

Formulation Development and Standardization of Herbal Face Pack

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Abstract: Our aim was to formulation development and evaluation of herbal face pack without adding any preservatives. Face pack was formulated with different natural ingredients (sandal wood powder, multani mitti, china rose flower powder, turmeric, rose water) which are rich sources of vitamins and minerals that are essential for the health and glow of the skin. Evaluation methods were organoleptic, physico-chemical, rheological parameters and stability along with irritancy test. All prepared formulations were standardized by different parameters. Organoleptic parameters showed that the pack was smooth and rheological findings proved the flow properties of the pack as it was found to be free flowing and non-sticky in nature. The results showed that the formulation was stable on all aspects. Stability tests performed revealed the inert nature of the pack. Irritancy test was showed that no irritancy after use. 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: Cosmetics, face pack, herbal, skin care, standardization.

INTRODUCTION

From the ancient time different herbs are used for cleaning, beautifying, promoting attractiveness and smoothness to the skin. Face skin is the major part of the body, which also indicates the health of an individual so a special care is required for the skin to keep it clear and healthy. In Ayurveda, the herbal paste called as “mukha lepa” is used for the facial therapy.

This herbal paste smeared on face to treat acne, pimple, scars, marks and pigments. Face pack is a similar formulation as it is a smooth powder, which is 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 fifteen to thirty minutes to allow all the water to evaporate, the resulting film thus contracts and hardens and can easily be removed with water. The scrubbing and tightening effect produced by the application of face pack results into rejuvenation of face skin. There are various kinds of face packs described in Ayurveda which have nourishing, healing, cleaning, astringent and antiseptic properties. They increase the glow and smoothness of the skin as by reducing wrinkles, pimples, acne and dark patches [1-2].

Benefits of Natural Face Pack are

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 [3].

Face packs are one of the oldest and traditional methods of cleansing skin. They are also considered as best ayurveda treatment to increase fairness of the face. Herbal face packs are having fewer side effects as of chemical based so they are preferred more over others. As from the ancient era, people are using herbs for cleaning, beautifying and maintaining skin. The Natural face packs contain vital vitamins that are required for the health and glow of our skin. These substances also

prove to be beneficial for our skin in many ways. They are less complicated and pretty simple to use. The present study deals with the formulation and evaluation

of herbal face pack for healthy face skin by using natural ingredients [2, 3].

Table-1: Ingredients with Medicinal use and figure

Sr. No.	Plant Name	Medicinal use	Figure
1	Neem leaves <i>Azadirachta indica A.Juss.,</i> <i>Meliaceae</i>	Antibacterial, anti fungal, anti septic.[4]	
2	Sandal wood powder <i>Santalum album L. Santalaceae</i>	Anti-tanning Property, Anti-aging Property, Skin Softening Effect, Pimple and Acne Treatment, Clear Complexion.[5]	
3	Turmeric Powder <i>Curcuma longa L., Zingiberaceae</i>	Antibacterial, antifungal, also adds glow to the skin.[5,3]	
4	Fuller's earth (multani mitti) <i>Euphorbiaceae</i>	Removes excess sebum and oil, cleanses skin by removing dirt and impurities. Evens out skin tone and brightens complexion, treats tanning, sunburn, skin rashes and infections (multani mitti is also an effective cooling agent).[5,3]	
5	Gram flour <i>Cicer arietinum</i> <i>L. Fabaceae</i>	Helps Treat Acne. The zinc in gram flour can fight infections that cause acne.	
6	China rose powder <i>Hibiscus rosa.</i> <i>Malvaceae</i>	It is rich with the anti bacterial properties along with the positive effects of Vitamin K, C and B. It also have good amount of antioxidants.	
7	Rose water <i>Rosa canina L.</i> <i>Rosaceae</i>	Rose water is rich with anti bacterial potential. It also have good amount of antioxidants. Helpful to get a radiant and glowing skin.[5]	

MATERIALS AND METHOD

The Face pack was formulated with different natural ingredients (sandal wood powder, fuller's earth, China rose flower powder, gram flour, turmeric, rose oil and neem leaves powder) which are rich sources of vitamins and minerals that are essential for the health and glow of the skin.

