

**FORMULATION OF HERBAL LIPBALM CONTAINING BANANA PEEL, PAPAYA AND ALOEVERTA EXTRACT FOR MOISTURISING LIPS**

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**ABSTRACT**

Lip balm formulations are most widely used to enhance the beauty of lips and add glamour touch to the makeup. This study was aimed to formulate and evaluate herbal lip balm containing banana peel, papaya and aloeverta extract. Beeswax, Banana peel, Papaya, aloeverta extract, glycerol Melted together in Chinadish A on Water bath. Cocoa butter, Vitamin E Melted together in China dish B on Water bath. After melting, china dish B is Poured into china dish A and mixed together to obtain homogeneous mixture Homogeneous Preparation was poured into balm stick mould and was kept in ice bath and allowed to solidify. After removing it from the mould, sticks were kept at refrigerator. those products were subjected to tests such as physical appearance, melting point, spreadability, pH determination, stability test. The prepared Herbal lipalm was Pale yellow in color and had characteristic pleasant odor of Rose oil. Melting point of lip balm was found to be in the range of range 68 o6 to 69 oC. Test of spreadability was found to be Good, uniform, does not leave fragments, perfect application, without any deformation of the lip balm at room temperature. The formulation was subjected to various evaluation tests, the results obtained indicate that the herbal lip balm had optimum pH, melting point and spreadability.

**KEYWORDS:** Herbal Lip Balm, Extract, Moisturising, Spreadability, Stability.**INTRODUCTION**

Cosmetics plays a significant role in today's lifestyle. Due to increasing public concern, on the presence of hazardous synthetic excipients in cosmetics, new techniques are gained to produce products using organic sources. Chapped, dry or cracked lips are very common beauty dilemma, particularly in harsh weather.<sup>[1]</sup> Moreover current trend is going green in almost all industries including cosmetics to adopt more natural way of life.<sup>[2]</sup>

Products used to protect lips rather than to decorate them are well known as lip balms. They form an adherent, moisture resistant film of oily substances. Usually without any dye. Among all cosmetic products, lip balm formulations are most widely used to enhance the beauty of lips and add glamour touch to the makeup.

Lip balms offer a natural way to maintain and promote healthy lips.<sup>[3]</sup> Lip balms are moisturizers that are applied to the lips to keep them from drying out and to protect them from the element. Types of lip balms: 5 The lip balms are divided into different types by their ingredients 1. UV filter lip balm, Nourishing lip balm, Moisturizing lip balm, Medicated lip balm, Tinted Lip

balm The primary purpose of lip balm is to provide an occlusive layer on the lip surface to seal moisture in lips and protect them from external exposure. Dry air, cold temperatures and wind all have a drying effect on skin by drawing moisture away from the body.<sup>[5]</sup>

Lip balm is a term used to describe products that can be applied to the lips to ward against drying and protect them from harmful elements. Lip balm is a term used to describe products that can be applied to the lips to ward against drying and protect them from harmful elements. Lip balms are frequently eaten by the user, so it's critical that the ingredients are safe for consumption. Since lips lack oil glands, it is crucial to provide extra moisture and protection all throughout the day.<sup>[6]</sup> Natural products have been used for traditional medicine purposes throughout the world for many thousands of years ago from now. Many of them have pharmacological properties, such as antiviral, antimicrobial, antimalarial, antipsychotic, antiinflammatory and cytostatic effects. They have been recognized as useful for human medicine.<sup>[7]</sup>

The purpose of this study was to formulate the lip balm preparations using natural ingredients to evaluate its

effectiveness as a lip moisturizer and to prevent discoloration, dark patches, dried lips and chapped lips.

