

## Formulation and evaluation of virgin Coconut oil lotion

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### ABSTRACT

Virgin Coconut Oil is usually extracted from well matured and fresh coconut through specialized processes without damaging its natural nutrition. Xanthan gum and bees wax components are able to block moisturize of the skin. While Virgin Coconut Oil (VCO) is able to moisturize and soften the skin. This study aims to determine the best formulation in protecting dryness of skin in application to the skin, as well as knowing the physical and chemical characteristics of skin lotion. The treatment is the addition Optiphen plus preservatives to the VCO skin lotion. Evaluation is carried out on the physical and chemical properties and the level of panelist preference. Clinical studies have revealed that VCO is effective and safe to use as a moisturizer and can improve skin hydration and accelerate healing in the skin.

**Key words:** Virgin coconut oil : skin moisturizer : Optiphen plus , skin hydration.

### I. INTRODUCTION

In recent years, many international cosmetics brands and their products Launch in India, compete with Indian brands and solve outstanding problems Consumers are demanding to look better and younger. But there is still a growing trend Designed for consumers looking for traditional cosmetics and nutritional products It is derived from natural ingredients and has certain medicinal effects. inevitably there are Such “cosmeceuticals” have studies show VCO is effective and safe Acts as a moisturizer to improve skin hydration and accelerate skin healing. number 8 It reduces skin diseases by moisturizing and soothing the skin (Sahle, et al. 2015) [30]. 2

Lotion is one of them Skin moisturizing cosmetics composed of various vegetable oils, animal oils or synthetic oils Synthetic, surface fat that forms artificial skin with layers of curved features Lotion can maintain the moisture of the skin and the waterproofness of the skin layer 6

Leaves skin softer and smoother. Human skin needs care. From birth, the skin, like the entire body, begins to age naturally. Physiological processes. Skin is the largest, heaviest and most versatile organ of the human body. The skin is also the outermost part of our senses system as a force transmitters and sensors. The main function is to protect the body and regulate Body temperature and sensory perception. Biological aging of the skin should begin Over the age of 25; however, physiological aging of the skin begins earlier and therefore accelerates Many external factors such as sunlight, cold, UV radiation and air pollution. skin is are permeable and have highly specialized structures such as the stratum corneum (SC), This is the outermost layer of the epidermis. The barrier function of the skin mainly lies in this stratum corneum. 4 This highly hydrophobic layer consists of differentiated non-nucleated cells, keratinocytes, filled with keratin and embedded in lipids field. Virgin Coconut Oil (VCO) is the purest coconut oil and has a unique taste and natural coconut scent. Virgin Coconut Oil (VCO) is extracted from the coconut kernel Fresh naturally ripe coconut, heated or unheated. From a nutritional perspective, VCO Has more positive effects than coconut oil as it retains most of its functions Element. VCO is rich in vitamin E and antioxidants, making it easy to digest Medium chain fatty acids (MCFA) are present.

The coconut tree (Cocos nucifera) is a plant belonging to the Arecaceae family. It's one of the ten most useful trees in the world. It provides food for millions of people, especially in tropical countries. Coconut trees are of two types videlicet tall and dwarf trees. It lives in sandy soil and needs a lot of sun and regular rains. It can't survive in a place with low temperature and low humidity

### History

The name coconut comes from the Portuguese hearties of the 16 century, who allowed that the three small holes in the coconut shell act a mortal face, so they called the fruit coconut which means smiling face Smile or mouth". The word nut was added to the English language subsequently.

### Origin

The coconut began and was domesticated in Malaysia where it was considerably distributed? Prehistorically, it was introduced to the Asian landmass in and reached East Africa by 1492. All tropical areas are suitable for coconut cultivation Philippines, Indonesia, India, and Sri Lanka are the major producer of coconut, in world.

