

In House Preparation, Development of The Antibacterial Polyherbal Face Pack.

**Ms. Dipali R. Pawar¹, Mr. Ankush R².
Dudhe, Mr. Rushabh S. Dawalbaje³**

¹B pharmacy, Ishwar desh mukh institute of pharmacy, Digras

²M. Pharm (Quality Assurance), Ishwar desh mukh institute of pharmacy, Digras

³B. Pharmacy, Ishwar desh mukh institute of pharmacy, Digras

ABSTRACT

Antibacterial polyherbal face packs are gaining popularity due to their natural and safe ingredients. In this study, we formulated an antibacterial polyherbal face pack using orange peel powder, potato peels powder, tomato peels powder, rose petal powder, turmeric, grapes peels powder, multani mitti, chandan powder, aloe vera powder. The herbs were selected based on their documented antibacterial property. All prepared formulations were evaluated by different parameters organoleptic properties and physico-chemical parameters stability along with irritancy test and microbial load.

Key Word: Cosmetics, Face pack, Herbal, Ingredient, Natural, Product Rejuvenates.

INTRODUCTION

Now-a-days, the whole world there is return towards the use of herbal products and to adopt more natural way of life. People refer and prefer natural food, herbal medicines and natural curing practices for healthy life. There is much craze for the usage and great demand for the cosmetics. 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. According to Ayurveda, skin problems are normally due to impurities in blood. Accumulated toxins in the blood during improper food and lifestyle are causing skin related diseases.

Various herbs, medicines are described in Ayurveda for blood purification. The herbal paste which is applied on face to treat acne, pimple, scars, marks and pigments are known as mukh lepa this beauty therapy popular as facial. The smooth powder which is used for facial application is "face pack". A good herbal face pack must supply necessary nutrients to skin. It should penetrate the subcutaneous tissues in order to deliver the required nutrients. Skin of the face is the major part of the body, which is a mirror, reflecting the health of an individual. A balanced nutrition containing amino acid, lipids and carbohydrates. These are required for the skin to keep it clear, glossy and healthy. So that a balanced nutrition is required for the skin to keep it clear glossy and healthy. Remedies like plants extracts for various cosmetics purposes like aloe vera, tulsi, orange peel, rose etc.

MATERIALS AND METHODS

The crude drugs used in this study were procured from the nearby local area. All the ingredients were washed, shade dried and powdered finely for further use. The following ingredients were used for the preparation of this polyherbal face pack formulation

1. Orange peels powder : Orange peel powder contains natural enzymes and alpha-hydroxy acids that can help to exfoliate the skin and remove dead skin cells, revealing smoother and brighter-looking skin.

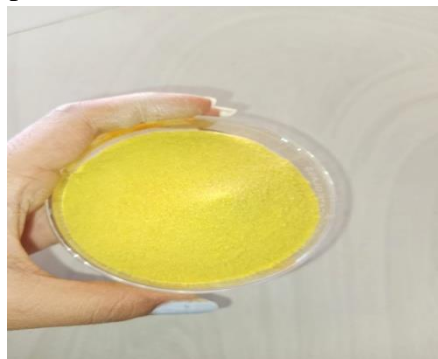
preparation of orange powder: collect fresh sweet oranges. The fruits were washed, weighed, peeled by using knife and were cut into small pieces (10 to 20 mm), after that they were washed using hot water at 90°C for 5 min. After that peel surface moisture was removed, then it was followed by solar tunnel drying. After dried, peel were grinded mixer jar or coffee grinder to make a fine powder.



Step 1



Step 2



Step 3

2. Potatoes peels powder: Potato peel powder is known for its skin lightening, brightening, and anti-aging properties. It contains an enzyme called catecholase, which can help to lighten dark spots and blemishes on the skin.

Preparation of potato powder: The Potatoes were stored, washed to remove adhering dirt, peeled, sliced, and blanched in boiling water for 4 min, dipped in 10% salt solution and 0.05% Potassium metabisulphate for 15min to avoid browning, dried in hot air oven at 60°C for 8-9hrs. The dried slices of potatoes were ground to fine powder.



Step 1



Step 2



Step 3

3. Tomato peels powder: Tomato peel powder is rich in antioxidants like lycopene and vitamin C that can help protect the skin from free radical damage, which can cause premature aging and skin damage. It may help protect against skin cancer.

Preparation of tomato powder : Tomato powder prepare in two methods, 1) Sun dried method, 2) Hot air oven method. Here we follows Sun dried method, The tomatoes were stored, washed, sliced. Sliced tomatoes directly dried in sunlight. Sun dried tomatoes slices are grind them in a mixer jar or coffee grinder to make a fine powder and Store in an air tight container.



Step1



Step2



Step 3

4. Grapes peels powder: The high levels of vitamin C in grape peel powder can stimulate collagen production in the skin, which can help to improve the elasticity and firmness of the skin. It contains natural alpha-hydroxy acids (AHAs) that can help to exfoliate the skin and remove dead skin cells, revealing smoother and brighter-looking skin.

