



IJCS PUBLICATION (IJCSPUB.ORG)

INTERNATIONAL JOURNAL OF CURRENT SCIENCE (IJCSPUB)

An International Open Access, Peer-reviewed, Refereed Journal

“Formulation and Evaluation Of Face Pack using by OREANG PEEL”

¹Miss.Telange-Patil P.V,²Mr. Phade S.A,³Miss.Nimbalkar A.S.,¹Assistant Professor,²Principal,³Student,¹Pharmaceutics Department.,¹College of Pharmacy, Paniv, Malshiras, INDIA.

Abstract: Now a day, human skin has become more sentient for faster aging atopic dermatitis, acne and many more skin related problem, which mainly arise due to increased pollution, allergy, microbes, etc. Acne and dull skin are the common problem arising in various people. 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 herbal face pack for acne and dull skin from herbal ingredients: orange peel, sandalwood, multani mitti, aloe Vera, turmeric were collected from local market. The ingredient have been reported in this research paper having good anti – inflammatory , anti – oxidants and anti – microbial activity . All the constituents are dried powdered and passed through sieve no.100.

The face pack were prepared and evaluated for various parameters like color, appearance, pH, consistency, wash ability, antimicrobial activity. Herbal face packs or masks are used to stimulate blood circulation, rejuvenates them muscle and help to maintain the elasticity of the skin and removes dirt from skin pores. Thus in the present work, we found good properties for the face pack.

Key words: Skin care, Natural ingredients, face packs, herbal formulation, Acne, dull skin, etc.

I. INTRODUCTION:

Since the ancient era, people are aware of the use of the plans for the essential need of the healthy and beautiful skin. Cosmetic are products that are used to clean, beautify and enhances ones look. [1]

The skin of the face is the largest area of the body and act as a mirror, reflecting and individuals health. To keep the skin bright, shiny and healthy, it requires a well- balanced diet rich in amino acid, lipids and crabs. Women in ancient time were particularly concerned with their appearance and took great care of their skin types. [2]

Even today people special in rural areas and hilly regions go far the natural remedies like plant extracts for various cosmetics purposes like orange peel, sandalwood, aloe Vera, turmeric, multani mitti , etc. Herbal cosmetics are cosmetic that are intended to cleanse and beautify the skin. The primary benefits of utilizing herbal cosmetic is that they are natural and have no negative effects on the human body. Men’s skin has tough and when they don’t take proper care of it, it darkens due to overexposure to sun, other pollutants and other factors.[3]

Everybody wants gets fair and charming skin. Nowadays, acne black spot or head, pimples, dark circle are common among youngsters and person who suffer from it. According to Ayurveda, skin problems are normally due to impurity in blood.[4]

In Ayurveda, the herbal paste is called as “Mukha lepa” used for as facial therapy, this herbal paste smeared on face to treat acne, pimples, scars, marks and pigments. Herbal face packs are cheaper and have no side effect for getting fair skin naturally.[5]

Herbal cosmetics are the products which are used to purify and beautify the skin. The main advantages of using herbal cosmetics is that it is pure and does not have any side effect on human body.[6]

Face pack is the smooth powder which is used for facial application. These preparations are applied on the face in the form of liquid or paste 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 10 to 25 minutes to allow all the water to evaporate, the resulting film thus contracts and hardens and can easily be removed. The warmth and tightening effect produced by application of face pack produces the stimulating of a rejuvenated face, while the applied face pack is eventually removed skin debris and deposited dirt gets removed with it.[7]

Good herbal face pack should provide essential nutrients to the skin in the form of a free-flowing powder that can be applied to the face for external use. To give the needed nutrients it should penetrate into the subcutaneous tissue. Every type of skin is specific for the requirement of skin pack. Different types of packs are now available for oily, normal and dry skin types. Face packs are used to improve the skin's fairness and smoothness. It helps to get rid of wrinkles, pimples, acne and dark bags under the eyes. [8]

2. Benefits of applying face pack:

- 1) Nourishes the skin fruit face packs supply essential nutrients to skin.
- 2) Helps to reduce acne, pimples, scars and marks depending on its herbal ingredients.
- 3) Usually face packs made of sandalwood and turmeric helps to reduce acne and pimples. Face packs are recommended for acne, pimples, black heads usually control the over discharge of sebum from sebaceous gland and remove the harmful bacteria inside acnes lesion.
- 4) The scars and marks of skin can be reduced by adding fine powder of sandal and orange lentils with acne face pack.
- 5) Face packs usually remove dead cells of skin.
- 6) These face packs masks provides a soothing and relaxing effect on skin.
- 7) They help to restore the lost shine and glow of skin in short span of time.
- 8) Regular use of natural face packs brings glow to skin, improve skin texture and complexion.
- 9) The harmful effects of pollution and harsh climates can be effectively combated with judicious use of face packs.
- 10) They help to prevent premature aging of skin.
- 11) Formation of wrinkles, fine lines and aging of skin can be effectively controlled by using natural face packs.
- 12) Natural face packs made the skin look young and healthy.[9,10,11,12]