### Botany



### Botany

Common names: Coconut Palm,

Scientific name *Cocos nucifera*

Family: Arecaceae

Order: Arecales tree, the box bears scars from the unfolding stem

### The Fruit

The fruit of the coconut, botanically known as a fibrous drupe and popularly the 'nut', consists internally of the endosperms' kernel with the embryo embedded in it and externally protected by the fruit coat known as the pericarp which consists of three distinct and well defined regions, viz., the exocarp or epicarp, the mesocarp and the endocarp

The outermost region of the fruit coat is the exocarp for epicarp) which consists of a tough smooth and hard fibrous skin where as in the ripe fruit it assumes green, red, yellow or brown colour. Within the kernel is a cavity which in the unripe

fruit is Completely filled with the liquid popularly known as 'coconut

### Water



### Coconut oil:

Coconut comes from the meat of matured coconuts harvested from the coconut palm. It is issued in food, medicine and in the industry. Coconut oil is high in saturated fat content, and because of it, it has a long self life

### COMPOSITION OF COCONUT OIL

CNO has come one of the most sought after oils in the world due to its high degree of achromatism and good stability types of CNO are attained from different corridor of the cocarut Bobby oil painting oil is pulled from dried kernel by mechanical milling and virgin coconut oil painting (VCO) is pulled from fresh kernel without high heat or chemical treatment. The oil painting pulled from coconut heavy with Isopropyl alcohol is called coconut test oil painting til 24 CNO consists mainly of SFAs, of which accounts for 50 of its composition 6 In addition to triacylglycerols (Marker), is esterified with Fas. CNO contains other minor factors analogous as phospholipids, sterols, tocopherols and volatiles. The presence of these substances plays an important role in modulating the chemical and physical characteristics of CND 25 For instance, the melting pattern of CNO, which passes abruptly from solid to a liquid within a short range, is mainly due to the nature of the composition. Also, VCO is found to be healthier than commercial copra oll due to its medium-chain SFA content and higher amounts of polyphenols. 26 Hence, it is vital to understand the relationship of the composition to the exact health benefits exerted by the oil

Fatty acid profile of Coconut Oil (% age):

|                        |      |
|------------------------|------|
| Caprylic acid (C8:0).  | 8.00 |
| Capric acid (C10:0).   | 6.00 |
| Lauric acid (C12:0).   | 48.0 |
| Myristic acid (C14:0). | 18.0 |
| Palmitic acid (C16:0). | 9.00 |
| Stearic acid (C18:0).  | 2.50 |
| Oleic acid (C18:1).    | 6.50 |

Application for skin

- 1 Moisturizing skin and hair
2. It is found that CNO has a beneficial impact on external parts of the body such as hair and skin. People in the tropics have used.
3. as a natural moisturizer for centuries, In Ayurvedic medicine,
4. CNO has been used to treat numerous skin disorders which
5. Wound Healing Effect

Wound Healing Effect

Wound healing is a complex process where the skin or other body tissue repairs itself after injury. The Oil of *Cocos nucifera* has been reported to be an effective wound healing agent<sup>17</sup>. Nevin et al studied the Effect of topical application of virgin coconut oil on skin components and antioxidant status during Dermal wound healing in young 3 effect on Dermatitis

6. Atopic dermatitis (AD) i

a chronic skin disease characterized by features of defective epidermal barrier Function and inflamed cutaneous layer. In this condition trans epidermal water loss (TEWL) is increased And the ability of the stratum corneum to hold water is impaired. This leads to decreased skin capacitance And hydration. A study by Evangelista et al investigated the topical effect of VCO on SCORAD index Trans epidermal water loss, and skin capacitance in mild to moderate pediatric atopic dermatitis using a Randomized controlled trial design. A total of 117 patients included were evaluated at baseline, and then at 2,4, and 8 weeks respectively. The results concluded the superiority of VCO over mineral oil among pediatric patients with mild to moderate AD 19.

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Extraction methods of coconut oil

1. Cold Extraction (C-VCO)

Cold processing is the method of VCO extraction without the aid of heat. In this Method, the coconut milk is subjected to chilling (2-8 °C) overnight and the sepa →s Rated oil is collected by centrifugation, filtered and stored. This is a simpler and Cheapest method available (Narayanankutty et al. 2018).