## MATERIALS AND METHODS

**Materials:** Banana peel, Papaya and Aloe vera, Bees wax, cocoa butter, glycerol, rose oil and vitamin E.

### Methods

**Procurement of materials:** Banana peel, Papaya and Aloe vera are collected from various regions of Mangalore and washed under running water to remove the contaminants. and used further for the extraction. Bees wax, cocoa butter, glycerol, rose oil and vitamin E obtained from the drug store of Srinivas college of pharmacy.<sup>[1,2]</sup>

### Preparation of extract

#### Extraction method: Papaya

- Fresh papaya fruit were collected from the market, and washed under running water to remove the contaminants. They were peeled off and pulp was collected and made into small pieces. It was further used for obtaining the active principles by subjecting it to maceration extraction process. Extraction is the first step to separate the desired natural products from the raw materials. Solvent extraction is technique employed to obtain papaya extract. 300ml of ethanol is added to the 150g of papaya pulp, and the mixture is agitated or stirred to facilitate the extraction process. Kept it for 7 days for the extraction, Afterward, the solvent is separated from the extract through filtration and evaporation, leaving behind the concentrated papaya extract. The extracts are obtained and sealed with aluminum foils and stored in the refrigerator until required.

#### Extraction method: Banana peel

- The banana peel selected for the formulation of lip balm collected from local market. The peels were separated from banana and washed it to remove contaminants under running water. Peels are cut into small pieces. It was further used for obtaining the active principles by subjecting it to maceration extraction process. The maceration technique extracted polyphenols from banana peel. Preliminary studies were conducted to determine the optimum solvent concentration, and ethanol is used as solvent for extraction. The sample to solvent ratio was set to 1:20 and kept at 37°C. 150 grams of peels were placed in 500 ml beaker, and 300ml of solvent was introduced at 50% and kept it further for 7 days for complete maceration process. The resulting extracts are filtered and kept for evaporation on water bath. The extracts are obtained and sealed with aluminum foils and stored in the refrigerator until required.<sup>[3]</sup>

#### Extraction method: Aloe vera

The fresh leaves of Aloe Vera were collected from surroundings of Srinivas college of pharmacy. Fresh leaves of Aloe barbadensis were washed under running

water to remove the contaminants. The spines were removed using a knife. The aqueous whole leaf extract was prepared by first slicing the leaves into small pieces and adding 45g of the sliced plant material into 90 mL of distilled water. The mixture was extracted by heating at 70°C for 45min. The extract was then left to cool, later filtered using a muslin cloth. The aqueous extract was concentrated by evaporating aqueous content.

### Formulation of Herbal lip balm<sup>[7,8]</sup>

Beeswax+Banana peel+Papaya+aloe vera extract+ glycerol Melted together in China dish A on Water bath. Cocoa butter +Vitamin E Melted together in China dish B on Water bath. After melting, china dish B is Poured into china dish A and mixed together to obtain homogeneous mixture Homogeneous Preparation was poured into balm stick mould and was kept in ice bath and allowed to solidify. After removing it from the mould, sticks were kept at refrigerator.

### Evaluation parameters of herbal lip balm

- **Physical appearance:** Colour, odour and taste of lip balm was determined.
- **Melting point:** To determine the melting point, the material was made molten to fill capillaries. The capillaries were coupled to a system with a thermometer and emerged in vial with water at a controlled temperature.<sup>[3]</sup>
- **Spreadability:** This is tested by applying the product (at room temperature) repeatedly on glass slide to usually observe the uniformity in the formation of the protective layer and determine if the product is fragmented, deformed or broken during application.<sup>[13]</sup>
- **pH Parameter:** The pH of the formulated herbal lipbalm was determined by using pH meter... To determine the pH, 1 g of sample was dissolved in 100 ml of water. 13 pH of lip balm was near to neutral pH i.e. 7.2 this would not cause any irritation to lips.<sup>[3]</sup>
- **Stability:** Prepared lip balm was placed for accelerated stability studies at room temperature (25 to 30°C). As this type of cosmetic form undergoes softening and deformation at high temperature. As this formulation gives the satisfied results so, it was submitted to be Normal Stability Study.<sup>[13]</sup>

## RESULTS AND DISCUSSION

### Physical appearance

The prepared Herbal lipalm was Pale yellow in color and had characteristic pleasant odor of Rose oil. The results obtained for both the formulation F1 and F2.

