International Journal of Current Research and Techniques (IJCRT)
E-ISSN: 2349-3194 (Online) | P-ISSN: 2348-4446 (Print)
UGC Approved Journal No: 47722 [No: 2616]
DOI: https://doi.org/10.5281/ZENODO.15422927

An Overview of Research Article for Safe and Effective Formulation of Herbal Moisturizing Cream by Bougainvillea Flowers

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Manuscript Received: May 08, 2025; Revised: May 14, 2025; Published: May 15, 2025

Abstract: Moisturizing Cream is a semi-solid preparation used to reduce the chances of skin problems and fight wrinkles. The main aim of this research work is to use different herbs. The herbs used in the preparations are dried Bougainvillea flowers powder, Amla powder, Neem powder, and Turmeric. Herbal moisturizers are preparations used to improve a person's appearance. The main goal of our work is to develop a herbal cream with multipurpose effects such as a moisturizer that reduces acne and skin irritation. An herb is a plant or part of a plant valued for its aromatic medicinal properties. Herbal cosmetics are widely accepted in the belief that they are safe for use and have no side effects. All the chemicals in the formulation make the cream very stable and help in making a good cream.

Keywords: Bougainvillea, Moisturizer, Hydration, Herbal cosmetics.

1. Introduction:

In recent years, there has been a growing preference for natural and herbal products in skincare due to their perceived safety, minimal side effects, and traditional efficacy. The increasing incidence of skin problems such as dryness, irritation, and acne has driven the demand for effective topical formulations that are both safe and natural. Herbal cosmetics, which utilize botanical extracts, have gained popularity as they are believed to contain beneficial bioactive compounds that promote skin health and hydration.

Herbal moisturizing creams serve a dual purpose of hydrating the skin while providing therapeutic benefits. Among various botanicals, Bougainvillea flowers are traditionally recognized for their skin-enhancing properties, such as hydration and antioxidant activity. Combined with other medicinal herbs like Amla, Neem, and Turmeric, each known for their skin-protective, anti-inflammatory, and brightening qualities, the formulation aims to address multiple skin concerns.

This research focuses on developing a safe, stable, and effective herbal moisturizing cream incorporating Bougainvillea flowers along with other selected botanicals. The objective is to create a multipurpose topical product that not only maintains skin hydration but also offers benefits like reducing skin irritation, combating signs of aging, and promoting a healthy complexion. The use of natural plant-based ingredients aligns with the increasing consumer demand for eco-friendly and holistic skincare solutions.

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2. Methodology

Experimental procedure

Preparation of herbal leaf powders

- Fresh leaves of Bougainvillea glabra, Neem, Tulsi, Amla, and Turmeric were collected and washed thoroughly 2-3 times with running tap water and once with sterile distilled water.
- Then the leaves were shaded and dried.
- Plant materials were regularly examined to check for any fungal growth or rotting.
- The dried leaves were powdered to obtain a very fine particle size using a mechanical mixer grinder.
- Then powders were sieved by using sieve no. 80.
- Powders were collected and stored in air-tight containers.
- The powdered drug was extracted using the soxhlation process.

Bougainvillea

Neem

Tulasi

Turmeric

Amla

Figure-1 Herbal Leaf Powders

3. Extraction Process

There are different types of extraction processes like decoction, infusion, maceration, percolation, and Soxhlation apparatus. We mainly used the Soxhlation process to extract the contents.

