



# Formulation and Evaluation of Herbal Lipstick Containing Alkanet Root as a Natural Colorant

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**Abstract:** From ancient time peoples were using lipstick, which was made by natural sources to protect and to increase the beauty of lips. Herbal lipstick contains pigments, antioxidants, waxes, oils, fragrance and preservatives. Alkanet root is used as natural source of red pigment in cosmetics, food and textile industries. Alkanet roots are traditionally used to treat aging, wounds, inflammation and herpes. The herbal lipstick was formulated and subjected to evaluation by different parameters like breaking, melting and, softening points, surface anomalies, aging and perfume stabilities, solubility test and pH. The herbal lipstick presents quintessential properties after application. It was concluded that the formulated herbal lipstick provides less side effects and further clinical investigation is required to assess for better efficacy.

**Keywords:** herbal lipstick, Alkanet root, red pigment, stability, surface anomalies

## 1. Introduction

From ancient period, the cosmetics were made by natural sources which provides medicinal values, so both men and women involved in makeup. Lipsticks were first used during Sumerian civilization. The natural stains were obtained from fruits, henna, insect and clay rust. Powder of jewels was used to add colour to the lips by Mesopotamian women.

Egyptians are first lovers of lipstick, by striking shades like purple and black and carmine dye obtained from cochineal insects. They also used harmful substances like lead and mixture of polyalcohol mannitol and iodine which leads to chronic diseases.

Abulcasis an Arab scientist in 9 AD invented the solid lipstick. Lipstick was first commercially produced by Guerlain Perfume French Company, the ingredients used were: deer fat, beeswax and castor oil which are mixed and packed in a silk paper. Maurice Levy invented lipstick in cylindrical containers in 1915 [1].

Currently synthetic lipsticks can contain traces of heavy metals like chromium, arsenic, nickel, copper and cobalt and some of these toxic substances are absorbed by the lips during the application of these lipsticks, causing rashes on the lips [2]. The artificial materials that contribute to the color of the lipstick can cause harmful hazards to humans like cancer, allergy, drying of the lips, nausea and dermatitis [3,4].

Cosmetic made from herbs have huge demand in the market because herbal formulations are usually safe. Natural colorants obtained from herbs are used in formulation of lipstick, which possess wide variety of benefits; lipophilic in nature, non-toxic, anticancerous, hypoallergic, antimicrobial, antioxidant and protects against skin disorders. Natural colorants are available in different shades like purple, rose red, orange, magenta etc.

In the present study natural colorant obtained from *Alkanet* root was used to formulate our lipstick. *Alkanna tinctoria*, commonly known as the dyer's alkanet, orchanet, and bugloss belong to family *Boraginaceous* [5,6]. Alkanet roots produces a fine red colouring compound used for dyeing cloth, medicines, varnishes, food, braveries etc [5-9]. The dye obtained from Alkanet are water insoluble but

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soluble in organic solvents like ethanol, acetonitrile, ether etc [6].

*Alkanna tinctoria* root produces red colouration due to the presence of naphthoquinones which are aromatic diketones that belong to Alkannins and Shikonins. They are lipophilichydroxy naphthoquinone red pigments, which are used intensively in many purposes [10]. Alkanet root extracts possess wound healing, anti-nociceptive and anti-inflammatory properties [11,12]. Bioactive naphthoquinone compound alkannin and its derivatives acts as cytotoxic, antimicrobial, antioxidant and anti-leishmanial agents [10, 13-16].

The purpose of present study was to formulate herbal lipstick using natural colorant (obtained from Alkanet root) and evaluate the lipstick for different parameters like colour, breaking, softening and melting points, pH, surface anomalies, solubility, skin irritation, and ageing were carried out respectively.

## 2. Materials and methods

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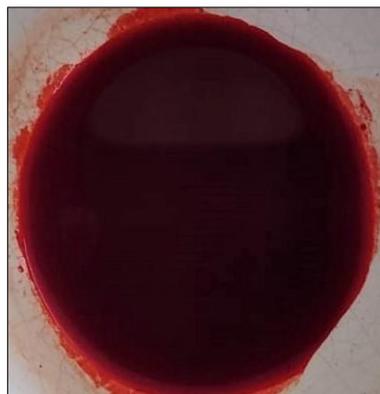
The herbal lipstick was made by using alkanet root powder, white bees wax, soft paraffin, castor oil, coconut oil, olive oil, lemon juice, rose essence and vitamin E were collected from Chickballapur local market. Required amount of ingredients (Table 1) were used for the preparation of 4 formulations (F<sub>1</sub>-F<sub>4</sub>).

