



Study About The Formulation And Evaluation Of Facepack

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1. ABSTRACT: -

The objective this work is to formulate and evaluate a polyherbal face pack for cosmetic purpose from herbal ingredients. Multani mitti, Manjistha, Haridra, Rakta chandan and lodhra were procured from the local market and were dried, powdered, then passed through sieve no 100, mixed geometrically and evaluated for its organoleptic and physico-chemical, general powder, microscopical characters and chemical evaluation. The dried powder of combined form had passable flow property which is suitable for a face pack. Particle size of the powder was found to be 20 -25 μ m. The microscopical characters of dried powder of combined form were noted Herbal face packs or masks are used to stimulate blood circulation, rejuvenates the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. The advantage of herbal cosmetics is their nontoxic nature, reduce the allergic reactions and time-tested usefulness of many ingredients. Thus, in the present work, we found good properties for the face packs and further optimization studies are required on this study to find the useful benefits of face packs on human use as cosmetic product.

Everybody wants to get a fair and charming skin. Now a day, acne, black heads, pimples are common among persons who suffer from it. According to Ayurveda, skin problems are normally due to impurity in blood. Herbal face packs are used to simulate blood circulation, rejuvenate the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. The advantage of herbal cosmetics is their nontoxic nature, reduce the allergic reactions and time tested usefulness of many ingredients.

2. INTRODUCTION: -

People have been utilizing plants for healthy, radiant, and beautiful skin since the start of time. Cosmetics are goods that are used to maintain aesthetic appeal and to make one look beautiful. Cosmetics are readily available items intended to enhance one's look by activities including such washing, beautifying, and enhancing attractiveness. Herbs have been utilized for cleansing, beautifying, and managing people and things since ancient times. The largest portion of the body that reveals someone's health is their face skin.

Ancient ladies were extremely concerned with their appearance and taken special care of her unique skin types. Even today, many people, especially in rural and hilly areas, prefer natural therapies such organic extracts for a variety of cosmetic products. Everybody wants to be had nice skin that is fair. Acne, black heads, pimples, and dark circles are now frequent among young people and those who have it. According to Ayurveda, blood impurity the herbal paste used as a facial treatment in Ayurveda is known as "mukha lepa." This herbal paste is applied to the face to cure pigmentation, scars, markings, and acne. Natural face packs are more affordable and offer no negative effects in the quest for naturally pale skin. Facial mask is the silky powder that is applied to the face. These treatments are applied to the face as pastes or liquids and then left to dry and harden into a film, which has the effect of tightening, nourishing, and cleaning the skin. They are typically kept on the skin from ten to fifteen minutes so that all the water can evaporate. As a result, the ensuing film contracts and hardens, making it simple to remove. While a colloidal and adsorbed clays employed in these treatments remove grease and oil from the skin on the face, the warming and tightening impact created by application of a face pack creates the stimulating sense of a revitalized face. Skin impurities and previously deposited dirt are also eliminated when the placed face pack is subsequently removed.

Everybody wants to get fair and charming skin. Now a day, 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 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. Herbs like Manjistha, Lodhra, Chandana, Haridra etc. are good example of blood purifier. The herbal paste which is applied on face to treat acne, pimple, scars, marks and pigments are known as "mukha lepa" in ayurveda. The process of smearing this herbal mix on face is known as "mukha lepana". This beauty therapy is 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. Different types of skin need different types of herbal face packs.

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.