3. Material and equipments:

All the natural materials used in the present study i.e. orange peel, multani mitti, turmeric, aloe-vera, sandalwood were purchased from local market in a form of dried powder and were authenticated at botany department of KTHM College, Nasik.

The details of the plant material used for the formulation of face packs are mentioned below:

3.1. Materials:

3.1.1. Orange peel:



Img.1. Orange Peel.

3.1.1.1. Scientific name: Citrus reticulata.

3.1.1.2. Synonym: Sweet orange.

3.1.1.3. Family: Rutaceae.

3.1.1.4. Chemical constitute: Limonene (90%), Citral(4%), Vitamin C, Pectin, Hesperidine, Aurantimaricin, Aurantimarinic acid, Octanol (39%), Decanal (42%), Monoterpene (91%) & contains no less than 2.5% volatile oil.[13]

3.1.1.5. Uses: 1) Lighten and brighten skin.

2) Cells build up around the pores enhances the shadows and make the pores appear larger.

3) Hydrates Dehydrates skin.

4) Promotes healthy skin glow. [14]

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. [15]

3.1.2. Sandal Wood:



Img.2. Sandal Wood.

3.1.2.1. Scientific name: Santalum alba.

3.1.2.2.Synonym: Sandal, Indian sandalwood oil.

3.1.2.3.Family: Santalaceae.

3.1.2.4.Chemical constitute: 90% Sesquiterpenic alcohols of which 50-60% is the tricyclic alpha-santalol, beta-santalol comprises 20-25%.

3.1.2.5.Uses: 1) Anti-tanning property.

- 2) Anti-aging property.
- 3) Skin softening effect.
- 4) Pimple and acene treatment.
- 5) Clear complexation.

Sandalwood has an anti-tanning and anti-aging property. It also helps in many ways like toning effect, emollient, antibacterial property, cooling astringent property, soothing and healing property. [16]

3.1.3.Aloe Vera:



Img.3. Aloe Vera.

3.3.1.Scientific name: Aloe barbadensis.

3.3.2.Synonym: aloe, kumari.

3.3.3.Family; Asphodelaceae.

3.3.4.Chemical constitute: Amino acid, vitamins, lipids, sterols, tannin and enzymes, phenol, saponin, antithraquinones.

3.3.5.Uses: 1) Moisturizing agent delivers smoothening property to the skin.

- 2) Remove dead skin cells.
- 3) Treating acene, sunburn.
- 4) Rights ageing.

Aloe Vera is a great moisturizing intended for a skin. Aloe Vera rejuvenates skin, hydrates this and keeps skin layer looking fresh all the time. Aloe Vera has anti-microbial activity rendering it ideal to deal with acene and pimples. Aloe Vera powder contains several nutrients like glycerin, sodium palmate, sodium carbonate, sodium pain kemelate, sorbital, etc.[17]

3.1.4.Calcium bentonite:



Img.4.Calcium bentonite.

3.4.1.Scientific name: Fuller's Earth.

3.4.2.Synonym: Multani mitti.

3.4.3.Chemical constitute: Silica, iron oxide, lime, magnesia and water.

3.4.4.Uses: 1) Fight acene and pimples.

- 2) Removes excess sebum and oil, deep cleanses skin removing dirt, sweat and impurities.
- 3) Evens out skin tone and brightens complexion.
- 4) Treats tanning and pigmentation.

Calcium bentonite 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. [18]

3.1.5.Turmeric:



Img.5.Turmeric.

3.5.1.Scientific name: Curcuma longa.

3.5.2.Synonym: Turmeric root, wid curcuma.

3.5.3.Family: Zingiberaceae.

3.5.4.Chemical constitute: Curcumin I, Curmumin II, III, dihydrocurcumin, 3-6% polyphenolic compounds, curcuminoid's,

Demethoxy curcumin and bisdemethoxycurcumin.

3.5.5.Uses: 1) Antibacterial activity.

2) Antifungal activity.

3) Also adds glove to the skin.

