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Formulation and Evaluation of herbal antibacterial face pack

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ABSTRACT-: Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones. Herbal formulations have growing demand in the world market. The objective of this work is to formulate and evaluate a cosmetic preparation polyherbal face pack made from herbal ingredients. Kaoline, tragacanth, orange peel powder, neem powder, chandan powder, aloe juice powder, turmeric powder, Fullers earth and Cicer arientinum Powder were procured from the local market in dried, powdered and then passed through sieve no 80, mixed thoroughly prepared and evaluated for its organoleptic, physico-chemical and microscopical characters. The dried powder of combined form had passable flow property which is suitable for a face pack.

KEYWORDS: Herbal Face pack, Skin, Natural Formulation, Herbal Remedies.Gram flour, Masoor Dal, Papaya,

I. INTRODUCTION

The face packs which are mentioned in ayurveda help women to get rid of wrinkles, dark circles, pimples and acne. Herbal face packs increase the fairness and smoothness of skin. We can derive the maximum benefits of herbal face packs by using them according to our skin type. These face packs increase skin glow and are best ayurveda treatment to increase fairness. Face packs are one of the oldest and beautiful methods of cleansing skin. There are various kinds of face packs described in Ayurveda which have nourishing, healing, cleaning, astringent and antiseptic properties. From the ancient era people are using herbs for cleaning, beautifying and to manage them. Cosmetics are defined as the products used for the purposes of cleansing, beautifying, promoting attractiveness or alternating one's appearance. Homemade natural face packs and masks make way for smooth, radiant and silky

skin. Face packs used in ayurveda helps to reduce wrinkles, pimples, acne and dark circles. They also increase the fairness and smoothness of the skin. The Natural face packs do contain some vital vitamins that are required for the health and glow of our skin[2]. Cosmetics are over-the-counter items that are aimed to enhance the look of the skin by washing, beautifying, and enhancing attractiveness. Herbs have been utilized cleansing, rejuvenating, and managing them since ancient times. The skin of the face is the largest portion of the body and reflects an individual's health. It is made up of components such as amino acids, lipids, and carbs, thus it requires a well-balanced diet to maintain it clean, shiny, and healthy.[3] The herbal paste is known as "mukhalepa" in Ayurveda which is used as a face therapeutic. This herbal paste is used to pimples, scars, markings, and treat acne, pigmentation on the face[1]. These face packs increase skin glow and are best ayurveda treatment to increase fairness. Face packs are one of the oldest and beautiful methods of cleansing skin. There are various kinds of face packs described in Ayurveda which have nourishing, healing, cleaning, astringent and antiseptic properties. Herbal face packs are cheaper and have no side effects for getting fair skin naturally. Present research article deals with the formulation and evaluation of herbal face pack for glowing skin at home by using natural materials i.e., multani mitti, turmeric [8]. When herbal face pack according to us skin type, then we get maximum benefits of herbal face pack like by increasing glow and fairness. These are various kinds of face packs described in Ayurveda which have nourishing, healing, astringent, cleansing and antiseptic properties. Cosmetics are defined as products used for the purpose of cleansing, beautifying, promoting attractiveness or altering one's appearance. The natural

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facepack contain some vitamins which are essential for health and glow of skin. The herbal face pack act by improving blood circulation in the veins of skin but the effect of facial face packs generally temporary, so for regular glow it should be used 2-3 times a week[9].

Advantages of herbal face Pack[2,5]

- 1. They help to restore the lost shine and glow of skin in short span of time.
- Regular use of natural face packs brings a glow to the skin, improve skin texture and complexities.
- 3. The harmful effects of pollution and harsh elements can be effectively combated with judicial use of face pack.
- 4. They help to prevent premature aging of the skin.
- 5. Formulation of wrinkles, fine lines and sagging of skin can be effectively controlled by using natural face packs.
- 6. Natural face packs make the skin look young and healthy

- 7. Herbal facials are both good for skin and give you a healthy-looking, young, energetic skin.
- 8. An herbal face pack is used to rejuvenate the muscles, maintain the elasticity of the skin, remove adhered dirt particles and improve the blood circulation.
- 9. The benefits of herbal based cosmetics are their nontoxic nature. It nourishes the facial skin. This face pack supplies vital nourishment to the skin.
- Nourishes the skin. Fruit face packs supply essential nutrients to skin.
- 11. Helps to reduce, acne, pimple, scars and marks depending on its herbal ingredients.

