

## Formulation and Evaluation of Vanishing Cream by using Citrus limonseed Extract.

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### ABSTRACT

Citrus limon seeds are found in fruit of citrus belonging to family Rutaceae. Citrus limon seeds size is varied according to variety but most are hard, wrinkled, elliptical or oval and measure about 3/8 inch. Citrus limon seed contain certain compounds with various level of bitterness. Chemical composition is main raw material obtained in Citrus limon seed. Citrus limon seed activity determined by its high content of oils and fatty acids mainly palmitic acid, oleic acid and linoleic acid Scientifically therapeutic activities of Citrus limon seed include antibacterial activity, anti-fungal activity, Analgesic activity, also for Fragrance. Importance of chemical, botanical, and Pharmacological Characteristic of Citrus limonSeed Also this species is Valuable for Cosmetic, Pharmaceutical Properties. The purpose of present study of Formulation and Evaluation of Vanishing Cream using Citrus limon seed extract. Citrus limon seeds have moisturizing activity so After the detection of chemical composition of Citrus limon seed the extraction process is must. By the Soxhlet apparatus Citrus limon seed extract is collected. Fatty acids analyzed by various chemical test and TLC. Method carried out to prepare vanishing cream is very simple. firstly, oil phase is prepared of stearic acid, propylparaben, extract was melted separately at 70°C. secondly aqueous phase was prepared, mixture of glycerin, triethanolamine and methylparaben at 70°C. then aqueous phase is added in oil phase at 70°C with continuous stirring. The above prepared vanishing cream was evaluated. The physical parameters such as pH, appearance, spread ability, homogeneity, irritancy, stability, viscosity, smear type. The vanishing cream using lemon seed extract, spread easily and seem to disappear rapidly when rubbed on skin. Due to their water content, it easily absorbed in the skin. And also improve skin hydration.

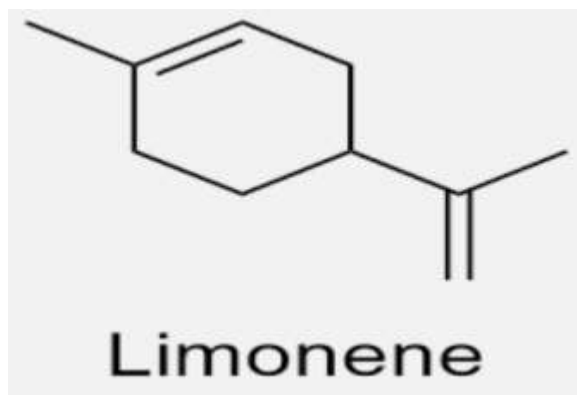
**KEY WORDS:** Citrus limon seed extraction, vanishing cream, formulation and evaluation.

### I. INTRODUCTION

Recently the use of herbs in cosmetics preparations increases to enhance the beauty and personal skin care [1]. The main origin of herbal medicines belonging from Rigveda, Yajurveda, Ayurveda and Unani systems of medicines. In this system of medicines herbs are use as active pharmaceutical ingredients having various uses, like antioxidants, antibacterial, anti-inflammatory, antiacne, antiseptic, emollient, antiseborrhatc, antikerolytic activity [2]. Skin is largest defence from any external exposure; by understanding this, we prepare creams to protect from any dust particles, Ultraviolet radiation and any harmful environmental exposure [3]. In this formulation the lemon seed extract is used as a flavouring agent. This lemon is cultivated on large scale in various countries. The botanical source of lemon is, fruit of Citrus limon(L). Burm, a small tree belonging the family Rutaceae [4]. The geographical source lemons are found in many countries of the world including Africa, Australia, Europe, South and North America, India. Phytochemistry of lemon include polyphenols and terpenes present in Lemons [4]. The other phytochemical constitutes like essential oils, volatile as well as Non-volatile oils, Vitamin C, citric acid, sugars, calcium oxalate, flavonoids etc. [5]. The general information about lemon seeds is, they are present in pulp in the middle portion of the lemon fruit in numbers up to 5- 10 according to the variety and size. These seeds are extracted by various methods and having medicinal use from antioxidant, ant acne activity up to the digestive detoxification. Vanishing cream belongs to the semisolid type of dosage form. Vanishing cream is low fat moisturiser that disappears after applying on the skin leaving behind nothing. Thus, it called as vanishing cream.

