



Research Article

HERBAL *LEPA* FORMULATION PREPARATION AND ITS EVALUATION

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ABSTRACT

The concept of beauty is as old as humanity itself. Herbs have been used for beautification from historic times and have also been described in Ayurvedic literature. Herbs as whole or herbal extracts have been used to treat the various ailments of the skin, hair, body odor, and overall beautification. The demand for Ayurveda in cosmetology is established because it is effective, cheaper, and long-lasting without any side effects. The present study aimed to formulate and evaluate herbal *Lepa* formulation. The dried powder of herbs was procured from the local market, sieved and mixed geometrically and evaluated for its organo-leptic and physio-chemical properties. *Lepa* was prepared by mixing powder with cream base to the desired consistency and leaving it overnight for before its application. *Lepa* formulations exhibited slight alkaline properties (pH 7.6), spreading ability (19.63cm²), and non-irritating properties. The *Lepa* formulation contains a variety of natural components in the appropriate and desired quantities for greater efficacy. The developed herbal *Lepa* formulation has shown satisfactory properties without the necessity of further moisturizing cream.

INTRODUCTION

The most ancient medical science known to humanity is the Ayurveda. It is also known as the art of life. The basic requirements for all living beings are health and longevity. *Bhaishajya* (Medicine) is among the four pillars of therapy and the treatment of the illness and its medical management. The *Bhaishajya* (Medicine) is administered to the patients in different forms and modulations according to the need. The branch of Ayurvedic Pharmaceutical Sciences has been modifying dosage forms in an effort to reduce dosage and increase compliance among patients.^[1]

Medicines that are in the form of a paste and applied externally (to the skin or mucosa) are called *Lepas*. *Lepa Kalpana* (powder formulation), even to this day, though a secondary formulation, it continues to be a very popular option due to its convenience for external use. *Lepa kalpana* is described both as *Chikitsa* for the treatment of skin diseases and a beauty regimen.

When one or more than one drug is ground into fine powder before being mixed with a suitable liquid to give a paste like consistency, the preparation is called a *Lepa*. The *Lepa* preparations are best known for '*Vrna Shodhana*' (wound cleaning) and '*Vrna ropana*' (wound healing).^[2,3,4]

Mukha Lepa is one of the oldest and most effective methods of beautification. *Mukha Lepa* is applied evenly all over the face and allowed to dry. After it dries, its cleansed using water and the skin is moisturized with oil or creams to improve its condition. Each type of skin requires a different type of *Mukha Lepas*. In addition to improving skin texture, *Lepas* also improve blood circulation within facial veins. The *Mukha Lepas* remedy can be used both to prevent and to treat any skin condition or problem.^[5,6]

The drawback with the current *Lepa* formulation is that, post its application the skin needs to be moisturized with oil or creams to prevent skin dryness. Thus, to address this limitation and to eliminate the step of skin moisturizing post-*Lepa* application, I have developed a new *Lepa* formulation prepared from natural herbs and evaluated for its effectiveness.

Herbs used for fairness of skin are as below.

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MATERIALS AND METHODS**Raw Material Procurement**

Herbs components as mentioned in the Table 1 has been purchased from the local Ayurvedic stores in Lucknow.

Table 1: Composition of Lepa

S. No	Ingredients	Botanical Name	Part Used	Form	Qty Taken (gm)
1	Matcha Tea	<i>Camellia sinensis</i>	Leaves	Powder	10
2	Green tea	<i>Camellia sinensis</i>	Leaves	Powder	20
3	Gulab	<i>Rosa hybrida</i>	Petals	Powder	2
4	Gendha	<i>Tagetes erecta</i>	Petals	Powder	2
5	Lemon Peel	<i>Citrus limon</i>	Peel	Powder	15
6	Dal-Chini	<i>Cinnamomum</i>	Bark	Powder	20
7	Saunf	<i>Foeniculum vulgare</i>	Seeds	Powder	20
8	Mulethi	<i>Glycyrrhiza glabra</i>	Rhizome	Powder	5
9	Chandan	<i>Santalum album</i>	Heartwood	Powder	1
10	Coffee	<i>Coffea arabica</i>	seeds	Powder	0.5
11	Elaichi	<i>Elettaria cardamomum</i>	seeds	Powder	1
12	Jaifal	<i>Myristica fragrans</i>	fruit	Powder	0.5
13	Neem	<i>Azadirachta indica</i>	Leaves	Powder	0.5
14	Tulsi	<i>Ocimum tenuiflorum</i>	Leaves	Powder	2
15	Kesar	<i>Crocus sativus</i>	Stigma	Powder	0.1
16	Adrak	<i>Zingiber officinale</i>	Rhizome	Powder	0.1
17	Pomegranate Seed	<i>Punica granatum</i>	Seeds	Powder	0.1
18	Mosambi Seed	<i>Citrus limetta</i>	Seeds	Powder	0.2
19	Lemon Oil	<i>Citrus limon</i>	Peel	Oil	0.25
20	Fennel Seed Oil	<i>Foeniculum vulgare</i>	Seeds	Oil	0.25
21	Lavender Oil	<i>Lavandula angustifolia</i>	Flower	Oil	0.25

Formulation of Lepa cream

Using #40 mesh, the powdered ingredients (Table 1) were sieved and accurately weighed, then mixed geometrically to ensure even mixing. In order to evaluate it, the product was placed in an airtight container. Lepa cream is prepared by mixing powder mixtures with cream base (beeswax, cocoa butter, shea butter, and aloe vera gel) in desired consistency of making soft cream. The prepared mixture was then placed in the refrigerator overnight before application.

