



PREPARATION & EVALUATION OF LIP LIGHTENING SCRUB BY USING HERBAL ENTITIES

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Abstract: This study aimed to Prepare and Evaluate a herbal lip lightening Cosmetic(Scrub, Balm) to meet the growing demand for natural skincare products. A "scrub" is a word use for a skin-exfoliating cosmetic product. Exfoliation is a process that gets rid of dead skin cells from the skin's surface, revealing smoother, more youthful skin beneath. This procedure can help enhance the skin's texture and look. Scrubs usually consist of a base of oils, creams, or gels with abrasive particles suspended in it, which include sugar, salt, coffee grounds, or crushed nut shells. Using herbal extracts known for their skin-lightening properties, the formulation included Walnut Powder, Orange Peel Powder, Almond oil, honey and Beetroot Extract. Residue of Orange Fruit (peel of Orange) act as potential natural resources of antioxidants, which comprise a considerable quantity of ascorbic acid. Orange peel has complexes such as catechol, cyclohexane, coumarin, acetic acid, stigmaterol and vitamin E which are accountable for its antioxidant Activity. These can help in Lightening the dull spots and expel dry textured patches from the skin. Beet root extract was prepared by blending and filtering it. The formulation process involved melting oils and waxes at 70°C, mixing them with the Powdered ingredients. The resulting balm addresses lip pigmentation and uneven tone with natural ingredients. Our approach included a thorough examination of our Scrub's physical characteristics, stability, and consistency.

Keyword : Lip Lightening Scrub, Beet root, Orange Peel Powder.

1.1 Introduction

Herbal Lip Scrub represent a welcome diversion from the norm in a time when personal care products are primarily made of synthetic chemicals. Concerns about the harmful consequences of synthetic chemicals included in conventional scrubs are causing people to turn more and more towards herbal and organic solutions. Drawing inspiration from ancient traditions of herbal medicine, these Scrub leverage the therapeutic properties of plants and botanical extracts to cleanse, nourish, and rejuvenate the Lips . Products for herbal lip care are designed to be kind to the lips. The Herbal Lip Lightening Scrub can help reduce lip darkness caused by external factors such as smoking, dehydration or sun exposure and bring back you natural lip colour . It effectively removes dead skin and helps rejuvenate lips. They often eliminate common irritants such as parabens, sulphates , and artificial perfumes, making them suited for persons with sensitive skin or those prone to allergies. This is in contrast to traditional products, which could have various additions for texture, scent, or preservation. These lip Scrubs uses eco-friendly packaging and is made from renewable resources, demonstrating a dedication to reducing their negative effects on the environment. Ingredients like Walnut, Orange peel reside etc are Biodegradable Promising its Environment friendly nature. Conventional products, on the other hand, could exacerbate environmental issues by using non-renewable resources and non-biodegradable packing materials. Herbal lip care also represents a comprehensive strategy for maintaining healthy lips. These products is designed to do more than just lighten pigmentation; it also moisturises, protects, and nourishes lips. These formulations contains ingredients like shea butter, Beeswax, and almond oil, which provide intense moisturization and support overall lip resiliency.

Orange Peel (*Citrus sinensis*) powder contains natural exfoliating agents that can help remove dead skin cells from the lips, revealing smoother and softer skin underneath. Abundant in vitamin C and antioxidants, which can help brighten the lips and reduce pigmentation over time. The natural antibacterial properties of orange peel powder can help cleanse the lips and prevent infections or breakouts. Walnut (*Juglans Regia*) (*Juglandaceae* family) Shell Powder used for its natural Exfoliant properties . Honey is a viscid secretion stored in honeycombs by many bee species, including *Apis mellifera*, *Apis dorsata*, and *Apis florea*. It is a natural moisturiser and humectant that helps retain moisture on the skin . It contains proteins that permit dampness to enter profoundly into the skin, bringing much-needed hydration to the more profound layers. This can result in milder, plumper skin that's normally brilliant all day long. Honey works Rapidly compare to many antibiotics as it gets easily absorbed into the blood stream. Beta vulgaris (beet root) is a biennial herb used as Natural Colourant Because of the presence of betacyanin's . It Offers antioxidant benefits due to phytochemical compounds, ascorbic acid, carotenoid, phenolic acid, and flavonoids. The Carrier used for the Scrub includes Shea butter; a natural fat that is derived from the nuts of the Shea tree (*Vitellaria paradoxa*) and Bees wax ; anti-allergenic, anti-inflammatory, anti-oxidant, anti-bacterial and germicidal. These qualities make beeswax an extremely stable basic component, increasing the product's life.

