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Research Paper

Formulation And Evaluation of Herbal Lip Scrub

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ABSTRACT

Herbal cosmetics have gained significant importance in recent years due to their safety, effectiveness, and minimal side effects compared to synthetic products. Lip scrubs play an important role in exfoliating dead skin cells, improving blood circulation, and enhancing the smoothness and softness of lips. In the present study, an attempt was made to formulate and evaluate herbal lip scrubs using natural ingredients. Three different formulations were prepared using beetroot powder, coconut oil, beeswax, aloe vera gel, honey, vitamin E & rose essence as key ingredients. Beetroot was selected for its natural colouring property and antioxidant activity. Each formulation was prepared in three different trials by varying the concentration of ingredients such as exfoliating agents, oils, and waxes in order to achieve optimum consistency, spread-ability, and stability. The prepared formulations were evaluated for various parameter. Among the prepared formulations, trial 4 showed better performance in terms of texture, ease of application, and overall acceptability. Beetroot lip scrub provided natural colour along with nourishment & was found suitable for sensitive lips. Thus, the present study concludes that herbal lip scrubs can be successfully formulated using natural ingredients and can serve as safe, effective, and economical alternatives to commercially available synthetic products

INTRODUCTION

Lips are one of the most delicate and sensitive parts of the human body and play an important role in facial appearance, communication, and expression. Unlike the skin on other parts of the body, lips do not contain sebaceous (oil) glands and have a very thin layer of skin. Lip scrubs are

cosmetic preparations designed specifically for this purpose. They help in gently exfoliating the lips, improving blood circulation, and enhancing the overall texture and appearance. Lip scrubs generally contain exfoliating agents, moisturizing agents, and binding agents. Exfoliating agents such as sugar, or natural powders help in removing dead skin cells. Moisturizing agents like oils and

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butters provide hydration and nourishment, while binding agents help in maintaining the consistency and stability of the formulation. Regular use of lip scrubs results in softer, smoother, and healthier lips. Key formulation principles include:

- Exfoliation: Achieved using mild abrasives such as sugar, Beetroot powder.
- Moisturization: Provided by oils (coconut, almond, jojoba), butters (shea, cocoa), and humectants (honey, glycerine).
- Protection: Natural waxes (beeswax,) act as binders and protective barriers.
- Therapeutic/Herbal Additives: Plant extracts like beetroot, aloe vera, turmeric, or green tea impart antioxidant, anti-inflammatory, and colouring properties. ^(1,2)

Literature Review –

- According to various studies, an ideal lip scrub formulation should contain exfoliating agents, emollients, humectants, and binding agents. Exfoliating agents play a crucial role in removing dead skin cells. Natural exfoliants such as sugar, and plant-based powders are widely used due to their gentle action and effectiveness. Emollients such as oils and butters help in softening and moisturizing the lips, while humectants help in retaining moisture. Binding agents are responsible for maintaining the consistency and stability of the formulation.
- Beetroot is another important natural ingredient used in cosmetic preparations. It is rich in antioxidants, vitamins, and minerals that help in nourishing and protecting the skin. Beetroot is also known for its natural colouring property, which provides a pinkish tint to the lips. Research studies have indicated that Beetroot based formulations not only improve lip colour but also provide hydration and protection against environmental damage.
- In addition to exfoliating agents, moisturizing ingredients such as honey, aloe vera, coconut oil, and shea butter play a significant role in lip scrub

formulations. Honey acts as a natural humectant, attracting and retaining moisture, thereby preventing dryness. Aloe vera possesses soothing, healing, and anti-inflammatory properties that help in reducing irritation and promoting skin repair. Coconut oil and shea butter act as emollients, providing deep hydration and improving the softness and elasticity of lips. ^(3,4,5)

Aim –

To formulate and evaluate herbal lip scrub using beetroot.

Objective –

- To formulate herbal lip scrub.
- To prepare different trial formulations.
- To evaluate the prepared formulations.
- To provide moisturization to lips.
- To develop safe and economical product.