**Powder****Cream Base****Lepa Cream****Figure 1: Powder, Cream Base and Lepa Cream (formulation)**

Skin Irritation Test

Skin irritation test was performed to determine skin sensitivity by applying *Lepa* and its routine structures to intact skin. Following application, the *Lepa* was kept in contact with intact skin for 15 minutes and then washed off with normal water. The process lasted for one week. Redness, rashes, burning sensations, itching, and other unfavorable reactions were observed on the skin. In addition, the *Lepa* formulation left the skin smooth with no signs of skin dryness normally associated with *Lepas*.

Pharmaceutical Study

A range of physio-chemical properties, such as colour, smell, consistency, texture, spreadability, loss on drying, ash value, and pH, were measured. The results are depicted in Table 2.

Spreadability and Spreading Coefficient

A wooden board with scale and two glass slides, one of which was attached to the wooden board, were used to determine the spreading coefficient (spreadability) of the formulas. Another was movable, attached to a cord that passed through a pulley and carried a weight. A sample of formulation (1g) was placed between two glass slides. Weight (100g) was placed on the upper slide and allowed to rest for 5 minutes to provide a uniform film of the formulation. The weight was removed, and the top slide was subjected to a pull obtained by attaching a 30g weight over the pulley. The time (sec) required for the slide to travel a pre-marked distance was recorded.^[7] Spreadability is calculated by using the following formula:

$$S = M \cdot L / T$$

The weight tied to the upper slide is M, the length of the glass slides is L, and the time taken to separate the slides is T.

Loss on Drying

A petri dish was weighed first and then 50g of a test sample was added. The weight of the petri dish with the added sample was also noted. Next, it was placed in a hot air oven set to 105°C. Based on the following formula, the dry loss was calculated:

$$\text{Loss on drying} = \text{Wt. before heating} - \text{Wt. after heating}$$

$$\% \text{ Loss on Drying} = \text{Loss on Drying} / \text{Wt. before Heating} * 100$$

RESULTS AND DISCUSSIONS

In order to add good cosmetic value to the powder, it was made of fine quality. The cream base has moisturizing, rich ingredients. The results of the evaluation parameters have been mentioned in table 2. Characterization of the formulation was done for its organoleptic, physiochemical properties, and skin irritation. The formulation has been tested for its colour, odor, touch, consistency, texture, spread ability, moisture content, and ash value. Additionally, the skin irritation test was also performed for the formulation.

Based on the analysis of pH and Spread ability, it was found that the pH of the *Lepa* formulation was 7.4 to 7.6, and the spreadability was 19.68cm³. Having a greasy texture, characteristic odor, soft consistency, and gritty texture, the formulation is lightweight. The total ash value was found to be 1%, and moisture content was 14.5gm (11.88%).

Table 2: Organoleptic characters of formulation

S.No	Parameters	Powder	Cream base	<i>Lepa</i> Formulation (powder + Cream Base)
1	Color	Yellowish - brown	Bright Yellow	Yellowish - Green
2	Odor	Characteristic	Characteristic	Characteristic
3	Touch	Coarse Powder	Greasy	Greasy
4	Consistency	Soft	Soft	Soft
5	Texture	Gritty	Smooth	Gritty
6	Spreadability	NA	28.26 cm ²	19.63 cm ²
7	Loss on drying	5.5 g	NA	14.5 g
8	% Loss	5%	NA	11.88%
9	Ash value % w/w	3.5%	NA	1%
12	pH (5% v/w Aqua solution)	7.4	7.4	7.6
13	Skin Irritation Test	NA	Non - irritable	Non - irritable

In addition, the formulation was found to be non-irritating, and it was found to improve the skin texture immediately after the initial application with no further extra need for moisturizing agents.

Herbs have been used for beautification from historic times and have also been described in Ayurvedic literature. Herbs as whole plants or herbal extracts have been used to treat various ailments related to skin, hair, body odor, and overall beautification.^[8] Ayurveda, or Ayurvedic medicine, is gaining popularity among the beauty industry because it is effective, cheaper, and long-lasting with no side effects. The herbal paste that is applied to the face to treat 'Mukhdushika' is called 'Mukha Lepa' (face pack). *Mukhdushika* is derived from two words, 'Mukha' meaning the face, and 'Dushika', meaning impurity causing pigmentation, pimples, acne, scars, marks, or any other ailments.^[9,10] In the present study, the new herbal *Lepa* has been formulated with added moisturizing constituents and evaluated for its effectiveness.

It was found that the formulation was easy to apply, easy to wash, and slightly alkaline pH compatible with normal skin physiology. There were no signs of skin dryness. The formulation has moisturizing constituents, which offers no need for extra moisturizing agents. Based on the results, the formulation proved suitable for the application, comply with the requirements, and do not cause irritation.

CONCLUSION

There is a drastic rise in demand for herbal formulations because the belief that they are safer and cause fewer side effects than synthetic formulations. A newly developed herbal *Lepa* product has exhibited good cosmetic properties without the need of moisturizing creams. As a result of its fairness herbal components, *Lepa* cream will facilitate skin beautification by reducing skin pigmentation, melasma, acne marks, and skin lightening.

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