

**DEVELOPMENT OF A NATURAL ANTI-PIGMENT CREAM INCORPORATING LENS
CULINARIS, NEEM AND ACTIVATED CHARCOAL****Dr. Shiju L.*, Prajwal B. S., Darshan A. P., Chandana Shree G. V., Gunashekar S., Aishwarya M.**

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ABSTRACT

The purpose of cosmetics is to improve and beautify the appearance of people. The present study focuses on the formulation and evaluation of an **herbal face cream using Masoor dal (Lens culinaris)** as the main ingredient. Masoor dal is rich in proteins, vitamins, and antioxidants that help in skin nourishment, brightening, and rejuvenation. The cream was prepared using natural ingredients such as almond oil, coconut oil, rose water, and essential oils to enhance its moisturizing and healing properties. The formulated cream was evaluated for parameters like appearance, consistency, pH, spreadability, and stability. Results showed that the cream possessed desirable cosmetic characteristics and was free from any irritation or side effects. Thus, the **Masoor dal herbal face cream** can serve as an effective, natural, and safe alternative to synthetic skincare products.

KEYWORDS: Effective, Gentle, Hydrating, Skin care, Soothing, non-irritating.**INTRODUCTION**

Cosmetics have been used for centuries to enhance beauty and improve skin appearance. The term "cosmetics" is derived from the Greek word "kosmetikos," which means "to adorn". Herbal ingredients in cosmetic products offer advantages such as antioxidant, anti-inflammatory, antiseptic, and antibacterial properties, and are generally considered to have fewer adverse effects compared to synthetic alternatives.^[1]

Cream is a sort of semisolid emulsion that is designed for external application and can be either water in oil (w/o) or oil in water (o/w).^[2] Skin pigmentation is characterized by the appearance of uneven brown to dark brown spots on the skin.^[3] The pigment known as melanin is what gives human skin its colour. Hyperpigmentation is a condition where a significant quantity of the melanin is produced. This typically occurs as a result of the skin being exposed to too much sunlight. The skin cells known as melanocytes begin to produce melanin in response to UV radiation from sunbeams. Darkened areas on the skin appear as a result of this enhanced melanin synthesis.

Aloe vera has the ability to lessen facial pigmentation and dark patches.^[4,5]

Since ancient times, herbal creams have been used as natural treatments for a variety of skin conditions and aesthetic enhancements. Herbal creams, which use botanical extracts' medicinal qualities to nourish, protect, and revitalize the skin, are made from plant-based ingredients and provide a comprehensive approach to skincare.^[6]

Masoor dal also known as red lentil is a prevalent pulse in Indian cuisines and widely utilized in diverse food products. It is a type of lentil with a reddish-orange colour, a small size and can cook easily as compared to other lentils. It can be cooked without prior soaking like other pulses. To cook masoor dal, it is rinsed thoroughly and then cooked with water or broth until it becomes tender. It can be seasoned with various spices and herbs. Masoor dal is mainly consumed in the form of curry for lunch and dinner meals along with boiled rice, flatbread, and so forth. It is typically cooked with spices, tomatoes,

onions, and sometimes garlic and ginger.^[7]

MATERIALS AND METHODS

Collection of Material: The Masoor dal was collected from supermarket, Maddur, Mandya district, Karnataka, India in the month of August 2025. An herbarium voucher specimen was preserved in the department of Pharmacognosy, Bharathi College of Pharmacy, Bharathinagara for further reference.

Method of Preparation

- Weigh required quantity of ingredients like bees wax, almond oil, coconut oil
- Heat the above mixture gently in a water bath until

the bee's wax melts.

- To a beaker add rose water, distilled water and benzoic acid
- Warm this mixture in a separate water bath to the same temperature as the oil phase.
- In mortar and pestle add an alcoholic extract of masoor dal, beetroot powder, tulsi powder, activated charcoal, sandalwood powder & masoor dal.
- Mix thoroughly then add oil and water phase and then triturate until the clicking sound.
- Then the final product stored in a well closed container.

Ingredients used in herbal face cream

Sl.No.	INGREDIENTS	F1	F2	F3
1	Alcoholic extract of Masoor dal	6g	5 g	6 g
2	Coconut oil	3 ml	2 ml	3.5 ml
3	Bees wax	2 g	2 g	2 g
4	Almond oil	3 ml	4 ml	2.5 ml
5	Beetroot powder	0.5 g	0.5 g	0.4 g
6	Neem powder	0.5 g	0.5 g	0.5 g
7	Sandal wood powder	0.5 g	0.5 g	0.5 g
8	Activated Charcoal	0.5 g	0.5 g	0.4 g
9	Benzoic Acid	0.05 g	0.05 g	0.05 g
10	Rose Water	12 ml	14 ml	13 ml
11	Tulsi Powder	0.5 g	0.5 g	0.4 g
12	Vitamin E Capsule	0.4 ml	0.3 ml	0.4 ml

Evaluation Parameters

To ensure the quality and stability of herbal face creams, various evaluation parameters are employed. These include.

1. Organoleptic properties

Colour, scent, and look were among the sensory attributes that were recorded.

2. Sensitivity test

The prepared cream was applied to the hand's skin and left in the sun for four to five minutes.

3. pH

The pH meter was calibrated using a standard buffer solution. A digital pH meter was used to determine the pH of a solution prepared by dissolving 0.5 g of cream in 50 ml of distilled water.