MATERIALS AND METHODS

Formulation steps –

Coconut Oil and beeswax were accurately weighed and melted using a heating metal at 60 degrees Celsius until a clear liquid was obtained. Aloe Vera gel and honey were added with continuous stirring. The required active ingredient beetroot powder was added and mixed thoroughly. Brown sugar was added and mixed uniformly to enhance exfoliation. Let the mixture cool up to 40-degree Celsius Vitamin E and Rose Essence as the flavouring were added. The mixture was stirred continuously to obtain a homogeneous consistency and transferred into suitable containers and labelled. ⁽⁶⁾



Formula –

Sr. No.	Ingredient	F1	F2	F3	F4	Role of ingredient
1	Beetroot powder	0.5 gm	1 gm	1.5 gm	2 gm	API
2	Brown sugar	7 gm	8 gm	9 gm	9.5 gm	Exfoliating agent
3	Bees wax	2 gm	2 gm	2 gm	2 gm	Binding agent
4	Coconut oil	3 gm	3 gm	3 gm	3 gm	Moisturizer
5	Aloe vera gel	2 gm	2 gm	2 gm	2 gm	Soothing agent
6	Honey	2 gm	2 gm	2 gm	2 gm	Humectant
7	Vit E	0.5 gm	0.5 gm	0.5 gm	0.5 gm	Antioxidant
8	Rose oil	0.5 gm	0.5 gm	0.5 gm	0.5 gm	Flavouring agent

Evaluation parameters (7,8,9,10) –**1. Physical Appearance**

Method: The formulations were visually observed for colour, odour, texture, and consistency.

2. pH Determination

Method: A small amount of lip scrub was mixed with distilled water. The pH paper was dipped into this solution and the colour change was compared with the standard pH scale. Note: The pH of lips is slightly different from skin. While skin has a pH range of 4.7–5.5, the lip surface (vermillion) has a slightly higher pH around 5.0–5.2. Therefore, the formulation should have a pH close to lip pH to avoid irritation.

3. Homogeneity

Method: The formulation was checked visually and by touch for uniformity and smoothness.

4. Spread-ability

Method: A small amount of the formulation was placed between two glass slides. A certain weight was placed on the upper slide and the formulation was allowed to spread. The ease of spreading was observed.

5. Washability

Method: A small amount of the formulation was applied on a back side of palm and washed under running tap water to observe ease of removal.

6. Patch Test

Method: A small amount of the formulation was applied on the inner side of the forearm and observed for 10–15 minutes for any redness, irritation, or allergic reaction.

RESULT

Table 1.0 – evaluation Parameters.

Sr. No.	Parameters	F1	F2	F3	F4
1	Colour	Burgandi	Burgandi	Burgandi	Burgandi
2	Odour	Rose like	Rose like	Rose like	Rose like
3	Consistency	Semisolid	Semisolid	Semisolid	Semisolid
4	Homogeneity	Uniform	Uniform	Uniform	Uniform
5	pH	5.5	5.3	5.1	5.0
6	Spread-ability	Cannot easily spread	Too smooth to spread	Easily spread	More likely to spread
7	Washability	Washable	Washable	Washable	Easily washable
8	Grittiness	Slightly rough to use	No grittiness	Slightly gritty	Best for grittiness
9	Skin irritation/ Patch test	Slightly irritating	Negligible irritation	No irritation	No irritation

CONCLUSION

The present study successfully formulated and evaluated herbal lip scrub using natural ingredient such as beetroot. The prepared F4 formulation showed satisfactory characteristics in terms of appearance, pH, homogeneity, spread-ability, washability, and stability. Among all the trials, 4th trial formulation was found to be optimized as they exhibited better consistency, good spread-ability, and acceptable pH range. The beetroot lip scrub provided natural colour and nourishment. The use of natural ingredient improved the safety, effectiveness, and acceptability of the formulations. No irritation was observed, indicating that the prepared lip scrub is safe for application.

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