**Table 1.** Formulation of herbal lipstick

S.No.	Ingredients	Required amount of ingredients			
		F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
1	Beeswax	3 g	3 g	4 g	4.5 g
2	White paraffin	1 g	1 g	1 g	1.5 g
3	Coconut oil	3 mL	1 mL	2 mL	1 mL
4	Olive oil	4.5 mL	3 mL	3 mL	1 mL
5	Alkanet root powder	1 g	3 g	5 g	7 g
6	Castor oil	1 mL	1 mL	1 mL	1 mL
7	Lemon juice	0.5 mL	0.8 mL	0.8 mL	0.8 mL
8	Vitamin E	0.5 mL	1.2 mL	1.2 mL	1.2 mL
9	Rose essence	0.5 mL	1 mL	2 mL	2 mL

### 2.1. Formulation of herbal lipstick

Herbal lipstick was formulated by moulding technique. Natural colouring matter was prepared by heating alkanet root powder in olive oil and is filtering (Figure 1). The different concentration filtrate was mixed into melted base contains white bees wax, soft paraffin and coconut oil. Remaining ingredients castor oil, rose flavour, lemon juice and Vitamin E are added to the above mixture. Finally pour the above mixture was poured into clean empty lipstick moulds and solidify by keeping in refrigerator for 30 min.



**Figure 1.** Natural colorant prepared from Alkanet root

## 2.2. Evaluation of herbal lipstick [17-18]

### 2.2.1. Colour, texture and pH

Formulated herbal lipsticks were examined for colour, smooth texture and pH.

### 2.2.2. Determination of melting point

Capillary tube method was used to determine the melting point of formulated herbal lipstick.

### 2.2.3. Breaking point

The breaking point test gives the strength of lipstick. Herbal lipstick was kept an inch away from socket horizontally. The weight was gradually increased by 10 gm at 30 s interval and determines weight at which lipstick breaks and considered as its breaking point.

### 2.2.4. Softening point

Formulated herbal lipstick was kept at varying temperature conditions i.e., hot and cold, to determine the resistance.

### 2.2.5. Surface anomalies

Herbal lipstick was stored for a particular period to detect the formation of crystals, wrinkles, growth of mould and fungi.

### 2.2.6. Aging stability

Determination of the stability of herbal lipsticks was done by storage at various temperatures ranging from 4°C - 40°C for 1h.

### 2.2.7. Perfume stability

Perfume stability was determined 30 days after formulation.

## 3. Results and discussions

The lipsticks are available in different shades of colours and are lustier nowadays. The users consume lipsticks and hence it is important to check the properties of the ingredients that are used to make lipstick. Most of the lipsticks contain traces of heavy metals like manganese, lead, chromium, cadmium, petrochemical products etc., and causes health hazards like cancer, skin irritation, dermatitis, and drying of lips. The formulated herbal lipsticks made from natural red colorant obtained from Alkanet root is non-toxic, highly lipophilic and possess anti-oxidant, antimicrobial, anti-inflammatory properties.

So, the present study was aimed to prepare and evaluate the formulated lipstick (Figure 2) with a hope to provide natural support and minimize the side effects. Results showed (Table 2) that herbal lipstick F<sub>4</sub> was found to be best among all the three formulations. The chemical present in natural sources

acts as antioxidant, antiwrinkle, anticancer, anti-inflammatory agents etc. hence from the present investigation it was concluded that this formulated herbal lipstick having ideal properties of lipstick.



**Figure 2.** Formulated herbal lipstick

**Table 2.** Evaluation of Herbal Lipsticks (F<sub>1</sub>-F<sub>4</sub>)

S.No.	Parameters	Observation			
		F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
1	Colour	Maroon	Dark cherry red	Wine red	Wine red
2	Texture	Smooth	Smooth	Smooth	Smooth
3	pH	6.0	6.0	6.1	6.1
4	Melting point	57°C	59°C	58°C	61°C
5	Breaking point	120 g	120 g	130 g	150 g
6	Surface anomalies	Sweating	Sweating and bleeding	No defect	No defect
7	Aging stability	Oil bleed	Oil bleed	Smooth	Smooth
8	Perfume stability	Slight	Slight	Good	Good
9	Skin irritation	No	No	No	No
10	Solubility	Ether	Ether	Ether	Ether

#### 4. Conclusions

It was concluded from the present study that this formulated herbal lipstick has ideal properties and is a better option for women. Further detailed studies are required to find better efficacy.

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