It is w/o type of emulsion-based preparation having aqueous phase and oil phase. It is more user friendly to use because it is less oily and messy and sticky, easily removable[6]. Vanishing creams are used to adhere powders for long time. A cold cream has been used, but it feels very greasy and not use for oily skin type [2]. Due to this vanishing cream are better option for it. Now a days many of cosmetics preparations are available in market to treat the day skin but they are much more expensive patients' compliance is often poor as currently available medications are often greasy, sticky and odorous. In proposed work it was planned to prepare herbal vanishing cream by using Citrus limon seed extract.


This herbal vanishing cream contain citrus seeds extract like 21.03% fatty acid, 3.67% static acid, 20.80% oleic acid and 8.96% of linoleic acid. It also contains hygroscopic ingredients like glycerine, it leaves a protective, invisible film of static acid. This herbal cosmetic preparation also helpful to reduce the skin disorders like skin wrinkles, skin aging and rashes etc [3]. The use of chemical cosmetics is very harmful on skin as well as environment because these synthetic products produce many harmful disorders and side effects. By understanding the large increasing demand of herbal cosmetics, we prepare herbal vanishing cream. This vanishing cream used to treat mild to moderate acne and also used in combination with other acne treatment.


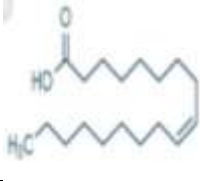

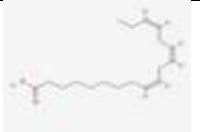


**CHEMICAL CONSTITUENTS:**

As we know Citrus limon seed is the composition of oils and fatty acid so the total fatty acids, palmitic, oleic, linoleic acids and oil yield was determined. By the thin layer chromatography Citrus limon seed had three lipid classes determined in that triacylglycerols is the major oil class. main fatty acids as palmitic, oleic, linoleic are analysed by gas chromatography[7]. In human nutrition palmitic acid is the saturated fatty acid[8]. palmitic acid is act as emollient. It helps to soothe and soften the skin and also help to trap moisture in

the skin. Palmitic acid protects the skin from bacteria and help to prevent moisture loss[9]. oleic acid is obtained from high oleic sunflower oil it is renewable monosaturated fatty acids[10]. oleic acid restores skins natural oil without clogging pores it prevents skin from developing fine lines it locks in the moisture and penetrate deeply in the skin[11]. linoleic acid is polyunsaturated essential fatty acids. Linoleic acid is a natural exfoliation which causes keep pores clear, complexion bright, renewal and healthy skin shedding.

Chemicals	Content	Chemical Structure
Oils	34.92%	
Palmitic acid	21.03%	

Stearic acid	3.67%	
Oleic acid	20.80%	
Linoleic acid	44.31%	
Linolenic acid	8.96%	

## II. MATERIAL AND METHODS:

### Selection of material

The ripe fruit of Citrus limon. Fruit was collected from local market of karjat. After collection of fruits. We cut that and collect the seeds.

### Drying of material

For the extraction of Citrus limon drying process is important because of the plant material are having the active enzymes which produces the active constituents' intermediates and metabolic reaction after the extraction of material[12,13]. Using the hot air oven this is manufactured using superior grade stainless steel and advanced technology at vendor's end.0 collection of Citrus limon seed the moisture Content was reduced to 5% in the hot air oven at 110C for 1 hour[14].

### Grinding of material

If the smaller particle size greater the surface area of powder particles so, size reduction and grinding is important for the Soxhlet extraction process for the extraction the contact angle of the powdered particles with solvent which improves by large surface area[15]. Hence efficient extraction take place using the mixer dry seeds of Citrus limon are broken into coarse powder.