Turmeric is mainly used to rejuvenates the skin. It delays the signs of aging like wrinkles and also possesses other properties like antibacterial, antiseptic and anti-inflammatory. It is best sources of blood purifier. It is effective in treatment of acene due to its antiseptic and antibacterial properties that fight pimples and breakouts to provide a youthful glow to your skin. It also reduce the oil secretion by the sebaceous gland. [19, 20]

4. Equipments and Materials:

4.1.Euipments:

Sr. No.	Equipments
1.	Mortar pestle
2.	Hot air oven
3.	Sieve no.100
4.	Weighing balance
5.	Spatula

Table.1. Equipments.

4.2.Materials:

Sr. no.	Ingredient	Quantity
1.	Orange peel	15%
2.	Sandalwood	15%
3.	Aloe Vera	15%
4.	Calcium bentonite	15%
5.	Turmeric	15%

Table.2. Materials for the Preparation.

5. Method of preparation:

All the herbal ingredient are in dry form and grinded to make fine powder by using size reduction mill. Weighing all the required herbal powder for fruit mask preparation were accurately weighed individually by using digital balance. The quantity and composition are listed in Composition of herbal face pack or mask

5.1.Mixing: All these fine ingredients were mixed thoroughly by mixer to form a homogenous fine powder.

5.2.Sieving: Then this fine powder was passed through sieve no. 100, to get the sufficient quantity of fine powder.

5.3.Collection & Storage: The powder mixture was collected and store in a suitable plastic container and used for evaluation parameters.

6. Procedure of face pack application:

In the first step take the prepared face pack powder in a bowl as per the requirement and add rose water to mix. In the second step mix well apply over the facial skin. Cover the acene and blemishes spots too. Keep the pack on face for complete drying for around 10 to 20 min. In the third step wash the face with cold water. [21]

7.Formula:

Sr. no.	Ingredient	Quantity Given	Quantity taken	Uses
1.	Orange peel	50 gm	25gm	Cells build up around the pores enhances the shadows & make the pores appear larger. Lighten & brighten skin.
2.	Sandalwood	30gm	15gm	Anti – tanning property, anti – aging property, Skin softening effect, pimples & acene treatment. Clear complexion.
3.	Aloe Vera	2.0ml	1.0ml	Moisturizing agent delivers smoothening property to skin.
4.	Multani mitti	8.5gm	4.3gm	Fights acene and pimple removes excess sebum and oil, deep cleanses skin removes dirt, sweat and impurities.
5.	Turmeric	9.5gm	4.8gm	Antibacterial, antifungal, also adds glow to skin.

Table.3. Formula for Face Pack.

8. Formulation:

Raw material were gathered from market and home. The natural ingredients were shed dried, powdered and sieved using # 44 mesh, weighed accurately and mixed. For the evaluation of various parameters, the formulated face pack (F1) was stored in an air tight containers[22-23].

Ingredients	(F1)
Orange peel	2.5
Sandalwood	2.5
Aloe Vera	2.5
Turmeric	2.5
Calcium bentonite	2.5

Table.4. Ingredients.



Img.6. Formulation of Face pack

9. Evaluation:

Following evaluation parameters were preferred to ensure superiority of prepared face pack.

9.1. Organoleptic evaluation:

The organoleptic parameters include its nature, color, odor, feel and consistency which were evaluated manually for its nature, odor, feel and consistency which were evaluated manually for its physical properties. [24]

9.2. Irritancy test:

Mark an area of 1sq.cm on the left hand dorsal surface. A definite quantity of prepared face packs was applied to the specified area and time was noted. Irritancy, erythema, edema was checked if any for regular intervals up to 24 hrs and reported. [25]

9.3. Stability studies:

Stability testing of prepared formulation was conducted for batch B3 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, 35degree C and were evaluation for physical parameters like color, odor, PH, consistency and feel. [26]

9.4. Determination of moisture content:

Weigh about 1.5gm of the powdered drug into a weighed flat and thin porcelain dish. Dry in the oven at 100 degree C at 105 degree C, until two consecutive weights do not differ by more than 0.5 mg cool in desiccators and weigh. The loss in weight is usually recorded as moisture. [27]

9.5. Determination of rheological properties of the prepared pack:

Physical parameters like untapped (Bulk) density, tapped density, angle of repose, Hausner's ratio and Carr's index were observed and calculated for the formulation. Bulk density refers to the adjustment of particles and granules to pack themselves collectively. 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. [28, 29]

9.6. Angle of repose:

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

9.7. Bulk density flow:

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 second intervals. The volume of the powder is measured. Then the powder is weighed. This is reported to get average values. The bulk density is calculated by using the below given formula.

