

Formulation and evaluation of herbal cosmetics

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Submitted: 25-05-2023

Accepted: 05-06-2023

ABSTRACT:

The objective of this work is to formulate and evaluate a cosmetic herbal face pack for glowing skin by using natural ingredients. With the varying concentrations, four different formulations containing ingredients such as multanimitti, turmeric, aloe vera, sandal wood, neem and nutmug, reetha; were prepared named as F1 to F4. All prepared formulations were evaluated by different parameters like organoleptic properties and physico-chemical parameters and stability along with irritancy test and microbial load. Among all formulation, F2 was found to be good in physical parameters, free from skin irritation and maintained its consistency even after stability storage conditions.

Key words: Herbal ,cosmetics ,formulation ,face pack ,organoleptic characteristics

I. INTRODUCTION:

Herbal cosmetics are also known as natural cosmetics. During the civilization era there were no fairness creams nor the cosmetic surgeries. The objective of this work is preparation and characterization of natural face pack. By varying the concentrations in formulations pertaining the ingredients . Herbal cosmetics are the preparation which represent cosmetics that are with active bio-ingredients (Natural), nutraceuticals and pharmaceuticals that are to be applied on our skin. The outermost layer of skin which is exposed to atmosphere is a horny layer i.e. stratum corneum & is made up of keratinized dead cells. These cells are responsible for maintaining the suppleness of the skin, i.e. maintaining the moisture balance and overall appearance .

Face packs are basically additives delivering some additional benefits. Different types of herbal face packs are used for different types of skin. Herbal face packs are helps to reduce wrinkles, pimples, acne and dark circles. Also increase the fairness and smoothness of skin. It also helps someone to boost their confidence. Ayurveda is the most useful and successful means for achieving this purpose

Herbal Cosmetics are Used in an Effective Manner which are Very Much Beneficial like

1. As they are natural, they does not possess any of the harmful effects on the skin
2. They are relatively safe than marketed ones
3. Easily formulated and evaluated depending on their availability
4. From earlier days results are satisfactory and also having microbiological stability

Present research article deals with the formulation and evaluation of cosmetic herbal face pack for glowing skin at home by using natural materials i.e., multanimitti, turmeric, Aloe vera, sandalwood, orange peel, reetha neem and nutmeg.

II. MATERIALS AND METHODS

All the natural materials used in the present study i.e., multanimitti, turmeric, Aloe vera, sandalwood, orange peel, neem, reetha and nutmeg were purchased from local market in a form of dried powder and were authenticated at Botany department of kishoricollege of pharmacy beed. Multani Mitti (Calcium bentonite)

Multani mitti helps skin by different ways like diminishing pore sizes, removing blackheads and whiteheads fading freckles, soothing sunburns, cleansing skin, improving blood circulation, complexion, reducing acne and blemishes and gives a glowing effect to a skin as they contain healthy nutrients. Multani mitti is rich magnesium

chloride.



Turmeric (*Curcuma longa*)

Turmeric is mainly used to rejuvenate the skin. It delays the signs of aging like wrinkles and also possesses other properties like antibacterial, antiseptic and anti-inflammatory. It is best source of blood purifier. It is effective in treatment of acne due to its antiseptic and antibacterial properties that fight pimples and breakouts to provide a youthful glow to your skin. It also reduces the secretion by the sebaceous glands.



Aloe Vera (*Aloe barbadensis*)

Contains a popular and natural depigmentation compound known as Aloin. This compound effectively lightens skin, eradicates skin imperfections like dark spots and patches, and eliminates dead skin cells. Hence, the answer is yes- aloe vera can help lighten your skin tone!



Sandal wood (*Santalum alba*)

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



Neem (*Azadirachta indica*)

Neem is anti-inflammatory, antiseptic and highly beneficial for oily and acne prone skin¹⁴. An anti-acne effect is due to antimicrobial, anti-inflammatory and anti-oxidant activities of different chemical constituents



Reetha (*Sapindus mukorossi*)

You can add Reetha powder to water and boil it till it gets reduced to half and then use it as a body wash as it is good for the skin. As per Ayurveda, it also helps manage skin infections such as eczema, psoriasis and pimples due to its Tridosha property (Vatta Pitta Kaph balancing property).



Nutmeg (Myristica fragrans)

Nutmeg is widely used for its analgesic, anti-inflammatory, antiseptic and anti-bacterial property¹⁴. It helps in reducing wrinkles, fine lines and other signs of aging. It also helps in reducing acne scars and to make them less noticeable.



Methods 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 1. The accurate quantity ingredients were weighed and ground into fine powder by using sieve #120. Then the all ingredients were mixed geometrically by serial dilution method for uniform mixing. Then the prepared face pack was packed into a self sealable polyethylene bag, labeled and used for further studies.

Sr.no.	Name of ingredient	Scientific name	F1	F2	F3	F4
1	Multani mitti	Calcium bentonite	20	30	35	15
2	Turmeric	Curcuma longa	25	5	10	20
3	Neem	Azadirachta indica	10	15	10	20
4	Nutmeg	Myristica fragrance	25	25	20	25
5	Reetha	Sapindus mukorossi	10	12	6	5
6	Aloe vera	Aloe barbadensis	7	8	15	10
7	Sandal wood	Santalum alba	3	5	4	5

Table 1: Formulation of facepack (quantity of sample for 100 mg)

Procedure of Face Pack Application

Take prepared face pack powder in a bowl as per the requirement and add rose water to mix. Mix well and apply over the facial skin. Cover the acne and blemishes spots too. Kept as it is for complete drying for 20 to 25 min and then wash with cold water.