3. HISTORY: -

Since ancient times, people have known about cinnamon. Although it was brought to Egyptians so early as 2000 BC, people who claimed that it originated in China mistook it for *Cinnamomum cassia*, a very related species. Cinnamon has been so highly valued in ancient cultures that it was thought to be a gift befitting of kings or even gods; a beautiful inscription attests to the donation of cinnamon with cassia to the Apollo temple in Miletus. In order to maintain their monopoly as suppliers, those in the spice trade in the Mediterranean region for centuries kept its source a trade secret. India, Sri Lanka, Bangladesh, and Myanmar are the native countries of *Cinnamomum verum*, which is known as "genuine cinnamon" in Latin. China is the original home of cassia, or cinnamon mum. Native to Southeast Asian nations with warm temperatures, including Vietnam ("Saigon cinnamon"), Indonesia, and others, related species are all collected and sold as cinnamon in the contemporary age. Cinnamon was utilized to embalm mummies in ancient Egypt. Cinnamon and cassia were employed in Ancient Egyptian recipes in typhi, an aromatic used in burning, starting in the Ptolemaic Kingdom. Hellenistic kings occasionally presented cassia and cinnamon as gifts to temples. The term "kasa" is first encountered in Greek in a poem written with Sappho in the seventh century BC. Herodotus claimed that winged serpents protected the cinnamon, cassia, incense, myrrh, and labdanum crops in Arabia. Arabia was cited as the origin of cinnamon by Herodotus, Aristotle, and other writers. According to their accounts, enormous "cinnamon birds" collected cinnamon sticks from an unidentified country where cinnamon trees thrived and used them to build their nests.

4. **BENEFITS OF APPLYING FACEPACK: -**

1. Nourishes the skin. Fruit face packs supply essential nutrients to skin.
2. Helps to reduce, acne, pimple, scars and marks depending on its herbal ingredients.
3. Face packs usually remove dead cells of skin.
4. These face masks provide a soothing and relaxing effect on skin.
5. They help to restore the lost shine and glow of skin in short span of time.
6. Regular use of natural face masks 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 skin look young and healthy.

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. The scars and marks of skin can be reduced by adding fine powder of sandal, rose petals and orange lentil with acne face pack.

5. **IDEAL PROPERTIES OF FACE PACK: -**

1. It should be non-irritating and non-toxic.
2. It should be stable both physically and chemically.
3. It should be free from gritty particles.
4. It should have pleasant odour.
5. They should be capable of producing significant cleansing of the skin.
6. They should produce a sensation of tightening of the skin after application.
7. They should form a smooth paste

6. **PRECAUTIONS TO BE TAKEN WHILE APPLYING FACE PACK: -**

1. Select the face pack according to your skin type. Take opinion of natural therapist or concerned skin expert before applying face pack.
2. The face pack should not be left on face more than 15 to 20 minutes. Keeping for very long time may result in formation of wrinkles, sagging of skin and enlargement of open pores.
3. Apply face pack once in a week. Don't try to peel or scratch the dried face pack. This may harm underlying skin.
4. Spray water (which is at room temperature) on face before removing dried face pack. After removing the mask, roll an ice cube on facial skin. This helps to close open pores and tightens skin. It also tones and soothes the skin.
5. Do not scrub face vigorously. This may result in eruption of pimples and dark spots. Stay away from heat when you have applied face pack.
6. Avoid applying face pack near "eye zone". The skin around eye is very delicate. The process of removing face pack may damage skin around eyes.

7. Select the face packs according your skin type.
8. The face pack should not be left on face, or than 15-20 minutes. Keeping for very long times may result in formation of wrinkles, sagging of skin and enlargement of open pores.
9. Avoid applying face pack near “eye zone”. The skin around eye is very delicate.
10. Applying face pack in a week. Don't try to peel or straiten the dried face packs. This may harm underlying skin.
11. Spray water on face before removing dried face pack. After removing the mask roll an ice cube on facial skin which helps to use open pores and tightens skin.

7. MATERIAL AND METHODS: -

Present research article deals with the formulation and evaluation of herbal face pack for glowing skin by using natural ingredient i.e., multani mitti, turmeric, sandalwood, saffron, milk powder, rice flour and orange peel. They were purchased from local market in the form of dried powder. The powder of banana peel was prepared by shade drying commercially. All ingredients authenticated at Botany department of Aditya institute of pharmaceutical, beed. The details of the natural ingredient used for the formulation of herbal face pack are mentioned below.

- **INGREDIENTS OF FORMULATION: -**

- 1) **Multani mitti: -**



Figure 1: - Multani mitti

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.

