

# Preparation and Evaluation of Flaxseed Oil Cream

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**Abstract:** Herbal cosmetics are the beauty products, which possess desirable physiological properties like Skin healing, smoothening, appearance, enhancing and conditioning properties due to the herbal ingredients. Cosmetics are safe, effective, elegant properties. Whatever may be the type of skin, these three steps act as External care for skin to protect it from the constant effect of environment, stress and skin's natural process of cell degradation decay. Flaxseed oil cream is used for heal cracked fingertips during winter; whenever You apply cream to your face, hand, leg, cover the cracked area with a nice thick layer too, to seal in moisture and protect the area.

**Keywords:** Flex seed oil cream cosmetic, formulation, herbal products

## I. INTRODUCTION

The word 'Cosmetic' derived from a Greek word – 'kosmestikos' that means to adorn. From that time any materials used to beautification or promoting appearance is known as Cosmetic [1]. The word "cosmetics" actually stems from its use in Ancient Rome. They were typically produced by female slaves known as "cosmetae" which is where the word "cosmetics" stemmed from. Cosmetics are used to enhance appearance [2].

Cosmetics are readily available today in the form of creams, lipstick, perfumes, eye Shadows, nail polishes, hair sprays etc. Other cosmetics like face powder give glow to the Skin after applying the base cream [2].

Cosmetics like creams, gels, and colognes are used on a daily basis by both women and Men. Creams act as a cleanser for the face in many circumstances. More recently anti-Ageing creams have been manufactured which can retain younger looking skin for many Years. The best cleansing agents are cleansing cream, soap and water. Cosmetic creams serve as a skin food for hard, dry and chapped skin. It mainly lubricates, softens and Removes unwanted dirt from the skin. Some popular fat creams that are used include Vaseline and Lanolin. Dry creams are used in the manufacture of soap and gelatin which is used as a base for the skin [2].

The demand of cosmeceuticals is rapidly expanding. This expansion is due to the Availability of new ingredients, the financial rewards for developing successful products, Consumer formulation needs maintenance of quality standard. The quality of a formulation should satisfy the consumer's need in terms of its performance. The plant parts used in Cosmetic preparation should demand, and a better understanding of skin physiology [3].

Cosmetics are the products that are created for application on the body for the purpose of Cleansing, beautifying or altering appearance and enhancing the beauty. Cosmetics are Developed to reduce wrinkles, fight acne and to control oil secretion. For various types of Skin ailments formulations like skin protective, sunscreen, antiacne, antiwrinkle and Antiaging are designed using varieties of materials, either natural or synthetic. The Development process for cosmetic have varieties of properties like antioxidant, anti-inflammatory, antiseptic, emollient, antiseborrheic, antikerolytic activity and antibacterial etc.

### 1.1 Topical Drug Delivery

Over the last decades the treatment of illness have been accomplished by administering Drugs to human body via various routes namely oral, sublingual, rectal, parental, topical, inhalation etc. Topical delivery can be defined as the application of a drug containing Formulation to the skin to directly treat cutaneous disorder or the cutaneous manifestations of a general disease (e.g. psoriasis) with the intent of containing the pharmacological or the Effect of drug to the surface of

the skin or within the skin semisolid formulations in all their Diversity dominate the system for topical delivery, but foams, spray, medicated powders, Solutions and even medicated adhesive systems are in use [2]

### 1.2 Advantages of Topical Drug Delivery System

1. Avoidance of first pass metabolism.
2. Convenient and easy to apply.
3. Avoid of risk.
4. Inconveniences of intravenous therapy and of the varied conditions of absorption like Ph
5. Changes presence of enzymes gastric emptying time etc.
6. Achievement of efficacy with lower total daily dosage of drug by continuous drug input.
7. Avoid fluctuation of drug levels inter and intra patent variations.
8. Skin irritation or dermatitis may occur due to the drug or excipients.