Evaluation characteristics

Organoleptic Evaluation

They include odour, nature, colour, feel and consistency were evaluated to identify the property. The odour of formulations was pleasant and acceptable. Texture and smoothness was also acceptable as per requirement of natural Herbal formulations.

Physical Evaluation

The particle size was tested by microscopy method. 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.

The Powder Flow Property of the Natural Herbal face pack as follows

Angle of repose: $\theta = \tan^{-1} (h/r)$

Bulk density \rightarrow Weight of powder/ Bulk volume

Tapped density \rightarrow Weight of powder/ Tapped volume

Carr's Index (I) = $(\text{Tapped Density} - \text{Bulk Density}) / (\text{Tapped Density}) \times 100$

Hausner's ratio \rightarrow Tapped density/ Bulk density

Physicochemical Evaluation

Ash content was performed using incinerator, pH was found by using pH meter and loss on drying was also performed.

pH of 1% aqueous solution of the preparation was measured using a calibrated digital pH meter at constant temperature.

Weigh approximately 1.5 gms of the powder into a weighed flat and thin porcelain dish, dry in the oven at 100°C or 105°C and two consecutive weights must not differ more than 0.5 mg. Cool it in a desiccator and weigh. Calculate the loss of drying

Stability testing was done by storing the formulation at temperature conditions for the period of one month.

The packed glass vials were evaluated for physical parameters (Color, Odor, pH, Consistency and feel)

at different temperature conditions ($35 \pm 0.50C$ to $40 \pm 0.50C$).

Sr.no	Parameter	F1	F2	F3	F4
1	Particle size	26.4+ ₋ 5.44	22.5+ ₋ 2.85	24.8+ ₋ 4.36	25.2+ ₋ 5.21
2	PH	6.52 ± 0.10	6.55 ± 0.4	6.79± 0.16	6.88± 0.1
3	Ash content	93 ± 0.732	87 ± 0.85	92 ± 0.556	95 ± 0.512
4	Loss of drying	4.5	3	5	3.67

Organoleptic Evaluation

Morphological parameters were evaluated and depicted in Table 2. Colour of formulation was

Slight yellow. The odour of formulations was pleasant and acceptable.

Texture and smoothness was also acceptable as per requirement of natural Herbal formulations.

Sr.no.	Parameter	F1	F2	F3	F4
1	Apparence	Powder Free flowing	powder Free flowing	powder Free flowing	powder Free flowing
2	Colour	Greenish yellow	Slight yellow	Slight yellow	Slight yellow
3	Odour	slight	slight	slight	Slight
4	Texture	Fine	Fine	Fine	Fine
5	Smoothness	smooth	Smooth	Smooth	Smooth

Table 2:organolepticevaluation

Irritancy test

Irritancy test was conducted in order check whether the prepared formulation showed any irritancy, edema or erythema. This test was repeated at regular intervals by applying on the left-hand dorsal surface for about an area of 1sq.cm approx..

Sr .no.	Evaluation	F1	F2	F3	F4	Observation
1	Irritant	+	+	Null	Null	No irritation
2	Erhythma	Null	Null	Null	-	No irritation

Ash Content

Weigh 2-4g of the ground air-dried powder that is previously ignited and tared crucible. Spread the powder evenly and ignite it by increasing the heat to 500-600°C gradually until it is white thus indicating the absence of carbon. Cool in a desiccator and weigh.

Parameter for stability studies of formulation f2

Sr no	parameter	Room temperature	35±0.5°C	40±0.5°C
1	colour	No change	No change	No change
2	odour	No change	No change	Slightly change
3	Ph	6.63±0.17	6.65±0.15	6.85±0.45
4	Texture	Fine	Fine	Fine
5	Smoothness	smooth	smooth	smooth

Microbial Load of Formulation F2

Sr no	test	observation
1	Total viable count (CFU/g)	712
2	Gram negative pathogens, CFU/g	absent

Determination of Microbial Load

The microbial load showed the Total Viable Count (867 CFU/g), and the test for presence of gram negative pathogens such as E. coli, Salmonella and pseudomonas absent per gram showed in Table 6.

The Formulation F2 was found to be a good in physical parameters, free from skin irritation and maintained its consistency even after stressed storage conditions. It is suggested that the prepared formulation was physico-chemically and microbiologically stable, and possessed characteristics of a standard cosmeceuticals formulation for skincare.

III. CONCLUSION

In the current scenario, people are in search of cure for numerous skin problems without harmful side effects. Natural/ Herbal ingredients proved itself in formulating the cosmetics without any side effects to the skin. These face packs are preferred for sustaining and effective way to increase the glow and appearance of skin. Thus in the present work, It is a very good attempt to formulate the herbal face pack containing naturally available ingredients like multanimitti, turmeric, aloe vera, sandalwood, orange peel, neem and nutmeg. It is suggested that the prepared formulation was physico-chemically and microbiologically stable, and possessed characteristics

ACKNOWLEDGEMENT

The authors are thankful to kishori College of Pharmacy, Beed, Botany department of KCP College, Beed and BAC-Test Laboratory, Beed for providing necessary facilities and to carry out this work and microbiological studies.

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