

A Polyherbal approach to anti-aging formulation and evaluation of a cream containing *Murraya Koenigii* and *Tinospora Cordifolia*

Ms. Nilam A. Mhasane, Ms. Poonam T. Jundre*

Student, SMBT Institute of Diploma Pharmacy affiliated to MSBTE, Dhamangaon Nashik, Maharashtra, India.

Lecturer, SMBT Institute of Diploma Pharmacy affiliated to MSBTE, Dhamangaon Nashik, Maharashtra, India.

*Corresponding Author: Ms. Poonam T. Jundre**

*Lecturer, SMBT Institute of D. Pharmacy
Dhamangaon, Nashik.*

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ABSTRACT: The cosmetics industry is using herbal substances with proven therapeutic effects due to the increasing demand for safe and natural skincare products. *Murraya koenigii* (also known as curry leaves) extract, which is rich in bioactive elements like flavonoids, alkaloids, and phenolic substances renowned for their antioxidant and antiaging benefits, was used in this work to create an anti-aging herbal cream. The goal was to create a topical herbal preparation that uses *Murraya koenigii*'s inherent antioxidant capacity to lessen wrinkles, fine lines, and elasticity loss. Both internal genetic components and external environmental factors influence the complex biological process of ageing. Demand for anti-aging skincare products has significantly increased due to the growing emphasis on wellbeing and physical beauty. Physical properties such color, odor, texture, spreadability, viscosity, pH, and stability under various storage and temperature conditions were taken into consideration when developing and optimizing formulations. The DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging experiment was used to assess the extract's and the cream formulation's in vitro antioxidant activity. The results showed a strong free radical neutralizing capability, indicating the formulation's anti-aging potential. Furthermore, the formulation underwent expedited stability testing and demonstrated constant performance devoid of microbiological growth, phase separation, or discoloration.

KEYWORDS: *Murraya koenigii*, herbal cream, anti-aging formulation, natural cosmetics, skin aging,

I. INTRODUCTION:

[1] The use of herbal substances with established therapeutic qualities has become more popular in the cosmetics sector due to the rising

demand for safe and natural skincare products. *Murraya koenigii* (also known as curry leaves) extract, which is rich in bioactive elements like flavonoids, alkaloids, and phenolic substances renowned for their antioxidant and antiaging benefits, was used in this work to create an anti-aging herbal cream. The goal was to create a topical herbal preparation that uses *Murraya koenigii*'s inherent antioxidant capacity to lessen wrinkles, fine lines, and elasticity loss. Ageing is a complex biological process influenced by both internal hereditary components and external environmental factors. Clear signs of wrinkles, fine lines, sagging, dryness, and hyperpigmentation include. Aging is a complicated biological process that is impacted by both extrinsic environmental variables and intrinsic genetic elements. Wrinkles, fine lines, sagging, dryness, and hyperpigmentation are all obvious indicators of aging, especially on the skin, and they all have an impact on appearance and, consequently, mental health. [2] The demand for anti-aging skincare products has significantly increased due to the growing emphasis on wellbeing and physical attractiveness. Due to rising skincare awareness and an older population, the worldwide anti-aging market has grown quickly. Phyto-cosmetics, another name for herbal cosmetics, use the inherent advantages of plant extracts to improve health and appearance. In addition to being safer, herbal formulas work with the physiology of the skin. Flavonoids, alkaloids, tannins, and terpenoids are examples of the active phytochemicals included in plant extracts that have antioxidant, anti-inflammatory, antibacterial, and photoprotective qualities that can greatly aid in skin protection and rejuvenation by causing the breakdown of collagen and elastin, two essential proteins that give skin its suppleness and firmness, oxidative stress plays a major part in the aging process.

FIG 01: MURRAYA KOENIGII FIG 02: TINOSPORA CARDIFOLIA



[3] The *Murraya koenigii* contains antioxidants, vitamins, flavonoids, and carbazole alkaloids that help shield the skin from free radical damage and early ageing, it is utilized in the anti-aging cream. It increases the formation of collagen, minimizes fine lines and wrinkles, preserves skin suppleness, and shields the skin from UV rays and pollutants. Additionally, it has antibacterial and anti-inflammatory qualities that support healthy, radiant skin. As a result, it functions in the formulation as a natural antioxidant and skin-protective agent.

