

# Formulation and Evaluation of an herbal cream containing extract of *Curcuma longa* and *Trigonella Foenum* seeds Powder

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## Abstract:

Fenugreek seeds and *Curcuma Longa* have antioxidant effects and contain mucilage with softening properties. It can also produce healing, whitening, moisturizing, soothing and anti-wrinkle effects on the skin. The aim of the study was to produce a stable W/O emulsion containing fenugreek seed extract using liquid paraffin oil. Fenugreek seed extract, obtained by concentrating the methanol extract of fenugreek seeds, was trapped in the internal aqueous phase of the W/O emulsion. *Curcuma longa* was obtained by thin layer chromatography method. The active ingredient in *curcuma longa*, curcumin, has anti-inflammatory, antimicrobial, and antioxidant properties that are good for maintaining healthy skin. These characteristics make it a great candidate for inclusion in an old cream recipe. In the formulation process, suitable natural base ingredients like beeswax, shea butter, and olive oil are chosen because they moisturise and protect the skin. Through a suitable emulsification process, *curcuma longa* extract is added to the cream, guaranteeing its stability and effectiveness. Stability tests are performed on the final formulation to evaluate its long-term physical, chemical, and biological properties. A base containing no active material and a formulation containing concentrated extract of fenugreek (in a concentration of 4%) in the internal aqueous phase (W/O emulsion) were prepared and stored at different accelerated conditions for a period of four weeks to predict the stability of these creams. It was found that both, the base, and the formulation, were stable at all the accelerated conditions regarding colour, liquefaction, and phase separation. However, insignificant changes in the pH of base and significant changes in the pH of the formulation were observed with the passage of time. The aim of formulating the cream was to produce a cooling and glowing effect on the skin.

**Keywords:** Fenugreek seeds extract, *Curcuma Longa*, melanin, erythema, skin moisture, skin sebum, pH.

## Introduction:

An emulsion is a system in which one fluid is dispersed in another with which it is immiscible is known as an emulsion. A suitable surfactant is added to prevent the phases from macroscopically separating. (1) The emulsion has attracted new interest as a means of delivering drugs to the body because it has been discovered to possess a few beneficial qualities that frequently increase the bioavailability of the drug substance. The spread ability and healing qualities of the constituents are improved in an emulsion. More frequently used for the treatment of dry skin and emollient applications are water-in-oil emulsions. (2) These formulations can be given more value by incorporating plant extracts with cosmetic effects. When antioxidants are used as active ingredients in cosmetic emulsion preparations, particularly advantageous results are obtained. The powdered seeds of fenugreek and turmeric extracts gives a high effect on the skin. Due to their antioxidant and emollient properties, the resulting extract is rich in polyphenols, galactomannans, and flavonoids, all of which have some cosmetic benefits for the skin. The cream appears as an oily, yellowish, tasteless, non-fluorescent liquid at room temperature. (3) The development of the herbal cold cream is tracked over a predetermined time frame to assess any changes in its physical properties, stability, and effectiveness. Its shelf life, microbial safety, and sensory attributes are all evaluated to ensure consumer acceptance and satisfaction. The aim of this study was to measure the

effects of W/O cream made from fenugreek seed and turmeric extract on various physiological functions of the skin. In this formulation the cream base contains beeswax, liquid paraffin, distilled water, and olive oil. (4,5) The evaluation tests include pH, viscosity, patch test, physical properties. The researchers aimed to harness the properties of turmeric extract, which has been shown to have cosmetic benefits such as reducing inflammation and redness and giving the skin a healthy glow. It was essential to make sure the cream gave off the desired cooling and glowing effects without producing any negative side effects.(6,7)

## MATERIALS AND METHODS:

### MATERIALS: -

*Curcuma longa*, *Trigonella foenum* seeds Extracts, Beeswax and shea butter, Paraffin oil, sodium benzoate, Rose oil, Distilled water, Olive oil, lemon oil.

### EQUIPMENTS:

UV Visible spectrophotometer, Brookfield viscometer, Digital pH meter, Magnetic stirrer, Container, Mortar and pestle.

### FORMULATION:

- Take 200 mg of *Curcuma longa* and *Trigonella foenum* seeds and put it in a conical flask.
- Cover the mouth of the bottle with a cotton cap.

