

FORMULATION AND EVALUATION OF HERBAL UNDER EYE CREAM TREATMENT OF DARK CIRCLES

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ABSTRACT

Herbal Cosmetics are the Preparation used to enhance the human skin appearance. The objective of present research was to formulate and develop Herbal under eye cream for treatment of dark circle an herbal formulation is a formulation that contains two or more herbal drug which act as active constituents & can show beneficial effects. Herbals product is most preferable & safer with fewer side effects than synthetic product. The main objective of this work is to formulate and evaluate of a cosmetic preparation. Herbal Cream using flaxseed oil, Amla powder and cucumber juice were used, they are shows the anti-tanning, anti-inflammatory & antioxidant property is show the removal of dark circles. The herbal extract, the herbal under eye cream represents a natural & safe to use & this herbal under eye cream is beneficial for the removal of dark circles.

KEYWORD: Herbal under eye, Cream, Antioxidant, Dark circles.

INTRODUCTION

The skin beneath the eyes is extremely delicate and sensitive, and it's usually the first place where signs of stress, aging, and tiredness become noticeable. Anatomically, it is thinner than the rest of the facial skin, with limited sebaceous glands, minimal subcutaneous fat, and a rich vascular network. Because of these traits, the under-eye area is especially prone to dryness, the formation of fine lines, swelling, and the appearance of dark circles. The appearance of dark circles can be influenced by various factors, including genetics, inadequate sleep, poor circulation, and oxidative stress. Given the vulnerability of this area, gentle and effective care is essential. Herbal formulations, rich in natural antioxidants, anti-inflammatory agents, and

skin-nourishing phytoconstituents offer a safe and holistic approach to revitalizing under-eye skin. The development of an herbal under-eye cream aims to utilize these botanical actives to improve skin tone, reduce pigmentation, and restore a healthy, refreshed appearance without the risk of harsh side effects.

CREAM

creams are semisolid preparations designed for external use, containing or more active substances. they are primarily applied to the skin or mucous surfaces to provide localized therapeutic or cosmetic benefits creams are generally categorized into two type based on their formulation characteristics

- 1) oil-in-water creams
- 2) water-in-oil (O/W)

creams consist of small droplets of oil dispersed in a continuous water phase they are less greasy more comfortable to use and can be easily washed off with water making theme cosmetically more acceptable. (W/O) creams consist of small droplets of water dispersed in a continuous oily phase, offering better moisturizing effects and are often used for dry skin conditions.

Our research aimed to develop an herbal under-eye cream formulated with flax seed oil, cucumber and Amla powder to help reduce dark circles. under eye cream has the refreshing antipruritic, anti-tanning, Antiseptic, antispasmodic, anti-oxidant, Properties. which Prevent under eye cream skin from the various element such as sun exposure, hormonal imbalance, lifestyle Factor and allergies

Classification of creams

Creams are classified according to their functions. They are:

1. Cleansing and Cold Creams
2. Foundation and Vanishing Creams.
3. Eye cream
4. All-purpose Creams is Cleansing and Cold.

Advantages of creams

1. Non-irritating when applied to the skin
2. Easily water washable. Easy to wipe away

3. Less greasy compared to ointment.
4. Easy to spread on the skins surface (i.e. easy to apply)

USES OF CREAM

1. creams are applied to manage skin problems and improve skin health.
2. they serve both therapeutic and beauty related purposes
3. For Cleansing purpose.
4. Emollient effects.

CHARACTERISTICS OF CREAM

1. Easy to apply.
2. Easily spread on skin.
3. Non- irritant and Non- toxic.
4. Liquefy when applied on the skin Creams.^[14]

CAUSES OF DARK CIRCLES

As compared to others skin Part of the body the under eye skin is more sensitive and thin because of UV exposure, genetics, life style and the use of certain medication. common reasons behind dark circles include

- 1) **Aging:** As you age your body produce less collagen, which is a substance in the dermis or middle layer of your skin. This your skin to become thinner and dried.
- 2) **Genetics-** genetics Play a significant role in determining how thick your skin appears.
- 3) **sun exposure-** The sun's UV rays can damage skin cells and thin the skin over time.
- 4) **medications** - Long-term use of certain medication such as corticosteroids, aspirin, blood thinners and NSAIDS can weaken the skin.
- 5) **Diet-** A lack of key nutrients such as biotin can Cause thin skin, eating a variety of fruits & vegetables can help ensure you're getting the nutrients you need.^[3]

MATERILAS AND METHODS

1) Flax seed oil



Synonyms: Linseed, oil seed Flax & common Flax.

Biological source: Flax seed obtained from ripen seeds of *Linum usitatissimum*.

Family: Linaceae

Use

- 1) Flax seed oil is used to improve skin health
- 2) Flax seed oil can help reduce symptoms of atopic dermatitis. a type of eczema that causes red, itchy skin, it also helps with skin rashes, redness & inflammation.^[8]

2) Amla powder



Synonyms- Indian gooseberry

Biological Source-amala also known as an Indian gooseberry, is the fruit of the plant *Phyllanthus emblica*

Family- Phyllanthaceae

use

1. Rich in vitamin C and antioxidants
2. It also helps you improve skin appearance by reducing fine lines & dark circles.
3. improves eye health.
4. Immune health promoter. n and accelerate aging.^[23]

3) Cucumber Juice



Synonym – cuke

Biological source- Cucumber is obtained from the fruits of *cucumis sativus*

Family- cucurbitaceae

Used

- 1) Soothing skin- Cucumber can help reduce redness irritation & inflammation
- 2) Hydrating skin- Cucumbers are high in water content can help keep your skin supple and revitalized
- 3) Reducing dark circles- Cucumbers Can help brighten the under eye area and reduce puffiness
- 4) Treating sun burn- Cucumber Can help take the sting out of sunburns & soothe the skin.

