FORMULATION AND EVALUATION OF FACE PACK CONTAINING NATURAL SOIL

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Abstract

The objective of this work was to formulate and evaluate a Face Pack for facial skin by using natural soil. With the varying concentrations, two different formulations containing Natural ingredients such as soil, Neem leaf powder, Gram flour, Masoor dal were prepared named as F1 and F2. Both the formulations were evaluated organoleptically, as per BIS guidelines, for the stability study and subjective evaluation. Both the formulations were found to be acceptable in organoleptic parameters, pass the test as per BIS guidelines and maintained its properties even after stability storage conditions. During stability studies both formulations shown good physical properties. Formulation F2 was well appreciated by human volunteers during subjective evaluation. We conclude the present study that the face pack containing natural soil and herbal ingredients is a good product for human use and further studies are needed to know the possible benefits of the face pack.

Keywords: Face Pack, Cosmetics, Natural soil, patch test

Introduction

Cosmetics are defined as the products used for the purposes of cleansing, beautifying, promoting attractiveness or alternating one's appearance [1, 2]. The use of face packs by women dates back to early antiquity. These preparations are applied to the face in the form of liquids or pastes. They are then allowed to dry or to set with the object of improving appearance of the skin, by producing a transient tightening effect as well as by cleansing the skin [3]. Homemade natural face packs and masks make way for smooth, radiant and silky skin [4]. If pimples, acnes and other skin problems are troubling then face packs can be used as natural remedy which not only helps in removing these problems but also gives a healthy and glowing skin [5]. The Natural face packs do contain some vital vitamins that are required for the health and glow of skin. These substances also prove to be beneficial for skin in many ways. They foster skin by not only improving its color but also by cleansing and reducing interstices. Natural Facial Packs are less complicated and pretty simple to use. They help in looking after skin and also prove its worthiness by increasing the circulation of the blood within the veins of the face. From the ancient time, different herbs are used for cleaning, beautifying and to manage skin texture. Face skin is the major part of the body, which indicates the health of an individual [6-7]. It consists of materials such as amino acids, lipids and carbohydrates etc. hence a balanced nutrition is required for the skin to keep it clear glossy and healthy [8]. In Ayurveda, the herbal paste is called as "mukha lepa" used for a facial therapy. This herbal paste smeared on face to treat acne, pimple, scars, marks and pigment [9]. In the present study an attempt was made to formulate face packs of different natural ingredients like natural soil, Neem powder, Gram flour and Masoor dal powder. The

natural soil is known for cleansing of skin, Neem leaf powder is having anti-inflammatory, antiseptic and beneficial for oily and acne prone skin, Gram flour for removal of tan, to reduce oiliness of skin, Masoor dal for anti-wrinkle and smoothening effect. The formulations were evaluated for Physical parameters like Color, Odor, pH, , Texture, Patch test, Stability studies and subjective evaluation.

Materials and Methods

Materials

The natural material used in the present study is Neem leaves, Gram flour, Red Lentils (Masoor dal) were purchased from local market of Nagpur, Maharshtra, India. These were dried in shade and powdered for further use. Soil used in face pack was taken from Gadchiroli, Taluka-Bhrampuri, Village-Khed, Maharashtra, India. Soil is mixture of organic matter, minerals, gases, liquid and organisms.

Formulation of Face pack

With the varying concentration of all ingredients two different formulations were prepared and the formulations were named as F1 [(Natural Soil) – Table 1] and F2 [(Face pack containing other herbal ingredients and natural soil) – Table 2]. All ingredients were shade dried (especially Neem leaves). The ingredients were weighed accurately and then grinded into fine powder. The ingredients were sieved separately by using sieve-60. The soil sample was also dried, sieved and grinded. Then all the ingredients were mixed one by one in mortar pestle and were triturated well, the prepared face pack was packed into a self-sealable polythene bag, labeled and used for further studies.

Table No. 1: Formulation 1 (F1) (Natural soil)

S.N.	Ingredients	Quantity
1.	Soil	100gm

Table No. 2: Formulation 2 (F2) (Natural soil + Herbal ingredients)

S.N.	Ingredients	Quantity
1.	soil	25 gm
2.	Neem powder	15 gm
3.	Gram flour	10 gm
4.	Masoor dal powder	10 gm

Evaluation of Face Pack as per Indian Standard [10]:-

Face pack formulations F1 and F2 were evaluated as per BIS Guideline (BIS 15153 : 2002) and results were recorded and compared with standards.(Table No. 3)

Table no. 3- Evaluation of Face pack

S. N.	Test	BIS Requirement	Observations for F-1	Observations for F-2	Inference
1	Loss on drying, percent by mass, Max.	5	0.3318 gm%	0.25 gm %	Passes test.
2	Ash content, percent by mass, Min.	85%	87 %	88 %	Passes test.
3	pH	5-9	7.12	6.2	Passes test.

