



formulation and evalution of herbal lip balm

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Abstract:

Herbal lip balms have emerged as a natural alternative to conventional lip care products, offering a blend of moisturizing, healing, and protective benefits derived from plant-based ingredients. These formulations aim to address common lip concerns such as dryness, chapping, and pigmentation, utilizing the therapeutic properties of herbs and natural oils. This abstract delves into the composition, benefits, and formulations of herbal lip balms, highlighting their role in modern skincare. The skin of the lips is delicate and prone to environmental damage, necessitating effective care. Traditional lip balms often contain synthetic chemicals and artificial colorants, which may pose risks of irritation or long-term adverse effects. In contrast, herbal lip balms leverage the natural properties of plant-based ingredients to nourish and protect the lips. These products align with the growing consumer preference for organic and eco-friendly skincare solutions.

Keywords: Herbal lip balm, natural ingredients, beeswax, cocoa butter, shea butter, almond oil, coconut oil, essential oils, antioxidant protection, sun protection.

INTRODUCTION

Essential cosmetics, lip balms are made to protect and moisturize the lips, which are especially susceptible to environmental elements including wind, cold, and dry air. Herbal lip balms, which use plant-based components to provide a gentler and more skin-friendly alternative to synthetic formulations, have gained popularity as a result of the movement toward natural and organic products. (1) The medicinal qualities of natural oils, waxes, and botanical extracts are harnessed by herbal lip balms. In addition to their emollient and moisturizing qualities, ingredients like beeswax, shea butter, coconut oil, and essential oils also offer advantageous qualities like antibacterial, anti-inflammatory, and antioxidant activities. These traits make herbal lip balms ideal for

sensitive skin and for those who desire a more natural routine of skin care. The process of making an herbal lip balm includes choosing the right ingredients that guarantee the stability, functionality, and sensory qualities of the final product. (2) Lip balm is a skin care product that is specifically made to moisturize, protect, and soothe the lips. It is most commonly employed to treat or prevent dry, chapped, and cracked lips, giving relief from environmental discomfort like wind, cold weather, or exposure to the sun. Lip balms contain a combination of natural oils, butters, and waxes, which combine to form a barrier that retains moisture and keeps lips soft and moisturized. Herbal lip balms are natural substitutes for traditional lip care products that provide moisturizing, protection, and nourishment to the lips. Herbal lip balms are made from plant-based ingredients, which are rich in therapeutic properties. (3) The increasing need for natural, chemical-free cosmetics has resulted in the popularity of herbal lip balms, as they are usually free from artificial fragrances, preservatives, and colours, thus being more skin-friendly.

Lip balms are cosmetic preparations designed to protect and moisturize the lips, which are susceptible to environmental factors such as dryness, chapping, and sun damage. Traditional lip balms often contain synthetic chemicals that may cause irritation or adverse reactions. In response to growing consumer demand for natural and safe alternatives, there has been a shift towards formulating lip balms using herbal and natural ingredients. (4)

Herbal lip balms are crafted using plant-based components like beeswax, essential oils, herbal extracts, and natural butters. These ingredients not only provide nourishment and protection but also offer therapeutic benefits such as anti-inflammatory, antioxidant, and healing properties. For instance, aloe vera and calendula are known for their soothing effects, while vitamin E acts as an antioxidant that helps in maintaining lip health. (5)

TYPES OF LIP BALM

There are 7 types of lip balms

1. Tinted Lip Balm: A lip balm applied to moisturize and colour the lips referred to as tinted. When one does not desire to have to wear a thick layer of lipstick, tinted lip balms are ideal substitutes. Tinted lip balm is used by users to moisturize the lips and also provide them with a stunning wash of colour. Simply apply the coloured lip balm on the lips to utilize it. (6)

2. Medicated Lip Balm: Medicated lip balms are most likely to be the least calming and irritating lip balms among the rest. This lip balm is often recommended by dermatologists in drug for chapped lips and other diseases concerning the lips. (7)

3. Flavoured Lip Balm: The flavoured lip balm is a type of lip balm which contains flavourings. Flavoured lip balms are lip balms which are infused with flavour like vanilla, mint, mango and numerous other fruity Flavors. This lip balm is formulated for moisturizing and is also supplemented with special Flavors to lure the users' taste buds and aroma.

