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FORMULATION AND EVALUATION OF HERBAL D-TAN FACE PACK

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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, sandalwood, rose powder, masoor flour, orange peel were purchased from local market in the form of dried powder. The powder of Nutmeg was prepared by shade drying commercially, all powdered natural ingredients were sieved using #44 mesh, weighed accurately and mixed geometrically for uniform formulation and then evaluated for parameters including morphological, physicochemical, physical, irritancy 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 its useful benefits on the human beings.

Keywords: Herbal Face Pack ,D – Tan , Glowing Skin , Herbal Ingredients, Evaluation.

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 attractive appearance. 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 cosmetics purposes like neem, aloe vera, orange peel, tulsi, rose...etc1. 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 these 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 with it.⁶

Benefits of Applying Face Packs.^[7,8]

1. Nourishes the skin. Fruits face packs supply essential nutrients to the skin.
2. Face pack usually remove dead cells of skin.
3. Helps to reduce acne, pimples, scars and marks depending on its herbal ingredients.
4. These face packs provide a soothing and relaxing effects on skin.
5. Regular use of natural face masks bring glow to skin, improve skin texture and complexion.
6. They help to restore the lost shine and glow of skin in short span of time.
7. The harmful effects of pollution and harsh climates can be effectively combated with judicial use of face packs.
8. They help to prevents 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 skin look young and health

HERBAL INGREDIENTS PROFILE::

1. Cinnamon
2. Orange Peel Powder
3. Neem Powder
4. Ritha Powder
5. Nutmeg Powder
6. Rose Powder
7. Sandalwood Powder
8. Turmeric
9. Multani Mitti Powder
10. Masoor Flour

CONTENT FOR 25 GRAM – FORMULATIONS

TABLE- 1

Sr. No.	Ingredients	F1 (in gm)	F2 (in gm)	F3 (in gm)
1.	Orange peel powder	2.5 gm	3 gm	3.5gm
2.	Neem powder	2 gm	3 gm	3gm
3.	Sandalwood powder	2 gm	4 gm	4gm
4.	Turmeric powder	2.5 gm	1 gm	1gm
5.	Multani mitti	1.5 gm	3 gm	3gm
6.	Nutmeg powder	2.5 gm	0.5 gm	0.5gm
7.	Ritha powder	3 gm	1 gm	1gm
8.	Cinnamon powder	2 gm	0.5 gm	0.5gm
9	Rose petal powder	3 gm	3 gm	4gm
10.	Masoor flour	4 gm	6 gm	4.5gm

✚ FORMULATION OF HERBAL FACE PACK

Step 1: All the required herbal powders for the face pack preparation were accurately weighed individually by using digital balance. The quantity and compositions are listed in Table: 1

Step 2. The herbal drugs such as Cinnamon, Orange peel, Neem, Sandalwood powder and Turmeric powder were transferred to mortar and pestle and triturated.

Step 3. Herbal drugs such as Ritha, Rose powder, Nutmeg, Multani Mitti and Masoor Flour were triturated in a separate mortar and pestle to form a uniform fine mixture.

Step 4. Previously prepared mixture of herbal powders was transferred to the mixture of fine powders and triturated to obtain uniform drug powder of face pack.

Step 5. The powders were passed through sieve no #44

Step 6. The prepared face pack powder was packed into a well pack glass container and used for further studies.

✚ PROCEDURE OF FACE PACK APPLICATION

Step 1. Take prepared face pack powder in a bowl as per the requirement and add rose water.

Step 2. Mix well to form a paste with optimum thickness.

Step 3. It should be applied evenly on the face with the help of a brush. Cover the acne and blemishes spots.

Step 4. Keep as it is for complete dryness for 20-25 minutes. Then it should be washed with cold water.²⁵



EVALUATION PARAMETER:

ORGANOLEPTIC EVALUATION:

The organoleptic parameters include its appearance, color, odor, texture, smoothness which were evaluated manually for its physical properties. ¹

PHYSICOCHEMICAL EVALUATION:

Physicochemical parameters were determined, including the determination of Loss on Drying, pH and ash values. ⁵

RHEOLOGICAL EVALUATION:

Rheological parameters were determined including the determination of bulk density, tapped density, hausner's ratio, angle of repose, particle size.

