



Virgin Coconut Oil Infused Healthy Cosmetics

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Coconut and its products are important foods for thousands of years in India. Coconut oil is classified as a "superfood." Recently, virgin coconut oil (VCO) is gaining wide popularity among the public. It is believed that VCO is more beneficial than copra oil since the method of extraction retains more bio active components including polyphenols and vitamins.

It is generally recognized that the coconut provides many items of great value to man, such as coconut meat, milk, water, oil, and sugar. Currently, there is a great deal of research and commercial interest in cosmetic production utilizing VCO. VCO infused beauty products such as moisturizer, shampoo, lip balm, mouth wash, sun screen cream, hair oil and massage oil are available worldwide. The aim of this article is to explore the potential utility of VCO for production of cosmetics.

Moisturizer

People in the tropical countries have effectively used coconut oil as a traditional moisturizer for centuries. Mineral oil is the major ingredient for preparation of moisturizer. Recently, the coconut oil was found to have skin antiseptic effects. Coconut oil consists of triglycerides (made up of glycerol), combined with stable saturated medium-chain fatty acids (49% C12 lauric acid, 7% C10 capric acid, and 8% C8 caprylic acid) (Agero and Verallo-Rowell, 2004). Coconut oil has the same occlusive and hydrophobic characteristics that mineral oil has. Unlike mineral oil, fatty acids present in the coconut (particularly lauric acid) have been found to have antiseptic properties (Kumar *et al.*, 2018). A moisturizer with



antiseptic effects has higher value in the market. The obvious risk of mycotoxin contamination is high in oil extracted from copra (Mattie, 1964). The extraction methods for VCO avoid this contamination by processing the coconut meat shortly after harvest. The clinical studies conducted by Agero and Verallo-Rowell (from Makati Medical Center, Philippines) confirmed that coconut oil is as effective as mineral oil when used as a moisturizer.

Shampoo

VCO is used to prepare natural shampoos, in which the extract of amla fruit and soap nut powder are sometimes incorporated to add value (Rethinam, 2002). The shampoo prepared from VCO reported that it is free from sulphate. VCO based



Hair oil

VCO has been widely used for the preparation of hair oil. VCO hydrates and softens the hair. The presence of fatty acids, vitamins and minerals in VCO nourish and restore the hair naturally. VCO has multi-benefits that include moisture retention, smoothing and protecting. The studies show that the VCO can be used as protective medium against hair damage and it blocking about 20% of the sun's ultraviolet rays. Since, coconut oil contains a triglyceride of lauric acid, has a high affinity for hair proteins and, because of its low molecular weight and straight linear chain, it is able to penetrate inside the hair shaft. Mineral oil, being a hydrocarbon, has no affinity for proteins and therefore is not able to penetrate and yield better results (Rele and Mohile, 2003). The research study highlighted that among the coconut, sunflower and mineral oil, coconut oil was found to reduce the protein loss remarkably for both undamaged and damaged hair when used as a pre-wash and post-wash grooming product.



shampoo helps to stimulate the hair growth, lift away the impurities, re-hydrate hair and keeps it shining. A study found that coconut oil helped prevent protein loss from the wet combing of hair when used for fourteen hours (Rele and Mohile, 2003). Viste *et al.* (2013) revealed that the shampoo is highly effective against fleas, ticks, lice and mites. The shampoo contains 80% VCO is the most effective concentration in eliminating and reducing the mite count as early as 6th week of treatment and other ectoparasites in dogs.

Lip Balm

The moisturizing effects of virgin coconut oil have increased the interest in this ingredient as a lip balm. Lip balm enriches with VCO, shea butter, bees wax, herbal extract (Aloe vera and carotenoid), organic sunflower oil, olive oil, vitamin E and calendula. It has formulated without petroleum, phthalates, parabens, and free of artificial flavors and colors. It will protect lip from dryness and enhance soft and moisten lips for delightful and healthy look. Since VCO has potential antimicrobial and disinfecting effects, it may keep the lips germ-free, and subsequently help to protect any cracked skin from becoming infected too. Azwanida *et al.* (2014) formulate the herbal lipsticks with virgin coconut oil, vegetable fat, and olive oil as natural excipients. The authors highlighted that the formulated lipstick offers excellent properties like



smoothness, spreadability, and stable when stored under room temperature. Additional properties of antioxidant and antimicrobials properties added extra market values to the product.

Mouth wash (Oil Pulling)

Oil pulling has been used extensively as a traditional Indian folk remedy for many years for strengthening teeth, gums, and jaws and to prevent decay, bleeding gums, oral malodor, and dryness of throat, and cracked lips (Asokan *et al.*, 2011). Exploitation of VCO for oil pulling is becoming popular. VCO has a favorable fatty acid profile, containing high amounts of lauric acid, which has antimicrobial properties which can kill some of the harmful bacteria in the mouth, improve dental health and reduce bad breath. Streptococcus mutans is one of the main bacteria in mouth and a key player in plaque buildup and tooth decay. Also, coconut oil has high saponification index. It contains lauric acid which can react with alkalis present in saliva such as sodium hydroxide and bicarbonates to form sodium laureate-soap like substance, which reduces plaque adhesion and accumulation, and possesses cleansing action (Peedikayil *et al.*, 2015). The clinical study conducted for 60 adults showed that oil pulling using VCO for 10 min at every day for two weeks significantly reduced the S. mutans counts in saliva compared to Chlorhexidine mouth wash (Kaushik *et al.*, 2016). An in vivo study conducted by Peedikayil



et al. (2016) observed that there is a statistically significant decrease in *S. mutans* count from coconut oil pulling as well as chlorhexidine group from baseline to 30 days. This study conducted for fifty female children (25 children's for the study group (coconut oil) & 25 children's for control group (chlorhexidine) aged from 8 to 12 years. The participants were routinely performed oil swishing with coconut oil and chlorhexidine and rinse every day in the morning after brushing for 2-3 minutes for 30 days. Hence, oil pulling with VCO is natural, safe and has no side effects.

Massage oil

VCO is an ideal moisturizer for the body which makes the skin smooth and textured. The molecular structure of the VCO allows for easy absorption on the skin. A massage with coconut oil can also help to relax tight muscles in the body. Songkro et al. (2010) characterize the aromatherapy massage oils prepared from virgin coconut oil (VCO) and essential oils (lemon, eucalyptus and lavender oils). Three essential oils (lemon, eucalyptus and lavender oils) at concentrations of 1, 3 and 5% w/w were blended with the VCO to prepare massage oils. Results showed that types and concentrations of essential oils used affected the viscosity, refractive index and three chemical characteristics (acid, peroxide, and iodine values) associated with oxidative stability of the massage oils.

Soap

VCO is an excellent raw material for making soaps as it provides the lathering and active cleaning properties. Using a soap containing VCO is a convenient way to treat the skin for hydration. VCO soap infuses all the goodness of oil into the skin. The fatty acids present in VCO helps to remove blemish-causing dirt and bacteria. The VCO soap can be used for removing makeup and even for cleansing hair without the use of shampoo containing chemical.



Its natural deodourising properties can also help to eliminate body odour. Coconut oil based soap has antibacterial, anti-fungal and anti-inflammatory properties, hence it can help to tackle many kinds of skin issues. ■

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