

FORMULATION AND EVALUATION OF HERBAL FACE PACK USING HERBAL PRODUCTS

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ABSTRACT

The aim of this work is to formulate and evaluate an herbal face pack for glowing skin by using natural herbal ingredients. The natural herbal ingredients such as multani mitti, turmeric powder, sandalwood powder, orange peel powder, neem powder, aloe vera powder were purchased from local market in the form of dried powder. All powdered natural ingredients were sieved using #120 mesh, weighed accurately and mixed geometrically for uniform formulation and then evaluated for parameters including organoleptic evaluation, rheological evaluation, physicochemical evaluation, irritancy test along with stability examination.

Thus, in the present work, we formulated a herbal face pack which can be easily made with the easily available ingredients. After evaluation, we found good properties for the face packs, free from skin irritation and maintained its consistency even after stability storage conditions. Results of the study scientifically verified that herbal face pack having enough potential to give efficient glowing effect on skin. The overall study is useful to substantiate product claims due to its useful benefits on the human beings.

Herbal face packs are non-toxic in nature and nourishes the facial skin and it helps to circulation of blood and help to maintain the elasticity of skin and helps remove dirt.

Thus in this work we had concluded good properties for the herbal face pack and further optimization studies are required on this study to find the useful and important benefits of herbal face pack on human cosmetic products. Face packs are generally used to increase the fairness, glow and smoothness of the skin. They are non-toxic, non-allergic and having lesser side effects.

Thus in the present work, it was a very good attempt to formulate and evaluate the herbal face pack containing natural herbal ingredients.

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

I. INTRODUCTION

Since from ancient period of time, people are aware of the use of plants for the healthy, glowing and beautiful skin. Cosmetics are products used to clean, beautify and promote attractive appearance. 1. Cosmetics are commercially available products that are used to improve the appearance of the skin by action of cleansing, beautifying, promoting attractiveness. From the ancient time, different herbs are used for cleaning, beautifying and to manage them. Face skin is the major part of the body, which indicates the health of an individual. 2. In ancient times women were very conscious about their beauty and took special care of their specific skin types. Even today, people especially in rural areas and hilly regions go for the natural remedies like plant extracts for various cosmetic purposes like neem, aloe

vera, orange peel, tulsi, rose...etc. 1. everybody wants to get fair and charming skin. Nowadays, acne, black head, pimples, dark circle are common among youngsters and person who suffers from it.

According to Ayurveda, skin problems are normally due to impurity in blood. 3. In Ayurveda, the herbal paste is called as 'mukha lepa' used for as a facial therapy. This herbal paste smeared on face to treat acne, pimple, scars, marks and pigments. Herbal face packs are cheaper and have no side effect for getting fair skin naturally. 4. Herbal cosmetics are the products which are used to purify and beautify the skin. The main advantage of using herbal cosmetics is that it is pure and does not have any side effects on human body. 5. Face pack is the smooth powder which is used for facial application. These preparations are applied on the face in the form of liquid or pastes and allowed to dry and set to form film giving tightening, strengthening and cleansing effect to the skin. They are usually left on the skin for ten to twenty-five minutes to allow all the water to evaporate, the resulting film thus contracts and hardens and can easily be removed. The warmth and tightening effect produced by application of face pack produces the stimulating sensation of a rejuvenated face, while the colloidal and

adsorption clays used in the preparations remove the dirt and grease from the skin of the face. When the applied face pack is eventually removed skin debris and deposited dirt gets removed. Herbal formulations have more demand in the market. It is nontoxic in nature. It is used for nourishing the facial skin. Herbal face pack can be applied daily without any side effects. And now days everyone wants to get fair and good looking. But dark circle, Dark spots, Pimples are common. By using various chemical products like face pack, face scrub the skin become Dark or pimple may come. So to avoid all these problems the herbal face pack is the best remedies. It is safe and to use. As compare to other face packs flooded in the market, Natural and herbal cosmetics are safest to use and effective also. It is suitable for all skin types. It is easily available. Herbal face pack helps women to get rid of wrinkles, pimples, acne. There are many benefits of herbal face pack by using them according to our skin type. Herbal face pack increases fairness and glow.

II. AIM AND OBJECTIVES

Aim: To study the formulation and evaluation of herbal face pack.

