



The Facts on Organic Virgin Coconut Oil

Introduction

The people of South Asia and the Pacific look to the coconut tree as an important provider of food, drink, and fuel, not to mention its many uses in industry. Folkloric and Ayurvedic writings over 4000 years old are replete with accounts of the efficacy of the coconut for many ailments—from the cure of wounds, burns, ulcers, lice infestations to dissolution of kidney stones¹ and the treatment of choleric dysenteries². Hence, it has been called the *tree of life*. Sanskrit medicine also documents the same health benefits in mother's milk. Modern research has found a common link between mother's milk and coconut oil in terms of their fat or lipid content. The fatty acids and monoglycerides found in these two products have extraordinary antimicrobial properties³.

The medium-chain fats found in coconut oil are similar to fats found in mother's milk and have similar nutraceutical effects. According to Ayurvedic classics, coconut oil nourishes the body and increases strength. The oil is valued for its antimicrobial properties. When coconut oil is consumed, the body makes the disease fighting monolaurin, the monoglyceride of lauric acid. Among the saturated fatty acids, lauric acid has the maximum antiviral activity. Different preparations that use coconut oil promote luxurious hair growth and protect the skin from bacterial, protozoal, and viral infections. Fresh lauric acid is wholesome to the heart and relieves skin troubles.

Organic, Virgin Coconut Oil is Very Different from Refined Coconut Oil

Refined Coconut Oil is generally made from copra. Copra is the dried kernel (meat) of the coconut, which is smoke-, sun-, or kiln-dried, or a combination of the three. Because the process of drying copra is generally unsanitary, the unrefined coconut oil extracted from copra is not suitable for consumption and must be purified (refined). The standard end product is RBD (refined, bleached, and deodorized) coconut oil. High heat is used to deodorize the oil, and the oil is typically filtered through bleaching clays to remove impurities. Sodium hydroxide is generally used to remove free fatty acids and prolong shelf life. This is the most common way to mass-produce coconut oil. The older way of producing refined coconut oil was through physical/mechanical refining. More modern methods also use chemical solvents to extract all the oil from the copra for higher yields.

RBD oil is sometimes hydrogenated or partially hydrogenated. Hydrogenated oils contain trans fatty acids.

¹ Macalalag, E.V., Jr, Macalalag, M.L., Macalalag, A.L., Perez, E.B., Cruz, L.V., Valensuela, L.S., Bustamante, M.M., and M.E. Macalalag, IV (1997) Buko water of immature coconut is a universal urinary stone solvent. Read at the Pacific Coconut Community Conference, Legend Hotel, Metro Manila, August 14-18.

² Anzaldo, F.E., Kintanar, Q.L., Recio, P.M., Velasco, R.U., de la Cruz, F., and A. Jacalne (1975) Coconut Water as Intravenous Fluid. *Phil. J. Pediatrics*. 24:143-166, August.

³ Kabara, J.J. (19??) Helath Oils From the Tree of Life (Nutritional and Health Aspects of Coconut Oil). ??

Organic Virgin Coconut Oil can only be produced by using fresh coconut meat or what is called non-copra. Chemicals and high heating are not used in further refining, since the natural, pure coconut oil is very stable with a shelf life of several years. There are currently two main processes for manufacturing organic virgin coconut oil:

1. Fresh coconut meat undergoes a quick-drying process; the dried meat is then pressed for the oil. Minimal heat is used for quick-drying the coconut meat, and the oil is extracted via mechanical means.
2. Fresh coconut meat undergoes a wet-milling process. “Coconut milk” is extracted by pressing the fresh coconut meat. The oil is then separated from the water from boiling, fermentation, refrigeration, enzymes and/or mechanical centrifuge.

Some retailers and manufacturers of organic virgin coconut oil call their coconut oil “Extra Virgin Coconut Oil.” However, there are no other processes used to make coconut oil other than the ones mentioned above, so this classification is arbitrary.

Nevin and Rajamohan (1994)⁴ compared refined coconut oil (CO) with Virgin Coconut Oil (VCO) and found that VCO obtained by wet process has a beneficial effect in lowering lipid components compared to CO. It reduced total cholesterol, triglycerides, phospholipids, LDL, and VLDL cholesterol levels and increased HDL cholesterol in serum and tissues. This property of VCO may be attributed to the biologically active polyphenol components present in the oil.

The Importance of Medium-Chain Fatty Acids Found in Virgin Coconut Oil

In the past four decades misinformation and disinformation provided by certain politically-biased agricultural groups and repeated in professional and lay press have lead people to believe that all saturated fats are unhealthy. While it has been known for decades that subgroups exist for unsaturated fats, i.e., mono-unsaturated fats (omega-9) and polyunsaturated oils (omega-6 and omega-3), little recognition is given to subgroups of saturated fat. Saturated fatty acids are not a single family of fats but comprise three subgroups: short- (C2-C6), medium- (C8-C12) and long- (C14-C24) chain fatty acids. Each subgroup has different metabolic, biological, and pharmacological functions.

