

A Comprehensive Review on Herbal Cream Formulations Containing *Moringa oleifera*

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Abstract

Herbal Cosmetics are the products which are used to enhance a persons appearance. Chemical based cosmetics can harm the skin, and growing consumer awareness of herbal alternatives has driven increased demand for natural products and plant-based extracts in cosmetics formulations. Semisolid dosage forms that are typically applied topically to the skin are known as Creams. This study primarily focuses on the Preparation and Evaluation of a herbal cream containing *Moringa Oleifera* leaf extract for topical therapeutic applications. The herbal cream is basically a water-in-oil type of emulsion. *Moringa Oleifera* is an indigenous tree widely valued for its benefits and antioxidant properties. Beyond its medicinal uses, it also shows strong potential for moisturizing and cleansing the skin. The natural ingredients that are selected for the preparation

1. Introduction

The Greek word "cosmetics" which meaning to embellish is where the word "cosmetics" originates.

Cosmetics are generally defined as products used to beautify or enhance one's look.

In addition to enhancing the skin's general appearance and beauty cosmetic products shield it from damaging elements both within and outside the body. Herbal cosmetics are skincare and cosmetics that use natural plant-based ingredients—such as herbs, oils, extracts, and other botanical sources—

to improve appearance while reducing the usage of artificial chemicals. Herbal cosmetics use natural or plant-based substances that improve the skin's look without harming it, while chemical-based treatments can cause skin damage.

2. Literature Overview

Flavonoids, phenolic compounds, vitamins, and vital nutrients are only a few of the numerous phytochemical compounds found in *Moringa oleifera*.

Moringa is a fantastic natural substance for topical usage because of these components' strong antioxidant, antibacterial, and anti-inflammatory properties.

Moringa's antioxidant qualities protect the skin from premature aging-related damage and lessen oxidative stress on the body.

Because natural herbal products are safer, more biocompatible, and have less side effects than synthetic ones, more consumers are choosing herbal creams over synthetic ones due to the growing misunderstanding over which products to use.

According to the reviewed studies, oil-in-water (O/W) cream formulations can effectively employ *Moringa oleifera* seed oil and *Moringa* extracts

3. Phytochemical Constituents of *Moringa oleifera*

The plant contains various biologically active compounds:

Flavonoids (quercetin, kaempferol)

Phenolic compounds

Alkaloids

Tannins

Saponins

Steroids and terpenoids

These phytochemicals are responsible for antimicrobial, antioxidant, and anti-inflammatory activities, making the plant suitable for topical formulations .

4. Role of *Moringa oleifera* in Herbal Creams

Moringa oleifera is used in creams primarily for:

Skin hydration and nourishment

Anti-aging effects

Treatment of infections (bacterial & fungal)

Reduction of inflammation and irritation

Studies show that creams containing *Moringa* oil exhibit significant antibacterial activity against *Staphylococcus aureus* and *Escherichia coli* .

5. Formulation of Herbal Cream

Herbal creams are typically oil-in-water (O/W) or water-in-oil (W/O) emulsions.

5.1 Ingredients Used

Oil Phase:

Stearic acid

Cetyl alcohol

Liquid paraffin

Moringa oil

Aqueous Phase:

Distilled water

Glycerin

Other Components:

Emulsifier (Triethanolamine)

Preservatives (Methyl paraben, Propyl paraben)

Fragrance

5.2 Method of Preparation

Oil phase and aqueous phase are heated separately (70–75°C).

The aqueous phase is added to the oil phase with continuous stirring.

Moringa extract/oil is incorporated.

Homogenization is done to obtain a smooth cream.

The formulation is cooled and packed.

Different formulations (M1, M2, M3) are prepared by varying emulsifier concentration; stable formulations show uniform consistency and acceptable pH

6. Evaluation of Herbal Cream

The formulated creams are evaluated using the following parameters:

6.1 Physical Evaluation

Color, odor, and texture

Homogeneity

6.2 pH Determination

Should be near skin pH (5.5–7)

6.3 Viscosity

Determines consistency and spreadability

6.4 Spreadability

Measures ease of application

6.5 Stability Studies

Conducted under different temperature conditions

6.6 Antimicrobial Activity

Tested using agar well diffusion method

6.7 Anti-inflammatory Activity

Evaluated using albumin denaturation assay

The optimized formulation shows good stability, non-greasiness, and significant biological activity .

7. Pharmacological Activities

7.1 Antimicrobial Activity

Moringa cream inhibits growth of bacteria such as:

Staphylococcus aureus

Escherichia coli

7.2 Anti-inflammatory Activity

It reduces inflammation by inhibiting protein denaturation and inflammatory mediators.

7.3 Antioxidant Activity

Neutralizes free radicals and protects skin from oxidative damage.

7.4 Wound Healing

Promotes tissue regeneration and faster healing.

8. Advantages of Moringa-Based Creams

Natural and safe

Minimal side effects

Multifunctional (moisturizing + therapeutic)

Suitable for all skin types

10. Conclusion

Moringa oleifera-based herbal creams show significant potential as multifunctional dermatological formulations due to their antimicrobial, anti-inflammatory, and antioxidant properties. The presence of diverse phytochemicals enhances their therapeutic efficacy. With further research and clinical validation, these formulations can be widely used in pharmaceutical and cosmetic industries.

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