4. Organic Lip Balm: Organic lip balm is a type of lip balm which contain organic or natural ingredients. Although there are other lip balms that contain chemical ingredients that might damage the lips and the skin, the organic lip balm typically consists of organic ingredients such as avocado oils, jojoba oils, beeswax, vitamin E, hemp, and cocoa butter. (8)

5. SPF Lip Balm: The SPF lip balm is a type of lip balm that have ingredients in them which safeguard the lips against the damaging effects of the Sun rays. (9) The SPF lip balm works as a sunscreen to guard the lips against the damage caused by the sun, burning, and even skin cancer. If the user is skin conscious and is trying to avoid the ill effects of the sun, then this lip balm is the ideal thing to apply on day's out.

6. Plumping Lip Balm: Plumping lip balm is a type of lip balm that not only hydrates the lips, but also makes the lips appear fuller. Plumping lip balms is designed to provide protection to the lips, yet simultaneously contains special ingredients to provide the lips with a fuller look. Plumping lip balm is needed by users who would like to get a plumper lip without performing any surgical procedure. (10)

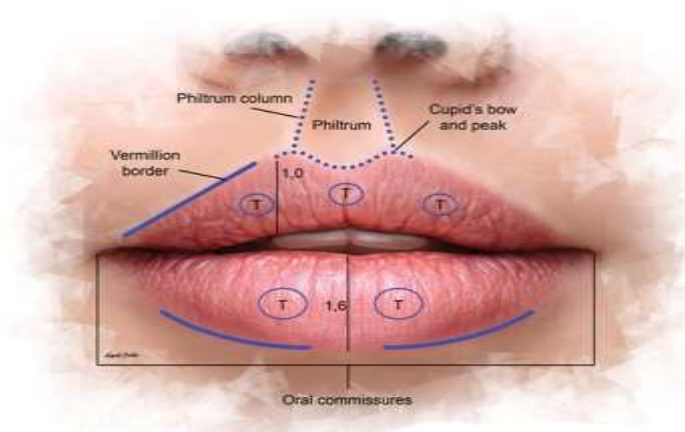


Figure 1: Lip

LIPS-RELATED ISSUES:

There are some common lip-related problems that some illnesses or issues may have an impact on.

Dry lips: Dry lips are the consequence of lip drying and a loss of moisture. This results from environmental exposure such as low temperatures, windy air, or especially excessive licking of the lips. Dry lips can be stiff, cracked, or even shed. (11)

Chapped lips: Lips that are chapped can be painful, uncomfortable, and sometimes bleed. Lips that are chapped are a more severe kind of dryness. Chapped lips can be caused by prolonged dryness, the sun, wind or bad weather.

Inflammation: An inflammation and cracking of the mouth corners are symptoms of the condition angular cheilitis. It may be caused by bacterial or yeast infections, nutritional deficiencies or constant exposure to wetness. (12)

Allergies: Certain people might develop allergies to certain ingredients used in food, cosmetics, or lip care. Symptoms of an allergy are swelling, itching, redness, and even blistering of the lips.

Discoloration of lips: A number of factors, ranging from sun exposure to smoking, some medicines or medical issues, may change the colour of your lips. Lips become darker in such a situation. (13)

ADVANTAGES OF NATURAL LIP BALM

1. Lip balms help to protect the natural health and beauty of the lips
2. Sun block lip balms are proved to prevent ultraviolet rays from hurting the lips.
3. They are not gender specific products and both men and women can use them. (14)
4. Lip balm products help to protect lips affected by cold sores, chapping and dryness.

