

Formulation and Evaluation of Herbal Lip Scrub by Using Beetroot

Sakshi Gadge¹, Madhavi Yeskar¹, Sudhhanshu Maggidwar¹, Akanksha Patil^{*2}, Nitin Indurwade³

¹B. Pharm, Dr. R. G. Bhoyar Institute of Pharmaceutical Education & Research, Wardha, Maharashtra

²Assistant Professor, Dr. R. G. Bhoyar Institute of Pharmaceutical Education & Research, Wardha, Maharashtra

³Principal, Dr. R. G. Bhoyar Institute of Pharmaceutical Education & Research, Wardha, Maharashtra

ABSTRACT

The cosmetics product plays major role in human lifestyle. The continuous advances in cosmetics sometimes shows few side effects in human. Sometimes thus side effect is due to improper information of particular product or sometimes it is due to the hyperactive responses given by the body. To overcome such condition one of most convenient way is to use natural care products. The natural care products have no side effects. In our article, we used beetroot as the main ingredient in making herbal lip scrub. The herbal lip scrub provide nourishment to the lip and provides glow to lips. For the formulation of herbal lip scrub ingredients like almond scrub, brown sugar, orange peel powder, almond oil, aloe vera gel, coca butter, bees wax, honey, beetroot extract and other natural products. The evaluation of prepared herbal lip scrub was done by using physical appearance, determination of pH value, homogeneity test, skin irritation test, washability test and stability test.

Keywords: Beetroot, herbal lip scrub, natural cosmetics, side effects

INTRODUCTION

The definition of cosmetics under the law varies slightly between countries, but in general terms "cosmetics" means any article intended to be used by rubbing, spraying or an application similar to the human body for cleaning, beautifying, promoting attractiveness, altering the appearance of the human body. ^[1,2] The use of cosmetics can significantly improve appearance and self-confidence. With such a diversified population, India has recently seen a significant increase in the cosmetics market. However, concerns have been raised regarding the negative impacts related to the use of cosmetics in India due to the unregulated nature of the business and insufficient consumer consciousness. To overcome such things, the use of natural products is very important. ^[3] Lip cosmetics are one of the most used cosmetic products. The beauty and attractiveness of a person improves as lip cosmetics color the lips and protect them from the external environment. However, current lip care products not only

emphasize aesthetic value, but also have medicinal value added to the lips. ^[4] An lip exfoliating or scrub is a cosmetic product made of natural ingredients, typically herbs and other plant-based materials, designed to exfoliate and hydrate the lips. They are used to improve the texture and appearance of the lips, leaving them soft, smooth and rejuvenated. ^[5] The beet root is a tap root portion of the beet plant. It belongs to the *Amaranthaceae* family. It is used as a food product and natural color agent. The beet root has biological property that is antibacterial, diuretic, antipruritic, anticanogenic, antioxidant. It has medicinal value from the last 2000 years. The beet root is grown from *Beta vulgaris*. *Vulgaris* growth through the Asia, Europe, America. ^[6, 7]

MATERIALS AND METHODS:

Collection methods:

All the natural components were collected for herbal lip scrub namely as almond scrub, brown sugar,

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



orange peel powder, almond oil, coca butter, bees wax, alovera gel, honey, beetroot, sodium benzoate, vitamin Eoil, rose water. These products was collected from local market.

Formula:

Table 1: Quantity of ingredients used in herbal lip scrub

Sr. No.	Ingredients	Quantity
1.	Almond scrub	1.5 g
2.	Brown sugar	2.7 g
3.	Orange peel powder	0.35 g
4.	Almond oil	0.57 ml
5.	Coca butter	2.5 g
6.	Bees wax	1.0 g
7.	Alovera gel	0.3 g
8.	Honey	0.51 ml
9.	Beetroot extract	0.39 ml
10.	Sodium benzoate	0.05 g
11.	Vitamin E oil	0.15 ml
12.	Rose water	q.s.

Extraction methods:

The chopped beets was mixed by using grinder and then filtered through a clean cotton cloth. Then the obtained beetroot juice was used for study.

Preparation of beetroot extract:

The collected beetroot from local market was washed properly. After that, the beetroot peeled and chopped.



Figure 1: Beetroot extract

Preparation of alovera extract:

The alovera was properly washed and the thorn and green portion of the alovera leaves was removed. The

white, clear and fleshy portion was gathered for further use. Then blended with a blender to ensure there was no lumps in prepared extract of alovera.