### Selection of solvent

The solvent selection is based on the increasing polarity order of methanol, ethanol,

hexane, petroleum ether, acetone[16,17,18]. Solvent would be inert and easily remove. The Soxhlet extraction is based on the Phytoconstituents isolation process for that selection of solvent is must.



### Soxhlet extraction process


Firstly, we clean all the apparatus of Soxhlet assembly and then rinsed with alcohol. The coarse powder of Citrus limon sufficient to fill in the thimble in our experiment we used 30gm of coarse powder of Citrus limon. The solvent petroleum ether 200ml is added to a round bottom flask which is attached to a Soxhlet extractor and condenser. The coarse powder about 30gm is placed inside the Soxhlet extractor. Glass wool lagged with the side arm of apparatus then the solvent is heated using isomantle by giving temperature 70°C constant and it starts to evaporate moving though apparatus to condenser. Then drips are collected into reservoir containing the thimble. The level solvent siphon then the solvent again falls Down and cycle begin. This process is run for the 5 hours and about 12 cycles are finished with same procedure[19]. After the Soxhlet extraction process the extracted material are concentrated[20,21]by the evaporation method and 2-3ml extract is collected.

There is no need to filter the extract and the transfer equilibrium is disrupted by bringning new solvent into contact with the solid matrix on a regular basis. [22,23]



**Chemical test for extraction[24]:**

Name of test	Test	Observation	Inference	Image
1) solubility test	1ml extract + water	Extract is does not dissolve in water	Palmitic acid is present	
2) test for unsaturation	1ml extract + 2ml chloroform + dropwise dilute KMnO4	Decolorization of dilute KMnO4 is observed	Oleic acid is present	

3)Huble's iodine test	1ml extract + 2ml chloroform + dropwise Huble's reagent	Decolorization of iodine is observed	Oleic acid is confirmed	
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**THIN LAYER CHROMATOGRAPHY [7]:**

**Requirements-**

stationary phase - coated silica gel plate,  
 Mobile phase - hexane: diethylether:glacialaceticacid ,  
 sample - Citrus limon seed extract.

This line. Develop in the TLC tank containing mobile phase, hexane: diethylether: glacialaceticacid 8:2:0.1 until 2 cm below the top. Allow to dry and then sample spot analysed through UV light.

**Calculation: -**

RF Value = Distance moved by spot / Distance moved by solvent

**Procedure: -**

With the pencil make the line at a distance of 2 cm from the bottom apply sample on

Sr. No.	Fatty acids	Value found	Standard value
1)	Linoleic acid	0.67	0.65
2)	Oleic acid	0.54	0.56- 0.61



**Result:**

From the above rf values we get two fatty acids i.e.; linoleic acid and oleic acid are present[25].

**Method of preparation: -**

To prepare the vanishing cream various steps are carried out ware as follows

**Preparation of extract of crude drug: -**

We take 30gm of lemon seed powder is taken for extraction by using petroleum ether as solvent. For this extraction Soxhlet apparatus is used. This process is carried out for 5 hours and in that mainly 12 cycles of Soxhlet assembly is done.

**Preparation of oil phase: -**

We prepare oil phase by mixing Citrus limon seed extract oil with stearic acid and propylparaben in a beaker. This beaker is then we kept in water bath at

70°C with continuous stirring and allowed mixture to melt.

**Preparation of aqueous phase: -**

Then Aqueous phase is prepared by mixing glycerine, triethanolamine, and methylparaben in a beaker which is placed in another water bath with continuous stirring at 70°C.

**Addition of aqueous phase to oil phase: -**

The aqueous phase is added to the oil phase with constant stirring at 70°C after that water is added slowly to the mixture with continuous stirring one the transfer is completed it was allowed to come at room temperature while being stirred citrus oil was then added and stirred at last just before the product was transferred to container. After the complete formulation various physical parameters of vanishing cream is then evaluated[26].



