

**EXPLORING THE ANTIOXIDANT AND SKIN-RENEWAL BENEFITS OF MURRAYA KOENIGII IN DE-TAN PACK DEVELOPMENT****Polly Gupta<sup>1\*</sup>, Dr. Shashank Tiwari<sup>2</sup>, Divya Soni<sup>3</sup> and Abhishek Tiwari<sup>4</sup>**<sup>1</sup>Associate Professor, Lucknow Model College of Pharmacy, Lucknow.<sup>2</sup>Professor & Director, Lucknow Model College of Pharmacy, Lucknow.<sup>3</sup>Lecturer, Lucknow Model College of Pharmacy, Lucknow.<sup>4</sup>Research Scholars, Lucknow Model College of Pharmacy, Lucknow.**\*Corresponding Author: Polly Gupta**

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**ABSTRACT**

The aim of this work is to formulate and evaluate a de-tan face pack for glowing skin by using natural herbal ingredients. The natural herbal ingredients such as cetyl alcohol, EDTA, stearic acid, glycerine, propyl alcohol, eucalyptus, clove, peppermint, rose water, vitamin E and curry leaves in the form of dried powder. The powder of *Murraya koenigii* was prepared by shade drying commercially, all powdered natural ingredients were sieved using #120 mesh, and extract obtained from Soxhlet apparatus, then weighed accurately and mixed geometrically for uniform formulation and then evaluated for parameters including morphological, pH, skin irritancy along with spreadability and stability examination. Thus, in the present work, we formulated a De-tan face pack which can be easily made with the easily available ingredients. After evaluation, we found good properties for the de-tan face pack, free from skin irritation and maintained its consistency even after stability storage conditions. Results of the study scientifically verified that de-tan face pack having enough potential to give efficient glowing effect and anti-tanning effect on skin. The overall study is useful to substantiate product claims due its useful benefits on the human beings.

**KEYWORDS:** De-Tan Face Pack, Glowing Skin, remove tanning by Herbal Ingredients, Evaluation.**INTRODUCTION**

Since from ancient period of time, people are aware of the use of plants for the healthy, glowing and beautiful skin. Cosmetics are products used to clean, beautify and attractive appearance. In ancient times women were very conscious about their beauty and took special care of their specific skin types. Even today, people especially in rural areas and hilly regions go for the natural remedies like plant extracts for various cosmetics purposes like neem, aloe vera, orange peel, tulsi, rose...etc1. Everybody wants to get fair and charming skin. Nowadays, acne, black head, pimples, dark circle are common among youngsters and person who suffers from it. According to Ayurveda, skin problems are normally due to impurity in blood.

Herbal cosmetics are the products which are used to purify and beautify the skin. The main advantage of using herbal cosmetics is that it is pure and does not have any side effects on human body. 5 Face pack is the smooth powder which is used for facial application. These preparations are applied on the face in the form of liquid or pastes and allowed to dry and set to form film

giving tightening, strengthening and cleansing effect to the skin. They are usually left on the skin for ten to twenty-five minutes to allow all the water to evaporate, the resulting film thus contracts and hardens and can easily be removed. The warmth and tightening effect produced by application of face pack produces the stimulating sensation of a rejuvenated face, while the colloidal and adsorption clays used in these preparations remove the dirt and grease from the skin of the face.

**De-tan pack**

The de-tan face pack traps the moisture or ingredient in the skin and creates film that helps to either hydrate, moisturize, dry or exfoliate the skin depending on the ingredients used and its purpose. Therefore, face packs allow ingredients to penetrate better into your skin in a short amount of time. Whether it's salicylic acid for acne, vitamin C for fine lines for brightening dark spots, a de-tan face pack can offer a more concentrated dose and more intense version of its ingredients compared to other forms of applications.