### Melting Point

Melting point of lip balm was found to be in the range of range of 68 °C-69 °C, which matches with appropriate melting point of between 65 and 75 °C. and results are mentioned in table.

**Spreadability**

Test of spreadability was found to be G - Good: uniform, does not leave fragments, perfect application, without any deformation of the lip balm at room temperature. and results are mentioned in table.

**pH determination**

The pH of the formulation is found to be  $6.9 \pm 0.05$  to  $7.0 \pm 0.173$ . Since the pH of the Herbal lipbalm was found to be same as that of the lip pH, it shall indicate that there shall be no irritation to the site of application. Results are mentioned in table.

**Stability Study**

The stability study was carried out for the prepared Herbal lip balm at standard room temperature of 25 – 30 OC for 30 days. There was no significant changes in color, appearance, odour and pH of lip balm. hence it can be used for longer time.

**Table no. 1: Phytochemical screening of Banana peel.**

S.No	Test	Result
1	Glycosides	+
2	Flavonoids	+
3	Alkaloids	+
4	Steroids	+
5	Carbohydrates	+

**Table 2: Phytochemical screening of papaya.**

S.No	Test	Result
1	Alkaloids	+
2	Carbohydrates	+
3	phenoles	+
4	Terpinoids	+
5	Flavonoid	+

**Table NO. 3: phytochemical screening of Aloevera.**

S.No	Test	Result
1	Alkaloids	+
2	Flavonoid	+
3	Glycosides	+
4	Steroids	+

**Table No. 4: visual inspection of formulation.**

Sl No	Organoleptic Evaluation	Result F <sub>1</sub>	Result F <sub>2</sub>
1	Colour	Pale Yellow	Pale Yellow
2	Odour	Pleasant	Pleasant
3	Taste	Characteristic	Characteristic

**Table NO.5: melting points of Herbal lip balm.**

Sl No	Formulation	Melting point*( <sup>o</sup> C)
1	F1	$67 \pm 0.5$
2	F2	$67 \pm 0.4$

**Table NO.6.**

Trial no	Spreadability F1	Spreadability F2
1	good	good
2	good	good

**Table NO. 7.**

Sl no	Formulation	pH*
1	F1	$7 \pm 0.17$
2	F2	$6.9 \pm 0.05$

**CONCLUSION**

The current study is a successful attempt to formulate and evaluate herbal lip balm utilizing safe natural ingredients, emphasizing its efficacy and excluding dangerous synthetic ingredients. From the reproducible results of executed experiments, it can be concluded that; The present study was an attempt to formulate and evaluate a Herbal lip balm containing Banana peel, Papaya and aloe vera extract for moisturising lip balm. Herbal sources used in the formulation of herbal lip balm were found as rich source of useful chemical components. Herbs used in the formulation of lip balm are helpful to maintain moisture of lips. prevent drying and chapping of lips due to external environment The observed physical characteristics (color, odor and taste) indicate that it was satisfactory and acceptable. The formulation was subjected to various evaluation test such as pH, melting point, spreadability and stability studies. The results obtained indicate that the Herbal lip balm had optimum pH, Melting point and spreadability favoring ease of application. The Melting point of the Herbal lip balm was found to be optimum. The pH of the Herbal lip balm indicated that it shall cause no irritation at the site of application and was compatible with the lip pH. The stability study indicate that was no significant changes in color, appearance, odour and pH of Herbal lip balm. Hence it can be concluded that the preparation remained stable at room temperature. But additional research is needed to enhance its quality, product performance, and safety.

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**CONFLICT OF INTEREST**

We declare that we have no conflict of interest.

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