2) Turmeric: -**Figure 2: - Turmeric**

Turmeric has been used in this preparation due to its blood purifying property and helps in wound healing, because of its antiseptic action. It cures the skin diseases occurring due to blood impurities. It is a very good anti-inflammatory and anti-allergic agent. The phytoconstituents, mainly terpenoids present in it helps to lighten the skin tone. Turmeric delays the signs of aging like wrinkles, improves skin elasticity. It cures pigmentation, uneven skin tone and dull skin. Turmeric has been shown to anti-inflammatory, antimicrobial, antioxidant properties. It mainly uses for rejuvenate the skin. It is best source of blood purifier. It is effective in treatment of acne due to its antimicrobial, antioxidant and anti-inflammatory property. It also reduces the oil secretion by sebaceous glands.

3) Sandal wood: -**Figure 3: - Sandal wood**

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.

4) **Saffron: -**



Figure 4: - saffron

Mainly consists of dried stigmas and upper parts of styles of plant known as *Crocus sativus*, belonging to the family Iridaceae. It is rich in carotenoid glycosides, mainly containing terpenoids. It lightens the skin tone and provides fair and glowing skin.

5) **Milk powder: -**



Figure 5: - Milk powder

Milk powder is very beneficial for skin, as it provides nourishment for dry, rough skin for the longer duration. Milk cream either in the form of powdered raw milk or milk as such provides a brilliant shine to skin. This is beneficial in hydrating the face deeply and makes skin youthful, lustrous and flawless. It bleaches the skin to remove dark spots, pigmentation, acne etc. This pack also removes blackheads, whiteheads, and other skin imperfections naturally. This facial pack helps in fading sun tan.

6) **Rice flour: -**



Figure 6: - Rice flour

Rice flour can be applied to cure some forms of skin ailments. In Indian subcontinent, rice water is duly prescribed by Ayurvedic practitioners as in undigested form. It aids the growth of useful bacteria for normal bowel movements an effective ointment to cool off inflamed skin surface.

7) **Orange peel: -**



Figure 7: - Orange peel

Orange peel is a covering of citrus fruit which contains different nutritional source such as vitamin C, calcium, potassium and magnesium. It prevents the skin from free radical damage, skin hydration and oxidative stress. Also, it has instant glow property, prevent acne, blemishes, wrinkles and aging.

8) **Banana peel: -**



Figure 8: - Banana peel

Banana peel has both antifungal and antibiotic components. The natural antibiotic acts against Mycobacterium, Norepinephrine, dopamine, and serotonin are also present in the ripe peel and pulp.

8. **METHODS OF PREPERATION: -**

The powdered dried natural ingredients were sieved using #120 mesh, weighed accurately and mixed geometrically for uniform formulation mentioned in Table 1. The prepared face pack was then stored in an air tight container for evaluation of various parameter.

Sr. No	CONSTITUENT	SCIENTIFIC NAME	PERCENTAGE
1.	Multani mitti	Calcium bentonite	15
2.	Turmeric	Curuma longa	15
3.	Sandalwood	Santalum album	10
4.	Saffron	Crocus sativus	05
5.	Milk powder	15
6.	Rice flour	Oryza sativa	20
7.	Orange peel	Citrus sinensis	10
8.	Banana peel	Musa acuminata	10



Figure 9: - Prepare face pack

9. PROCEDURE FOR APPLICATION OF FACE PACK: -

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. It should be left for 15 minutes for complete drying. Then it should be removed with the help of a wet sponge.

Procedure for Development of Formulation of Face Pack Application: -

1. Various formulation were prepared according to table.
2. The prepared face pack powder in a bowl as per requirement, add water (rose water) to mix it well up to forming a smooth paste.
3. Apply this paste over a skin which covers acne, blackheads and whiteheads.
4. Keep it for 30-40 Min and then wash the face with cold water.

Determination of Moisture Content: -

Weigh about 2 gm of powdered face pack into a weighed flat and thin porcelain dish. Dry it in Hot Air Oven at 100 °C-105 °C, until two consecutive weighing do not differ by more than 0.5 mg. Cool in desiccator and weigh the loss in weight is usually recorded as moisture.