### De-tan face pack

This de-tan pack, have been around for a long time and the benefits of using them are almost immeasurable. These masks can be used to hydrate the skin, to remove excess oils and impurities, and to improve the appearance of pores. Materials like *Murraya koenigii*, as Active Pharmaceutical Ingredient. These detan face pack are inexpensive so that every individuals can afford it and use easily. These are also pocket friendly so that one can avoid spending much time at spa and also in buying high expensive cosmetics. Due to the awareness of the environmental damage caused by industrialization, a trend has developed to use products with natural ingredients. Natural extracts are multi-functional and act as antioxidants to create pharmaceutical products. These extracts are used to create flavours for pharmaceutical products. Extracts are available in several forms such as solid extract, fluid extract, and powder extract. Here the extraction process is carried out as a powder extract. The herb that are selected are Indian *Murraya koenigii*.

### Benefits of Using De-Tan Cream

De-tan creams are designed to address the issue of skin tanning, offering a remedy to those seeking to restore their natural skin tone. Suitable for various skin types,

including dry skin, oily skin, and even sensitive skin types, de-tan creams are formulated to be gentle yet effective. Here are the benefits of De-tan cream.

- Reduces skin pigmentation caused by sun exposure.
- Helps restore the skin's original complexion.
- Removes dead skin cells, promoting a brighter appearance.
- Evens out skin tone and reduces discoloration.
- Diminishes signs of aging, such as fine lines and dark spots.
- Suitable for various skin types, including sensitive, oily, and dry skin.
- Infused with natural ingredients known for their lightening and exfoliating properties.
- Helps prevent further damage to the skin.
- Can be used as part of a regular skincare routine to maintain a healthy complexion.
- Provides a more uniform skin tone and texture.

### MATERIALS AND METHODS

#### Instrument and its role/uses

Various type of instrument used in preparation of De-tan face pack listed below.

**Table: List of Instruments.**

Sr. No.	INTRUMENTS	ROLE/USES
1	Heating mantle	Heating
3	Weighing balance	Weight
4	pH meter	Measurement of pH

#### Material and its role/importance

Various ingredients used in the preparation of De-tan

face pack listed below.

**Table: List of Ingredients.**

Sr. No	Material/ingredients	Role
1	Cetyl alcohol	Anti-inflammatory & Antioxidant
2	Stearic acid	Moisturizer
3	Propyl glycol	Humectant
4	Vitamin-E	Binder
5	Clove oil	Antimicrobial
6	Rose Water	Antibacterial
7	Peppermint oil	Soothing effect
8	Eucalyptus oil	Cold and
9	Glycerine	Enhancer of skin complexion

### Application of API

#### Curry leaves

**Synonym-** *Murraya paniculata*.

**Biological source** - The curry leaves (*Murraya koenigii*) is leaves that belongs to the (Rutaceae) family.

**Description - Color-** Dark green colour.

**Odor-** It have such a mild smell like pungent and aromatic.

**Taste-** citrusy and somewhat bitter.

**Uses** – They help reduce acne, blemishes, and fine lines, giving the skin a youthful and radiant shine. Improves eyesight; Vitamin A in curry leaves is crucial for eye health. It helps prevent vision-related issues like dry eyes,

night blindness, and macular degeneration.

### Application of Excipients

#### Cetyl alcohol

**Synonym-** 1-hexadecanol or n-hexadecyl alcohol

**Biological source** – Made from vegetable oil such as palm or coconut oil.

**Description – Color-** waxy white.

**Taste-** faint characteristic and bland taste.

**Uses:** It helps prevent creams from separating into oil and liquid. A chemical that helps to keep liquid and oil together is known as an emulsifier. It may also make a product thicker or increase the product's ability to foam.

**Rose Water**

**Biological source** - It consists of the fresh plant of *Rosa Rubiginosa*, belonging to family Rosaceae.

**Description – Color-** shade of red.

**Chief Chemical constituents** - Flavonoids, triterpenes, tannins, phenolic acids, polysaccharides, fatty acids, organic acids, carotenoids and vitamins.

**Uses** – It help regenerate skin tissues and delay the signs of aging. The antioxidants neutralize free radicals that quicken the appearance of wrinkles, fine lines, and freckles.