Like mother’s milk (which also contains lauric acid), numerous studies show that the high lauric acid content of coconut oil is beneficial in attacking viruses, bacteria and other pathogens, and builds the body’s immune system. In a series of papers published in the 70s, Jon J. Kabara et al^{5,6,7,8,9} and other workers studied anti-microbial activity of various fatty acids. They found that the medium chain fatty acids (MCFA) with 6 to 12 carbons possessed significant activity against gram positive bacteria; they were also active against lipid-coated viruses as well as fungi and protozoa. Saturated fatty acids, longer than 14 carbons long, had no such activity. And of the MCFA, lauric acid (C12:0)

⁴ Nevin, K.G. and T. Rajamohan (2004) Beneficial effects of virgin coconut oil on lipid parameters and in vitro LDL oxidation. *Clin Biochem.* 37(9):830-835.

⁵ Kabara, J.J., Swieczkowski, D.M., Conley, A.J., and J.P. Truant (1972) Fatty Acids and Derivatives as Antimicrobial Agents. *Antimicrobial Agents and Chemotherapy*, pp.23-28, July.

⁶ Conley, A.J., and J.J. Kabara (1973) Antimicrobial Action of Esters of Polyhydric Alcohols. *Antimicrobial Agents and Chemotherapy*, pp.501-506, Nov.

⁷ Kabara, J.J. (1979) Toxicology, Bacteriocidal and Fungicidal Properties of Fatty Acids and Some Derivatives. *JAOCS.* 56:760.

⁸ Kabara, J.J. (1978) Fatty Acids and Derivatives as Antimicrobial Agents—A Review. *Symposium on the Pharmacological Effects of Lipids.* (ed) J.J. Kabara. AOCS, pp.1-13.

⁹ Hieholzer, J.C. and J.J. Kabara (1982) In vitro effects of monolaurin compounds on enveloped RNA and DNA viruses. *J. Food Safety.* 4:1-12.

was most potent, particularly in its monoglyceride form (monolaurin). It was more active than caprylic acid (C-8), capric acid (C-10) or myristic acid (C-14).

Beneficial Applications of Organic Virgin Coconut Oil

Examples of the beneficial applications of medium-chain fatty acids (MCFA) found in coconut oil include the following:

- Dental caries and cancer: details on positive health benefits of saturated lipids on dental and cancer research can be found in *Pharmacological Effects of Lipids*, Volumes 1, 2, and 3, edited by J.J. Kabara and published by AOCS Press. Lim-Sylianco et al (1992) demonstrated in animals a powerful protecting effect of coconut oil against six muta-carcinogenic chemicals, such as benxpyrine, azaserine, and nitrosamines. The protection was observed not only when coconut oil was given with the diet for several days before the mutacarcinogen but also when it was given in one bolus or dose with the mutacarcinogen^{10,11}. In both experiments, coconut oil gave a significantly higher protection than soybean oil.
- Nutriceutical treatment for ulcers: collectively, the data demonstrate that *H. pylori* is rapidly inactivated by medium-chain lauric acid esters.
- Nutriceutical treatment for HIV-AIDS: According to Mary Enig¹², the AIDS organization, and Keep Hope Alive, the viral load of several patients diagnosed with HIV-AIDS reportedly fell as low as being undetectable after consuming coconut oil, eating half a coconut per day, or adding coconut to anti-HIV medication that had previously been ineffective (anti protease and/or antiretrovirals). The lauric acid in coconut oil appears to be released in the body as monolaurin, which disrupts the lipid membranes of envelope viruses and inactivates bacteria, yeast and fungi.
- Some of the pathogens reported by Dr. Enig to be inactivated by Monolaurin include HIV, measles, vercular stomatitis virus (VSV), herpes simplex virus (HSV-1), visna, cytomegalovirus (CMV), Influenza virus, Pneumonovirus, Syncytial virus and Rubeola. Some bacteria inactivated by Monolaurin include listeria, *Staphylococcus aureus*, *Streptococcus agalactiae*, Groups A, B, F and G streptococci, Gram-positive organisms; and gram-negative organisms, if treated with chelator.

Based on her calculations on the amount of lauric acid found in mother's milk, Dr. Enig suggests a rich lauric acid diet contains ~24 grams of lauric acid daily for the average adult. This amount can be found in about 3.5 tablespoons of coconut oil, 10 ounces of high quality coconut milk or from ~7 ounces of raw coconut daily.¹³

Conclusion

Research findings on the healthful benefits of coconut oil indicate that simple medium-chain saturated lipids, which are non-toxic and produce nutriceutical effects, may represent the new health lipids of this millennium.

¹⁰ Lim-Sylianco, C.Y., Mallorca, R., Serrame, E., and L.S. Wu (1992) A Comparison of Germ Cell Antigenotoxic Activity of Non-Dietary and Dietary Coconut Oil and Soybean Oil. *Phil. J. of Coconut Studies*. Vol XVII 2:1-5, Dec.

¹¹ Lim-Sylianco, C.Y., Balboa, J., Cesareno, R., Mallorca, R., and I. Serrame (1992) Antigenotoxic Effects on Bone Marrow Cells of Coconut Oil versus Soybean Oil. *Phil. J. of Coconut Studies*. Vol XVII 2:6-10, Dec.

¹² Enig, M.G. (1997) Coconut Oil: An Anti-bacterial, Anti-viral Ingredient for Food, Nutrition and Health. *AVOC Lauric Symposium*. Manila, Philippines, October 17.

¹³ Lands, L. (1995) *Positively Well: Living with HIV as a Chronic, Manageable, Survivable Disease*. Irvington Publisher.