Total Ash

Place about 2 g of ground air dried material, accurately weighed, in a previously ignited and tared crucible (usually of platinum or silica). Spread the material in an oven layer and ignite it by gradually increasing the heat to 500-600 °C until it is white, indicating the absence of carbon. Cool in a desiccator and weigh. If carbon-free ash cannot be obtained in this manner, cool the crucible and moisten the residue with about 2 ml of water or a saturated solution of ammonium nitrate R. Dry on a water-bath, then on a hot-plate and ignite to constant weigh. Allow the residue to

cool in a suitable desiccator for 30 min and then weigh without delay. Calculate the content of total ash in mg per g of air-dried material.

10. EVALUATION OF FACE PACK: -

1) Morphological evaluation: -

It refers to the evaluation of the herbal face pack by its color, odor, appearance, texture etc. The external characters of the formulation were examined based on the method described by Siddiqui et al.

2) Physicochemical evaluation: -

Physicochemical parameters were determined, including the determination of extractive value, ash value, pH and moisture content.

3) 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.

4) Phytochemical evaluation: -

The aqueous extract of the herbal face pack was evaluated for the presence of different phytoconstituents as per the standard procedures.

5) 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, erythematic, edema, was checked if any for regular intervals up to 24 hrs. and reported.

6) Stability studies: -

Stability testing of prepared formulation was conducted by storing at different temperature conditions for the period of one month. The packed glass vials of formulation stored at different temperature conditions like, room temperature and 400C and were evaluated for physical parameters like color, odour, pH, consistency and feel.

Acid-Insoluble Ash

To the crucible containing the total ash, add 25 ml of hydrochloric acid (~70g/l) TS, cover with a watch glass and boil gently for 5 min. Rinse the water-glass with 5 ml of hot water and add this liquid to the crucible. Collect the insoluble matter on an ash less filter-paper and wash with hot water until the filtrate is natural. Transfer the filter-paper containing the insoluble matter to the original crucible, dry on a hotplate and ignite to constant weight. Allow the residue to cool in suitable desiccators for 30 min and then weigh without delay. Calculate the content of acid-insoluble of acid-insoluble ash in mg per g of air-dried material

Water-Soluble Ash

To the crucible containing the total ash, add 25 ml of water and boil for 5 min. Collect the insoluble matter in a sintered glass crucible or on an ash less filter-paper. Wash with hot water and ignite in a crucible for 15 min at a temperature not exceeding 450 °C. Subtract the weight of this residue in mg from the weight of total ash. Calculate the content of water-soluble of water ash in mg per g of air-dried material

Particle Size

Particle size is a parameter, which affect various properties like spread ability, grittiness, etc., particle size was determined by sieving method by using I.P. Standard sieves by mechanical shaking for 10 min.

Angle of Repose

It defined as the maximum angle possible in between the surface of pile of powder to the horizontal flow

Open-Ended Cylinder Method

It required amount of dried powder is placed in a cylinder tube open at both ends is placed on a horizontal surface. Then the funnel should be raised to form a heap. The height and radius of heap is noted and recorded. For the above method, the angle of repose (ϕ) can be calculated by using the formula. $\phi = \tan^{-1} (h/r)$ where, ϕ - Angle of repose, h - Height of the heap, r - Radius of the base.

Bulk Density

Bulk Density is the ratio between the given mass of a powder and its bulk volume. Required amount of the powder is dried and filled in a 50 ml measuring cylinder up to 50 ml mark. Then the cylinder is dropped onto a hard wood surface from a height of 1 inch at 2 sec intervals. The volume of the powder is measured. Then, the powder is weighed. This is repeated to get average values. The Bulk Density is calculated by using the below given formula. Bulk Density = Volume/Mass

Tapped Density

Tapped density is an increased bulk density attained after mechanically tapping a container containing the powder sample. After observing the initial powder volume or mass, the measuring cylinder or vessel is mechanically tapped for 1 min and volume or mass readings are taken until little further volume or mass change was observed. It was expressed in grams per cubic centimeter (g/cm³).