Face packs which are recommended for acne, pimple, black heads usually control the over discharge of sebum from sebaceous glands and remove the harmful bacteria inside acne lesion.

II. MATERIAL AND METHODS

The Face pack prepared accordingly the particle size and their binding property mixed thoroughly in plastic bag which shown in figure no 01

Table 1: Composition of Herbal antibacterial Face Pack

Sr. No. Name of Ingredients. Scientific Name Quantity of sample for 100g

- 1. Multani mittiCalcium bentonite 15
- 2. Turmeric powderCurcumalonga15
- 3. Chandan powderS. Album15
- 4. Aloe VeraAloe barbadensis10
- 5. Lemon peelCitrus limon10
- 6. Rose petals powderRosa canina. 05
- 7. Kaolinchina clay10
- 8. Neem powderAzadirachta indica10
- 9. Gram flour Cicer arietinum10

The materials used in the present purchased from local market, powdered for further use. The below are the details of the plant materials study. The details of the plant material used for the formulation of face pack are mentioned below [8].

2.1 Lemon peel (Citrus Limon): The high content of Vitamin C in lemon will help to lighten the skin tone and remove dark spots caused by skin tan. It prevents the skin from free radical damage, skin hydration and oxidative stress [8].

2.2 Neem powder (Azadirachta indica)

Neem is anti-inflammatory, antiseptic and highly beneficial for oily and acne prone skin[8]. An anti-

acne effect is due to anti-microbial, anti-inflammatory and anti-oxidant activities of different chemical constituents[9].

2.3 Sandalwood powder (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.

2.4 Aloe (Aloe barbadensis)

Aloe Vera is a great moisturizer intended for a skin. Aloe vera rejuvenates skin, hydrates this

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and keeps skin layer looking fresh all the time. Aloe vera has anti-microbial property rendering it ideal to deal with acne and pimples. Aloe vera powder contains several nutrients like glycerin, sodium palmate, sodium carbonate, sodium palm kemelate, sorbitol, etc.[12].

2.5 Turmeric powder (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 oil secretion by the sebaceous glands [13,14].

2.6 Fullers earth (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.[15]

2.7 Rose Petals powder

Rose petal powder is high in antibacterial characteristics, as well as Vitamin K, C, and B,

which have beneficial benefits. It also has a significant level of antioxidants[1].

2.8 Kaolin

China clay reduces oily skin purifies pores and cleanse skin. And treat acne and make a skin in toning and softening [16].

2.9 Gram flour. The high content of zinc in gram flour will help to fight infections that cause acne. It removes dead skin, astringent and protective [8].

Face pack application procedure

Prepared face pack powder was placed into a Petridis and rose water was added for blend preparation. That after prepared face pack was applied onto the face. Acne and blemishes should also be covered. Allow for thorough drying for 20–25 min before washing with cold water[1].

III. EVALUATION OF FORMULATION

3.1 Organoleptic evaluation

Physical parameters such as colour, appearance and texture were carried out. Colour and texture was evaluated by vision and touch sensation respectively. For odour evaluation a team of five odour sensitive persons were selected[3].

Table 2 Organoleptic Properties

S.r No	Paramo	eters	Observation
1.	Appearance.	Powder (Fre	e Flowing)
2.	Colour	Slight Yell	low
3.	Odour	Slight	
4.	Texture	Fine	

3.2 Physical Evaluation & Physicochemical Evaluation

The particle size of formulations was in the range of $22.3\pm2.25\mu m$. The pH of formulation

lied near to neutral. The ash content and moisture content was within limit[8].

Table 3 Physical Evaluation & Physicochemical Evaluation [8].

