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Research Article

Formulation And Evaluation Of Functional Herbal Edible Lipsticks Using Natural Coloring Ingredients

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ABSTRACT

In recent year demand for herbal cosmetic increased and very popular day by day because the natural cosmetics are skin friendly, safe to use, less side effect and easy to handle by women while applying. Synthetic color or chemical containing lipsticks shows various adverse effect and may be carcinogenic in nature. The aim behind this research work is to formulate herbal lipstick with the help of natural coloring ingredients like beetroot, cocoa powder, watermelon, turmeric powder etc. as well as utilization of different natural ingredients such as bees wax, olive oil, coconut oil, castor oil, rose essence, cocoa, lemon juice. Formulated lipstick were evaluated for various parameters such as texture, color, melting point, pH, melting point, breaking point, softening point, surface anomalies, ageing and perfume stability. To ensure the quality and efficacy of formulated herbal lipstick were compared with marketed standard formulation.

INTRODUCTION

The human desire to enhance beauty using natural product having a long and storied past, evident in the use of pigments, antioxidant and botanical extracts by ancient civilizations [1]. Lipsticks, an important and frequently used cosmetic product in modern makeup routines, traditionally it is made up from synthetic colorants and chemicals to achieve different variety of color and long-lasting wear. However, in the past decade awareness and concerns regarding the safety and potential health risks associated with these synthetic ingredients have been increases due to this natural ingredient

growing their importance in the cosmetic industry [2]. Edible lipsticks represent a revolutionary approach to lip color and care. Unlike conventional lipsticks, herbal lipsticks are formulated with the natural ingredients which are safe for consumption, offering not only a touch of color but also a unique sensory experience [3]. This investigation will explore the potential advantages of edible lipsticks over traditional options, such as the elimination of potentially harmful chemicals and the possibility of incorporating additional health benefits derived from natural ingredients. Herbs provide a diverse

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array of natural pigments, offering a vibrant shade of color without the synthetic dyes [4]. Additionally, many herbs possess inherent properties that can benefit lip health, such as providing antioxidants, anti-inflammatory effects, and even mild sun protection [5]. By exploring the potential of herbs in edible lipstick formulation, this research aims to contribute to the advancement of safe and effective natural cosmetics. This investigation will not only provide valuable insights for manufacturers seeking to develop innovative products but also empower consumers seeking a more natural approach to beauty.

Ideal characteristics of good lipstick-

The ideal requirements for the formation of a good lipstick may be as follows: [6,7]

- It should cover lips with colour.
- It should impart a gloss which would last long.
- It should maintain the intensity of colour.
- It should adhere firmly to the lips.
- It should not provide any greasy appearance.
- It should possess good thixotropic property so as to deposit the colour with minimum pressure.
- It should show a smear proof coloring effect.
- It should not be gritty.
- It should be easily dried.
- It should possess even firmness and should maintain its strength at varying temperatures up to 55°C.
- The stick should not dry or crumble easily.
- It should possess a pleasant fragrance and a good flavour.
- It Should be safe and non-irritating to the lips.

Potential advantages of herbal edible lipstick-
Natural and Potentially Nourishing:

Unlike traditional lipsticks that might contain synthetic ingredients like parabens and phthalates, herbal lipsticks rely on natural waxes like beeswax and candelilla wax, and oils like shea butter and

coconut oil. These natural ingredients are generally less irritating and more suitable for sensitive skin. Many herbal lipsticks include ingredients with known soothing and moisturizing properties. Shea butter and cocoa butter are rich in fatty acids that help lock in moisture and keep lips soft and supple. Calendula, a popular herbal ingredient, has anti-inflammatory properties that can soothe chapped or irritated lips [8].

Fewer Chemicals:

By using natural ingredients, you avoid potential irritation from synthetic colorants and preservatives found in some lipsticks. These chemicals have been linked to dryness, cracked lips, and in rare cases, even allergic reactions [9].

Safe for Ingestion:

A major benefit of edible lipsticks is the safety aspect. Accidental ingestion, especially by children who tend to explore with their mouths, is less of a concern compared to conventional lipsticks containing potentially harsh chemicals. This provides peace of mind for parents and anyone who might accidentally lick their lips. [10].

Potential Additional Benefits:

Many herbal lipsticks use natural colorants derived from fruits and vegetables like beetroot and berries. These pigments can offer a beautiful tint while potentially boasting additional benefits. Beetroot, for example, can provide a natural red hue and may also have antioxidant properties that protect the lips from free radical damage [11]. Overall, herbal edible lipsticks offer a natural alternative with potential benefits for lip health and the peace of mind that comes with a safe-to-ingest formula.