Figure 2: Alovera extract

Formulation of herbal lip scrub of beetroot:

Alovera extract, honey, beetroot root extract, vitamin E oil and all the powdered ingredients such as almond

scrub, brown sugar powder, and orange peel powder was precisely weighed using a digital balance. All these ingredients was taken beaker and named as beaker 1.



Figure 3 : Beet root & alovera extract with other powdered ingredients (Beaker 1)

Oil phase ingredients was taken in beaker 2. The appropriate amounts of almond oil, cocoa butter, and

beeswax was measured and mixed well. The oil phase was heated upto 40 °C by using water bath.

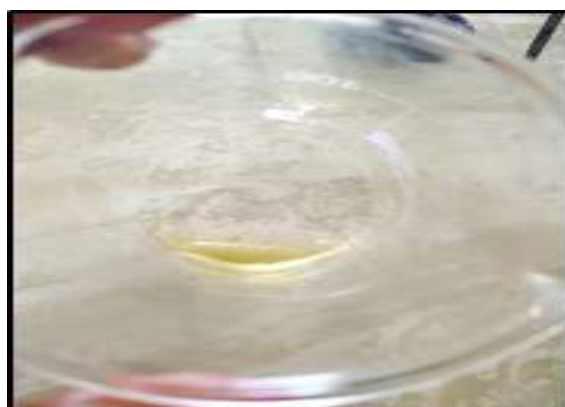


Figure 4: Oil phase ingredients (Beaker 2)

As the oil phase melts completely, powdered ingredients was added in wax phase. Then both the beaker ingredients was mixed properly. Preservative

and rose water was added after complete mixing. The prepared formulation was stored in a suitable container.



Figure 5: Prepared formulation of herbal lip scrub of beetroot

Evaluation of prepared formulation of herbal lip scrub of beetroot:

To assess the quality of the prepared formulation, a number of rigorous quality control tests were conducted. These included evaluations of conditioning performance, physicochemical studies, and visual inspections.

1. Physical appearance:

Texture, colour and odour characteristics of the prepared formulation was evaluated.

2. Determination of pH value:

The pH meter was used to measure the pH of a 10% v/v solution of prepared formulation in distilled water at room temperature.

3. Appearance and homogeneity:

Visual inspection was studied to assess the homogeneity and appearance of prepared formulation.

4. Skin irritation test:

The skin irritation test was assessed by applying the formulation to the skin and kept for ten minutes. After 10 min the washing was done and any rashes or itching on the skin was assessed by both visual and sensory examination.

5. Washability test:

The formulation was applied on the slide, then slide was healed with running tap water. It was considered to have good washability if it can be removed with a little rubbing.

6. Stability study:

For one-month period the lip scrub was kept at room temperature after being sealed with aluminium foil. Periodically scrub was checked for phase separation, colour, odour and appearance changes.

RESULTS:

All the evaluation parameters with results are as follows:

1. Physical appearance:

Sr. No.	Parameter	Result
1.	Color	Reddish pink
2.	Odor	Pleasant nutty odor
3.	Texture	Gritty

The physical attributes of the formulated lip scrub such as colour, smell and general appearance was assessed. The herbal mixture was responsible for the

scrub's appealing look, which was opaque and reddish pink in hue. Additionally, when orange peel powder was added, it had a lovely smell. Scrub seems slightly

grainy because of the presence of the abrasive agent almond.

Table 2: Physical parameters



Figure 6: Physical appearance test

2. Determination of pH value:

To make sure lip care products are safe and effective to use the pH testing is essential. Lip care products

should have a pH that is comparable to the lip's natural pH, which is between 4.5 and 5.5. It is discovered that the pH of the prepared scrub ranges from 4.0 to 4.13.



Figure 7: pH value of prepared lip scrub

3. Appearance and homogeneity:

Almond powder and brown sugar are two natural exfoliating ingredients was included in the lip scrub

formulation. The scrub's particles was dispersed evenly for efficient exfoliation. The product's glossiness was consistent and blended in with the rest of it.



Figure 8: Appearance and homogeneity**4. Skin irritation test:**

A tiny quantity of the prepared scrub was applied to the skin and it was left there for ten minutes. The treated area did not exhibit any irritation, redness,

itching, or inflammation during this period. These outcomes confirm that the scrub is safe to use.

**Figure 9: Skin irritation test****5. Washability test:**

After the washing under tap water, there was no traces of the lip scrub. Which indicates the product are safe to use and doesn't harm the lips.

