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Research Article

Formulation and Evaluation of Papaya Herbal Face Pack

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ABSTRACT

The skin is very sensitive protective layer for human body is exposed to environmental pollution[3].Herbal face masks and packs are used to promote circulation, refresh the skin, protect its softness, and to remove pollutants from pores. The work required to get a herbal facial pack with different herbal powders is wonderful. Herbal cosmetics possess the advantage of being completely non-toxic, decreasing allergic reactions, and containing many substances who have been proven to be safe and effective throughout time. Thus, although we found certain beneficial features of the face packs in this work, considerable optimization Study is necessary for assessing the practical benefits of face packs for utilization as beauty products on individuals[1] The aim of this study is to create and assess a herbal face pack utilizing natural herbal ingredients to encourage shining skin. The dried powder form of natural herbal ingredients such as Multani Mitti, Turmeric, Sandalwood, Saffron, Milk Powder, Rice Flour, and Papaya Powder was bought at a nearby market. Papaya powder is produced commercially by shade-drying the powdered the fruit. All natural powder ingredients were sieved using #80 mesh sieve, accurately measured, and geometrically mixed to ensure a uniform formulation. The powder was analysed for morphological, physicochemical, and stability causes. Thus, we developed a natural face pack which has no adverse effects on our present work [2].

INTRODUCTION

Cosmetics are generally defined as commercially available products used for cleansing, beautifying, promoting attractiveness, or differing the appearance of the skin. Since the times past, various herbs were used for cleaning, beautifying, and controlling them. The skin is the largest organ of the body and is an indication of an individual's health due to the fact it includes products such as

lipids, carbohydrates, and amino acids, between other elements. Thus, a nutritious diet is essential to preserve the skin's simplicity, gloss, and health [15]. Anti-inflammatory actions, which may prevent disorders caused on by redness, inflammation, etc. from developing more severe[16]. Face packs are powders utilized in facial formulation that are used; different face kinds requires different kinds of face packs [11].

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The preparation is applied to the face as a paste, allowed to air out and harden into a film, and finally wiped off to show skin that has been improved, tightened, and cleaned [15].

Advantages of herbal face pack [11]

1. They help with rapidly recovering the skin's lost luster and smooth.
2. They help in preventing the indications of premature aging.
3. A natural face pack give skin a youthful, healthy tone.
4. Due to its herbal components it can assist with reducing acne, pimple, scars.

MATERIALS

All of the natural products used in the present study, include papaya powder, neem extraction, turmeric, sandalwood, and multani mitti, were purchased locally as dried powders [10].

Ingredients of formulations:

Papaya powder

Synonyms:

Papayotin, vegetable pepsin.

Biological Source:

Papine is dried & purified latex of the green fruits & leaves of carica papaya.

Family:

Caricaceae

Chemical constitution:-

Saponins, tannins, flavonoids, glycosides [9].

Uses:-

1. Remove dead skin cells.
2. Gives skin lightening effect [12].



Fig No 1 Papaya Powder

Multani Mitti

Dead skin cells is a specific kind of impurities which multani mitti helps to remove.[5] Multani

Mitti improves skin in several ways, includes reducing pore dimensions, removing blackheads, healing sunburns, cleansing the skin, increasing blood circulation, improving complexion, reducing acne and blemishes, and providing skin a glowing appearance as it has essential nutrients.[6].



Fig no 2 :- Multani Mitti

Sandal wood

Synonym:-

East Indian sandal wood.

Biological source:

Obtained by distillation from heart-wood of santalum alum.

Family:-

Santalaceae.

Uses:-

Anti-aging and anti-tanning effects are found in sandalwood. In addition, it has numerous benefits for skin, including toning, emollient, antibacterial, cooling, and therapeutic properties [6].



Fig no 3 - Sandal wood

Saffron

Synonym:-

Saffron, kesar.

Biological source:-

Dried stigma and upper parts of styles of crocus sativus

Family:-

Iridaceae

Uses:-

1. It is rich in carotenoid glycosides, mainly has terpenoids.
2. It provide shiny skin tone [6].



Fig no 4 Saffron

Milk Powder

It preserves dry, rough skin nourished for long periods of time, allowing it highly beneficial for the skin.[5].It provides the skin a youthful appearance and helps in offering deep nourishment to the face. It bleaches the skin to naturally remove imperfections [7]



Fig no 5 Milk Powder

Rice Flour

Applying rice flour can help treat various skin conditions. In the Indian subcontinent, Ayurvedic practitioners appropriately administer rice water in its undigested state. It promotes the development of beneficial bacteria for regular bowel motions and works as an efficient ointment to soothe irritated skin [6].



Fig no 6 Rice flour

Rose petal powder

Rose petal powder contains a lot of antimicrobial properties in addition to the health benefits of

vitamins B, C, and K. Antioxidants are present in good amounts as well [15].



Fig no 7 Rose petal powder

Neem leaves powder

Synonyms:-

Melia azadirachta

Biological source:-

It consist of leaves and other arial parts of Azadirachtea indica.

Family:-

Meliaceae .

Chemical constituent:-

The most various important constituent is nimbolininimbin, nimbidin, nimbidol, sodium nimbinate, gedunin etc.

Uses:-

1. Neem is anti-inflammatory.
2. Antibacterial, antifungal, antiseptic.
3. Antiinflammatory [1].



Fig no 8 Neem leaves powder

Turmeric

Synonyms: -

Curcuma longa

Biological source:-

Turmeric is the dried rhizome of Curcoma .

