# **INCORPORATION OF COLORED EXTRACTS OF PUNICA GRANATUM** FOR THE FORMULATION OF NATURAL LIPSTICKS

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lipstick using natural ingredients to avoid side effects produced by synthetic ingredients adverse effects of synthetic cosmetics.

Method: The purpose of this study was to develop and assess herbal lipstick using dried seed powder or peel powder of pomegranate fruit and to use that aqueous extract as an antioxidant as well as one of the formulation. The use of cosmetics has become essential for constituents for herbal lipstick. Eight lipsticks all women. Herbal cosmetics are made with a were formulated using herbal ingredients and variety of approved cosmetic components and pomegranate seeds and peels powder as well as one or more herbal elements to offer particular extracts. Both waxes were melted and followed advantages of cosmetics. Another term for by addition of oil and edible colors. After them is herbal cosmetics (Kothari, Shukla, cooling the mixture were poured into mould Gautam, Bagaria, & Sharma, 2018). It has long and solidify it

evaluated with different parameters such as first records of cosmetic ingredients and their smoothness, shining, melting point, ease of use go all the way back to the Indus Valley application, perfume stability and breaking point etc. F4 to F8 were found to be acceptable and 1550 B.C. There was a customary remedy formulations among all eight formulations for chapped lips documented in history. Lip

whose pH balance 6-6.5, smoothy consistency with no defect and has good breaking point and stability compared to other formulation of lipsticks.

**Conclusion:** According to the study, herbal lipstick can be made effectively with a variety **Objective:** To develop and evaluate the herbal of natural substances in order to minimize the

> words: Antioxidant. Key cosmetics, extraction, evaluation, herbal formulation, punica granatum,

#### 1. Introduction

been believed that the study of cosmetics **Results:** The formulated lipsticks were originated in ancient Egypt and India, but the civilization, which flourished between 2500

prehistoric era. Crushed henna, ants, and combination of fragrantly scented waxes, fats, carmine beetles were among the biological and oils. These were commonly produced as items used to make the colouring pigments. shaped sticks (Mahanthesh et al., 2020). (McMullen & Dell'Acqua, 2023). The term "herbal" denotes safety as contrast to "synthetic," which is detrimental to the health of people (Aher, Bairagi, Kadaskar, Desai, & Nimase, 2012). Herbal cosmetics are in increasing demand all over the world and are a priceless nature's gift. Herbal cosmetics are a priceless gift from nature and are in high demand worldwide. A large selection of herbal products is available to fit any beauty treatment. Due to the negative impacts of synthetic preparations in the personal healthcare system, more people are choosing herbal remedies (Devidas, Leena, Shahid, Vilas, & Ramdas, 2023). Frequent use of synthetic products including lead, petrolatum, and phthalates may be harmful to users. These products have been connected to dry, chapped lips, lip irritants, and health problems like is Punica granatum fruit that has been believed cancer, asthma, and allergies. (Dauda, Friday, to be packed with bioactive components such & Benjamin, 2023). Lipstick is one type of flavonoids, cosmetic that provides colour, texture, and chemicals, even though the phytochemical protection for the lips. In addition, it contains composition varies throughout the fruit. The oils, emollients, waxes, and pigments. There fruit of the Punica granatum plant is rich in weren't many hues available for lipstick in the macroearly 1900s. They are made of colouring compounds, and has remarkable antioxidant pigments that have been dissolved or qualities (Valero-Mendoza et al., 2023).

colouring has been a tradition from the early distributed in a fat base made of a suitable

Natural lipsticks are defined as those that contain pigments found in nature. As a result of their pharmacological qualities, which include cytostatic, anti-inflammatory, antimicrobial, and antioxidant effects, we can refer to them as "herbal lipstick" (Rasheed, Rahman, & Hafsa, 2020). Herbal lipsticks are basically colourant dispersions in a base made of suitable waxes, fats, and oils that have been flavoured, scented, formed into the shape of a stick, and then packaged in a container. Natural cosmetics have always been favoured over synthetic ones since they are healthier, include no artificial components, give the body nutrition, and don't have any unfavourable side effects (Obat & Bosire, 2022).