**Figure 10: Washability test****6. Stability test:**

Parameter	Zero day	15 day	30 day
Physical Appearance	Unchanged	Unchanged	Slightly changed
pH	4.13 ± 0.05	4.00 ± 0.05	3.90 ± 0.05
Phase separation	No separation observed	No separation observed	No separation observed

Table 3: Stability test



Figure 11: Observations of stability test

DISCUSSION:

The current study focused on creating and testing a herbal lip scrub with beetroot extract as a main component. The natural pigmentation, antioxidant qualities, and nutritional advantages of beetroot (*Beta vulgaris*) are widely recognised. The goal was to create a solution that naturally nourishes and improves lip colour in addition to exfoliating. Natural exfoliants like sugar and salt which helps to remove dead skin cells and promote smoother lips was used in the preparation of formulation. In order to avoid dryness and cracking, carrier oils such as coconut and almond oil was used to provide nourishment and hydration. To ensure consistency and stability and to make application easier, beeswax was added. In order to give the lips a natural pink hue and antioxidant effects that shield them from oxidative stress, beetroot extract was included. Numerous physicochemical tests, such as pH, spreadability, stability, and organoleptic properties was performed on the prepared lip scrub. Because of the beetroot extract's inherent pigmentation, the product had a pleasing colour and texture. The formulation's pH was discovered to be within an acceptable range, which minimises the chance of irritation by matching the pH of lips naturally. While stability studies verified that the product retained its consistency, colour, and effectiveness over time, spreadability testing showed that the product applied smoothly. This herbal mixture stood out for its natural benefits when compared to commercial lip scrubs, which frequently contain artificial colourants and preservatives. This eco-friendly, skin-loving substitute is a great fit for the increasing desire for cleaner, more sustainable

skincare products as more people turn to organic beauty products.

CONCLUSION:

In this study, we developed a herbal lip scrub using botanical extracts that have been used for centuries. Its physicochemical properties was thoroughly evaluated using accepted techniques. After comparing the created scrub with a number of evaluation metrics, it was determined that it met the necessary characterisation requirements. Consequently, the resulting solution can be used as a scrub to keep lips healthy and radiant. The scrub demonstrated the best qualities one would anticipate from a high-end lip care product. Crucially, it was made without the use of harmful chemicals, offering a sustainable substitute for synthetic rivals.

REFERENCE

1. M. Surya and S. Gunasekaran. A Review on Recent Scenario of Cosmetics. International Journal of Pharmaceutical Sciences Review and Research. 68 (1), May - June 2021; Article No. 30, Pages: 190-197.
2. Sujit karpe, Shashikant Modekar, Avinash Bhende, Asad Patel, Anand Bhagwat, Aniket Bagde and Dhiraj More. GENERAL INTRODUCTION TO COSMETIC PRODUCTS. International Journal of Scientific Development and Research. (2024) Volume 9, Issue 1, 328 – 335.
3. Jeesa George, Adusumilli Pramod Kumar, Sabarish Sachithanandan J, Ranjan G, Yuvaraj SN, Naveen N Prabu, Rohith S. Use of Cosmetics and its adverse effects among adults in India: A

- Cross -Sectional Study. African Journal of Biomedical Research. (December 2024); 11970-11976.
4. P. Anitha, C. Ronald Darwin, D. Vasavi Devi, A. V. S. Madhulatha, G. Jaya Vasavi, V. Sarovar Reddy, Sanisetty Ashok, D. Jeslin, B. Bhargavi, Gummalla Vijayamma. Lip Cosmetics – A Formulator (OR) An innovator to Overcome a Challenge in Quest of Research with its Advances. Asian Journal of Pharmaceutics. (Jan-Mar 2024); 18 (1), 61 – 71.
 5. Ms. Shruti Saraf, Anjali Mistry, Pankaj Vanzara, Bhumi Patel, Hetvi Kachhiya. Formulation and Evaluation of Herbal Lip Exfoliator. International Journal of Pharmaceutical Research and Applications. (May-June 2024); Volume 9, Issue 3, pp: 81-84.
 6. Tom Clifford, Glyn Howatson, Daniel J. West and Emma J. Stevenson. The Potential Benefits of Red Beetroot Supplementation in Health and Disease. Nutrients. (2015); 7, 2801-2822.
 7. Shivani Chauhan, Kartik Chamoli and Shilpa Sharma. Beetroot - A review paper. Journal of Pharmacognosy and Phytochemistry. (2020); Sp 9 (2): 424-427.

HOW TO CITE: Sakshi Gadge, Madhavi Yeskar, Sudhhanshu Maggidwar, Akanksha Patil*, Nitin Indurwade, Formulation and Evaluation of Herbal Lip Scrub by Using Beetroot, Int. J. Sci. R. Tech., 2025, 2 (5), 103-110. <https://doi.org/10.5281/zenodo.15331115>