MATERIALS AND METHOD-

Following raw material were used for the preparation of herbal edible lipstick- (12,13)

- Candelilla wax
- Cocoa butter
- Sweet almond oil
- Coconut oil



- Beetroot
- Lemon juice
- Vanilla essence
- Rose water

Table 1. Working formula for herbal edible lipstick

| Sr. No | Ingredients | Quantity Taken | Properties |
|--------|------------------|----------------|---------------------|
| 1. | Candelilla wax | 4 gm | Glossy and Hardness |
| 2. | Cocoa butter | 1.5 ml | Moisturizing agent |
| 3. | Sweet almond oil | 1.5 ml | Nourishing agent |
| 4. | Coconut oil | 1.5 ml | Antimicrobial agent |
| 5. | Beetroot extract | 1 gm | Coloring agent |
| 6. | Vanilla Essence | 0.1 ml | Flavoring agent |
| 7. | Lemon Juice | 0.5 ml | Anti-oxidant |
| 8. | Rose water | 0.1 ml | Flavoring agent |

Formulation of Herbal Lipstick-

Herbal edible lipstick was prepared by following various step of general procedure for preparation of herbal lipstick. (4,14)

Step 1. Preparation:

Firstly, we disinfect working area, utensils, and mold with rubbing alcohol wipes.

Step 2. Melt the Base:

Then bottom pot of the double boiler fill the with water and bring to a simmer and glass jar was placed in the top of pot. Candelilla wax and cocoa butter was added to the jar. Using low heat, gently melt the base, stirring occasionally.

Step 3. Add Oil:

Once base melted, jar was removed from heat. carrier oil (sweet almond, coconut oil) slowly added and stir until well combined.

Step 4. Color and Fragrance:

Mixture was cooled slightly (around 60°C/140°F) and a tiny pinch of pigment i.e. beetroot powder was added to the mixture and stir thoroughly. Then more color added for a stronger color in small increments. For fragrance, 1-2 drops of a safe essential oil like lemon juice, vanilla essence and rose water added and stir gently.

Step 5. Pouring:

Prepared mixture carefully added into the disinfected lipstick mold.

Step 6. Solidification:

The poured mold is placed in the refrigerator for at least 30 minutes to set completely.

Step 7. Unmolding:

After the solid state appear, lipsticks was pop out of the mold.





Fig 1. Prepared Lipstick

Evaluation of Herbal Lipstick-

Maintaining uniform standard of herbal lipstick is very essential in the cosmetic science (15). To maintain it the formulated lipstick were evaluated for various parameter such as color and texture, pH, solubility test, determination of melting point, breaking point, perfume stability test, skin irritation test. (16,17)

1. Color and Texture

The color and texture of formulated herbal lipstick and marketed herbal lipstick were determine by applying on skin and visual inspection.

2. pH

The pH of formulated Herbal lipstick and marketed herbal lipstick were determined by using digital pH meter under favorable condition.

3. Solubility test

The formulated Herbal lipsticks as well as marketed herbal lipstick was dissolved in various solvents observe the solubility in each solvent.

4. Determination of Melting point

Capillary tube method was used for determination of melting point of formulated herbal lipsticks as well as marketed herbal lipstick. In this process we take 10gm sample of herbal lipstick and filled into capillary glass tube open at ends. The

temperature at which material move along the capillary tube was considered as melting point.

5. Breaking point

This test was used to determine the strength of lipstick. The herbal lipstick is held horizontally and weights are gradually added at set times. The weight that holds the lipstick is its breaking point, indicating its strength.

6. Perfume stability test

Perfume stability of formulated herbal lipsticks as well as marketed herbal lipstick assessed by storing the formulation for 30 days and then fragrance was determined.

7. Skin irritation test

It is carried out by applying herbal lipsticks and marketed herbal lipstick on the skin for 10m.

RESULTS AND DISCUSSION-

The formulation of herbal edible lipstick was prepared successfully by using various step of general procedure for preparation of herbal lipstick. To ensure the safety and efficacy various evaluation test of the formulated herbal edible lipstick were performed and observed data compared with the marketed herbal formulation which given in the following table no 2.

Table 2. Evaluation results of herbal lipstick and marketed formulation-

| Sr. No | Parameter | Herbal lipstick Formulation | Marketed Formulation | Standard values |
|--------|-----------|-----------------------------|----------------------|-----------------|
| 1. | Color | Reddish pink | Pink | - |

| | | | | |
|----|-------------------|------------|------------|--------------|
| 2. | Texture | Smooth | Smooth | Smooth |
| 3. | pH | 6.8 | 6.9 | 6.5 ±5 |
| 4. | Melting Point | 59 | 62 | 60 ±5 °C |
| 5. | Breaking Point | 90 grams | 140 grams | 140 ±5 grams |
| 6. | Perfume Stability | + | + | + |
| 7. | Surface anomalies | No defects | No defects | No defects |
| 8. | Softening Point | 5.2 | 5.6 | 5.5 ±5 |
| 9. | Aging Stability | + | + | + |

DISCUSSION-

From the present investigation we can conclude that the evaluation results of herbal edible lipstick having nearby or similar result to the marketed formulation and also comply with the standard values for lipstick. So, its posses' high efficacy and the potential benefits as like the marketed formulation.

CONCLUSION-

This research work conclude that the formulated herbal edible lipstick shows various potential benefits and no or minimum side effect as compared to the synthetic or chemical containing lipstick also comply the safety and standard parameter with the marketed herbal lipstick. We can also formulate an herbal lipstick which possess various shades of colour by using different type of natural pigment i.e. beetroot. Utilization of these natural colorant and other ingredient in the formulation of lipstick make it edible and safer for use.

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