The details of the ingredients and composition are mentioned below.

Table 2: Formulation of Face Pack

Sr. No.	Name of Ingredients	Quantity of Ingredients			
		F1	F2	F3	F4
1.	Fuller's earth	5.0	5.0	5.0	5.0
2.	Turmeric	0.5	0.2	0.2	0.2
3.	Sandal wood	1.0	1.5	2.5	2.5
4.	Neem	0.25	0.5	0.5	0.5
5.	China rose	0.5	1.0	0.5	1.5
6.	Gram flour	1.5	2.0	2.5	3.0
7.	Rose water	20 ml	20ml	20ml	20ml



Figure 1

Method of Preparation: Four different formulations were prepared with varying concentrations of all ingredients named as F1 to F4. Concentration of each ingredient was mentioned in Table 2. The accurate quantity of ingredients were weighed and ground into fine powder by using sieve no.120. Then all the ingredients were mixed uniformly. Then the prepared face pack was stored and labelled for further studies or tests. The picture of final formulation as shown in figure 1.

Methods of Evaluation

Following evaluation parameters were performed to ensure quality and stability of prepared face pack.

- 1. Organoleptic Evaluation:** The organoleptic parameters include its nature, color, odor, feel and consistency which were evaluated manually for its physical properties. Results are shown in table 3.
- 2. Rheological Evaluation:** The flow property of the dried powder of combined form was evaluated by performing Angle of Repose by funnel method, bulk density and tapped density by Tapping Method. Bulk density refers to the adjustment of particles or granules to pack themselves collectively. The formula for determination of bulk density (D) is $D = M/V$ where M is the mass of particles and V the total volume occupied by them. The volume of packing can be determined in a graduated cylinder. 100 grams of weighed formulation powder was taken and slowly added to the cylinder with the help of the funnel. The initial volume was observed firstly, the sample was tapped until no further volume reduction occurred. The bulk density value was obtained from the initial volume and after tapping the volume

reduced, from which tapped density was calculated. The angle of repose is used to quantify the flow properties of powder because it influences cohesion among the particles. The fixed funnel cone method employs the calculation of height (H) above the glass paper that is placed on a flat tabular surface. The powdered 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, $\tan a = H/R$ or $a = \arctan H/R$, where 'a' is the angle of repose. Hausner's ratio is associated with inter particle friction and predicts powder flow properties. The Hausner's ratio is calculated as D/D' where D is the tapped density and D', the bulk density. Carr's index helps to measure powder flow from bulk density [6-7]

- 3. Physicochemical Evaluation:** Ash content was performed using incinerator, pH was found by using pH meter and loss on drying was also performed [7].
- 4. Irritancy test:** Mark an area (1sq.cm) on the left hand dorsal surface. Definite quantities of prepared face packs were applied to the specified area and time was noted. Irritancy & edema, was checked and reported.
- 5. Stability studies:** Stability testing of prepared formulation was conducted for formulations by storing at different temperature conditions for the period of one month. The packed glass vials of formulation stored at different temperature as Room temperature, 35°C and 40°C and were evaluated for physical parameters like Color, Odor, pH & Consistency [7].

RESULT AND DISCUSSION:

The different formulation of face pack were prepared as shown in table 2. The final image of the formulation was shown in figure 1. The flow property parameter showed free flowing properties of the powder table 4 and figures 2-6. The colors of formulations were slightly different due to variation in composition of contents. Formulation F1 were slightly yellow in colour as compared to others as due to high turmeric content. The odour of prepared formulations was good acceptable as which is desirable for cosmetic formulations as shown in table 3. The pH of all formulations laid near to neutral range i.e. in the range of 7 to 8 pH which is mandatory for the skin showed in

table 5 and figure 7. LOD was found to be 1.5% as shown in table 5 and figure 8. Ash value was found to be 4.5 shown in table 5 and figure 9 as shows that mineral content is more in the formulation which good for the skin. The results of irritancy test were also negative as passes as shown in table 6. From the all above observations, it has been notified that the formulation F4 was shown good results and acceptable for all types of skin. It passes in all parameters as there are almost negligible chances of the deterioration and side effects of the formulation. The formulation F4 was stable at room temperature and at 35°C as shown in table 7.