- Leave the mixture for 72 hours with concussion.
- After 72 hours, filter the solution and dry the filter membrane. Till it is completely dry.(8)
- Melt the beeswax in a Chinese dish on an electric stove at 70°C.
- Dissolve borax in a 100 ml beaker and heat with olive oil on a 0.4 hotplate at 70°C.
- Slowly add the oil phase to the water phase Stir continuously until it reaches 45°C at 50°C. Then add herbal medicine and perfume. with constant stirring.(9,10)
- Combine 200g of Curcuma longa and 100 gm of Trigonella foenum and mix well with 500 ml of water and let it stand for 72 hours before being filtered and dried.
- The beeswax is melted, and the borax is dissolved in olive oil, and the two stages are combined under continuous stirring.
- Herbal medicines are added to the mixture with constant stirring. (11,12)



Figure 1: Formulated Herbal Cream of trigonella Foenum and Curcuma Longa

#### EVALUATION:

- Physical assessment: Color, texture and condition are observed during physical evaluation. On the left dorsal side, the mark is 1 cm<sup>2</sup> in size. The cream is then sprayed onto the designated area and the time is recorded. Then, for up to 24 hours, irritation, erythema, and edema, if present, will be assessed and reported.
- Washability: A small amount of cream is applied to the hands and then rinsed with tap water to test the rinsing ability. (13)
- PH: A 10% aqueous solution of both formulations was prepared, and the pH of the resulting solution was measured.
- Viscosity: The viscosity of prepared and marketed ice cream was measured using a Brooke viscometer.
- Consistency: The consistency of the cream is Test it by applying it to your skin and observe its texture and behavior on the skin.(14)
- Spreadability: A pair of slides is removed, and cream is placed between them. A fixed pressure was applied to them, and the time required for one slide to move apart was recorded. The weight was then kept away, and any excess product stuck on the slides was scraped. (15) The force of weight attached to the upper slide allowed it to glide off effortlessly. Where, m= Standard weight, which is tied to or placed over the upper slide (30 gm), l= length of a glass slide (5 cm), t= time taken in seconds.
- Grittiness: Formulated and marketed cream was observed under a microscope to find out any gritty particles
- Stain Determination: Stains are identified by applying cream on the skin surface of a volunteer and by observing its fatty properties and skin behavior.
- Softness determination (16) A test was performed to verify the quantity residue left on the skin after applying, the effective amount of cream.
- Irritation: Area of 12 square centimeters of water curved on the left dorsal surface. The cream has been applied to the designated area. The time was recorded, and Any irritation, erythema, edema was examined. (17,18) Regular intervals of up to 24 hours and reporting.
- Physical assessment: Herbal formula cream is further evaluated for its color, smell, consistency, and condition of the formula.
- Color and smell of cream: Visually observed the condition of the cream was checked by rubbing it visually. (19) A cream with a semi-solid texture has been reported.

#### RESULTS:

The prepared Formulation was smooth in texture.

- Color: The color of the formula is slightly yellow white.
- Smell: Odor is characteristic of the formulation.
- Consistency: The consistency is very smooth.
- Indicate: The formula condition is semi-solid.
- pH: The pH of the formula is 7.5.
- Ability to spread: The possibility of spread of the formula is 6.4 sq.cm/sec.
- Washability: The formula is easily washable
- Irritability: Does not show any type of irritation.
- Viscosity: Viscosity of formula is 31,054 cps.
- Phase separation: No phase separation was observed in the formulation.

**Table1: Observation of the Physicochemical parameters of the herbal cream**

PHYSICO CHEMICAL PARAMETERS	OBSERVATION
Colour	Yellow white colour
Texture	Semisolid
State	Semisolid
Irritancy	No irritancy
Washability	good
pH	7.5
Viscosity	good
Phase separation	No
Spreadability	Good
Greetiness	No

**CONCLUSION:**

Based on research results, it may be concluded that the cream is used for depigmentation, for removing wrinkles and act as an antioxidant due to its multi-herbal. The cream is prepared from plant extracts that have shown good consistency, spreadability, uniformity and pH. It also shows that the cream does not show phase separation during the study period. So, it can be

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inferred that cream is safe to use and has improved value compared to synthetic cosmetics. The use of natural remedies in personal care. The product is becoming more and more popular and is considered to have fewer side effects than synthetic products. The cream formula exhibits good physical and chemical properties equivalent to the formula sold on the market. Effective studies may demonstrate its effectiveness use.

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