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**EDTA**

**Synonym** – Ethylenediaminetetraacetic acid

**Biological source** - It synthesized by ethylenediamine, formaldehyde, and sodium cyanide.

**Description - Color-** White.

**Taste** – Slightly salty

**Uses** – EDTA acts as a chelator. It grabs metal ions that can affect the stability and appearance of cosmetic products. EDTA is used to counter the hardness of water in rinse-off products. It also increases the effectiveness of preservatives and antioxidants.

**Propylene glycol**

**Biological source** – Typically made from petroleum, and from soybeans and canola.

**Description - Color-** Clear Colorless.

**Uses** – It is used to absorb extra water and maintain moisture in certain medicines, cosmetics, or food products. It is a solvent for food colors and flavors.

**Glycerine**

Glycerine is a type of carbohydrate known as a sugar alcohol or a polyol. This odorless liquid has a sweet taste and a syrupy consistency. While glycerin occurs naturally in plants through the fermentation of sugars, most of the glycerin nowadays is produced from the hydrolysis of fats and oils.

**Uses**

Glycerine is a skin product that traps moisture, giving it a youthful glow, reduces wrinkles, keeps skin soft and smooth, and improves skin function, helping to slow down aging. You can use glycerin as a moisturizer but keep in mind that using only glycerin on the face might not be a good idea because it is thick.

**Vitamin E**

Vitamin E is a group of eight fat soluble compounds that include four tocopherols and four tocotrienols. Vitamin E deficiency, which is rare and usually due to an underlying problem with digesting dietary fat rather than from a diet low in vitamin E, can cause nerve problems.

**Uses**

Vitamin E have antioxidant properties protect skin from pollution and sun damage, promoting balance and wrinkle prevention. It also helps make skin firm and elastic, thereby reducing the appearance of wrinkles.

