FORMULATION AND EVALUATION OF HERBAL LIP BALM

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Abstract : The Presence research work is based on the formulation and evaluation of herbal lip balm by using natural herbal like bees wax, shea butter, vitamin E, Coconut oil. Coconut oil nourishes and softens lips naturally. The herbal lip balm which possess anti-inflammatory properties and heals chapped lips was formulated and evaluated. The lip balm was produced by homogeneous mixing. The lip balm, was characterized for physical stability, pH, melting point, spreadability. The pH was found to be 5.5 – 6.5 and the melting point was found to be 63ºC-65ºC. After carrying out stability tests at room temperature and in refrigerator, it was demonstrated that the manufactured lip balm was uniform in nature and could be applied flawlessly without any deformation.

KEYWORDS - LIP BALM, ACTIVE INGREDIENTS, SPREADABILITY.

Introduction :

Herbal lip balm is a natural cosmetic product used to protect, moisturize, and heal the lips using ingredients derived from plants and herbs. Unlike many commercial lip balms that may contain synthetic chemicals, herbal lip balms are made from natural substances such as herbal extracts, plant oils, natural waxes, and butters. These ingredients help to nourish the lips, prevent dryness, and provide long-lasting hydration.

Lips are very sensitive and can easily become dry, cracked, or damaged due to environmental factors such as sun exposure, cold weather, wind, and pollution. Herbal lip balms provide a protective layer on the lips that helps retain moisture and promote healing. Common ingredients used in herbal lip balms include beeswax, coconut oil, Coconut oil, shea butter, aloe vera, and herbal extracts like mint, rose, or calendula.

Because they are made from natural ingredients, herbal lip balms are generally safe, gentle on the skin, and suitable for regular use. They also reduce the risk of irritation and allergic reactions that may occur with chemical-based products. Due to these benefits, herbal lip balms have become increasingly popular in the cosmetic and personal care industry.[1]

Objectives of Herbal Lip Balm:

1. **To moisturize the lips** and prevent dryness and cracking.
2. **To protect the lips from environmental damage** such as sun, wind, and cold weather.
3. **To nourish the lips using natural herbal ingredients** like plant oils, extracts, and natural waxes.
4. **To maintain soft, smooth, and healthy lips.**
5. **To provide a natural and chemical-free alternative** to synthetic lip care products.
6. **To promote healing of chapped or damaged lips.**
7. **To improve the appearance of lips** by keeping them hydrated and healthy.

Advantages of Herbal Lip Balm

1. **Natural ingredients:** Made from herbal and plant-based ingredients, so it is safer for the lips.
2. **Moisturizes lips:** Helps keep lips soft, smooth, and well hydrated.
3. **Heals cracked lips:** Helps in healing dry, chapped, and damaged lips.
4. **Chemical-free:** Does not contain harmful synthetic chemicals or artificial additives.
5. **Nourishes the lips:** Provides essential nutrients from natural oils and herbal extracts.
6. **Less side effects:** Gentle on the skin and reduces the risk of irritation or allergies.
7. **Environmental friendly:** Uses natural materials that are biodegradable and eco-friendly.
8. **Suitable for regular use:** Safe to use daily for maintaining healthy lips.

Anatomy of Lip:

The lips are soft, movable structures located at the opening of the mouth. They play an important role in **speech, facial expression, eating, and protection of the oral cavity**. The structure of the lips is made up of skin, muscles, nerves, and blood vessels.

Main Parts of the Lip

1. **Skin (Outer layer)**
   - The outer surface of the lips is covered by thin skin.
   - It protects the lips from external factors such as dust, heat, and cold.
2. **Vermilion Border**
   - The reddish area between the skin and the inner mucous membrane.
   - This part gives the lips their red color because of many blood vessels and very thin skin.
3. **Mucous Membrane (Inner layer)**
   - The inner side of the lips that faces the mouth.
   - It is soft, moist, and helps in keeping the mouth lubricated.
4. **Muscle Layer**
   - The main muscle of the lips is the **Orbicularis oris**.
   - It helps in movements of the lips such as speaking, smiling, and closing the mouth.
5. **Blood Vessels and Nerves**
   - Lips have a rich supply of blood vessels, which gives them their pink or red color.
   - Nerves provide sensitivity, allowing the lips to feel touch, temperature, and pain.

Function of Lips

- Help in **speech and pronunciation**

- Assist in **eating and drinking**
- Provide **facial expressions** like smiling or frowning
- Protect the **oral cavity**[2-4]

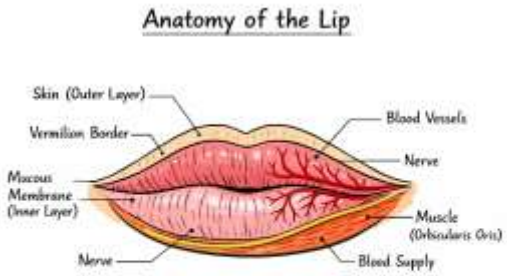

fig 1 : anatomy of lip

Experimentation :

Active Ingredient : Coconut oil is a natural oil extracted from almonds and is widely used in herbal cosmetic products. It is an important **active ingredient** in herbal lip balms because of its moisturizing, nourishing, and healing properties.

