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Formulation and Evaluation of Natural Lipsticks Prepared from Bixa Orellana Seeds and Daucus Carota Root Extract and their Comparative Study

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ABSTRACT:

Cosmetics are incredible in demand since historical time till day. Lipstick formulations are most widely used to enhance the beauty of lips and add glamour to touch to the makeup. With this aim and objectives, an attempt was made to formulate natural lipsticks by using coloring pigments of *Bixa orellana* linn seeds and *Daucus carota* root and the lipsticks were evaluated for their organoleptic properties such as spreading, hardness, shine and gloss and found to be satisfactory product to give attractive beauty. The preparation of this lipsticks with the natural ingredients like Bixa seeds, Carrot root, Olive oil, Ripe fruit powder of shikakai. Due to various adverse effects of available synthetic preparation, the present work was conceived by us to formulate a herbal lipsticks having minimal or no side effects which will extensively used by the women of our communities with great surety and satisfaction.

KEYWORDS: Bixa orellana, Daucus carota, Herbal lipsticks, Formulation, Cosmetics.

INTRODUCTION:

Now a day, in the whole world there is turn to return towards the use of herbal products and to adopt more natural way of life. People prefer natural food, herbal medicines and natural curing practices for healthy life; there is much craze for the vegetable products cultivated through biological/organic farming without using synthetic fertilizers and pesticides. The usage of herbal cosmetics has been increased to many folds in personal care system and there is a great demand for the herbal cosmetics^[1].

The word herbal is a symbol of safety in contrast to the synthetic one which has adverse effects on human health. Herbal preparations viz., herbal tablets, herbal tonics, herbal paste, herbal shampoo, herbal sindhur, herbal contraceptives and herbal lipstick has become popular

among the consumer herbal medicines represent the fastest growing segment to heal the various ailments. Possibly, herbal user desire to assume control over health care needs^[2, 3].

Coloring lips in an ancient practice date back to prehistoric period. In present days the use of product has increased and choice of shades of colors textures, luster, have been changed and become wider. This can observed from the facts that lipstick is marketed in hundred of shades of colors to satisfy the demand for the women^[4].

In recent time's lipsticks have been under the scanners of many health watchers. Lipsticks are often eaten away by the user and hence it is imperative that health regulators have a microscopic look at the ingredients that go in to the lipstick. The dyes that contribute to the color of the lipstick are dangerous to humans on consumption.

In a mild form, the coal tars that are the basic ingredients .from which synthetic dyes are formed can cause allergy, nausea, dermatitis, and drying of the lips. In a more severe form they can be carcinogenic and even fatal. Due to various adverse effects of available synthetic preparation the present work was conceived by us to formulate an herbal lipstick having minimal or no side effects which will extensively used by the women of our communities with great surety and satisfaction.

Bixa orellana Linn. Family (Bixaceae) is an ever green shrub native to Argentina, Bolivia, Brazil, Chile, and Colombia and exotic to India, USA and Thailand [5]. *Bixa orellana* linn appears like a small bush like tree. It grows to about 5 or 6 meters high and has a peculiar reddish sap. The leaves are alternate, oval to heart shaped and 10-30 cm long. The flowers are large, pinkish in colour and produced in terminal clusters. The fruits are initially green but turn reddish –brown. They are fully covered by soft spines and when they dry, open into two compartments exposing the seeds [6]. The roots bark and seeds of *Bixa orellana* are antiperiodic, antipyretic and astringent.

They are useful in intermittent fevers and gonorrhoea. The pulp surrounding the seed is a mosquito repellent and is useful to treat dysentery. The decoction of the root is used for liver diseases. The whole plant is bitter, purgative, cures leprosy, biliousness, kidney disorders and vomiting. Seeds and leaves of the annatto tree were used by the Aztecs to prepare remedies for a variety of illnesses such as tonsillitis, asthma, pleurisy, rectal disorders, headache, jaundice, sunstroke, and burns [7] (Fig .1).



Fig.1 *Bixa orellana* Linn Fig. 2 *Daucus carota* L.

One of the natural sources for cosmetics is a carrot (*Daucus carota* L) [9]. It is a fruit or vegetable containing a large amount of carotenoid compound, ranging from 0.006 to 0.0548 g/100 g [5] (Fig. 2).

The high carotenoid content can be used as a natural dye, and the carotene itself can act as a precursor of vitamin A, so it adds value to carrots [8, 9, 10]. Products using natural

coloring, such as carotenoid, are getting more popular as the public becomes more concerned about the long-term effects of synthetic materials.

MATERIAL AND METHODS

Selection of herbs

The various herbs used in the formulation of herbal lipsticks were selected on the basis of literature survey [11, 12].

Collection of plant material

The herb used in formulation of herbal lipstick were collected in the months of September from the local market of Bareilly and the plant seeds were used for preparation herbal lipstick and Carrot roots were procured from the local market of Bareilly, Uttar Pradesh. The plant material were identified and authenticated by the Department of Pharmacognosy. The Herbarium specimen (No. 171 and 172) of plant was deposited it has been identified from Shri Ram Murti Smarak College of Engineering and Technology, Bareilly. The collected herbs were shade dried under normal environmental condition, powdered, stored in a closed container for further use.