MAIN ACTIVE INGREDIENT



Figure 2: Rose

Kingdom	Plantae
Class	Tracheophytes
Family	Rosaceae

Rose is an excellent additive to herbal lip balm, boasting soothing, moisturizing, and anti-inflammatory properties. It restores moisture to dry, chapped lips and stimulates softness. Rose essential oil offers a gentle, sweet scent, imparting a natural fragrance to the balm and offering antioxidant protection. (15) Rose petals, when infused into carrier oils such as coconut or olive, are used to make a rich, moisturizing base that soothes and protects the lips from environmental stressors. Full of vitamins and organic oils, a rose lip balm is perfect for keeping lips hydrated, healthy, and smooth, and is a great addition to your routine.

Uses

- Cure Depression & Anxiety
- Anti-inflammatory property
- Perfuming agent

ROSE INFUSED OIL



Figure 3: Rose Infused Oil

Here's how to create rose-infused oil in an easy, step-by-step way:

1. Gather Materials:

- Fresh or dried rose petals (organic, if possible).
- Carrier oil (olive oil, jojoba oil, or sweet almond oil, for example). (16)

2. Prepare the Rose Petals:

- If using fresh petals, rinse them gently and dry them off.
- If using dried petals, leave them as they are.

3. Fill a Jar with Rose Petals:

- Put the rose petals into a fresh glass jar, filling it halfway. (17)

4. Add the Carrier Oil:

- Pour the carrier oil over the rose petals so that they are fully covered.

5. Seal and Shake:

- Close the jar tightly with a lid and shake it to combine the petals and oil. (18)

6. Store in a Warm, Dark Place:

- Store the jar in a cupboard or other warm, dark location for 2-3 weeks.

7. Shake the Jar Regularly:

- Shake the jar softly every 1-2 days to facilitate the release of the rose essence into the oil.

8. Strain the Oil:

- Strain out the rose petals after 2-3 weeks using a fine mesh strainer or cheesecloth.(19)

9. Store the Infused Oil:

- Pour the strained rose-infused oil into a clean, dark glass bottle in order to lock in its strength.

BEETROOT POWDER:

Figure 4: beetroot powder

To prepare beetroot powder at home, do the following:

1. Select Fresh Beetroots:

- Use fresh and firm beetroots with no soft spots or damage. (20)

2. Wash and Peel:

- Wash the beetroots well to eliminate dirt. Use a vegetable peeler to peel the skin.
- **Slice the Beetroots:** Slice the beetroots into thin slices or chop them into small pieces. This ensures they dry quickly.

3. Dehydrate the Beetroot:

- Dehydrating with a Dehydrator: Put the beetroot slices on the dehydrator trays in a single layer, not overlapping. (15) Dehydrate at 125°F (52°C) for 8-12 hours until dry. Oven Drying: Set your oven to its lowest

temperature (about 150°F or 65°C). Put the beetroot slices on a baking sheet and dry in the oven for 2-4 hours, checking every now and then, until dry and crispy. (21)

4. Cool the Beetroot:

- Let the dried beetroot slices cool to room temperature before grinding.

5. Grind into Powder:

- Grind the dried beetroot slices using a blender, food processor, or spice grinder into a fine powder. (22)

6. Store the Powder:

- Transfer the beetroot powder into an airtight container. Store in a cool, dark place for freshness.