**Clove oil**

**Biological source** -The essential oil is extracted from the dried flower buds of clove.

**Synonym** - ding xiang (Chinese), laung (Hindi).

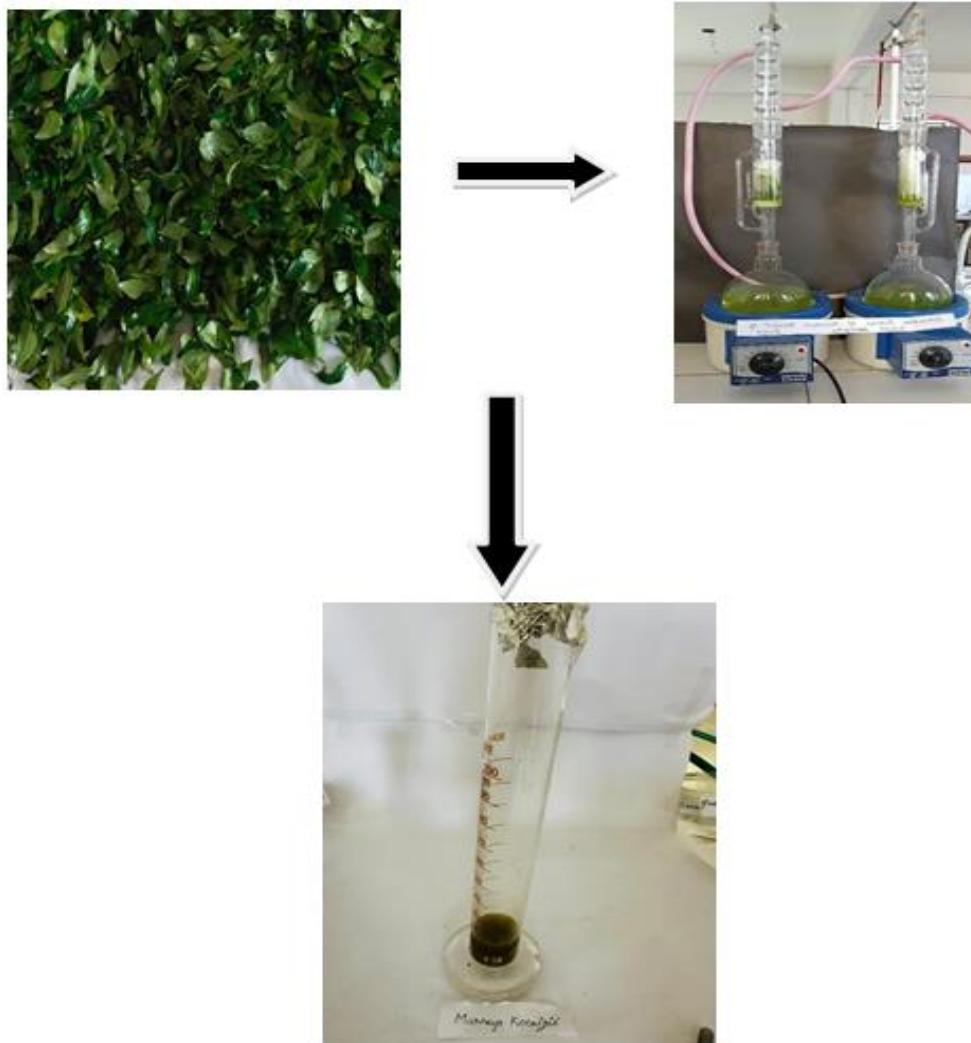
**Uses**

It helps in lessen the appearance of stretch marks, baggy eyes and puffy skin. It helps moisturizing dry skin and hair. It is often used as the active ingredient to soothe the itching and burning. It is good for those who suffer from acne or oily skin.

**Silver leaf****Uses**

A chandi vark is generally used for toppings and decorations to Indian Sweets and Face pack, this is made from 99.9% finest silver with modern machinery.

**Process of material preparation**  
**Curry leaves (API)**



**Formulation of de-tan pack**

We prepared two types of De-tan pack

- De-tan pack F-1
- De-tan pack F-2

**Formulation of De-tan Pack F-1**

**Table: Formulation table of De-tan pack F-1.**

S.no	Name of Ingredients	Quantity (ml/gm)
1.	Stearic acid	3gm
2.	Cetyl alcohol	1gm
3.	Rose water	2ml
4.	Glycerine	2ml
5.	Vitamin E	0.10ml
6.	EDTA	0.75gm
7.	Eucalyptus oil	1ml
8.	Clove oil	0.15ml

**Procedure: for formulation F-1****Mixture (A)**

Take the aqueous phase (Glycerine, EDTA) into the beaker.

**Mixture (B)**

Weigh all ingredients (Stearic acid, Cetyl alcohol, propylene glycol, Eucalyptus oil, clove oil, peppermint oil) and mix them in a beaker. Heat both the mixtures on hot plate for 10 min at 60-degree temp.