Table 3: Organoleptic Evaluation

Sr. No.	Parameters	Observation			
		F1	F2	F3	F4
1	Appearance	Fine, non sticky	Fine, non sticky	Fine, non sticky	Fine, non sticky (Free Flowing)
2	Color	Brown	Light brown	Light brown	Light brown
3	Odor	Pleasant	Pleasant	Pleasant	Pleasant
4	Texture	Fine	Fine	Fine	Fine
5	Smoothness	Smooth	Smooth	Smooth	Smooth

Table 4: Rheological properties

Sr. No.	Parameters	Observation			
		F1	F2	F3	F4
1.	Tapped density	0.75 gm/ml	0.78 gm/ml	0.71 gm/ml	0.71 gm/ml
2.	Untapped density	0.60gm/ml	0.62gm/ml	0.57gm/ml	0.58gm/ml
3	Angle of Repose	7.8	7.5	7.5	7.5
4.	Hausner'sr ratio	1.45	1.42	1.41	1.40
5.	Carr's index	31.2%	32.6%	29.3%	28.5%

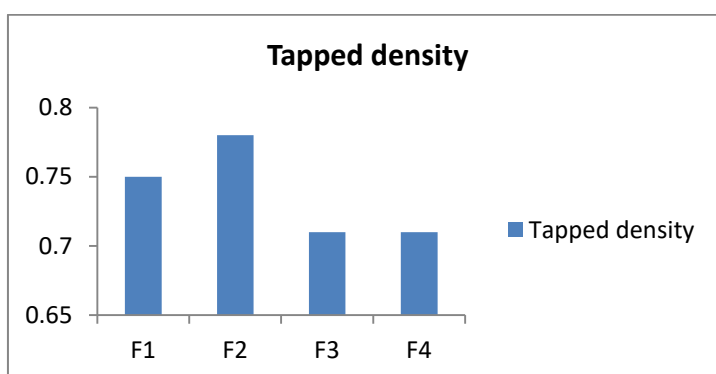


Figure 2 (values are in gm/ml)

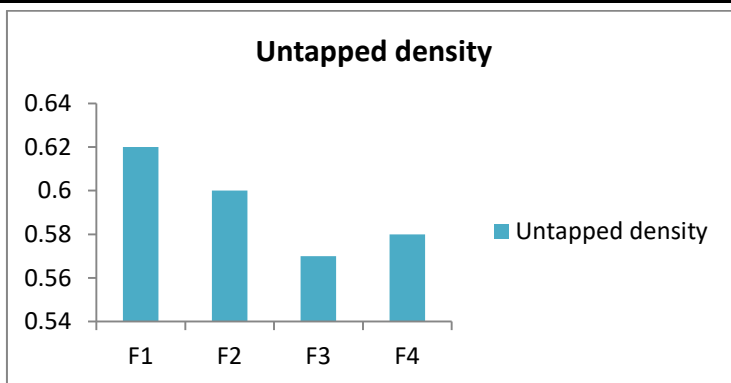


Figure 3 (values are in gm/ml)