Objectives:

- 1) The objective of this study was to formulate the face pack which does not cause any side effect or adverse reaction.
- 2) To evaluate the prepared herbal face pack for glowing of skin.
- 3) Herbal face pack is used to rejuvenate the muscles, maintain the elasticity of the skin, remove adhered dirt particles and improve the blood circulation.
- 4) Herbal face pack is nontoxic in nature.

III. BENEFITS OF HERBAL FACE PACK

1. Nourishes the skin as provides essential nutrients to skin.
2. Helps to reduce, acne, pimple, scars and marks from the skin.
3. Face packs usually remove dead cells of the skin.
4. Face packs provide a soothing and relaxing effect to the skin.
5. They help to restore the lost glow of skin in short span of time.
6. Regular use of natural face packs bring glow to skin, improve skin texture and complexion.
7. The harmful effects of pollution and harsh climates can be effectively combated with judicious use of face packs.
8. They help to prevent premature aging of skin.
9. Formation of wrinkles, fine lines and sagging of skin can be effectively controlled by using natural face packs.
10. Natural face packs make the face skin look young and healthy.
11. They restore the natural glow of skin in the optimum period.
12. Frequent uses of natural face packs improve skin texture and complexion.
13. Herbal face packs are safe and can give you a smooth glowing skin.
14. Herbal face pack exfoliates the skin, soothes sunburns, removes suntan and dirt and reduces the signs of ageing.
15. It is helpful in improving the fairness.

IV. IDEAL PROPERTIES OF FACE PACK

- 1) It should be non-irritating and non-toxic.
- 2) It should be stable both physically and chemically.
- 3) It should be free from gritty particles.
- 4) It should have pleasant odour.
- 5) They should be capable of producing significant cleansing of the skin.
- 6) They should produce a sensation of tightening of the skin after application.
- 7) They should form a smooth paste.

V. PRECAUTIONS TO BE TAKEN WHILE APPLYING FACE PACKS

- 1) Select the face packs according your skin type.
- 2) The face pack should not be left on face, or than 15-20minutes. Keeping for very long times may result in formation of wrinkles, sagging of skin and enlargement of open pores.
- 3) Avoid applying face pack near "eye zone". The skin around eye is very delicate.
- 4) Applying face pack in a week. Don't try to peel or straiten the dried face packs. This may harm underlying skin.
- 5) Spray water on face before removing dried face pack. After removing the mask roll an ice cube on facial skin which helps to use open pores and tightens skin.

VI. HERBAL INGREDIENTS PROFILE

1. Multani Mitti:



Fig 1: Multani Mitti

Scientific Name: Fuller's Earth

Synonym: Multani Mitti

Chemical constituents: Silica , iron oxide , lime , magnesia and water .

Uses:

- 1) Fight acne and pimples
- 2) Treats tanning and pigmentation.
- 3) Evens out skin tone and brightens complexion.

2. Turmeric:



Fig 2: Turmeric

Scientific name: Curcuma longa

Synonym: Turmeric root , wid curcuma

Family: Zingiberaceae

Chemical constituents: Curcumin I , curcumin II , III , dihydrocurcumin , 3 - 6 % polyphenolic compounds , curcuminoids , Demethoxy curcumin and bisdemethoxy curcumin .

Uses:

- 1) Antibacterial activity .
- 2) Also adds glow to the skin .
- 3) Antifungal activity .

3. Sandal wood:



Fig 3: Sandal wood

Scientific name: Santalum

Synonym: Sandal

Family: Santalaceae

Chemical constituents : 90% sesquiterpenic alcohols of which 50 – 60 % is the tricyclic alpha – santalol, beta – santalol comprises 20 – 25 % .

Uses:

- 1) Anti – tanning property.
- 2) Skin softening effect.
- 3) Pimple and acne treatment.
- 4) Clear complexion

Sandalwood has an anti-tanning and anti-aging property. It also helps in many ways like toning effect, emollient, antibacterial property, cooling astringent property, soothing and healing property.

4. Orange peel:



Fig 4: Orange peel

Scientific Name: Citrous reticulate

Synonym: Sweet orange

Family: Rutaceae

Chemical constituents : Limenene (90%) , citral (4%) , vitamin c , pectin , Hesperidine , Aurantimaric acid , Octanol (39%) , Decamal (42%) , Monoterpenes (91%) , and contains no less than 2.5 % volatile oil.