### 1.3 Creams

Creams are the topical preparations which can be applied on the skin. Creams are defined As “viscous liquid or semi-solid emulsions of either the oil-in-water or water-in-oil type” Dosage forms which consistency varies by oil and water. Creams are used for cosmetic Purposes Is cleansing, beautifying, improving appearances, protective or for therapeutic Function. These topical formulations are used for the localized effect for the delivery of the Drug into the underlying layer of the skin or the mucous membrane. These products are Designed to be used topically for the better site-specific delivery of the drug into the skin For skin disorders [2] As a free radical scavenger, it not only combats the harmful effects of ultraviolet radiation But also contributes to a moisture barrier to the skin that decelerates the aging process in Return. Due to its multifunctional effects on the skin, vitamin E has been receiving attention In the skincare and cosmetic market throughout the years.[4] Creams are considered as a pharmaceutical product as they are prepared based on Techniques developed in the pharmaceutical industry; unmediated and medicated creams Are highly used for the treatment of various skin conditions or dermatoses. Creams can be Ayurvedic, herbal or allopathic which are used by people according to their needs for their Skin conditions. They contain one or more drugs substances dissolved or dispersed in a Suitable base.[2]. The main aim of our work is to develop an herbal cream which can give Multipurpose effect like moisturizer, reduce acne and skin irritation. [5] Creams may be classified as o/w or w/o type of emulsion on the basis of phases. The term ‘cream’ has been traditionally applied to semisolid formulated as either water-in-oil (e.g.: Cold cream) or oil-in-water (e.g.: vanishing cream).[2]

## II. TYPES OF CREAMS

They are divided into two types:

- **Oil-in-Water (O/W) creams** which are composed of small droplets of oil dispersed in a Continuous phase, and an emulsion in which the oil is dispersed as droplets throughout the Aqueous phase is termed an oil-in-water (O/W) emulsion.
- **Water-in-Oil (W/O) creams** which are composed of small droplets of water dispersed in A continuous oily phase. When water is the dispersed phase and an oil the dispersion Medium, the emulsion is of the water-in-oil (W/O) type [2]

### 2.1 Classification of Creams

All the skin creams can be classified on different basis:

1. According to function, e.g. cleansing, foundation, massage, etc.
2. According to characteristics properties, e.g. cold creams, vanishing creams, etc.
3. According to the nature or type of emulsion.

**Types of creams according to function, characteristic properties and type of emulsion:**

1. Make-up cream (o/w emulsion): a) Vanishing creams. B) Foundation creams.
2. Cleansing cream, cleansing milk, Cleansing lotion (w/o emulsion)
3. Winter cream (w/o emulsion): a) Cold cream or moisturizing creams.

4. All-purpose cream and general creams.
5. Night and massage creams.
6. Skin protective cream.
7. Hand and body creams [2]

## 2.2 Advantages

1. It is used as skin moisturizer, skin cleanser.
2. Used to blemish any pimples or scars.

## 2.3 Disadvantages

1. Skin allergies due to certain compounds in the cream
2. Skin reactions like itching, pilling, irritation, redning, etc. might happen.

**Linum usitatissimum L.** is an herb belonging to the **Linaceae** family, popularly known as Flax or linseed, which is native to Europe, Asia, and the Mediterranean region. The seeds Of flax are used as the source material for the production of oil and meal, which is rich in Fiber, protein, and fat [6] Flaxseed oil is present in the Brazilian national pharmacopoeia in the form of calcareous Liniment oil, which is indicated for use in cases of pruritic dermatoses and burns. According To Chinese traditional medicine and ayurvedic medicine, linseed oil is indicated for the Treatment of wounds and as a moisturizer and dermal antioxidant, among other uses. The Pharmacological properties of linseed oil are attributed to the presence of PUFA and MUFA In its composition, which act stimulating production of growth factors, fibroplasia, and Neovascularization.[6] Benefits of flaxseed oil cream. The essential fatty acids in flaxseed oil work inside out to keep your skin moisturized and Hydrated. Due to improved levels of moisture in skin, it reduces the appearance of wrinkles and other aging signs.

## Skin Aging

Skin aging is a complex process induced by constant exposure to ultraviolet (UV) Irradiation and damages human skin. Skin aging is the result of continual deterioration Process because of damage of cellular DNA and protein. Aging process is classified into Two distinct types, i.e. “sequential skin aging” and “photo-aging”. Both types have distinct Clinical and historical features. Sequential skin aging is universal and predictable process Characterized by physiological alteration in skin function. In the aging process Keratinocytes are unable to form a functional stratum corneum and rate of formation from Neutral lipids slows down, resulting in dry pale skin with wrinkle. In contrast, photo aging Is caused by over exposure to UV rays from sunlight. It is characterized by dry, pale and Shallow skin, displaying fine wrinkles as well as deep furrows caused by the disorganization Of epidermal and dermal components associated with elastosis and heliodermatitis. Herbs And plants have already proved useful as a tool in complementary medicine. [7,8].

## III. MATERIALS AND METHODS

### 3.1 Collection of Materials

The *Linum usitatissimum* and the other chemicals such as Liquid paraffin, borax, bees Wax, was taken from NCP college of pharmacy from pharmaceutical laboratory.