[4] *Tinospora cordifolia*, a well-known Ayurvedic revitalizing herb with potent healing, moisturizing, and anti-aging qualities, is incorporated in the formulation. Alkaloids, glycosides, and diterpenoid chemicals found in it aid in the repair of injured skin cells, encourage skin regeneration, lessen inflammation, and enhance skin hydration.

II. OBJECTIVES:

- To formulate a Polyherbal anti-aging cream using extract of *Murraya koenigii* and *Tinospora cordifolia*.
- To evaluate the prepared cream for physiochemical parameters such as

pH, viscosity, spread ability and physical appearance.

- To ensure the safety and skin compatibility of the formulated cream.

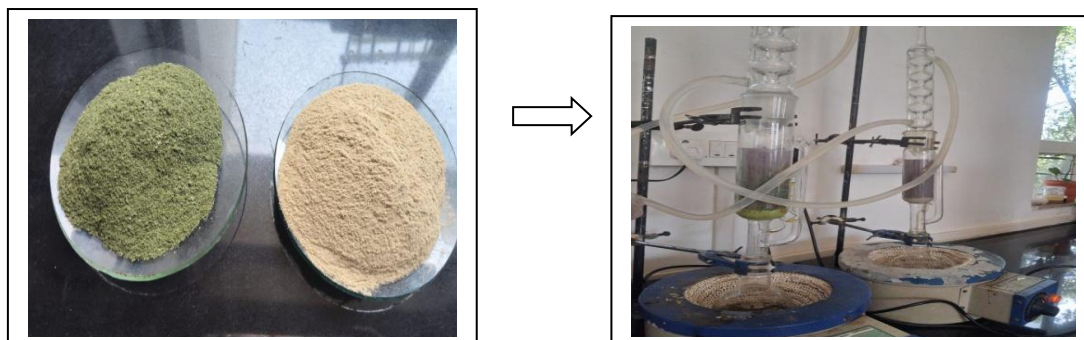
III. MATERIAL AND METHODS:

[5] **Collection of materials:** *Murraya koenigii* and *Tinospora cordifolia* collect from Igatpuri and steric acid, Acetyl alcohol, liquid paraffin, glycerin, triethanolamine, methyl paraben and rose water was collect from pharmaceutical lab (SMBT IODP, Nashik)

Extraction Method of *Murraya koenigii* and *Tinospora cordifolia*:

1. Fresh *Murraya koenigii* leaves and *Tinospora cordifolia* stem are collected and dried for 1-2 weeks in room temperature separately
2. The dried leaves and stem put into a mixer grinder and to make coarse powder.
3. Weighing the 25gm of leaves powder and stem powder put and placing in soxhlet apparatus for extraction with containing 200 ml of ethanol; allow standing for 3 days for 6 hours daily.
4. After the extraction, Filtering the material with the help of by using filter paper to obtain particle-free extract.

Fig No.3: Extraction of *Murraya koenigii* and *Tinosporacardifolia*



[6] METHOD OF PREPARATION OF HERBEL CREAM:

1.Oil Phase Preparation

Take liquid paraffin, cetyl alcohol, and stearic acid. Melt them together in a water bath at roughly 75°C.

2.Aqueous Phase Preparation

Heat to 70–75°C and dissolve glycerin, methyl paraben in the necessary amount of water.

Stir continuously while adding triethanolamine.

3. Emulsification

Add the oil phase to the aqueous phase gradually.

Continue stirring until a homogenous emulsion forms.

4. Including Extract

Emulsion should be cooled below 40°C.

Gradually add the herbal extract while stirring gently.

5. Last Modification

Add rose water.

Add purified water to the final weight.

To create a smooth, uniform cream, thoroughly mix.

6. Storage

Keep in a cool location in a well sealed container.