Organoleptic Evaluation of face packs

The prepared face packs were subjected to organoleptic analysis for parameters like Color, Odor and Texture and the results were recorded. [11-12] (Table 4)

Table 4: Organoleptic Evaluation of Face packs

S. N.	Evaluation Parameter	Observations	
		F1	F2
1	Colour	Greyish black	Light greenish
2	Odour	characteristic odour of wet soil	characteristic
3	Texture	Fine powder	Fine powder

Patch test of Face Packs [13]

Non-irritancy of the preparation is evaluated by patch test. This test is performed to evaluate the safety of face packs on application. Even though the formulations contain all natural ingredients, from the safety point of view patch test was performed for three parameters i.e., Primary irritation test, Delayed hypersensitivity and Photo irritation or allergy and the procedure for all test is as follows:

Primary irritation:

In the test 3 volunteers were selected. Definite quantities of prepared face pack were applied in combination with purified water separately on the fore arm and observed the signs of irritation. No visible skin reaction was observed.

Delayed hypersensitivity:

Delayed hypersensitivity test was performed with the same procedure as in primary irritation test by increasing the application time and observation time. After washing of face pack from the skin the reaction were observed for 2 hours and no visible skin reaction was observed.

Photo irritation/ allergy:

The face packs were applied as in the primary irritation test and the individual were asked to expose themselves for sunlight and possible reaction in the term of itching, allergy, irritation and signs of redness after washing were observed and noted down, no visible skin reaction was observed.

Stability Study of Face Pack

The objective of accelerated stability studies is to predict the shelf life of a product by accelerating the rate of decomposition preferably by increasing the temperature [14]. The evaluation employs a combination of tests. This method of evaluation not only indicates stability of formulation but also indicates the stability of functional ingredients [15]. For both face packs i.e. F1 and F2, the accelerated stability studies were carried out for 45 days. The samples of F1 and F2 were kept at room temperature, fridge and oven temperature, for the observation of changes in colour, odor, pH, and Texture.

Subjective evaluation

Both the Face pack formulations were given to 10 subjects of age group between 20-30 years for 8 weeks to carry out the subjective evaluation on the basis of their feedback. These subjects were asked to first use the Face pack F1 twice in a week for 4 weeks on facial skin and then to use the Face pack F2 twice in a week for 4 weeks and noted the changes they observed on the facial skin before and after the use of Face packs. Subjective evaluation was carried out on the basis of the parameters like Colour, Odor, Cleansing effect, Ease of removal, Drying time, Irritation and ease of spreading.

Results and discussion

Sample of soil was tested from "National Bureau Of Soil Survey And Land Utilization Planning Research Institute in Nagpur, Amravati road, nagpur-440033". As per the report the soil contained 3 % silicates, carbonates and iron traces. The Face packs passed the tests as per BIS guidelines. The organoleptic evaluation of face packs showed that F1 and F2 had acceptable color, odor and texture. In Patch test study, no visible skin reaction was observed. From the results of stability study it was found that both the face packs i.e. F1 and F2 were stable and effective with respect to colour, odor, pH and Texture. Hence both the face packs under study were selected for further subjective evaluation. From the results of subjective evaluation it was observed that, face pack F2 was well appreciated. It showed better Colour, Odor, Cleansing effect, Ease of removal, Drying time, ease of spreading and no irritation on regular application as compared to F1.

Conclusion

Herbal remedies are becoming more popular as compared to synthetic ones in belief that Naturals are safer. Thus in the present work humble attempt was made to formulate Herbal face pack containing Natural soil which showed good properties on human facial skin and was well appreciated by the panel of human volunteers. Thus, it can be concluded that

the Face pack formulation (F2) containing Natural Soil in combination with herbal ingredients i.e. Neem leaf powder, Gram flour, Masoor dal powder, was acceptable in view of Colour, Odor, Cleansing effect, Ease of removal, Drying time, ease of spreading and no irritation on regular application and further studies are needed to know the possible benefits of the face pack.

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