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PREPARATION AND CHARACTERIZATION OF HERBAL FACE PACKPOWDER CONTAINING MARIGOLD EXTRACT

Avinash S. Gudigennavar*, Anita R. Desai, Jaydev Hiremath, Sakshi Bhattad, B. Srikrishna Teja and Sagar C. Dangi

BVVS, HSK College of Pharmacy, Bagalkote, Karnataka, India.

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***Corresponding Author**
Avinash S. Gudigennavar
BVVS, HSK College of Pharmacy, Bagalkote, Karnataka, India.
sakshibhattad8@gmail.com,

ABSTRACT

The purpose of this research is to create and assess a herbal face pack for healthy looking skin using natural herbal ingredients. Natural herbal ingredients like gram flour, rice flour, charcoal powder, arjuna powder, lemon peel powder, nutmeg, manjistha, saffron, turmeric, and pure aloevera were bought in dried powder form from the neighbourhood market. All natural ingredients that were pulverized were sieved through 120 mesh, carefully weighed and blended geometrically for homogenous formulation before being tested for stability and other factors including organoleptic, phytochemical, and irritancy. The combined powder that had dried had tolerable flow characteristics. Making it ideal for face pack. Utilizing herbal face pack or masks helps to retain the flexibility of the skin, revitalizes the muscles and increases blood circulation.

KEYWORDS: Face pack, Cosmetics, Natural, Standardization, Formulation, Evaluation.

INTRODUCTION

Cosmetics are defined as the products used for the purposes of cleansing, beautifying, promoting attractiveness or alternating the appearance. From the ancient time, different herbs are used for cleaning, beautifying and to manage them.[1] Face skin is the major part of the body, which indicates the health of an individual. In ayurveda, the herbal paste is called as “mukha lepa” used for as a facial therapy. This herbal paste smeared on face to treat acne, pimple, scars, marks and pigments.[2] 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 pastes and allowed to dry and set to form film giving tightening, strengthening and cleansing effect to the skin.[3] They are usually left on the skin for fifteen to thirty minutes to allow all the water to

evaporate, the resulting film thus contracts and hardens and can easily be removed.[4] The warmth and tightening effect produced by application of face pack produces the stimulating sensation of a rejuvenated face, while the colloidal and adsorption clays used in these preparations remove the dirt and grease from the skin of the face.[5] When the applied face pack is eventually removed skin debris and deposited dirt gets removed with it. 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.[6] 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.[7] 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.[8] 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, aloe vera, sandalwood, lemon peel, Rose petal powder, manjistha, lodhra and gram flour.[9]

This herbal pack/paste smeared on face to treat acne, pimple, scars, marks, and pigments. The main advantage of using herbal cosmetic is that it is pure and does not have any side effects on the human body.[10] Facial skin is a major part of the body, which indicates the health of an individual. Face pack is a smooth powder with natural constituents which are rich in vitamins, antioxidants and are used for facial application for a healthy and glowing skin.[11]

OBJECTIVES

To prepare alcoholic extract of lutein from marigold,and formulate herbal face pack powder containing lutein extract, powder of manjishta, sandalwood, neem, charcoal, rose, nutmeg, aloevera, and To carry out the Phytochemical test for herbal face pack powder and Characterization of herbal face pack powder.

MATERIALS AND METHODS[11,12,13,14]

MATERIALS

Manjistha Powder, Sandalwood Powder, Neem Powder, Charcoal Powder, RosePowder, Aloe Vera Powder, NutMeg Powder were used.

EVALUATION[15,16,17,18,19,20]

1. Organoleptic Evaluation

Herbal face pack was evaluated for Organoleptic parameters. The colour of formulation was

Brown. The odour of prepared formulations was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness was acceptable as per requirement of cosmetic formulations.

2. 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.

3. Spreadability

Spreadability was determined by an apparatus suggested by fabricated in- house. The apparatus consist of a wooden block with a fixed glass slide and movable glass slide withone end tied to weight pan rolled on the pulley, which was in the horizontal level with fixed slide. Weigh about 2gm of face pack powder in china dish and add about 10 ml of rose water stirr with glass rod until it forms paste and then spreadability was determined by spreadability apparatus take the readings and calculate the spreadability.

4. Angle of Repose

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

Fix Funnel method:- The material is poured through a funnel to form a cone. The tip of the funnel should be held close to the growing cone and slowly raised as the pile grows to minimize the impact of falling particles.

