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Research Article

Formulation And Evaluation of Herbal Lipstick from Aqueous Extract of Bougainvillea Glabra

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ABSTRACT

Currently, there is a rising trend in the use of herbal lipsticks, attributed to the safety and user-friendliness of natural cosmetics for women. Conversely, synthetic dyes have been linked to allergic reactions and have been identified as potentially carcinogenic. The purpose of this research was to create and evaluate a herbal lipstick formulated with natural color by using fresh pink flower of Bougainvillea Glabra. The formulation also included a variety of natural ingredients such as beeswax, coconut oil, vaseline, rose essences, vitamin E and C. The prepared herbal lipsticks were subjected to various evaluation tests, including assessments of color, texture, pH, melting point, breaking point, softening point, surface anomalies, aging, and fragrance stability. The results demonstrated that the evaluation parameters of the herbal lipsticks were consistent.

INTRODUCTION

The concept of "cosmetic" is rooted in the Greek word "kosmetics," which pertains to beautifying substances. Cosmetics are defined as materials utilized to augment the visual appeal of the human body. This term encompasses any product that is meant to be applied whether by spraying, pouring, rubbing, or sprinkling on various body parts for the purposes of cleansing, beautifying, enhancing attractiveness, or altering appearance. Moreover, cosmetics include a wide range of items such as skin care products, lotions, powders, perfumes, nail polishes, eye color contact lenses, hair dyes,

hair sprays and gels, deodorants, and baby products, found in both developing and developed regions. [1] The definition of cosmetics, as stipulated by the D&C Act of 1940 and the rules from 1945, encompasses any article intended for application to the human body or its parts through methods such as spraying, pouring, rubbing, or sprinkling, aimed at cleansing, enhancing, beautifying, or reshaping one's appearance. [2]

The emergence of civilization coincided with the rise of herbal cosmetics, commonly known as natural cosmetics. Individuals of both genders exhibited a pronounced interest in enhancing their appearance to captivate others. A comprehensive

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range of herbal cosmetic products is available to support individual beauty regimens, all recognized as safe for the skin. Throughout history, humans have employed herbs for a multitude of purposes, including culinary, medicinal, and aesthetic applications, with scientific and technological advancements providing deeper insights into these practices. The art of coloring the lips is an age-old tradition that can be traced back to prehistoric times. In the present day, the use of lip products has seen a notable rise, with a considerable expansion in the selection of colors, textures, and finishes. This phenomenon is reflected in the marketing strategies that promote lipsticks in a multitude of shades, catering to the varied preferences of women. [3] Lipstick is commonly used to enhance the appearance of the lips with attractive colors. In addition to its aesthetic purpose, it helps protect the lips from dryness, adds brightness to the natural lip color, and can help conceal imperfections or asymmetry in lip shape. [9]

The colouring agent is derived from the coloured aqueous extracts of *Bougainvillea glabra*.

Bougainvillea Glabra:

Kingdom- Plantae

Phylum- Tracheophyta

Class- Magnoliopsida

Order- Caryophyllales

Family- Nyctaginaceae

Genus- *Bougainvillea*

Species- *glabra*



Figure 1 : Flower of *Bougainvillea glabra*

1.1 IDEAL PROPERTIES OF HERBAL LIPSTICKS:

- The application process is characterized by its smoothness and ease of use.
- The item ought to have the appropriate plasticity, in addition to a variety of qualities, including unique odors, colors, textures, and packaging styles.
- The formulation maintains its stability over time and does not experience bloom or sweating during the storage of lipsticks.
- Stability is required in both the physical and chemical aspects of the substance.
- It is essential that the material remains moist during storage.
- The content should be absent of considerable particles.
- The product must possess a pleasing taste, aroma, and flavor profile.
- The material must remain stable, avoiding both melting and hardening, despite variations in climatic temperatures throughout the seasons. [4]

1.2 TYPES OF LIPSTICKS:

- Gloss lipsticks
- Moisturizing lipsticks
- Matte and lipsticks
- Satin and sheer lipsticks
- Long wearing and transfer resistant lipsticks
- Pearl and frosted lipsticks
- Cream lipsticks [5]

2. MATERIAL AND METHOD

Bougainvillea glabra, Bees wax, Vaseline, Coconut oil, Rose water, vit-E and C were taken from pharmacognosy laboratory and local market.



Figure 2: Ingredients

2.1.1. Extraction Of Aqueous Extract:

1. Clean Bougainvillea bracts were introduced into a sterile conical flask.
2. Distilled water was incorporated in a 1:2 proportion.
3. The mixture was boiled for 30 minutes at a temperature of 80°C.
4. Subsequently, the slurry was filtered into a sterile beaker.^[8]
5. Aqueous extract was concentrated.