S.r no.	Parameters.	Observation
 Particle size (μm) Ash content 94 ± 0.412 3pH 6.86 ± 0.11 Loss on Drying 3.10 	22.3±2.25	

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Angle of repose:

The friction forces in a loose powder can be measured by the angle of repose. It is an indicative of the flow properties of the powder. It is defined as maximum angle possible between the surface of the pile of powder and the horizontal plane. The powder mixture was allowed to flow through the funnel fixed to a stand at definite height (h). The angle of response was then calculated by measuring the height and radius of the heap of powder formed. Care was taken to see that the powder particles slip and roll over each other through the sides of the funnel. Relationship between angle of repose and powder flow property[5].

Tan $\theta = h/r$

Where, θ = angle of repose h= height of the cone r= radius of the base

Washability

Formulation were applied on the skin and then ease and extent of washing with water were checked manually[3].

3.4 Antimicrobial evaluation

Formulation was tested for antibacterial activity against test organisms using modified agar well diffusion method. Aerobic bacteria: Staphylococcus aureus were obtained from the Microbial Type Culture Collection Centre. In this method, nutrient agar plates were seeded with 100µl of standardized bacterial suspension. After optimization of dose, 150 mg of formulation was mixed with distilled water and poured into the wells. Standard clindamycin (1% w/w) was used as positive control. The plates were then incubated at optimum temperature conditions and antibacterial activity was evaluated by measuring the diameter of zones of inhibition (mm)[3].

Table no. 4 Antimicrobial Evaluation of Face Pack

S.r No. Samples. Zone of Inhibition

Staphylococcus aureus

- 1. Clindamycin 15mm
- 2. Herbal Ant acne Face pack 10mm

IV. RESULT &DISCUSSION

The various face pack formulations were made and analyzed for the physical criteria listed in Table 3 The flow property variable indicated that the system was free flowing. Due to differences in the composition of the components, the colors of the formulations differed. Formulations F1, F2, and F4 were yellowish yellow, whereas Formulation F3 was greenish-yellow. The developed compositions have a pleasant odor, which is ideal for cosmetic preparations. The particle size of the compositions ranged from 23.3 μm to 26.9 μm . All compositions

had pH values that were close to neutral, ranging from 6 to 7. The loss on drying and ash content was both within acceptable limits (Table-3)[8].

Irritancy test

On the dorsal side of the skin of the Wistar rat al sq.cm area was cleaned for the face pack application. A certain amount of formulated face packs was applied to the designated region and the time was recorded. Irritation, erythema, and edema were assessed and reported at periodic intervals up to 24 [5].

Table 5 Irritancy Test

ParametersFormulations

Observation

F1. F2. F3. F4

Irritant00000=No Irritation
Erythema00000=No Irritation
Edema00000=No Irritation

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Stability Test

The pH of the composition was stored at 40°C changed somewhat, while no variations were seen at ambient temperature or at 35°C, according to the stability experiments. After 1 month of stability testing at 40°C, the formulation's scent altered somewhat, but there was no change in color or odour under the other parameters of stability

shown in the Table 6[1] . 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, 350c and 400c were evaluated for Physical parameters like color, odour, pH, Texture and Smoothness[5]

Table 6 Stability test

Parameters Observation (Formulation) Room temp. $35\pm0.5^{\circ}\text{C}$ $40\pm0.5^{\circ}\text{C}$

Color NochangeNo change No change

OdourNochangeNo changeNo change

pH6.80±0.13 6.79±0.14 6.80±0.17

Texture Fine Fine Fine Fine Smooth Smooth Smooth

V. CONCLUSION

Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones. Herbal formulations have growing demand in the world market. Herbal face packs are used to stimulate blood circulation, rejuvenate the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. It is a our good attempt to formulate the herbal face pack containing natural herbal ingredients such as multani mitti, turmeric, sandal wood, saffron, milk powder, rice flour, orange peel and banana peel. After evaluation, we found good properties for the face packs, free from skin irritation and maintained its consistency even after stability storage conditions. It has been revealed 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.

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