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Powdered Drug

↓

Solvent added

↓

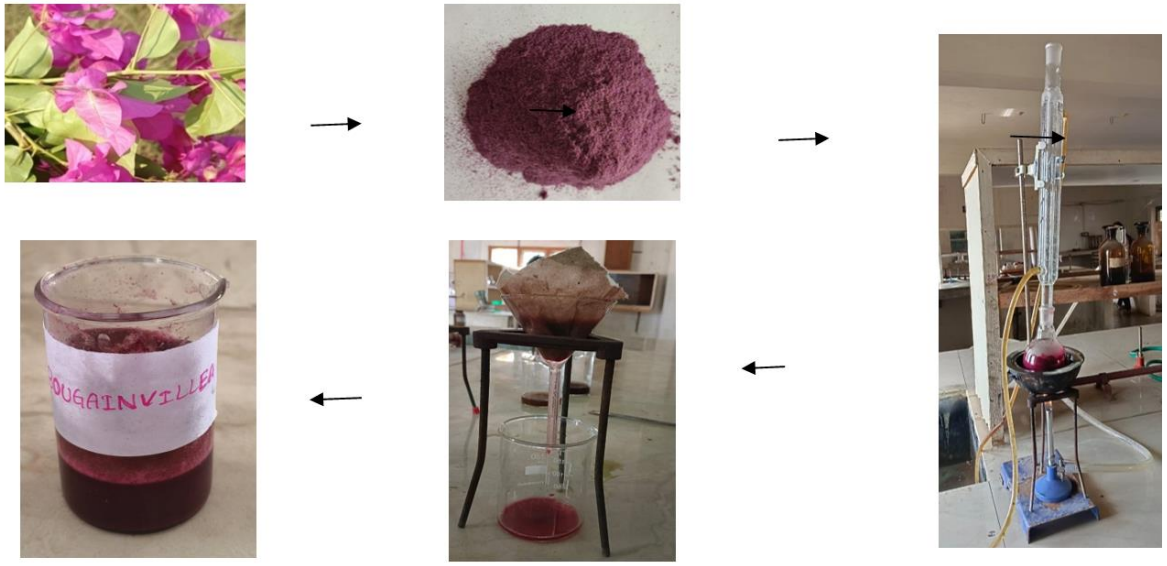
Soxhletion for 1 hour

↓

Filter the final product

↓

Collect the extract



Extract **Filter** **Soxhletion of Powder**

Figure-2 Extraction Process

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4. Phytochemical Tests

Table-1 Tests and Observations

TESTS	PROCEDURE	INFERENCE	OBSERVATION
CARBOHYDRATES			
Molisch's test	Mix 1ml of reagent in 2ml of test solution. Add 1ml of conc. sulfuric acid.	Red to violet ring depending on the amount of sugar appears at the junction of the two liquids.	Presence of Carbohydrates
PROTEINS			
Biuret test	Mix 2ml test solution with 2ml biuret reagent.	Violet to pink color.	Presence of proteins
AMINO ACIDS			
Ninhydrin test	Mix 2ml test solution with 1ml of 5% ninhydrn solution. Boil for 5 mins in water bath.	Blue to purple color	Presence of Amino acids
ALKALOIDS			
Mayer's reagent	Mix 2ml of reagent with 2ml filtrate of plant drug extract.	Cream colored precipitate	Presence of Alkaloids
FLAVONOIDS			
Lead acetate test	Mix test solution with lead acetate.	Yellow precipitate	Presence of Flavonoids
TANNINS			
Ferric chloride test	Mix 2ml of test solution with 5% of ferric chloride solution.	Blue, blue-black or blue- green color reaction	Presence of Tannins
TRITERPENOIDS			
Noller's test	Mix 2ml test extract with small quantity of tin and thinoyl chloride.	Pink coloration indicates the presence of triterpenoids	Presence of Triterpenoids
STEROIDS			
Liebermann test	Mix 2ml test extract with 2ml acetic anhydride. Boil and add 0.5ml of H2SO4.	Blue color	Presence of Steroids
SAPONINS			
Foam test	Shake aqueous solution of a saponins containing sample producing oam, which is stable for 15seconds or more.	Foam lasts for more than 15 seconds	Presence of Saponins

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a)

b)

Formulae

Figure-2 a) & b) Chemical Tests

Table-2 Ingredients

S. NO	INGREDIENTS	QUANTITY
1	Bougainvillea	3ml
2	Amla	3ml
3	Tulsi	3ml
4	Turmeric	3ml
5	Neem	3ml
6	Bees wax	15gms
7	Liquid paraffin	30ml
8	Methyl paraben	0.06gms
9	Borax	0.6gms
10	Rose oil	q.s
11	Water	q.s

Bougainvillea **Neem** **Turmeric** **Amla** **Tulasi**

Figure-3 Herbal Extracts of Pants

5. Formulation

Heat liquid paraffin and beeswax in a borosilicate glass beaker at 75°C and maintain that heating temperature (oil phase). In another beaker, dissolve borax and methyl paraben in distilled water and heat this beaker to 75°C to dissolve borax and methyl paraben and to get a clear solution. Then slowly add this aqueous phase to the heated oily phase. Then add a measured amount of Bougainvillea extract, Turmeric extract, Amla extract, Neem extract, and Tulsi extract. Stir vigorously until it forms smooth cream, then add a few drops of rose oil as fragrance.

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Figure-4 Moisturizing Cream

6. Evaluation Parameters

Physical evaluation

Irritancy test: Mark an area (1cm) on the left-hand dorsal surface. Then the cream is applied to that area and the time is noted. Then it is checked for irritation.

Wash ability test: A small amount of cream is applied on the hand, and it is then washed with tap water.

pH : 0.5g of cream is taken and dispersed in 50ml of distilled water and then pH is measured by using pH paper.

Phase separation

Prepared cream is kept in a closed container at room temperature away from sunlight. Then phase separation is checked for 24 hours for 30 days. Any change in phase separation is observed.

Spread ability

The spread ability is expressed in terms of time in seconds taken by two slides to slip off from the cream, placed between the slides, under certain load. The less time taken for separation of the slides, the better the spread ability.

Greasiness

Here the cream was applied on the skin surface in the form of a smear and checked if the smear was oily or greasy.

Table-3 Evaluation Results

S. NO.	PARAMETERS	OBSERVATION
1	Organoleptic properties	
A.	Colour	White
B.	Odour	Pleasant
C.	Smoothness	Fine
D.	Taste	characteristic
2	Irritancy test	Negative
3	PH	6.9
4	Wash ability	Good
5	Spread ability	Good
6	Phase separation	No phase separation
7	Greasiness	Moderate

7. Discussion

The herbal moisturizing cream formulation was prepared from Bougainvillea, Neem, Tulsi, Amla, Turmeric leaves, and a small amount of synthetic ingredients. Moisturizing cream is a cosmetic used to hydrate the skin and improve the brightness of skin. Bougainvillea glabra has been reported to hydrate the skin. Neem leaves act as a wrinkle remover, Amla hydrates and protects the skin, and Turmeric evens skin tone. The prepared herbal moisturizing cream is more acceptable in skin research and is safer with minimum side effects than synthetic preparations. The formulated moisturizing cream is capable of reducing skin dryness, soothing the skin, and brightening the skin.

8. Conclusion

The moisturizing cream has multipurpose effects and all these herbal ingredients, based on results and discussion, show that the formulation was stable at room temperature. The prepared formulation of herbal moisturizing cream was found to be compliant with all the properties of semi-solids, and the evaluation studies showed that it reduces skin problems. Herbal moisturizing cream was formulated with the aqueous extract of medicinal plants that are commonly used traditionally for skin problems. From the given study, it can be concluded that the prepared herbal moisturizing cream was good, and the formulation exhibited satisfactory results.

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