Fig 2 : Coconut oil

Properties

1. **Rich in Vitamin E** – Helps protect and repair dry or damaged lips.
2. **Deep moisturizing** – Keeps lips soft, smooth, and hydrated.
3. **Nourishing effect** – Provides essential nutrients and fatty acids to the lips.
4. **Healing property** – Helps in healing chapped and cracked lips.
5. **Antioxidant property** – Protects lips from environmental damage.[5]

Equipment :

1. Water Bath
2. China Dish

3. Tripod Stand
4. Filter Paper
5. Glass Slide
6. Beaker
7. Stirrer

Raw Material :

Collection and extraction: All the medicinal plants and herbs are selected for herbal lip balm for lip moisturizetion are Coconut oil, vitamin E, shea butter , These materials are collected from local market.

Formulation :

Table 1 : Formulation

Sr. No	**Ingredients**	**Biological Action**	**Amount used in the preparation**
1.	Bees wax	Base	4 g
2.	Shea Butter	Humectant	2.5 g
3.	Vitamin E	Preservative	0.15 ml
4.	Cocounut Oil	Anti oxidant	0.5 ml
5.	Menthol	Cooling and Soothing effect	0.2 ml
6.	Lavender Essential oil	Sweet,herbaceous aroma	0.2 ml

Preparation

1. A water bath is kept on the burner and is filled with water for boiling.

2. Bees wax filled in china dish is kept on the boiling water.

3. The beeswax is heated till it melts properly.

4. To the molten beeswax, shea butter and vitamin E are added and is made homogeneous with slow stirring with glass rod.

5. In the mixture Coconut oil is added and mixed properly.

6. After homogeneous mixture is obtained, colouring agent, menthol and perfume is added.

7. The mixture is poured in the container.

8. Then the mixture is cooled in the ice bath or dried in the sunlight[6-7].

Evaluation of Lip Balm :

1. **Organoleptic Properties :** The lip balm was studied for the basic organoleptic characters such as colour, odour, taste and appearance.
2. **Melting Point:** For melting point, the sample of lip balm was taken in a glass capillary whose one end was sealed by flame. The capillary containing drug was dipped in liquid paraffin inside the melting point apparatus which was equipped with magnetic stirring facility. Melting was determined visually, and melting point was reported.
3. **Test of spreadability:** The product was applied (at room temperature) repeatedly onto a glass slide to visually observe the uniformity in the formation of the protective layer and whether the stick fragmented, deformed or broke during application.
4. **pH measurement :** The pH study was carried out by dissolving 1 gm of sample into 100 ml water. The pH measurement was done using pH paper.
5. **Stability studies :** Prepared lip balm was placed for accelerated stability studies at room temperature (25.0 ± 3.0 ºC), refrigeration (4± 2.0 ºC) and oven temperature (40.0 ± 2.0 ºC) for 30 days. After 30 days, it was again characterized for organoleptic properties, melting point, spreadability and pH.[8]

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

1. Organoleptic properties :

Table 2 : Organoleptic Characteristics

Colour	Lavender
Odour	Sweet
Taste	Tasteless
Appearance	Smooth

2. **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.
3. **pH test**: The pH of lip balm was near to neutral pH i.e 5.5.
4. **Test of spreadability:** Prepared lip balm was tested for its ability of spreading which initially has shown uniform application in room temperature.

Discussion: The evaluation of the lip balm's organoleptic attributes, including color, odor, taste, and appearance, ensures that the product will be aesthetically and sensually appealing to consumers. A satisfying user experience is facilitated by positive organoleptic characteristics. The melting point of the lip balm formulation was shown to be within the allowable range, indicating that it can withstand typical storage conditions without melting or changing its texture. This is required to maintain the lip balm's stability throughout storage and transportation. The spreadability test gauges how smoothly and consistently the lip balm may be applied. The high spreadability of the lip balm suggests that it may be applied quickly and easily

to the lips, creating a protective barrier that is free from distortion or fragmentation.

Conclusion: Whether the formulation was kept at ambient temperature or in a refrigerator, it demonstrated the same stability behavior. 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.

References:

1. Formulation and evaluation of lip balm by using honey and sesame oil to lighten the dark lips, Nishigandha Waykule*, Prachet Bagewadikar and Somasharan Kale, World Journal of Pharmaceutical Research, Volume 11, Issue 6, 710-722, ISSN 2277– 7105.
2. Mayuri Kadu, Dr. Suruchi Vishwasrao, Dr. Sonia Singh; Review on Natural Lip Balm.
3. International Journal of Research in Cosmetic Science, 03/08/2014, 2015; 5(1): 01-03.
4. M.S. Balsam, E. Sagarin, Cosmetics science and technology, Second ed. Wiley Interscience Publication, NY, USA, 2008; 3: 209-512.
5. https://roxiecosmetics.co.uk/blogs/beauty/lip-balm-type.
6. https://en.wikipedia.org/wiki/Roserose description, species, images, & facts | Britannica". www.britannica.com. Retrieved 2023-02-24.
7. Coconut oil: ornamental as well as medicinal plant Dr. Savita Chahar Lecturer Dept. Of Botany Govt. Meera Girls College Udaipur (Raj.) Quest Journals Journal of Research in Agriculture and Animal Science Volume 4 ~ Issue 1 (2016) pp: 08-10 ISSN(Online) : 2321-9459.
8. Preparation and evaluation of Herbal lip balm Sravanthi Mulagada, Sridivya Penki, Devi Podilapu,Gopi Priya Pothala, Praveen Bandi Assistant professor, Department of pharmaceutical technology StudentBachelor of Pharmacy St.Ann's college of pharmacy, cantonment, Vizianagaram,- 535003,Andhra Pradesh, India., International Journal of Creative Research Thoughts, ISSN: 2320-2882.