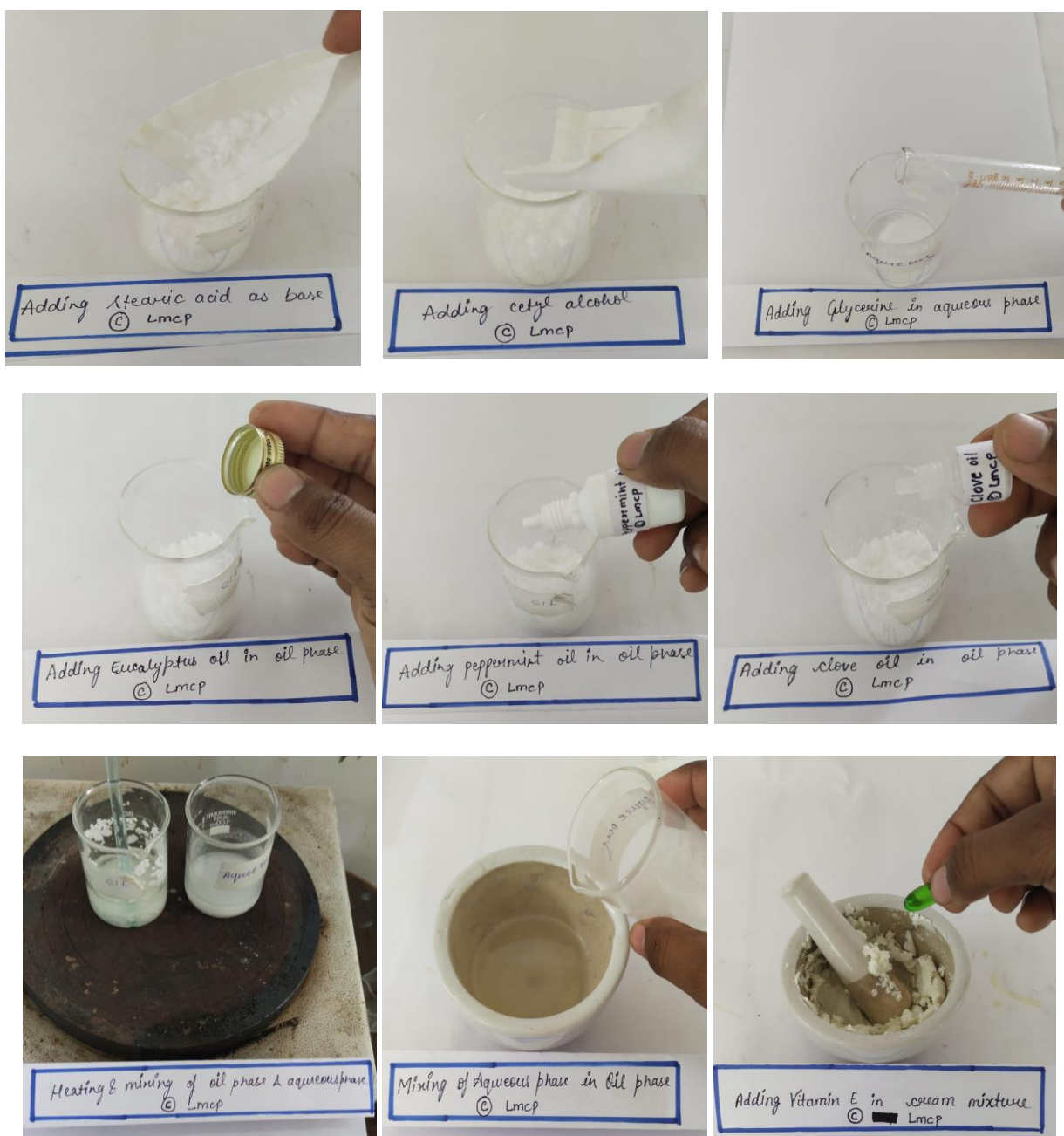
**Final Steps**

Pour the mixture B into mixture A very slowly and mix it well to make the cream form

Then uniform triturate the mixture

Mixture should be triturate with anticlockwise

De-tan pack is ready to apply on skin



**Fig: Preparation of De-tan pack F1.**



**Formulation of De-tan Face Pack F-2****Table no. 5 Formulation table of De-tan Face pack F-2.**

Sr. No.	N	Quantity (ml/gm)
1.	Stearic acid	3.5gm
2.	Cetyl alcohol	1.5gm
3.	Glycerine	5ml
4.	Vitamin – E	0.10ml
5.	EDTA	0.50gm
6.	Clove oil	0.15ml
77Y7767.	Eucalyptus oil	1ml
8.	Rose water	5ml

**Procedure: for formulation F-2****Mixture (A)**

Take the aqueous phase (Glycerine, EDTA) into the beaker.

**Mixture (B)**

Weigh all ingredients (Stearic acid, Cetyl alcohol, propylene glycol, Eucalyptus oil, clove oil, peppermint oil) and mix them in a beaker.

Heat both the mixtures on hot plate for 10 min at 60degree temp.

