

Design, Development and Synthesis of Herbal Lipstick from Natural Pigments

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ABSTRACT

The natural pigment and colorant in the cosmetics are inconceivable in demand since, historical time till day. The colors that add to the shade of the lipstick, are unsafe to people on utilization can bring about sensitivity, sickness, dermatitis, and drying of the lips. The usage of natural dyes and pigments, increase more importance in food and textile industries because of their nontoxic and ecofriendly characteristics. Coloring pigments is obtained from petals of *Rosa rubiginosa*, flower of *Bougainvillea spectabilis*. *Beta vulgaris* (Beetroot) and flower of *Crocus sativus*. (F1 to F4) and were evaluated on the parameters such as melting point, breaking point, force of application, surface anomalies, aging stability, solubility, pH, skin irritation and perfume stability etc. The prepared lipstick showed ideal properties like shining, spreading and smoothness of lips after application. Further studies through a detailed clinical trial may be suggested to ensure safety of these formulations. Hence from present investigation it was concluded that, formulated herbal lipstick having minimal and no side effects and thus showing zero side effects on lips.

Keywords: Herbal cosmetics, lipstick, natural pigments, formulation evaluation

INTRODUCTION

With the beginning of the civilization, Herbal cosmetic also known as “natural cosmetics”, peoples (men and women) had the magnetic lip towards impressing others with their looks was reported⁽¹⁾ and there are a number of wide range of herbal cosmetics products to satisfy your beauty regime, is very safe for the lip skin. The human beings have been using herbs for different purpose like food, medicine, beautifying with the advancement of science & technology was studied.⁽²⁾ The phenomenon of herbals, nowadays becoming a full-fledged, encircling both health and beauty care. The lips perhaps constitute the most sensitive part of our body and it is also very close to the nose and mouth. The natural aroma and colors compounds used in the lipstick, by transdermal absorption of the skin, lips and also inhaling the vapors of selected combinations of aroma principles could release neurochemicals in the brain through the receptors in the mouth (lips) and nose takes the desired effects.

In the cosmaceutical application, the lipstick functional is safe, eco-friendly, health protective and herbal colors, aroma useful as natural colors are now being well researched and also considered as powerful agents for promoting the physical health was studied⁽³⁾ and in similar study Cosmetics include skin care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial make up, colored contact lenses, hair colors, hair sprays, gels, deodorants, baby products, bubble bath, bath salts and many more products are in The taxonomical (Plants) classification of A) *Rosa rubiginosa* B) *Bougainvillea spectabilis* C) *Beta vulgaris* D) *Crocus sativus* were Red roses.

2.0 Plants description

It is a dense deciduous shrub 2–3 m high and across, with the stems bearing numerous hooked prickles. The foliage has a strong apple-like fragrance. The leaves are pinnate, 5–9 cm long, with 5–9 rounded to oval leaflets with a serrated margin.

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2.1 Paper flower

Plants description

Bougainvillea spectabilis grows as a woody vine or shrub, reaching 15 to 40 feet (4.6 to 12.2 m) with heart-shaped leaves and thorny, pubescent stems. The flowers are generally small, white, and inconspicuous, highlighted by several brightly colored modified leaves called bracts. The bracts can vary in color,

ranging from white, red, mauve, purple-red, or orange. Its fruit is a small, inconspicuous, dry, elongated achene shown in fig.1⁽⁴⁾ and taxonomical paper flower is reported to have medicinal values including anti-inflammatory⁽⁵⁾ and also in similar study antihyperlipidemic⁽⁶⁾, antidiabetic· antifertility⁽⁸⁾ antioxidant⁽⁹⁾ and antiulcer properties⁽¹⁰⁾



Figure 1 Images of Paper Flower

2.2 Beetroot (Garden beets)

Plants description

Annual or biennial herb; leaves glabrous, ovate to cordate, dark green or reddish, frequently forming a rosette from the underground stem; roots conspicuously swollen at junction with stem; flowering stalk 1.2–1.8 m tall, produced the second year from the top of the tuber; flowers small, numerous in a tall open panicle; ⁽¹⁰⁾fruit an aggregate of 2 or more fruits forming an irregular dry body; in garden beets, roots are usually a deep red color and may be globular or cylindrical shaped.⁽¹¹⁾and taxonomical classified. In another study, Garden beets are reported to have powerful detoxification⁽¹²⁾,

Kidney ailment⁽¹³⁾and increases hormones drive²⁷ and in another study beetroot have lowers cholesterol, blood pressure and also in skin disorder was reported⁽¹⁴⁾ and also have decomposition of anticarcinogen factors⁽¹⁵⁾, antioxidant.⁽¹⁶⁾ The concentrated extract was then kept in desiccators to remove the excessive moisture.⁽¹⁷⁾ The dried extract was packed in airtight glass container for further studies. Coloring agent can be obtained from *Beta vulgaris* and *Crocus sativus* by milling followed by pressing indivisibly, ⁽¹⁸⁾ filtration and evaporation of the resulted juice, in airtight glass container for further studied.





Figure 2. Images of Beet route pigments

2.3 Evaluation of herbal lipstick

It is very essential to maintain a uniform standard for herbal lipstick, keeping this view in mind the formulated herbal lipsticks was evaluated on the

parameters such as melting point, breaking point, thixotropic character, ⁽¹⁹⁾force of application and surface anomalies ,paraffin etc.