Uses:

- 1) Lighten and brighten skin .
- 2) Cells build up around the pores enhances the shadows and make up the pores appear larger.
- 3) Promotes healthy skin glow.
- 4) Hydrates dehydrates skin.

It prevents the skin from free radical damage, skin hydration and oxidative stress. Also it has instant glow property prevent acne, blemishes, wrinkles and aging.

5. Neem



Fig 5 : Neem

Scientific name : Azadirachta indica

Family : Meliaceae

Chemical constituents : Triterpenoids , alkaloids , phenolic compounds , flavonoids , carotenoids , ketones and strroids , Azadirachtin .

Uses :

- 1) Neem helps in healing process of post – surgical scalp wounds.
- 2) It reduces scars , heal wounds , minimize wartes and moles.
- 3) It also has antifungal and antibacterial activity.
- 4) Neem oil has good prolonged treatment for acne.

6. Aloe vera



Fig 6: Aloe vera

Scientific name: Aloe barbadensis

Synonym: Aloe , kumari

Family: Asphodelaceae

Chemical constituents: Amino acid, vitamins, lipids, sterols, tannin and enzymes, phenol, saponin, antithraquinones .

Uses:

- 1) Moisturizing agent delivers smoothening property to the skin.
- 2) Rights ageing.
- 3) Remove dead skin cells.
- 4) Treating acne sunburns. Aloe Vera is a great moisturizing intended for a skin. Aloe Vera rejuvenates skin, hydrates this and keeps skin layer looking fresh all the time. Aloe Vera has anti-microbial activity rendering it ideal to deal with acne and pimples. Aloe Vera powder contains several nutrients like glycerin, sodium palmate, sodium.

4 Treating acne sunburns.

Aloe Vera is a great moisturizing intended for a skin. Aloe Vera rejuvenates skin, hydrates this and keeps skin layer looking fresh all the time. Aloe Vera has anti-microbial activity rendering it ideal to deal with acne and pimples. Aloe Vera powder contains several nutrients like glycerin, sodium palmate, sodium carbonate, sodium pain kemelate, sorbital etc.

Table 1:

SR .NO	INGREDIENTS	QUANTITY OF SSAMPLE FOR 100 gm
1	Multani miiti	30gm
2	Turmeric Powder	5gm
3	Sandal wood Powder	25gm
4	Orange peel Powder	20gm
5	Neem Powder	10gm
6	Aloe Vera powder	10gm

1. The powdered were passed through sieve machine using #120 mesh upto 15 min sieving.
2. Then all ingredients were mix them together to form a uniform mixture with the help of mortarpestle.

3. Then formulation were prepared
4. Then the prepared face pack was packed into a container / self polyethylene bag . Labeled and used for further studies.



Fig 7: Prepared face pack

Procedure for face pack application

- 1) Take prepared face pack powder in a bowl as per requirement and add rose water/Distilledwater to mix.
- 2) Mix well to form a paste with optimum thickness.
- 3) It should be applied evenly on the face with the help of brush/hand
- 4) Cover the acne and blemishes spots too. Kept as it is for complete drying for 20 to 25min. .

VII. EVALUATION OF FACE PACK

ORGANOLEPTIC EVALUATION:

The organoleptic parameters include its appearance, color, odor, texture, grittiness, washability, which were evaluated manually for its physical properties.

PHYSICOCHEMICAL EVALUTION:

Physicochemical parameters were determined, including the determination of moisture content, extra ctive values, pH and ash values.

Determination of moisture content:

Moisture content is important for the plant drugs because insufficient drying may lead to possible enzymatic deterioration of the active principles. Moisture content was determined by loss on drying (LOD). Weigh accurately 3gms of the powder drug and take in a weighed petri dish and placed in hot air oven at 100-108°C. It was weighed until constant weight was obtained.

Determination of extractive values:

Extractive values are primarily useful for the determination of exhausted or adulterated drugs. It helps to determine the quality as well purity of the product. It also gives an idea about the nature of the chemical constituent's less extractive value indicates addition of exhausted material, adulteration or incorrect processing during drying or storage or formulating.