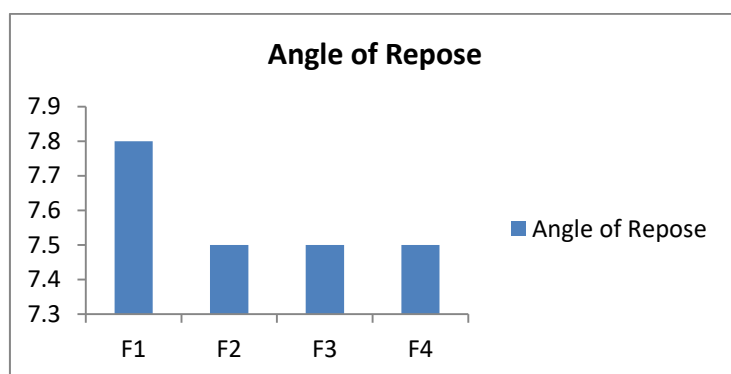


Figure 4

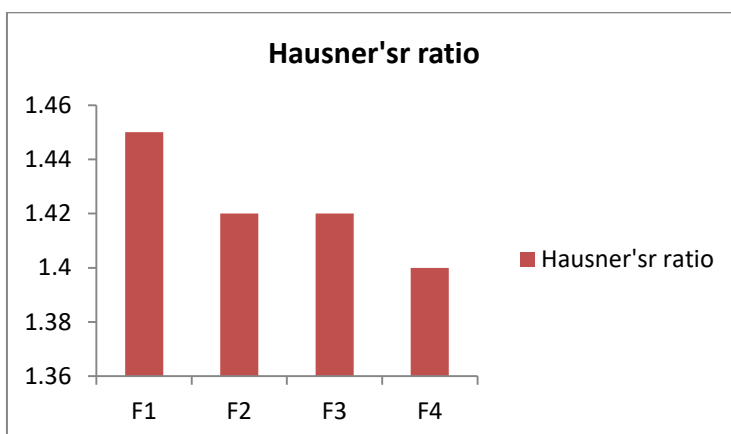


Figure 5

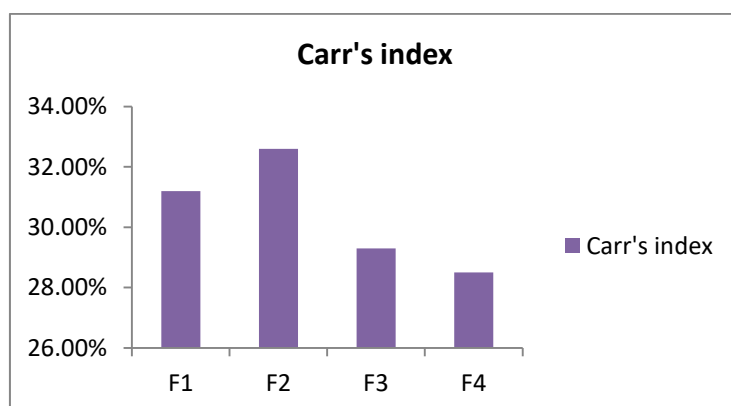


Figure 6

Table 5: Physicochemical Evaluation

Sr. No.	Parameters	Observation			
		F1	F2	F3	F4
1	L.O.D	1.5%	2%	1.5%	1.5%
2	PH	8	7.5	7.5	7.5
3	Ash value	4.0	4.2	4.5	4.5