Extraction of color pigments

The shade dried coarsely powdered seeds of *Bixa orellana* (100 gm) were extracted with ethanol (60-80°C) for 18 hrs. After completion of extraction, the defatted extract was filtered while hot through Whatman filter paper (No.10) to remove any impurities if present.

The extract was concentrated by vacuum distillation to reduce the volume to 1/10; the concentrated extract was transferred to 100 ml beaker and the remaining solvent was evaporated on a water bath. Dark reddish coloured extract was obtained. The concentrated extract was then kept in desiccators to remove the excessive moisture. The dried extract was packed in air tight glass container for further studies [13].

Coloring agent Carotenoid can be obtained from carrot root by milling followed by pressing, filtration and evaporation of the resulted juice [14].

METHODOLOGY

Formulation of Natural Lipstick

The Natural lipsticks were formulated as per method described [15].



Figure 3



Figure 4

The lipstick prepared from *Bixa orellana* Linn and *Daucus carota* were denoted by NL1 and NL2 respectively. The ingredients used in the formulation of both lipsticks are shown in **Table 1 and 2**.

Evaluation of Natural Lipstick

Table 1: Preparation of natural lipstick from *Daucus carota* root Extract

Ingredients	Quantity (gm)NL1	Importance
Olive oil	13	Blending agent
Paraffin wax	26	Glossy and hardness
Bees wax	38	Glossy and hardness
<i>Daucus carota</i> extract	0.8	Coloring agent
Ripe fruit powder of Shikakai	14	Surfactant
Strawberry essence	1	Flavoring agent
Lemon juice	0.5	Antioxidant

It is very essential to maintain a uniform standard for herbal lipstick, keeping this view in mind the formulated natural lipsticks was evaluated on the parameters such as melting point, breaking point force of application, surface anomalies etc [16]. Both the Lipsticks shown the result in

the specific limits for the respective evaluation parameter and were found nearly same as reported in **Table no 3**

Table 2: Preparation of natural lipstick from *Bixa orellana* seed Extract

Ingredients	Quantity (gm) NL2	Importance
Olive oil	12	Blending agent
Paraffin wax	29	Glossy and hardness
Bees wax	37	Glossy and hardness
<i>Bixa orellana</i> extract	0.8	Coloring agent
Ripe fruit powder of Shikakai	14	Surfactant
Strawberry essence	1	Flavoring agent
Lemon juice	0.1	Antioxidant

Table 3: Evaluation of prepared natural lipsticks (NL1 and NL2)

Evaluation Parameters	Inferences	
	NL1	NL2
Color	Yellowish red	Red
pH	6.9±0.1	6.5±0.1
Skin irritation	No	No
Melting point	59	60
Breaking point	30	25
Force of application	Good	Good
Perfume stability	++	+
Surface anomalies	No	Yes
Aging stability	Smooth	Smooth
Solubility	Ethanol	Ethanol

Melting point

Determination of melting point is important as it is an indication of the limit of safe storage. The melting point of

formulated lipstick was determined by capillary tube method, the capillary was filled and kept in the capillary apparatus and firstly observed the product was slowly-melted. After sometimes observed product was completely melted. The above procedure was done in 3 times and the melting point ratio was observed in all formulation.

Breaking point

Breaking point was done to determine the strength of 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 (10 gm) at specific interval of 30 second and weight at which breaks was considered as the breaking point.

Force of application

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

Surface anomalies: This was studied for the surface defects, such as no formation crystals on surfaces, no contamination by moulds, fungi etc.

Aging stability

The products were stored in 40°C for 1 hrs. Various parameters such as bleeding, crystallization of on surface and ease of application were observed.

Solubility test

The formulated herbal lipstick was dissolved in various solvents to observe the solubility.

pH parameter

The pH of formulated herbal was determined using digital pH meter.

Skin irritation test

It is carried out by applying product on the skin for 10 min.

Perfume stability

The formulated herbal lipsticks were tested after 30 days, to record fragrance.

RESULT AND DISCUSSION

Different natural ingredients were used for formulating natural lipsticks that contain coloring agent which is a natural colorant obtained from herb *Bixa orellana* and *Daucus carota* and the effect of different natural ingredients on different evaluation parameters in the formulation have been investigated. The prepared lipsticks (table 1 & 2) were evaluated (table 3) and it was found that herbal natural lipstick, NL1 was best among all three lipsticks formulations.

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 lips.

CONCLUSION

This research provides guideline on the use of herbal ingredients on the preparation of lipsticks having minimal or no side effects. The natural ingredients like Olive oil, ripe fruit powder of Shikakai were used in the preparation of natural lipsticks along with *Bixa orellana* and *Daucus carota* as coloring agent. The present study proves that both *Bixa orellana* and *Daucus carota* are coloring agents and *Daucus carota* containing lipstick was best among both natural lipsticks.

The prepared lipsticks were show excellent properties like shining, spreading and smoothness of lips. The research finding also provides a guideline on effects of ingredients towards the physical properties and consumer acceptance of the lipstick formulations.

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