### Extraction Method

The dried flaxseeds are were crushed to obtain homogenous powder. The powder was Steamed using a pressure cooker. Subsequently, the steamed powder was mechanically Pressed using a cold press, to extract the edible oil. The obtained oil was filtered and stored In an amber colored bottle with an air tight lid under room temperature or further use.[9]



**Figure 1:** Extraction of flaxseed

Excipients with their role

Ingredients role

1. Flaxseed oil = Antiaging, moisturizer, Antiwrinkle
2. Bees wax = Emulsifying agent, stabilizer and gives thickness to the skin
3. Liquid paraffin = Lubricating agent
4. Methyl paraben = Preservative
5. Borax = Alkylating agent
6. Rose oil = Perfume
7. Distilled water = Solvent

### Formulation of Cream

Heat liquid paraffin and bees wax in a borosilicate glass beaker at 75°C and maintain that heating temperature (Oil phase).

In another beaker, dissolve borax methyl paraben in distilled water and heat this beaker to 75°C to dissolve borax and methyl paraben and to get a clear solution. (Aqueous phase).

Then slowly add this aqueous phase to heated oily phase.

Then add a measured amount of flaxseed oil and stir vigorously until it forms a smooth Cream.

Then add a few drops of rose oil as a fragrance. Put this cream on the slab and add a few drops of distilled water if necessary and mix the Cream in geometric manner on the slab.

To give smooth texture to the cream and to mix all the ingredients properly.

This method is called as slab technique or extemporaneous method of preparation of Cream. [5]

Sr. No	Ingredients	Formulation F1H	Formulation F2H	Formulation F3H
1	Flaxseed oil	3ml	4ml	5ml
2	Bees wax	4.8gm	6.4gm	8gm
3	Liquid paraffin	15ml	20ml	25ml
4	Borax	0.24gm	0.32gm	0.40gm
5	Methyl paraben	0.054gm	0.072gm	0.090gm
6	Rose oil	Q.S	Q.S	Q.S
7	Water	Q.S	Q.S	Q.S



**Figure 2:** Flaxseed oil cream

### **Evaluation of Cream**

#### **1. Physical Evaluation**

In this test, the cream was observed for color, odor, texture, state.

#### **2. Irritancy**

Make the area (1cm.sq) on the left hand dorsal surface. Then the cream was applied to That area and the time was noted. Then it is checked for irritancy, erythema, and edema if any for an interval up to 24h and reported.

#### **3. Wash ability**

A small amount of cream was applied on the hand and it is then washed with tap water.

#### **4. pH**

0.5 g cream was taken and dispersed in 50 ml distilled water and then pH was measured by Using digital pH meter.

#### **5. Viscosity**

Viscosity of cream was done by using Brooke field viscometer at a temperature of 25c Using spindle No. 63 at 2.5 RPM.

#### **6. Phase separation**

Prepared cream was kept in a closed container at a temperature of 25-100 c away from Light. Then phase separation was checked for 24h. Any change in phase separation was Observed or checked.

#### **7. Dye test**

The scarlet red dye was mixed with the cream. A drop of cream was placed on a Microscopic slide and covered with a coverslip. This was examined under microscope. The Dispersed globules appear colorless in the red ground indicating the o/w type Formulation.

#### **8. Homogeneity**

The formulation was tested for homogeneity by visual appearance and by touch.

#### **9. Greasiness**

Here the cream was applied in the skin surface the form of smear and checked if the smear Was oily or grease

#### **10. Franz Glass diffusion studies**

Stock Solution (phosphate buffer 6.8) – Consider a solution-A (Potassium dihydrogen Phosphate) and solution –B (sodium hydroxide) take a sample A is 4.08 gm add in 150 ml Of distilled water. And take solution-B 0.79 gm. Add in 100 ml distilled water. Then Potassium dihydrogen phosphates withdraw 50 ml and sodium hydroxide withdraw 22.4 ml. Add solution A to solution B and make up the volume up to 250 ml.

#### IV. CONCLUSION

The purpose of this study was to develop an herbal cream. This herbal cream is one of the Good alternatives in place of synthetic cream. The herbal oil-based cream was prepared By the trituration method. The formulation showed good in activity and spreadability and Thus could be an effective formulation made from the flaxseed oil and has a cosmetic benefit Like moisturizing, anti-aging, anti-wrinkle is more acceptable in the belief that they are safer With fewer side effects than the synthetic ones. Based on the result and discussion, the Formulated cream are safe for skin and having good potential for cosmetic product Development.

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