FORMULATION TABLE No.: 1

Sr.No.	Name of Ingredients	F1	F2	F3
1.	Murraya Koenigii Extract	0.6gm	0.8gm	01gm
2.	Tinosporacardifolia Extract	0.6gm	0.8gm	01gm
3.	Stearic acid	3.0gm	3.0gm	3.0gm
4.	Cetyl alcohol	0.9ml	0.9ml	0.9ml
5.	Liquid paraffin	1.5ml	02ml	2.5ml
6.	Glycerin	1.5ml	02ml	2.5ml
7.	Triethanolamine	0.3ml	01ml	1.5ml
8.	Methyl paraben	0.05gm	0.05gm	0.05gm
9.	Rose water	q.s	q.s	q.s

Fig No.: 4 Formulation of *Murraya koenigii* and *Tinosporacardifolia* Cream



EVALUATION PARAMETERS:

- Appearance:** The Cream appearance was examined visually.
- Color:** The color of the cream was visible.
- Odour:** Sniffing was used to assess the lotion's aroma.
- PH:** The produced herbal lotion's PH was measured using a digital PH meter and a PH paper.
- Spread ability:** A sample was placed between two slides and crushed to a uniform thickness using a particular weight for a predefined period of time in order to assess the lotion's spread ability.
- Irritancy test:** The lotion was applied to a specific area of the dorsal surface of the left hand.
- Test of Removal:** The applied area was washed with water to test how easy it was to remove the cream.
- Stability Test:** The formulation was put in the middle of the petri dish, and the plates were then incubated for 72 hours at 37°C to examine the all-microbial growth.
- Viscosity:** The viscosity of lotion was determined by using Brookfield viscometer (LV Viscometer) spindle No. 64 at 20 RMP for 3 min. The Values Obtained for sample is noted.

EVALUATION TABLE No.: 2

Parameters	F1	F2	F3
Colour	Light brown	Dark brown	Dark brown
Odour	Pleasant	Pleasant	Pleasant
Texture	Smooth	Smooth	Smooth
pH	5.8	6.1	5.9
Stability test	Stable	stable	Stable
Spreadability	Not easily spreadable	Easily spreadable	Easily spreadable
Washability	Easily washable	Easily washable	Easily washable
Viscosity	2003cp	2326cp	2166cp
Irritancy Test	Non irritable	Non irritable	Non irritable

Fig No.: 5 Stability test

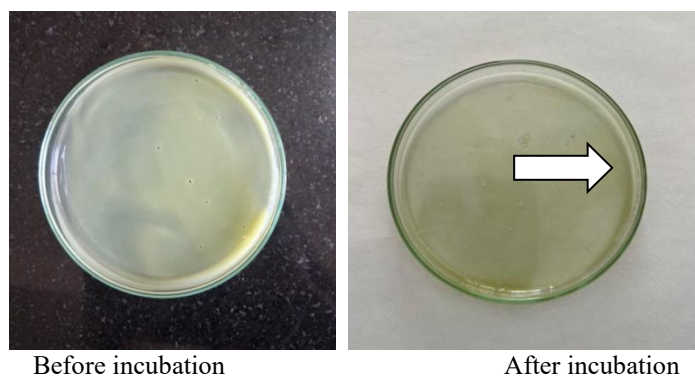


Fig No.: 6 pH Test



Fig No.: 7 Viscosity test



Fig No.: 8 Spread-ability Test



IV. Result and Discussion:

The herbal Cream prepared with *Murraya koenigii* leaves and *Tinospora cardifolia* steam extract showed notable advantages. According to the study's findings and product testing, extract is essential for boosting skin elasticity, decreasing dryness, and improving skin texture. The color of the herbal preparation was Brown. The pH, viscosity, stability and irritancy was determined between 5 to 6 and the lotion did reduce any skin discomfort when applied to the skin so overall, the Cream show that the extract-based herbal Cream is a safe, natural, and skin-friendly for skin and mucous membrane.

V. Conclusion:

In present study, Herbal Cream formulation was developed and evaluated using organoleptic characteristics (color, odor, and appearance) as well as physiological parameters like pH, Spread-ability, ease of removal, and irritancy test. Herbal extracts are the subject of the current investigation. The creation of a herbal Cream with *Murraya koenigii* Leaves and *Tinospora cardifolia* steam extract demonstrates how beneficial natural ingredients are for skin as a anti-aging. extract is a great option for a Cream formulation because of its well-known antioxidant, moisturizing, and anti-aging qualities. This Cream provides deep hydration, nourishment, and skin protection as a safe, chemical-free substitute for traditional skincare products.

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