Determination Of Loss on Drying: 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. ⁶

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.

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,

$$\text{Tapped density} = \frac{\text{Weight of (g)}}{\text{tapped volume(ml)}}$$

Bulk Density: The bulk density value includes the volume of all the pores within the powder sample. The term bulk density refers to method used to indicate a packaging of particles or granules. 25gms of weighed powder was taken and slowly poured into the graduated cylinder.

The volume occupied by the powder was noted. The formula for calculating bulk density is

$$D = \frac{M}{V}$$

Where, D = bulk density

M = mass of particles

V = total volume occupied by them.

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,

$$\text{Hausner's ratio} = \frac{\text{Tapped Density}}{\text{Bulk Density}}$$

Particle size: Particle size is a parameter, which affect various properties like spreadability, grittiness, etc. Particle size was determined by microscopy method according to the standard procedure.²⁵

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 2. The colour of prepared formulation was Daizy Yellow. The odour of prepared formulation was pleasant and good acceptable which is desirable to cosmetic formulations.

TABLE 2: ORGANOLEPTIC EVALUATION

SR NO.	PARAMETER	OBSERVATION		
		F1	F2	F3
1	Colour	Yellow	Daizy yellow	Creamy corn
2	Odour	Pleasant	Pleasant	Pleasant
3	Appearance	Powder	Powder	Powder
4	Texture	Fine	Fine	Fine
5	Smoothness	Smooth	Smooth	Smooth

Rheological evaluation:

Herbal face pack was evaluated for powder property. showed in Table 3. 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		
		F1	F2	F3
1	Bulk Density	0.347gm/ml	0.352gm/ml	0.342gm/ml
2	Tapped Density	0.595gm/ml	0.641gm/ml	0.609gm/ml
3	Hausner's Ratio	0.58	0.54	0.56
4	Angle of Repose	30.11°	27.92°	33.02°
5	Particle Size	24.3	25.6	24.6

Physicochemical evaluation

Herbal face pack was evaluated for physicochemical parameters showed in Table 4. The pH of the formulation was found to be 7.43. The moisture content was within limit.

TABLE 4: PHYSICOCHEMICAL EVALUATION

SR NO.	PARAMETER	OBSERVATION		
		F1	F2	F3
1	pH	6.55	7.43	7.50
2	Loss On Drying	5%	4%	3%
3	Ash Content	1.62gm	1.42gm	1.48gm

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 sign of irritation, redness and swelling during irritancy studies.

TABLE 5: IRRITANCY TEST

SR NO.	PARAMETER	OBSERVATION		
		F1	F2	F3
1	Irritation	No Irritation	No Irritation	No Irritation
2	Redness	No Redness	No Redness	No Redness
3	Swelling	No Swelling	No Swelling	No Swelling

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	OBSERVATION		
		F1 in 40 ⁰ c	F2 in 40 ⁰ c	F3 in 40 ⁰ c
1	Colour	No change	No change	No change
2	Odour	No change	No change	No change
3	pH	6.55	7.43	7.50
4	Texture	Fine	Fine	Fine
5	Smoothness	Smooth	Smooth	Smooth

CONCLUSION:

Nature remedies are more acceptable to the people than synthetic, in the belief that they are safer and fewer side effects that they compare with synthetic. The dried powders of combined pack showed good flow property which is suitable for a face pack. Organoleptic evaluation showed that the pack is smooth & pleasant odour. Rheological findings justified the flow properties of the pack as it was found to be free flowing & non sticky in nature. Formulation no. 2 was stable on all aspects, with no Irritancy. Stability tests revealed the inert nature of the pack. Further optimisation studies are required on its various parameters to find its useful benefits on the human beings.

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