Pour the mixture B into mixture A very slowly and mix it well to make the cream form



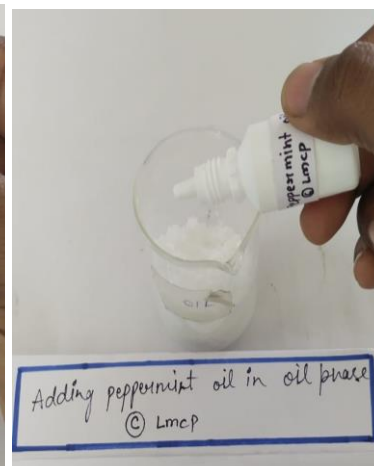
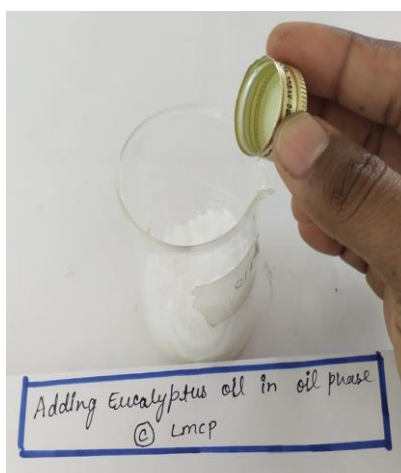
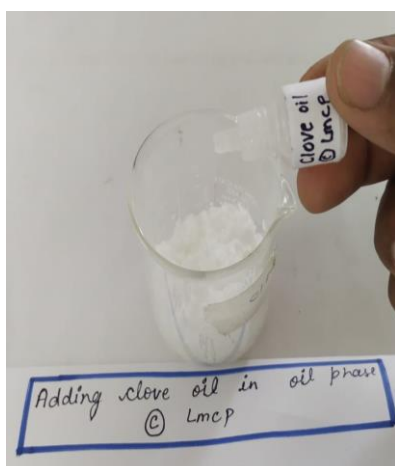
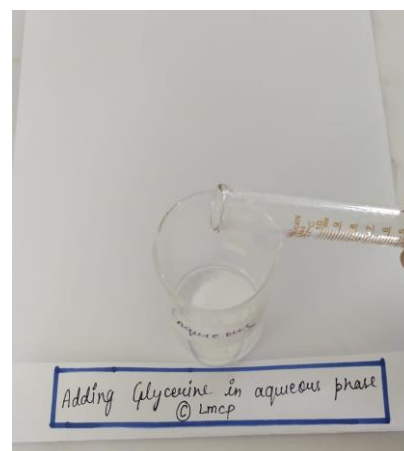
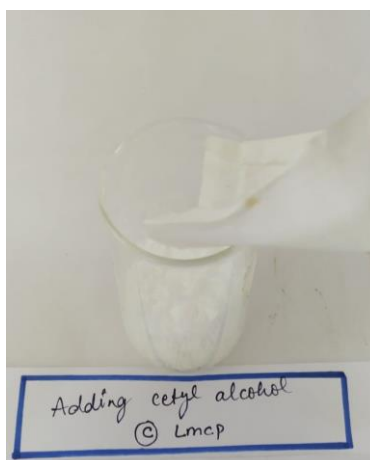
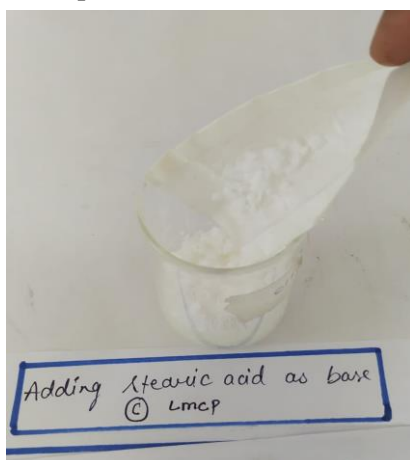
Then *uniform triturate* the mixture.