2.1. Formulation Of Herbal Lipstick:



Figure 3: Extraction Process

2.1.2. The Formula Of Herbal Lipstick:

Table 1: Formula Of Herbal Lipstick

Sr.No	Ingredients	Formulation 1 (F1)	Formulation 2 (F2)	Role
1.	Bees wax	4gm	2gm	Thikning agent
2.	Vaseline	4gm	4gm	Moisturizing agent
3.	Coconut oil	0.4gm	0.8gm	Moisturizing agent
4.	Aqueous extract	0.1gm	0.4gm	Colouring agent
5.	Vitamin E	q.s	q.s	antioxidant
6.	Vitamin C	q.s	q.s	Preservative
7.	Rose water	q.s	q.s	Fragrance

2.1.3. General Procedure:

1. Weigh all of the ingredients.
2. Melt beeswax and add the aqueous extract.
3. Make sure above ingredients were mixed properly.
4. Next, add all the other ingredients.
5. Melt them and pour into the lipstick mould (before pouring, grease the mould).
6. Freeze it for an hour.
7. Herbal lipstick is formed.

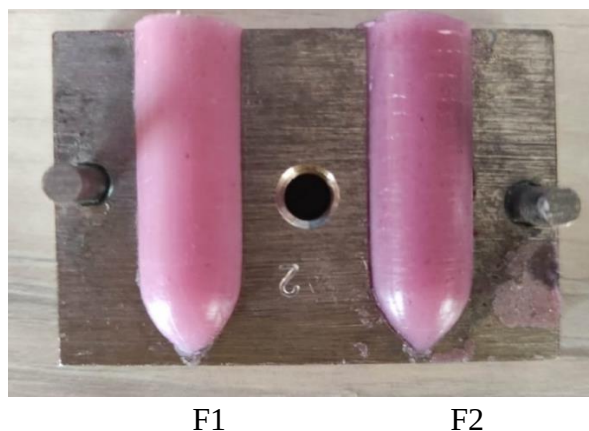


Figure 4: Formation Of Herbal Lipstick

2.2. Evaluation Of Lipstick:

Ensuring a consistent standard for herbal lipstick is essential. To this end, the formulated herbal lipsticks were examined against various criteria, including melting point, the force of application at the breaking point, and surface imperfections, etc.

pH parameter:

A pH meter was used to ascertain the pH of the herbal lipstick that was formulated.

Skin irritation test:

This method entails applying the product to the skin for a total of 10 minutes.^[6]

Melting point:

Establishing the melting point is significant because it provides insight into the safe storage conditions of a product. The melting point of the lipstick formulation was evaluated using the capillary tube method. The capillary tube was filled with the lipstick and positioned in the apparatus, where it was observed that the substance melted gradually. Eventually, the entire sample was found to be in a liquid state. This process was conducted three times, and the melting point was documented for each formulation.

Breaking point:

A breaking point assessment was carried out to determine the strength of the lipstick. The lipstick was held in a horizontal position within a socket, situated one inch from the edge of the supporting structure. The weight was gradually augmented by 10 grams at 30-second intervals, with the breaking point defined as the weight at which the lipstick failed.

Force of application:

The purpose of this test is to conduct a comparative analysis of the force necessary for application. A

piece of coarse brown paper is placed on a shadow graph balance, and lipstick is applied at a 45-degree angle to ensure that a one square inch area is entirely covered. The resulting pressure reading indicates the force applied during this process.

Surface anomalies:

This analysis was conducted to explore surface irregularities, such as the lack of crystal formation on surfaces and the non-existence of contamination by molds, fungi, and other comparable microorganisms.

Aging stability:

The product was stored at 40°C for a duration of one hour. During this time, various parameters were observed, including instances of bleeding, surface crystallization, and the ease of its application.

Perfume stability:

A 30-day testing period was conducted for the herbal lipstick formulation to analyze its fragrance.^[7]



F1

F2

Figure 5: F1-0.1gm of extract F2- 0.4 gm of extract

2.2.1. Evaluation parameters:

Table 2: Evaluation Parameters

Evaluation parameter	Interference	
	F-1	F-2
Colour	Light Pink	Pink
pH	5.9	6.1
Skin Irritation	No	No
Melting Point	62-64 ⁰ C	59-61 ⁰ C
Breaking Point	45gm	39gm
Force Of Application	Easy	Easy
Perfume Stability	+++	+++
Surface Anomalies	No Defects	No Defects
Aging Stability	Smooth	Smooth

3. RESULT AND DISSCUSION:

The present research aims to formulate and evaluate a herbal lipstick, focusing on the incorporation of herbal ingredients to minimize the adverse effects typically associated with synthetic lipsticks. The growing popularity of herbal lipstick among women underscores its importance in cosmetics, as it offers both aesthetic appeal and health benefits, such as softening, anti-inflammatory effects, and lip hydration. Natural herbal lipsticks were formulated using plant-based coloring agents derived from the petals of flowers of *Bougainvillea glabra*. Two different formulations (F1–F2) were developed and evaluated for key physicochemical properties including color, pH, Skin Irritation, melting point, breaking point, surface anomalies, Perfume Stability and aging stability. The evaluation results are summarized in Table 2, while the physical appearance of the prepared lipsticks is shown in Figure 5. Due to the various adverse effects associated with available synthetic preparations, the present investigation concluded that the formulated herbal lipstick exhibits minimal to no side effects while providing maximum local effectiveness on the lips.

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