$\theta = \tan^{-1} (2h/d)$

where,

θ = Angle of

Reposeh = height of heap

r = radius of heap

5. 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).

6. 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

7. 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.

8. Washability

This is the common method for checking the washibility 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 thesurface.

9. Total 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 morethan 0.5 mg. Cool in dessicator and weigh the loss in weight is usually recorded as moisture.

10. Ash Value

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 andignite it by gradually increasing the heat to 500-600 °C until it is white, indicating the absence of carbon. Cool in a dessicator 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 dessicator for 30 min ad then weigh without delay. Calculate the content of total ash in mg per g of air-driedmaterial.

RESULTS

1. Phytochemical tests for extract

TABLE NO. 1

TEST	OBSERVATION	INTERFERENCE
TEST FOR CARBOHYDRATES: SOLUBILITY: Compound + Water	Insoluble	Polysaccharides
MOLISH TEST: Aq, or alcoholic solution of subs. +10% Alc. Soluion of A Napthol shake + Conc. Sulphuric acid along the side of the test tube.	Violet ring at thejunction of two liquids	Present
FEHLINGS TEST: 2ml. of felhing's sol. A + 2ml.of sugar solution. Boil	Yellow or brick red ppt	Reducing sugars present
Benedict's Test: 5ml.of Benedict's reagent +3ml.of sugarsolution boil for 2 minutes cool.	Green, yellow or red ppt.	Reducing sugar presents.
Test for Alkaloids: Dragendroff's Test: 1ml of extract + 1ml of Dragendorff's reagent	Orange Red Colour was obtained.	Alkaloids present
Mayer's Test: 1ml of extract + 1ml ofMayer's reagent	No Creamy – white precipitate	Absent
Test for Glycocides: **1.Borntrager's Test:** 1gm of drug add 5-10mlof dilute HCL boil on water bath for 10 min and filter. Filtrate was extracted with CCl_4/Benzene and add equal amount of ammonia solution to filtrate and shake.	No pink or Red colour	Absent
Test For Volatile oil: 1.Salkowski reaction: To 2ml of adds 2ml of $CHCl_3$,and 2ml of conc.H_2SO_4.Shake well	Greenish fluorescence	Present
2.Liebermannreaction: Mix 3ml of extract with3ml of acetic anhydride, Heat and cool. Add few drops of con.H_2SO_4	No blue colour	Absent
Test for Tannins: Ferric chloride test:Alcoholic extract of drug + 1% $FeCl_3$	Brownish green colour	Present

Characterization

1. Organoleptic

TABLE NO: 2

S.No	Parameter	Observation
1	Colour	Brown colour
2	Odour	Pleasant
3	Appearance	Smooth, fine
4	Texture	Fine
5	Smoothness	Smooth

TABLE NO: 3

Formulation Code	Parameters				
F1	Spreadabilityin gm.cm/sec	Angle of repose	Tapped density ingm/ml	Bulk density gm/ml	Ash valuein %
	37.40	28.3˚	1.76	1.02	7.35%

DISCUSSION

Organoleptic Evaluation

Herbal face pack was evaluated for organoleptic parameters. The colour of formulation was brown. The odour of prepared formulation was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness was acceptable as per the requirement of cosmetic formulations.

Phytochemical Evaluation

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

Spreadability

To determine the spreading ability of herbal facepack powder the test was performed.

The values of spreadability indicate that the herbal facepack powder was easily spreadableby small amount of shear.

Angle of Repose

Angle of repose was performed by funnel method. For herbal facepack powder formulation angle of repose was found in the range of 28.3^{0}c of powder, which indicate good free flowing properties.

Bulk Density

The bulk density of herbal facepack powder formulation was found to be in the range 0.75 gm/ml. The values were used for calculating the % compressibility of powder.

Tapped Density

The tapped density of herbal facepack powder was found to be in the range of 0.369gm/ml. The values were used for calculating the % compressibility of powder.

Carr's Index

The percent of (% compressibility) of powder mix was determined by carr's compressibility index. The % compressibility of herbal facepack powder formulation lie within the range of 0.52% indicating good flow property of powder.

Hausner's Ratio

It is the indirect index of ease of powder flow. The values lie within the range of 0.48% which indicate the herbal facepack powder formulation show good flow properties.

Irritancy Test

The results of irritancy test were shown in Table 6. The formulation showed absence of irritation, redness and swelling during irritancy studies. This formulation have safe to use on skin.