Figure 3. Sources of Natural pigments for preparation of ecofriendly Lipsticks

2.4 Breaking point

Breaking point is done to determine the strength of lipstick. The lipstick is held horizontally in a socket ½ inch away from the edge of support. The weight gradually increased by a specific value (10 GM) at specific interval of 30 second and weight at which breaks are considered as the breaking point.

2.5 Thixotrophy character

It is indication of thixotropic quality and is done by using penetrometer. A standard needle of specific diameter is allowed to penetrate for 5 second sunder a 50-gm load at 25°C. The depth of penetration is a measurement of the thixotropic structure of lipstick.

2.6 Force of application

It is tested for comparative measurement of the force to be applied for application. A piece of coarse brown paper can be kept on a shadow graph balance and lipstick can be applied at 45° angle to cover a 1 sq. inch area until fully covered. The pressure reading is an indication of force of application.

months of December 2024, Red rose and Paper flower from the pallavaram municipal garden, Chennai, Tamil Nadu. Beetroot and Saffron were procured from local market of Tambaram, Chennai, Extraction of color pigments the shade dried coarsely powdered flower petals of *Rosa rubiginosa* and the flower of *Bougainvillea spectabilis* (100 Gms) were macerated for 7 days separately. After completion of extraction, the extract was filtered through Whatman filter paper (No.10) to remove any impurities if present. The extract was concentrated by vacuum distillation to reduce the volume and evaporated on a water bath. Dark reddish coloured extract solution was obtained. The herbal lipstick was formulated as per herbal method. The ingredients used along with their formulation aspects had been mentioned Indian pharmacopeia methods. All the ingredients are taken in definite ratio and formulations (F1 to F4) were prepared. The different formulated lipstick is shown in figure4.

MATERIALS AND METHODS

Collection of plant material the herbs used in formulation of herbal lipstick were collected in the



Figure 4. Manufactured images of Herbal Lipsticks

Melting point Determination of melting point is important as it is an indication of the limit of safe storage. The melting point of formulating lipstick was determined by capillary tube method the capillary was filled, keep in the capillary apparatus and firstly observed the product was slowly melted. After sometimes was observed the product was completely melted. The above procedure was done. Surface anomalies this is studied by the surface defects, such as no formation crystals on surfaces, no contamination by molds, fungi etc. Aging stability The product was stored in 40°C at 1 hrs. Various parameters such as bleeding, crystallization of on the surface and ease of application were observed. pH parameter The pH of formulated herbal lipstick was determined using pH meter. Solubility test The formulation herbal lipstick was dissolved in various

solvents like acetone, hexane, petroleum ether, water, alcohol etc. & the solubility was observed. Skin irritation test It is carried out by applying product on the skin for 10 min. Perfume stability The formulation herbal lipstick was tested after 30 days, to record the fragrance.

RESULTS AND DISCUSSION

The natural ingredients were used for formulating natural herbal lipsticks, contains coloring agent, which is obtained from the petals of *Rosa rubiginosa*, flower of *Bougainvillea spectabilis*, *Beta vulgaris* (Beetroot) and flower of *Crocus sativus*. The different formulation, evaluation parameters like color, pH, melting point, breaking point, thixotrophy, surface anomalies, perfume and aging stability... etc,

Table 1. Extraction details of Herbal lipsticks

Sr. No	Ingredients	Importance	Quantity taken			
			F1	F2	F3	F4
			Red rose	Paper flower	Beet root	Saffron
1	Castor oil	Blending agent	4 gm	4 gm	4 gm	4 gm
2	Paraffin wax	Glossy and hardness	5.6 gm	5.6 gm	5.6 gm	5.6 gm
3	Bees wax	Glossy and hardness	7.2 gm	7.2 gm	7.2 gm	7.2 gm
4	Rose petal extract	Coloring agent	2.5 gm	-	-	-
5	Paper flower extract	Coloring agent	-	2.5 gm	-	-
6	Beet root extract	Coloring agent	-	-	1.5 gm	-
7	Saffron	Coloring agent	-	-	-	1.5 gm
8	Shikakai powder	Surfactant	0.4 gm	0.4 gm	0.4 gm	0.4 gm
9	Lemon oil	Antioxidant	0.8 ml	0.8 ml	0.8 ml	0.8 ml
10	Vanilla essence	Preservative	q.s.	q.s.	q.s.	q.s.
11	Orange essence	Flavoring agent	1ml	1ml	1 ml	1 ml
12	Mica powder	Texture	-	-	qs	-

It was observed that, among all the prepared formulations (F1 to F4). The formulations F2 and F4 were good enough to meet the general characteristics for ideal lipsticks, on the other hand formulations F1

and F3 showed poor pigmentation after application. The reason for such observation may be due to use of polar solvents during extraction of the coloring matter from the plant sources. The Formulation F3 contained

mica powder along with a beet root extract was also smooth enough and complied with the requirements of lipsticks. Due to various adverse effects of available synthetic preparation, hence from present investigation, it was concluded that this formulated herbal lipstick, having minimal and no side effects and thus showing maximum local effect on the lips.

CONCLUSION

The current study offers, new archetype of lipstick formulations containing natural ingredients and also serves as a guideline to use natural products in lipstick formulations, so as to avoid toxic effects of harmful chemicals or else used in synthetic lipsticks. The prepared lipstick formulations F1, F2 and F4 showed ideal properties like shining, spreading and smoothness of lips after application. Further studies through a detailed clinical trial may be suggested to ensure safety of these formulations

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The authors **C.SakthivelChinnathambi** and **Prof.G.Ashok** has not involved in the editorial review or the decision to publish this article

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