



Review Article

Formulation and Evaluation of Polyherbal Clay Face Pack

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ABSTRACT

The aim of present study was to formulate and evaluate the poly herbal clay face pack having properties of moistening, nourishing, anti-acne, anti-inflammatory, anti-oxidant, anti-wrinkle and skin brightening effect on the skin using different herbal drugs like Green clay, Rubia cordifolia (Manjistha), Moringa oleifera (Moringa), Aloe barbadensis (Aloe vera). The poly herbal clay face pack was prepared by homogeneous mixing of all the herbal crude drugs and the excipients. By using this method we have prepared five formulations F1, F2, F3, F4 and F5. Evaluated for different parameters like physical evaluation, irritancy study observation, washability, pH, spreadability, homogeneity, after feel and consistency. All the five formulation F1, F2, F3, F4 and F5 showed good appearance, pH, washability, homogeneity was observed. Also the formulations F1, F2, F3, F4 and F5 showed no redness, erythema, edema and irritation during irritancy study and these formulations are easily washable. All the five formulations F1, F2, F3, F4 and F5 were stable at room temperature. All four herbal ingredients like Green clay, Rubia cordifolia (Manjistha), Moringa oleifera (Moringa), Aloe barbadensis (Aloe vera) showed significant different activities. Based on the Result, we can suggest that all the five formulations F1, F2, F3, F4 and F5 were stable and can be safely use on the skin.

INTRODUCTION

A poly herbal clay face pack is a skincare product that combines multiple herbal ingredients with clay to provide various benefits for the skin. These clay face packs are designed to cleanse, exfoliate, and rejuvenate the skin, leveraging the natural properties of herbs and clays.

Poly herbal clay face packs are a popular choice in the cosmetics industry due to their natural and holistic approach to skincare. The integration of polyherbal clay face packs in cosmetics offers a natural and effective alternative to synthetic skincare products. Their multiple benefits combined with their safety and sustainability; make them a preferred choice for many consumers seeking holistic skincare solutions.

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The pack traps the moisture or ingredient in the skin and creates film that helps to either hydrate, moisturize, dry or exfoliate the skin depending on the ingredients used and its purpose.

Therefore, clay face packs allow ingredients to penetrate better into your skin in a short amount of time. Whether its salicylic acid for acne, vitamin C for fine lines or retinoid for brightening dark spots, a clay face pack can offer a more concentrated dose and more intense version of its ingredients compared to other forms of applications.

The Pack aims to restore your skin, balanced pH level and helps to ease inflammation of the skin while it supporting your body's natural collagen production and Slowing down the degradation of collagen and elastin in the skin. Even though facial packs have been around for decades, they have recently undergone a makeover with innovative ingredients, immediately perceived efficacy and creative functionalities that differentiate them from their predecessors. Traditional facial packs are temporarily applied to the face in a thick layer without massage. This film is known to dry quickly, and the residual film is peeled or rinsed off. Some are massaged until they aggregate into easy-to-eliminate rolls.

The application site and amount applied largely determine the rheological properties of facial packs. They are formulated to resemble viscous gels, pastes or thick emulsions. In general, they are shear-thinning products that are easily and homogeneously distributed on the face with the fingers. Once applied, the pack layer should remain in place and not drip. This is necessary to keep the product out of the eyes and mouth.

The main cosmetic objectives of facial packs are to provide: fast, deep moisturization; skin replenishment and restitution; sebum absorption and elimination; and skin rejuvenation. In

addition, an immediate radiant complexion is expected by consumers after removing the pack. In other cases, and more frequently in aesthetic practices, facial packs are applied over a face cream to help the penetration of actives by promoting intense skin hydration. In this case, they remain longer on the skin and are gently removed by wet wipes. Some subcategories of facial packs exist, including those that involve evaporation and those are formulated into a substrate like a cloth, patch, pad or polymeric film to maintain their application. In evaporation packs, the water or hydro-alcoholic blend solvent is evaporated to leave a dry residue of solids and film-forming agents for a skin tightening effect. In other cases, the water phase is not easily evaporated due to its high, complex hydrotropes, and the applied layer maintains its initial structure during its intended performance time.