One of the natural sources for cosmetics anthocyanidins, and phenolic and micronutrients, bioactive

medicine, and because of their remarkable radical damage (Guzmán & Lucia, 2021). healing properties, they are often used in the Lemon juice is one of the components that acts cosmetics industry. Usually found in body oils, as an antioxidant because it contains flavonoids shampoos, and lotions. Pomegranate peels and vitamin C. Research have shown that when were effective in treating pimples, acne, and they are utilised in cosmetics, they can prolong rashes. Due to its softening, moisturising, and the shelf life of a product (Sharmeen, anti-aging properties, а number dermatological and cosmetic product makers intrinsic antioxidant properties of vitamin E, have included it into their product lines commonly known as tocopherol, have been (Yepes-Molina, Hernández, & Carvajal, 2021). employed to boost the durability of cosmetics. Additionally natural ingredients are used such There were multiple flavours, such as floral, as Beeswax is one of the waxes that are fruity, and woodsy. These smells were commonly used to make lipsticks. It is a categorised based on how volatile they were. naturally occurring substance that comes from The essence of interest in this case was vanilla bees and is used in many cosmetic products. essence, which has a subtle aroma (Prabhu et Because of its natural ingredients' capacity to al., 2023). help the skin retain moisture, it is advantageous for chapped and dry lips (Gupta & Anjali, 2023). As a natural emollient, paraffin wax helps remove dead skin cells from the skin, giving it a smooth, soft appearance. Paraffin wax was used as a glossing, hardening, and stiffening agent in lipsticks (Desai & Gupta, 2023). In addition to being naturally sourced, oils from plants such as Cocos nucifera, olive trees, and castor oil plants have been shown to influence the sensory characteristics of products that are produced. Their natural qualities were believed to be essential for lipsticks because they promote moisturised

Pomegranates are a powerful food and lips, suppleness, and a defence against free of Mahomoodally, Zengin, & Maggi, 2021). The

# 2. MATERIALS AND METHODS

# **2.1 Materials**

lipsticks Herbal were made by using pomegranate seeds and peel powder as well as seeds and peel extracts. Bees wax, paraffin wax, coconut oil, olive oil, lemon essence, rose powder, vitamin E capsules, strawberry essence, vanilla essence, peppermint oil and food colors were collected from local market. During the current investigation, the following methodology was used (Chaudhari et al., 2019).

2.2 Selection of herb

The pomegranate seeds and peels used in used in the filtration process to produce the current formulation of herbal lipsticks Using extract. Because the freshly prepared extract the results of a research review (Rani, Pooja, has antioxidant qualities, it was used in the Harshavardhan, Madhav, & Pallavi, 2019).

# **2.3 Preparation of pomegranate's peel and** Hamdani, Rovida, & Khan, 2018). seeds powder

To separate the seeds and skin, the pomegranate fruit was gently washed and procedure was followed in the development of chopped. Using a sharp knife, cut the peel into the herbal lipstick with a few minor small slices, and let it dry in the sun. The dried adjustments. (Kothari et al., 2018). In this pieces were then ground with a grinder to make formulation in a beaker set over a water bath, a powder, which was then sealed or kept in beeswax and paraffin wax were heated, and polyethylene bags and kept temperature. Similarly Pomegranate seeds that added. In the beaker of melted wax on the were left over after the fruit was peeled off hotplate, coconut oil and olive oil were then were cleaned with water to get rid of any added. Once a homogenous mixture of the oil remaining pomegranate flesh, and then they and wax phases was achieved, colourful were sun-dried. After using a grinder to turn pigments such as edible colour, tint, or rose the dried seeds into powder, the powder was powder were added. Following the mixture's sealed in polyethylene bags and kept at room cooling down, vitamin E capsules, vanilla or temperature (Khan, Patel, & Bhise, 2017).

#### **2.4 Extraction**

were used in the extraction process. Using a solidification, any surplus was scraped off weighing balance, 5 g of the seed and peel using a razor. The prepared lipsticks were used powders were weighed and then added to 150 for additional analysis and assessment. The mL of distilled water in a beaker. The mixture ingredients and their respective roles in the was heated until it thickened while it was left preparation of herbal lipstick are listed in Table on the hot plate. A funnel and filter paper were 1.

subsequent creation of lipstick (Jalal, Pal,

#### 2.5 Method of formulation of herbal lipstick

The conventional lipstick formulation at room then pomegranate seed and peel extract was strawberry essence, and lemon essence were added. Next, the melted lipstick mixture was Distilled water and powdered peels and seeds poured into the lipstick container. After

