

Formulation and Evaluation of Beta Vulgaris Herbal Lipstick

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ABSTRACT-The beetroot color pigment extracted with ethanol. The extract was subsequently regulated based on herbal pharmacopoeia. Castor oil and beeswax was added later as the oil base. Herbal lipsticks were evaluated for their physical properties like melting point, breaking point, skin irritation. The results exhibit that all the herbal lipsticks were stable and has good force of application while the breaking point has reached 30 sec. The melting point containing different weights of castor oil and beeswax were 59-70 respectively, while the ph test resulted in 6.5-9. The Herbal lipstick from natural color pigment formulations F3 had met the physical requirements stability standards, and also safety requirements.

Keywords: Beetroot, breaking point, melting point, castor oil, beeswax, herbal Lipstick

INTRODUCTION

Herbal cosmetic are also known as natural cosmetics. Herbal cosmetics are developed by applying distinct Cosmetic essentials to form a base in which one or more elements of natural origin are used. Plants are primarily used for improvement of new drug products for cosmetic formulation. In herbal cosmetics the herbs are used in the crude or extract form. Herbs include crude plant material like fruits, flowers, leaves, seeds, wood, stems, rhizomes, roots or other plant parts, which may be integrated, disintegrated or powdered.

The application of herbal medicines is that increasing immediately due to their skin ability and lack of side effects. The best tract of the herbal cosmetics is that it is hardly made by the herbs and shrubs and hence without any of the side-effects. The natural ingredients in the herbs also provide nutrients and minerals to body. The term Cosmaceuticals was first developed by Raymond Read member of U.S Society of Cosmetics Chemist in 1961. The word cosmetic was derived from the Greek word "kosmtikos" which

means having the power, to arrange and having skill in decoration.^{1,2}

Advantages of herbal cosmetic over the synthetic cosmetics:

Herbal cosmetics are popular nowadays and are preferred over chemical as these products provide nutrients to the body enhance health and are free from synthetic chemicals and have no side effect as compared to synthetic cosmetics. Some of the advantages of using natural cosmetics which make them a better choice over the synthetic ones are as follows³

- 1) Safe to use
- 2) Compatible with body
- 3) Natural in nature
- 4) Affordable and non expensive
- 5) Variety of products
- 6) No side effects
- 7) Not tested on animals

Natural Coloring agents: colorants or coloring agents are mainly used to impart a distinctive appearance to the cosmetic products. Color is used in cosmetics since early times. Basically, a desire to buy a cosmetic product is mainly controlled by three senses namely sight, touch and smell.

As such as, color is an important ingredient of cosmetic formulation.⁴

The color is imparted to the lips in two ways:

- 1) By staining the skin with a solution of dyestuff which can penetrate the outer layer of the lip's skin.
- 2) By covering the lips with a colored layer which serves to hide any skin roughness and give a smooth appearance.

The naturally occurring colors from different plant and fruit sources. The colorants derived from the natural source should be non-toxic with no

physiological activity. It should be a definite chemical compound because then only it's the coloring power will be reliable, its assay will be practicable and easier. Its tinctorial (coloring) power should be high enough so that only small quantities would be sufficient for the use. Colorants should be unaffected by light, tropical temperatures, hydrolysis and micro organisms and therefore they must be stable on storage.^{5,6,7,8}

Beetroot leaves glabrous ovate, dark green or reddish, frequently forming a rosette from the underground stem, roots conspicuously swollen at junction with same; 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; 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. In another study, garden beets are reported to have powerful detoxification, kidney ailment and increases sex drive and in another study beetroot have lowers cholesterol.⁹

MATERIALS AND METHOD

Castor oil, Beeswax, lanolin, Ripe fruit of shikakai, Eugenol, Beetroot extract, Rose oil, Lemon juice Vanilla essences.

Extraction of color pigment from Beet root:

Beetroot is that the main supply box natural red dye called "Beet root red". Betanine is the main part of the red colorants extracted from common beet. The roots bare most typically deep red- purple in color, however it is available a large kind of the alternative shades, like golden yellow, red and white stripy. Extraction of pigment is by homogenization of equal ratio of fruit pulp and solvents(1/1 w/v) .Take 100 g of the peeled fruit , of watery consistency, and macerated it with the 100 ml of Solvents (Et OH, aqueous ethanol 50:50) for 15 minutes onice bath. Centrifuge the aqueous mixture at 18,000 RPM, 40 c for 20 min, and filter immediately through Nylon mesh. By using of rotary evaporator concentrate the extract in vacuum at 350 c , to 3-4 ml. Completely remove the alcohol through concentration process and keep the samples in a dark vessel.^{10,11}



Figure 1: Beetroot extract

FORMULATION

Manufacturing procedure

- First, all raw ingredients for the lipstick are melted and mixed separately.
- One mixture contains the solvents, the second contains oils and a third contains the fats and waxy materials. All are heated in a stainless steel or ceramic containers
- The solvent solution and liquid oils are mixed with colored pigments
- After the pigment mass is prepared, it is mixed with hot wax
- The mixture is agitated to free it of any air bubbles and then it is poured into tubing mouldsand cooled
- After final touch up and visual inspection, the lipstick is ready for packaging