PROCEDURE

Oil Phase- Melt bees wax + flax seed oil + liquid paraffin + tween 80+ vitamin E Capsule

(melt at 70°C)



Water phase- Cucumber juice + Amla powder +Rose water (at 70°C)



Add Phase 1 the into Phase 2 (oil phase into water phase) with continuous stirring



Dissolve citric acid in water and add as a preservative. then add lavender oil as perfume



After that stir continue until become Cold.

storage - cream was stored in a well closed Container with proper labelling.

FUTURE PROSPECTS OF UNDER EYE CREAMS FOR DARK CIRCLES

The future for under eye creams targeting dark circles looks promising, with increasing demand driven by rising awareness of skincare and the growing prevalence of under eye concerns like puffiness and dark circles.

1) Growing Consumer Demand

Increased Awareness: - more people are becoming aware of under-eye issues like dark circles.

Puffiness & fine lines due to lifestyle factors such as stress, Poor sleep, screen time and Pollution.

Rising concerns across age Groups

while aging is a common cause, younger individuals. are also experiencing under eye problems. leading to broader market interest.

2) Advancement in formulations

scientific ingredients

future creams will continue to incorporate advanced active ingredients such as:

Retinol -for collagen boosting wrinkle reduction

Vitamin c - for skin brightening & antioxidant Protection.

peptides to promote elasticity of reduce fine lines

Niacinamides- for pigmentation & skin barrier repair.

- Hydrating Agents: - Ingredients like hyaluronic acid and ceramides will be used more to restore moisture & reduce hollowing under the eyes.

3) Innovation in Delivery system

Nanotechnology: Nano-carriers will help deliver active ingredients deeper into the skin for improved effectiveness.

- Hydrogel & microneedle patches

These will support sustained release of ingredients, better Penetration & convenience of use.
smart skincare Devices

Devices integrated with apps may guide the application or monitor treatment response over time.

4) Rise of Personalized skin care

- Dermatological diagnostics will enable Customs-Formulated under-eye creams tailored to individual skin type, lifestyle habits, & genetic Predispositions.
- DNA-based skincare and at home skin analysis kits may become common, enhancing treatment precision.

5) Expanding Global market

- The global eye care product market, including under-eye creams, is expected to grow due to rising demand in both developed & emerging economies.
- Digital marketing & influencer-driven trends will continue to fuel interest in advanced skincare routines.

- more people are using skincare due to stress, poor sleep & more screen time so the market for under-eye creams is expected to grow.

6) Natural & Eco-friendly Products

- people want safer, chemical-free creams made with natural ingredients and eco-friendly Packaging.

EVALUATION TEST OF HERBAL UNDER EYE CREAM

1) **ORGANOLEPTIC PROPERTIES** – assesses colour, consistency, and fragrance.^[22]

2) **TEST FOR PHASE SEPERATION** – The prepared cream was transferred in a suitable wide mouth container set aside for storage. The oil phase and aqueous phase separation were visualizing after 24 hrs.^[17]

3) **AFTER FEEL**- determines texture and residue post application.^[23]

4) **SKIN IRRITABILITY TEST**- Herbal cream formulation was evaluated for the skin irritability test. Preparation shown.^[19]



5) **pH MEASUREMENT TEST**- Take 100 gm of sample and dissolve in 100ml of distilled water and store for 2min then measure the pH by using pH meter.^[11]



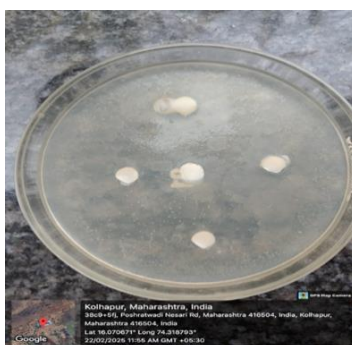
6) SPREADABILITY- 1 gm of the sample was placed at the centre of a glass plate and another glass plate was carefully placed over it.^[20]



7) WASHABILITY- Formulation was applied on the skin and the ease extends of washing with water was checked.^[21]



8) TEST FOR MICROBIAL GROWTH- Agar media was prepared and then the formulated cream was inoculated into it by agar well diffusion Method /cup plate method. then the plate was transferred to the incubator and kept at 37°C for 24 hours. after incubation period the plates were taken out the microbial growth was checked.^[14]



CONCLUSION

The above research has been carried out with the aim of developing a formulation consisting of flaxseed oil (*Linum usitatissimum*), amla powder (*Phyllanthus, emblica*), and cucumber juice (*Cucumis sativus*) for their effectiveness in the treatment of under-eye dark circles.

The study demonstrates that

Flaxseed oil possesses anti-inflammatory and antioxidant activity due to the presence of omega3 and omega-6 fatty acids and lignans.

Amla powder exhibits anti-tanning and skin-lightening activity, attributed to vitamin C and tannins.

Cucumber juice helps rejuvenate the skin due to its content of vitamins A, C, E, K, thiamine, and niacin.

The combination of these ingredients contributes to a stable, safe, and cost-effective herbal under-eye cream that can help in the reduction of dark circles and improve overall skin tone and health around the eyes.

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