4. Spreadability

Spreadability is assessed by the number of seconds it takes for two glass slides to detach from the cream; a shorter time indicates better spreadability. To measure, 3 g of herbal cream was sandwiched between two slides and pressed to make a uniform thin layer. A weight of 1000 grams was then imposed for 5 minutes. Following that, an additional 10 g was added with a pan, and the upper slide was attached to a thread and hook for pulling. The time it took for the upper slide to move 10 cm over the

bottom slide was measured, and spreadability was computed using the specified formula.

$$S = M \times LT$$

Where;

M = weight tied to upper slide, L = length of glass slides, T = time taken to separate the slides.

5. Irritancy test

Mark a 1 cm² region on the left dorsal surface. The cream was then applied to the designated area, and the time was recorded.

6. Dilution test

The type of emulsion is determined by diluting it with water or oil. An o/w (oil-in- water) emulsion will entirely mix with water because it is the dispersion medium, whereas a w/o (water-in-oil) emulsion will separate when mixed with water. In contrast, a w/o emulsion will combine with oil, whereas an o/w emulsion will not dissolve in oily stuff.^[12]

7. Washability

The product applied on skin washability with water it was easily removed were checked manually.

8. Consistency

The consistence was determined manually it was found to be solid by visual observation.

RESULTS

cream were judged by colour, odour, and texture.

1. Organoleptic properties

The Organoleptic properties of the formulated herbal face

Organoleptic properties

Sl.No.	Properties	F1	F2	F3
1	Colour	Reddish cream	Reddish cream	Reddish cream
2	Odour	Aromatic	Aromatic	Aromatic
3	Texture	Good	Good	Good



Formulation 1



Formulation 2



Formulation 3

2. Sensitivity test**Sensitivity test**

SL NO.	Formulations	Sensitivity
1	F1	No
2	F2	No
3	F3	No

3. pH

to be in the range of 6.5-6.9 which is good for the skin.

The pH of The Formulated herbal face cream was found

pH of Formulation F1 to F3

Sl.No.	Formulations	pH
1	F1	6.8
2	F2	6.5
3	F3	6.9



Picture of Digital pH meter in use

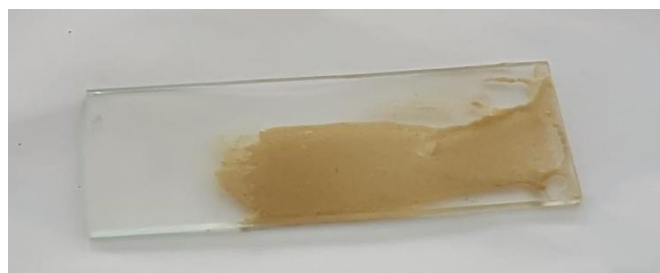
4. Spreadability

On the glass slide, a small amount of herbal face cream was placed and another slide was placed on the cream and over the slide 100 gm of weight is kept. The

spreadability was recorded in gm cm/sec. The herbal face cream spreadability was checked manually and after applying the herbal face cream on the skin and gently rubbing it, the herbal face cream was easily spreadable.

Spreadability Test

Sl.No.	Formulation	Mass in (gm)	Spreadability gm cm /sec
1	F1	100gm	33
2	F2	100gm	27
3	F3	100gm	21



Spreadability test by using glass slides

5. Irritancy Test

Irritancy Test

SL.No.	Formulations	Redness	Edema	Irritation	Inflammation
1	F1	No	No	No	No
2	F2	No	No	No	No
3	F3	No	No	No	No

6. Dilution Test

Dilution Test

SL.No.	Formulations	Water	Oil
1	F1	Immiscible	Miscible
2	F2	Immiscible	Miscible
3	F3	Immiscible	Miscible

The formulated herbal face creams are found to be W/O type of emulsion.

7. Washability

A small quantity of scrub is applied to the skin and washed with water. It is easily washable.

Washability Test

SL.No.	Formulations	Washability
1	F1	Easily washable
2	F2	Easily washable
3	F3	Easily washable



Before wash



After wash

Washability Test

8. Consistency

The consistency was determined manually. It was found

to be solid by visual observation.

Results of all evaluation parameters

SL.No.	Parameters	F1	F2	F3
1	Sensitivity	No allergic reaction	No allergic reaction	No allergic reaction
2	Spreadability	Good	Good	Good
3	Irritancy	Non -Irritant	Non -Irritant	Non -Irritant
4	Washability	Easily washable	Easily washable	Easily washable
5	Consistency	Good	Good	Good

9. SENSITIVITY AND IRRITANCY TEST

The formulated herbal face cream doesn't show any type of sensitivity reaction. The formulated herbal face cream

shows no Redness, Edema, Irritation or Inflammation during studies. The formulated herbal face cream is safe for use.

Sensitivity and Irritancy Test

Sl.No.	Formulation	Sensitivity	Redness	Edema	Irritation	Inflammation
1	F1	No	No	No	No	No
2	F2	No	No	No	No	No
3	F3	No	No	No	No	No



Sensitivity & Irritancy Test

CONCLUSION

The formulation of the **Masoor dal herbal face cream** was successfully developed using natural ingredients that provide multiple skin benefits. The cream showed good consistency, smooth texture, pleasant appearance, and easy spreadability. Masoor dal, being rich in proteins and antioxidants, helps in improving skin tone, reducing blemishes, and providing nourishment. Hence, the prepared herbal face cream is effective, safe, and suitable for regular use as a natural skincare formulation.

Finally, we conclude that the masoor dal herbal face cream was found to be safe and skin- friendly. It showed good pH, consistency, spreadability, and washability. No irritation, redness, or inflammation was observed after use. Overall, it is a natural and effective cream for soothing and hydrating the skin.

Conflict of interest: - No conflict of interest.

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