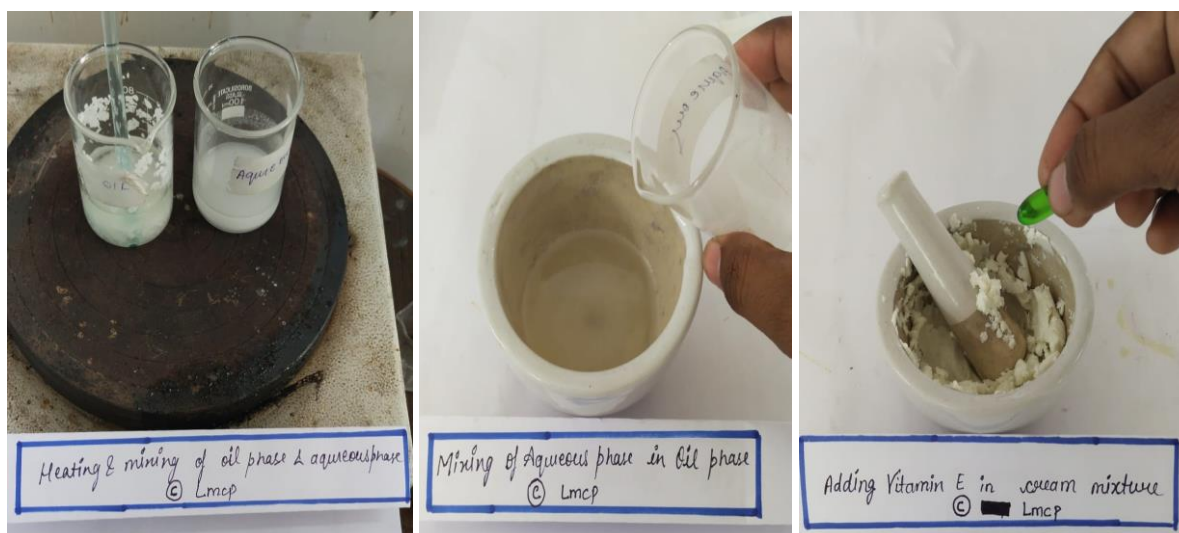


Mixture should be triturate with anticlockwise



De-tan pack is ready to apply on skin

**Final Steps**



**Fig: Preparation of De-tan pack F2.**

## Evaluation parameters

### 1. pH determination

Determination of the pH of preparation is done by using a pH meter. The pH test was carried out before and during cycling test.



**Fig: pH Determination.**

### 2. Irritability

A small amount of De-tan pack was applied on the skin and kept it for 20 minutes and found to be non-irritated.



**Fig: Applied De-tan pack.**



**Fig: Tanning removed after applied de-tan pack.**

### 1. Determination of Homogeneity

This test was carried out using 2 object glass, 2-3 drops of the preparation are smeared on a piece of object glass covered by another glass. The preparation must show a homogeneous arrangement and no coarse grains are visible. This homogeneity test was carried out before and during cycling test.