Examining the unique benefits of Orange peel Powder, Walnut^[2], and Beetroot, Honey, Brown Sugar^[9] we learn how each component enhances the effectiveness of herbal Lip Scrub. We learn about the rich history and solid scientific basis that underpin these natural substances, from conventional preparation techniques to cutting-edge formulations that maximise the potential of these botanical ingredients.

Mechanism of Lip Scrub : Lips needs proper nourishment and hydration as it lacks oil gland and also is the only part in our body that lack pores. Chapped lips are the result of dry broken skin on your lips due to cold or dry climate, sun introduction, habitually licking your lips or lack of hydration. Cosmeceuticals Products like lip balms, lip oils, lip masks, lip scrubs Helps maintain the Nourishment of Lips. Lip Scrub have granular or abrasive particles suspended in a moisturizing base. Dead skin cells and rough spots are physically removed from the lips' surface by the abrasive particles present in the lip scrub. The texture and smoothness of the lips are enhanced by this procedure. Smoothness and Hydration is also Achieved by the Emollient and Humectant Present in the Formulation. The technique of gently massaging the lip scrub 19 into the lips promotes blood flow to the area. Improved circulation can make lips look healthier and gradually improve their natural colour. Also the lips scrub contain ingredients which have antibacterial property which helps to prevent infection if lips become crack. E.g. Honey.

2.1 Material and Method

Table No. 1 Raw material Collection

Sr.no.	Name of the Ingredient	Manufacturer
1	Almond Oil	Bajaj Almond drops®
2	Shea Butter	Veda oils
3	Honey	Dabur
4	Orange	Local Market
5	Brown Sugar	Local Market

2.2 Preparation of core material

Orange peel powder. Orange Peel was Dried under direct Sunlight For Few Days (approx. 3 days) until they Are completely Dried and Moisture free. Then powder was prepared by grinding them. Powder was Passed Through Mesh 60 to Gain uniform size.

Preparation of Beetroot Extract Washed beet roots were peeled and chopped. The chopped beets were well mixed using grinder and then filtered through a clean cotton cloth. The extracted beetroot juice was used.

Preparation of Alovera Extract. All the Thorn and Green Portion of Leaves was removed. The white, Clear, Fleshy Section of the Leaves Were Collected. White Section was Blended using Blender to make Sure no Lumps are Present. Save in Refrigerator (40 to 50 Celsius)

2.3 Formula Table

Table No. 2 Formula Table

Sr. No.	Ingredients	Percent use	Properties
1	Walnut scrub	15- 30 %	Exfoliator
2	Brown sugar	39.7 %	Exfoliator
3	Orange peel	3.7 %	Bleaching agent (Lip Lightening Agent)
4	Almond Oil	3.7 %	Bleaching agent
5	Shea butter	14.5 %	Moisturizer (humectant)
6	Bees wax	5.00 %	Wax
7	Alovera gel	2.00 %	Moisturizer
8	Honey 11	8.00 %	Moisturizer and Anti bacterial
9	Beet-root Extract	3.00 %	Colorant
10	Sodium benzoate	0.5-1.00 %	Preservative
11	Lecithin	1.5%	Anti oxidant

2.4 Formulation of Herbal lip Scrub

BEAKER 1: All the Powdered Ingredients like Walnut powder , Brown Sugar Powder, Orange peel Powder is weighed accurately using digital balance in beaker 1 along with Alovera extract, honey, Beet root Extract.