TABLE NO: 4

Sl. no	Parameter	Observation
1.	Irritation	No
2.	Redness	No
3.	Swelling	No

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 using1 liter of water is used to remove all content of the formulation were applied on the surface.

CONCLUSION

Herbal face pack powder containing LUTEIN extracted from marigold. Herbal face pack was evaluated for organoleptic parameters. Herbal face pack showed the presence of phytoconstituents such as carbohydrates, glycosides, tannis, & volatile oil which act as good nourished for skin. All the physical properties of the formulations were found to be show the good flow properties. The face pack formulation showed good spreadability indicate that the powder was easily spreadable by small amount of shear. The face pack formulation showed absence of irritation, redness & swelling during the irritancy studies. This formulations washability showed the optimum results.

REFERENCES

1. Aglawe SB, Gayke AU, Mindhe SA, Rane VG. Formulation and evaluation of herbal face pack. Int J Pharm Biol Sci., 2018; 49-52.
2. Jain A, Patil S. Formulation and evaluation of poly-herbal face pack.
3. Priya R, Anand K, Rasika D. Preparation and evaluation of herbal anti–acne face pack. World J Pharm Res, 2017; 6: 1000-10.
4. Somwanshi SB, Kudale KS, Dolas RT, Kotade KB. Formulation and evaluation of cosmetic herbal face pack for glowing skin. Int J Red Ayurveda Pharm, 2017; 8(3): 199-203.
5. Mohiuddin AK. An extensive review of face powder formulation considerations. J.Derm. Dermatitis, 2019; 4(2): 60-78.
6. Sing Y, Gupta A, Kannojia P. Tagetes erecta (Marigold)-a review on its phytochemical and medicinal properties. Curr Med Drugs Res., 2020; 4(1): 1-6.
7. Singh S, Maury S. Formulation and Evaluation of Herbal Face Pack For Acne ProneSkin. 8. Maske AO. Formulation and evaluation of herbal face pack for glowing skin. J Adv Pharm, 2019; 8(01): e5184.
8. Redasani VK, Baid KJ, Yadav DJ. Formulation and evaluations of herbal face pack.
9. Neware PR, Rahangdale RS, Patle OD, Suryavanshi MM, Donode PS, Sirsat NS. Formulation and evaluation of herbal face pack for ACNE-Prone skin and dull skin.
10. Priya R, Anand K, Rasika D. Preparation and evaluation of herbal anti–acne facepack. World J Pharm Res., 2017; 31: 6:1000-10.
11. Aglawe SB, Gayke AU, Mindhe SA, Rane VG. Formulation and evaluation ofherbal face pack. Int J Pharm Biol Sci., 2018; 8: 49-52.
12. Atish Y. Sahare, Tikesh R. Agrawal, Sonal S. Gupta, Dinesh V. Panpaliya, Pooja S. Dhoke5 Formulation and Evaluation of Polyherbal Face Pack for Healthy Skin. Int J I Res Technol.
13. Londhe SS, Joshi AA. Formulation and evaluation of skin whitening-lighteningherbal facewash. Asian Journal of Pharmacy and Technology, 2020; 10(4): 245-9.
14. Ramkrishna S, Gopikrishna UV. Formulation and Evaluation of Herbal Face Pack. JETIR., 2021; 8(12).
15. Aswale Ashwini E, Gund Akshada L, Chaugule Afroz N, Awate Pranay V, ShelkeDipali S. Formulation and Evaluation of Polyherbal Facepack. IJARSCT, 2022; 2(1).
16. Meena V. Manjistha (Rubia cordifolia)-A helping herb in cure of acne. Journal of Ayurveda and Holistic Medicine (JAHM), 2015 May 15; 3(2): 11-7.

17. Subasinghe SM. Sandalwood research: a global perspective.
18. Alzohairy MA. Therapeutics role of Azadirachta indica (Neem) and their active constituents in diseases prevention and treatment. Evidence-Based Complementary and Alternative Medicine, 2016 Oct; 2016.
19. Kwon KJ, Choi SJ, Yoon Y. Improving effects of the cleanser containing Centella asiatica extracts and charcoal and pearl powder on the facial skin. Kor J Aesthet Cosmetol, 2012; 10(3): 581-6.
20. Ahmed Y, Jamil SS, Hashimi A, Siraj MB, Jahangir U. Rosa Damascene Mill.(Rose): A versatile herb in cosmetology. CELLMED, 2019; 9(4): 2-1.