Sr No	Ingredients	Importance
1	beeswax	Hardness and glossy
2	parrafin wax	Luminosity and Hardness
3	coconut oil	Moisturizing and antibacterial
4	olive oil	nourishing and moisturizing properties
5	pomegranate seed extract	Antioxidant and antibacterial effects
6	pomegranate peel extract	Antioxidant and anti-inflammatory effects
7	vanilla essence	Flavoring agent
8	strawberry essence	Flavoring agent
9	Vitamin E capsule	Has humectant and emollient properties
10	Lemon essence	Rich in vitamin C, antioxidant
11	edible yellow green and red color	coloring agent
12	rose powder	coloring agent
13	peppermint oil	soothing effect
14	lip tint	coloring agent

**Table 1:** Ingredients with their significance in the formulation of herbal lipstick

#### **3.** Evaluation of Herbal lipstick

Maintaining a consistent quality for herbal lipstick has been essential. In light of this, tests were conducted on the herbal lipstick formulations for a variety of parameters, such as the breaking point, pH parameter, ageing stability, surface abnormalities, and sensitivity test. Which are described below (Hayati & Chabib, 2016).

## **3.1 Melting point**

Determining the melting point was a crucial component of lipstick composition since it indicated the maximum amount that could be stored securely. The melting point of custom lipstick was assessed using the capillary tube method. To put it simply, a glass capillary tube with two apertures was filled with a sample of lipstick that had been melted and collected. After the capillary was filled and placed within the capillary apparatus, it was initially observed that the substance was melting slowly. The product was occasionally observed to have completely melted. Melting point was defined as the temperature at which a substance flows through a capillary tube. Every lipstick formulation that underwent this technique displayed a constant melting point ratio (Suthar, Singh, & Jain, 2022).

#### **3.2 Breaking point**

This test was designed to find the highest tension that lipstick can withstand before cracking. This test evaluated the longevity of the lipstick. The prepared herbal lipstick was stored straight in a socket far from the edge of the support. The breaking point was determined as the weight at which the break occurred after the weight was gradually increased by a certain value at predetermined intervals of about thirty seconds (Sai Datri, Lakshmana Rao, BDV, Zakir, & Sri Snigdhanjani, 2023).

#### 3.3 Surface abnormalities

This was examined by looking at surface imperfections such surface crystallisation, microbiological contamination, wrinkle development, and fatty material exudation (Mishra & Dwivedi, 2012).

#### 3.4 Color and texture

The lipstick compositions were examined for colour, gloss, and smoothness.

#### **3.5 Determination of pH**

The pH of a specially made herbal lipstick was measured with a pH meter.

#### **3.6 Aging stability**

The lipsticks that had been prepared were kept in storage at different temperatures: 3 °C, 22 - 26 °C, and 30 - 40°C, respectively. Bleeding, cratering streaking, and blooming were among the many factors noted.

#### 3.7 Perfume stability

After a few days, the composed lipsticks were examined to determine and characterise their smells.

### **3.8 Ease of application**

It was calibrated to apply herbal lipsticks.

#### 3.9 Irritation test

It was evaluated by applying on the lips for 8-10 minutes.

#### 3.10 Thixotropic character

It is a thixotropic quality indicator technique based on penetrometers. A typical needle with a given diameter is allowed to pierce for five seconds at 25°C while carrying a 50 g load. The depth of penetration of lipstick serves as a gauge for its thixotropic structure (Mota Ferreira et al., 2016).

#### 3.11 Solubility test

The formulated herbal lipstick was diluted in a variety of solvents to assess its solubility.

#### 4. RESULT AND DISCUSSION

The aim of the development and testing process of herbal lipsticks was to formulate a lipstick using herbal components. Based on research and analysis, the negative impacts of synthetic plants may be reduced when using herbal ones. Different natural ingredients were used in the creation of natural lipsticks with colouring additives. The pomegranate plant was utilised in the lipstick mixture. This study showed that pomegranate seed and peel extracts functioned as natural ingredients because of their potent antioxidant and antibacterial properties, which allowed them to be used as acceptable natural alternatives to synthetic ingredients in food additives and cosmetics for creating herbal lipsticks. Following analysis, it was determined that the created lipstick was displaying excellent qualities including lip smoothness, sparkle, and expansion. The produced lipsticks were well-liked and had unfavourable no consequences

# 4.1 Formulation of seeds and peels powder

Pomegranate seeds and peels were dried under sun and shade then were ground to make powder. Peels and seeds were weighed both before and after they were dried. Moreover, weight was assessed in powder form. The observed weight was shown in Table 2 and 3