Preparation of grapes powder: turn on your oven to its lowest temperature and keep the plate with grape fruit peel in the oven. Let the plate sit until the peel is completely dry. Then grind them to a fine powder. You may sieve the ground powder to get a very fine powder.



Step 1



Step 2



Step 3

5. Turmeric: Turmeric also has antibacterial properties, which can help to fight acne-causing bacteria and other harmful microorganisms that can cause skin infections. Turmeric contains curcumin, which has anti-inflammatory properties that can help to reduce redness and inflammation on the skin.

Preparation of Turmeric Powder: Turmeric rhizome are collected and dried under sunlight. Later turmeric rhizomes are ground to make a fine powder and sieved.



Step 1



Step 2

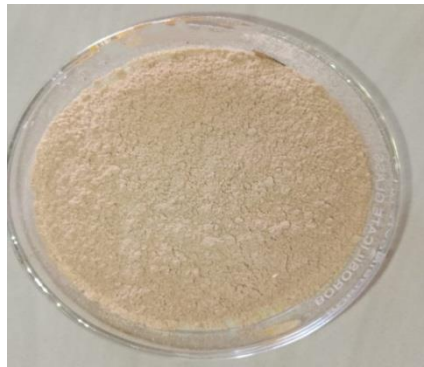
6. Aloevera powder: Aloe contains many polysaccharides and does wonders for the skin. If you have pure aloe powder you can mix it in your regular cosmetics and use. For any other skin preparation, mix it to the desired thickness with pure or mineral water. For face tightening, you can use a small quantity of the powder used in our face mask.



7. Fuller's earth: Multani mitti is a natural cleanser that helps to remove dirt, oil, and impurities from the skin, leaving it clean and refreshed. Multani mitti has natural absorbent properties that can help to control excess oil production. Multani mitti is rich in minerals like magnesium, calcium, and quartz, which help to nourish and strengthen the skin. It is also a natural absorbent and helps to draw out impurities.



8. Sandalwood powder: Sandalwood powder Chandan powder has natural anti-inflammatory and antibacterial properties that can help to reduce inflammation and prevent the growth of acne-causing bacteria. Chandan powder has a cooling effect on the skin that can help to soothe sunburn and reduce redness. Sandalwood has anti-inflammatory and antimicrobial properties, which help soothe and heal the skin, reduce acne and pimples, and prevent further breakouts.



9. Gram flour: Gram flour has a gritty texture that can help remove dead skin cells, excess oil, and impurities from the skin, leaving it smooth and glowing. It deeply cleanses and brightens your skin. It reduces blemishes, and early signs of ageing. In addition to that, it controls sebum production and soothes inflamed skin.



10. Rose petal powder: The anti-bacterial properties found in rose petals make it an excellent remedy for fighting acne and breakouts.

Preparation of Rose Powder: Collect fresh rose petals wash with water for 2-3 times. Dry these petals in shade for one to two hours and then churn them with sugar in mixer. This will make a paste put this paste in a plate for drying it takes about 6-7 hrs for drying. Make a powder.



Step 1



Step 2



Step 3

Table no.1 : Formulation Table for herbal face pack:

Ingredients	Amount in gms
Orange peels powder	15
Potato peels powder	5
Tomato peels powder	5
Grapes peels powder	5
Fullers earth	5
Sandalwood powder	20
Aloevera powder	10
Turmeric powder	10
Gram flour	20
Rose petal powder	5
Total in grams	100g



Method of preparation of face pack: Different formulations were prepared with different concentrations of all ingredients. The accurate quantity of ingredients were weighed and ground into fine powder by using sieve #120. Then all the ingredients were mixed homogenously in fig. for uniform

formulation it was then kept in moisture –proof container in a cool place for the purpose of standardization of various parameters.

Procedure of face pack application:

The pack should be applied daily on wet face, forming a paste of it in water with optimum thickness. It should be applied evenly on the face with the help of a brush. Apply the face pack to your face and neck, avoiding the eye area. Leave it on for 15-20 minutes or until it dries. Rinse off the face pack with warm water and pat your skin dry with a towel.

EVALUATION OF FORMULATION

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

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.

Organoleptic evaluation: The organoleptic parameters include its nature, color, odour, feel and consistency which were evaluated manually for its physical properties.

Particle Size: Control of Size and the size range of Particles is of a profound importance in Pharmacy Clinically, the particle size of a drug can affect its release from dosage forms. The successful formulation of Biphasic liquid dosage form such as emulsion, suspension and Solid dosage form such as tablets, both dosage forms Physical stability and Pharmacological response depends on the particle size.