Water soluble extractive value:

Macerate about 5gm of accurately weighed sample with 100ml chloroform water in a stoppered flask for 24 hours. Shake frequently for first 6 hours. Filter rapidly through filter paper into a 50ml cylinder and evaporate 25ml aqueous extract to dryness in a tared flat-bottomed shallow dish. Evaporate to dryness on a water bath and completely dry the residue in an oven at 105° and weigh. Keep it in a desiccator. Drythe extract to constant weight, finally calculate the percent w/w of water-soluble extractive value with reference to the air-dried drug.

Alcohol soluble extractive value:

Macerate about 5gm accurately weighed sample with 100ml 90% alcohol in a 100ml stoppered flask for 24 hours. Shake frequently for first 6 hours. Filter rapidly through filter paper into 50ml cylinder and collect the filtrate and evaporate 25ml of alcoholic extract to dryness in a tared flat-bottomed shallow dish. Evaporate to dryness on a water bath and completely dry the residue at 105° and weigh. Keep it in a desiccator. Dry the extract to constant weight, finally calculate the percent w/w of alcohol soluble extractive value with reference

to the air-dried drug.

Determination of PH:

It is the measurement of acidity or alkalinity of the product measured on a scale of 0-14. pH of formulated face pack in rose water was found.

Determination of Ash values:

The residue remaining after complete incineration is the ash content of the product. Ash value is a criterion to judge the identity or purity of the drug. A high ash value is indicative of contamination, substitution, adulteration or carelessness in preparation of the product. Ash values can be determined by as follows:

Total Ash value:

Total ash value is useful for detecting low grade, exhausted products and also useful for detecting excess of sandy, earthy matter with drug. About 2-4gm of the prepared sample was placed in a previously ignited and tared crucible. The material was spread evenly on the crucible and ignited by gradually increasing the heat until it was white i.e. free from carbon. It was then cooled in desiccator and weighed. Percentage total ash was calculated with reference to the air-dried sample.

Acid insoluble Ash value:

Used to determine the earthy matter. To the crucible containing total ash, 25ml of HCl was added and covered with a watch glass. Boiled gently for 5min. The watch glass was rinsed with 5ml hot water and added into the crucible. The insoluble matter was collected on an ashless filter paper and washed with hot water until it was neutral. The filter paper containing the insoluble matter was transferred to the original crucible, dried on a hot plate and ignited to constant weight. Allowed to cool in a desiccator for 30min and weighed. Percentage acid insoluble ash was calculated in reference to air-dried sample.

Water soluble Ash value:

It is the difference in weight between total ash and residue after treatment of total ash with water. It is used to detect either the material is exhausted by water or not. To the crucible containing total ash, 25ml water was added and boiled for 5min. The insoluble matter was collected on an ashless filter paper.

Washed with hot water and ignited in a crucible for 15min at a temperature not exceeding 450°C. Cooled and weighed. Percentage water soluble ash was calculated in reference to air dried sample.

RHEOLOGICAL EVALUATION:

It gives an overall idea about the visco elastic flow behavior of the product. Physical parameters like angle of repose, tapped density, bulk density, Hausner's ratio and Carr's index were observed and calculated for the formulation.

Angle of repose:

The angle of repose or critical angle of repose, of a granular material is the steepest angle of descent or dip relative to the horizontal plane to which a material can be piled without stumping. It is important for the design of processing, storage and conveying systems of particulate materials. It is also useful to quantify the flow properties of powder because it influences cohesion among the different particles. The fixed funnel cone method employs the calculation of height (H) above a paper that is placed on a horizontal surface.

The formulated pack was carefully poured through the funnel till the peak of the conical heap just touched the tip of the funnel. Here 'R' denotes the radius of the conical heap. The equation for calculating angle of repose(α) is,

$$\alpha = \tan^{-1} \frac{H}{R}$$

Tapped density:

The tapped density is an increased bulk density attained after mechanically tapping a graduated measuring cylinder containing powder sample. The tap density of a powder can be used to predict both flow properties and its compressibility. The volume of packaging can be determined in a graduated cylinder. 25gms of weighed formulation powder was taken and slowly added to the cylinder with the aid of a funnel. The initial volume was observed firstly and the sample was then tapped until no further volume reduction occurred. The value obtained after tapping was noted. The equation for calculating the tapped density is, Tapped density = **Weight of**

(g) Tapped volume(ml).