Spreadability

Spreadability was determined by an apparatus suggested by fabricated in- house. The apparatus consists of a wooden block with a fixed glass slide and movable glass slide with one end tied to weight pan rolled on the pulley, which was in the horizontal level with fixed slide. The spreadability of the formulated gel was measured on the basis of 'Slip and Drag' characteristics of gel. An excess of gel (about 2 g) under study was placed on this ground slide. The gel was then sandwiched between two slides. One kg weight was placed on the top of the two slides for 5 min to excel air and to provide a uniform film of the gel between the slides. Excess of the gel was scrapped off from the edges. The top plate was then subjected to pull off 50 gm. Mix with the help of string attached to the hook and the time (T, in seconds) required by the top slide to move a distance of 7.5 cm be noted. A shorter interval indicated better spreadability.

Microbial Assay

The antibacterial activities of different formulations were determined agar well diffusion method. In this method, nutrient agar plates were seeded with 0.2 ml of 24 h broth culture of Escherichia coli and Pseudomonas aureginosa a causative organism for acne vulgaris. The agar plates were allowed to solidify. A sterile 8 mm borer was used to cut wells of equidistance in each of the plates. 0.5 ml of formulations, herbal extracts were introduced into the wells at randomly. The plates were incubated at 37 °C for 24 hours. The antibacterial activities were evaluated the zones of inhibition (in mm).

Washability

This is the common method for checking the washability of the formulation were applied on the skin and then ease and extent of washing with water were checked manually by using 1 liter of water is used to remove all content of the formulation were applied on the surface.

11. RESULT AND DISCUSSION: -

1) Morphological evaluation: -

Herbal face pack was evaluated for morphological parameters. The color of formulation was pale yellow. The odour of prepared formulations was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness were acceptable as per requirement of cosmetic formulations.

Sr. No.	Parameter	Observation
1	Color	Pale yellow
2	Odour	Pleasant
3	Appearance	Smooth, fine
4	Texture	Fine
5	Smoothness	Smooth

2) Physicochemical evaluation: -

Herbal face pack was evaluated for physicochemical parameters. The pH of formulation was found close to neutral. The ash content and moisture content were within limit. The particle size of formulations was found in the range of $24.3 \pm 2.5 \mu\text{m}$.

Sr. No.	Parameter	Observation
1	PH	6.92
2	Loss on drying	2.9
3	Ash content	89 +- 0.352
4	Particle size	24.3+-2.5

3) Phytochemical evaluation: -

Herbal face pack was evaluated for phytochemical parameters. It was found to be a presence of phytoconstituents such as carbohydrates, alkaloids, glycosides, tannins and volatile oil which act as good nourisher for the skin.

Sr. No.	Phytoconstituents	Observation
1	Carbohydrate	+
2	Alkaloids	+
3	Glycosides	+
4	Tannins	+
5	Volatile oil	+

4) Physical evaluation: -

Herbal face pack was evaluated for physical parameters (powder property). Rheological findings justified the flow (powder) properties of the herbal face pack. It was found to be a free-flowing and non-sticky in nature.

Sr. No.	Parameter	Observation
1	Tapped density	1.428gm/ml
2	Bulk density	1.08gm/ml
3	Angle of repose	32.610
4	Hauser's ratio	1.322
5	Carrs index	21.94%

5) Irritancy test: -

The results of irritancy test. The formulation showed absence of irritation, redness and swelling during irritancy studies. This formulation has safe to use on skin.

Sr. No.	Parameter	Observation
1	Irritation	No
2	Redness	No
3	Swelling	No

6) Stability studies: -

The results of stability. No change in color, odour, texture and smoothness was observed at mentioned conditions of stability except pH. The stability studies showed a slight change in pH of formulation at 400C.

Sr. No.	Parameter	Room Temp.	40C
1	Color	No change	No change
2	Odour	No change	No change
3	Ph	6.92 ± 0.12	6.87 ± 0.13
4	Texture	Fine	Fine
5	Smoothness	Smooth	Smooth

12. 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 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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