**Table 2:** Observed weight of materials dried

 under sun

Materials	before drying(g)	dried(g)	powder(g)
seeds	85	68.4	53.5
peels	75	51	57
Table 3. O	bserved weig	wht of mat	erials dried

in shade

Materials	before bdrying(g)	dried(g)	powder(g)
seeds	80	72.4	68
peels	70	57.7	52
	•		

#### 4.2 Extraction

Two separate solvents, distilled water and rose water, were used to extract the pomegranate peel and seed powder in a beaker on a heated plate with a magnetic stirrer. Paper filters were used to filter the extracts. Afterwards, lipstick composition was done using this recently prepared extract. The amounts of samples, we utilized to make the extracts, are displayed in Table4 Table 4: Quantities of solvent and sample to

make extract

Sample	Qty(g)	Solvent	Qty(g)
peel powder	5	distilled water	150
seed powder	5	distilled water	150
peel powder	5	rose water	150
seed powder	5	rose water	150

# 4.3 Composition of lipsticks

To achieve the best stability for the lipstick, several concentrations of extracts and herbal components were applied. Customized ingredients are shown in Table 5

Table 5: In	ngredients <sup>v</sup>	with their	prescribed of	uantity in	the com	position	of herbal li	psticks

Entries	Ingradiants	Quantity(g/mL)							
Linutes	Ingreatents	F1	F2	F3	F4	F5	F6	F7	F8
1	Beeswax	2	2	3	4	4	4	4	4
2	paraffin wax	0.5	0.5	0.5	1	1	1	1	1
3	coconut oil	4	4	4	4	4	4	4	4
4	olive oil	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5	seed powder		1						
6	seed extract			1		1			
7	peel powder	1						0.7	
8	peel extract				1		1		1
9	red edible color					1.5		1.5	1
10	yellow edible color				2				
11	rose powder		1	0.7				0.5	
12	pink lip tint						q.s	q.s	q.s
13	vanilla	3	3		3		3		3
15	essence(drops)	5			5				
1/	strawberry			3		3		3	
14	essence(drops)			5		5		5	
15	lemon essence(drops)	2	2	2			2		
16	vitamin E capsules	1	1	1	1	1	1	1	1
17	peppermint oil(drops)				2	2		2	2



F1

F2

F3

F4



F6

F5



#### **4.4 Evaluation**

A number of characteristics, including colour, texture, melting and softening points,

were assessed for the created lipsticks. The observed assessed parameters for each formulation are reported in Table 6

F7

F8

Sr.	Evaluation	Inferences							
No	parameter	F1	F2	F3	F4	F5	F6	F7	F8
1	Melting point	50	50	52	55	57	55	59	56
2	Breaking point	28	28	30	30	31	30	31	30
3	Color	colorless	violet	light pink	pale yellow	ruby pink	rose pink	dark pink	reddish
4	Texture	rough	not smooth	smooth	smooth	smooth	smooth	smooth	smooth
5	Perfume stability	aromatic	aromatic	aromatic	aromatic	aromatic	aromatic	aromatic	aromatic
6	Ease of Application	poor	average	easy	good	easy	good	good	average
7	Surface abnormality	abnormal	abnormal	no defect	no defect	no defect	no defect	no defect	no defect
8	pH value	6.7	6.6	5.9	6.4	6.6	6.1	6.3	6.5
9	Aging stability	medium	medium	smooth	good	smooth	smooth	smooth	normal
10	Irritation test	no irritaton	no irritation	no irritation	no irritation	no irritation	no irritation	no irritation	no irritation
11	Thixotropic character	8	8.2	8.7	8.5	8.9	9	10.1	9.5
12	Solubility test	chloroform	chloroform	chloroform	chloroform	chloroform	chloroform	chlolroform	chloroform

#### **Table 6:** evaluation of herbal lipsticks

#### 5. Conclusion

The goal of creating the herbal lipstick formula was accomplished in order to encourage the use of natural formulations and dyes rather than synthetic ones. Formulated lipsticks using natural ingredients showed good results based on the evaluation criteria examined. F4 to F8 were found best among all eight formulations showing the good properties like shining, pH balance 6-6.5, smoothy appearance with no defect and has good breaking point and stability in contrast to other formulation. It was also concluded from the recent Herbal components should be utilised in the creation of cosmetic items as they are secure and easily available. Furthermore, due to their strong antiinflammatory and antihypertensive qualities, among other health benefits, herbal products ought to be suggested for use in cosmetics.

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