Family:-

Zingberaceae

Uses:

The herbal remedy contains turmeric because of its blood-purifying properties and its antibacterial effect, which aids in wound healing. It improves skin conditions brought on by blood impurities. It

is an excellent anti-allergic and anti-inflammatory drug [7].



Fig no 9 Turmeric

Lemon Peel

Lemons' strong vitamin C content can aid to brighten skin tone and get rid of dark spots brought on by sun exposure.



Fig no 10 Lemon Peel powder

FORMULA:-[6,7,1,15,7,8]

Ingredients	Uses	Quantity in gm
Papaya powder	Antioxidant	5 gm
Multani Mitti	Reducing agent	3 gm
Turmeric	Anti-inflammatory	3 gm
Sandal wood	Antioxidant	2 gm
Saffron	Antioxidant	1 gm
Milk powder	Glowing Skin	4 gm
Rice flour	Antioxidant	2 gm
Lemon peel	Exfoliant	1 gm
Rose petal powder	Antioxidant	2 gm
Neem	Antibacterial	2 gm

METHODOLOGY

Step 1:

Weigh all necessary elements for the papaya herbal face pack formulation was done precisely.

Step 2:

The drugs were triturated before moving to the mortar and pestle.

Step 3:

To obtain uniform medicine powder for the face pack, the prepared mixture of herbal powders was transferred to Sieve No. 80.

Step 4:

To apply the papaya herbal face pack, the prepared face pack powder was placed into a container [2].

Procedure for application of papaya herbal face pack

1. Transfer the prepared papaya herbal face pack powder into a bowl and mix in rose water.
2. Blend thoroughly to create the ideal thickness of a paste.
3. A brush should be used to apply it evenly throughout the face.
4. Cover any patches of blemishes and acne.
5. Use cold water to wash your face after 15 minutes [8].

EVALUATION PARAMETER

1. Total Ash Content.

In a crucible, add around 2g of the ground, air-dried material. Evenly distribute the material and light it, progressively raising the heat to 100–105°C until it turns white, indicating the absence of carbon. Weigh after cooling in a desiccator. Determine how much ash is there overall in the air-dried material [1].

2. Particle size.

Weigh the material accurately. Pass it from sieve no. 80 mesh [1].

3. Loss On Drying.

Weigh the drug powder in a porcelain dish to a weight of around 2 grams. Dry it in a hot air oven set at 105°C until there is no more than 0.5 mg difference between two consecutive weigh-ins. Weigh and cool in a desiccator. Usually, the weight loss is reported as moisture [13].

4. pH

Take 1 grams of face pack powder and dissolve it in 100 milliliters of water. The pH meter used is a typical single or double electrode model. The instrument is calibrated using distilled water at pH 7 and 9.2. After leaving the electrode in the solution for three to four minutes, take a reading [1].

5. Angle of Repose.

The funnel was filled with 25 grams of powder. Raising the funnel will produce a heap. The heap height and radius are recorded. The formula is used to compute the angle of repose (θ).

$$\theta = \tan^{-1}(h/r)$$

Where,

θ – Angle of repose

h – Height of the heap

r – Radius of the base [11]

6. Bulk Density[4]

The relationship between a powder's bulk volume and mass is known as bulk density. After the powder has dried, the necessary amount is put into a 50 ml measuring cylinder. Subsequently, the cylinder is dropped at intervals of two seconds, from a height of one inch onto a hard wood surface. It is measured how much powder there is. The powder is then weighed. Repeating this yields average results. The formula provided below is used to compute the bulk density.

Bulk Density = Mass of the powder /Volume of the powder

7. Tapped Density [1]

Weigh the powder precisely that has been added to the mechanical shaker's measuring cylinder. Following the initial mass or volume of powder observation, the measuring cylinder is mechanically tapped 100 times.

Formula of Tapped Density =Mass of powder /Tapped Volume.

8. Carr`s Index [13]

Carr`s Index is calculated by using the below given formula

Tapped Density-Bulk Density/ Tapped Density

9. Hausner`s ratio [13]

Hausner`s ratio is calculated by using the below given formula

Tapped Density /Bulk Density

MORPHOLOGICAL PARAMETERS

The morphological characteristics listed in the Table were assessed for the herbal face pack. The formulation had a light yellow color. The aroma of the developed formulations was agreeable and pleasant, making them ideal for use in cosmetic formulations. Smoothness and texture were appropriate given the specifications of cosmetic formulas [2].

Sr. No	Parameter	Observation
1	Appearance	Smooth
2	Colour	Cream
3	Odour	Pleasant
4	Texture	Fine
5	Smoothness	Smooth

Physicochemical Evaluation

Sr. No	Parameter	Observation
1	Partical Size	177 μ m
2	Ash Content	76% w/w
3	pH	7.3
4	Loss on Drying	9.5%

Evaluation of flow properties

Sr. No	Parameter	Observation
1	Tapped density	0.71 gm/ml
2	Bulk density	0.51gm/ml
3	Angle of repose	24.22°



4	Hausner's ratio	13.9%
5	Carr's index	0.28

CONCLUSION

People require side-effect-free treatments for a range of skin conditions. Herbal face masks are regarded as a long-lasting and effective method of improving skin look. Therefore, the materials used to produce the current work include naturally occurring elements such as rice flour, milk powder, saffron, papaya peel, turmeric, sandalwood, and neem leaves extract. It is proposed that the developed formulation had the properties of a typical cosmeceuticals formulation for skin care and was physico-chemically stable [14].

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