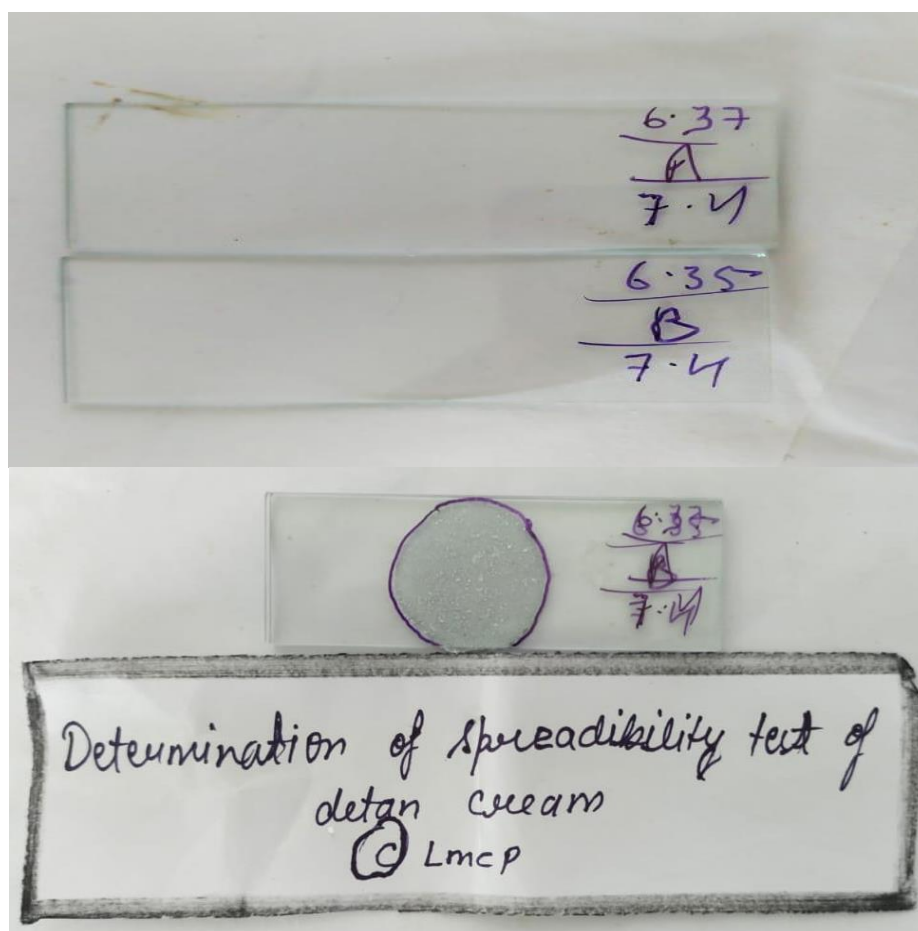
### 2. Spreadability test

The Spreadability of De-tan pack is crucial for its behavior on the skin. A small sample was placed on a

watch glass, and another glass was placed above it. A 100 g weight was placed on the watch glass. The time it took for the liquid to spread was measured, which was found to be 4 cm in 60 seconds. It was calculated by using following formula.

$$S = m \times l / t$$

S= Spreadability m=Weight placed on slide l=Length of the glass slide t= Time taken in second.



**Fig: Spreadability test of samples.**



## RESULTS AND DISCUSSION

The Composition of De-tan pack formulated in the laboratory was found to be compared with various parameters such as appearance, color, odor and pH, consistency, spreadability, irritancy, homogeneity. Thus, the developed formulation can be used as an effective cosmetic.

**Table: Evaluation parameter of De-tan pack.**

Sr. No.	Parameter	Formulation 1 [F1]
1.	Colour	Greyish white
2.	Odor	Aroma
3.	Consistency	Semi solid
4.	pH	6.8
5.	Irritability	Non irritant
6.	Homogeneity	Good

## CONCLUSION

The conclusion of this study was concluded that the prepared De-tan face pack having no or minimum side effects. The API used in the preparation of De-tan pack is Curry leaves which is used as Anti-tanning. All two prepared formulations show good properties like moisturizing, and hydrate the skin, possess aroma, removed tanning. In this research it was also found that it provides a guideline on the effect of ingredient towards the physical properties and consumer acceptance of the De-tan pack formulation. Hence, the use of natural ingredients is a step towards healthy cosmetics and can be widely utilized with great pleasure. The prepared De-tan pack was evaluated by the different parameters such as Irritability, Spreadability, Homogeneity, pH.

After completing this it was concluded that the observed reaction matched with the predicted reaction. When the de-tan pack was applied on the face, hand there was instant glow on the face & skin. Among the different types of de-tan pack available, the de-tan pack appears to be the most attractive due to its ease of application, high efficacy, and visible instant results, so we can use this special de-tan pack to get rid from tanning and black heads. Furthermore, de-tan pack for skin are also constructed of materials such as synthetic fibers, which are incredibly absorbent and can easily contain large quantities of water.

The study revealed that the de-tan pack is very effective in improving skin hydration and skin glow, encouraging an even skin tone, reducing skin pigmentation and promote black heads free skin, reducing the signs of tanning.

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