Sieving method: This method is the simplest and most widely used method of determining particles size and size distribution. In this method utilizes a series of standard sieves calibrated by the national bureau of standards. According to the method of USP a definite mass of sample is placed on the proper sieve in a mechanical shaker. The powder is shaken for a definite period of time and the material that passes through one sieve and fine it sieve is collected, weighed and then calculated the particle size.

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

Irritancy test: Mark an area (1sq.cm) on the left hand dorsal surface. Definite quantities of prepared face packs were applied to the specified in area and time was noted. Irritancy, erythema, edema, was checked if any for regular intervals up to 24 hrs and reported."

Stability study: Stability testing of prepared formulation was conducted for formulation by storing at different temperature conditions for the period of one month. The packed glass vials of formulation stored at different temperature conditions viz., Room temperature, 35°C and 40°C and were evaluated for physical parameters like Color, Odour, pH, Consistency and feel.

Antimicrobial evaluation: Formulation was tested for antibacterial activity against test organisms namely Staphylococcus aureus and Propioni bacterium acnes were obtained from the Pharmaceutics lab. In this method, nutrient agar plates and reinforced clostridial agar (RCA) were seeded with 100 micro liter standardized bacterial suspension. After optimization of dose, 200 mg of formulation was mixed with distilled water and poured into the wells. Standard conditions and antibacterial activity was evaluated by measuring the diameter of Zones of inhibition (mm) including cupsize. The experiments were repeated.

Determination of microbial load: The prepared formulations were evaluated for total viable count, presence of gram negative pathogens such as E. coli, Pseudomonas done at Pharmaceutical Biotechnology lab.

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, 350c and 400c were evaluated for Physical parameters like color, odour, pH, Texture and Smoothness.

RESULT

The result of evaluation are shown in table for organoleptic. The Study of nature, Color, odour, texture, ash content, Moisture Content and pH of dried powders of combined form under investigation provided the important features of organoleptic and Physiochemical Evaluation. The presence of color is sight yellowish. Odour is slight, texture is fine. The presence of ash in the dried powder of combined form was evaluated for total ash yield and it was found 4.2. Moisture content value was found to be 3%. The moisture content values observation clearly indicated that the powder of combined form was hygroscopic in nature. The dried powder of formulation was determined by preparing 1% dispersion of powder form in distilled water and measuring the pH with pH meter. The pH of 1% dispersion of powder was obtained 7.9, which indicates that the powder combined form were slightly alkaline in nature. The Powder have good flow properties which is suitable for a face pack and it is easily washable with water, the formulation shows absence of irritancy, redness and swell during irritancy studies. And its easily washable with water. Antimicrobial evaluation was performed two organisms staphylococcus aureus acne. Propioni bacterium Zone of inhibition was found formulation in table 3 and microbial load in table 4 The results of stability studies of the formulation show No Change in color, odour, texture and smoothness at mentioned conditions of stability except pH. The stability studies showed a slight change in pH of formulations at 40°C table 5.

Table 2: Evaluation Table of herbal face pack

S. No	Evaluation Parameter	Observation
A]	Organoleptic evaluation	
1	Nature (appearance)	Powder (free flowing)
2	Color	Slight yellow
3	Odour	Slight
4	Texture	Fine
B]	Physiochemical evaluation	
1	Total ash	4.2
2	Moisture content	3%
3	PH	7.9
C]	Irritancy Test	
1	Irritation	No
2	Redness	No
3	Swelling	No

Table 3: D] Antimicrobial evaluation

S. No	Staphylococcus aureus acne	Propioni bacterium
1	Clindamycin	11
2	Herbal face pack	08

Table 4: E] Determination of Microbial load

S. No	Test	Observation
1	Total viable count (CFU/g)	918
2	Gram negative pathogens(CFU/g); E.coli, Pseudomonas	Absent

Table 5: F] Stability Studies

S. No	Parameters	Room Temperature	At 40° C
1	Color	No Change	No Change
2	Odour	No Change	No Change
3	PH	7.1	7.14
4	Texture	Fine	Fine

CONCLUSION

Natural and home remedies are widely acceptable in the belief that they are safer with fewer side effects than the synthetic materials. Herbal face packs are used to stimulate blood circulation, rejuvenate the muscle and help to maintain the elasticity of the skin and remove dirt from skin pores. Herbal cosmetics advantages are nontoxic nature, reduce the allergic reaction. This face pack is beneficial, economical, and passed all evaluation parameters. 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 to its useful benefit of human beings.

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1. Leave in ayurveda. The process of smearing this herbal mix on face is known as "mukha lepana". This beauty therapy is Skin of the face is the major part of the body, which is a mirror, reflecting the health of an individual. A balanced nutrition containing amino acids, Traditionally potato peel waste is used for producing low-value animal feed, fertilizer or being the raw material of biogas, which causes waste of abundant nutritive materials within it having the properties of antioxidant, antibacterial, apoptotic, chemopreventive and anti-inflammatory. This beauty therapy is