Sr. no.	Ingredients	Quantity	Role/ Function	uses
1	Lemon seed extract	0.5ml	Active drug	
2	Stearic acid	1.7gm	Emulsifier	It provide stability to formulation.
3	Triethanolamine	0.07gm	Emulsifier	It creates loose emulsion which is effortlessly absorbed by the skin.
4	Glycerine	1.0ml	Humectant	keeps the skin moisturized
5	Methylparaben	0.018gm	Preservative	preserve the ingredients of a cosmetic products
6	Propylparaben	0.002gm	Preservative	is used as antimicrobial

				preservative in cosmetics
7	Citrus oil	0.5ml	Flavoring agent	it is commonly used as a flavouring agent in various cosmetics
8	Distilled water	Quantity sufficient to 10ml	vehicle	

**EVALUATION TEST OF VANISHING CREAM:**

- Determination of organoleptic properties** - The appearance of cream was found by its texture and colour.
- pH** - The placing pH. Containing was measured by pH paper in bearer 20 mg of Cream.
- Determination of homogeneity** – This evaluation is done by testing the appearance and by touch to the formulation.

- Wash ability** – The cream can be removed by washing after applied on skin for this the hand kept under tap, with minimal force to remove cream. [27]
- Spreadability test**- The 10 grams of cream spread on slab with the help of spatula, to check whether the cream spread uniformly or not.



- Viscosity** –The viscosities of formulated vanishing creams were measured by Brook field Viscometer (DV-II) at room temperatureThe viscosity of cream was found to be 25,045 on Brookfield viscometer [28]



- Smear type** – After application of cream on the skin the smear formed was oily or aqueous [29].

**EVALUATION PARAMETER:**

<u>Sr. No.</u>	<u>Parameters</u>	<u>Observations</u>
1	Appearance	White
2	pH	6.8
3	Homogeneity •By touch • By visual	Homogeneous Smooth Consistent
4	Washability	Washable
5	Spreadability test	Easily spreadable
6	Accelerated stability studies	Stable
7	Viscosity	25,045
8	Smear type	No greasy particles observed

**USES OF VANISHING CREAM:****Makeup Purpose:**

It is used as adhesive for makeup powders, It Reduces loss of moisture from dry skin, Smoothens the skin and keeps it soft, and it also prevents skins from roughening and chapping.

**Moisturizing Cream**

Moisturizers are generally used in, antiperspirants, skin cleansers. Sunscreens, creams, hair tonics and aftershaves, they are used to treat certain skin diseases like, itching, irritation and in atopic dermatitis. Mostly, they are vehicles or bases for topical medication. It is one of the types of cosmetics which used for protecting and lubricating the skin

**III. RESULTS:**

The lemon seed extract vanishing cream is prepared by using the w/o emulsion method and subjected to evaluation of various parameters. The results of the present research work showed the creams were white in color and smooth appearance also gave cool and pleasant feel on application which was maintain after the tested stability study. PH of the formulation was shown neutral [6.8] and the gel was non-irritant upon application on to the skin. Spreadibility were also measured and found to be less variation with standard prepared creams after performed the stability study at 30°C viscosity of formulated creams was measured using Brookfield viscometer at different rpm and

respective viscosities were recorded using spindle 64. We found that there is no irritation when applied to the skin hence classified as a nonirritant to the skin.

**IV. CONCLUSION:**

It is very convenient to use herbal cosmetics as compare to chemical cosmetics, because it contains nutritional values, and also helpful to take care of skin. This herbal vanishing cream having moisturizing, antioxidant, anti acne properties which is very useful to take care of skin in day-to-day life. It is found that this type of vanishing cream was not prepare earlier i.e., by using lemon seed extract. This vanishing cream is O/W type of emulsion-based preparation and having oil phase and aqueous phase. From the above studies and evaluation parameters here we conclude that, this herbal vanishing cream is safe and effective to use

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