Table 1. Ingredients used in formulation

Ingredients	F1	F2	F3	F4
beeswax	1gm	1gm	2gm	2gm
White soft paraffin	0.5gm	0.5gm	1gm	1gm
Liquid paraffin	0.5ml	0.5ml	1ml	1ml
Castor oil	0.5ml	0.5ml	1ml	1ml
Coloring agent	50mg	50mg	100mg	100mg
Rose essence	q.s	q.s	q.s	q.s
vanilla	q.s	q.s	q.s	q.s
Propyl methyl paraffin	5mg	5mg	5mg	5mg

Physiochemical evaluation of Herbal lipstick¹²

Evaluation of herbal lipstick is important to maintain a standard of herbal lipstick. The prepared formulations were evaluated for the following tests. Color of lipstick: The evaluation of color was assessed by Physical observation of the lipstick products.

Determination of Melting point: Take both ends of lipstick bin open glass capillary tubes. Then a sufficient amount of lipstick was introduced into each of five capillary tubes, about 10 mm high and allows tubes to stand for the appropriate time and at the Prescribed temperature in the capillary tube apparatus. After that, the temperature at which the lipsticks begin to melt in the capillary tube was taken as melting point. The operations were repeated for five times, and the average was calculated and recorded.

Determination of Spreadability: It was tested by repeatedly applying the lipstick onto the glass slide to observe the uniformity in the formulation of the protective layer and whether the stick fragmented, deformed, or broke during the application.

Good: Uniform, fragments do not occur, perfect application, without deformation of lipstick.

Intermediate: uniform, leave fragments, good application but with little deformed.

Bad: Not uniform, leaves many fragments, difficult to apply and deformed

Determination of Hardness: Four formulated lipstick from each formulation were selected randomly and measured using Monsanto hardness tester. The average result of each formulation was recorded.

Determination of surface anomalies: Determination of surface anomalies was studied about the surface defects, such as any crystal formation on lipstick surfaces, any contamination by moulds, fungi.

Determination of aging stability: The formulated lipstick was stored in hot air oven (400 c), room temperature (220 c) and refrigerator (4 to 80 c) for one hour each and observed various parameters such as bleeding, crystallization on surface and ease of application. There lipsticks for each condition were used to ensure obtained the consistency and accurate results

Determination of solubility: The solubility of the herbals was observed after dissolved lipstick in various solvents such as acetone, ethanol, hexane, ether and water.

Determination of pH: pH of the herbal lipstick was determined by using pH meter and pH paper. The average result of each formulation was calculated and recorded.

Skin irritation test: It is carried out by applying product on the skin for 11 min.

Determination of Breaking point: Breaking point was done to determine the strength of the lipstick. The lipstick was held horizontally in a socket inch away from the edge of support. The weight was gradually increased by a specific value (10gm) at a specific interval of 31 seconds and weight at breaks was considered as the breaking point.

Table 2. Evaluation of herbal lipstick

color	pinkish purple	pinkish purple	pinkish purple	pinkish purple
hardness	3.2kg/m ²	3.5kg/m ²	3.0kg/m ²	3.4kg/m ²
melting point	62 ⁰ c	58 ⁰ c	60 ⁰ c	55 °c
breaking point	31 se	28 sec	25 sec	30 sec
spreadibility	good	intermediate	good	intermediate
surface anomalies	no	no	no	no
ageing stability	smooth	smooth	smooth	smooth
solubility	methanol	methanol	methanol	methanol
pH	6.2	6.5	6.4	6.6
Skin irritation	no	no	no	no



Figure 2 : Formulated lipsticks

RESULTS AND DISCUSSION

Stability studies: Stability studies of lipsticks important to predict the possible changes that may occur to the lipsticks since the product manufactured until the end of the product shelf life. In the stability study, the formulation were subjected to different temperature conditions to assess the changes that occur over time the stability studies was conducted for a period of one month. The herbal lipstick formulated did not exhibit any changes overtime. The

colour, odour and Spreadibility of all the formulated herbal lipstick remained unchanged over one month.

Table 3. Stability studies for optimized formulation F3

color	Faint purple
Odour	good
Spreadibility	Good
Melting point	50 ^o c
Breaking point	26
hardness	3.1 kg/cm ²

CONCLUSION

Different natural or herbal ingredients were used for the formulations of the herbal lipstick like Beeswax, lanolin, castor oil and Eugenol. Beet root extract obtained from Beta vulgaris used as coloring pigment. The lipsticks were then evaluated for various criterions. From the above evaluation criterions it was concluded that F3 formulation was found to pass all those criterions and it shows no side effects, showing maximum local effects and good properties like shining, spreading and smoothness of.F3 formulation was considered as the optimized formulation even it shows good results in stability studies..

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