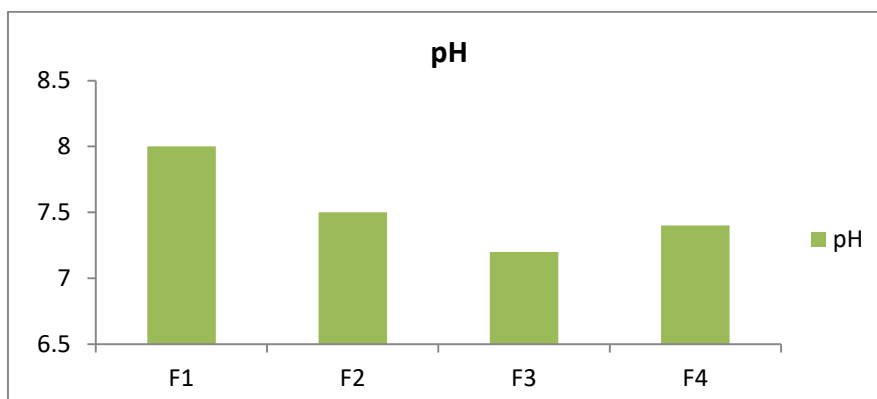


Figure 7

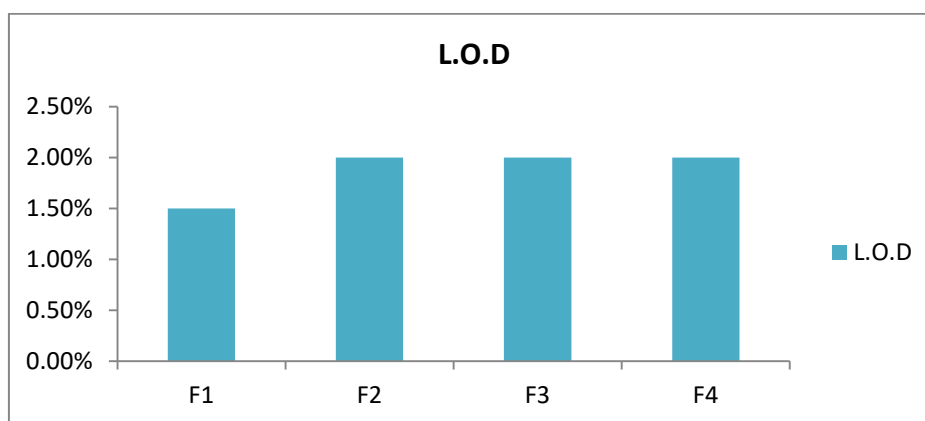


Figure 8

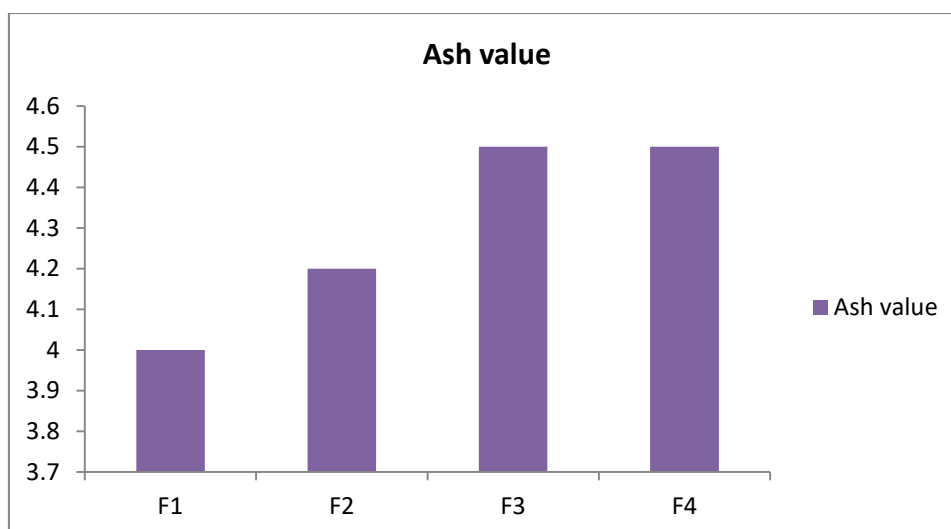


Figure 9

Table 6: Irritancy test

Sr. No.	Parameters	Observation			
		F1	F2	F3	F4
1	Irritation	No	No	No	No
2	Redness	No	No	No	No
3	Swelling	No	No	No	No

Table 7: Stability studies

Sr. No.	Parameters	35±0.5°C	40±0.5°C	Room Temperature
1	Color	No change	No change	No change
2	Odour	No change	No change	Slightly Change
3	pH	6.65±0.17	6.65±0.11	6.72±0.21
4	Texture	Fine	Fine	Fine
5	Smoothness	Smooth	Smooth	Smooth

CONCLUSION:

The advantage of herbal packs is their nontoxic nature and cost effective. Natural face pack exfoliates skin and provides a soothing, calming and cooling effect on the skin. They restore the natural glow of skin in the optimum time period. Frequent uses of natural face packs improve skin texture and complexion [8-10]. Thus in the present work, we found good results of herbal face packs as give glowing, smoothing, antibacterial, anti-acne & anti wrinkle effect on skin. This face pack is found to be beneficial, economical and passed all evaluation parameter.

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Conflict of interest statement:

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