BEAKER 2 : Oil Phase is prepared. Almond Oil, shea butter, Bees wax is weighed in Proper quantity in Beaker 2. Oil Phase is heated at 40o Celsius Temperature Using Water Bath.

MIXING OF BOTH PHASE: As the Oil Phase Melts Completely . Powdered Ingredients are put in Wax Phase .Both the Phases are mixed properly. Preservative is added after complete mixing.

2.5 Optimization of Lip scrub

To get a lip Scrub having Proper Texture, Grittiness, Moisture, Uniformity; Five Different Batches of Formulation was Prepared to get the Best Composition. Best Formulation is based on the Optimum result of Organoleptic Evaluation, pH, Uniformity and ease of application. Five variations of the lip Scrub formulation were made to find out which were the best compositions are given in the table below:

Table No. 3 Optimization of final Batch

Ingredients	F1	F2	F3	F4	F5
Walnut	2.6gm	2gm	1.74gm	1.5gm	1.5gm
Brown sugar	3.87gm	3.2gm	2.7gm	2.7gm	2.7gm
Orange Peel	0.37gm	0.35gm	0.35gm	0.35gm	0.35gm
Almond Oil	0.35ml	0.37ml	0.39ml	0.63ml	0.63ml
Shea Butter	1.35gm	2.45gm	2.45gm	2.45gm	2.95gm
Bees Wax	0.3gm	0.5gm	0.5gm	0.5gm	0.5gm
Alovera Gel	0.2gm	0.2gm	0.3gm	0.3gm	0.3gm
Honey	0.7ml	0.7ml	0.8ml	0.8ml	0.8ml
Beet root Extract	0.3ml	0.4ml	0.39ml	0.39ml	0.39ml
Sodium benzoate	0.04gm	0.05gm	0.05gm	0.05gm	0.05gm
Lecithin	0.15gm	0.15gm	0.15gm	0.15gm	0.15gm

2.6 INFERENCE

1) After preparation of the first batch (F1), it was discovered that the formulation had dried and lumps were formed the next day of Storage, implying that the amount of humectant was less. Hence 2nd Batch (F2) was prepared with an aim to maintain the Moisture Content of the Product for longer duration by increasing the humectant Quantity.

2) 2nd batch (F2) was formulated and the issue noted in the Former batch (F1) was resolved successfully. Amount of Shea Butter (humectant) was increased to optimum Quantity were it did not dried the formulation. However, In 2nd batch (F2) it was seen that the size of powdered ingredients (walnut shell, orange peel, brown sugar) was large (i.e. Grittiness) and therefore was felt harsh on skin.

3) With the Aim to overcome the problem observed in 2nd batch (F2) , 3rd Batch(F3) was Prepared. Prior to preparation of 3rd Batch all the powdered ingredient were passed through the Mesh. Walnut shell powder was passed through Mesh No. 60 and was retained on Mesh No. 80. Brown sugar powder and Orange Peel powder were passed Through Sieve No. 60. After passing through their Respective Sieve the powder was used in preparation of formulation. Thus, Problem of Grittiness was Solved.

4) Nevertheless, Stickiness of 3rd batch (F3) was more Which was Concluded to be the Result of Higher Quantity of Brown Sugar. Subsequently, 4th Batch (F4) was made by Adjusting the Sugar Quantity to Avoid Stickiness.

5) A 5th Batch (F5) was made by Putting Together all the changes made so Far. Evaluation on the Batch Was done. The Result of all Evaluation Parameters (Organoleptic Test, pH, Uniformity, Spreadability) of 5th Batch (F5) was noted and concluded to be successful Batch.

2.7 All the Evaluation Parameters with Results are discussed below.^[8]

A variety of stringent quality control tests were performed to evaluate the generated formulations' quality. These included visual inspections, physicochemical investigations, and assessments of conditioning performance.

2.7.1 Physical appearance

The prepared formulation underwent evaluations for Texture, color, and odor characteristics.

2.7.2 Determination of pH

The pH of a 10% v/v solution in distilled water was determined using a pH meter (Mi 151, Martini Instruments) at room temperature in Duplicate.