2. Hot extraction

Is traditionally used in Southern India for VCO preparation. In this Method, the coconut milk is subjected to a moderate temperature of up to 100 °C. The Processing lasts for 60 min or until the oil get completely separated from the milk Then the oil is collected by filtration. This heating process helps to increase the release Of bound phenolic acids into the oil and also yield is much higher. The oil prepared In this way is being used conventionally in the Ayurvedic system of medicine for skin



### 3. Centrifugation Method

The extraction of VCO was studied by using various Centrifugation speeds, temperature and time intervals. The results Showed that the yield of VCO was 13.53% at 12000 rpm, at 120 Minutes [1]. The highest yield of VCO was 13.80% at centrifugation Temperature of 40°C. Studied the potential of the centrifugation In demulsification of coconut milk that was collected from local Market and centrifuge at different speed from 6000 to 12000 rpm For time varied from 30 to 105 min, resulting that enhanced the Demulsification of coconut milk in a very short time compare to The fermentation method and provide higher yield [15].



### Body lotion Preparation

Preparation method:- Mainly:

The principle of making lotion is to mix multiple ingredients and stir and beat thoroughly.

Steps:

Put xanthan gum into cup A

Use glycerin Dissolve a few parts of xanthan gum.

Stir evenly with a stick. Add distilled water Use a squeeze bottle to mix.

Stir evenly with a stick.

They have a gel-like consistency and richness Pass the cup through the counter paper.

This is the water phase.

Place coconut oil in another cup Add emulsifying wax to the ribbon.

Those cups covered with Antipodean paper.

Get the best of both worlds Place the beaker in a water bath and maintain the water bath temperature at 70–75 °C.

Melt the mixture properly. Mix water phase A and oil phase B until homogeneous Heat to 7075°C.

Also use a mixer for proper mixing.

Also processes the mixture into a thin white substance

Create a thick layer of friction.

- Let the mixture cool to below 40°C and once cool add the lavender oil lotion.
- The medicine contains Optiphen plus preservative .







## II. MATERIAL AND METHODS:-

In this study, virgin coconut oil, bee wax, coconut oil, xanthan gum, glycerine, distilled water, and Optiphen Plus are the raw materials and chemicals used. The equipment utilized in the process includes the blender, water bath, borosilicate glass beaker, glass rod, autoclave, and aluminum spoon. A digital thermometer, an

analytical balance, and a measuring cylinder are the instruments used to analyze the VCO.

## III. RESULT :

The formula of Lotion 5 is a thin, non-greasy liquid formulation that looks very soft. It flows evenly and adheres to the skin in a thin film. Develop body lotion No precipitation for up to three months at room temperature Has good stability. Skin contamination 7 is one of the most likely potential risks Health consequences of persons exposed to various occupational hazards. Many skin care products on the market contain chemical ingredients The preparations are aggressive, irritating, and even toxic. This highlights the need to identify them Develop a natural products research program. In this case, topical moisturizer Formulations developed in this study are thought to be associated with reduced risks to humans health risks and environmental pollution. Virgin coconut oil, one of the top three Part of the formula itself acts as a preservative and increases the shelf life of the body emulsion and protect against microbial degradation. Body lotion developed to contain No irritation to skin, inherently long life, quiet, stable and safe .

## IV. CONCLUSION.

The best formula in this study added extracted coconut oil and has been shown to be safe Suitable for normal skin types. Natural ingredients extracted into coconut oil are added during the production process Body lotion. It prevents the skin from getting wet or dry. Coconut oil moisturizer is also proven to be one of the skin moisturizing cosmetics Various natural ingredients that are very useful for our skin. VCO (Virgin Coconut Oil) acts as an antioxidant, anti-inflammatory, skin protectant and antibacterial agent It also acts as an immune modulator. It is used to treat various skin conditions. Which It provides wound healing protective properties to human skin. It can also be concluded that one of the The formula of this lotion is rated as excellent as the others, with a VCO value of 76% Ingredients without any preservatives are acceptable. Coconut oil body lotion mainly uses Optiphen plus preservatives because of protective effect against bacteria and mold.

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