$$\text{Bulk density} = \text{Volume/mass.}$$

9.8. Tapped density:

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

9.9. Phytochemical screening:

The aqueous extract of the herbal face pack was evaluated for the presences of different phytoconstituents as per the standard procedure. [30]

a) Shinoda test:

Aqueous solution was added to a pinch of magnesium turnings and 1-2 drops of concentrated hydrochloric acid were added. Formation of pink color indicates the presences of flavonoids.

b) Lead acetate test:

Aqueous solution was taken and few drops of 10% lead acetate solution were added. Appearance of yellow color precipitate indicates the presences of flavonoids.

c) Salkowski test:

Aqueous solution (5ml) was mixed with chloroform (2ml) and concentrated sulphuric acid (3ml) was carefully added to form a layer. A reddish – brown coloration of the interface was formed to show positive results for the presences of terpenoids.

9.10. Particle size:

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

9.11. pH:

PH of 1% aqueous solution of the formulation was measured by using a calibrated digital PH meter at constant.

9.12. Wash ability:

This is the common method for checking the wash ability of the formulation. The formulation was applied on the skin and then ease and extend of washing with water were checked manually by using 1 litre of water is used to remove all content of the formulations were applied on the surface. [31]

9.13. Microbial assay;

The antibacterial activities of all four formulation were daetermined by modified agar well diffusion method. In this method, nutrient agar plates were seeded with 0.2 ml of 24 hrs broth culture of Escherichia coli and Staphylococcus aureus. The agar plates were allowed to solidify. The plates were incubated at 37 degree C for 24 hrs. The antibacterial activities were evaluated by measuring the zones of inhibition. [32]

10. Result and Conclusion:**10.1. Result:**

The different formulations of face pack was prepared and evaluated for physical parameters. The flow property parameters showed free flowing properties. The color of formulations were different due to variation in composition of content.

The order of prepared formulation was good acceptable which is desirable as cosmetic formulations. The particle size of formulations was in the range of 20 to 30 micron meter. The PH of all formulations lied near to neutral range i.e. in the range of 6 to 7 shown in graph. The ash content and moisture content was within limit and compar3ed as per graph. The stability studies showed a slight change in PH of formulation which was stored at 40 degree C and no change were observed at room temperature and at 35 degree C.

10.2. Conclusion:

Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones.

In the present scenario, people need to cure for various skin problems without side effects. Herbal ingredients opened the way to formulation cosmetics without any harmful effects. Herbal face packs are considered as sustaining and productive way to appearance of skin. Thus, in the present work it is very good attempt to formulate the herbal face packs containing naturally available ingredients like Multani mitti, Turmeric, Aloe Vera, sandalwood and orange peel.

Herbal face packs 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 non – toxic nature reduces the allergic reactions and time tested usefulness of may ingredients

thus in the present work we found good properties for the face pack and in future further optimization studies are required on this study to find the useful benefits of face packs on human use as cosmetic products.

11. References:

- 1) Rani S. Hiremanth R. Formulation and evaluation of poly – herbal face wash gel. World J Pharm Pharmsci 2015; 4(6);585-8.
- 2) Sowmya KV, Darsika cx, Grace F, Shanmuganathan S, Shanmuganathan S. Formulation and evaluation of poly – herbal face wash gel – 4(6) : 585-588... World J Pharma and Pharma sci 2015; 4(6) : 585-8.
- 3) Ashawant MS, Banchhor M. Herbal cosmetics Trends in skin care formulation, Pharma cogn Rev 2009; 3(5) : 82-9.
- 4) Seema Yuvraj Mendhekar, Pratiksha Sukhadev Sonawane, Rupali Bajirao kale, Jadhav S.L. and Gaikwad D.D Formulation and evaluation of Polyherbal face pack. World Journal of Pharmacy and Pharmaceutical sciences 2017; 6(12) ; 1378-1387.
- 5) Sachin Bhagwat Aglawe, Amol Uttamrao Gayke, Suraj Anil mindhe, Varsha Gajanan Rane. Formulation and evaluation of herbal face pack. International Jornal of Pharmacy and biological sciences. 2018; 8(4) ; 49-52.
- 6) Avinash O Maske, Manisha Pandhare, Ashwini D. wanjari. Formulation and evaluation of herbal face pack for glowing skin. International of Advances in Pharmaceutics 2019; 8(1); 1-5.
- 7) Sachin B Somwanshi, kiran S. Kudhale, Ramdas T Dolas, Kiran S Kotade. Formulation and evaluation of cosmetics herbal face pack for glowing skin. International Journal pf Research in Ayurveda and Pharmacy. 2017; 8(3); 199-203.
- 8) Mithal BM, SadhaRN. A hand book of cosmetics.
- 9) Milikan, Larry E. cosmetically, cosmetics, cosmeceuticals: definition and regulations. Clinics in dermatology, 2001, 19(4); 271-274.
- 10) Swarmalatha saraf, Shailendra saraf. Cosmetics a practical manual, Pharma and med press, 2nd edition, 2005.p126-129.
- 11) C.V.S. Subrahmanyam, Teaxt book of physical pharmaceutics. 2011 edition, Published by vallabh Prakashan pg no; 195- 200.
- 12) C.K. Kokate, text of pharmacognosy, edition 46, Published by nirali prakashan, pg no; 1.46-1.48.
- 13) Orange peel Biological source, Morphological features, chemical constitutes and Uses. Nov. 03, 2020. www.gpatindia.com.
- 14) Sways you can use orange peel to get glowing skin. Updated on march 02, 2021. www.timesnownews.com.
- 15) Himaja N, Ashok Kumar A, Bhatt. kumar B. Preparation and evaluation of poly herbal fruit face mask. J Res Pharm sci 2015; 2(11): 07-13.
- 16) Nemade Ct, Baste N. Formulation and evaluation of a herbal facial scrub. World J Pharm Ress 2014; 3(3): 4367-4371.

