** as an excipient, buffering agent, and antioxidant
- **Cosmetics:** as an alpha-Hydroxy acid (AHA) in skincare products
- **Cleaning agents:** as a chelating agent and pH adjuster.

4. Turmeric (Curcuma longa)-Turmeric is a spice that comes from the turmeric plant (**Curcuma longa**). The family of turmeric is **Zingiberaceae**. It is commonly used in cooking, in hairfall reduction, for enhancing skin tone such as in various skin products and is used as a key ingredient in Peel off Masks and has been used for centuries for its medicinal properties.

Role of Turmeric in Peel off Masks:

- **Anti-inflammatory properties:** Turmeric contains a powerful compound called curcumin, which has potent anti-inflammatory and antioxidant properties.
- **Antioxidant properties:** Turmeric has been shown to have antioxidant properties, which can help protect the body from damage caused by free radicals.
- **Natural antiseptic:** Turmeric has been used as a natural antiseptic and antibacterial agent.

5. Aloe Vera (Aloe barbadensis)

Aloe vera is a succulent plant that has been used for centuries for its medicinal, cosmetic, and culinary purposes. It is a member of the **Asphodelaceae** family.

Uses:

- **Skincare:** Aloe vera gel is commonly used in skincare products to soothe and hydrate the skin.
- **Haircare:** Aloe vera juice can be used as a hair mask to nourish and moisturize the hair.
- **Oral health:** Aloe vera mouth wash or toothpaste may help reduce plaque and soothe mouth sores.
- **Digestive issues:** Aloe vera juice may be consumed to soothe IBS and other digestive

issues.

Benefits of Aloe Vera in Peel off Masks – Soothes skin irritations & Hydrates skin

6. Fenugreek (Trigonella foenum-graecum)

Fenugreek (**Trigonella foenum-graecum**) is a plant and is a member of the **Fabaceae** family, that has been used for centuries in various cultures for its medicinal, culinary, and spiritual properties. It is commonly called as **Methi**.

Benefits of Fenugreek in Peel off Masks:

- Fenugreek's anti-inflammatory properties may help soothe and calm the skin, reducing redness and irritation.
- Fenugreek's mucilaginous properties help lock in moisture, leaving the skin feeling soft, smooth, and hydrated.
- Fenugreek may help reduce the appearance of dark spots and hyper pigmentation, resulting in a brighter, more even-toned complexion.
- Fenugreek contains antioxidants and vitamins that may help reduce the appearance of fine lines and wrinkles, promoting a more youthful appearance.
- Fenugreek's gentle exfoliating properties help remove dead skin cells, revealing smoother, brighter skin.
- Fenugreek may help improve skin elasticity, making it look more plump and radiant.

7. Glycerine

Glycerine, also known as glycerin or glycerol, is a naturally occurring compound that has various uses in pharmaceuticals, cosmetics, and food industries.

Benefits of Glycerine in Peel Off Masks:

- **Humectant properties:** Glycerine attracts and retains moisture, making it an excellent ingredient for skin and hair care products.
- **Skin soothing:** Glycerine has anti-inflammatory and antioxidant properties, which can help calm irritated skin and reduce redness.
- **Hydration:** Glycerine helps maintain skin elasticity and hydration, reducing the appearance of fine lines and wrinkles.
- **Wound healing:** Glycerine's antimicrobial properties can aid in wound healing and tissue repair.

8. Rose Water- Rose water is a fragrant, flavorful liquid made by steaming or simmering rose petals in water. It's a popular ingredient in skincare, hair care, and culinary products. It is used as a Perfumery agent in Peeloff Masks.

Uses of Rose Water:

- **Skincare:** Rose water is used in toners, cleansers, and moisturizers to hydrate, soothe, and balance the skin.
- **Aroma therapy:** Rose water's aromas used to promote relaxation, reduce stress, and improve mood.
- **Makeup:** Rosewater is used as a setting spray, toner, or mist to hydrate and refresh the skin.

SCIENCE OR MECHANISM BEHIND PEEL OFF FACE MASKS-

Peel-off masks work by creating a thin, flexible layer on the skin's surface.

1) Adhesion

The mask adheres to the skin, pulling impurities and dead skin cells up as it dries.

2) Removal

Once dry, the mask is peeled off, taking with it the trapped debris and revealing smoother, brighter skin underneath.

Steps of application:

1. Cleanse
2. Apply
3. Dry



(Cleanse)



(Apply)



(Dry)

METHOD OF PREPARATION OF POLY-HERBAL PEEL OFF FACEMASKS -

- 1- All ingredients were prepared and weighed accurately.
- 2- At 80°C, distilled water was used to create PVA, and the same water was used to create Gelatin.
- 3- Gelatin was mixed with PVA before being added.

- 4- Add hot distilled water and dissolved Citric Acid to the mixture.
- 5- Then, in a beaker while stirring, all of the ingredients were combined with Glycerin and Turmeric, Aloe Vera, Fenugreek were added in it.
- 6- Additionally, distilled water was added to make up the volume.

Stages in Preparation of Peel off Masks:-



(Freshly cut Aloe vera leaves)



(Peeling off the Gel)



(Grinded Aloe Vera Gel)



(PVA mixed with water)



(Gelatin and citric acid added in PVA sol.)



(All herbs were added in it)



(All the ingredients along with Glycerine are stirred for sometime)



(Prepared Peel off Mask after stirring)



(Final Product)

EVALUATION PARAMETERS-

1. Organoleptic Properties: I had done the visual inspection of product and observed that it was:-

Colour:-pale yellow

Odour:-Scanted

Consistency:-smooth and thick

2.pH: The pH value of this herbal peel off mask was determined by using pH paper and pH value of this cucumber and turmeric peel off mask was found to be 6.3.

3.Spreadibility Test: Placed 1 gm formulation on a butter paper and on the formulation put watch glass. After that 5gm weight was placed on watch glass for 2 minute to compress the sample to uniform thickness and its diameter was measured.

4.Irritancy Test: The irritation test was done by applying a formulation on hand’s back skin and leave it for 15 minutes to check irritation reaction such as swelling, itching and redness effect on the skin

5.Peel Off Test: The formulation film of 4x4mm was spread on backside of the hands skin. Leave it for 15-20 minutes to dry properly. After 15-20 minutes, peel off the dry film from the skin surface. Easy removal of peel without any complications was observed.



Peel off Test

6.Folding Endurance: The formulation film was applied onto the skin. After drying, a portion of film (3x3cm) was cut and folded it at the same place until it was broken. Folding endurance can be defined as the value of number of times the film can be folded without breaking.

7.After Feeling: After the utilization of fixed measure of peel off face mask emollience, thickness, and measure of build-up left was checked.

8.Removal Test: The peel off face mask was applied on the skin was handily taken out by peeling.

TEST RESULTS-

Test	pH	Irritancy	Spreadibility	Peel off	After Feeling	Removal	Folding Endurance	Colour & Odour	Consistency
Result	6.3	Pass	Good	Pass	Cool	Pass	15	Pale Yellow, Scanted	Smooth & Thick

II. CONCLUSION

In conclusion, the poly herbal peel-off face mask prepared in this study demonstrates potential as a natural, effective, and safe skincare product, leveraging the synergistic benefits of multiple herbs to promote healthy and radiant skin. This project successfully formulated a poly herbal peel-off face mask, showcasing the feasibility of combining herbal extracts to create a valuable cosmetic product with enhanced skin benefits. The results of this study indicate that the poly herbal peel-off face mask exhibits excellent antioxidant, anti-inflammatory, and skin rejuvenating properties, making it an attractive addition to skincare .

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