Overall, wash-off packs are the most effective, budget-friendly, and environmentally-friendly option when it comes to clay face packs. Wash-off packs are made of creams, mud, clay, gel, or other ingredients and are designed to penetrate deeply into the skin and remove bacteria, dirt, and excess sebum that clogs pores and causes acne.

METHODS

Table 1: List of herbal ingredients and excipients with their roles:

SR.NO.	INGREDIENTS	ROLES
1.	Green clay powder	Unclog pores of excess oil and dirt. Remove dead skin cells.
2.	Manjistha powder	For skin brightening.
3.	Moringa powder	Anti-microbial, Anti-oxidant.
4.	Aloe vera	Anti-aging, Anti-inflammatory, Moisturiser, Reduce acne and pimple.



5.	Bentonite	Suspending and colloidal agent. Adsorbent property.
6.	Kaolin	Absorbs sebum and prevents pore clogging.
7.	Propylene glycol	Humectant.
8.	Methyl paraben	Preservative.
9.	Methyl cellulose	Thickener.
10.	Rose oil	Fragrance.
11.	Distilled water	Vehicle.

Formulation of polyherbal clay face pack:

To obtain uniformly sized particles, each of the powdered materials was put through mesh size of 40 before being precisely weighed. Weigh and measure all the dry ingredients i.e. Moringa powder, Manjistha powder, Methyl cellulose, Bentonite, Kaolin and mix well. Add all the dry ingredients into mortar and pestle and mix well. Later add Propylene glycol and Aloevera to the above mixture and mix thoroughly. Add small quantity of water to make a paste. To the above homogeneous paste add Green clay, Methyl paraben as preservative and Rose oil as fragrance.

Table.2: Quantity of ingredients used in the preparation:

SR.NO.	INGREDIENTS	F1	F2	F3	F4	F5
1.	Green Clay	3g	3g	3g	3g	3g
2.	Manjistha Powder	2.5g	3g	3.5g	4g	4.5g
3.	Moringa Powder	3g	3g	3g	3g	3g
4.	Aloe vera Gel	2.5g	2.5g	2.5g	2.5g	2.5g
5.	Bentonite	1g	2g	3g	4g	5g
6.	Kaolin	5g	5g	5g	5g	5g
7.	Propylene Glycol	5ml	5ml	5ml	5ml	5ml
8.	Methyl Cellulose	1g	1.25g	1.5g	1.75g	2g
9.	Methyl Paraben	0.15g	0.15g	0.15g	0.15g	0.15g
10.	Rose Oil	0.5ml	0.5ml	0.5ml	0.5ml	0.5ml
11.	Distilled Water	Q.S	Q.S	Q.S	Q.S	Q.S

EVALUATION

1. PHYSICAL EVALUATION :

In this test, the clay face pack was observed for color, odor, texture, state.

2. IRRITANCY :

For this test laboratory rats were taken, and removed hair using scraper and applied face pack on the rats. Apply the face pack evenly to the shaved skin area of rats and irritancy property observed after a day. Then it is checked for irritancy, erythema and edema usually 24 hours after application.

3. WASHABILITY :

A small quantity of face pack was applied on hand. After applying allow it to dry and washed with tap water.

4. pH :

1gram of face pack was taken and dispersed in 100ml of distilled water and then pH was measured by using pH meter.

5. HOMOGENEITY :

The formulations were tested for the homogeneity by visual appearance and by touch.

6. AFTER FEEL EFFECT :



Moisturizing, smoothening and amount of residue left after the application of fixed amount of face pack was checked.

7. SPREADABILITY

The spreadability was expressed in terms of time in seconds taken by 2 slides to slip off from the face pack, placed in between the slides, under certain load. Lesser the time taken for separation of 2 slides better the spreadability. Two sets of glass slides of standard were taken. Then one slide of suitable dimension was taken and the formulation was placed on that slide. Then other slide was placed on the top of the formulation. Then a weight or certain load was placed on the upper slide so that the pack between the two slides was pressed uniformly to form a thin layer. Then the weight was removed and excess of formulation adhering to the slides was scrapped off. The upper

slide was allowed to slip off freely by the force of weight tied to it. The time taken by the upper slide to slip off was noted.

$$\text{Spreadability} = m \times 1/t$$

Where,

m = Standard weight which is tied to or placed over the upper slide (30g)

l = length of a slide (5cm)

t = time taken in seconds.