2.7.3 Appearance and Homogeneity

Visual inspection was used to evaluate appearance and homogeneity.

2.7.4 Skin Irritation Test

Skin Irritation Test was evaluated by applying the Formulation on skin and left for 10 min, after 10 minutes of washing observe any itching, rashes on skin by sensory and visual inspection.

2.7.5 Washability Test

Formulation is spread on Slide & Slide is healed under Running Tap water to Check the Washability of Formulation If it gets Removed easily with Sligh Rubbing then formulation is said to have good washability

2.7.6 Stability Study

Lip Scrub was Closed with aluminium foil and stored at room temperature (25°C / 60% RH) for a period of 1 months. Scrub was periodically examined for changes in appearance, colour, odour, and phase separation.

2.8 Result and Discussion

2.8.1 Physical appearance

Lip Cosmetics, like all cosmetic products, are expected to possess visually appealing physical attributes. The formulated Lip Scrub underwent evaluation for their physical characteristics, including color, odour, and overall appearance. The resulting Scrub exhibited a pleasing appearance, being opaque and brownish Orange in color, attributed to the herbal Mixture. Additionally, it emitted a pleasant odour, owing to the inclusion of Orange Peel Powder. Due to Presence of Abrasive Agent Walnut, Scrub Appears Slightly Gritty.

2.8.2 Determination of pH

pH testing is crucial for lip care cosmetics to ensure they are safe and effective for use. The pH of lip care products should be close to the natural pH of the lips, which is around 4.5 to 5.5. Products with a pH too far from this range can cause irritation or dryness. pH of the Formulated Scrub is Found to be 4.6-4.8 .

2.8.3 Appearance and Homogenicity

Formulated lip scrub contains exfoliating particles like Walnut Powder and Brown sugar, Which are Natural Exfoliators. Powder was Passed through mesh 60. Particles was evenly distributed throughout the scrub for effective exfoliation. The Glossiness was Uniform and not Separated From the Rest of the Product.

2.8.4 Skin Irritation Test

A Small Amount of the formulated Scrub was administered to the skin and allowed to remain in contact for 1 hours. During this time, no irritation, redness, itching, or inflammation were seen in the treated area. These results affirm the safety of the scrub for use.

2.8.5 Washability Test

Washability testing for lip scrubs is essential to evaluate how well the product can be removed from the lips after use. Scrub was Evaluated for Following Parameters

Complete Removal: The lip scrub rinsed off completely, leaving no visible particles or film.

Smooth Feel: The lips Felt smooth and refreshed after rinsing, indicating effective exfoliation and cleansing.

No Residue: There was no residual stickiness, greasiness, or gritty texture left behind.

2.8.6 Stability Test

Table No. 4 Stability Study Result

Parameters	Zero day	15 Day	45 days
Physical Appearance	Unchanged	Unchanged	Unchanged
pH	4.7±0.05	4.8±0.05	4.7±0.05
Phase Separation	No Separation Observed	No Separation Observed	No Separation Observed

Table No. 5 Comparative Result With Marketed Formulation

Parameters	Marketed (Nicolips Scrub)	Formulated
Colour	Reddish Pink Brownish	Orange
Odour	No Odour	Orange
Texture	Slightly Gritty	Slightly Gritty
Skin Irritation Test	No Irritation	No Irritation
pH	4.8	4.75
Washability	Easily Washable	Easily Washable
Spreadability	Good	good

2.9 Conclusion For Lip Scrub

In this research, we innovated a herbal Lip Scrub employing traditionally utilized botanical extracts. Rigorous assessment of its physicochemical attributes was conducted employing standard methodologies. The prepared scrub was compared with various Evaluation parameters and found to be satisfied with all required characterization. As a result, the produced solution can be used as an effective scrub to maintain healthy and bright skin. The scrub exhibited optimal characteristics expected of a superior Quality Lip Care Product. Importantly, it was crafted without any detrimental chemicals, presenting a sustainable alternative to synthetic counterparts.

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