Vitamin E:



Figure5: vitamin E

Vitamin E is an organic moisturizer. By reducing the look of aging, vitamin E helps maintain the rough, velvety feel of the lips. (23) Dry, chapped lips may be relieved by vitamin E oil. (24) Applying vitamin E to parched lips promotes the rejuvenation and development of new cells because it simply does that. The thickness of vitamin E oil is another comfort for irritation. A product's colours may also provide hints regarding its freshness and quality. (25)

HOW TO PREPARE BEESWAX



Figure6: beeswax

1. Prepare the Wax

- Break the honeycomb or capping into smaller pieces to facilitate melting.
- If using a slow cooker, place the wax in the cooker and add water to cover the wax.
- If using a pot, fill it with water and add the wax pieces. (26)

2. Melt the Wax

- Heat the mixture over low heat.
- **Slow Cooker:** Set to low and allow the wax to melt slowly.
- **Stovetop:** Heat gently, stirring occasionally, until the wax is fully melted.
- Avoid boiling the mixture to prevent discoloration and loss of quality.

3. Strain the Melted Wax

- Place a strainer or cheesecloth over a clean container.
- Carefully pour the melted wax through the strainer to remove impurities.
- Allow the wax to cool and solidify. (27)

4. Cool and Solidify

- Once the wax has cooled and solidified, remove it from the container.
- If the wax has any remaining impurities, repeat the melting and straining process.

PREPRATION OF SHEA BUTTER



Figure7: Shea Butter

- **Melt the Shea Butter:** Gently melt the shea butter using a double boiler or microwave.
- **Cool Slightly:** Allow the melted butter to cool until it begins to solidify but is still soft. (28)
- **Whip the Butter:** Use a hand mixer to whip the butter until it becomes light and fluffy. (29)
- **Add Essential Oils:** Optional: Add a few drops of essential oils for fragrance.
- **Store Properly:** Transfer the whipped shea butter into clean, airtight containers. (30)

Some methods commonly used for preparing herbal lip balm:

1. Double Boiler Method
2. Microwave Method
3. Solar Infusion Method
4. Cold Infusion Method

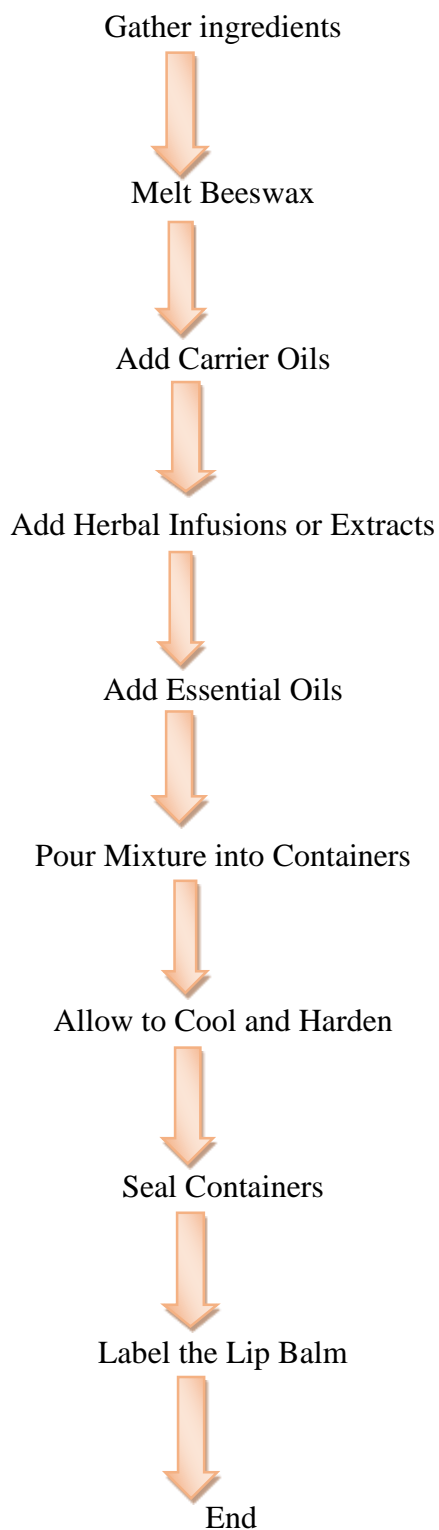
INGREDIENT AND USES

Sr.no	Ingredient	Uses
1	Beeswax	Hardness
2	Beetroot	Colouring agent
3	Shea butter	Moisturizing agent
4	Vitamin E	Antioxidant
5	Rose	Perfuming agent