RESULT AND DISCUSSIONS

PHYSICAL EVALUATION:

In this test colour, odour, texture and state of all the 5 formulation were checked.

Table 3: Physical evaluation of 5 different formulations:

SR.NO.	PARAMETERS	F1	F2	F3	F4	F5
1	Colour	Brown	Brown	Brown	Brown	Brown
2	Odour	Pleasant	Pleasant	Pleasant	Pleasant	Pleasant
3	Texture	Watery smooth	Smooth	Fine & Smooth	Slightly rough	Rough
4	State	Semi-solid	Semi-solid	Semi-solid	Semi-solid	Semi-solid



Fig1: Physical evaluation of all 5 formulations

IRRITANCY:

Out of all the 5 formulations, formulation 3 i.e.; F3 has been found to be standard. The face pack were applied on rat's shaved skin surface. Then it is

checked for irritancy, erythema and edema, for an interval upto 24hours and reported.

According to the results there is no sign of irritancy, erythema and edema.

Table.4: Results of irritancy:

SR. NO	PARAMETERS	F1	F2	F3	F4	F5
1	Irritancy	Nil	Nil	Nil	Nil	Nil
2	Erythema	Nil	Nil	Nil	Nil	Nil
3	Edema	Nil	Nil	Nil	Nil	Nil

WASHABILITY

Washability test was carried out by applying a small amount of face pack on the hand and allow it to dry then washing it with tap water.

All 5 formulations were found easily washable.

pH :

According to the result the pH of all the 5 formulation i.e.: F1, F2, F3, F4 and F5 were found

to nearer to the skin pH. So it can be safely used on the skin.

Table.5: Results of pH:

SR.NO.	FORMULATIONS	pH
1	F1	6.36±3
2	F2	6.26±4
3	F3	6.26±1
4	F4	6.40±1
5	F5	6.35±1

HOMOGENEITY:

The formulation was tested for the homogeneity by visual appearance and by touch. According to the results all the 5 formulation are homogenous. The homogeneity test confirms the uniform distribution in pack of all five formulations.

**Fig 2: Homogeneity view of all five formulations****AFTER FEEL:**

The moisturizing, smoothening and amount of residue left after the application of face pack for all the 5 formulations F1, F2, F3, F4 and F5.

SPREADABILITY:

The spreadability of 5 formulations i.e. F1, F2, F3, F4 and F5 was carried out and out of that for F1

the time taken by the 2 slides to separate is less so as said in the description of evaluation test, lesser the time taken for separation of the 2 slides better the spreadability. So according to the statement F1 showed better spreadability. But according to good consistency and texture F3 shows required spreadability time which is needed for the formulation.

Table.6: Results of spreadability:

SR. NO.	FORMULAIONS	TIME (Sec)	SPREADABILITY (gxcm/sec)
1	F1	8	33.2
2	F2	9	32.3
3	F3	10	22.4
4	F4	11	20.2
5	F5	14	14.9

CONCLUSION

Natural face packs, crafted from ingredients like Moringa powder, Manjistha, and Green clay, offer numerous benefits for your skin. Embracing these natural remedies means nourishing your skin with ingredients that are gentle yet effective. All the formulated polyherbal clay face pack that is F1, F2, F3, F4, and F5 has been evaluated and compared and it is capable to maintain skin moisture and to fight against acne and aging issues. Evaluation and comparison of results with formulated polyherbal clay facepack F3 is better, helpful and fascinating than over other formulated polyherbal clay facepack F1, F2, F3, F4, and F5. The formulated polyherbal clay facepack has good scope in the future by increasing natural ingredients for manufacturing more and safer natural remedies in the research and health of skin of public, society and nation. It was concluded that formulated polyherbal clay facepack was found to be of good quality.

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