Bulk density:

The tapped density is an increased bulk density attained after mechanically tapping a graduated measuring cylinder containing powder sample. The tap density of a powder can be used to predict both flow properties and its compressibility. The volume of packaging can be determined in a graduated cylinder. 25gms of weighed formulation powder was taken and slowly added to the cylinder with the aid of a funnel. The initial volume was observed firstly and the sample was then tapped until no further volume reduction occurred. The value obtained after tapping was noted. The equation for calculating the tapped density is, Tapped density = **Weight of**

(g) Tapped volume ml.

Hausner's Ratio:

Hausner's ratio is related to interparticle friction and as such can be used to predict the powder flow properties.

The equation for measuring the Hausner's ratio is,

Hausner's ratio = tapped density / bulk density Particle size:

Particle size is a parameter, which affects various properties like spreadability, grittiness, etc. Particle size was determined by microscopy method according to the standard procedure.

VIII. RESULT AND DISCUSSION

Following evaluation parameters were performed to ensure superiority of prepared face pack.

Organoleptic Evaluation:

Herbal face pack was evaluated for organoleptic parameters showed in the Table . The colour of prepared formulation was brown. The odour of prepared formulation was pleasant and good acceptable which is desirable to cosmetic formulations.

Table 2: Organoleptic Evaluation

Sr.no	Parameter	Observation
1)	Colour	Brown
2)	Odour.	Pleasant
3)	Appearance	Smooth ,fine
4)	Texture	Fine
5)	Smoothness	Smooth

Herbal face pack was evaluated for powder property. showed in Table . Rheological findings justified the flow properties of herbal face pack. It was found to be free flowing and non- sticky in nature.

Table 3: Rheological Evaluation

SR No	Parameter	Observation
1)	Bulk density	0.35g/ml
2)	Tapped density	0.40g/ml
3)	Angle of repose	20.1
4)	Hausner's ratio	1.33
5)	Carr's index	17.4%
6)	Particle size	54.87

Observation: Rheological findings justified the flow properties of the face pack as it was found to be free flowing and non-sticky in nature. The results proved that the formulation was stable in all aspects.

Physiochemical Evaluation :

Herbal face pack was evaluated for physiochemical parameters showed in Table. The pH of the formulation was found to be 6.. The moisture content was within limit.

Table 4: Physiochemical evaluation

Sr.No	Parameter	Observation
1)	PH.	6
2)	Moisture content.	11.34%
3)	Water soluble	
4)	Extractive value.	16%
5)	Alcohol soluble	
6	Extractive value	13.6
7)	Total ash value	2.066%
8)	Acid insoluble ash	0.925%
9)	Water soluble ash	1.48%

Observation: Moisture content value clearly indicated that the formulation was hygroscopic in nature. Extractive values and ash values were found within the limits. pH was found neutral to suit the requirements of all skin types.

Irritancy test:

The prepared herbal face was subjected for irritancy test and the results are showed in Table 5. The herbal face pack formulation doesn't showed any sigh of irritation, redness and swelling during irritancystudies.

Table 5: Irritancy test

Sr.no	Parameter	Observation
1)	Irritation	Nil
2)	Redness	Nil
3)	Swelling	Nil
4)	Photo irritation	No irritation , No swelling , No redness

Observation: Irritancy test showed negative results for irritancy, redness, swelling and photo irritancy, as the herbals in their natural form without addition of chemicals were found to be compatible with the skin proteins.

Stability studies:

The prepared herbal face pack was subjected for stability studies and the results are showed in Table 6. No change in colour, odour, texture, smoothness and pH was observed.

Table 6: Stability testing

Sr.no	Parameter	Room Temperature	40 C
1)	Colour	No change	No change
2)	Odour	No change	No change
3)	Texture	Fine	Fine
4)	Smoothness	Smooth	Smooth
5)	PH	6	6

Observation : Stability tests performed at different temperatures over a period of one month revealed the inert nature of the face pack in the terms of color, odor, appearance, texture and pH.

IX. CONCLUSION

In the present study, people need cure for various skin problems without side effects. Herbal formulation have growing demand in the world market. Herbal face pack are used to stimulate blood circulation, treating pimples, dark circles, whiteheads, blackheads, acne, and glowing skin. It is good to formulate theherbal face pack

containing natural herbal ingredients such as Multani mitti , Turmeric powder , Sandal wood powder , Orange peel powder , Neem powder , Aloe vera powder. After evaluation, we found good properties for the face pack, free from skin irritation, swelling, redness.

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