Table no. 1: Ingredient and Uses

FORMULATION:

Here's a simple flow chart outlining the steps to formulate lip balm:



VALUATION PARAMETERS

1. **Organoleptic characters**-The lip balm was analysed for the simple organoleptic attributes like colour, smell, flavour and appearance. (31)

2. **Spread ability test**-The product was applied (at room temperature) multiple times on a glass slide to visually inspect the consistency in the creation of the protective layer and if the stick fragmented, deformed or cracked during application. (32)

3. **G - Good**: uniform, no fragmentation; ideal application, without deformation of the lip balm.

I - Intermediate: uniform; leaves few fragments; proper application; deformation of the lip balm. (33)

B - Bad: not uniform; leaves many fragments; difficult or improper application, severe deformation of the lip balm. (34)

4. **pH determination**- The pH experiment was performed by dissolving 1 gm of sample in 100 ml water. The pH was measured by using pH meter. (35)



Figure8: pH determines

5. **Stability studies**- The prepared lip balm was stored at room temperature (25.0 ± 3.0 °C), refrigeration (4 ± 2.0 °C) and oven temperature (40.0 ± 2.0 °C) for 30 days for accelerated stability studies. 30 days later, it was re-characterized for organoleptic properties, melting point, spreadability, and ph. (36)



Figure8: Stability

6. **Skin sensitivity test:** The process was applying the material as a skin patch, watching it for a half hour, and noting as the reply that was: N- No response R-Skin redness I-Itching or Irritancy. (37)

7. **Greasiness:** Greasiness test was examined to identify the amount of oil in the formulated lip balm. In this study, 4 g of lip balm was placed on the filter paper, and the sample was left at room temperature for 24 hours. (38)

8. **Colour:** The Konica Minolta CR-400 chroma meter was used to assess the colour analysis. Three indicators on this chroma meter contribute to the tested sample's brightness, redness, and yellowness. (40)

RESULTS:

All the evaluation tests were done the results were recorded in a form of table.

ORGANOLEPTIC PROPERTIES

Colour	Pink
Odour	Rose
Taste	Tasteless
Appearance	Smooth

MELTING POINT

Melting point of lip balm was found to be in the range of 63, which matches with the appropriate melting point of between 65 and 75.

PH TEST:

The pH of lip balm was near to neutral pH i.e. 5.5



Figure9: pH test

TEST OF SPREADABILITY:

Prepared lip balm was tested for its ability of spreading which initially has shown uniform application in room temperature.

DISCUSSION

Herbal lip balm is a natural product made from plant-based ingredients like shea butter, coconut oil, beeswax, and herbal extracts such as chamomile or tulsi. It is used to moisturize and heal dry or chapped lips without synthetic chemicals. Herbal lip balms are safe, eco-friendly, and suitable for sensitive skin. With rising awareness of natural skincare, these products are gaining popularity. They offer benefits like nourishment, healing, and protection, but may have a shorter shelf life compared to chemical-based options. Overall, herbal lip balms are a healthier, sustainable alternative in the growing natural cosmetics market.

CONCLUSION

Whether the formulation was kept at ambient temperature or in a refrigerator, it demonstrated the same stability behaviour. It was determined that the spreadability was "good" and that the organoleptic characteristics were stable. Storage under these conditions was deemed sufficient because the product's functionality was maintained. With a sufficient melting temperature (mean of 63°C), the lip balm made from natural ingredients passed the stability test. It was found that natural ingredients are safe to use in lip balm and are a superior alternative for the composition of lip balm. Excipients can be altered or combined in unusual ways to produce

a brand-new formulation with superior quality. The current research indicates that the formulation will not change.

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