- 17) Rajeswari R, Umadevi m, Rahale cs, Pushpa R. Selvavenkadesh S. Sampath kumar Kp, Bhowmilk D. Aloe Vera; The miracle plant Its medicinal and Traditional uses in India. J Pharmacognphytochem 2012; 1(4): 118-124.
- 18) Hawang JK, shim JS, Gwan SH, Kwon YY, ch HI et al. Novel use of Panduratin derivatives or extract of Kaempferia pandurata comprising the same. U.S. patent 0065272 A1, 2012 [cited 2016 Aug 05].
- 19) Michelle O' Sullivan, Turmeric is an effective homemade face pack ingredient to help open pores, Nov 2016 [cited 2016 Dec 13]. Available for:- [http:// newswire.net / newsroom / pr100094136](http://newswire.net/newsroom/pr100094136).
- 20) Best Benefits of Turmeric (Haldi) for skin, Hair and health- No.4 Is the Best Nov 2016 [cited 2016 Dec. 13] Available form:- [http://www.stylecraze.com / articles / turmeric – history – how to use-benefits](http://www.stylecraze.com/articles/turmeric-history-how-to-use-benefits).
- 21) Buhse L, kolinski R, Westenberger. B, wokovish A, spencer j, chen CW et al. Topical drug classification Int j Pharm 2005; 295: 101-112.
- 22) Farheen B, Mohammad I. Design and development of Unani face pack for skincare. European J Pharm Med Rees 2016; 3(12): 627-632.
- 23) Avinash .O. Maske et al. Formulation and evaluation of Herbal face packs for glowing skin. International Journal of advances in Pharmaceutics: 2019; 08(01): 1-5.
- 24) Buhse L, Kolinski R, Westenberger B, Wokovish A, Spencer J, chen CW et al. Topical drug classification. Int J Pharm 2005; 295: 101-112.
- 25) Mandeep S, Shalini's, Sukhbir LK, Ram ks, Rajendra J. Preapration and evaluation of Herbal cosmetics cream, Pharmacologyonline 2011; 1258-1264.
- 26) Rani SR and Hiremanth, Text book of Industrial pharmacy, Drug delivery system and cosmetic and Herbal drug Technology; Universities press (India) Ltd. 2nd edition,2002.
- 27) Dr. K.R. Khandelwal, Dr. Vrunda Sethi, Dr. Practical Pharmacognosy techniques and experiments practical, Pharmacognosy 2012 eddition, published by nirali prakashan, pg no. 23.8-23.10,25.5.
- 28) Lachmen L. Liberman HA, kanig JL. The theory and practice of Industrial Pharmacy 3rd ed.1987.
- 29) Aulton ME. Pharmaceutics. The Science of dosage form design 2nd ed. 2022.
- 30) Khandelwal KR. Practical Pharmacognosy 12th ed.2004.
- 31) Joshan and S. Nagarauk R, Anuradha, P. Antibacterial properties of exatracts of Indian medicinal plants: Syzygium alternifolium, Phyllanthus niruri and rubi cordifolia, Biomedical and Pharmacology Journal, 3:1 2011 pg. no. 123-128.
- 32) Choudhri, R.K. Emblica cascading anti-oxidants: Novel natural skin care ingredients. Page no.15: 374-380.